NV10/NV7.5 Transmitter

Troubleshooting Manual

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The comparisons and other information provided in this document have been prepared in good faith based on publicly available information. The reader is encouraged to consult the respective manufacturer's most recent published data for verification.

Contents

Release control record

Issue	Date	Reason
3.0	2011-11-10	Release 3 of product (NARF51B)
3.1	2012-10-01	Table 1.1: Troubleshooting Alarms - updated alarm descriptions
3.2	2014-12-10	Section 1: added step 1 to Troubleshooting Tips for AUI Screen Lockup (supports software release 4.2.7 or later)
3.3	2016-08-03	Software release NV SW 4.3

Section 1: Responding to alarms

This section provides instructions you need when performing troubleshooting on the NV10/ NV7.5 transmitter. This section includes the following topics:

If none of the procedures and alarms described in this section address your problem, contact Nautel for assistance. See "Technical support" on page ix.

Corrective maintenance

Corrective maintenance procedures consist of identifying and correcting defects or deficiencies that arise during transmitter operation. Local and/or remote alarm signals are generated when a malfunction occurs. If an alarm condition is caused by a malfunction in the RF power stage, the transmitter may maintain operation at a reduced RF output level. The nature of the fault – and station policy – will dictate whether an immediate maintenance response is necessary. Fault analysis and rectification may be conducted from three different levels, with a different technical competence level required for each: on-air troubleshooting, remote or local, and off-air troubleshooting.

CAUTION:
The transmitter contains many solid state devices that may be damaged if subjected to excessive heat or high voltage transients. Every effort must be taken to ensure that circuits are not overdriven or disconnected from their loads while turned on.

On-air troubleshooting

On-air troubleshooting can be performed from a remote location, or locally at the transmitter site.

Remote troubleshooting

Remote on-air troubleshooting consists of monitoring the transmitter's radiated signal using an on-air monitor or via a LAN connection, and observing the status of each remote fault alarm indicator. Information obtained from these sources should enable an operator to decide whether an alarm response may be deferred to a more convenient time, an immediate corrective action must be taken, or if a standby transmitter must be enabled (if one is available). It is recommended that the significance of remote indications, and the appropriate responses, be incorporated into a station's standard operating procedures. Refer to "Identifying an alarm" on page 1-5 to determine the remedial action required for a given fault.

Local troubleshooting

Local on-air troubleshooting consists of monitoring the transmitter's integral meters and fault alarm indicators. Analysis of this data will normally identify the type of fault, and in most cases will determine what corrective action must be taken. Refer to "Identifying an alarm" on page 1-5 to determine the remedial action required for a given fault.

The power amplifier stage contains an integral modular reserve (IMR) feature. This feature permits the transmitter to operate at a reduced RF output level when a malfunction occurs in one of its power modules. Station operating procedures will dictate whether a reduced RF output level is acceptable. When a reduced RF output level can be tolerated, replacement of the defective RF power module may be deferred to a convenient time.

A defective RF power module may be removed from the transmitter for servicing, while the transmitter is operating, provided that the conditions in the removal instructions detailed in "Removing an RF power module" on page 1-32 are met.

Off-air troubleshooting

Off-air troubleshooting must be performed when the replacement of a defective RF power amplifier module, or routine on-air calibration adjustments, will not restore operation.

It is recommended that the transmitter's output be connected to a precision 50 Ω resistive dummy load (rated for at least the maximum transmitter power rating) before starting off-air troubleshooting procedures. If an appropriate dummy load is not available, troubleshooting for a majority of faults can be performed with RF power stage turned off. The transmitter may remain connected to its antenna system for these procedures.

NOTE:
Reduce the RF output level to a minimal value when troubleshooting faults in the power amplifier stage while the transmitter's RF output is connected to the antenna system.

Electrostatic protection

The transmitter's assemblies contain semiconductor devices that are susceptible to damage from electrostatic discharge. The following precautions must be observed when handling an assembly which contains these devices.

CAUTION:
Electrostatic energy is produced when two insulating materials are rubbed together. A person wearing rubber-soled shoes, walking across a nylon carpet or a waxed floor, can generate an extremely large electrostatic charge. This effect is magnified during periods of low humidity. Semiconductor devices such as integrated circuits, field-effect transistors, thyristors and Schottky diodes may be damaged by this high voltage unless adequate precautions are taken.

Electrical discharging of personnel

Personnel should be electrically discharged by a suitable grounding system (e.g., anti-static mats, grounding straps) when removing an assembly from the transmitter, and while handling the assembly for maintenance procedures.

Handling/Storage

An assembly should be placed in an anti-static bag when it is not installed in a host transmitter, or when it is not undergoing maintenance. Electronic components should be stored in anti-static materials.

Tools/Test equipment

Testing and maintenance equipment – including soldering and unsoldering tools – should be suitable (i.e., grounded tip) for contact with static sensitive semiconductor devices.

Stress current protection

Every precaution should be taken to ensure the static sensitive semiconductor devices are protected from unnecessary stress current. This is achieved by ensuring that current is not flowing when an electrical connection is broken, and that voltages are not present on external control/monitoring circuits when they are connected.

Identifying an alarm

The best way to identify an alarm is by viewing the front panel's **Transmitter Status** page (Figure 1.1). If an alarm exists, the **Status** button at the bottom of the AUI display will be red. Press or click the **Status** button to go to the **Transmitter Status** page.

Figure 1.1: Transmitter Status Page

1. View the list of active faults by pressing the **Alarms** tab. Alarms are listed by their origin (**Device** column), then by name (**Alarm** column), and then by severity [1 = low (RF output not affected), 5 = medium (RF output is reduced), 10 = high (RF output is inhibited); see **Level** column]. See "List of current alarms" on page 1-6.

2. Attempt to clear any latching alarms by pressing the **Reset** button on the bottom banner of the page. If the alarm persists, it will not be cleared from the display.

3. Refer to Table 1.1 on page 1-8 for troubleshooting tips on the offending alarm(s), which may also reference replacement (see Table 1.2 on page 1-25) and subsequent re-calibration procedures. Note the origin of the alarm (i.e., contained within Controller, Exciter, or Module # sub-system folders).

4. If the troubleshooting and subsequent replacement of a suspect PWB or RF power module does not remove the fault condition, contact Nautel.

> *NOTE:*
> *Before undertaking any troubleshooting, record all AUI meter readings and note if any other alarms are displayed on the* Transmitter Status *page. Record all alarms. The most convenient way to do this is by using a web browser over a LAN connection to save screen shots of critical status, meter and alarm pages. From the* System Review *page, press the information* (!) *button for each sub-device (Controller, Exciter and Module) to view (and save) detailed information.*

List of current alarms

If an alarm exists and is being recognized by the transmitter, it is displayed under the Alarms tab of the transmitter status page (see Figure 1.1 on page 1-5). The Device name indicates the sub-system origin of the alarm. The sub-systems that can be displayed are:

- Controller: All alarms in this sub-system apply to the controller.
- Exciter A: All alarms in this sub-system apply to exciter A.
- Exciter B: All alarms in this sub-system apply to exciter B.
- Module #: All alarms in this sub-system apply to a specific RF power module (1 through 4).

Table 1.1 on page 1-8 contains a column for most Alarms that can occur, sorted alphanumerically for each sub-system. The Description and Troubleshooting Action column provides a brief description of the alarm, troubleshooting tips and a cross-reference to more detailed troubleshooting, as applicable.

Backup monitoring LEDs

The control/interface PWB (A1) contains LEDs that provide specific status and alarm indications. Status indications include RF ON/RF OFF, LOCAL/REMOTE and low voltage power supply status (+5V, +15V, -15V, +12V). Alarm indications include a summary alarm (SMY ALARM) and more specific location alarms (OUTPUT NETWORK, IPA/PA, EXCITER, POWER SUPPLY or EXTERNAL. There are also LEDs that indicate the approximate RF output power level, from 100% down to 10% (in 10% steps), relative to maximum RF output power for that mode of operation. The LIMIT LED indicates that the transmitter is attempting to exceed its maximum (100%) RF output capability.

Switching power supply LEDs

Each switching power supply contains two LEDs that provide specific status indications.

The AC OK LED indicates the status of the incoming ac source to the supply. The LED is green when the ac source is at its normal operating level (between 175 and 180 V ac) and off when the ac source is below an acceptable level or is not present.

The DC OK LED indicates the status of the dc output of the supply. The LED is green when the dc output is within the adjustable range of its operation limits and off when the dc output is outside the limits of normal operation.

Exciter LEDs

The front panel of each exciter contains two LEDs that provide specific status and alarm indications.

The upper LED indicates the status of the exciter's operating power. The LED is on (green) when the exciter's logic supply is enabled and operating at an acceptable level.

The lower LED indicates the RF operating status of the exciter; it has four different appearances:

- Green: the exciter is operating normally.
- Green/ing amber: the exciter is operating (and producing RF output), but has a non-inhibiting system fault (e.g., audio loss or low input level) and requires checking. The transmitter will likely continue to operate.
- Amber: the exciter has been inhibited by the controller (e.g., RF mute).
- Red: the exciter has been inhibited by a fault occurring within the exciter.

Table 1.1: Troubleshooting Alarms

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: +12V Supply A (or B) Fault	This alarm occurs if the +12 V supply from SBC/AUI power supply A (U1) or B (U2) is outside its acceptable voltage range (between +10.8 and +13.2 V). Use a digital multimeter to measure between +V and -V of the suspect +12 V supply's output voltage. If necessary, replace the +12 V supply (see "+12 V Power Supply Replacement" on page 1-44). If the alarm persists after replacing the supply, suspect the control/interface PWB (A1).
Controller: +15V Supply A (or B) Fault	This alarm occurs if the +15 V supply from LVPS module A (U3) or B (U4) is outside its acceptable voltage range (between +13.5 and +16.5 V). Use a digital multimeter to measure between V2 and COM of the suspect LVPS output voltage. If necessary, replace the LVPS (see "LVPS Replacement" on page 1-42). If the alarm persists after replacing the supply, suspect the control/interface PWB (A1).
Controller: -15V Supply A (or B) Fault	This alarm occurs if the +15 V supply from LVPS module A (U3) or B (U4) is outside its acceptable voltage range (between -13.5 and -16.5 V). Use a digital multimeter to measure between V3 and COM of the suspect LVPS output voltage. If necessary, replace the LVPS (see "LVPS Replacement" on page 1-42). If the alarm persists after replacing the supply, suspect the control/interface PWB (A1).
Controller: +5V Supply A (or B) Fault	This alarm occurs if the +5 V supply from LVPS module A (U3) or B (U4) is outside its acceptable voltage range (between +4.95 and +6.05 V). Use a digital multimeter to measure between V1 and COM of the suspect LVPS output voltage. If necessary, replace the LVPS (see "LVPS Replacement" on page 1-42). If the alarm persists after replacing the supply, suspect the control/interface PWB (A1).
Controller: Active Exciter Fail	This alarm occurs when a system inhibiting fault has occurred within the active exciter. The transmitter will be latched off (or changeover to the standby exciter, if applicable). Check for associated Exciter prefixed alarm(s) that may have caused the failure and refer to their troubleshooting action.
Controller: Active Exciter Not Responding	This alarm occurs if the active exciter is not responding to serial messages. Check the integrity of the cable between the exciter's TX LINK connector and J5 or J6 (as applicable) of the control/interface PWB. If the connection is secure, the problem is likely exciter related. Check for associated Exciter prefixed alarm(s) that may have caused the failure and refer to their troubleshooting action.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: Check Active Exciter	This alarm occurs when a non system inhibiting fault has occurred within the active exciter. The transmitter will likely resume operation. Examples of such faults are IBOC data loss, fan failure, high temperature, or an exciter low voltage power supply rail voltage is out-of-tolerance. Check for associated Exciter prefixed alarm(s) that may have caused the failure and refer to their troubleshooting action.
Controller: Combiner Matching Shutdown	This alarm occurs if two or more RF power modules are reporting a Module #: Output Network Shutdown alarm. The transmitter will be inhibited until a reset occurs. The alarm is indicative of a transmitter combiner fault. Contact Nautel.
Controller: CPLD Compatibility Fault	This alarm occurs when there is an incompatible software release in the control/interface PWB's CPLD. Update the software to clear the fault or contact Nautel.
Controller: Cutback	This alarm occurs whenever the transmitter experiences a cutback. A cutback (reduction in power) occurs when repeated shutback alarms occur within a prescribed time period. Shutbacks occur when the transmitter's peak reflected power exceeds 2:1 (1200 W for all modes) due to a transient SWR condition (arc or lightning) within the output transmission line or antenna system. The transmitter shuts back and recovers to a series of cutback levels (depending on the severity of the alarm), with each level representing a 1/8th reduction in power from the preset value. Attempt to reset the latched condition by pressing Reset. Inspect the output transmission line for punctures or damage. If no damage can be found, suspect a fault with the control/interface PWB (A1).
Controller: Disable Module # (1 -16)	With one IPA power supply operational, this alarm should not occur. Check for associated alarm(s) that may have caused the failure and refer to their troubleshooting action.
Controller: EEP Fail Configuration	This alarm occurs if there is no valid EEPROM configuration data to load. Various parameters will revert back to their failsafe default values. See "Controller: EEP Fail alarms" on page 1-27.
Controller: EEP Fail Meter Scales	This alarm occurs if there is no valid EEPROM meter scale data to load. All calibrated meter scales will revert back to their failsafe default values. See "Controller: EEP Fail alarms" on page 1-27.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: EEP Fail Module Thresholds	This alarm occurs if there is no valid EEPROM module threshold data to load. All module threshold values will revert back to their failsafe default values. See “Controller: EEP Fail alarms” on page 1-27.
Controller: EEP Fail Remotes	This alarm occurs if there is no valid EEPROM remote data to load. All configurable remote input/output settings will revert back to their failsafe default settings. See “Controller: EEP Fail alarms” on page 1-27.
Controller: EEP Fail Thresholds	This alarm occurs if there is no valid EEPROM threshold data to load. All controller threshold values will revert back to their failsafe default values. See “Controller: EEP Fail alarms” on page 1-27.
Controller: Exciter Changeover	This event is caused by a fault in the active exciter while the automatic changeover function is enabled. No further exciter changeovers can occur until the fault is cleared and the automatic changeover function is re-armed (using the Changeovers page; refer to the *Operations and Maintenance Manual*). Check for associated alarm(s) that may have caused the changeover and refer to their troubleshooting action.
Controller: Exciter Compatibility Fault	This alarm occurs when there is an incompatible software release in the exciter. Update the exciter software to clear the fault.
Controller: External Watchdog Reset Cause	This event is caused if the NAPC156 controller experiences a reboot due to assertion of the ATmega2560 CPU's /RESET pin. The timestamp that appears in the log reflects the instant immediately AFTER the controller has been released from reset; it does not attempt to reflect the time at which the failure occurred which triggered the reset in the first place. If it is an isolated incident, the event log is merely an indication that the transmitter has successfully self-healed from whatever triggered the event in the first place. No action is necessary. If happening repeatedly, then suspect a hardware failure on the NAPC156 or power supply issues.
Controller: Fan PS A (or B) AC Fail	This alarm occurs if fan power supply module A (U7) or B (U8) is reporting an ac failure, indicating its ac input voltage is less than 175 V ac. Check the ac voltage applied to the suspect fan power supply module. If the ac voltage is acceptable, replace the fan supply module (see “Fan, IPA and Module Power Supply Replacement” on page 1-45).

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: Fan PS A (or B) Fail	This alarm occurs if fan power supply module A (U7) or B (U8) is reporting a PS failure, indicating its output voltage is outside of its acceptable range. The transmitter will inhibit its RFoutput until the alarm is cleared. Check the dc voltage output of the suspect fan power supply module. If the dc voltage is out of tolerance, replace the fan supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45). If the voltage is acceptable, suspect the control/interface PWB (A1) or interconnect cabling.
Controller: Fan PS A (or B) High Temp	This alarm occurs if fan power supply module A (U7) or B (U8) is reporting a high temperature alarm, indicating its operating temperature has exceeded its internal threshold. This alarm is most likely caused by a module fan failure or blockage. Allow the module to cool and attempt to Reset the alarm. Verify the module turns on and its fan is operational. If the fan is not operational, inspect it for possible blockage. If necessary, replace the fan supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45). If the alarm persist after replacing the module, suspect the control/interface PWB (A1) or interconnect cabling.
Controller: Fan PS A (or B) Module Not Present	This alarm occurs if fan power supply module A (U7) or B (U8) is not being detected or has been removed.
Controller: Forward Power Limiting	When the High Forward Power alarm is active, this alarm occurs if the high forward power limiting threshold is exceeded [1.063 times the maximum power setting for all modes; e.g., 11,693 W (NV10) or 8,770 (NV7.5) for FM mode]. The transmitter will fold back the forward power each time the threshold is exceeded. This alarm occurs only if the exciter ALC cannot respond fast enough to transmitter load changes. Suspect the control/interface PWB (A1).
Controller: Forward Power Shutdown	This alarm occurs if the transmitter tries to reduce the forward power below minimum due to repeated Forward Power Limiting alarms. The transmitter latches off. See Controller: Forward Power Limiting for troubleshooting tips.
Controller: High Ambient Temperature	This alarm occurs if the ambient temperature sensed by the control/interface PWB (A1) exceeds 60°C (140°F). Check the intake air system.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: High Forward Power	This alarm occurs if the transmitter's average forward power exceeds the high forward power threshold [1.036 times the maximum power setting for all modes; e.g., 11,396 W (NV10) or 8,547 W (NV7.5) for FM mode]. This alarm occurs only if the exciter ALC cannot respond fast enough to transmitter load changes. Suspect the control/interface PWB (A1).
Controller: High PA Dissipation	This alarm occurs when the calculated average power amplifier dissipation exceeds 200 W.
Controller: High Reflected Power	This alarm occurs if the transmitter's average reflected power exceeds the high SWR threshold [276 W (NV10 or NV7.5) for FM mode, 197 W (NV10 or NV7.5) for FM+HD mode, 79 W (NV10 or NV7.5) for HD mode]. Check for associated alarm(s) that may have caused the alarm and refer to their troubleshooting action. Inspect the antenna and transmission line system for damage or de-tuning, else suspect the control/interface PWB.
Controller: High Reject Power	This alarm occurs if the power in any single reject load exceeds 67% of the reject shutback threshold (default is 1800 W in FM or FM+HD mode; 900 W in HD mode). The alarm will also occur if the summed power of reject loads 1/2 or 3/4 exceeds 89% of the reject shutback threshold, or if the summed power of reject loads 1, 2, 3 and 4 exceeds 133% of the reject shutback threshold. Check for associated alarm(s) that may have caused the alarm and refer to their troubleshooting action. This alarm may be accompanied by a Reject Power Foldback alarm. Typically, high reject power is a result of RF power module failure or removal. If no other alarms are indicated, suspect the control/interface PWB.
Controller: High RF Drive Power	This alarm occurs if the active exciter's power is greater than the high RF drive threshold [55 W for analog (FM) mode and 36 W for hybrid (FM+HD) and all-digital (HD) mode). Compare the exciter's programmed level to its actual output. If a difference exists, there may be an exciter regulation problem.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: Host Network Down	This alarm indicates that the microcontroller that runs the remote interfacing applications is unable to acquire an IP address. When this alarm is present, the communication between the LAN controller (server) and the transmitter server that was once established has now been lost. It will not be possible to access any of the remote AUI functionality. Check that the Ethernet cable is properly connected to A1J8A (LAN) on the rear of the transmitter. If the alarm is still present see "Setting up the network" on page 2-98 of the Operations and Maintenance Manual for information on setting up the network connection. Disable the alarm by setting DHCP to OFF and setting the IP Address to all zeroes (i.e. 0.0.0.0).
Controller: Injection Level Over-ridden	This alarm indicates a requested injection level for a given analog TPO (licensed power level) cannot be achieved. The transmitter will automatically reduce the injection level to maintain spectral compliance.
Controller: Interlock Open	The external interlock input wired to the control/interface PWB (A1) is open. Check the interlock connection between TB2-1 and TB2-2 on the control/interface PWB (verify a ground potential at TB2-1). If the interlock is intact, check all external interlock switches. Otherwise, suspect a problem with the interlock circuitry on the control/interface PWB.
Controller: IPA High Current Cutback	This alarm occurs if there is a failure in one or more IPA power supply module [A (U9), B (U10)] and the remaining IPA power supply module is unable to provide the current required by the IPAs. This alarm is typically accompanied by one or more Controller: Disable Module alarms. Check the troubleshooting action in the associated alarm(s).
Controller: IPA PS A (or B) AC Fail	This alarm occurs if IPA power supply module A (U9) or B (U10) is reporting an ac failure, indicating its ac input voltage is less than 175 V ac. If a bank of power supply modules are indicating an AC Fail alarm, it is possible that an ac phase loss has occurred. Check the ac voltage applied to the suspect IPA power supply module. If the ac voltage is acceptable, replace the IPA supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45).

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: IPA PS A (or B) Fail	This alarm occurs if IPA power supply module A (U9) or B (U10) is reporting a PS failure, indicating its output voltage is less than 40 Vdc. Check the dc voltage output of the suspect IPA power supply module. If the dc voltage is out of tolerance, replace the IPA supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45). If the voltage is acceptable, suspect the control/interface PWB (A1) or interconnect cabling.
Controller: IPA PS A (or B) High Temp	This alarm occurs if IPA power supply module A (U9) or B (U10) is reporting a high temperature alarm, indicating its operating temperature has exceeded its internal threshold. This alarm is most likely caused by a module fan failure or blockage. Allow the module to cool and attempt to Reset the alarm. Verify the module turns on and its fan is operational. If the fan is not operational, inspect it for possible blockage. If necessary, replace the IPA supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45). If the alarm persist after replacing the module, suspect the control/interface PWB (A1) or interconnect cabling.
Controller: IPA PS A (or B) Module Not Present	This alarm occurs if IPA power supply module A (U9) or B (U10) is not being detected or has been removed.
Controller: Low AC	This alarm occurs if the ac input voltage is below the switching power supplies' internal threshold or one of the phases of a 3-phase source has been lost. For 1-phase or 208 V ac 3-phase sources the low ac threshold voltage is 175 V ac. For 400 V ac sources the low ac threshold voltage is 303 V ac. Check the three amber LEDs (DS1 through DS3) in the bottom, left-hand of the transmitter. If the LEDs are off, there is likely a problem with the ac service. Measure the ac source voltage at the service entrance. Normally this should measure between 180 and 264 V ac line-line [for 3-phase (nominal 208 V ac) and 1-phase (nominal 230 V ac)] or between 312 and 457 V ac line-line [for 3-phase (nominal 400 V ac)].
Controller: Low Battery/Memory Fail	This alarm occurs if the backup battery voltage falls below an acceptable level (2.7 V). Check the battery voltage (with ac power on). If battery voltage is low, replace battery. If battery voltage is OK, cycle ac power (off, then on). If the alarm does not clear, suspect the control/interface PWB.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: Low Forward Power	This alarm occurs if the transmitter's average forward power falls below the low forward power threshold (defaulted to 50% of the preset power level for all modes) due to module failures, combiner/ filter faults, reject load faults, or SWR foldback. If no other alarms are being indicated, suspect the control/interface PWB.
Controller: Low Fan Volts A (or B)	This alarm occurs if fan voltage A or B falls below 40 volts. Check the dc voltage output of the suspect fan power supply module (U7 or U8). If the dc voltage is out of tolerance, replace the fan supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45).
Controller: Low RF Drive Power	This alarm occurs - in analog (FM) mode only - if the active exciter's power is less than the low RF drive threshold (18 W). Increase the exciter output power until the alarm clears. Check RF drive cabling.
Controller: Mode/ Frequency Mismatch	This alarm occurs if there is a mismatch between the operating mode or carrier frequency of the transmitter and one or more of the associated exciters. Using the AUI verify the active presets of the transmitter and exciter match. If necessary, set and save the transmitter's or exciter's preset accordingly.
Controller: Module 1 - 4 Not Responding	This alarm occurs if one or more of the RF power modules is not responding to serial messages. Try swapping the affected module with a module in another location (see "Operating with defective or missing RF power modules" on page 1-30). If the alarm follows the module, troubleshoot or replace the module. If the alarm follows the location, check the connections between the module location and its associated module backplane PWB.
Controller: Module Failure Foldback	This alarm occurs when the controller has reduced the target power level (below the set-point) due to a number of PA or RF module failures. The desired power level is not achievable with the failures and reduces the exciter's output. The amount of foldback is a function of the number of failures.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: Reject A Fan # (1- 3) Fail	This alarm occurs if one of the reject load cooling fans (B1 though B3 in reject load assembly A) is reporting a failure. With RF on, remove the transmitter's upper, back panels and check the associated fans for blockage. If the fan is functioning properly (as compared to adjacent fans), but the indicated fan speed on the AUI is zero, there may be a problem with the fan's tachometer circuitry on the control/ interface PWB. Disconnect the fan's power plug and verify there is a nominal 48 V on the plug. If so, replace the fan. If not, suspect a defective fan power supply module or interconnect cabling. Refer to Mechanical Drawings for Reject Load and fan locations.
Controller: Reject A Power High # (1-8)	This alarm occurs if any of the reject load power samples exceeds its high reject power threshold (600 W in analog or hybrid mode; 300 W in all-digital mode). Typically, high reject power is a result of RF power module failure or removal. If no other alarms are being indicated, suspect the control/interface PWB.
Controller: Reject Power Foldback	This alarm occurs if the transmitter's reject load's average power exceeds its reject power foldback threshold (750 W in analog or hybrid mode; 375 W in all-digital mode). The transmitter's forward power will be reduced each time the alarm occurs, until the fault clears. Typically, high reject power is a result of RF power module failure or removal. If no other alarms are being indicated, suspect the control/interface PWB.
Controller: Reject Power Shutdown	This alarm occurs if the transmitter tries to reduce the forward power below minimum due to repeated Reject Power Foldback alarms. The transmitter latches off. See Controller: Reject Power Foldback for troubleshooting tips.
Controller: Residual IPA Volts	This alarm occurs if the IPA Volts haven't fully discharged and the transmitter is held in an RF Off state. When the IPA volts fall below 3 V, the alarm will clear and the transmitter will recover.
Controller: Residual PA Volts	This alarm occurs if the PA Volts haven't fully discharged and the transmitter is held in an RF Of state. When the PA volts fall below 3 V, the alarm will clear and the transmitter will recover.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: Restore Status CRC Failure	This alarm occurs if the control/interface PWB was unable to maintain the state of the transmitter through the most recent ac power cycle. Replace the control/interface PWB's backup battery (see the Routine Maintenance section of the *Operations and Maintenance Manual*). If battery is OK, cycle ac power (off, then on). If the alarm does not clear, replace the control/interface PWB.
Controller: SBC Watchdog Reset	This event is caused by the controller failing to receive any communication from the SBC within aprescribed timeframe (default 2 minutes). The controller assumes that a software failure has occurred on the SBC, and it resets the SBC in an attempt to re-initialize its software and resume normal operation. Suspect either the SBC or Controller/Monitor PWB.
Controller: SWR Foldback	This alarm occurs if the transmitter's average reflected power exceeds the SWR foldback threshold [396 W (NV10 or NV7.5) for FM mode, 282 W (NV10 or NV7.5) for FM+HD mode, 113 W (NV10 or NV7.5) for HD mode) due to a gradual degrading load match. Each time the SWR foldback threshold is exceeded, the transmitter's forward power will be reduced until it reaches minimum power, beyond which the transmitter will shut down. If the load match improves while the transmitter is producing RF output, the forward power will increase. Visually inspect the antenna system for ice buildup and inspect hardline connections. If no problems are found, suspect the fault detection circuitry on the control/interface PWB (A1).
Controller: SWR Shutback	This alarm occurs if the transmitter's peak reflected power exceeds the SWR shutback threshold [2:1 SWR, 1200 W (NV10 or NV7.5) due to a transient SWR condition (arc or lightning) within the output transmission line or antenna system. Attempt to reset the latched condition by pressing Reset. Inspect the output transmission line for punctures or damage. If no damage can be found, suspect a fault with the control/interface PWB (A1). See also Controller: Cutback alarm.
Controller: SWR Shutdown	This alarm occurs if the transmitter tries to reduce the forward power below 1630 W (NV10 or NV7.5) (FM mode), 1164 W (NV10 or NV7.5) (FM+HD mode) or 465 W (NV10 or NV7.5) (HD mode) due to repeated SWR Foldback alarms (equivalent to a 3:1 SWR). The transmitter latches off. See Controller: SWR Foldback for troubleshooting tips.

Alarm (with Prefix)	Description and Troubleshooting Action
Controller: VDC A (or B) Fan Fail	This alarm occurs if the fan A or B voltage, measured on the power supply distribution PWB (A7), is below the low fan voltage threshold (40 V). If there is an associated Controller: Fan PS A(or B) Fail alarm, follow that alarm's troubleshooting action. Verify the voltage on TP1 (A) or TP2 (B) of the power supply distribution PWB. If the voltage is low, check the connections between the fan power supply module, its PS interface PWB and the power supply distribution PWB. If it is OK, suspect the control/interface PWB (A1).
Controller: Very Low Forward Power	This alarm occurs if transmitter's average forward power falls below the low forward power threshold (defaulted to 25% of the preset power level for all modes) due to module failures, combiner/filter faults, reject load faults, or SWR foldback. If no other alarms are being indicated, suspect the control/interface PWB.
Controller: Watchdog Asserted	This alarm occurs if the Single Board Computer (SBC) loses communication with the controller for over 2 minutes. The controller reboots the SBC in an attempt to re-establish communication.
Exciter A/B: Audio Shutdown	This alarm occurs if the exciter's audio processing and FM modulation code is shut down. Should display only during a software upgrade.
Exciter A/B: Analog Left (or Right) Low	This alarm indicates the analog left or right audio input level is too low (default threshold is 22.5 dB below full scale) or is not applied.
Exciter A/B: Composite Low	This alarm indicates the composite audio input level is too low (default threshold is 22.5 dB below full scale).
Exciter A/B: Dead Air	This alarm indicates that the exciter's audio modulation level is below the level specified in the dead air settings of the active preset. Check the appropriate program input(s) and the dead air setting for the preset.
Exciter A/B: Digital 1 (or 2) Low	This alarm indicates the corresponding digital input level is too low (default threshold is 22.5 dB below full scale). Typically accompanied by a Primary (or Secondary) Digital SRC Unlock alarm (see associated troubleshooting action). If no accompanying SRC alarm exists, check the external audio processor or studio feed.
Exciter A/B: Entered Firmware Upgrade	This alarm occurs when the exciter is in "firmware upgrade" mode. It should only be displayed during a transmitter software upgrade.

Alarm (with Prefix)	Description and Troubleshooting Action
Exciter A/B: Exgine Not Booted	This alarm occurs, in FM+HD or HD mode, when the exciter is initally powered up, but the Exgine PWB (A3) has not finshed its boot-up sequence. Normally, the alarm will clear on its own. If not, suspect a defective Exgine PWB.
Exciter A/B: Exgine Offline	This alarm occurs, in FM+HD or HD mode, when the exciter is not communicating with the Exgine PWB (A3). Check the ribbon cable between the Exgine PWB (A3) and J15 of the NVE exciter PWB (A1). Check the Exgine PWB.
Exciter A/B: External Mute	This alarm occurs if a ground potential is applied to pin 7 of connector A1J4A or pin 1 of connector A1J7A on the exciter's back panel. The exciter's RF output is reduced to 0 W.
Exciter A/B: Fan Fail	This alarm occurs if the exciter's cooling fan (B1) speed is too low. This alarm does not directly inhibit the exciter's RF output, but may result in a PA Over Temperature alarm, which will inhibit the output. Inspect the fan for a possible blockage.
Exciter A/B: FPGA Test Failed	There was a programming failure with the initial startup sequence of the NVE exciter PWB (A1). Possibly indicates a failed software upgrade or a hardware failure on the NVE exciter PWB.
Exciter A/B: Invalid HD Data	This alarms occurs, in FM+HD or HD mode, if IBOC data is detected from the Exgine PWB, but is not usable (all logic 0s). Digital carriers are muted. Check the IBOC data source.
Exciter A/B: IPA Volts Fail	This alarm indicates the first-stage amplifier's PA voltage is outside its acceptable range of 24.3 to 29.7 V. Check the exciter's power supply (U3).
Exciter A/B: Low Backup Battery	This alarm occurs if the backup battery voltage falls below an acceptable level (2.7 V). Check the battery voltage. If battery voltage is low, replace battery. If battery voltage is OK, cycle ac power (off, then on). If the alarm does not clear, suspect the NVE exciter PWB.
Exciter A/B: Missing External Preset	This alarm occurs if the transmitter has not sent a preset configuration to the exciter. Can occur of the exciter has been power-cycled, but the transmitter has not, in which case the alarm should clear on its own. If the alarm persists, contact Nautel.

Alarm (with Prefix)	Description and Troubleshooting Action
Exciter A/B: Need Reboot For Settings	This alarm indicates that NVE setup changes have been made, typically via the Hardware Configuration page of the AUI. Cycle (turn off, then on) the power to the exciter to store the changes.
Exciter A/B: No Active 10 MHz	This alarms occurs, in the transmitter log only, if no external or Exgine 10 MHz clock is being detected. If the alarm persists, the exciter may have experienced a TCXO failure or an improperly installed OCXO upgrade.
Exciter A/B: No Exgine 10 MHz	This alarms occurs, in FM+HD or HD mode, if no 10 MHz clock is being detected from the Exgine PWB (A3). Check the cable between the Exgine PWB and J13 of the NVE exciter PWB (A1). Check that the Exgine PWB is correctly powered up..
Exciter A/B: No Ext 10 MHz	This alarms occurs if no external 10 MHz is detected. Check the 10 MHz input.
Exciter A/B: No HD Data	This alarms occurs, in FM+HD or HD mode, if IBOC data is not detected from the Exgine PWB. Digital carriers are muted. Verify the RJ45 cable between the Exgine PWB (A3) and J11 of the NVE exciter PWB (A1) is seated properly. Check that the Exgine PWB is correctly powered up.
Exciter A/B: No Reverse Path	This alarm indicates the RF sample from the transmitter output is below a preset threshold. The pre-correction function will not operate.
Exciter A/B: No Transmitter Comms	This alarm, which is only displayed as a log entry, occurs if the transmitter is not communicating with the exciter. Check the transmitter link cable.
Exciter A/B: No 1PPS	This alarm occurs if the pilot output locking to 1 PPS is enabled and the 1 PPS signal is not present.
Exciter A/B: PA Over Temperature	This alarm occurs if the temperature sensed within the exciter's RF power stage exceeds 70°C (158°F). The exciter's RF output is reduced to 0 W. Check the exciter fan's air path.
Exciter A/B: PA Volts Fail	This alarm indicates the second-stage amplifier's PA voltage is outside its acceptable range of 40.5 to 49.5 V. Check the exciter's power supply (U3).
Exciter A/B: Pilot Unsync	This alarm occurs if there is no synchronization between the 10 MHz and 1PPS signals. It may indicate that the GPS receiver is not detecting a signal. Check the GPS receiver and antenna.

Alarm (with Prefix)	Description and Troubleshooting Action
Exciter A/B: PLL Unlock	This alarm indicates that the exciter's master clock is not locked Possible causes are an out-of-range 10 MHz input or a hardware failure on the NVE exciter PWB (A1).
Exciter A/B: Primary Digital SRC Unlock	This alarm indicate that no valid AES/EBU or SPDIF stream data is being detected on the selected AES/EBU. Check cable connections and verify the primary input assignments are set correctly in the Hardware Configuration page of the AUI.
Exciter A/B: SCA 1 (or 2) Low	This alarm indicates the SCA 1 or 2 input level is too low (default threshold is 22.5 dB below full scale) or is not applied.
Exciter A/B: Secondary Digital SRC Unlock	This alarm indicate that no valid AES/EBU or SPDIF stream data is being detected on the selected AES/EBU. Check cable connections and verify the primary input assignments are set correctly in the Hardware Configuration page of the AUI.
Exciter A/B: SWR Shutback	This alarm occurs if the exciter's peak reflected power exceeds 30 W due to a transient SWR condition. The exciter's RF output is temporarily reduced to 0 W. Typically caused by a severe mismatch (open or short circuit) at the exciter's RF output. Check the RF load at the exciter's output.
Exciter A/B: Unsigned DSP Image	This alarm indicates that the exciter is operating with 'unsigned code', but is otherwise operational. This alarm may only be displayed if the transmitter is operating with a 'beta' version of factory software.
Exciter A/B: Unsigned FPGA Image	This alarm indicates that the exciter is operating with 'unsigned code', but is otherwise operational. This alarm may only be displayed if the transmitter is operating with a 'beta' version of factory software.
Exciter A/B: +15V Fail, -15V Fail, +5V Fail, +3.3V Fail, +1.8V Fail, +1.2V Fail	This alarm occurs if the associated low voltage dc supply is 10% high or 10% low.
Module #: Alarm Fan Inhibit	(Module LED = red) This alarm occurs if two or more fans fail while the module is operating. Module PAs and IPA are inhibited. Requires a reset from the AUI.
Module #: External Inhibit Serial	(Module LED = red) This alarm occurs if the module receives an inhibit message serially from the controller. The controller may inhibit modules for various reasons.

Alarm (with Prefix)	Description and Troubleshooting Action
Module #: External Inhibit Switch	(Module LED = red) This alarm occurs if the module's front panel switch is in the 'down' position. Set the switch to its 'up' position and initiate a reset via the AUI to enable the module.
Module #: Fan 1-6 Fail	(Module LED = green/red) This alarm occurs if the speed of one of the associate module's cooling fans is below 3000 RPM (half its nominal value of 6000 RPM). Inspect the affected fan and, if necessary, replace it (see "Module cooling fan replacement" on page 1-40).
Module #: Heatsink Temp Inhibit	(Module LED = red) The heatsink temperature of the module has exceeded the AUI adjustable threshold. The module will be inhibited and requires a Reset from the AUI to re-enable. If this alarm is accompanied by another alarm, troubleshoot the other alarm first. If the alarm occurs on its own, see "Troubleshooting RF power modules" on page 1-36 to determine whether to replace the affected module or to repair damaged parts.
Module #: IPA Forward High	(Module LED = green/red) This alarm occurs if the IPA PA's peak forward power is greater than the AUI adjustable threshold for the operating mode and frequency. The module will continue to operate unless the IPA's peak forward power exceeds the IPA Forward Shutdown threshold, which is 10 W greater than the IPA Forward High threshold.
Module #: IPA Forward Low	(Module LED = green/red) This alarm occurs if the IPA PA's peak forward power is less than the AUI adjustable threshold for the operating mode. The module will continue to operate.
Module #: IPA Forward Shutdown	(Module LED = red) This alarm occurs if the IPA's peak forward power exceeds the AUI adjustable IPA Forward High threshold for the operating mode and frequency by more than 10 W. The module will be inhibited.
Module #: IPA Input High	(Module LED = green/red) This alarm occurs if the input RF drive (exciter power) is greater than the AUI adjustable high IPA input threshold for the operating mode. This alarm occurs if the exciter ALC cannot respond quickly enough to varying exciter load changes or if the exciter's output has increased or been incorrectly set to a very high level.

Alarm (with Prefix)	Description and Troubleshooting Action
Module #: IPA Input Low	(Module LED = green/red) This alarm occurs if the input RF drive (exciter power) is less than the AUI adjustable low IPA input threshold for the operating mode. This may be the result of an exciter fault, excessive load variation on the active exciter output, or defective components on the RF drive splitter/changeover assembly.
Module #: Module EEP Fault	(Module LED = green/red) There is no valid EEPROM data to load. See “Operating with defective or missing RF power modules” on page 1-30 to replace the affected module.
Module #: No Front Panel	(Module LED = red/amber) The module has not received any serial messages from the Controller for more than 2.5 seconds. This alarm is only displayed as a log entry for the applicable module.
Module #: Output Network Shutdown	This alarm occurs if the ratio of the highest PA 1 to 4 current versus the highest PA 5 to 8 current exceeds 3.5:1. This indicates that the module is operating into a high VSWR due to a transient arc or combiner failure.
Module #: PA 1-8 DSBL	(Module LED = green/red) Due to other failures within the module, the PA has been disabled to limit reject power in the module. Check for associated alarm(s) that may have caused the failure and refer to their troubleshooting action.
Module #: PA 1-8 Fail	(Module LED = green/red) This alarm occurs if the dc input current for the suspect PA has fallen below a preset threshold (typically less than 50% of the average PA current of the operational PAs). This may be caused by a cabling fault on the PA, loss of PA voltage or bias, or a defective FET. The transmitter’s output power may be reduced.
Module #: PS 1 (or 2) AC Fail	(Module LED = green/red or amber) This alarm occurs if one of the two module power supplies (1 or 2) is reporting an ac failure, indicating its ac input voltage is less than 175 V ac. If a bank of power supply modules are indicating an AC Fail alarm, it is possible that an ac phase loss has occurred. Check the ac voltage applied to the suspect power supply module. If the ac voltage is acceptable, replace the module (see “Fan, IPA and Module Power Supply Replacement” on page 1-45).

Alarm (with Prefix)	Description and Troubleshooting Action
Module #: PS 1 (or 2) Fail	(Module LED = green/red or amber) This alarm occurs if one of the two module power supplies (1 or 2) is reporting a PS failure, indicating its output voltage is outside its acceptable range, based on the control setting. Check the dc voltage output of the suspect power supply module. If the dc voltage is out of tolerance, replace the power supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45). If the voltage is acceptable, suspect the control/interface PWB (A1) or interconnect cabling.
Module #: PS 1 (or 2) High Temp	(Module LED = green/red or amber) This alarm occurs if one of the two module power supplies (1 or 2) is reporting a high temperature alarm, indicating its operating temperature has exceeded its internal threshold. The affected power supply is latched off while this fault exists. A manual reset is required to clear the alarm and restore the power supply to operation. This alarm is most likely caused by a module fan failure or blockage. Temporarily pull out the power supply module. After a few minutes, re-insert the power supply module and attempt to Reset the alarm. Verify the power supply module turns on and its fan is operational. If the fan is not operational, inspect it for possible blockage. If necessary, replace the power supply module (see "Fan, IPA and Module Power Supply Replacement" on page 1-45). If the alarm persists after replacing the power supply module, suspect the control/interface PWB (A1) or interconnect cabling.
Module #: PS 1 (or 2) Not Present	(Module LED = green/red or amber) This alarm occurs if one of the two module power supplies (1 or 2) is not being detected or has been removed.
Module #: Power Up Inhibit	(Module LED = red) The associated module has just been installed or dc power has just been restored. The module will be inhibited until a reset is received from the AUI.

Table 1.2: Module Replacement

Module	Replacement Procedure
RF Power Module	See page 1-30
Power Amplifier PWB	See page 1-37
Module Cooling Fan	See page 1-40
Control/Interface PWB	See page 1-40
Remote Interface PWB	See page 1-41
Low Voltage Power Supplies	See page 1-42
+12 V Power Supplies	See page 1-44
Fan, IPA and Module Power Supplies	See page 1-45
Single-Board Computer (SBC)	See page 1-48

Troubleshooting tips

AUI screen lockup

If the local AUI screen locks up, try the following to restore normal AUI operation:

1. At the transmitter, press the Nautel logo icon in the upper, left corner of the local AUI screen. This should reload the AUI and return you to the login screen. Enter your username and password and continue operation. If this does not restore operation of the local AUI, proceed to Step 2.

2. If you also use a PC for remote AUI control/monitoring of the transmitter, use the PC to navigate to the System Settings page (from the Menu options). Select Reset and click the Reboot AUI button. If this does not restore operation of the local AUI, proceed to Step 3.

3. Manually reset the SBC as follows:

   - Open the transmitter's front door.
   - Gain access to the single-board computer (SBC, U6U1) on the back of the door by removing the protective cover. Retain hardware.
   - Remove and then reinstall 4-pin connector P11.
   - Reinstall the SBC's protective cover.
   - Close the transmitter's front door.

Controller: EEP Fail alarms

There are five different alarms that can be displayed that indicate an EEPROM failure has occurred. When any of the Controller: EEP Fail Configuration, Controller: EEP Fail Meter Scales, Controller: EEP Fail Module Thresholds, Controller: EEP Fail Remotes, or Controller: EEP Fail Thresholds is displayed, the associated stored parameter information reverts back to failsafe default values.

Replacing the backup battery will have no effect on this alarm.

In the case of the Controller: EEP Fail Configuration alarm, the following parameters will revert to the indicated failsafe default states:

- Transmitter Type = NV40
- Redundant Supplies -> IPA = Yes
- Redundant Supplies -> Fan = Yes
- Active low power alarm when RF off = false
- Active very low power alarm when RF off = false
- Scaling -> Fan Control Voltage = 48.0 V
- Thresholds -> Minimum allowable fan speed = 3000 RPM
- System Configuration -> Exciter Changeover Delay = 5 s
- System Configuration -> ALC Voltage Limit = 100%
- System Configuration -> Main Exciter = A
- System Configuration -> Standby Exciter = false
- System Configuration -> Automatic Exciter Changeover = false
- System Configuration -> AUI watchdog = disabled

In the case of the Controller: EEP Fail Meter Scales alarm, all calibrated meter scales will revert to their failsafe default values.

In the case of the Controller: EEP Fail Module Thresholds alarm, all module thresholds will revert to their failsafe default values.

In the case of the Controller: EEP Fail Remotes alarm, all configurable remote input and output lines on J23 and J24 of the control/interface PWB will revert to their failsafe default values.

In the case of the Controller: EEP Fail Thresholds alarm, all controller thresholds will revert to their failsafe default values.

Troubleshoot a Controller: EEP Fail alarm as follows:

1. Using the front panel AUI's Hardware Configuration page, confirm the associated alarm by verifying the parameters have reverted to their failsafe default states. Use the list above to verify a Controller: EEP Fail Configuration alarm.

2. Attempt to reset the alarm by resetting one of the defaulted parameters to its desired value or state. Even if no parameter requires resetting, it is necessary to re-write at least one parameter. Press Apply in the applicable AUI screen.

3. Cycle the ac power (switch off ac power, then switch back on).

4. If the Controller: EEP Fail alarm persists, suspect the control/interface PWB (A1) and if necessary, replace it (see "Control/interface PWB replacement" on page 1-40).

RF Power Module faults

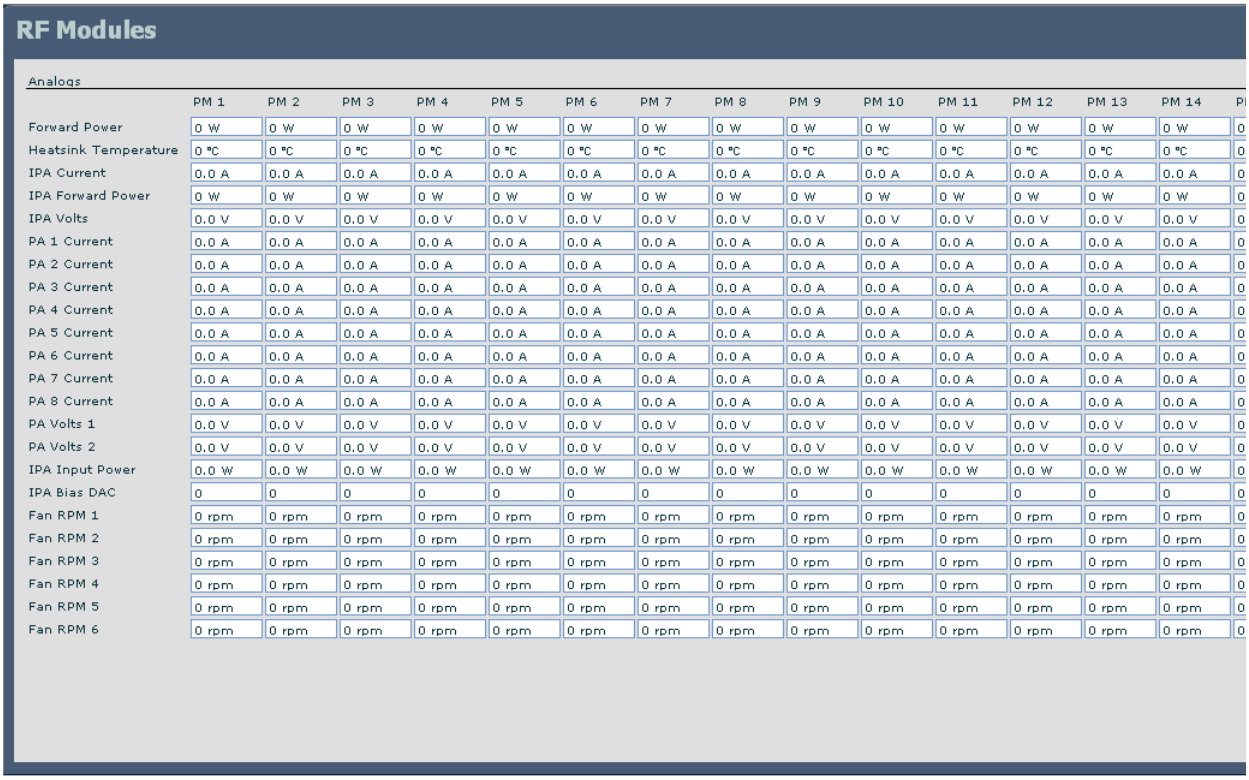
There are many alarms on the AUI, prefixed by the text Module, that indicate faults related to one or more of the RF power modules. The number that appears after Module (1-4) identifies the position of the affected module. Numbers correspond to modules in a left to right, top to bottom sequence, as viewed from the front of the transmitter.

1. Check the forward power reading on the AUI. If it is less than the preset level, one or more RF power modules are defective. Proceed to "RF power module fault validation" on page 1-29.

2. If the forward power reading in Step 1 is normal press the Transmitter Status button on the AUI to check for other alarms that may have triggered the RF power module alarm.

3. From the AUI's System Review page, click the **i** (information) button to view the RF Modules status screen (see Figure 1.2 on page 1-29). This screen displays critical parameters for all 4 RF power modules. As an aid in troubleshooting, compare parameters to isolate possible module faults.

Figure 1.2: Module Status Screen



	PM 1	PM 2	PM 3	PM 4	PM 5	PM 6	PM 7	PM 8	PM 9	PM 10	PM 11	PM 12	PM 13	PM 14
Forward Power	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W
Heatsink Temperature	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
IPA Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
IPA Forward Power	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W	0 W
IPA Volts	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V
PA 1 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA 2 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA 3 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA 4 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA 5 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA 6 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA 7 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA 8 Current	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A	0.0 A
PA Volts 1	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V
PA Volts 2	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V
IPA Input Power	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W	0.0 W
IPA Bias DAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fan RPM 1	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm
Fan RPM 2	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm
Fan RPM 3	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm
Fan RPM 4	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm
Fan RPM 5	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm
Fan RPM 6	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm	0 rpm

RF power module fault validation

Each RF power module has a multi-colour LED on its front panel, which can help in identifying a fault and allowing you to determine whether remedial action is required now or later.

Identify and isolate a defective RF power module, and verify the nature of the defect by checking the LED on the RF power module's front panel. Note which RF power module is not operating normally and producing RF power (i.e., LED is not solid green). Record which RF power modules are displaying an alarm and the state of its LED (see below).

For all Module alarms, the Description and Troubleshooting Action column of Table 1.1 on page 1-8 includes the expected LED colour for the AUI alarm being described.

- Green: Module is operational
- Green/Red: Module is operational, but has a non-inhibiting fault.
- Amber: Module is inhibited, but in a ready state (i.e., RF off).
- Red: Module is inhibited by a fault, or serially.
- Red/Amber: Module is not communicating with the AUI/Controller.

Attempt to reset an RF power module by pressing Reset on the AUI screen. If you cannot reset the front panel LED alarm, see "RF power module troubleshooting".

RF power module troubleshooting

Refer to "Operating with defective or missing RF power modules" on page 1-30 for removal and installation instructions and then refer to "Troubleshooting RF power modules" on page 1-36 for detailed troubleshooting information.

NOTE:
A defective RF power module can be removed for repair, without turning off the transmitter, as described in "Removing an RF power module" on page 1-32. The transmitter can be operated at a reduced output power level with an RF power module removed.

If you have purchased the RF power module extension test jig (Nautel Part # 206-5350), you can use it to test and troubleshoot RF power modules before returning them to service. Refer to "Using the RF power module extension test jig" on page 1-34 for more information.

Operating with defective or missing RF power modules

It is permissible to operate the transmitter with multiple defective or missing RF power module(s). Table 1.3 on page 1-31 contain the approximate percentage of remaining output power (relative to original) when power amplifiers (PAs) or RF power modules fail or are removed.

CAUTION:
Do not attempt to compensate for power reduction caused by an RF power module failure by adjusting the RF power level.

- If an RF power module has one or more defective PAs, as indicated by the AUI's RF Modules Status screen (and suspect RF power module's front panel LEDs), but is still contributing to the transmitter's RF output, it may be left on. The transmitter will take necessary precautions to reduce the stress on components due to the failure, i.e., power reduction.

- If an RF power module must be removed, turn it off prior to disengaging its blind-mating connectors. Refer to "Removing and reinstalling RF power modules" on page 1-32 to disable a module with the transmitter on air. At all other times, turn off the switching power supplies by pressing the RF Off button, then switch off the ac power source at the service entrance.

NOTE:
There are many possible combinations of PA/module failures or extractions. The best and worst case situations are shown in Table 1.3.

- When maintenance is complete and it is safe to return the transmitter to normal service, enable all RF power module supplies by setting the switch on the front of the associated RF power module(s) to its 'up' position.

Table 1.3: Output Power Level vs. PA/Module Failure/Removal

PA/Module Failures/Removal	RF Output Power (% of rated power **)	
	Best Case	Worst Case
1 RF Power Module	56.3	56.3
2 RF Power Modules	25	12.5
1 RF Power Amplifier	93.9	93.9
2 RF Power Amplifiers	87.9	87.9
3 RF Power Amplifiers	82.1	76.6
4 RF Power Amplifiers	76.6	66
1 IPA Power Amplifier	56.3	56.3
2 IPA Power Amplifiers	25	12.5
1 Tectrol Power Supply	76.6	76.6
2 Tectrol Power Supplies	56.3	56.3

NOTE: ** - When operating at less than rated power, the transmitter can increase PA voltage to compensate for PA/module failures, until high reject load limits are reached. Therefore, the percentage of RF output power compared to the setpoint power would be greater than shown above.

Removing and reinstalling RF power modules

Removing an RF power module

1. Confirm the location of the RF power module that is being removed. Note the alarm text includes a Module number (1-4) that is not identified on the RF power module. See Figure 1.3 on page 1-33 to determine the location for a given RF power module (1 - 4).

2. Set the switch on the front of the RF power module to its 'down' position. This inhibits the module's associated pair of power supply modules.

3. Remove the two M5 securing screws in the front of the module. If necessary, remove the two M8 shipping screws in the back of the module (the shipping screws do not need to be reinstalled, and may have already been removed during installation or previous maintenance).

WARNING:
Rotating parts are present at the bottom of the RF power module. Take care when removing the module.

4. Grasp the handle on the front of the RF power module and carefully pull the RF power module out of the transmitter. The module weighs 17 kg (38 lbs).

Installing an RF power module

1. Grasp the handle on the front of the RF power module and insert it into the transmitter.

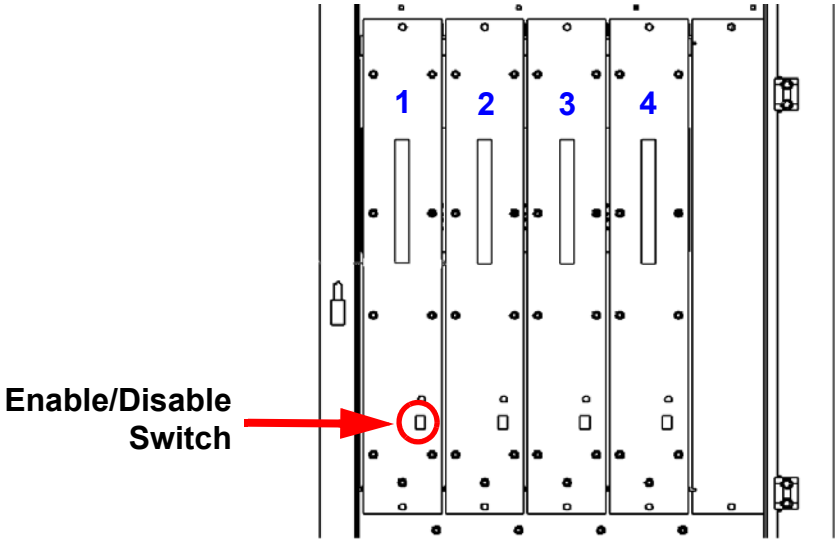
2. Carefully push the RF power module into place so that its card-edge connector mates with the transmitter.

3. Install both M5 securing screws in the RF power module's front panel.

4. Set the switch on the front of the RF power module to its 'up' position.

5. Press the Reset button on the AUI to enable the RF power module and its two associated power supplies.

Figure 1.3: RF Power Module Numbers/Locations



Partial Front View - Door Removed for Clarity

Using the RF power module extension test jig

The RF power module extension test jig (Nautel Part # 206-5350) is an option available from Nautel that allows convenient troubleshooting access to an RF power module while it is still electrically connected to the transmitter.

WARNING:
Dangerous RF and dc voltages are exposed when an RF power module's cover is removed. Use extreme caution when troubleshooting an RF power module. Nautel highly recommends that you contact a customer service representative before attempting to troubleshoot an RF power module.

The test jig consists of three parts:

- NAX249 NV Extension Module
- 206-5330 NV Module Extension Support
- 206-5355 Module Cover Runner

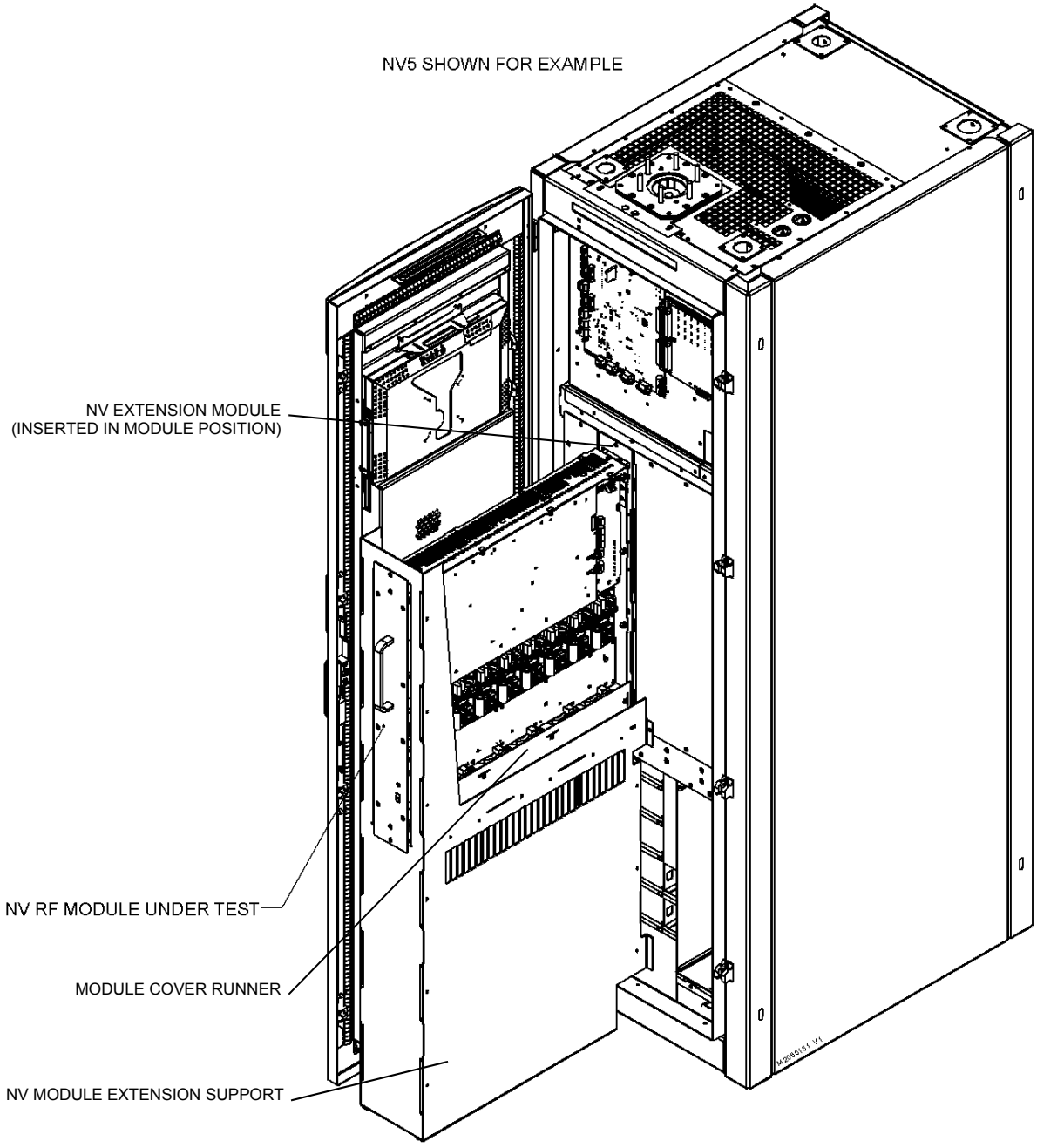
NOTE:
The test jig must be inserted into a vacant RF power module position. If necessary, remove an RF power module as detailed in "Removing an RF power module" on page 1-32. Due to its physical design, the test jig can not be mounted in certain cabinet-edge module positions. For the NV10/NV7.5 transmitter, the test jig can not be used in module positions 1 or 4. Nautel recommends using the test jig in module position 2. Swap RF power modules, as necessary, to move the suspect module to position 2.

1. Remove or verify an RF power module has been removed to allow insertion of the test jig (see "Removing an RF power module" on page 1-32). See above NOTE for restrictions.

2. Obtain the NV extension module (Nautel Part # NAX249). Carefully push the NV extension module into the vacant module position so that its card-edge connector mates with the transmitter. Note that the end of the extension module that has protruding 7/16" DIN and card-edge connectors is the end that inserts into the transmitter.

3. Install two M5 securing screws in the NV extension module's front panel.

Figure 1.4: Testing an RF Power Module with the NV Power Module Extension Test Jig



4. Obtain the NV module extension support (Nautel Part # 206-5330). Install the extension support at the front of the transmitter as shown in Figure 1.4. Secure the extension support using two M5 screws, which are pre-existing on adjacent modules (e.g., modules 1 and 3). Install, but do not tighten the screws at this time.

5. Obtain the RF power module to be tested. Remove the RF power module's right-hand side cover and, using four M4 screws from the cover, install the module cover runner (Nautel Part # 206-5355) at the bottom of the module's open side. The runner provides added mechanical stability for the module under test while its cover is removed.

6. Carefully push the RF power module into the module extension support so that its card-edge connector mates with the NV extension module. Firmly tighten the screws that were installed in Step 4.

7. Set the switch on the front of the RF power module to its 'up' (enabled) position.

8. Press the Reset button on the AUI to enable the RF power module and its two associated power supplies. Test or troubleshoot the RF power module as desired.

9. Reverse the steps in this procedure to remove the RF power module extension test jig and return the RF power module to the transmitter cabinet. Press the Reset button on the AUI to return the RF power module to service.

Troubleshooting RF power modules

Maintenance philosophy

Maintenance on an RF power module consists of replacing PA PWBs or cooling fans.

Special Tools and Test Equipment

The following tools and test equipment are required to troubleshoot an RF power module.

- Digital multimeter
- Torque screwdriver, capable of torquing up to 0.67 N-m (6 in.-lbs). Required for installing attaching hardware for PA PWB FETs.
- Soldering iron and desoldering tool
- NV10/NV7.5 station spares kit, if purchased (contains replacement PA PWBs)
- NV10/NV7.5 site spares kit, if purchased (contains replacement cooling fans)
- Electrical schematics SD-21 through SD-26 in Section 5 of this manual.
- Mechanical drawing MD-14 through MD-18 in Section 6 of this manual.

Electrostatic Precautions

The RF power module contains semiconductor devices that are susceptible to damage from electrostatic discharge. Be sure to follow the electrostatic precautions in "Electrostatic protection" on page 1-3 at all times.

Preparation for Troubleshooting

1. Follow the procedure in "Removing an RF power module" on page 1-32 to remove the RF power module from the transmitter.

2. Place the RF power module on a suitable work surface.

3. Based on the AUI alarm that prompted RF power module troubleshooting, replace either the defective PA PWB (see "PA PWB replacement" on page 1-37) or defective cooling fan. (see).

NOTE:
If a failure occurs, you must replace the entire power amplifier PWB, rather than an individual FET. A spare power amplifier PWB (NAPA20A) is provided in the transmitter station spares kit, if purchased. To order a station spares kit contact Nautel. Failure to observe this recommendation may void your equipment warranty or cause further failures.

PA PWB replacement

See Figure MD-14 in the Mechanical Drawings section (Section 6) of this manual.

1. Unsolder and remove the four solder connections to the PA PWB. They include a white, 22 AWG wire (to pad A), a white, 16 AWG wire (to pad B) and two tinned copper jumpers (to pads C and F).

2. Remove the two #4 screws, split and flat washers securing the FET to the heat sink.

3. Remove the six M3 screws securing the PA PWB to the heat sink.

4. Obtain the replacement NAPA20A PA PWB from the station spares kit, if purchased. As applicable, retain the PA Bias Volts Data sheet provided with the replacement PA PWB.

> *NOTE:*
> *FETs are static sensitive and must be handled in a static protected manner.*

5. Spread a small amount of thermal compound (Nautel Part # HAG39, from the station spares kit), thinly and evenly, on the bottom of the FET flange on the new PA PWB.

6. Secure the PA PWB on the module's heat sink using the six screws removed in Step 3. Ensure correct orientation (same as the adjacent PWB). Do not tighten the six screws at this time.

7. Secure the FET (Q1) with two # 4 screws, a flat washer and a new split washer.

> *NOTE:*
> *You can damage the FET case if you fully tighten one screw while the other is loose. Try to alternate tightening of the two screws to prevent this.*

8. Using a torque screwdriver, tighten the screws to 6 inch pounds (0.672 Newton-meters).

9. Tighten the six PWB screws.

10. Solder the wires removed in Step 1.

11. Return the RF power module to the transmitter (see "Installing an RF power module" on page 1-32).

12. If you experience any reject load related alarms, it is possible that the replacement PA PWB requires a change to its bias setting. A PA's bias setting acts to balance the PA output power levels based on different FET characteristics. If this occurs, perform the "PA Biasing Procedure" on page 1-39.

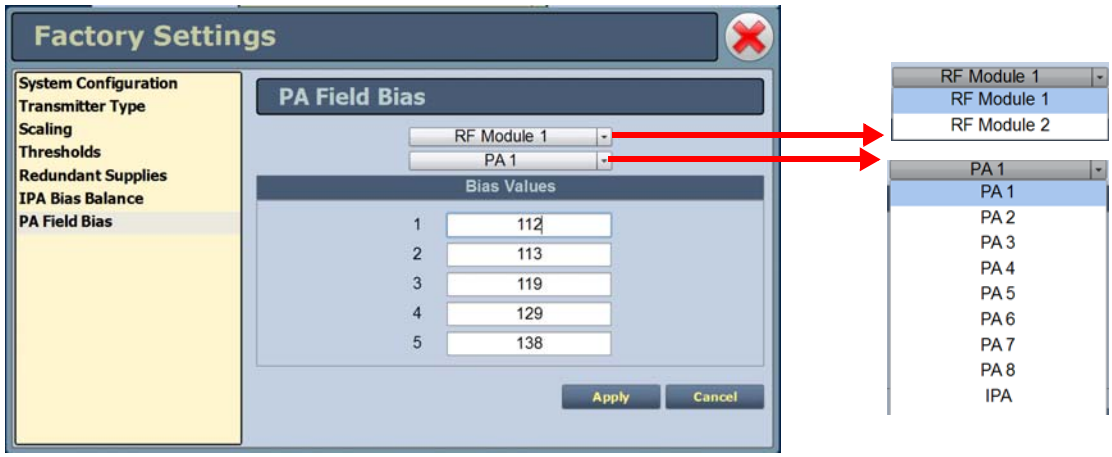
PA Biasing Procedure

This procedure (see Figure 1.5) allows the user to easily set the applicable bias values from the control tag provided with the replacement PA.

Select which RF Module and PA position the replacement PA was installed in, then enter the **Bias Values** for indices 1 through 5 from the factory supplied control tag. Select "Apply" to save the new Bias Value (s).

> *NOTE:*
> *The Bias Values fields accept only a decimal number format. Enter the decimal number from the control tag, or if your spare PA control tag specifies a hexadecimal number, convert it to decimal and then enter the appropriate decimal number.*

Figure 1.5: Factory Settings - PA Field Bias



Module cooling fan replacement

See Figure MD-14 in the Mechanical Drawings section (Section 6) of this manual.

1. Disconnect the suspect cooling fan's mating plug (B1P1 through B6P1).
2. Remove and retain the cooling fan's two M3 captive screws that secure the fan to the module.
3. Obtain a replacement fan (Nautel Part # ZAP50) from the site spares kit, if purchased or a suitable equivalent (vendor part # is Minebea Motor Mfg. Corp. 3115RL-07W-B79-E51).
4. Install the replacement fan using retained screws.
5. Return the RF power module to the transmitter (see "Installing an RF power module" on page 1-32).

Control/interface PWB replacement

See Figure MD-1 in Section 6 of this manual.

NOTE:

If the transmitter is operating with NV SW 4.3 or later, any existing presets will be transferred to the new PWB from the exciter. For single exciter systems with software older than 4.3, the customer will have to enter any preset information.

The customer's calibration data and Remote I/O configuration settings will not need to be entered if the EEPROM file is transferred from the old PWB to the new one. If the NAPC156 PWB's EEPROM was not saved to the new PWB, navigate to the local or remote AUI's Menu -> Factory Settings -> Scaling page. Record the scale values for RF Drive Power, Forward Power and Reflected Power. These values will be required later to configure the replacement Control/Interface PWB.*

1. Switch off (and lock out if possible) ac power at the service entrance. Open the front door to gain access to the control/interface PWB (A1).
2. Remove all interconnecting plugs and wiring from the control/interface PWB. Note the destination of each wire/connector (refer to Section 4, "Wiring/connector lists" on page 4-1 to locate wiring and connector mating tables).

3. Remove and retain the 10 sets of mounting hardware from the control/interface PWB.

4. Pull the control/interface PWB away from the remote interface PWB (A2). It may be helpful to gently pry the connector loose with a screwdriver.

5. Set all jumpers on the replacement PWB to the same positions as the defective PWB.

6. Install the new control/interface PWB by reversing steps 3 and 4.

7. Reconnect all mating connectors and wiring to the new control/interface PWB and turn on ac power to transmitter.

NOTE:
The NV's Transmitter Type can only be set from the local AUI.

8. Navigate to the local AUI's **Menu -> Factory Settings -> Transmitter Type**. Select the appropriate transmitter type (eg. NV5) and press **Apply**.

NOTE:
The following settings are not affected when the NAPC156 PWB is replaced: Logs, User Settings, Network Setup, Email Config, Notifiactions, SNMP Config, and Scheduler settings.*

9. If applicable, navigate to the local or remote AUI's **Menu -> Factory Settings -> Scaling** page. Enter the scale values for RF Drive Power, Forward Power and Reflected Power recorded earler. Press **Apply** to save the changes.

10. Return the transmitter to service.

Remote interface PWB replacement

See Figure MD-1 in Section 6 of this manual.

1. Open the front door to gain access to the remote interface PWB (A2).

2. Remove all customer interface wiring from the remote interface PWB. Note the destination of each wire for ease of reconnecting.

3. Remove and retain six sets of mounting hardware from the remote interface PWB.

4. Pull the remote interface PWB away from the control/interface PWB (A1). It may be helpful to gently pry the connector loose with a screwdriver.

5. Set the STATUS and ALARM jumpers as well as jumpers E1 through E24 on the new remote interface PWB to the same positions as the defective PWB.

6. Use an indelible marker to identify the LED and switch labels on the new remote interface PWB to match the labels on the defective PWB.

7. Install the new remote interface PWB by reversing steps 3 and 4.

8. Reconnect all interface wiring to the new remote interface PWB.

9. Return the transmitter to service.

LVPS Replacement

WARNING:
LETHAL VOLTAGES EXIST INSIDE THE TRANSMITTER WHEN THE POWER IS TURNED ON. FOLLOW REPLACEMENT INSTRUCTIONS CAREFULLY TO ENSURE SAFETY FOR MAINTENANCE PERSONNEL DURING POWER SUPPLY REPLACEMENT.

See Figure 1.6 on page 1-43 and Figures MD-2 and MD-7 in the Mechanical Drawings section (Section 6) of this manual.

1. Open the front door and remove the blank panel to the right of the RF power modules. Retain hardware and locate the suspect LVPS module [U3 (A) or U4 (B)].

2. Temporarily disconnect ac power from the suspect LVPS module by disconnecting the appropriate ac plug from the ac distribution assembly (A6). Disconnect P3 from A6J3 for LVPS module A (U3). Disconnect P6 from A6J7 for LVPS module B (U4). The LVPS module's green lamp should turn off. Verify ac power has been disconnected from the LVPS module by using a digital voltmeter to verify 0 V between the L and ground terminals and between the N and ground terminals.

3. Disconnect all wiring from the LVPS module's terminal block, noting the specific destination of each wire.

4. Using a 4 mm hex key (not provided), loosen the two M5 cap screws securing the LVPS module to the transmitter. Remove the LVPS module and its mounting plate from the transmitter.

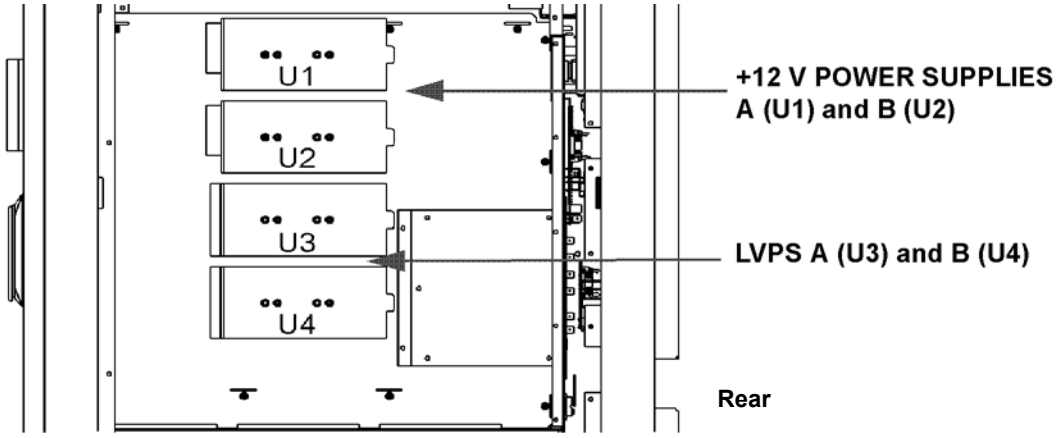
5. Remove the two M4 screws that secure the LVPS module to its mounting plate.

6. Locate or obtain a replacement LVPS module (Nautel Part # UG68). Reverse Step 1 and Step 5 to reinstall the new LVPS module. If necessary, refer to Section 4, "Wiring/ connector lists" on page 4-1 to locate wiring details.

7. From the AUI's System Review page, select Controller and view the +5V A or +5 V B meter, depending on which LVPS module was replaced. If necessary, adjust the potentiometer on the rear of the LVPS module until the meter reading is 5.6 V.

8. The transmitter should resume normal operation and the alarm should clear.

Figure 1.6: Location of +12 V and Low Voltage Power Supplies



Partial Side View - Panel Removed

+12 V Power Supply Replacement

WARNING:
LETHAL VOLTAGES EXIST INSIDE THE TRANSMITTER WHEN THE POWER IS TURNED ON. FOLLOW REPLACEMENT INSTRUCTIONS CAREFULLY TO ENSURE SAFETY FOR MAINTENANCE PERSONNEL DURING POWER SUPPLY REPLACEMENT.

See Figure 1.6 on page 1-43 and Figures MD-2 and MD-7 in the Mechanical Drawings section (Section 6) of this manual.

1. Open the front door and remove the blank panel to the right of the RF power modules. Retain hardware and locate the suspect +12 V power supply module [U1 (A) or U2 (B)].

2. Temporarily disconnect ac power from the suspect +12 V power supply module by disconnecting the appropriate ac plug from the ac distribution assembly (A6). Disconnect P2 from A6J2 for +12 V power supply module A (U1). Disconnect P5 from A6J6 for +12 V power supply module B (U2). The +12 V power supply module's green lamp should turn off. Verify ac power has been disconnected from the +12 V power supply module by using a digital voltmeter to verify 0 V between the L and ground terminals and between the N and ground terminals.

3. Disconnect all wiring from the +12 V power supply module's terminal block, noting the specific destination of each wire.

4. Using a 4 mm hex key (not provided), loosen the two M5 cap screws securing the +12 V power supply module to the transmitter. Remove the +12 V power supply module and its mounting plate from the transmitter.

5. Remove the two M4 screws that secure the +12 V power supply module to its mounting plate.

6. Locate or obtain a replacement +12 V power supply module (Nautel Part # UG57). Reverse Step 1 and Step 5 to reinstall the new +12 V power supply module. If necessary, refer to Section 4, "Wiring/connector lists" on page 4-1 to locate wiring details.

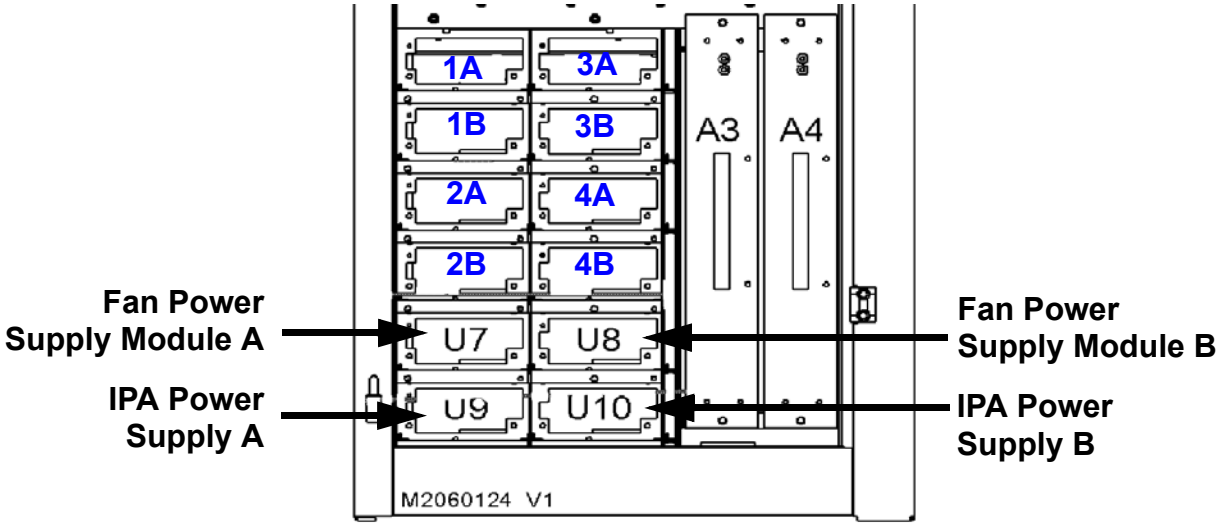
7. From the AUI's System Review page, select Controller and view the +12V A or +12 V B meter, depending on which +12 V module was replaced. If necessary, adjust the potentiometer on the rear of the +12 V module until the meter reading is 12.6 V.

8. The transmitter should resume normal operation and the alarm should clear.

Fan, IPA and Module Power Supply Replacement

> WARNING:
> Lethal voltages exist inside the transmitter when power is on. Follow replacement instructions carefully to ensure safety for maintenance personnel during power supply replacement.

Figure 1.7: Location of Various Power Supply Modules



Front Door Removed for Clarity

Module Power Supply	Associated RF Power Module
1A (U12), 1B (U13)	1 (A18)
2A (U14), 2B (U15)	2 (A21)
3A (U16), 3B (U17)	3 (A24)
4A (U18), 4B (U19)	4 (A27)

1. Open the front door and locate the suspect power supply module. See Figure 1.7.

> WARNING:
> Rotating parts are present at the back of the power supply module. Take care when removing the module.

2. From the front of the transmitter, remove the power supply module from the transmitter. If necessary, use a slotted screwdriver to turn the LATCH knob at the front

of the power supply module counterclockwise to unlatch the module from its support bracket.

3. Locate or obtain a replacement power supply module (Nautel Part # UG69). Reverse Step 1 through Step 2 to reinstall the new power supply module. The transmitter should resume normal operation and the alarm should clear.

4. If you have purchased the power supply extension assembly (Nautel Part # 206-5750), you can use it to bench test and troubleshoot power supplies before returning them to service. Refer to "Using the power supply extension assembly" on page 1-46 for more information.

Using the power supply extension assembly

The power supply extension assembly (Nautel Part # 206-5750) is an option available from Nautel that allows convenient bench troubleshooting access to a power supply while it is connected to the transmitter.

WARNING:
Lethal voltages exist inside the power supply module when power is applied or had recently been applied (within 10 minutes). Opening the power supply module to troubleshoot will void your warranty. Contact Nautel before attempting to troubleshoot a power supply module.

The assembly consists of three parts, which are pre-connected for customer convenience:

- A1: 206-5700 Power Supply Extension Module
- A2: 206-5708 Power Supply Support
- 206-5702 Cableform Assembly (interconnects A1 and A2)

1. Remove or verify a power supply has been removed to allow insertion of the power supply extension assembly.

2. Obtain the power supply extension assembly (Nautel Part # 206-5750).

3. Carefully push the power supply extension module end (A1) of the assembly into the vacant power supply position so that its card-edge connector mates with the transmitter. No securing hardware is required.

4. Place the power supply support end (A2) of the assembly on a suitable test surface that is less than 15 feet (4.5 m) from the transmitter. The power supply support contains holes to allow mounting to the test surface, but it is not necessary.

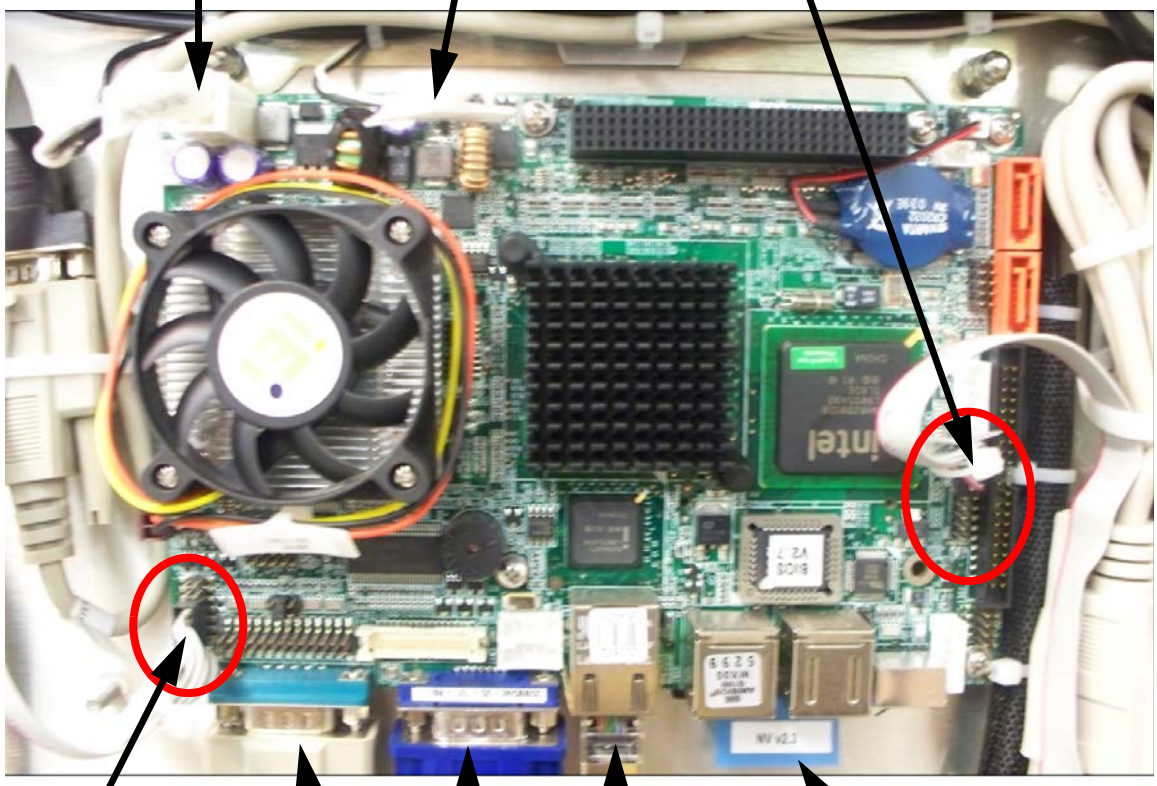
5. Carefully push the power supply to be tested along the runners of the power supply support so that its card-edge connector mates with the support.

6. Test or troubleshoot the power supply as desired.

7. Reverse the steps in this procedure to remove the power supply extension assembly and return the power supply to the transmitter cabinet.

Single-Board Computer (SBC) Replacement

Figure 1.8: Single-Board Computer U6U1 (on the back of the front door)



1. Switch off (disable) the transmitter's ac power source.

2. Open the front door and locate the single-board computer (SBC) on the back of the door.

3. Disconnect all connectors from the current SBC. See Figure 1.8 on page 1-48 for details. Remove the SBC from the front door by removing its four M3 securing screws.

> *NOTE:*
> *It is recommended to reuse the original Compact Flash card. This saves re-entering all the CF card related saved content. Ensure the Compact Flash card has latest software available.*

4. Locate or obtain the replacement SBC (Nautel Part # 206-8973). If the replacment SBC does not contain a card (U5) (see Figure 1.8 on page 1-48), obtain the card from the SBC removed in Step 3 and insert it into the replacement SBC.

5. Install the replacement SBC using its four M3 securing screws. Use Figure 1.8 on page 1-48 to reconnect all mating connectors. Pay particular attention to ribbon cable connectors U6W1P1 and U6W2P1, which have specific connection requirements.

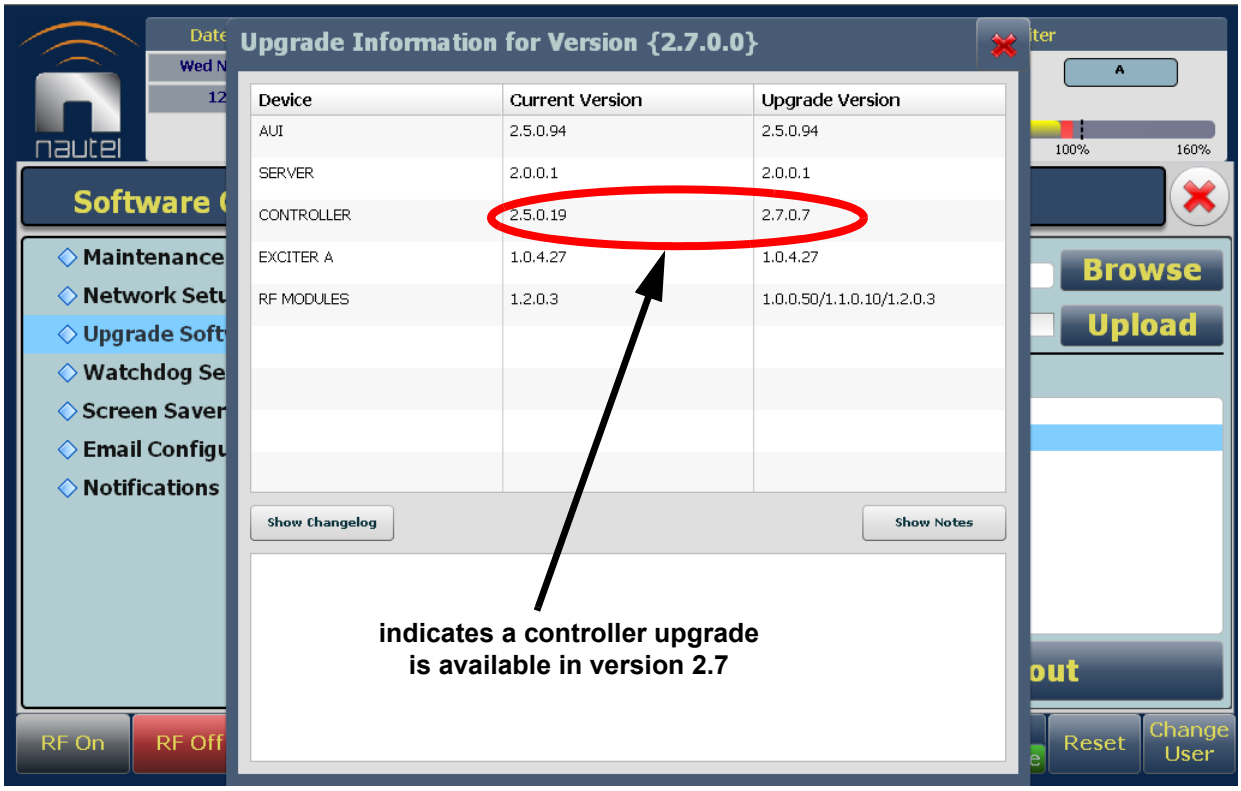
6. Switch on (enable) the transmitter's ac power source. Ensure RF is off.

7. From the AUI's Software Configuration page, select Upgrade Software and view the files in the *Select A Boot Image* list. These are the files on the card. Select the latest version of software from the list (e.g., V2_7) and press the About button. Information about the transmitter device's current software versions and the selected upgrade file should appear (see Figure 1.9 on page 1-50).

8. For each device shown in Figure 1.9 on page 1-50, compare the Current Version column with the Upgrade Version column. If the Upgrade Version value is a higher number, an upgrade is available for that device from the selected software upgrade file. If desired, close the Upgrade Information screen and upgrade the software by pressing Begin.

> *NOTE:*
> *Pressing* Begin *initiates the software upgrade process. Contact Nautel if you are unsure if you should perform a software upgrade.*
>
> *For more details on performing a software upgrade, refer to the "Upgrading software" procedure in Section 4, "Non-standard maintenance" on page 4-1 of the Operations and Maintenance Manual.*

Figure 1.9: Upgrade Software - About screen



Section 2: Detailed Circuit Descriptions

Refer to the functional block diagram: "NV Series Transmitter Block Diagram" on page 1-9 and high level descriptions of the *NV10/NV7.5 Operation and Maintenance Manual*.

This section provides a detailed description of the transmitter's key modules and assemblies, including:

NV10/NV7.5 electrical schematics

The descriptions in this section all refer to the NV10/NV7.5 electrical schematics listed in Table 5.1 on page 5-5 of the *NV10/NV7.5 Troubleshooting Manual*.

Control/interface PWB (NAPC156A)

See electrical schematics Figures SD-10 through SD-17.

Microcontroller

Microcontroller IC U41 interfaces with the transmitter via several serial buses. J17 provides an isolated RS-232 interface with the front panel's advanced user interface (AUI). J20 provides an isolated RS-232 interface for debugging. There are also serial interfaces with exciter A (via J5), exciter B (via J6), optional SC2 system controller (via J22).

U41 also acts as an internal and external serial interface for transmitter alarm and status signals.

Remote inputs and outputs

The user can interface with up to 24 pre-defined digital inputs, 24 digital outputs and eight analog outputs via the remote interface PWB (A11A4) (see "Remote interface PWB (NAPI115A)" on page 2-2). The control/interface PWB configures these inputs and outputs based on customer interface with the AUI. These inputs and outputs may be user-defined, but are factory defaulted (see the *NV10/NV7.5 Installation Manual* for default settings).

Digital inputs

RFI filtering is provided on all digital input lines to ensure transmitter operation is not interrupted due to RF pick up on control lines. Opto-couplers buffer/isolate the external circuits and prevent unwanted transients from affecting transmitter operation. The digital inputs on connector J24 are shifted in through shift register IC U42. These values are then relayed to microcontroller U41 over the SPI bus.

Digital outputs

Shift registers U63, U64 and U83, controlled by microcontroller U41 over the SPI bus, control the status of the digital outputs applied to connector J23. Digital output logic levels are configured through the AUI.

Analog outputs

Digital samples of the selected (or defaulted) analog outputs are applied to DACs U61 and U62 by microcontroller U41 over the SPI bus. The analog outputs of DACs U61 and U62 are applied to connector J24, via operational amplifiers U66:A through U66:D and U70:A through U70:D.

Remote interface PWB (NAPI115A)

See electrical schematic Figure SD-18.

The remote interface PWB (A2) performs the following functions:

- Provides an interface between the remote control/monitor facility and the transmitter.
- Provides momentary contact activation switches for each of the 24 digital inputs.
- Provides configurable status or alarm indicator LEDs for each of the 24 digital outputs.

Digital inputs

Up to 24 digital inputs can be connected to terminal blocks J7, J8, J9 and J10. You can define these digital inputs using the advanced user interface (AUI). Each must provide a logic low input (0 V) in its active state to the associated terminal of the remote interface PWB. Momentary switches S1 (01) through S24 (24), which can be labelled according to their function, provide a means to locally activate the digital inputs.

Digital outputs

Up to 24 digital outputs can be connected to terminal blocks J3, J4, J5 and J6. You can define these digital outputs (alarm or status) using the advanced user interface (AUI). Each provides a negative logic (current-sink-to-ground) output when a 'true' (alarm condition or active status) exists. The outputs provide an open collector during logic 'false' conditions (non-alarm or non-active status condition) and have no influence on the external monitoring circuit. Each monitoring circuit must present impedance between the switching device and a positive dc voltage source that results in a current flow of not more than 30 mA. Each circuit's positive voltage source must not exceed 28 V dc. A +15 V supply is available for use by the remote monitoring circuits on J1-34 or J1-35 (ground on J1-36 or J1-37). Bi-position shorting jumpers E1 through E24 allow you to connect each digital output to a STATUS (green) or ALARM (red) LED, depending on its function. The outputs can also be labelled according to their function.

RF power module (NAA56/01D)

See electrical schematics Figures SD-22 through SD-27.

Each RF power module (1 through 4) provides up to 2750 W (for NV10) or 2062.5 W (for NV7.5) of RF output power and is comprised of an IPA PA PWB (A9), eight PA PWBs (A1 through A8), a power module interface PWB (A10), a module splitter PWB (A11) and a combiner PWB (A12). Cooling air for the module is provided by six internal fans (B1 through B6).

An *RF Drive* output from the RF drive stage is applied to each RF power module via its power module interface PWB (A10). Within each RF power module, the RF drive signal is amplified through an IPA PA and then split to drive the module's eight PAs. The *IPA Volts* input from the associated power supply module control the RF output of the IPA PA. The *PA Volts* inputs from the associated power supply modules control the RF output of the eight PAs. The RF power module receives alarm signals (*PS Temp*, *PS Fail* and *PS AC Fail*) from the ac-dc power stage, which, when active, inhibit the PAs. The RF power module also provides a *Pwr Supply Inhibit* signal to the ac-dc power stage, which, when active, inhibits the associated switching power supply. A *PA V Sample* and *IPA V Sample* from each RF power module is applied to the control/monitor stage. The control/monitor stage supplies a *PA Volts Inhibit* signal, which controls the PA outputs of the RF power module.

Power amplifier PWBs

See Figures SD-22 and SD-24. Each power amplifier PWB [IPA (A9) and PA (A1 through A8)] contains an identical, broadband, push-pull, RF power amplifier (PA). Each PA provides 375 W (nominal) of RF power in the FM band (87.5 to 108 MHz). The *RF Drive*, *PA V* and *Bias* voltage are provided by the power module interface PWB (A10).

The *RF Drive* input is applied to cable T1, which is connected as a balun to provide balanced, 180° out-of-phase, RF drive signals to the individual gates of dual N-channel power MOSFET (Q1). Cables T2:A and T2:B, as well as capacitors C2, C6, C7 and C17, inductor L2 (part of R12/R13 leads) and resistors R5, R8 through R10, R12 and R13 provide impedance matching, which transforms the 50 ohm input to low impedance for application to Q1. The PA voltage is applied to the individual drains of Q1 via inductors L4 and L5, which provide proper resonating reactance for Q1's output. Cable T3:A and T3:B transform the impedance at the RF output, ensuring an optimum (low) impedance is presented at Q1's output. Cable T4 converts the balanced RF signal to an unbalanced RF Output signal.

The *PA V* input is applied to capacitors C1, C3, C5, C8 and C11, which act as a broadband decoupling network. Capacitor C13 and inductor L3 provide low-pass filtering of the RF signal back to the ac-dc power stage.

The *Bias* input voltage is provided by the power module interface PWB to establish a dc bias current for Q1. The bias current depends on the operating mode and whether the amplifier is in an RF power module or an IPA module.

Power module interface PWB

See Figures SD-25 through SD-27. The power module interface PWB (A10) monitors and distributes the RF drive and the dc supply current to the individual power amplifiers of the IPA or RF power module. Its main functions are:

- Monitoring the current supplied to each PA and cause an alarm condition if a PA stops drawing current.
- Providing a low level dc signal, proportional to the intermediate RF drive power, for monitoring.
- Providing each PA's dc bias voltage.
- Inhibiting the associated switching power supply module when the appropriate fault occurs.
- Communicating with the control/monitor stage on module specific status and alarm parameters.

PA fail detection

The voltages across resistors R88, R90, R93, R96, R98, R99, R101 and R103, representative of the individual PA currents, are applied to differential amplifiers U25, U27 through U29, U31 through U33 and U35. Their output voltages are applied to input channels of multiplexer U30. PA 1 CUR through PA 8 CUR test points are provided at the module's front panel for monitoring. Multiplexer U30's output is fed to microcontroller U12. Microcontroller U12 outputs data to 8-bit shift registers U5 and U6.

During normal operation, when a PA is drawing current, the logic 'low' output at U5-7 causes FET Q2 to turn off. If no current is flowing through a PA, the U5-7 output will switch to logic 'high'. This turns on FET Q2 and causes a ground potential to be applied to the *Module Fault* output, which causes the FLT (fault) LED on the module splitter PWB (A11) to turn.

PA and IPA bias voltage

Microcontroller U12's memory contains PA bias voltage settings for analog (FM), hybrid (FM+HD) and digital (HD) modes of transmitter operation. Communication with the control/monitor stage, through a serial interface (TX/RX connections at P1-24 and P1-26) determines which bias voltage information is loaded into 8-bit DACs U8 and U9 (for PAs) and U39 (for IPA). The corresponding analog outputs of U8, U9 and U39 are applied through operational amplifiers (U19:A through U19:D, U22:A through U22:D and U20:A) to the PA BIAS 1 (TB3-1) through PA BIAS 8 (TB3-8) and IPA BIAS (TB3-9) outputs for application to the power amplifier PWBs. If microcontroller U12's PA inhibit output (pin 10) becomes active (logic low), NAND gate(s) U13:A through U13:D and U14:A through U14:D will switch to logic high and operational amplifiers U19:A through U19:D and U22:A through U22:D will apply a negative bias voltage to the PA PWBs. A PA failure condition will also cause a negative bias voltage to be applied to the associated PA PWB.

RF drive sample

A short section of micro-strip transmission line is in close proximity to the active exciter's RF drive output. Due to the proximity and orientation to the micro-strip, an RF voltage representative of the RF drive is induced in a power probe circuit. The RF drive signal is peak detected by CR26, C131, R112 and associated components and applied to the *RF Drive Sample* output (P1-18). The sample is applied to the control/monitor stage's monitoring and protection circuits.

Module splitter PWB

See Figures SD-22 and SD-23. The module splitter PWB (A11) splits and impedance matches the intermediate RF drive power to each PA.

The RF drive signal is passed through the module splitter PWB to the IPA PA (A9). The IPA PA output is then applied to the combiner PWB (A12), where the RF drive is split into two equal signals. For each of the signals applied, the module splitter PWB provides four equal amplitude PA Drive signals to drive the eight PAs. For final combining purposes, half of the *PA Drive* signals are in phase quadrature (90° out of phase) with the other drive signals. The PA outputs are applied to the combiner PWB.

Combiner PWB

See Figures SD-22 and SD-23. The combiner PWB (A12) performs the initial stage of splitting of the RF drive signal within each RF power module. It also combines the PA outputs to provide the final RF output for each RF power module.

The output of the IPA PA PWB (A9) is applied to hybrid splitter U1 on the combiner PWB. U1 splits the IPA PA output into two equal amplitude, phase quadrature (90° out of phase) drive signals for the module splitter PWB (A11). A short section of micro-strip transmission line is in close proximity to the IPA PA output signal. Due to the proximity and orientation to the micro-strip, an RF voltage representative of the IPA output is induced in a power probe circuit. The IPA output signal is peak detected by CR1, C1, R13 and associated components and applied to the *IPA Pwr Sample* output (terminals A/B). The sample is applied to monitoring and protection circuits in the module interface PWB and the control/monitor stage.

The outputs of the PA PWBs (A1 through A8) are applied to two combiner/impedance matching networks comprised of coaxial cables and reject load resistors. These networks provide two equal amplitude, phase quadrature (90° out of phase) amplified signals that are applied to a hybrid combiner. The signals are combined at the hybrid combiner's *Comb RF Out* output. Any amplitude imbalances between the inputs causes a proportional signal to be applied to the *Reject Load* output. Short sections of micro-strip transmission line are in close proximity to the combined RF output and reject load output. Due to the proximity and orientation to the micro-strips, RF voltages representative of the combined forward power, combined reflected power, and reject power are induced in power probe circuits. The *Fwd Pwr Sample*, *Refld Pwr Sample* and *Rej Pwr Sample* signals are applied to monitoring and protection circuits in the module interface PWB.

Section 3: Parts Lists

Parts information

This section contains reference designation lists that provide descriptive and provisioning information for all electrical and mechanical parts that have an assigned reference designation and form a part of the subject equipment.

Family tree

Figure 3.1 depicts the family tree for the subject equipment. It is based on the descending order of the reference designation hierarchy and identifies all assemblies that have an assigned Nautel configuration control number.

How to locate information about a specific part

To locate the information for a specific part, the assigned reference designation for the part must be known. In addition, the Nautel nomenclature (e.g., NAA56/01D) assigned to the assembly containing the part or the full reference designation, including the reference designation of all higher assemblies, must be known.

When the Nautel nomenclature is known:

- Refer to the family tree (Figure 3.1) and identify the block(s) associated with the Nautel nomenclature. At the bottom of the main family tree block, a reference is made to “See Part Number Index Tables”. Locate the part's reference designation in the identified reference designation list in this section, noting they are sorted alphanumerically.

When the reference designation is known:

- Refer to the family tree depicted in Figure 3.1 with the full reference designation.
- Follow the family tree branches to the block that represents the lowest level assembly assigned a Nautel configuration control number. Then locate the part number index table for that Nautel configuration control number.
- Locate the part's reference designation in the specified table.

Reference designation lists

Individual reference designation lists are provided for:

- assemblies that are assigned an alpha-prefixed Nautel nomenclature (e.g., NAA56/01D)
- cable harnesses that are assigned a numbered Nautel part (e.g., 206-8104-02)
- optional kits that are assigned a numbered Nautel part

To obtain the full reference designation for a specific part the Nautel configuration control number must be located in the family tree (Figure 3.1) to include the reference designation of all higher level assemblies. The reference designation lists, which are titled and presented in alphanumeric order, are divided into columns to aid in locating specific information.

Column content

The following paragraphs provide an explanation of the purpose and contents of each column in the part number indexes.

Ref des column

The 'ref des' column contains the reference designation for a specific part. These designations are assigned in accordance with the requirements of American National Standard Specification ANSI Y32.16.

Description column

This column contains the name and descriptive information for each part. The key word is presented first, followed by the adjective identifiers. When the description is 'See Family Tree for Assembly Nomenclature', the associated part is subject to its own part index table or is contained in an optional kit's list. Look up the reference designation list title (nomenclature) and the reference designation of the associated part in the family tree (Figure 3.1) to determine where to locate its part information.

Nautel # column

This column contains the Nautel number assigned to each part. This number is Nautel's drawing number for Nautel manufactured parts, Nautel's configuration control number for assemblies that are under configuration control management, or Nautel's inventory management number for purchased parts. When a Nautel configuration control number (e.g. NAPC*) is referenced in this column, the associated ref des item is subject to its own part index table.

Vendor # column

This column contains an original equipment manufacturer's part number for a part. A single part number is listed for each part, even though there may be more than one known manufacturer. The listed number is Nautel's usual or preferred choice. The use of this number does not restrict Nautel from selecting and using commercial equivalents during manufacture, where their use will not degrade circuit operation or reliability.

OEM code column

This column typically contains a five digit coded group as the original equipment manufacturer's (OEM) identifier. The code was extracted from Cataloging Handbook H4/H8 Commercial and Government Entity (Cage) Code. Manufacturers that were not listed in the catalog when this listing was compiled have been assigned a unique five-letter code. This code is assigned arbitrarily and has no other significance. The manufacturers identified for parts that have JAN or MIL part numbers are Nautel's normal supply source for that part.

Note: OEM code 37338 is listed for parts manufactured by Nautel or to a Nautel control drawing. United States of America customers should refer all replacement part orders to Nautel Maine Incorporated (OEM code 57655).

OEM code to manufacturer's cross-reference

The OEM (CAGE) codes listed in the reference designation lists are representative of the original equipment manufacturers of those parts. To determine a specific part's manufacturer contact information, enter the five-character OEM (CAGE) code for that part in the following website:

https://www.bpn.gov/bincs/begin_search.asp

After entering the OEM (CAGE) code number, manufacturer pertinent information (address, telephone number, fax number, etc.) will be displayed. Please contact Nautel if a part cannot be obtained (see also “On-Line Part Quotes” in the Warranty section of this manual).

Manufacturer's index

For customers without web access, Table 3.1 provides a cross-reference from the original equipment manufacturer's (OEM) codes to the manufacturer's name. The listing is sorted alphanumerically by the OEM code.

Common abbreviations/acronyms

The following abbreviations/acronyms may appear in the *Description of Part* column:

- SMT
  Denotes item is designed to be installed using Surface Mount Technology.
- MTA
  Denotes item is a Mass Termination Assembly connector.
- SIP
  Single In-line Package
- DIP
  Dual In-line Package
- IDC
  Denotes item is an Insulation Displacement connector for ribbon cable.

Table 3.1: OEM Codes / Manufacturers

OEM Code	Manufacturer	OEM Code	Manufacturer
00779	CTS Company Incorporated	0DY74	Microsemi Corp-Power Products Grp
01295	Texas Instruments Incorporated	0FMA6	Neutrik USA Inc
01961	Pulse Engineering Inc.	0G343	Huffman Manufacturing Co.
02660	Amphenol Corp., Spectra-Strip/ITD	0GP12	Radiall Inc.
03LB0	Sandisk Corporation	0P2J5	Kingston Technology Company Inc.
04713	Motorola Incorporated	12060	Diodes Inc.
06090	Raychem Corporation	13919	Burr-Brown Corp.
07263	Fairchild Semiconductor Corp	14655	Cornell Dubilier Electronics
07933	Fairchild Semiconductor Corp	15542	Scientific Components Corp.
07EN1	Advanced Monolythic Ceramics	1AA44	Collmer Semiconductor Inc
08779	Signal Transformer Co. Inc.	1E4C5	SEI Electronics Inc.
09482	Amp of Canada Limited	1FN41	Atmel Corporation
09581	3M Canada Incorporated	1JRT7	Epson Electronics American Inc.
0A5K5	IXYS Corporation	1KK13	ITT Industries Incorporated
0AG18	Hirose Electric / USA / Inc.	1MQ07	ZRG Incorporated
0B0A9	Dallas Semiconductor Corporation	1N3T0	Semikron Inc.
0CVK3	Allegro Microsystems Inc.	1W344	United Chemi-Con Mfg Inc.

Table 3.1: OEM Codes / Manufacturers

OEM Code	Manufacturer	OEM Code	Manufacturer
22421	Thomas and Betts Limited	79942	Intel Corp Sales Office
23598	Ross Engineering Corp.	7D893	Fairchild Semiconductor Corporation
23875	M-Tron Industries Incorporated	80294	Bourns Instrument Incorporated
24355	Analog Devices Incorporated	83330	Dialight Corporation, DBA Dialight
27014	National Semiconductor Corporation	90201	Hammond Mfg. Co. Ltd.
27264	Molex Incorporated	91833	Keystone Electronics Corporation
2D829	Cornell Dubilier Electronics Corp.	91929	Honeywell Incorporated
31433	Kemet Electronics Corporation	95146	Alco Electronic Products Inc.
31781	Edac Incorporated	96095	AVX Ceramics, Div of AVX Corp
33062	Ferronics Incorporated	AMP/TYCO	Tyco Electronics Corporation
35005	Dale Electronics	ANALOG D	Analog Devices
37338	Nautel Limited	ASTEC	Astec Power
3CYG3	Sanyo Denki America Inc.	AVAGO	Avago Technologies
3DX59	Citizen America Corporation	AVX CORP	AVX Corporation
3EH09	Murata Electronics North America Inc	C3057	Conec Elektronische Bauelemente
3USB5	Startech.com USA LLP	C4751	Epcos AG
3WCG0	Ferraz Shawmut Incorporated	C & D	C & D Technologies
45496	Digital Systems	COMET	
48862	GC Electronics	Comp Corp	Components Corporation
49588	S B E Incorporated	CORNELL	See 2D829
4G927	Raychem Corporation	CREE INC	Cree Inc.
4TKQ5	UPE Inc.	ER737	Texas Instruments
54473	Matsushita Electric Corp of America	HYPERTR	Hypertronics Corporation
54583	TDK Electronics Corp.	IDT	Integrated Device Technology, Inc.
56289	Sprague Electric Company	ITT INDUS	See 1KK13
56699	BC Components	KEYSTONE	See 91833
56845	Vishay Dale Electronics Inc.	KYCON	Kycon Cable & Connector Inc.
59124	KOA Speer Electronics Inc.	LINEAR	See 64155
59993	International Rectifier Corp.	LITEON	Vishay-Liteon Power Semiconductor
5Y407	Phoenix Contact Inc.	L3845	Circuit-Test Electronics Ltd.
63590	Premier Industrial Corp.	MARKTEC	Marktech Optoelectronics
64155	Linear Technology Corporation	MICRON	Micron Technology, Inc.
65786	Cypress Semiconductor Corp.	MINI-CIRC	Mini-Circuits
71400	Cooper Bussman Inc.	MOLEX	Molex Inc.
71468	ITT Corporation	NATIONAL	See 27014
75042	TRW Incorporated	NXP SEMI	NXP Semiconductors
75915	Littelfuse World Headquarters	ON-SEMI	ON Semiconductor

Table 3.1: OEM Codes / Manufacturers

OEM Code	Manufacturer	OEM Code	Manufacturer
PANAS	Panasonic	SL575	Meanwell Sales Information
PHOENIX	See 5Y407	TDK	See 54583
SARONIX	Saronix	TEXAS	See ER737
SAW84	IEI Technology Corp.	U3040	ST Microelectronics
SB ELE	SB Electronics Incorporated	VENKEL	Venkel Ltd
SCT30	Fairchild	WANJIA	Wanjia

Figure 3.1: NV10/NV7.5 Family Tree

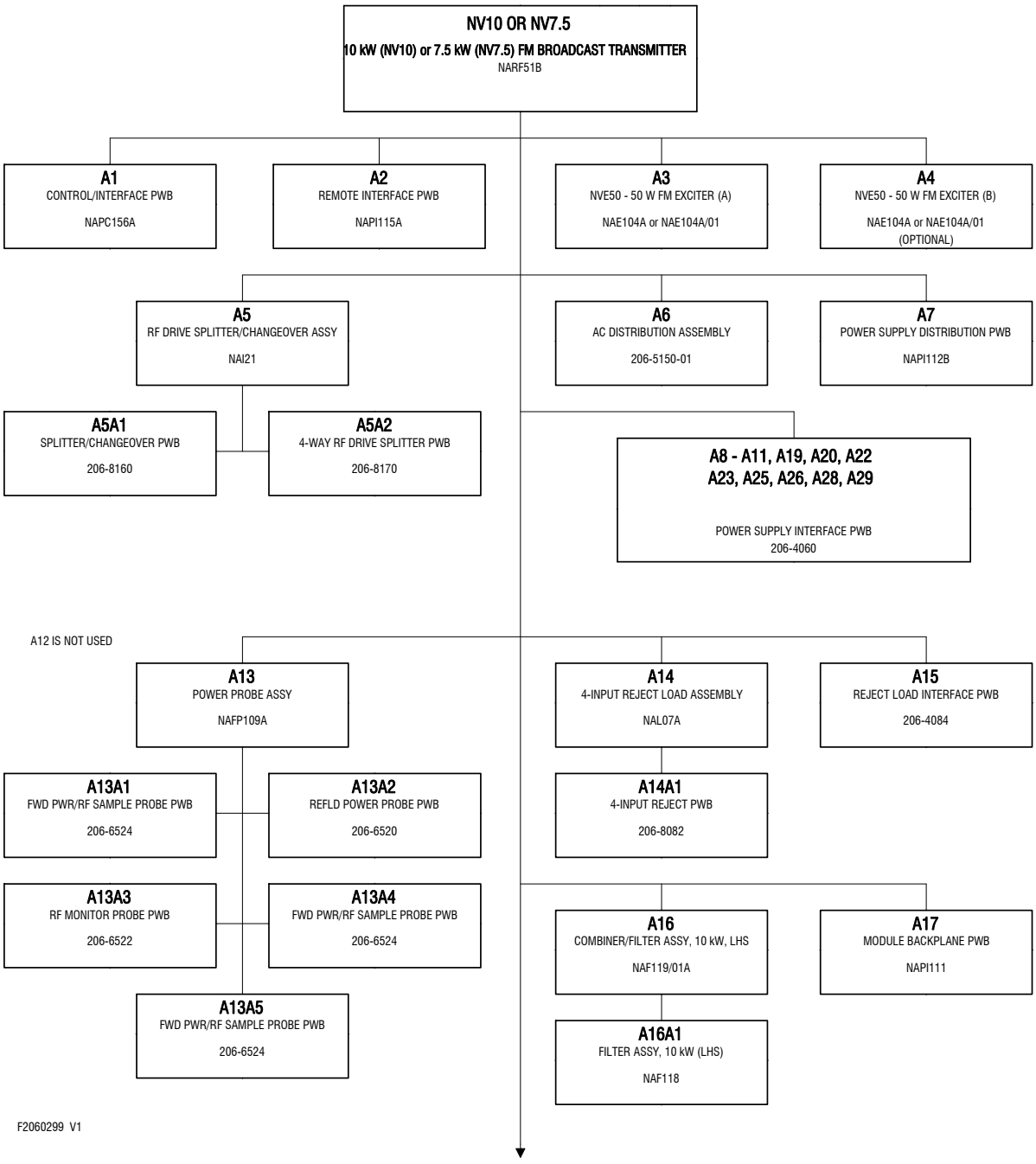
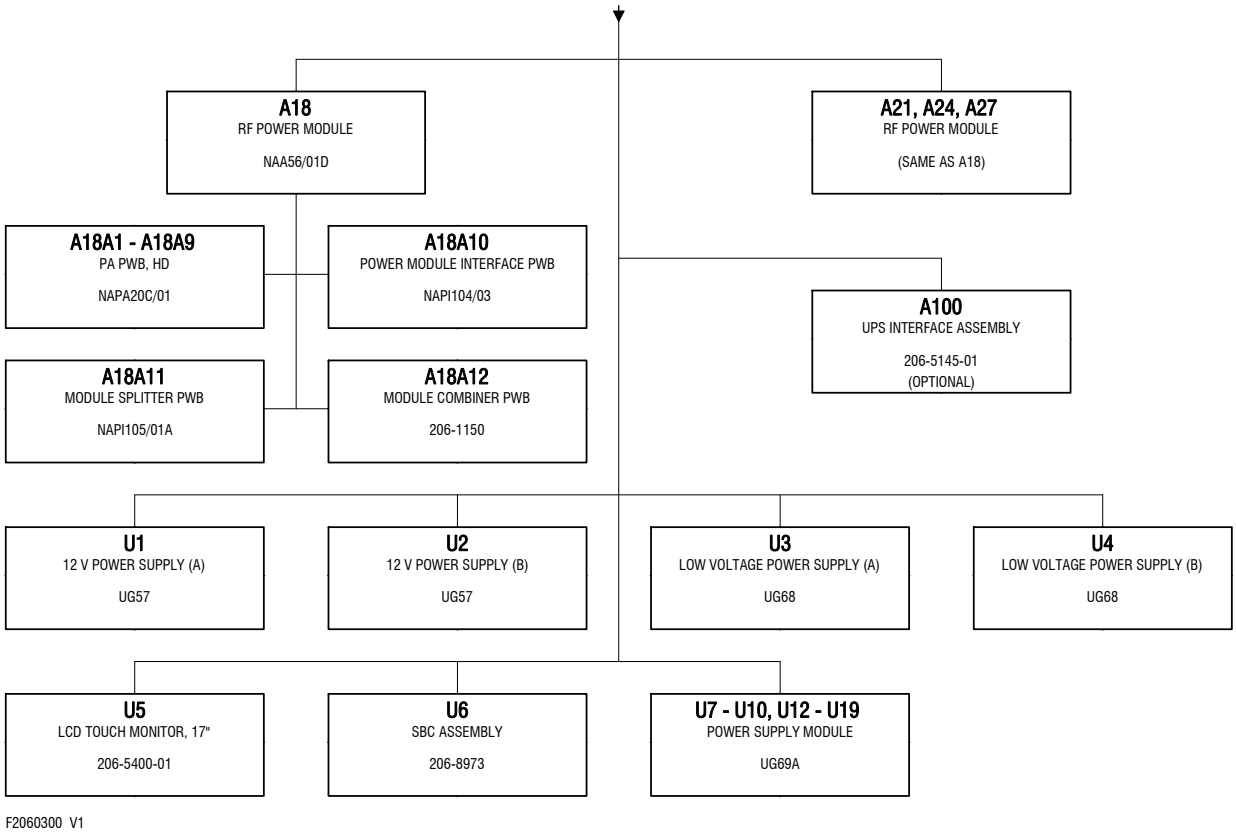


Figure 3.2: NV10/NV7.5 Family Tree (continued)



F2060300 V1

206-1004-02 Cable Set Assy, NV PowerModule RLS 3

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L01	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L02	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L03	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L04	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L05	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L06	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L07	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L08	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
L09	Toroid, Ferrite, 12.7mm, K Mtl	LA02	11-262-K	33062
W01	Cable Cat6E, 33", Shld, Blue,26AWG, 75degC, noguard	UA184	ZM6A-S33I-06-UA184(RoHS)	
W02	Cable Cat6E, 33", Shld, Blue,26AWG, 75degC, noguard	UA184	ZM6A-S33I-06-UA184(RoHS)	
W3P1	Conn, Plug, Crimp, Coax, RG188 Type	JT38	TMP-K01X-A1	TAIKO
W3P2	Conn, Plug, Crimp, Coax, RG188 Type	JT38	TMP-K01X-A1	TAIKO

206-1150 Module Combiner PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C02	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C03	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C04	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
CR01	Diode, Schottky, 70V, 15mA	QK09	1N5711 (STATIC)	50434
CR02	Diode, Schottky, 70V, 15mA	QK09	1N5711 (STATIC)	50434
CR03	Diode, Schottky, 70V, 15mA	QK09	1N5711 (STATIC)	50434
CR04	Diode, Schottky, 70V, 15mA	QK09	1N5711 (STATIC)	50434
R01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R03	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R04	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R05	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R06	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R07	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R08	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R09	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R10	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R11	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R12	Resistor, MF, 274 Ohms, 1PC 1/4W	RAB18	MF1/4DL2740F	59124
R13	Resistor, MF, 3.32K Ohms, 1PC1/4W	RAB31	MF1/4DL3321F	59124
R14	Resistor, MF, 3.32K Ohms, 1PC1/4W	RAB31	MF1/4DL3321F	59124
R15	Resistor, MF, 82.5 Ohms, 1PC 1/4W	RAB12	MF1/4DL82R5F	59124
R16	Resistor, MF, 82.5 Ohms, 1PC 1/4W	RAB12	MF1/4DL82R5F	59124
R17	Resistor, MF, 82.5 Ohms, 1PC 1/4W	RAB12	MF1/4DL82R5F	59124
R18	Resistor, MF, 82.5 Ohms, 1PC 1/4W	RAB12	MF1/4DL82R5F	59124
R19	Resistor, MF, 3.32K Ohms, 1PC1/4W	RAB31	MF1/4DL3321F	59124
R20	Resistor, MF, 301 Ohms, 1%1/4W	RAC23	MF1/4DL3010F	59124
R21	Resistor, MF, 301 Ohms, 1%1/4W	RAC23	MF1/4DL3010F	59124
R22	Resistor, MF, 3.32K Ohms, 1PC1/4W	RAB31	MF1/4DL3321F	59124
RT01	Not Used	-	NOT USED	37338
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

Continued from previous page

206-1150 Module Combiner PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE

206-4060 Power Supply Interface PWBAssy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C02	Not Used	-	NOT USED	37338
C03	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C04	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C05	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C06	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C07	Not Used	-	NOT USED	37338
C08	Not Used	-	NOT USED	37338
C09	Not Used	-	NOT USED	37338
E01	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E02	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
J01	Conn, 47 Contact, F, Straight,PWB Mt, Ac pass thru	JA84	PCIH47F300A1-246.0	
J02	Connector,Modular,RJ-45,Vert.,PWB	JPMT01	557969-1	09482
TP01	Not Used	-	NOT USED	37338
TP02	Not Used	-	NOT USED	37338
TP03	Not Used	-	NOT USED	37338
TP04	Not Used	-	NOT USED	37338
TP05	Not Used	-	NOT USED	37338
TP06	Not Used	-	NOT USED	37338
TP07	Not Used	-	NOT USED	37338

206-4084 Reject Load Interface PWB Assy (4-Way)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C02	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C03	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C04	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
J01	Conn, Header, Ribbon Cbl, 20Pin	JQ55	103308-5	00779
J02	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
J03	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J04	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J05	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J06	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J07	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J08	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
R01	Resistor, MF, 100K Ohms, 1PC 1/4W	RAC01	MF1/4DL1003F	59124
RT01	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT02	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT03	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT04	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
TP01	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C

206-5145-01 UPS Interface Assy, LP RLS 2

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Socket, 3 pin, Recessed, 250Vac, 6A	JT22	EAC309	82389
J02	Conn, Socket, 3 pin, Recessed, 250Vac, 6A	JT22	EAC309	82389
J03	Conn, Recept, AC, Single, Snap, 15A/125V	JT06	88010641	5F520
J04	Conn, Recept, AC, Single, Snap, 15A/125V	JT06	88010641	5F520
W01	Cord, Line Assy, Mates with JN24, 125V	JN25	IPC-65010B-01	BERQUIST
W02	Cord, Line Assy, Mates with JN24, 125V	JN25	IPC-65010B-01	BERQUIST

206-5150-01 AC Distribution Assy (2x3way)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Socket, 3 pin, Recessed, 250Vac, 6A	JT22	EAC309	82389
J02	Conn, AC Panel Outlet/Socket,250V/15A	JDP45	6600-3300	61935
J03	Conn, AC Panel Outlet/Socket,250V/15A	JDP45	6600-3300	61935
J04	Conn, AC Panel Outlet/Socket,250V/15A	JDP45	6600-3300	61935
J05	Conn, Socket, 3 pin, Recessed, 250Vac, 6A	JT22	EAC309	82389
J06	Conn, AC Panel Outlet/Socket,250V/15A	JDP45	6600-3300	61935
J07	Conn, AC Panel Outlet/Socket,250V/15A	JDP45	6600-3300	61935
J08	Conn, AC Panel Outlet/Socket,250V/15A	JDP45	6600-3300	61935

206-6272 Ribbon Cable Assy - NAL07

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W1P01	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779
W1P02	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779
W1P03	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779

206-6520 Refld Power Probe PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Receptacle, Right Angle, SMA, PWB Mount	JN60	132203(RoHS)	02660
R01	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R02	Not Used	-	NOT USED	37338
R03	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS

206-6522 RF Monitor Probe PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Receptacle, Right Angle, SMA, PWB Mount	JN60	132203(RoHS)	02660
R01	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R02	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R03	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS

206-6524 Fwd Power/RF Sample Probe PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Receptacle, Right Angle, SMA, PWB Mount	JN60	132203(RoHS)	02660
R01	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R02	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R03	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS

206-8082 4 Input Reject PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C02	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C03	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C04	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
CR01	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR02	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR03	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR04	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
J01	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
J02	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
R01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R03	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R04	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R05	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R06	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R07	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R08	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R09	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R10	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R11	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R12	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R13	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R14	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R15	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R16	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R17	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R18	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R19	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R20	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124

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206-8082 4 Input Reject PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R21	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R22	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R23	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R24	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R25	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R26	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R27	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R28	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R29	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R30	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R31	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R32	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R33	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R34	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R35	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R36	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R37	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R38	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R39	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R40	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R41	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R42	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R43	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R44	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R45	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R46	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R47	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R48	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124

206-8101-04 Coax Cable Set Assy-NV10/NV7.5

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W01P1	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W01P2	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W02P1	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W02P2	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W05P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W05P2	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W06P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W06P2	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W20P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W20P2	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W21P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W21P2	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W22J1	Conn, Coax, Jack, BNC, Crimp	JT13	24-BNC-50-3-1C/133 NE	0GZ58
W22P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W30P1	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W30P2	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W33P1	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W33P2	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W34P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W34P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W37P1	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W37P2	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W40P1	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W40P2	Conn, Coax, BNC, Plug, 50ohm,Crimp	JDP24	225395-7	09482
W41P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W41P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W42P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W42P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58

206-8103-04 Ribbon Cable Set Assy-NV10/NV7.5

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W10P1	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W10P2	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W10P3	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W10P4	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W10P5	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W11P1	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W11P2	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W13P1	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W13P2	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W14P1	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779
W14P2	Conn, Recept, Ribbon Cable, 20 pin	JP45	746288-4	00779

206-8104-04 AC Cableform Assy - NV10/NV7.5

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P01	Cord, Line Assy, Mates with JN24, 125V	JN25	IPC-65010B-01	BERQUIST
P04	Cord, Line Assy, Mates with JN24, 125V	JN25	IPC-65010B-01	BERQUIST
TB02	Pwr Dist Block, 175A, 2/0-8AWG x 1, 4-14 AWG x 4	JR56	PDBFS220	
TB03	Pwr Dist Block, 175A, 2/0-8AWG x 1, 4-14 AWG x 4	JR56	PDBFS220	

206-8106-04 Backplane Cableform Assy-NV10/NV7.5

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W23	Cable Cat6E, 3ft, Shld, Blue,26AWG, 75degC, noguard	UA178	ZM6A-S03-06-UA178(RoHS)	
W24	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	
W25	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	
W26	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	
W28	Cable Cat6E, 3ft, Shld, Blue,26AWG, 75degC, noguard	UA178	ZM6A-S03-06-UA178(RoHS)	
W29	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	
W31	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	
W32	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	
W35	Cable Cat6E, 3ft, Shld, Blue,26AWG, 75degC, noguard	UA178	ZM6A-S03-06-UA178(RoHS)	
W36	Cable Cat6E, 3ft, Shld, Blue,26AWG, 75degC, noguard	UA178	ZM6A-S03-06-UA178(RoHS)	
W38	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	
W39	Cable Cat6E, 4ft, Shld, Blue,26AWG, 75degC, noguard	UA179	ZM6A-S04-06-UA179(RoHS)	

206-8108-04 LV Cableform Assy-NV10/NV7.5

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C02	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C03	Not Used	-	NOT USED	37338
C04	Not Used	-	NOT USED	37338
C05	Not Used	-	NOT USED	37338
C06	Capacitor, Ceramic, 0.47uF 10% 50V	CCG09	CKR06BX474KRV	56289
C07	Capacitor, Ceramic, 0.47uF 10% 50V	CCG09	CKR06BX474KRV	56289
E10	Lug, Crimp, Joint, Butt,16-14 AWG, Blue	HAR29	320562	09482
E11	Lug, Crimp, Joint, Butt,16-14 AWG, Blue	HAR29	320562	09482
E12	Lug, Crimp, Joint, Butt,16-14 AWG, Blue	HAR29	320562	09482
E13	Lug, Crimp, Joint, Butt,16-14 AWG, Blue	HAR29	320562	09482
E14	Lug, Crimp, Joint, Butt,16-14 AWG, Blue	HAR29	320562	09482
E15	Lug, Crimp, Joint, Butt,16-14 AWG, Blue	HAR29	320562	09482
P02	Cord,AC,Jumper,3-cond,125V/250V 10A, 8ft	JN55	2143H-10-C3	VOLEX PW
P03	Cord,AC,Jumper,3-cond,125V/250V 10A, 8ft	JN55	2143H-10-C3	VOLEX PW
P05	Cord,AC,Jumper,3-cond,125V/250V 10A, 8ft	JN55	2143H-10-C3	VOLEX PW
P06	Cord,AC,Jumper,3-cond,125V/250V 10A, 8ft	JN55	2143H-10-C3	VOLEX PW
P07	MTA, Standard Dust Cover, 12 pin	JU04	1-640551-2	09482
P07	MTA, Keyed Closed End Housing,12pin,22AWG	JU26	1-644463-2	00779
P08	Conn, Recept, Mini-Fit dualrow, 4-pin	JP59	39-01-2045	MOLEX
P08	Contact, Pin, 18-24AWG, Mini-fit (Crimp)	JQ49	39-00-0039	27264
P09	Cable 6ft, 18AWG, Plug Ø 2.1mm/5.5mm	UB75	310-920	L3845
P10	MTA, Closed End Housing, 2-pin, 24AWG	JU30	640434-2	00779
P10	MTA,Standard Dust Cover, 2-PIN	JU44	640551-2	AMP
P11	Conn, 2mm, Housing 2, PH Series, White	JU63	PHR-2(RoHS)	
P11	Conn, Term, PH Series, Crimp,24-30 AWG	JU64	SPH-002T-P0.5S(RoHS)	
P12	MTA, Standard Dust Cover, 4 pin	JU02	640551-4	09482
P12	MTA, Closed End Housing, 4 pin, 20AWG	JU05	640432-4	09482
P13	MTA, Standard Dust Cover, 4 pin	JU02	640551-4	09482
P13	MTA, Closed End Housing, 4 pin, 20AWG	JU05	640432-4	09482
P16	MTA, Standard Dust Cover, 4 pin	JU02	640551-4	09482
P16	MTA, Closed End Housing, 4 pin, 20AWG	JU05	640432-4	09482
P17	MTA, Standard Dust Cover, 4 pin	JU02	640551-4	09482
P17	MTA, Closed End Housing, 4 pin, 20AWG	JU05	640432-4	09482
P18	Not Used	-	NOT USED	37338
P19	Not Used	-	NOT USED	37338
P20	Not Used	-	NOT USED	37338
P21	Not Used	-	NOT USED	37338

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206-8108-04 LV Cableform Assy-NV10/NV7.5

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P22	Not Used	-	NOT USED	37338
P23	Not Used	-	NOT USED	37338
P24	Conn, Recept, Mate-N-Lok, 3 pin, Mini	JT40	172234-1	09482
P24	Conn, Contact, Socket, 22-18,Mate-N-Lok	JT42	770988-1	09482
P25	Conn, Recept, Mate-N-Lok, 3 pin, Mini	JT40	172234-1	09482
P25	Conn, Contact, Socket, 22-18,Mate-N-Lok	JT42	770988-1	09482
P26	Not Used	-	NOT USED	37338
P27	Not Used	-	NOT USED	37338
W03	Cable Cat6E, 10ft, Shld, Blue,26AWG, 75degC, noguard	UA182	ZM6A-S10-06-UA182(RoHS)	
W04	Cable Cat6E, 10ft, Shld, Blue,26AWG, 75degC, noguard	UA182	ZM6A-S10-06-UA182(RoHS)	
W07	Cord,AC,Jumper,3-cond,125V/250V 10A, 8ft	JN55	2143H-10-C3	VOLEX PW
W08	Cord,AC,Jumper,3-cond,125V/250V 10A, 8ft	JN55	2143H-10-C3	VOLEX PW
W09	Cable Cat6E, 10ft, Shld, Blue,26AWG, 75degC, noguard	UA182	ZM6A-S10-06-UA182(RoHS)	
W15	Cable Cat6E, 3ft, Shld, Blue,26AWG, 75degC, noguard	UA178	ZM6A-S03-06-UA178(RoHS)	
W16	Cable, 3ft, 9-pin D-sub, M/FStraight-Through	UA129	PCM-2100-03	
W17	Cable, 3ft, 9-pin D-sub, M/FStraight-Through	UA129	PCM-2100-03	

206-8160 Splitter/Changeover PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
CR01	Diode, Schottky, 70V, 15mA	QK09	1N5711 (STATIC)	50434
CR02	Diode, General Purpose, 200V,0.1A	QAP29	1N4938	07263
J01	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J02	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J03	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
K01	Relay, Coaxial, SPDT, 12VDC	KB44	CX-120P	TOHTSU
R01	Resistor, MF, 332 Ohms, 1PC 1/4W	RAB19	MF1/4DL3320F	59124
R02	Resistor, MF, 121 Ohms, 1%, 1/4W	RAB14	MF1/4DL1210F	59124
R03	Resistor, MF, 3.32K Ohms, 1PC1/4W	RAB31	MF1/4DL3321F	59124
R04	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

206-8170 4 Way RF Drive Splitter PWBAssy (NV10)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J02	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J03	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J04	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
R01	Not Used	-	NOT USED	37338
R02	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R03	Not Used	-	NOT USED	37338
R04	Not Used	-	NOT USED	37338
R05	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R06	Not Used	-	NOT USED	37338
R07	Not Used	-	NOT USED	37338
R08	Resistor, SMT, 3.9 Ohms, 1%, 1W, 2512	RAD58	ERJ-1TRQF3R9U	
R09	Not Used	-	NOT USED	37338
R10	Resistor, SMT, 1820 Ohms, 1%, 1W, 2512	RAD66	ERJ-1TNF1821U	
R11	Resistor,SMT,MF,10ohms,1%,2W	RAD49	CR2512-2W-10R0F	VENKEL
R12	Resistor, SMT, 1820 Ohms, 1%, 1W, 2512	RAD66	ERJ-1TNF1821U	
R13	Not Used	-	NOT USED	37338
R14	Resistor,SMT,MF,10ohms,1%,2W	RAD49	CR2512-2W-10R0F	VENKEL
R15	Not Used	-	NOT USED	37338
R16	Resistor, SMT, 845 Ohms, 1%, 1W, 2512	RAD65	ERJ-1TNF8450U	
R17	Resistor, SMT, 15 Ohms, 1%, 1W, 2512	RAD59	ERJ-1TNF15R0U	
R18	Resistor, SMT, 845 Ohms, 1%, 1W, 2512	RAD65	ERJ-1TNF8450U	
R19	Not Used	-	NOT USED	37338
R20	Resistor, SMT, 3.9 Ohms, 1%, 1W, 2512	RAD58	ERJ-1TRQF3R9U	
R21	Not Used	-	NOT USED	37338
R22	Resistor, SMT, 1820 Ohms, 1%, 1W, 2512	RAD66	ERJ-1TNF1821U	
R23	Resistor,SMT,MF,10ohms,1%,2W	RAD49	CR2512-2W-10R0F	VENKEL
R24	Resistor, SMT, 1820 Ohms, 1%, 1W, 2512	RAD66	ERJ-1TNF1821U	
R25	Resistor, Chip, AIN, 50 Ohm,2%, 30W	RT60	CS13725TO50GBK(RoHS)	
R26	Resistor, Chip, AIN, 50 Ohm,2%, 30W	RT60	CS13725TO50GBK(RoHS)	
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

206-8407 Fan Assy, NV Door(Dual Blower)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L01	Ferrite, Clip-On, NiZn, 320ohms @ 100 MHz	LA52	28A2025-0A2	
L02	Ferrite, Clip-On, NiZn, 320ohms @ 100 MHz	LA52	28A2025-0A2	
P01	Conn, Plug, 3 pin, Mate-N-Lok, Mini	JT39	172166-1	09482
P01	Conn, Contact, Pin, 22-18, Mate-N-Lok	JT41	770987-1	09482
P02	Conn, Plug, 3 pin, Mate-N-Lok, Mini	JT39	172166-1	09482
P02	Conn, Contact, Pin, 22-18, Mate-N-Lok	JT41	770987-1	09482

206-8973 Single Board Computer Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
B01	Fan, 1RU, Celeron M. FCPGA,1.6C/W	ZAP31	I31G	SAW84
U01	Motherboard, EPIC, 825GM,479 FSB400, 12V	UB66	NANO-8522G-R10	SAW84
U02	IC, CPU, Pentium M, FCPGA	UB80	RH80536GC0292M(Static)	79942
U03	IC, Memory,1GB, 64B, DDR400,SODIM	UB68	KVR400X64SC3A/1G	OP2J5
U04	Not Used	-	NOT USED	37338
U05	Memory, Compact Flash Card,4GB	UB76	SDCFH-004G-A11(STATIC) SanDisk Corporation	03LB0

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A02	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A03	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A04	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A05	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A06	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A07	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A08	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A09	PA PWB Assy, HD0.032" PA spacer plate	NAPA20C/01	206-1180-05	37338
A10	Power Module Interface PWBAssy	NAPI104/03	206-1170-05	37338
A11	Module Splitter PWB Assy (RLS 3)	NAPI105/01A	206-1160-02	37338
A12	Module Combiner PWB Assy	206-1150	206-1150	37338
A12R1	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A12R10	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A12R2	Res, (BeO), 100 ohms, 5%, 250W Flng Mt w/stress relief	RT70	31A20271005F	
A12R3	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A12R4	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A12R5	Res, (BeO), 100 ohms, 5%, 250W Flng Mt w/stress relief	RT70	31A20271005F	
A12R6	Res, (BeO), 100 ohms, 5%, 250W Flng Mt w/stress relief	RT70	31A20271005F	
A12R7	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A12R8	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A12R9	Res, (BeO), 100 ohms, 5%, 250W Flng Mt w/stress relief	RT70	31A20271005F	
A12U1	Coupler, Hybrid, 90 degrees,3dB, Caseless	UX77	10261-3	31597
B01	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B02	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B03	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B04	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B05	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B06	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
J01	Conn, Coax, Recept, 7/16 DIN,Panel,50ohm	JA44	23-716-50-0-3 HUBER & SUHNER AG	
RT01	Thermistor,-30/105ºC,10Kohms@25ºC,Neg,Bvalue 3435K	RX49	EC2F103A2-07U002	

NAF118 Filter Assy, 10kW (LHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L02	Inductor Assy	206-6102	206-6102	37338

NAF119/01A Combiner/Filter Assy, 10kW (LHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Filter Assy, 10kW (LHS)	NAF118	206-6100	37338
J01	Conn, 7/16 DIN, Plug, 19.51mmFerrule, Flange Mt.	JA82	73134-2351	
J02	Conn, 7/16 DIN, Plug, 14.73mmFerrule, Flange Mt.	JA83	73134-2350	
J03	Conn, 7/16 DIN, Plug, 14.73mmFerrule, Flange Mt.	JA83	73134-2350	
J04	Conn, 7/16 DIN, Plug, 19.51mmFerrule, Flange Mt.	JA82	73134-2351	
J05	Conn, Coax, N, Recept, 50 ohm	JA52	KN-79-93	11636
J05	Conn, Coax, BNC, Recept, 50ohm	JDP26	UG1094/U	02660
J06	Conn, Coax, N, Recept, 50 ohm	JA52	KN-79-93	11636
J06	Conn, Coax, BNC, Recept, 50ohm	JDP26	UG1094/U	02660
J07	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660

NAFP109A Power Probe Assy, NV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Fwd Power/RF Sample Probe PWB Assy	206-6524	206-6524	37338
A02	Refld Power Probe PWB Assy	206-6520	206-6520	37338
A03	RF Monitor Probe PWB Assy	206-6522	206-6522	37338
A04	Fwd Power/RF Sample Probe PWB Assy	206-6524	206-6524	37338
A05	Fwd Power/RF Sample Probe PWB Assy	206-6524	206-6524	37338

NAI21 RF Drive Splitter/Changeover Assy, NV10

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Splitter/Changeover PWB Assy	206-8160	206-8160	37338
A02	4 Way RF Drive Splitter PWBAssy (NV10)	206-8170	206-8170	37338
A1R4	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1U1	Coupler, Hybrid, 90 degrees,3dB, Caseless	UX77	10261-3	31597
A2U1	Coupler, Hybrid, 90 degrees,3dB, Caseless	UX77	10261-3	31597
A2U2	Coupler, Hybrid, 90 degrees,3dB, Caseless	UX77	10261-3	31597

NAL07A 4 Input Reject Load Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	4 Input Reject PWB Assy	206-8082	206-8082	37338
A1R01	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R02	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R03	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R04	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R05	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R06	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R07	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R08	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R09	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R10	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R11	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R12	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R13	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R14	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R15	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R16	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R17	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R18	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R25	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R26	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R27	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R28	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R29	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R30	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R31	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R32	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R33	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R34	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R35	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R36	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R37	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R38	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R39	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R40	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R41	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
A1R42	Res, (BeO), 50 ohms, 5%, 250W, Flng Mt w/stress relief	RT69	31A2027505F	
B01	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	

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NAL07A 4 Input Reject Load Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
B02	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B03	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
J01	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660
J02	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660
J03	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660
J04	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660

NAPA20C/01 PA PWB Assy, HD0.032" PA spacer plate

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Metal, Polyester, 10uF 100V	CT38	DME1W10K	14655
C02	Capacitor,SMT,Ceramic,15pF,50V,5%	CT47	C1206C150J5GAC	91929
C03	Capacitor, Metal, Polyester, 10uF 100V	CT38	DME1W10K	14655
C04	Not Used	-	NOT USED	37338
C05	Capacitor, Ceramic, 1.0uF 100V	CAP16	RPE114Z5U105M100V	91929
C06	Capacitor,SMT,Ceramic,100pF,50V,5%	CT49	C1206C101J5GAC	91929
C07	Capacitor,SMT,Ceramic,56pF,50V,5%	CT48	C1206C560J5GAC	91929
C08	Capacitor, Ceramic, 1.0uF 100V	CAP16	RPE114Z5U105M100V	91929
C09	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C10	Capacitor, Ceramic, 0.01uF 10% 100V	CCG04	CKR05BX103KRV	56289
C11	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C12	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C13	Capacitor,SMT,Ceramic,470pF,200V,10%	CT52	ATC100B471KW200X	29990
C14	Capacitor,SMT,Ceramic,0.001uF,50V,10%	CT53	ATC100B102KW50X	29990
C15	Capacitor,SMT,Ceramic,0.001uF,50V,10%	CT53	ATC100B102KW50X	29990
C16	Cao, Electrolytic, 1000uF, +/-20%, 63V Radial Lead	CAP81	EEUFC1J102(RoHS)	
C17	Capacitor,SMT,Ceramic,15pF,50V,5%	CT47	C1206C150J5GAC	91929
C18	Not Used	-	NOT USED	37338
L01	Not Used	-	NOT USED	37338
L01	Wire, 16 AWG, Stranded, White	WB05	H0102005	SUPRE
L02	Not Used	-	NOT USED	37338
L03	Inductor, used with PA NAPA16 & 20	LA51	198-1035	37338
L04	Inductor, Horseshoe, used with PA NAPA16 & 20	LA50	198-1033	37338
L05	Inductor, Horseshoe, used with PA NAPA16 & 20	LA50	198-1033	37338
L06	Core, Ferrite, 2 Hole, K Mtl	LA45	12-365-K	33062
L07	Core, Ferrite, 2 Hole, K Mtl	LA45	12-365-K	33062
Q01	Transistor, (BeO), FET, NChannel, Dual	QAP58	SD2942(STATIC)	ST MICRO
R01	Resistor, SMT, MF, 15K Ohms,1%, 1/4W	RAD39	RK73H2BL1502F	59124
R02	Resistor, SMT, MF, 15K Ohms,1%, 1/4W	RAD39	RK73H2BL1502F	59124
R03	Resistor,SMT,MF,20ohms,1%,2W	RAD50	CR2512-2W-20R0F	VENKEL
R04	Resistor,SMT,MF,20ohms,1%,2W	RAD50	CR2512-2W-20R0F	VENKEL
R05	Resistor,SMT,MF,20ohms,1%,2W	RAD50	CR2512-2W-20R0F	VENKEL
R08	Resistor,SMT,MF,20ohms,1%,2W	RAD50	CR2512-2W-20R0F	VENKEL
R09	Resistor,SMT,MF,20ohms,1%,2W	RAD50	CR2512-2W-20R0F	VENKEL
R10	Resistor,SMT,MF,20ohms,1%,2W	RAD50	CR2512-2W-20R0F	VENKEL
R11	Resistor, SMT, MF, 47.5K Ohms, 1% 1/4W	RAD45	RK73H2BL4752F	59124
R12	Resistor, Film, 10 Ohms, 5%, 2W	RBP01	GS-3, 10 OHMS	75042
R13	Resistor, Film, 10 Ohms, 5%, 2W	RBP01	GS-3, 10 OHMS	75042

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NAPA20C/01 PA PWB Assy, HD0.032" PA spacer plate

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
T01	Cable, Coax, 50ohm, Strand, RG188A/U	WE38	A4188A	14433
T02A	Wire, 22 AWG, Stranded, 1-cond/shield,Tef	WF17	83305	70903
T02B	Wire, 22 AWG, Stranded, 1-cond/shield,Tef	WF17	83305	70903
T03A	Wire, 16 AWG, 1-Cond/Shield, Teflon	WF22	83308	70903
T03B	Wire, 16 AWG, 1-Cond/Shield, Teflon	WF22	83308	70903
T04	Cable,Coax,50 ohm,82.5% VP,SRJacket,NEWcel-GX16	WE46	N32-32S-259-6	74116

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
BT01	Battery, Lithium, 3V,20mm Coin Cell	BBLT01	CR2032	PANAS
C001	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C002	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C003	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C004	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C005	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C006	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C007	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C008	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C009	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C010	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C011	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C012	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C013	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C014	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C015	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C016	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C017	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C018	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C019	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C020	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C021	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C022	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C023	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C024	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C025	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C026	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C027	Cap,SMT,Tantalum,10uF,10%,16V,1411	CTFS01	T494B106K016AS	31433
C028	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C029	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C030	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C031	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C032	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C033	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C034	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C035	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C036	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C037	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C038	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C039	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C040	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C041	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C042	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C043	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C044	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C045	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C046	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C047	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C048	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C049	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C050	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C051	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C052	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C053	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C054	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C055	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C056	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C057	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C058	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C059	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C060	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C061	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C062	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C063	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C064	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C065	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C066	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C067	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C068	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C069	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C070	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C071	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C072	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C073	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C074	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C075	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C076	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C077	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C078	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C079	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C080	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C081	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C082	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C083	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C084	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C085	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C086	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C087	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C088	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C089	Cap,SMT,Tantalum,10uF,10%,35V,2917	CTFS03	T494D106K035AS	31433
C090	Cap,SMT,Tantalum,47uF,10%,16V,2917	CTFS05	T494D476K016AS	31433
C091	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C092	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C093	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C094	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C095	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C096	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C097	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C098	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C099	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C100	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C101	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C102	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C103	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C104	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C105	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C106	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C107	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C108	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C109	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C110	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C111	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C112	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C113	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C114	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C115	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C116	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C117	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C118	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C119	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C120	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C121	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C122	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C123	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C124	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C125	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C126	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C127	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C128	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C129	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C130	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C131	Cap,SMT,Tantalum,10uF,10%,35V,2917	CTFS03	T494D106K035AS	31433
C132	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C133	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C134	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C135	Not Used	-	NOT USED	37338
C136	Not Used	-	NOT USED	37338
C137	Cap,SMT,Tantalum,1uF,10%,35V,1411	CTFS02	T494B105K035AS	31433
C138	Not Used	-	NOT USED	37338
C139	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C140	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C141	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C142	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C143	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C144	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C145	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C146	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C147	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C148	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C149	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C150	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C151	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C152	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C153	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C154	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C155	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C156	Not Used	-	NOT USED	37338
C157	Not Used	-	NOT USED	37338
C158	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C159	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C160	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C161	Cap,SMT,Tantalum,1uF,10%,35V,1411	CTFS02	T494B105K035AS	31433
C162	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C163	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C164	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C165	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C166	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C167	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C168	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C169	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C170	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C171	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C172	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C173	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C174	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C175	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C176	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C177	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C178	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C179	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C180	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C181	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C182	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C183	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C184	Cap,SMT,Ceramic,390pF,2%,50V,C0G,0603	CCFS37	C0603C391G5GAC	31433
C185	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C186	Not Used	-	NOT USED	37338
C187	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C188	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C189	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C190	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C191	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C192	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C193	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C194	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C195	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C196	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C197	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C198	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C199	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C200	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C201	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C202	Not Used	-	NOT USED	37338
C203	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C204	Not Used	-	NOT USED	37338
C205	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C206	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C207	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C208	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C209	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C210	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C211	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C212	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C213	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C214	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C215	Not Used	-	NOT USED	37338
C216	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C217	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C218	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C219	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C220	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C221	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C222	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C223	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C224	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C225	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C226	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C227	Not Used	-	NOT USED	37338
C228	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C229	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C230	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C231	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C232	Cap,SMT,Ceramic,390pF,2%,50V,C0G,0603	CCFS37	C0603C391G5GAC	31433
C233	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C234	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C235	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C236	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C237	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP
C238	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP
C239	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C240	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C241	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C242	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C243	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C244	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C245	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C246	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C247	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C248	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C249	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C250	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C251	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C252	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C253	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C254	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C255	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C256	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C257	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C258	Cap,SMT,Tantalum,10uF,10%,35V,2917	CTFS03	T494D106K035AS	31433
C259	Not Used	-	NOT USED	37338
C260	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C261	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C262	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C263	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C264	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C265	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C266	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C267	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C268	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C269	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C270	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C271	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C272	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP
C273	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C274	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C275	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C276	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C277	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C278	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C279	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C280	Not Used	-	NOT USED	37338
C281	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C282	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C283	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C284	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C285	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C286	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C287	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C288	Not Used	-	NOT USED	37338
C289	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C290	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C291	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C292	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C293	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C294	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C295	Not Used	-	NOT USED	37338
C296	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C297	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C298	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C299	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C300	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C301	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C302	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C303	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C304	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C305	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C306	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C307	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C308	Cap,SMT,Tantalum,10uF,10%,35V,2917	CTFS03	T494D106K035AS	31433
C309	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C310	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C311	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C312	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C313	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C314	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C315	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C316	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C317	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C318	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C319	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C320	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C321	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C322	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C323	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C324	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C325	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C326	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C327	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C328	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C329	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C330	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C331	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C332	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C333	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C334	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C335	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C336	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C337	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C338	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C339	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C340	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C341	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C342	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C343	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C344	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C345	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C346	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C347	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C348	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C349	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C350	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C351	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C352	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C353	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C354	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C355	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C356	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C357	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C358	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C359	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C360	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C361	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C362	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C363	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C364	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C365	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C366	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C367	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C368	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C369	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C370	Not Used	-	NOT USED	37338
CR01	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR02	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR03	Not Used	-	NOT USED	37338
CR04	Not Used	-	NOT USED	37338
CR05	Not Used	-	NOT USED	37338
CR06	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR07	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR08	Not Used	-	NOT USED	37338
CR09	Not Used	-	NOT USED	37338
CR10	Not Used	-	NOT USED	37338
CR11	Not Used	-	NOT USED	37338
CR12	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR13	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR14	Diode, SMT, Schottky, 40V, 1A, SMA	QDDS02	STPS140A(RoHS)	
CR15	Not Used	-	NOT USED	37338
CR16	Not Used	-	NOT USED	37338
CR17	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR18	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR19	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR20	Diode, SMT, Schottky, 40V, 1A, SMA	QDDS02	STPS140A(RoHS)	
CR21	Not Used	-	NOT USED	37338
CR22	Not Used	-	NOT USED	37338
CR23	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR24	Not Used	-	NOT USED	37338
CR25	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR26	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR27	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR28	Not Used	-	NOT USED	37338
CR29	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR30	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR31	Not Used	-	NOT USED	37338
CR32	Not Used	-	NOT USED	37338
CR33	Not Used	-	NOT USED	37338
CR34	Not Used	-	NOT USED	37338
CR35	Not Used	-	NOT USED	37338
CR36	Not Used	-	NOT USED	37338
CR37	Not Used	-	NOT USED	37338
CR38	Not Used	-	NOT USED	37338
CR39	Not Used	-	NOT USED	37338
CR40	Not Used	-	NOT USED	37338
CR41	Not Used	-	NOT USED	37338
CR42	Not Used	-	NOT USED	37338
CR43	Not Used	-	NOT USED	37338
CR44	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR45	Not Used	-	NOT USED	37338
CR46	Not Used	-	NOT USED	37338
CR47	Not Used	-	NOT USED	37338
CR48	Not Used	-	NOT USED	37338
CR49	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR50	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR51	Not Used	-	NOT USED	37338
CR52	Not Used	-	NOT USED	37338
CR53	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR54	Not Used	-	NOT USED	37338
CR55	Not Used	-	NOT USED	37338
CR56	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR57	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR58	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR59	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR60	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR61	Not Used	-	NOT USED	37338
CR62	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR63	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR64	Not Used	-	NOT USED	37338
CR65	Not Used	-	NOT USED	37338
CR66	Not Used	-	NOT USED	37338
CR67	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR68	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR69	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR70	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR71	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR72	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR73	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR74	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR75	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR76	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR77	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR78	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR79	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR80	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR81	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR82	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR83	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR84	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR85	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR86	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR87	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR88	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR89	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR90	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR91	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR92	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR93	Diode,SMT,Zener,39V,5%,3W,SMB	QDZS04	1SMB5939BT3	04713
CR94	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR95	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
DS01	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS02	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS03	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS04	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS05	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS06	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS07	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS08	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS09	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS10	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS11	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS12	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS13	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS14	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS15	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS16	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS17	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS18	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS19	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS20	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS21	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS22	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS23	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS24	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS25	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
E01	Not Used	-	NOT USED	37338
E02	Not Used	-	NOT USED	37338

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
E03	Not Used	-	NOT USED	37338
E04	Not Used	-	NOT USED	37338
E05	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E06	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E07	Not Used	-	NOT USED	37338
E08	Not Used	-	NOT USED	37338
E09	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E10	Not Used	-	NOT USED	37338
E11	Not Used	-	NOT USED	37338
E12	Not Used	-	NOT USED	37338
E13	Not Used	-	NOT USED	37338
E14	Not Used	-	NOT USED	37338
E15	Not Used	-	NOT USED	37338
E16	Not Used	-	NOT USED	37338
E17	Not Used	-	NOT USED	37338
E18	Not Used	-	NOT USED	37338
E19	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E20	Not Used	-	NOT USED	37338
J01	Conn, Header, Ribbon Cbl, 20Pin	JQ55	103308-5	00779
J02	Conn, Header, Ribbon Cbl, 20Pin	JQ55	103308-5	00779
J03	Conn, Header, Ribbon Cbl, 20Pin	JQ55	103308-5	00779
J04	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J05	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J06	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J07	MTA, Square Post Header Assy,POL&N,2-pin	JU29	640445-2	00779
J08	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J09	Conn, Header, Ribbon Cbl, 20Pin	JQ55	103308-5	00779
J10	Conn, Header, Ribbon Cbl, 20Pin	JQ55	103308-5	00779
J11	MTA, Keyed Square Post HeaderAssy,12 Pin	JU23	1-647123-2	00779
J12	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J13	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J14	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J15	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J16	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
J17	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J18	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J19	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J20	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J21	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J22	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J23	Conn, Socket 37-pin D-SUB, 90Kit	200-5090	200-5090	37338
J24	Conn, Plug, D-Sub, 37-Pin PWB, 90	JQ51	621-037-260-043	EDAC
J25	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
K01	Relay, 5V Coil, 2PDT, 1A	KC18	TQ2-5V	61529
K02	Relay, 5V Coil, 2PDT, 1A	KC18	TQ2-5V	61529
K03	Not Used	-	NOT USED	37338
K04	Not Used	-	NOT USED	37338
L01	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
L02	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
L03	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L04	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L05	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L06	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L07	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L08	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L09	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L10	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
L11	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
L12	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L13	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L14	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L15	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L16	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L17	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L18	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L19	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
L20	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
L21	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L22	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L23	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L24	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L25	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L26	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L27	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L28	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L29	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L30	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L31	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L32	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L33	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L34	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L35	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
L36	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
Q01	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q02	Transistor,SMT,MOSFET,N-Channel,60V,115mA,SOT-23	QN53	2N7002LT1G(STATIC)(ROHS)	1MQ07
Q03	Not Used	-	NOT USED	37338
Q04	Not Used	-	NOT USED	37338
R001	Not Used	-	NOT USED	37338
R002	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R003	Not Used	-	NOT USED	37338
R004	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R005	Resistor,SMT,MF,221ohms,1%,1/10W,0603	RFFS30	RK73H1JLTD2210F	59124
R006	Resistor,SMT,MF,221ohms,1%,1/10W,0603	RFFS30	RK73H1JLTD2210F	59124
R007	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R008	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R009	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R010	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R011	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R012	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R013	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R014	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R015	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R016	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R017	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R018	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R019	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R020	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R021	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R022	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R023	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R024	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R025	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R026	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R027	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R028	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R029	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R030	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R031	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R032	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R033	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R034	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R035	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R036	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R037	Not Used	-	NOT USED	37338
R038	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R039	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R040	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R041	Resistor,SMT,MF,121Kohms,1%,1/10W,0603	RFFS63	RK73H1JLTD1213F	59124
R042	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R043	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R044	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R045	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R046	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R047	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R048	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R049	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R050	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R051	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R052	Not Used	-	NOT USED	37338
R053	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R054	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R055	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R056	Resistor,SMT,MF,20ohms,1%,2W	RAD50	CR2512-2W-20R0F	VENKEL
R057	Resistor,SMT,MF,10ohms,1%,2W	RAD49	CR2512-2W-10R0F	VENKEL
R058	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R059	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R060	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R061	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R062	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R063	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R064	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R065	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R066	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R067	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R068	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R069	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R070	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R071	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R072	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R073	Not Used	-	NOT USED	37338
R074	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R075	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R076	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R077	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R078	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R079	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R080	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R081	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R082	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R083	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R084	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R085	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R086	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R087	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R088	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R089	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R090	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R091	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R092	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R093	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R094	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R095	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R096	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R097	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R098	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R099	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R100	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R101	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R102	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R103	Not Used	-	NOT USED	37338
R104	Not Used	-	NOT USED	37338
R105	Resistor,SMT,MF,1.00Mohms,1%,1/10W,0603	RFFS74	RK73H1JLTD1004F	59124
R106	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R107	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R108	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R109	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R110	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R111	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R112	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R113	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R114	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R115	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R116	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R117	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R118	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R119	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R120	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R121	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R122	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R123	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R124	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R125	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R126	Not Used	-	NOT USED	37338
R127	Not Used	-	NOT USED	37338
R128	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R129	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R130	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R131	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R132	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R133	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R134	Not Used	-	NOT USED	37338
R135	Not Used	-	NOT USED	37338
R136	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R137	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R138	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R139	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R140	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R141	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R142	Resistor, SMT, MF, 274 Ohms,1% 1/4W	RAD18	RK73H2BL2740F	59124
R143	Not Used	-	NOT USED	37338
R144	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R145	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R146	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R147	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R148	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R149	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R150	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R151	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R152	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R153	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R154	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R155	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R156	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R157	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R158	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R159	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R160	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R161	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R162	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R163	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R164	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R165	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R166	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R167	Not Used	-	NOT USED	37338
R168	Not Used	-	NOT USED	37338
R169	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R170	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R171	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R172	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R173	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R174	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R175	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R176	Resistor,SMT,MF,1.00Mohms,1%,1/10W,0603	RFFS74	RK73H1JLTD1004F	59124
R177	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R178	Resistor, SMT, MF, 100 Ohms,1% 1/4W	RAD13	RK73H2BL1000F	59124
R179	Resistor, SMT, MF, 392 Ohms,1% 1/4W	RAD20	RK73H2BL3920F	59124
R180	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R181	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R182	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R183	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R184	Not Used	-	NOT USED	37338
R185	Not Used	-	NOT USED	37338

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R186	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R187	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R188	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R189	Resistor, SMT, MF, 100 Ohms,1% 1/4W	RAD13	RK73H2BL1000F	59124
R190	Resistor, SMT, MF, 100 Ohms,1% 1/4W	RAD13	RK73H2BL1000F	59124
R191	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R192	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R193	Resistor, SMT, MF, 562 Ohms,1% 1/4W	RAD22	RK73H2BL5620F	59124
R194	Resistor, SMT, MF, 562 Ohms,1% 1/4W	RAD22	RK73H2BL5620F	59124
R195	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R196	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R197	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R198	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R199	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R200	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R201	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R202	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R203	Resistor,SMT,MF,1.00Mohms,1%,1/10W,0603	RFFS74	RK73H1JLTD1004F	59124
R204	Not Used	-	NOT USED	37338
R205	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R206	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R207	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R208	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R209	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R210	Not Used	-	NOT USED	37338
R211	Not Used	-	NOT USED	37338
R212	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R213	Resistor,SMT,MF,49.9ohms,1%,1/10W,0603	RAD53	RK73H1JLTD49R9F	59124
R214	Resistor,SMT,MF,49.9ohms,1%,1/10W,0603	RAD53	RK73H1JLTD49R9F	59124
R215	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R216	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R217	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R218	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R219	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R220	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R221	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R222	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R223	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R224	Not Used	-	NOT USED	37338

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R225	Resistor,SMT,MF,332Kohms,1%,1/10W,0603	RFFS68	RK73H1JLTD3323F	59124
R226	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R227	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R228	Resistor,SMT,MF,825Kohms,1%,1/10W,0603	RFFS73	RK73H1JLTD8253F	59124
R229	Not Used	-	NOT USED	37338
R230	Not Used	-	NOT USED	37338
R231	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R232	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R233	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R234	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R235	Not Used	-	NOT USED	37338
R236	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R237	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R238	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R239	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R240	Resistor,SMT,MF,825Kohms,1%,1/10W,0603	RFFS73	RK73H1JLTD8253F	59124
R241	Resistor, SMT, MF, 562 Ohms,1% 1/4W	RAD22	RK73H2BL5620F	59124
R242	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R243	Resistor,SMT,MF,332Kohms,1%,1/10W,0603	RFFS68	RK73H1JLTD3323F	59124
R244	Resistor, SMT, MF, 562 Ohms,1% 1/4W	RAD22	RK73H2BL5620F	59124
R245	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R246	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R247	Not Used	-	NOT USED	37338
R248	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R249	Not Used	-	NOT USED	37338
R250	Not Used	-	NOT USED	37338
R251	Not Used	-	NOT USED	37338
R252	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R253	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R254	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R255	Not Used	-	NOT USED	37338
R256	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R257	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R258	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R259	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R260	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R261	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R262	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R263	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R264	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R265	Not Used	-	NOT USED	37338
R266	Not Used	-	NOT USED	37338
R267	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R268	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R269	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R270	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R271	Not Used	-	NOT USED	37338
R272	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R273	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R274	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R275	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R276	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R277	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R278	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R279	Not Used	-	NOT USED	37338
R280	Not Used	-	NOT USED	37338
R281	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R282	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R283	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R284	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R285	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R286	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R287	Not Used	-	NOT USED	37338
R288	Not Used	-	NOT USED	37338
R289	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R290	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R291	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R292	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R293	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R294	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R295	Not Used	-	NOT USED	37338
R296	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R297	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R298	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R299	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R300	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R301	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R302	Not Used	-	NOT USED	37338

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R303	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R304	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R305	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R306	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R307	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R308	Not Used	-	NOT USED	37338
R309	Not Used	-	NOT USED	37338
R310	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R311	Resistor, SMT, MF, 121K Ohms,1% 1/4W	RAE02	RK73H2BL1213F	59124
R312	Resistor, SMT, MF, 121K Ohms,1% 1/4W	RAE02	RK73H2BL1213F	59124
R313	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R314	Not Used	-	NOT USED	37338
R315	Not Used	-	NOT USED	37338
R316	Not Used	-	NOT USED	37338
R317	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R318	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R319	Not Used	-	NOT USED	37338
R320	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R321	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R322	Resistor,SMT,MF,274ohms,1%,1/10W,0603	RFFS31	RK73H1JLTD2740F	59124
R323	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R324	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R325	Resistor, SMT, MF, 121K Ohms,1% 1/4W	RAE02	RK73H2BL1213F	59124
R326	Resistor, SMT, MF, 121K Ohms,1% 1/4W	RAE02	RK73H2BL1213F	59124
R327	Resistor,SMT,MF,82.5ohms,1%,1/10W,0603	RFFS25	RK73H1JLTD82R5F	59124
R328	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R329	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R330	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R331	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R332	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R333	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R334	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R335	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R336	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R337	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R338	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R339	Resistor, SMT, MF, 49.9 Ohms,1% 1/4W	RAE21	RK73H2BL49R9F	59124
R340	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R341	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R342	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R343	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R344	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R345	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R346	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R347	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R348	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R349	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R350	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R351	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R352	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R353	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R354	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R355	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R356	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R357	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R358	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R359	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R360	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R361	Not Used	-	NOT USED	37338
R362	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R363	Not Used	-	NOT USED	37338
R364	Not Used	-	NOT USED	37338
R365	Not Used	-	NOT USED	37338
R366	Not Used	-	NOT USED	37338
R367	Not Used	-	NOT USED	37338
R368	Not Used	-	NOT USED	37338
R369	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R370	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R371	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R372	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R373	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R374	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R375	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R376	Not Used	-	NOT USED	37338
R377	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R378	Resistor,SMT,MF,82.5ohms,1%,1/10W,0603	RFFS25	RK73H1JLTD82R5F	59124
R379	Resistor,SMT,MF,274ohms,1%,1/10W,0603	RFFS31	RK73H1JLTD2740F	59124
R380	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R381	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R382	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R383	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R384	Not Used	-	NOT USED	37338
R385	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R386	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R387	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R388	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R389	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R390	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R391	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R392	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R393	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R394	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R395	Not Used	-	NOT USED	37338
R396	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R397	Not Used	-	NOT USED	37338
R398	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R399	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R400	Not Used	-	NOT USED	37338
R401	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R402	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R403	Not Used	-	NOT USED	37338
R404	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R405	Resistor, SMT, MF, 49.9 Ohms,1% 1/4W	RAE21	RK73H2BL49R9F	59124
R406	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R407	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R408	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R409	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R410	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R411	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R412	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R413	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R414	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R415	Not Used	-	NOT USED	37338
R416	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R417	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R418	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R419	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R420	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R421	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R422	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R423	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R424	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R425	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R426	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R427	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R428	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R429	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R430	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R431	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R432	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R433	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R434	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R435	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R436	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R437	Not Used	-	NOT USED	37338
R438	Not Used	-	NOT USED	37338
R439	Not Used	-	NOT USED	37338
R440	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R441	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R442	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R443	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R444	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R445	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R446	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R447	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R448	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R449	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R450	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R451	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R452	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R453	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R454	Not Used	-	NOT USED	37338
R455	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R456	Not Used	-	NOT USED	37338
R457	Not Used	-	NOT USED	37338
R458	Not Used	-	NOT USED	37338

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R459	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R460	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R461	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R462	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R463	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R464	Not Used	-	NOT USED	37338
R465	Not Used	-	NOT USED	37338
R466	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R467	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R468	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R469	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R470	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R471	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R472	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R473	Not Used	-	NOT USED	37338
R474	Not Used	-	NOT USED	37338
R475	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R476	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R477	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R478	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R479	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R480	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R481	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R482	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R483	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R484	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R485	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R486	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R487	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R488	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R489	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R490	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R491	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R492	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R493	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R494	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R495	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R496	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R497	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R498	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R499	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R500	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R501	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R502	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R503	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R504	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R505	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R506	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R507	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R508	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R509	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R510	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R511	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R512	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R513	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R514	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R515	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R516	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R517	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R518	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R519	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R520	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R521	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R522	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R523	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R524	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R525	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R526	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R527	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R528	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R529	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R530	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R531	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R532	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R533	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R534	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R535	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R536	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124

NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R537	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R538	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R539	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R540	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R541	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R542	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R543	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R544	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R545	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R546	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R547	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R548	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R549	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R550	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R551	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R552	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R553	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R554	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R555	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R556	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R557	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R558	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R559	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R560	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R561	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R562	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R563	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R564	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R565	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R566	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R567	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R568	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R569	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R570	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R571	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R572	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R573	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R574	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R575	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R576	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R577	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R578	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R579	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R580	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R581	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R582	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R583	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R584	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R585	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R586	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R587	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R588	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R589	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R590	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R591	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R592	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R593	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R594	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R595	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R596	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R597	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R598	Resistor,SMT,MF,182Kohms,1%,1/10W,0603	RFFS65	RK73H1JLTD1823F	59124
R599	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
RT01	Thermistor, PTC, .20-.31 Ohms, 0.9A Hold	RT18	RXE 090	06090
RT02	Thermistor, PTC, 3.30-5.21 Ohms,.17A Hold	RT44	RXE017 RAYCHEM	4G927
RT03	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT04	Thermistor, PTC, .20-.31 Ohms, 0.9A Hold	RT18	RXE 090	06090
S01	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S02	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S03	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S04	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S05	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S06	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S07	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S08	Not Used	-	NOT USED	37338
TB01	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB02	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TP29	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
TP35	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP43	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP46	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP54	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP57	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP58	Not Used	-	NOT USED	37338
U01	Diode, SMT, Dual Schottky, 30V 6Ax2, DPAK	QDSS04	12CWQ03FNPbF(STATIC)(RoHS)	
U02	IC,SMT,CMOS,8-Ch Analog MUX,SOIC-16	UDMS04	MC74HC4051AD(STATIC)	04713
U03	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U04	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263
U05	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U06	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U07	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U08	IC,SMT,CMOS,8-Ch Analog MUX,SOIC-16	UDMS04	MC74HC4051AD(STATIC)	04713
U09	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U10	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U11	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U12	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U13	IC,SMT,Quad RS-422 Receiver,16-SOIC	UT91	DS26C32ATM(STATIC)	NATIONAL
U14	Diode, SMT, Dual Schottky, 30V 6Ax2, DPAK	QDSS04	12CWQ03FNPbF(STATIC)(RoHS)	
U15	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U16	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U17	IC,SMT,CMOS,Quad Nand Schmitt,SOIC-14	UDLS07	SN74HC132D(STATIC)	01295
U18	IC,SMT,Quad 2 TO 1 DATA Sel/Mux 3 States Output,3.3V	UW90	74LVC257APW(STATIC)(ROHS) NXP SEMICONDUCTOR	NXP SEMI
U19	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263
U20	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263
U21	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263
U22	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U23	IC, Voltage Regulator, +3.3V,1A	UT59	LM3940IT-3.3/NOPB	27014
U24	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U25	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U26	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U27	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U28	IC,SMT,Quad RS-422 DIFF LineDriver	UD66	DS26C31T/DS26C31M (STATIC)	NATIONAL
U29	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U30	IC,SMT,CMOS,Octal Flip Flop,SOIC-20	UDLS01	SN74AHC574DW(STATIC)	01295
U31	IC,SMT,ADC,10-Bit,11-ch,SPI,SOIC-20	UMAS01	TLC1543IDW(STATIC)	01295
U32	IC,SMT,ADC,10-Bit,11-ch,SPI,SOIC-20	UMAS01	TLC1543IDW(STATIC)	01295
U33	IC,SMT,2.5V Reference,0.1%,SOT-23-6	UX83	LT1790BIS6-2.5(STATIC)	64155
U34	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U35	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U36	IC,SMT,CMOS,Octal Flip Flop,SOIC-20	UDLS01	SN74AHC574DW(STATIC)	01295
U37	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U38	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U39	IC,SMT,Comparator,Quad,SOIC-14	ULCS01	MC3302D(STATIC)	04713
U40	IC,SMT,4.096V Reference,0.1%,SOT-23-6	ULRS02	LT1790BIS6-4.096(STATIC)	64155
U41	IC, SMT, CMOS, Octal Latch,SOIC-20	UDLS02	SN74AHC573DW(STATIC)	01295
U42	Not Used	-	NOT USED	37338
U43	IC, SMT, TruPwr Detect, LF-2.5GHz, MSOP	UX110	AD8361ARM(Static)	
U44	IC,SMT,Optocoupler,High CMR &Speed Gull Wing	UD68	6N137-300E(STATIC)(ROHS) AVAGO TECHNOLOGIES	AVAGO
U45	IC, SMT, Digital Step Attenator, QFN-20	US19	PE4302-01(STATIC)	
U46	IC,SMT,Low Voltage Temp SensorSO-8	UC62	TMP36FS(STATIC)	ANALOG D
U47	IC,SMT,Micro,256K Flash,5V,TQFP-100	UX100	ATmega2560-16AUR(STATIC)(ROHS) ATMEL	1FN41
U48	IC,SMT,Complex Program LogicDev, PLCC-84	UDPS01	XC9572-15PC84C(STATIC)	68994
U49	Not Used	-	NOT USED	37338
U50	IC, SMT, SRAM, 32Kx8, SOIC-28(Wide)	UDMS01	CY62256NLL-55SNXI(STATIC)(RoHS)	65786
U51	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U52	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U53	IC,SMT,RS-232 Transceiver,3.3V,SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U54	Not Used	-	NOT USED	37338
U55	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U56	IC,SMT,Optocoupler,High CMR &Speed Gull Wing	UD68	6N137-300E(STATIC)(ROHS) AVAGO TECHNOLOGIES	AVAGO
U57	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U58	IC, SMT, TruPwr Detect, LF-2.5GHz, MSOP	UX110	AD8361ARM(Static)	
U59	IC,SMT,Real-Time Clock,SPI,SOIC-16	UDTS01	M41T94MQ6(STATIC)	U3040
U60	IC,SMT,Non-Volatile RAM Ctrlr,SOIC-8	UDSS01	DS1312S-2(STATIC)	0B0A9
U61	IC, SMT, Digital Step Attenator, QFN-20	US19	PE4302-01(STATIC)	
U62	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U63	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U64	IC,DC-DC Converter,3kV ISO,5V-5V,1W	UT73	NMV0505SA(STATIC)	C&D
U65	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U66	IC. CMOS, EEPROM, 32kx8, 2.7V-5V, 8SOIC	UW98	AT25256AN-10SU-2.7(Static)(RoHS) ATMEL	
U67	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U68	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U69	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U70	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U71	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U72	IC,SMT,RS-232 Transceiver,3.3V,SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U73	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U74	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U75	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U76	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U77	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U78	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U79	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U80	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U81	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U82	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U83	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U84	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893

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NAPC156A Control/Interface PWB Assy, NV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U85	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U86	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U87	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U88	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U89	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U90	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U91	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
U92	IC,SMT,Trans Array, 7 Darl.,SOIC-16	UDAS01	MC1413BD(STATIC)	04713
XBT01	Holder, 20mm Coin Cell, PWB Mt	BBHT01	1065	91833
XE01	Not Used	-	NOT USED	37338
XE02	Not Used	-	NOT USED	37338
XE03	Not Used	-	NOT USED	37338
XE04	Not Used	-	NOT USED	37338
XE05	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE06	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE07	Not Used	-	NOT USED	37338
XE08	Not Used	-	NOT USED	37338
XE09	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE10	Not Used	-	NOT USED	37338
XE11	Not Used	-	NOT USED	37338
XE12	Not Used	-	NOT USED	37338
XE13	Not Used	-	NOT USED	37338
XE14	Not Used	-	NOT USED	37338
XE15	Not Used	-	NOT USED	37338
XE16	Not Used	-	NOT USED	37338
XE17	Not Used	-	NOT USED	37338
XE18	Not Used	-	NOT USED	37338
XE19	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE20	Not Used	-	NOT USED	37338
Y01	Crystal, SMT, Fund, Par Res,14.7456MHz	XFPS06	CM309S14.7456MABJ-UT(Static)(RoHS) Citizen	
Y02	Crystal,SMT,Fund,Par Res,32.768kHz	XFPS02	MC20632.7680KA-A0	1JRT7

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C001	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C002	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C003	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C004	Cap,SMT,Tantalum,10uF,10%,16V,1411	CTFS01	T494B106K016AS	31433
C005	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C006	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C007	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C008	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C009	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C010	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C011	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C012	Cap,SMT,Tantalum,10uF,10%,35V,2917	CTFS03	T494D106K035AS	31433
C013	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C014	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C015	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C016	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C017	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C018	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C019	Cap,SMT,Tantalum,10uF,10%,16V,1411	CTFS01	T494B106K016AS	31433
C020	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C021	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C022	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C023	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C024	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C025	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C026	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C027	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C028	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C029	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C030	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C031	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C032	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C033	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C034	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C035	Cap,SMT,Tantalum,1uF,10%,35V,1411	CTFS02	T494B105K035AS	31433
C036	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C037	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C038	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C039	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433

NAPI104/03 Power Module Interface PWBAssy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C040	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C041	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C042	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C043	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C044	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C045	Cap, SMT, Ceramic, 10uF, 10%,25V	CCFS62	C3225X5R1E106K	
C046	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C047	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C048	Cap, SMT, Ceramic, 10uF, 10%,25V	CCFS62	C3225X5R1E106K	
C049	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C050	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C051	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C052	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C053	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C054	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C055	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C056	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C057	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C058	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C059	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C060	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C061	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C062	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C063	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C064	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C065	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C066	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C067	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C068	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C069	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C070	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C071	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C072	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C073	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C074	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C075	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C076	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C077	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C078	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C079	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C080	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C081	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C082	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C083	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C084	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C085	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C086	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C087	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C088	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C089	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C090	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C091	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C092	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C093	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C094	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C095	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C096	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C097	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C098	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C099	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C100	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C101	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C102	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C103	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C104	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C105	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C106	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C107	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C108	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C109	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C110	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C111	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C112	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C113	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C114	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C115	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C116	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C117	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C118	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C119	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C120	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C121	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C122	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C123	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C124	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C125	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C126	Not Used	-	NOT USED	37338
C127	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C128	Not Used	-	NOT USED	37338
C129	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C130	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C131	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C132	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C133	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C134	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C135	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C136	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C137	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C138	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C139	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C140	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C141	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C142	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C143	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C144	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C145	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C146	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C147	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C148	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C149	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C150	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C151	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C152	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C153	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C154	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C155	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C156	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C157	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C158	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C159	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C160	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C161	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C162	Not Used	-	NOT USED	37338
C163	Not Used	-	NOT USED	37338
C164	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C165	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C166	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C167	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C168	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C169	Not Used	-	NOT USED	37338
C170	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C171	Not Used	-	NOT USED	37338
C172	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C173	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C174	Not Used	-	NOT USED	37338
C175	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C176	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C177	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C178	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C179	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C180	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C181	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C182	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C183	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C184	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C185	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C186	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C187	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C188	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C189	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C190	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C191	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C192	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C193	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
CR01	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR02	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR03	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR04	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR05	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR06	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR07	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR08	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR09	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR10	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR11	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR12	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR13	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR14	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR15	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR16	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR17	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR18	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR19	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR20	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR21	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR22	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR23	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR24	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR25	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR26	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR27	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR28	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR29	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR30	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
DS01	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
J01	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J02	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J03	Conn, Coax, Recept, 20 Deg.Low Profile	JT43	TMP-S01X-B1	TAIKO
J04	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
L01	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L02	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L03	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L04	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L05	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L06	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L07	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L08	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L09	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L10	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L11	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L12	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L13	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L14	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L15	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L16	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
Q01	Transistor,SMT,MOSFET,N-channel,SOT-223	QMNS01	MMFT960T1(STATIC)	04713
Q02	Transistor,SMT,MOSFET,N-Channel,100V,1.5A,SOT-223	QS25	IRLL110PbF(STATIC)(ROHS)	59993
Q03	Transistor,SMT,MOSFET,N-Channel,100V,1.5A,SOT-223	QS25	IRLL110PbF(STATIC)(ROHS)	59993
R001	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R002	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R003	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R004	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R005	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R006	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R007	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R008	Resistor,SMT,MF,33.2Kohms,1%,1/10W,0603	RFFS56	RK73H1JLTD3322F	59124
R009	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R010	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R011	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R012	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R013	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R014	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R015	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R016	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R017	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R018	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R019	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R020	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R021	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R022	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R023	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R024	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R025	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R026	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R027	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R028	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R029	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R030	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R031	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R032	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R033	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R034	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R035	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R036	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R037	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R038	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R039	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R040	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R041	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R042	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R043	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R044	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R045	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R046	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R047	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R048	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R049	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R050	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R051	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R052	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R053	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R054	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R055	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R056	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R057	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R058	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R059	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R060	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R061	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R062	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R063	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R064	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R065	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R066	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R067	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R068	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R069	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R070	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R071	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R072	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R073	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R074	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R075	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R076	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R077	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R078	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R079	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R080	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R081	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R082	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R083	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R084	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R085	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R086	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R087	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R088	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R089	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R090	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R091	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R092	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R093	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R094	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R095	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R096	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R097	Resistor, SMT, MF, 18.2 Ohms,1% 1/4W	RAD04	RK73H2BL18R2F	59124
R098	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R099	Resistor, SMT, MF, 15K Ohms,1%, 1/4W	RAD39	RK73H2BL1502F	59124
R100	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R101	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R102	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R103	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R104	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R105	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R106	Resistor,SMT,MF,121Kohms,1%,1/10W,0603	RFFS63	RK73H1JLTD1213F	59124
R107	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R108	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R109	Resistor,SMT,MF,121Kohms,1%,1/10W,0603	RFFS63	RK73H1JLTD1213F	59124
R110	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R111	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R112	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R113	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R114	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R115	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R116	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R117	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R118	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R119	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R120	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R121	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R122	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R123	Resistor,SMT,MF,0.005ohms,1%,1W,2512	RFCS01	ERJM1WSF5M0U	0J4G8
R124	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R125	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R126	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R127	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R128	Resistor,SMT,MF,121Kohms,1%,1/10W,0603	RFFS63	RK73H1JLTD1213F	59124
R129	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R130	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R131	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R132	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R133	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R134	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R135	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R136	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R137	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R138	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R139	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R140	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R141	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R142	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R143	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R144	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R145	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R146	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R147	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R148	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R149	Resistor, SMT, MF, 15K Ohms,1%, 1/4W	RAD39	RK73H2BL1502F	59124
R150	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R151	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R152	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R153	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R154	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R155	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R156	Resistor, SMT, MF, 15K Ohms,1%, 1/4W	RAD39	RK73H2BL1502F	59124
R157	Resistor,SMT,MF,1.82Mohms,1%,1/10W,0603	RFFS77	RK73H1JLTD1824F	59124
R158	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R159	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R160	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R161	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R162	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R163	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R164	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R165	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R166	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R167	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R168	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R169	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R170	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R171	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R172	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R173	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R174	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R175	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R176	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R177	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R178	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R179	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R180	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R181	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124

NAPI104/03 Power Module Interface PWBAssy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R182	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R183	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
RT01	Thermistor, PTC, SMT, 2920,500mA Hold	RX64	2920L050(RoHS)	75915
RT02	Thermistor, PTC, SMT, 2920,300mA Hols	RX70	2920L030(RoHS)	
TB01	Terminal Block,5mm,3-pos,PWBMt,Angled,Blue	JR49	796688-3	5Y407
TB02	Terminal Block,5mm,3-pos,PWBMt,Angled,Blue	JR49	796688-3	5Y407
TB03	Terminal Block,5mm,3-pos,PWBMt,Angled,Blue	JR49	796688-3	5Y407
TB04	Terminal Block, 4-Pos, Dual Barrier, 20A	JT44	4DB-P107-04 THOMAS & BETTS	22421
TB05	Terminal Block, 6-Pos, Dual Barrier, 20A	JT48	1-1437667-2	TYCO
TP03	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP20	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
U01	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U02	Not Used	-	NOT USED	37338
U03	IC,SMT,Micro, ADC,PWM,TQFP-32,16k Flash	UX95	ATMEGA 168-20AI(STATIC)	1FN41
U04	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U05	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U06	IC,SMT,CMOS,8-Ch Analog MUX,SOIC-16	UDMS04	MC74HC4051AD(STATIC)	04713
U07	IC,SMT,CMOS,Quad Tri-State Buffer, SOIC-14	UDLS06	MC74HC125AD(STATIC)	04713
U08	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U09	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U10	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATIC)	04713
U11	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U12	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263
U13	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U14	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATIC)	04713
U15	IC,SMT,CMOS,Quad Nand Schmitt,SOIC-14	UDLS07	SN74HC132D(STATIC)	01295
U16	IC,SMT,CMOS,Quad Nand Schmitt,SOIC-14	UDLS07	SN74HC132D(STATIC)	01295
U17	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U18	IC,SMT,4.096V Reference,0.1%,SOT-23-6	ULRS02	LT1790BIS6-4.096(STATIC)	64155
U19	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATIC)	04713
U20	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155

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NAPI104/03 Power Module Interface PWBAssy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U21	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U22	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U23	IC,SMT,CMOS,8-Ch Analog MUX,SOIC-16	UDMS04	MC74HC4051AD(STATIC)	04713
U24	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U25	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U26	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U27	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U28	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U29	IC,SMT,Opamp,Quad,Single Supply,SOIC-14	ULAS01	MC33074AD(STATIC)	04713
U30	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U31	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U32	IC,SMT,CMOS,8-Ch Analog MUX,SOIC-16	UDMS04	MC74HC4051AD(STATIC)	04713
U33	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U34	IC,SMT,CMOS,8-Ch Analog MUX,SOIC-16	UDMS04	MC74HC4051AD(STATIC)	04713
U35	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U36	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATIC)	1E566
U37	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U38	IC,SMT,Comparator,Quad,SOIC-14	ULCS01	MC3302D(STATIC)	04713
Y01	Crystal,SMT,Fund,Par Res,3.6864MHz,Comm	XFPS03	ATSM49-3.6864MHz	23875

NAPI105/01A Module Splitter PWB Assy (RLS 3)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C02	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C03	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C04	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C05	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C06	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C07	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
DS01	Diode,SMT,LED,Bicolor,Red/Green,1210	QDLS04	597-7701-507(STATIC)	83330
J01	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J02	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J03	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J04	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J05	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J06	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J07	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J08	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J09	Conn, Coax, Recept, 20 Deg.Low Profile	JT43	TMP-S01X-B1	TAIKO
L01	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
R01	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R02	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R03	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R04	Resistor, SMT, AIN, 100 ohms,2%, 30W, 3725	RT57	CS13725TO100GBK(RoHS)	
R05	Resistor, SMT, AIN, 100 ohms,2%, 30W, 3725	RT57	CS13725TO100GBK(RoHS)	
R06	Resistor, SMT, AIN, 100 ohms,2%, 40W, 1373	RT58	CS13737TO100GBK(RoHS)	
R07	Resistor, SMT, AIN, 100 ohms,2%, 30W, 3725	RT57	CS13725TO100GBK(RoHS)	
R08	Resistor, SMT, AIN, 100 ohms,2%, 30W, 3725	RT57	CS13725TO100GBK(RoHS)	
R09	Resistor, SMT, AIN, 100 ohms,2%, 40W, 1373	RT58	CS13737TO100GBK(RoHS)	
RT01	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT02	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT03	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT04	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT05	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT06	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
RT07	Not Used	-	NOT USED	37338
S01	Switch, Rocker, Right Angle,SPDT, ON-ON	SD64	M2012TXG30-DA-RO	

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NAPI105/01A Module Splitter PWB Assy (RLS 3)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
TP01	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C02	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C03	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C04	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C05	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C06	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C07	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C08	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C09	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C10	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C11	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C12	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C13	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C14	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C15	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C16	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C17	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C18	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
E01	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E02	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E03	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E04	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E05	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E06	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E07	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E08	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E09	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E10	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E11	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E12	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E13	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E14	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E15	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E16	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E17	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482

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NAPI111 Module Backplane PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Header, Ribbon Cbl, 20 pin	JP46	499910-4	00779
J02	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J03	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J04	Connector,Modular,Dual,RJ-45Jack Rt Agl, PWB	JT77	569381-1	09482
J05	Conn, Header, Ribbon Cbl, 20 pin	JP46	499910-4	00779
J06	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J07	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J08	Connector,Modular,Dual,RJ-45Jack Rt Agl, PWB	JT77	569381-1	09482
J09	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J10	Conn, Header, Ribbon Cbl, 20 pin	JP46	499910-4	00779
J11	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J12	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J13	Connector,Modular,Dual,RJ-45Jack Rt Agl, PWB	JT77	569381-1	09482
J14	Conn, Header, Ribbon Cbl, 20 pin	JP46	499910-4	00779
J15	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J16	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J17	Connector,Modular,Dual,RJ-45Jack Rt Agl, PWB	JT77	569381-1	09482
J18	Conn,Edge Card,88 Contacts,Dual Row,30u Gold, M3	JN59	346-088-620-207	31781
J19	Conn,Edge Card,88 Contacts,Dual Row,30u Gold, M3	JN59	346-088-620-207	31781
J20	Conn,Edge Card,88 Contacts,Dual Row,30u Gold, M3	JN59	346-088-620-207	31781
J21	Conn,Edge Card,88 Contacts,Dual Row,30u Gold, M3	JN59	346-088-620-207	31781
R01	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R02	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R03	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R04	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R05	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R06	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R07	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R08	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R09	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R10	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R11	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R12	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R13	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R14	Resistor, Film, 3900 Ohms, 2PC 1/2W	RD02	RL20S392G	35005
R15	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
R16	Resistor, MF, 221 Ohms, 1PC 1/4W	RAB17	MF1/4DL2210F	59124
S01	Switch, DIP, Rotary, 16-pos,BC-Hexidecimal	SB49	SD1010(RoHS)	
S02	Switch, DIP, Rotary, 16-pos,BC-Hexidecimal	SB49	SD1010(RoHS)	

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NAPI111 Module Backplane PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
S03	Switch, DIP, Rotary, 16-pos,BC-Hexidecimal	SB49	SD1010(RoHS)	
S04	Switch, DIP, Rotary, 16-pos,BC-Hexidecimal	SB49	SD1010(RoHS)	
TP01	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP02	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP03	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP04	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP05	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP06	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP07	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP08	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP09	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP10	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP11	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP12	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
XE01	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE04	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE05	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE08	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE09	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE13	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE14	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE17	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C02	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C03	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C04	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C05	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C06	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C07	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C08	Capacitor, Ceramic, 0.47uF 10% 50V	CCG09	CKR06BX474KRV	56289
C09	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C10	Capacitor, Ceramic, 0.47uF 10% 50V	CCG09	CKR06BX474KRV	56289
C11	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C12	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C13	Capacitor, Ceramic, 0.47uF 10% 50V	CCG09	CKR06BX474KRV	56289
C14	Capacitor, Ceramic, 0.001uF 10% 200V	CCG01	CKR05BX102KRV SPRAGUE	91929
C15	Capacitor, Ceramic, 0.47uF 10% 50V	CCG09	CKR06BX474KRV	56289
C16	Capacitor, Ceramic, 0.1uF 10%100V	CCG07	CKR06BX104KRV	56289
C17	Capacitor, Ceramic, 0.01uF 10% 100V	CCG04	CKR05BX103KRV	56289
CR01	Diode, Pwr Rect, Schottky, 60VDual 2x40A	UR93	STPS80L60CY(Static)(RoHS) STMicroelectronics	
CR02	Diode, Pwr Rect, Schottky, 60VDual 2x40A	UR93	STPS80L60CY(Static)(RoHS) STMicroelectronics	
CR03	Diode, Pwr Rect, Schottky, 60VDual 2x40A	UR93	STPS80L60CY(Static)(RoHS) STMicroelectronics	
CR04	Diode, Pwr Rect, Schottky, 60VDual 2x40A	UR93	STPS80L60CY(Static)(RoHS) STMicroelectronics	
E01	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E02	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E03	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E04	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E05	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E06	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E07	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E08	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E09	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E10	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
J01	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779

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NAPI112B Power Supply Distribution PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J02	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J03	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J04	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J05	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J06	MTA, Keyed Square Post HeaderAssy, 4 pin	JU25	647123-4	00779
J07	Conn, Header, Ribbon Cbl, 20 pin	JP46	499910-4	00779
J08	Conn, Header, Ribbon Cbl, 20 pin	JP46	499910-4	00779
J09	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J10	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J11	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J12	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
J13	Conn, Jack, RJ45, PWB Mount	JM44	556591-1	09482
Q01	Transistor, FET, N Channel, Plas	QR52	IRF540N(STATIC)	81483
R01	Resistor, MF, 100K Ohms, 1PC 1/4W	RAC01	MF1/4DL1003F	59124
R02	Resistor, Film, 22K ohms, 2PC1/2W	RD11	RL20S223G	35005
R03	Resistor, Film, 22K ohms, 2PC1/2W	RD11	RL20S223G	35005
R04	Resistor, MF, 100K Ohms, 1PC 1/4W	RAC01	MF1/4DL1003F	59124
R05	Resistor, MF, 10.0K Ohms, 1PC1/4W	RAB37	MF1/4DL1002F	59124
R06	Resistor, MF, 1.21K Ohms, 1PC1/4W	RAB26	MF1/4DL1211F	59124
R07	Resistor, MF, 100K Ohms, 1PC 1/4W	RAC01	MF1/4DL1003F	59124
R08	Resistor, MF, 10.0K Ohms, 1PC1/4W	RAB37	MF1/4DL1002F	59124
R09	Resistor, MF, 1.21K Ohms, 1PC1/4W	RAB26	MF1/4DL1211F	59124
R10	Resistor, MF, 10.0K Ohms, 1PC1/4W	RAB37	MF1/4DL1002F	59124
R11	Resistor, MF, 1.21K Ohms, 1PC1/4W	RAB26	MF1/4DL1211F	59124
R12	Resistor, MF, 1K Ohms, 1PC 1/4W	RAB25	MF1/4DL1001F	59124
R13	Resistor, MF, 22.1K Ohms, 1PC1/4W	RAB41	MF1/4DL2212F	59124
R14	Resistor, MF, 1K Ohms, 1PC 1/4W	RAB25	MF1/4DL1001F	59124
TP01	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP02	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP03	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP04	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP05	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP06	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
CR01	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR02	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR03	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR04	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR05	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR06	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR07	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR08	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR09	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR10	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR11	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR12	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR13	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR14	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR15	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR16	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR17	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR18	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR19	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR20	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR21	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR22	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR23	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR24	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
DS01	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS02	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS03	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS04	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS05	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS06	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS07	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS08	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS09	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330

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NAPI115A Remote Interface PWB Assy, NV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
DS10	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS11	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS12	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS13	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS14	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS15	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS16	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS17	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS18	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS19	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS20	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS21	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS22	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS23	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS24	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS25	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS26	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS27	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS28	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS29	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS30	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS31	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS32	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS33	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS34	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS35	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330

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NAPI115A Remote Interface PWB Assy, NV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
DS36	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS37	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS38	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS39	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS40	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS41	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS42	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS43	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS44	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS45	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS46	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS47	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS48	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
E01	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E02	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E03	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E04	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E05	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E06	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E07	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E08	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E09	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E10	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E11	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E12	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E13	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E14	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E15	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E16	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E17	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E18	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E19	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E20	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482

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NAPI115A Remote Interface PWB Assy, NV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
E21	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E22	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E23	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E24	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
J01	Conn, Plug, D-Sub, 37-Pin PWB, 90	JQ51	621-037-260-043	EDAC
J02	Conn, Socket 37-pin D-SUB, 90Kit	200-5090	200-5090	37338
J03	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J04	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J05	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J06	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J07	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J08	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J09	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J10	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J11	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
J12	Terminal Block,2-pos,PWB Mount	JR51	1803277(ROHS)	PHOENIX
J13	Terminal Block,2-pos,PWB Mount	JR51	1803277(ROHS)	PHOENIX
J14	Terminal Block,8-pos,PWB Mount,90 Deg	JR53	1803332(ROHS)	PHOENIX
R01	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R02	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R03	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R04	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R05	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R06	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R07	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R08	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R09	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R10	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R11	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R12	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R13	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R14	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R15	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R16	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R17	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R18	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R19	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R20	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R21	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124

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NAPI115A Remote Interface PWB Assy, NV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R22	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R23	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R24	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
RT01	Thermistor, PTC, .20-.31 Ohms, 0.9A Hold	RT18	RXE 090	06090
S01	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S02	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S03	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S04	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S05	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S06	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S07	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S08	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S09	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S10	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S11	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S12	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S13	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S14	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S15	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S16	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S17	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S18	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S19	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S20	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S21	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S22	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S23	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
S24	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G IT	T INDUST
XE01	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE02	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE03	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE04	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE05	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE06	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE07	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE08	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE09	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE10	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE11	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482

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NAPI115A Remote Interface PWB Assy, NV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
XE12	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE13	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE14	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE15	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE16	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE17	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE18	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE19	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE20	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE21	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE22	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE23	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE24	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Control/Interface PWB Assy, NV Series	NAPC156A	206-2010-01	37338
A02	Remote Interface PWB Assy, NV	NAPI115A	206-4120-01	37338
A03	NVE Exciter A, Digital, FM	NAE104A or /01	206-3400-02	37338
A04	NVE Exciter B, Digital, FM	NAE104A or /01	206-3400-02	37338
A05	RF Drive Splitter/Changeover Assy, NV10	NAI21	206-8310	37338
A06	AC Distribution Assy (2x3way)	206-5150-01	206-5150-01	37338
A07	Power Supply Distribution PWB Assy	NAPI112B	206-7060-02	37338
A08	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A09	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A10	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A100	UPS Interface Assembly (Optional)	206-5145-01	206-5145-01	37338
A11	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A12	Not Used	-	NOT USED	37338
A13	Power Probe Assy, NV	NAFP109A	206-6500-01	37338
A14	4 Input Reject Load Assy	NAL07A	206-6270-01	37338
A15	Reject Load Interface PWB Assy (4-Way)	206-4084	206-4084	37338
A16	Combiner/Filter Assy, 10kW (LHS)	NAF119/01A	206-6000-04	37338
A17	Module Backplane PWB Assy	NAPI111	206-4050	37338
A18	RF Power Module Assy, NV Series RLS 3	NAA56/01D	206-1000-05	37338
A19	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A20	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A21	RF Power Module Assy, NV Series RLS 3	NAA56/01D	206-1000-05	37338
A22	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A23	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A24	RF Power Module Assy, NV Series RLS 3	NAA56/01D	206-1000-05	37338
A25	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A26	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A27	RF Power Module Assy, NV Series RLS 3	NAA56/01D	206-1000-05	37338
A28	Power Supply Interface PWBAssy	206-4060	206-4060	37338
A29	Power Supply Interface PWBAssy	206-4060	206-4060	37338
B01	Fan Bracket Assy, NV Door	206-8406	206-8406	37338
CR01	Diode, Pwr Rect, Schottky(BeO)170V 2x100A	UR94	STPS200170TV1(Statics)(RoHS)	
DS01	LED, Pilot Light, Amber, 230Vac	BAP44	LEDTECA220AC	
DS02	LED, Pilot Light, Amber, 230Vac	BAP44	LEDTECA220AC	
DS03	LED, Pilot Light, Amber, 230Vac	BAP44	LEDTECA220AC	
L01	Toroid, Ferrite, Mtl 43, 1.40"OD, 0.9" ID	LP33	FT-140-43	
TB01	Pwr Dist Block, 175A, 2/0-8AWG x 1, 4-14 AWG x 4	JR56	PDBFS220	

Continued from previous page

NARF51B Final Assy, NV10/NV7.5 (RLS 3)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U01	Power Supply, 12V@200W, 85-264VAC, PFC	UG57	SP-200-12	S8116
U02	Power Supply, 12V@200W, 85-264VAC, PFC	UG57	SP-200-12	S8116
U03	Power Supply, Univ Input, 5V, +/-15V, 75W, PFC	UG68	TP-75C	
U04	Power Supply, Univ Input, 5V, +/-15V, 75W, PFC	UG68	TP-75C	
U05	Touchscreen Monitor Kit Assy (UR108)	206-5400-01	206-5400-01	37338
U06	Single Board Computer Assy	206-8973	206-8973	37338
U07	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U08	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U09	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U10	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U11	Not Used	-	NOT USED	37338
U12	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U13	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U14	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U15	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U16	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U17	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U18	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	
U19	Power Supply, 7-53V, 2000W, 50A, 180-264Vac	UG69A	011-1509A1-1	

Section 4: Wiring/connector lists

This section contains the wiring information for the hard-wired assemblies of the transmitter, and applicable connector mating information.

Wiring lists provided

Wiring lists are provided in tabular format. Table 4.1 on page 4-2 lists the tables containing wiring information. These tables provide non-printed wiring pattern, point-to-point (source and destination) interconnection information.

Wiring lists not provided

Separate wiring lists are not provided for some assemblies, including:

- Assemblies that have a separate maintenance manual. Refer to the appropriate maintenance manual for detailed wiring information for these assemblies, if provided.
- Assemblies that have their wiring information shown in tables on their assembly detail drawing(s). Refer to the *Mechanical Drawings* section of this manual for detailed wiring information for these assemblies.

Connector mating information

Where applicable, a connector mating table is provided after the corresponding wiring list. Table 4.2 on page 4-2 identifies all provided connector information.

Wire colours

Every effort is made to manufacture assemblies using the wire colour shown in the **Colour** column of the wiring list tables. Sometimes, a white wire will be substituted for the listed colour. In such cases, wires must be identified by their assigned numbers.

Printed wiring board patterns

Printed wiring pattern information for printed wiring boards (PWBs) is beyond the scope of this manual, and therefore not provided.

Table 4.1: Wiring Lists Provided

Table #	Description
Table 4.3	Wiring List - NV10/NV7.5 Transmitter (page 4-2)
Table 4.5	Wiring List - NAE104A & /01 NVE50 Exciter (page 4-12)
Table 4.7	Wiring List - Ac Distribution Assembly (Nautel Part # 206-5150-01) (page 4-14)
Table 4.8	Wiring List - NAA56/01D RF Power Module (page 4-15)

Table 4.2: Connector Mating Information Provided

Table #	Description
Table 4.4	Connector Mating Information - NV10/NV7.5 Transmitter (page 4-8)
Table 4.6	Connector Mating Information - NAE104A & /01 NVE50 Exciter (page 4-13)
Table 4.9	Connector Mating Information - NAA56/01D RF Power Module (page 4-16)

Table 4.3: Wiring List - NV10/NV7.5 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
P24-1	P24-3	-	Capacitor		C1, 0.001 uF
P25-1	P25-3	-	Capacitor		C2, 0.001 uF
U1-6 (+V)	U1-4 (-V)	-	Capacitor		C6, 0.47 uF
U2-6 (+V)	U2-4 (-V)	-	Capacitor		C7, 0.47 uF
TB1-1B1	TB2-1A1	1	Black	6	3-Ph, 208 (L1A)
TB1-1B2	TB3-1A1	2	Black	6	3-Ph, 208 (L1B)
TB1-2B1	TB2-2A1	3	Black	6	3-Ph, 208 (L2A)
TB1-2B2	TB3-2A1	4	Black	6	3-Ph, 208 (L2B)
TB1-3B1	TB2-3A1	5	Black	6	3-Ph, 208 (L3A)
TB1-3B2	TB3-3A1	6	Black	6	3-Ph, 208 (L3B)
TB1-1B1	TB2-1A1	1	Black	6	3-Ph, 400 (L1A)
TB1-2B1	TB2-3A1	2	Black	6	3-Ph, 400 (L2A)
TB1-3B1	TB3-2A1	3	Black	6	3-Ph, 400 (L3A)
TB1-4B1	TB2-2A1	4	Black	6	3-Ph, 400 (N1A)

Table 4.3: Wiring List - NV10/NV7.5 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
TB1-4B2	TB3-1A1	5	Black	6	3-Ph, 400 (N2A)
TB1-4B3	TB3-3A1	6	Black	6	3-Ph, 400 (N3A)
TB1-1B1	TB2-1A1	1	Black	6	1-Ph, 240 (L1A)
TB1-1B2	TB2-3A1	2	Black	6	1-Ph, 240 (L1B)
TB1-1B3	TB3-2A1	3	Black	6	1-Ph, 240 (L1C)
TB1-2B1	TB3-1A1	4	Black	6	1-Ph, 240 (L2A/N)
TB1-2B2	TB3-1A1	5	Black	6	1-Ph, 240 (L2B/N)
TB1-2B3	TB3-3A1	6	Black	6	1-Ph, 240 (L2C/N)
TB2-1B1	A19J1-47	7	Red	14	
TB2-1B2	A23J1-47	8	Red	14	
TB2-1B3	A28J1-47	9	Red	14	
TB2-2B1	A19J1-46	10	White	14	
TB2-2B2	A23J1-46	11	White	14	
TB2-2B3	A28J1-46	12	White	14	
TB2-3B1	A20J1-47	13	Red	14	
TB2-3B2	A25J1-47	14	Red	14	
TB2-3B3	A29J1-47	15	Red	14	
TB2-3B3	A11J1-47	16	Red	14	
TB2-3B4	A9J1-47	17	Red	14	
TB3-1B1	A20J1-46	18	White	14	
TB3-1B2	A25J1-46	19	White	14	
TB3-1B3	A29J1-46	20	White	14	
TB3-1B3	A11J1-46	21	White	14	
TB3-1B4	A9J1-46	22	White	14	
TB3-2B1	A22J1-47	23	Red	14	
TB3-2B2	A26J1-47	24	Red	14	
TB3-2B3	A10J1-47	25	Red	14	
TB3-2B3	A8J1-47	26	Red	14	
TB3-3B1	A22J1-46	27	White	14	
TB3-3B2	A26J1-46	28	White	14	
TB3-3B3	A10J1-46	29	White	14	
TB3-3B3	A8J1-46	30	White	14	
-	-	31	Not Used		
-	-	32	Not Used		
TB2-1B4	DS1-X1	33	Red	14	

Table 4.3: Wiring List - NV10/NV7.5 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
TB2-2B4	DS1-X2	34	White	14	
TB2-3B4	DS2-X1	35	Red	14	
TB3-1B4	DS2-X2	36	White	14	
TB3-2B4	DS3-X1	37	Red	14	
TB3-3B4	DS3-X2	38	White	14	
-	-	39	Not Used		
E1	E5	40	Black	2	Station Ref Gnd
E1	E5	41	Black	2	Station Ref Gnd
E6	E7	-	Grn/Yel	14	Jumper
A7E7	E14-A	42	White	16	
A7E8	E15-A	43	White	16	
U1-6 (+V)	A7E4	44	White	18	
U1-7 (+V)	A7E4	45	White	18	
U1-4 (-V)	A7E6	46	Black	18	
U1-5 (-V)	A7E6	47	Black	18	
U1-5 (-V)	U1-3 (GND)	-	Black	18	Jumper
U2-6 (+V)	A7E5	48	White	18	
U2-7 (+V)	A7E5	49	White	18	
U2-4 (-V)	A7E6	50	Black	18	
U2-5 (-V)	A7E6	51	Black	18	
U2-5 (-V)	U2-3 (GND)	-	Black	18	Jumper
A7E7	E10-A	52	White	16	
A7E8	E11-A	53	Black	16	
E10-B	P9 (+VE)	-	White	18	
E10-B	P8-4	54	White	18	
E11-B	P9 (-VE)	-	Black	18	
E11-B	P8-1	55	Black	18	
U3-4 (V1)	P7-1	56	White	22	
U3-1 (V2)	P7-4	57	White	22	
U3-5 (V3)	P7-7	58	White	22	
U3-2 (COM)	P7-3	59	Black	22	
U3-2 (COM)	U3-6 (GND)	-	Black	22	Jumper
U4-4 (V1)	P7-2	60	White	22	
U4-1 (V2)	P7-5	61	White	22	
U4-5 (V3)	P7-8	62	White	22	
U4-2 (COM)	P7-6	63	Black	22	
U4-2 (COM)	U4-6 (GND)	-	Black	22	

Table 4.3: Wiring List - NV10/NV7.5 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
P10-1	P11-1	64	White	24	
P10-2	P11-2	65	Black	24	
P12-1	P13-1	66	White	20	
P12-2	P13-2	67	White	20	
P12-3	P13-3	68	Black	20	
P12-4	P13-4	69	Black	20	
P16-1	P17-1	70	White	22	
P16-2	P17-2	71	White	22	
P16-3	P17-3	72	Black	22	
P16-4	P17-4	73	Black	22	
A8E1	A7E1	74	White	10	
A9E1	A7E2	75	White	10	
A10E1	CR1-A1	76	White	10	
A11E1	CR1-A2	77	White	10	
CR1-K1 (A)	A17E10	78	White	10	
A19E1	A17E15	79	White	10	
A20E1	A17E16	80	White	10	
A22E1	A17E11	81	White	10	
A23E1	A17E12	82	White	10	
A25E1	A17E6	83	White	10	
A26E1	A17E7	84	White	10	
A28E1	A17E2	85	White	10	
A29E1	A17E3	86	White	10	
-	-	87	Not Used		
-	-	88	Not Used		
-	-	89	Not Used		
TB3-2B4	P1-L	90A	Brown or Black	18	
TB3-3B4	P1-N	90B	Blue or White	18	
P1-E	GND	90C	Grn or Grn/Yel	18	
P2-L	U1-1 (L)	91A	Brown	18	
P2-N	U1-2 (N)	91B	Blue	18	
P2-E	U1-3 (GND)	91C	Grn/Yllw	18	
P3-L	U3-8 (L)	92A	Brown	18	
P3-N	U3-7 (N)	92B	Blue	18	
P3-E	U3-6 (GND)	92C	Grn/Yel	18	
TB2-1B3	P4-L	93A	Brown or Black	18	
TB2-2B3	P4-N	93B	Blue or White	18	

Table 4.3: Wiring List - NV10/NV7.5 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
P4-E	GND	93C	Grn or Grn/Yllw	18	
P5-L	U2-1 (L)	94A	Brown	18	
P5-N	U2-2 (N)	94B	Blue	18	
P5-E	U2-3 (GND)	94C	Grn/Yllw	18	
P6-L	U4-8 (L)	95A	Brown	18	
P6-N	U4-7 (N)	95B	Blue	18	
P6-E	U4-6 (GND)	95C	Grn/Yllw	18	
U3-4	P7-1	96	White	22	
U4-4	P7-2	97	White	22	
-	-	98	Not Used		
-	-	99	Not Used		
A7E9	E12-A	100	White	16	
A7E10	E13-A	101	Black	16	
E12-B	P24-1	102	White	22	
E12-B	P25-1	103	White	22	
-	-	104	Not Used		
-	-	105	Not Used		
E13-B	P24-3	106	Black	22	
E13-B	P25-3	107	Black	22	
-	-	108	Not Used		
-	-	109	Not Used		
A8J1-45	GND	-	Grn/Yel	14	Jumper
A9J1-45	GND	-	Grn/Yel	14	Jumper
A10J1-45	GND	-	Grn/Yel	14	Jumper
A11J1-45	GND	-	Grn/Yel	14	Jumper
A19J1-45	GND	-	Grn/Yel	14	Jumper
A20J1-45	GND	-	Grn/Yel	14	Jumper
A22J1-45	GND	-	Grn/Yel	14	Jumper
A23J1-45	GND	-	Grn/Yel	14	Jumper
A25J1-45	GND	-	Grn/Yel	14	Jumper
A26J1-45	GND	-	Grn/Yel	14	Jumper
A28J1-45	GND	-	Grn/Yel	14	Jumper
A29J1-45	GND	-	Grn/Yel	14	Jumper
W1P1	W1P2	W1	Coax	-	
W2P1	W2P2	W2	Coax	-	
W3P1	W3P2	W3	CAT-5e	-	
W4P1	W4P2	W4	CAT-5e	-	

Table 4.3: Wiring List - NV10/NV7.5 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
W5P1	W5P2	W5	Coax	-	
W6P1	W6P2	W6	Coax	-	
W7P1	W7P2	W7	Black	-	
W8P1	W8P2	W8	Black	-	
W9P1	W9P2	W9	CAT-5e	-	
W15P1	W15P2	W15	CAT-5e	-	
W16P1	W16P2	W16	9-pin D-sub	-	
W17P1	W17P2	W17	9-pin D-sub	-	
W20P1	W20P2	W20	Coax	-	
W21P1	W21P2	W21	Coax	-	
W23P1	W23P2	W23	Black	-	
W24P1	W24P2	W24	Black	-	
W25P1	W25P2	W25	Black	-	
W26P1	W26P2	W26	Black	-	
W28P1	W28P2	W28	Black	-	
W29P1	W29P2	W29	Black	-	
W30P1	W30P2	W30	Coax	-	
W31P1	W31P2	W31	Black	-	
W32P1	W32P2	W32	Black	-	
W33P1	W33P2	W33	Coax	-	
W35P1	W35P2	W35	Black	-	
W36P1	W36P2	W36	Black	-	
W37P1	W37P2	W37	Coax	-	
W38P1	W38P2	W38	Black	-	
W39P1	W39P2	W39	Black	-	
W40P1	W40P2	W40	Coax	-	

Table 4.4: Connector Mating Information - NV10/NV7.5 Transmitter

Connector	Mate	Remarks
A14B1P1	A15J4	REJ LD A FAN 1
A14B2P1	A15J5	REJ LD A FAN 2
A14B3P1	A15J6	REJ LD A FAN 3
A14W1P1	A15J2	REJ LD A PWR SAMPLES
A100W1P1	A100J3	used only when A100 is installed
A100W1P2	A6J1	used only when A100 is installed
A100W2P1	A100J4	used only when A100 is installed
A100W2P2	A6J5	used only when A100 is installed
B1P1	P24	DOOR BLOWER 1 - PLUG 1
B1P2	P25	DOOR BLOWER 1 - PLUG 2
B2P1	Not Used	
B1P2	Not Used	
P1	A6J1	AC DIST. INPUT A
P2	A6J2	AC DIST. OUTPUT +12V PS A
P3	A6J3	AC DIST. OUTPUT LVPS A
P4	A6J5	AC DIST. INPUT B
P5	A6J6	AC DIST. OUTPUT +12V PS B
P6	A6J7	AC DIST. OUTPUT LVPS B
P7	A1J11	CONTROL PWB LVPS
P8	U6U1-CN4	SBC +12V
P9	U5-DC INPUT	MONITOR +12V
P10	A1J7	SBC WD RESET
P11	U6U1-RST1	SBC WD RESET (RHS connector)
P12	A7J5	FAN VOLTS (REJ LD A)
P13	A15J3	FAN VOLTS (REJ LD A)
P14	Not Used	
P15	Not Used	
P16	A7J1	FAN VOLTS (1-4)
P17	A17J9	FAN VOLTS (1-4)
P18	Not Used	
P19	Not Used	
P20	Not Used	
P21	Not Used	
P22	Not Used	
P23	Not Used	
P24	B1P1	DOOR BLOWER 1 - PLUG 1
P25	B1P2	DOOR BLOWER 1 - PLUG 2
P26	Not Used	

Table 4.4: Connector Mating Information - NV10/NV7.5 Transmitter

Connector	Mate	Remarks
P27	Not Used	
U5-VGA	U6U1-VGA1	AUI VGA
U5-COM	U6W2P2	AUI COM
U5-DC INPUT	P9	AUI DC INPUT
U6B1P1	U6U1-FAN1	SBC FAN
U6W1P1	U6U1-COM2	SBC Streaming Bus
U6W1P2	W16P2	SBC Streaming Bus
U6W2P1	U6U1-COM3	SBC External Serial
U6W2P2	U5-COM	SBC External Serial
W1P1	A3-RF OUT	EXCITER A - RF OUT (A3A2J1)
W1P2	A5A1J1	EXCITER A - RF OUT
W2P1	A4-RF OUT	EXCITER B, if installed
W2P2	A5A1J2	EXCITER B - RF OUT
W3P1	A1J5	EXCITER A - XMTR LINK
W3P2	A3-XMTR LINK	EXCITER A - XMTR LINK (A3A1J2)
W4P1	A1J6	EXCITER B - XMTR LINK
W4P2	A4-XMTR LINK	EXCITER B - XMTR LINK (A4A1J2), if installed
W5P1	A13A4J1	EXCITER A - XMTR RF SAMPLE
W5P2	A3-XMTR RF SAMPLE	EXCITER A - XMTR RF SAMPLE (A3A1J1)
W6P1	A13A5J1	EXCITER B - XMTR RF SAMPLE
W6P2	A4-XMTR RF SAMPLE	EXCITER B, if installed
W7P1	A6J4	EXCITER A - AC
W7P2	A3-AC INPUT	EXCITER A - AC (A3U1)
W8P1	A6J8	EXCITER B - AC
W8P2	A4-AC INPUT	EXCITER B, if installed
W9P1	A1J4	RF DRV S/C
W9P2	A5A1J3	RF DRV S/C
W10P1	A1J1	BUS - SOURCE
W10P2	A17J14	BUS - 1
W10P3	A17J10	BUS - 2
W10P4	A17J5	BUS - 3
W10P5	A17J1	BUS - 4
W11P1	A15J1	REJ LD SAMPLE A
W11P2	A1J2	REJ LD SAMPLE A
W12P1	Not Used	
W12P2	Not Used	
W13P1	A7J7	IPA PS DIST.
W13P2	A1J3	IPA PS DIST.
W14P1	A7J8	FAN PS DIST.
W14P2	A1J10	FAN PS DIST.

Table 4.4: Connector Mating Information - NV10/NV7.5 Transmitter

Connector	Mate	Remarks
W15P1	A1J12	SBC LAN
W15P2	U6U1J1	SBC LAN
W16P1	A1J13	SBC Streaming Bus
W16P2	U6W1P2	SBC Streaming Bus
W17P1	A1J17	SBC External Serial
W17P2	U6-COM1	SBC External Serial
W18	-	Not Used
W19	-	Not Used
W20P1	A13A1J1	FWD PWR SAMPLE
W20P2	A1J18	FWD PWR SAMPLE
W21P1	A13A2J1	REFLD PWR SAMPLE
W21P2	A1J19	REFLD PWR SAMPLE
W22P1	A13A3J1	RF MONITOR
W22J1	-	
W23P1	A7J12	FAN PS A CTRL
W23P2	A8J2	FAN PS A CTRL
W24P1	A7J13	FAN PS B CTRL
W24P2	A9J2	FAN PS B CTRL
W25P1	A7J9	IPA PS A CTRL
W25P2	A10J2	IPA PS A CTRL
W26P1	A7J10	IPA PS B CTRL
W26P2	A11J2	IPA PS B CTRL
W27P1	Not Used	
W27P2	Not Used	
W28P1	A17J17B	PS 1A CTRL
W28P2	A19J2	PS 1A CTRL
W29P1	A17J17A	PS 1B CTRL
W29P2	A20J2	PS 1B CTRL
W30P1	A5A2J1	RF DRIVE 1
W30P2	A17J15	RF DRIVE 1
W31P1	A17J13B	PS 2A CTRL
W31P2	A22J2	PS 2A CTRL
W32P1	A17J13A	PS 2B CTRL
W32P2	A23J2	PS 2B CTRL
W33P1	A5A2J2	RF DRIVE 2
W33P2	A17J11	RF DRIVE 2
W34P1	A16J5	REJ LD 1-2
W34P2	A14J4	REJ LD 1-2
W35P1	A17J8B	PS 3A CTRL
W35P2	A25J2	PS 3A CTRL

Table 4.4: Connector Mating Information - NV10/NV7.5 Transmitter

Connector	Mate	Remarks
W36P1	A17J8A	PS 3B CTRL
W36P2	A26J2	PS 3B CTRL
W37P1	A5A2J3	RF DRIVE 3
W37P2	A17J6	RF DRIVE 3
W38P1	A17J4B	PS 4A CTRL
W38P2	A28J2	PS 4A CTRL
W39P1	A17J4A	PS 4B CTRL
W39P2	A29J2	PS 4B CTRL
W40P1	A5A2J4	RF DRIVE 4
W40P2	A17J2	RF DRIVE 4
W41P1	A16J6	REJ LD 3-4
W41P2	A14J3	REJ LD 3-4
W42P1	A16J7	REJ LD 1-4
W42P2	A14J1	REJ LD 1-4

Table 4.5: Wiring List - NAE104A & /01 NVE50 Exciter

Source	Destination	Wire #	Colour	Size	Remarks
P1	U2-L	1	Grey	14	
P2	U2-N	2	Grey	14	
E1	U2-GND	3	Yel/Grn	14	
U2-L	U3-L	4	Grey	14	
U2-N	U3-N	5	Grey	14	
U2-GND	U3-GND	6	Yel/Grn	14	
E1	U1-GND	7	Yel/Grn	14	
U2-(+5V)	P4-6	8	White	22	
U2-COM	P4-5	9	Black	22	
U2-COM	P4-7	10	Black	22	
U2-(+5V)	P6-4	11	White	22	
U2-(+5V)	P3-11	12	White	22	
U2-(+5V)	P3-23	13	White	22	
U2-COM	P3-12	14	Black	22	
U2-COM	P3-24	15	Black	22	
U2-COM	U3-(V-)	16	Black	16	
U2-(+V)	P3-25	17	White	22	
U2-(-V)	P3-13	18	White	22	
U3-(+V)	A2E3-A	19	White	16	
U3-(+V)	P3-1	20	White	22	
U3-(+V)	P5-5	21	White	22	
U3-(+V)	P5-9	22	White	22	
U3-(-V)	A2E8	23	Black	16	
P3-2	P5-7	24	Black	22	
P3-3	P4-1	25	White	22	
P3-4	P5-4	26	White	22	
P3-5	P5-6	27	Black	22	
P3-7	P6-2	28	White	22	
P3-14	P5-8	29	Black	22	
P3-15	P5-2	30	White	22	
P3-17	P5-3	31	White	22	
P3-20	P6-1	32	White	22	

Table 4.6: Connector Mating Information - NAE104A & /01 NVE50 Exciter

Connector	Mate	Remarks
P1	U1-L	
P2	U1-N	
P3	A1J9	
P4	A3J5	
P5	A2P1	
P6	A4J1	
A2P1	P5	
B1P1	A1J12	
W1P1	A1J15	
W1P2	A2J1	
W2P1	A1J11	Exgine Systems Only
W2P2	A3J8	Exgine Systems Only
W3P1	A1J14	Exgine Systems Only
W3P2	A3J2	Exgine Systems Only
W4P1	A3J1	Exgine Systems Only
W4P2	U4J1	Exgine Systems Only
W5J1	EXT 10 MHz	
W5P1	A1J13	
W5P1	A3J3	Exgine Systems Only
W6P1	A1J13	Exgine Systems Only
W6P2	A3J4	Exgine Systems Only

Table 4.7: Wiring List - Ac Distribution Assembly (Nautel Part # 206-5150-01)

Source	Destination	Wire #	Colour	Size	Remarks
1-L	J2-L	-	Red	14	
J1-E (GND)	E1	-	Grn/Yel	14	
J1-N	J2-N	-	White	14	
J2-L	J3-L	-	Red	14	
J2-E (GND)	E1	-	Grn/Yel	14	
J2-N	J3-N	-	White	14	
J3-L	J4-L	-	Red	14	
J3-E (GND)	E2	-	Grn/Yel	14	
J3-N	J4-N	-	White	14	
J4-E (GND)	E2	-	Grn/Yel	14	
J5-L	J6-L	-	Red	14	
J5-E (GND)	E3	-	Grn/Yel	14	
J5-N	J6-N	-	White	14	
J6-L	J7-L	-	Red	14	
J6-E (GND)	E3	-	Grn/Yel	14	
J6-N	J7-N	-	White	14	
J7-L	J8-L	-	Red	14	
J7-E (GND)	E4	-	Grn/Yel	14	
J7-N	J8-N	-	White	14	
J8-E (GND)	E4	-	Grn/Yel	14	

Table 4.8: Wiring List - NAA56/01D RF Power Module

Source	Destination	Wire #	Colour	Size	Remarks
A10TB4-1	A1-B	1	White	16	
A10TB4-2	A3-B	2	White	16	
A10TB4-3	A5-B	3	White	16	
A10TB4-4	A7-B	4	White	16	
A10TB5-1	A2-B	5	White	16	
A10TB5-2	A4-B	6	White	16	
A10TB5-3	A6-B	7	White	16	
A10TB5-4	A8-B	8	White	16	
A10TB5-5	A9-B	9	White	16	
A10TB3-1	A1-A	10	White	22	
A10TB3-2	A2-A	11	White	22	
A10TB3-3	A3-A	12	White	22	
A10TB3-4	A4-A	13	White	22	
A10TB3-5	A5-A	14	White	22	
A10TB3-6	A6-A	15	White	22	
A10TB3-7	A7-A	16	White	22	
A10TB3-8	A8-A	17	White	22	
A10TB3-9	A9-A	18	White	22	
A12-M	A10TB2-3	19	White	22	1 Conductor
A12-N	E1	19	Shield	-	Shielded
A12-J	A10TB1-1	20	White	22	
A12-L	A10TB1-3	21	White	22	
A12-A	A10TB2-1	22	White	22	
A12-G	A10TB2-2	23	White	22	
A12-C	A11-K	24	Core		50 ohm coax cable
A12-D	A11-L	24	Shield	-	
A12-E	A11-M	25	Core		50 ohm coax cable
A12-F	A11-N	25	Shield	-	
W1P1	W1P2	-	Black	-	Cat.5e Shielded
W2P1	W2P2	-	Black	-	Cat.5e Shielded

Table 4.9: Connector Mating Information - NAA56/01D RF Power Module

Connector	Mate
B1P1	A11J1
B2P1	A11J2
B3P1	A11J3
B4P1	A11J4
B5P1	A11J5
B6P1	A11J6
W1P1	A10J1
W1P2	A11J8
W2P1	A10J2
W2P2	A11J7
W3P1	A10J3
W3P2	A11J9

Section 5: Reading Electrical Schematics

This section contains electrical schematics and logic diagrams for the transmitter. Block diagrams, simplified electrical schematics, and logic diagrams may be included. Refer to Table 5.1 on page 5-5 for an itemized listing.

Component values

Unless otherwise specified on the logic or schematic diagram, the following defaults apply:

- Resistor values are shown in ohms (K = 1,000 and M = 1,000,000)
- Resistor power ratings are not shown when less than 0.5 W
- Capacitor values are shown in microfarads (uF)
- Unidentified diodes are part number 1N4938 (Nautel Part # QAP29)

Graphic symbols

The graphic symbols used on electrical schematics are in accordance with *American National Standard ANSI Y32.2-1975 - Graphic Symbols for Electrical and Electronic Diagrams*.

Logic symbols

The logic symbols used on electrical schematics and logic diagrams are in accordance with *American National Standard ANSI Y32.14-1975 - Graphic Symbols for Logic Diagrams*.

Reference designations

Referenced designations were assigned in accordance with *American National Standard ANSI Y32.16-1975 - Reference Designations for Electrical and Electronic Parts and Equipment*.

Each electrical symbol is identified with its basic reference designation. To obtain the full reference designation for a specific part, prefix this basic identifier with the reference designation assigned to all higher assemblies. For example, the complete designation for a resistor (R1) on a printed wiring board (A1), that is part of a larger board (A2), would be A2A1R1.

Unique symbols

Nautel uses unique symbols on electrical schematics to describe logic (two-state) signals. These signals differ from single-state signals or analog signals that may have multiple values.

Type of inputs and outputs

On electrical schematics, names used to describe logic (two-state) input and output signals are prefixed with a # symbol.

Logic level convention

The # prefix identifies an input or output signal that has two distinct states: high and low.

The suffix on an input or output signal name identifies the *active* (true) state of the signal. The *high suffix* (+) indicates the more positive of the two levels used to represent the logic states. The *low suffix* (-) indicates the less positive of the two levels.

Two types of logic, positive and negative, may be represented on a particular schematic. In positive logic, high represents the *active* (true) state, and low represents the *inactive* (false) state. In negative logic, low represents the *active* (true) state, and high represents the *inactive* (false) state.

Identifying schematic diagrams

Each electrical schematic in this section is identified by a number that is both the figure number and the page number. The numbers are assigned sequentially are prefixed by the letters SD. The electrical schematics and logic diagrams included in this section are listed in Table 5.1 on page 5-5.

Structure of schematics

The electrical schematics are structured in a hierarchical format that is based on function and signal flow. Wherever practical, the signal flow is from left to right. Normally, inputs originate on the left-hand side and outputs extend to the right-hand side. Exceptions are shown by an arrow indicating the direction of signal flow.

> *Note: The physical location of a part or assembly was not necessarily a factor during creation of the schematic. The full reference designation assigned to a part or assembly, in conjunction with the family tree (see Section 3, "Parts Lists" on page 3-1) and the assembly detail drawings (see Section 6, "Mechanical Drawings" on page 6-1), will identify its location.*

Figures SD-1 through SD-9 identify each major stage and its detailed interconnection. Each stage contains cross-references that identify which blocks are the signal sources for inputs, or the destinations for outputs.

When a sub-function is treated as a block in figures SD-1 through SD-9, its detailed circuit information is included in its own schematic drawing(s), which is also included in this section.

Locating schematic diagram(s) for a functional block

The text inside a functional block provides the key to locating its schematic diagram(s).

1. When a functional block is assigned a reference designation (e.g., A2A1), refer to the family trees in Section 3, "Parts Lists" on page 3-1. Follow the family tree branches to the block that contains the desired reference designation, and associated Nautel nomenclature (e.g., NAPI104/03 Power Module Interface PWB). Note the reference designations and Nautel nomenclatures of all higher assemblies in the path.
   Example: A18 NAA56/01D RF Power Module > A18A10 NAPI104/03 Power Module Interface PWB.

2. Refer to Table 5.1 on page 5-5 and use the reference designation and Nautel nomenclature to identify the appropriate schematic diagram(s).
   Example: NAPI104/03 Power Module Interface PWB is shown on schematics SD-25 through SD-27.

3. If necessary, refer to the referenced figure in the schematics at the end of this section and locate the next, lower-level assembly. Then, repeat this procedure until the desired schematic diagram is found.

Locating a part or assembly on a schematic

The full reference designation assigned to a part or assembly is the key to physically locating that part or assembly.

> *Note: Full reference designations contain the assembly hierarchical coding. When the end item is divided into units (cabinets), the first coding is a unit number (1, 2, 3, etc.). When the end item is divided into assemblies, the first coding is an assembly number (A1, A2, A3, etc.). If a unit or an assembly is divided into sub-assemblies, assembly coding that identifies assembly relationship (1A1, A2A1, A2A1A1, etc.) is added.*

1. Refer to the family trees in Section 3, "Parts Lists" on page 3-1.

2. Follow the family tree branches to the block that contains the desired reference designation, while noting the Nautel nomenclatures and names of all higher assemblies in the path. **Example:** A18 NAA56/01D RF Power Module > A18A10 NAPI104/03 Power Module Interface PWB.

> *Note: The drawings in the* Mechanical Drawings *section depict the assembly detail of the transmitter and its modules and assemblies.*

3. Refer to Table 6.1 in Section 6, "Mechanical Drawings" on page 6-1. Use the Nautel nomenclature and name of each family tree block in the path, starting at the highest assembly – this is normally Figure MD-1 – to determine the figure number(s) for that assembly.
   Example: NAPI104/03 Power Module Interface PWB is shown on MD-16.

4. Refer to the referenced figure (e.g., MD-16) in Section 6.1, "List of Mechanical Drawings" on page 6-2 to locate the desired part or assembly.

Table 5.1: List of Electrical Schematics

Figure #	Title
SD-1A	NV10/NV7.5 Transmitter - Ac-Dc Power Stage, 3-Phase, 180-264 V ac (Sheet 1A of 3)
SD-1B	NV10/NV7.5 Transmitter - Ac-Dc Power Stage, 3-Phase, 312-457 V ac (Sheet 1B of 3)
SD-1C	NV10/NV7.5 Transmitter - Ac-Dc Power Stage, 1-Phase, 180-264 V ac (Sheet 1C of 3)
SD-2	NV10/NV7.5 Transmitter - Ac-Dc Power Stage (Sheet 2 of 3)
SD-3	NV10/NV7.5 Transmitter - Ac-Dc Power Stage (Sheet 3 of 3)
SD-4	NV10/NV7.5 Transmitter - Control/Monitor Stage (Sheet 1 of 2)
SD-5	NV10/NV7.5 Transmitter - Control/Monitor Stage (Sheet 2 of 2)
SD-6	NV10/NV7.5 Transmitter - RF Drive Stage
SD-7	NV10/NV7.5 Transmitter - RF Power Stage (Sheet 1 of 3)
SD-8	NV10/NV7.5 Transmitter - RF Power Stage (Sheet 2 of 3)
SD-9	NV10/NV7.5 Transmitter - RF Power Stage (Sheet 3 of 3)
SD-10	NAPC156A Control/Interface PWB (Sheet 1 of 8)
SD-11	NAPC156A Control/Interface PWB (Sheet 2 of 8)
SD-12	NAPC156A Control/Interface PWB (Sheet 3 of 8)
SD-13	NAPC156A Control/Interface PWB (Sheet 4 of 8)
SD-14	NAPC156A Control/Interface PWB (Sheet 5 of 8)
SD-15	NAPC156A Control/Interface PWB (Sheet 6 of 8)
SD-16	NAPC156A Control/Interface PWB (Sheet 7 of 8)
SD-17	NAPC156A Control/Interface PWB (Sheet 8 of 8)
SD-18	NAPI115A Remote Interface PWB
SD-19	NAE104A and /01 NVE50 Exciter, Optional
SD-20	Power Amplifier Pallet (CD2011B)
SD-21	4-Input Reject PWB (206-8082)
SD-22	NAA56/01D RF Power Module (Sheet 1 of 2)
SD-23	NAA56/01D RF Power Module (Sheet 2 of 2)
SD-24	NAPA20C/01 Power Amplifier PWB
SD-25	NAPI104/03 Power Module Interface PWB (Sheet 1 of 3)
SD-26	NAPI104/03 Power Module Interface PWB (Sheet 2 of 3)
SD-27	NAPI104/03 Power Module Interface PWB (Sheet 3 of 3)
SD-28	NAPI112B Power Supply Distribution PWB

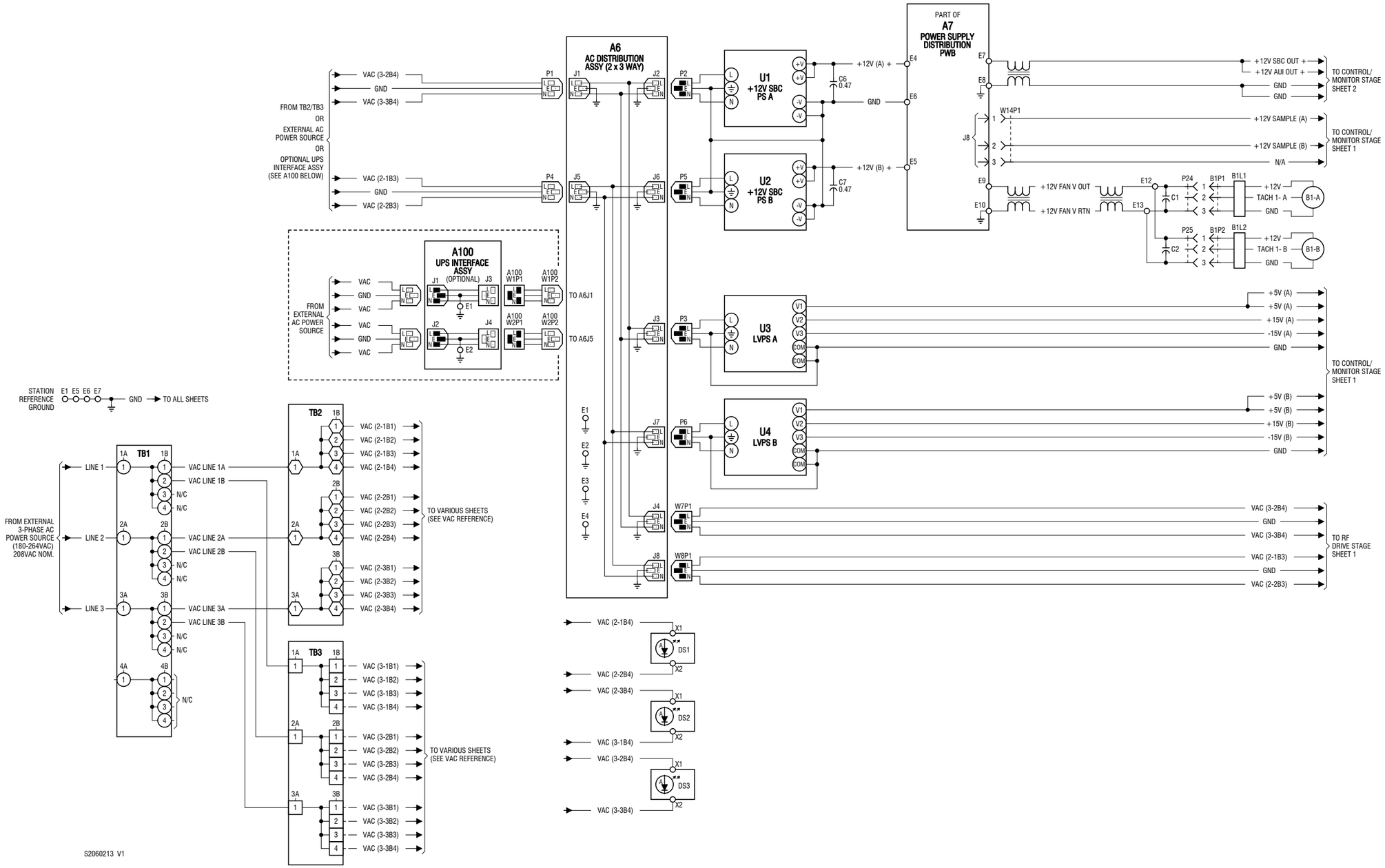
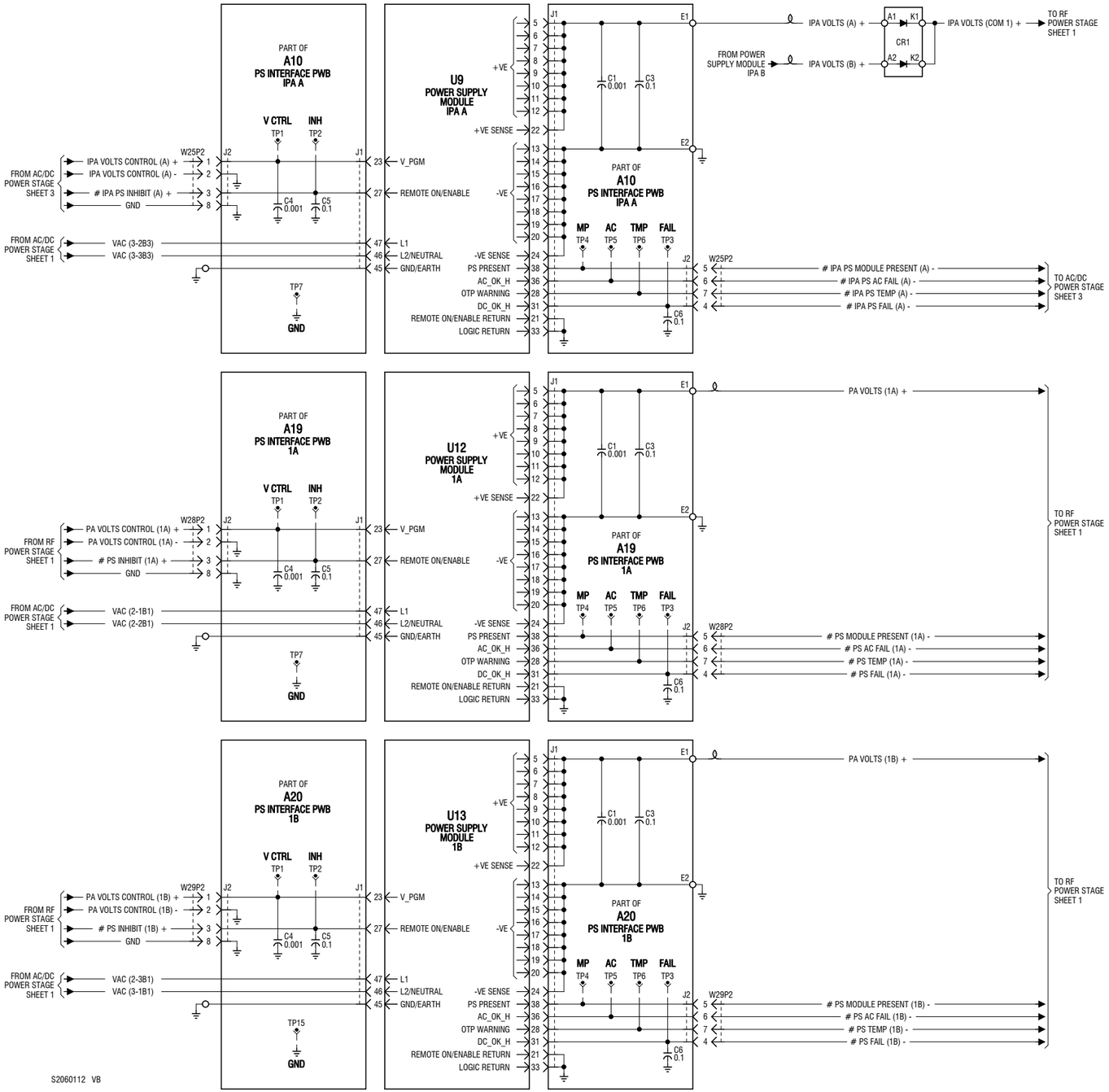


Figure SD-1A: NV10/NV7.5 Transmitter - Ac-Dc Power Stage, 3-Phase, 180-264 V ac (Sheet 1A of 3)



NOTES:

POWER SUPPLY MODULE CONNECTOR J1 AND PS INTERFACE PWB CONNECTOR J1 ARE BLIND-MATE CONNECTIONS.

PS INTERFACE PWB 2 THROUGH 4 ARE THE SAME AS "1" SHOWN EXCEPT FOR DIFFERENCES SHOWN IN THE TABLE BELOW. CHANGE SIGNAL NAME REFERENCES OF (1) TO (2) THROUGH (4) AS APPLICABLE.

PS INTERFACE PWB IPA B AND POWER SUPPLY MODULE IPA B ARE THE SAME AS "IPA A" SHOWN EXCEPT FOR DIFFERENCES SHOWN IN THE TABLE BELOW. CHANGE SIGNAL NAME REFERENCES OF (IPA A) TO (IPA B) AS APPLICABLE.

VAC SIGNAL NAME DIFFERENCES ARE ALSO SHOWN IN THE TABLE BELOW.

PS INTERFACE PWB	A10	A11
	IPA A	IPA B
J1	U9J1	U10J1
J2	W25P2	W26P2
VAC (L1)	3-2B3	2-3B3
VAC (L2/N)	3-3B3	3-1B3

PS INTERFACE PWB	A19	A20	A22	A23	A25	A26	A28	A29
	1A	1B	2A	2B	3A	3B	4A	4B
J1	U12J1	U13J1	U14J1	U15J1	U16J1	U17J1	U18J1	U19J1
J2	W28P2	W29P2	W31P2	W32P2	W35P2	W36P2	W38P2	W39P2
VAC (L1)	2-1B1	2-3B1	3-2B1	2-1B2	2-3B2	3-2B2	2-1B3	2-3B3
VAC (L2/N)	2-2B1	3-1B1	3-3B1	2-2B2	3-1B2	3-3B2	2-2B3	3-1B3

Figure SD-2: NV10/NV7.5 Transmitter - Ac-Dc Power Stage (Sheet 2 of 3)

NOTES:
POWER SUPPLY MODULE CONNECTOR J1 AND PS INTERFACE PWB CONNECTOR J1 ARE BLIND-MATE CONNECTIONS.

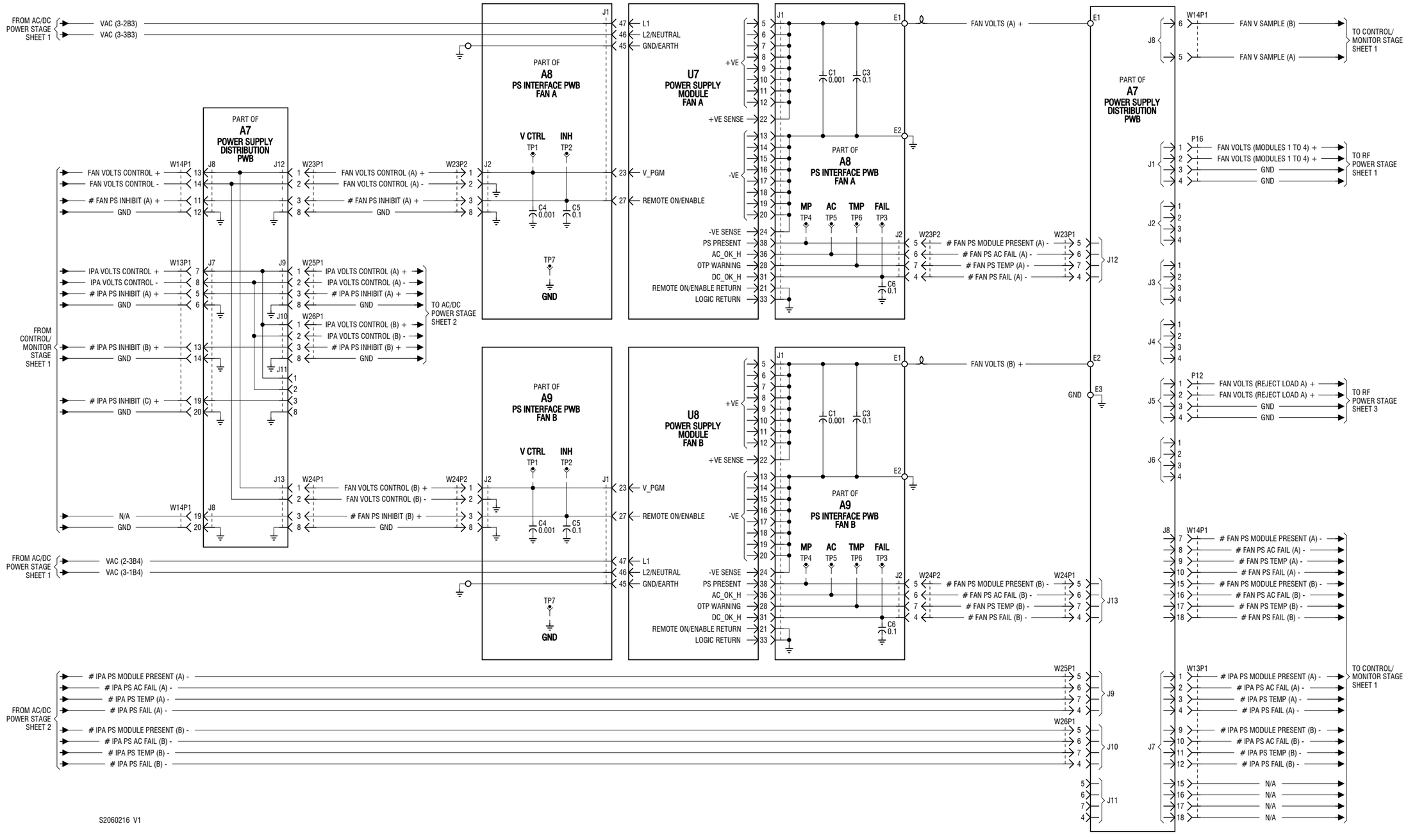


Figure SD-3: NV10/NV7.5 Transmitter - Ac-Dc Power Stage (Sheet 3 of 3)

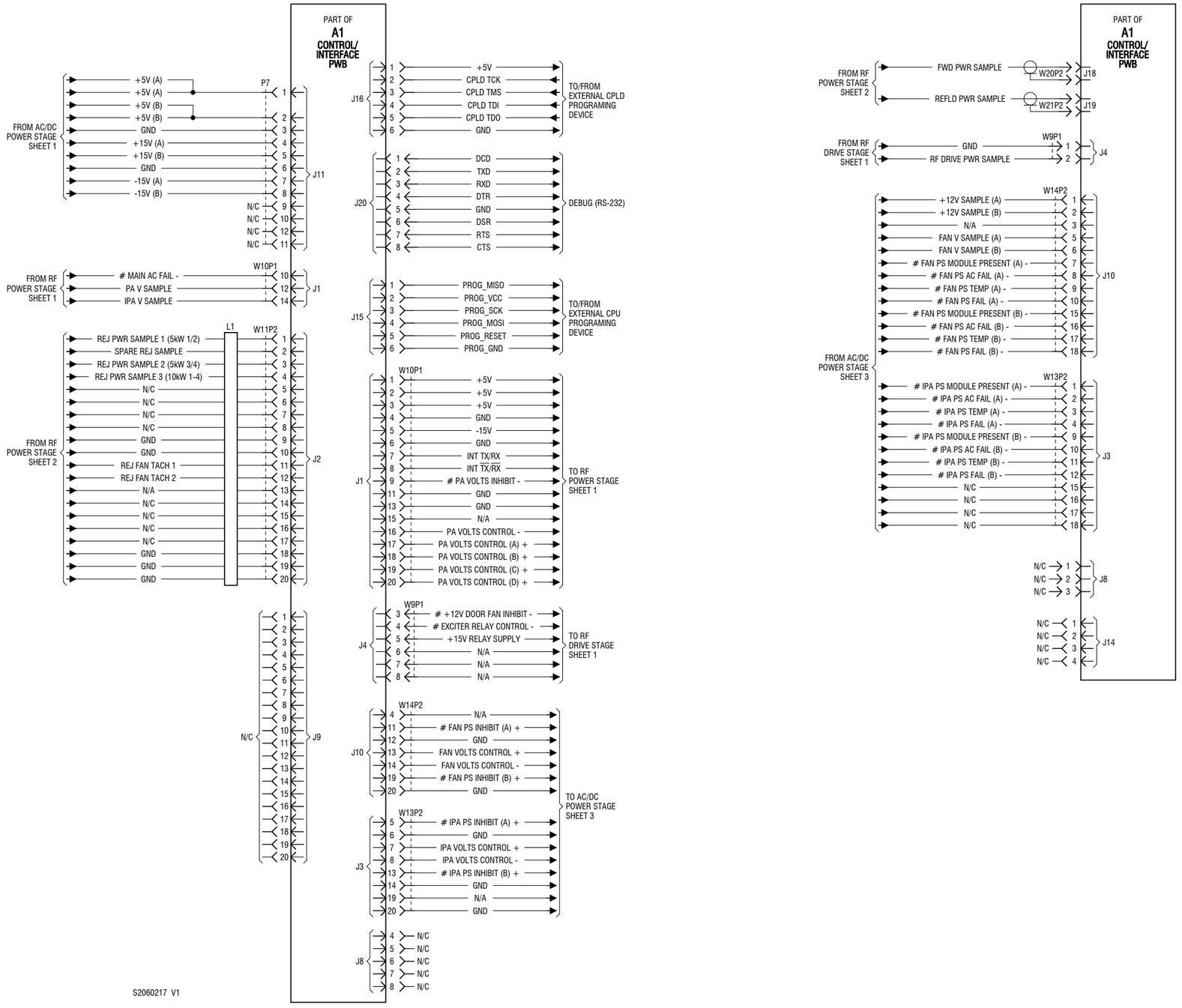


Figure SD-4: NV10/NV7.5 Transmitter - Control/Monitor Stage (Sheet 1 of 2)

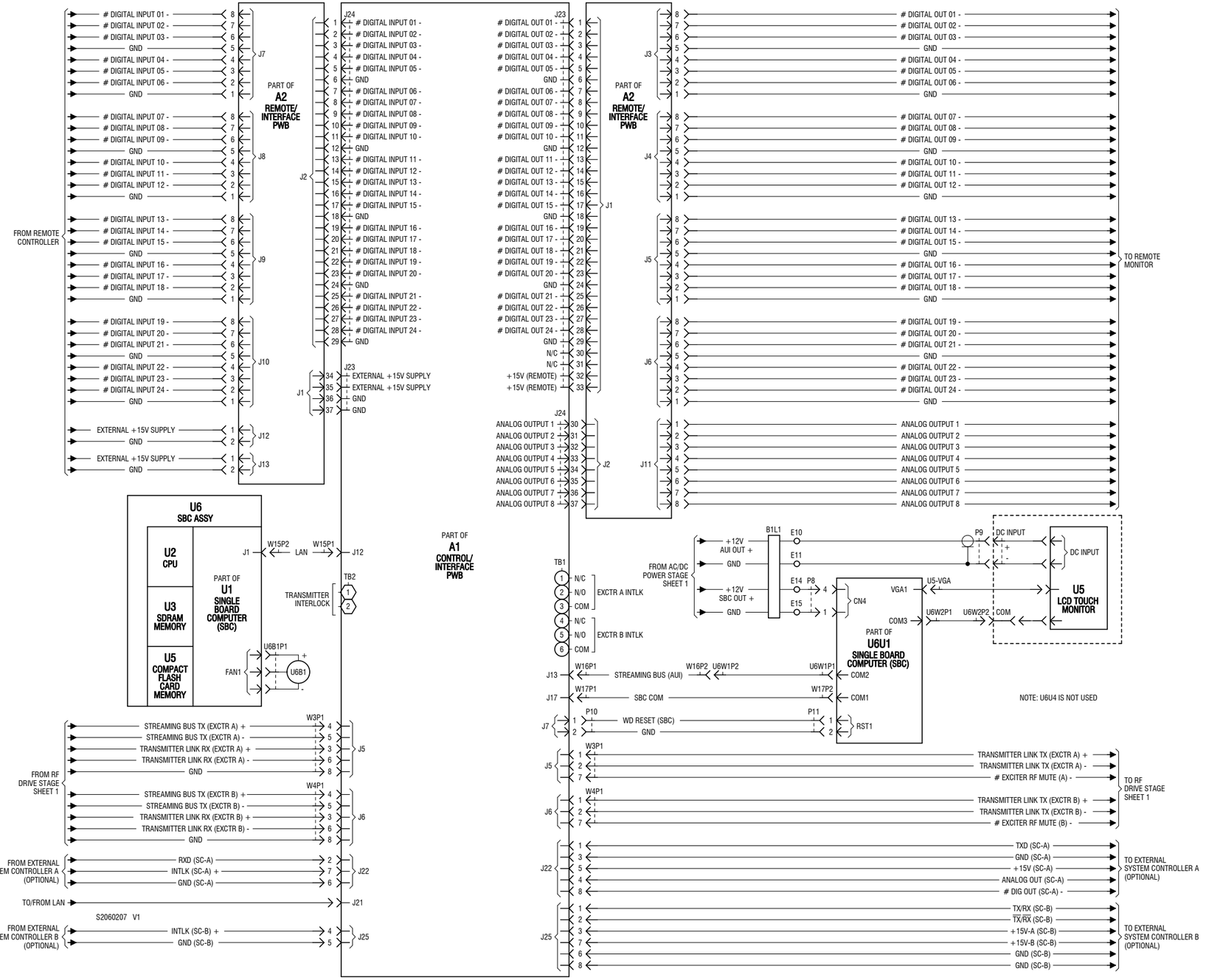


Figure SD-5: NV10/NV7.5 Transmitter - Conrol/Monitor Stage (Sheet 2 of 2)

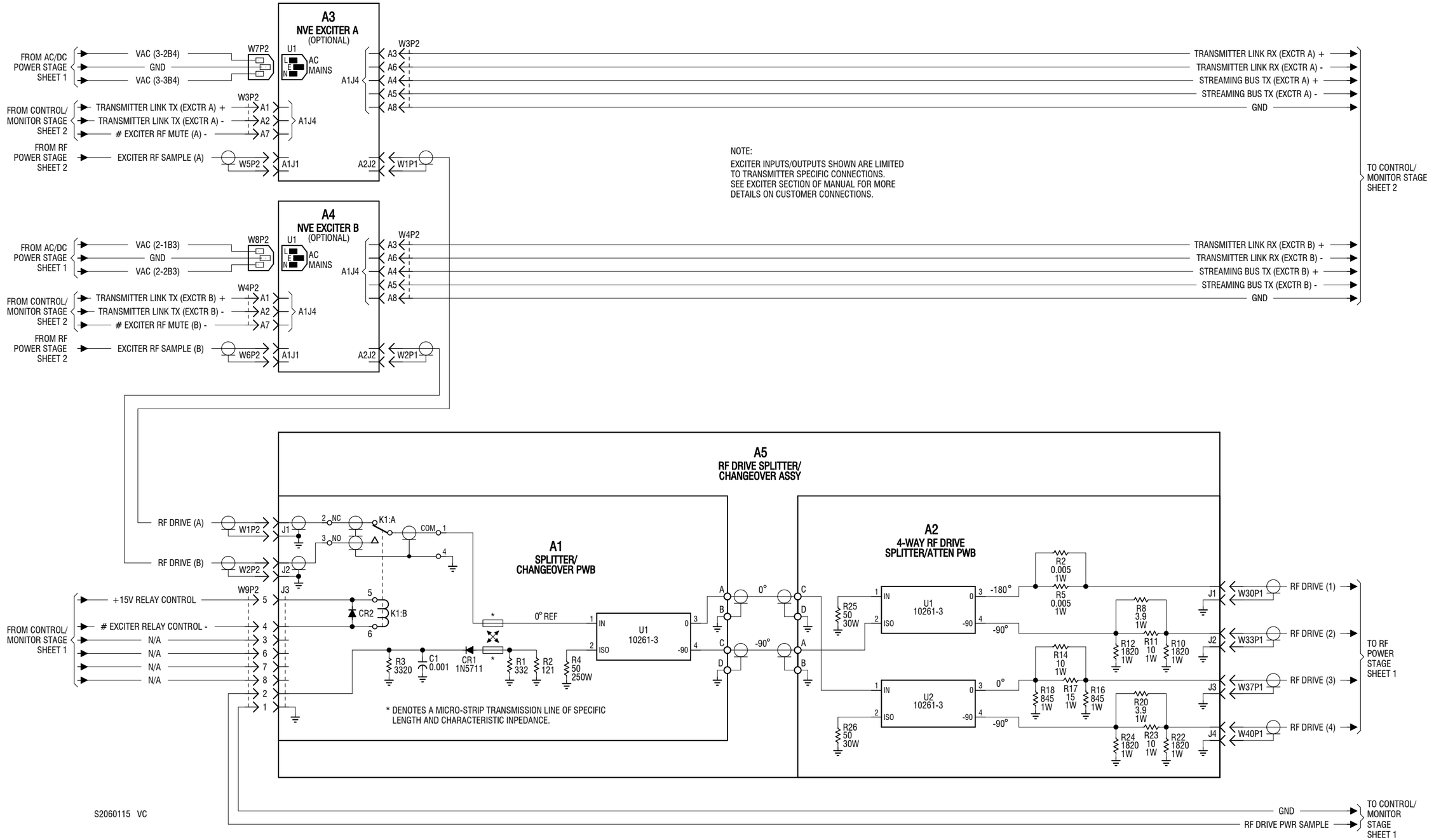
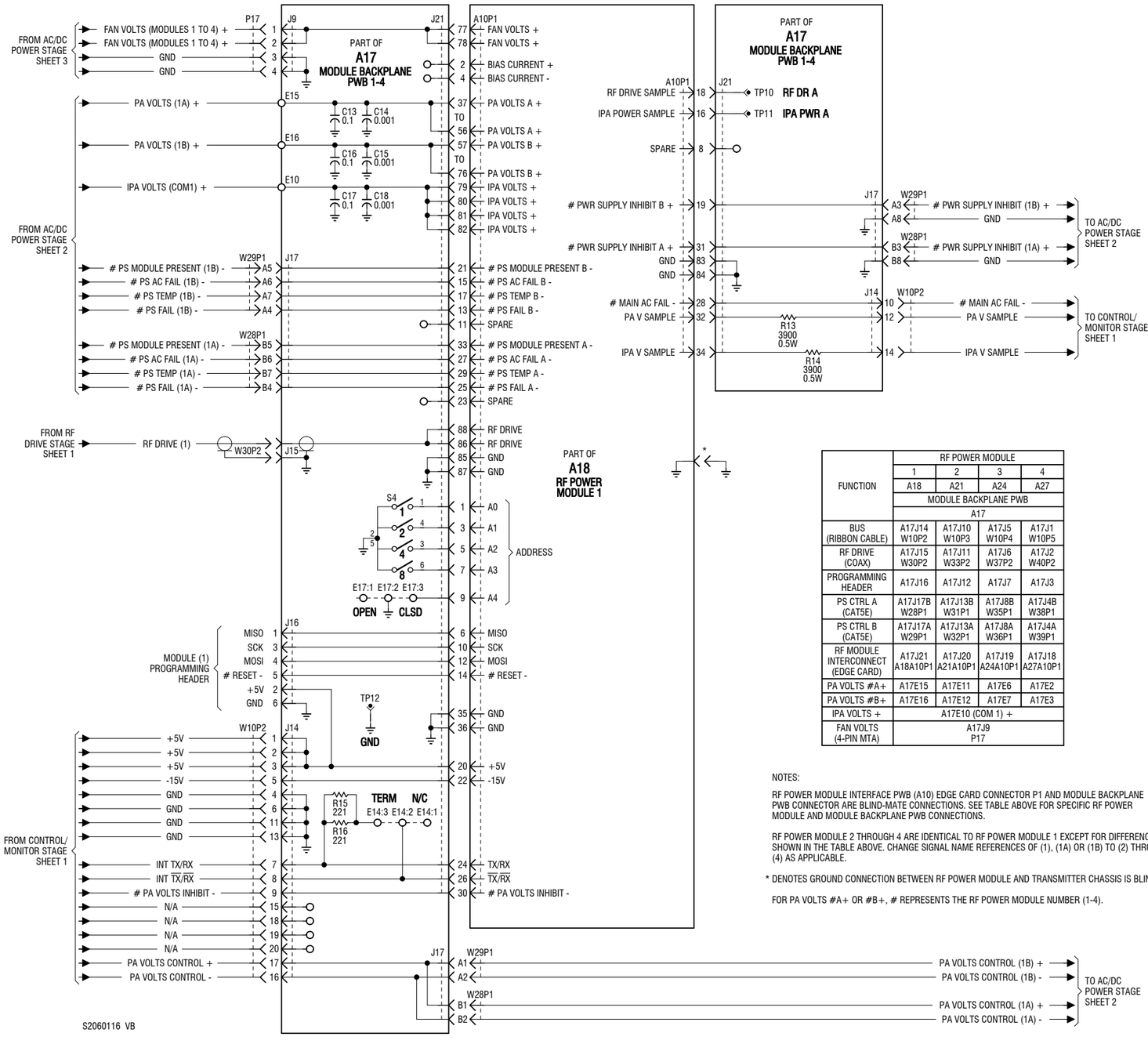


Figure SD-6: NV10/NV7.5 Transmitter - RF Drive Stage



FUNCTION	RF POWER MODULE			
	1	2	3	4
	A18	A21	A24	A27
	MODULE BACKPLANE PWB			
	A17			
BUS (RIBBON CABLE)	A17J14 W10P2	A17J10 W10P3	A17J5 W10P4	A17J1 W10P5
RF DRIVE (COAX)	A17J15 W30P2	A17J11 W33P2	A17J6 W37P2	A17J2 W40P2
PROGRAMMING HEADER	A17J16	A17J12	A17J7	A17J3
PS CTRL A (CAT5E)	A17J17B W28P1	A17J13B W31P1	A17J8B W35P1	A17J4B W38P1
PS CTRL B (CAT5E)	A17J17A W29P1	A17J13A W32P1	A17J8A W36P1	A17J4A W39P1
RF MODULE INTERCONNECT (EDGE CARD)	A17J21 A18A10P1	A17J20 A21A10P1	A17J19 A24A10P1	A17J18 A27A10P1
PA VOLTS #A+	A17E15	A17E11	A17E6	A17E2
PA VOLTS #B+	A17E16	A17E12	A17E7	A17E3
IPA VOLTS +	A17E10 (COM 1) +			
FAN VOLTS (4-PIN MTA)	A17J9 P17			

NOTES:

RF POWER MODULE INTERFACE PWB (A10) EDGE CARD CONNECTOR P1 AND MODULE BACKPLANE PWB CONNECTOR ARE BLIND-MATE CONNECTIONS. SEE TABLE ABOVE FOR SPECIFIC RF POWER MODULE AND MODULE BACKPLANE PWB CONNECTIONS.

RF POWER MODULE 2 THROUGH 4 ARE IDENTICAL TO RF POWER MODULE 1 EXCEPT FOR DIFFERENCES SHOWN IN THE TABLE ABOVE. CHANGE SIGNAL NAME REFERENCES OF (1), (1A) OR (1B) TO (2) THROUGH (4) AS APPLICABLE.

* DENOTES GROUND CONNECTION BETWEEN RF POWER MODULE AND TRANSMITTER CHASSIS IS BLIND-MATE.

FOR PA VOLTS #A+ OR #B+, # REPRESENTS THE RF POWER MODULE NUMBER (1-4).

Figure SD-7: NV10/NV7.5 Transmitter - RF Power Stage (Sheet 1 of 3)

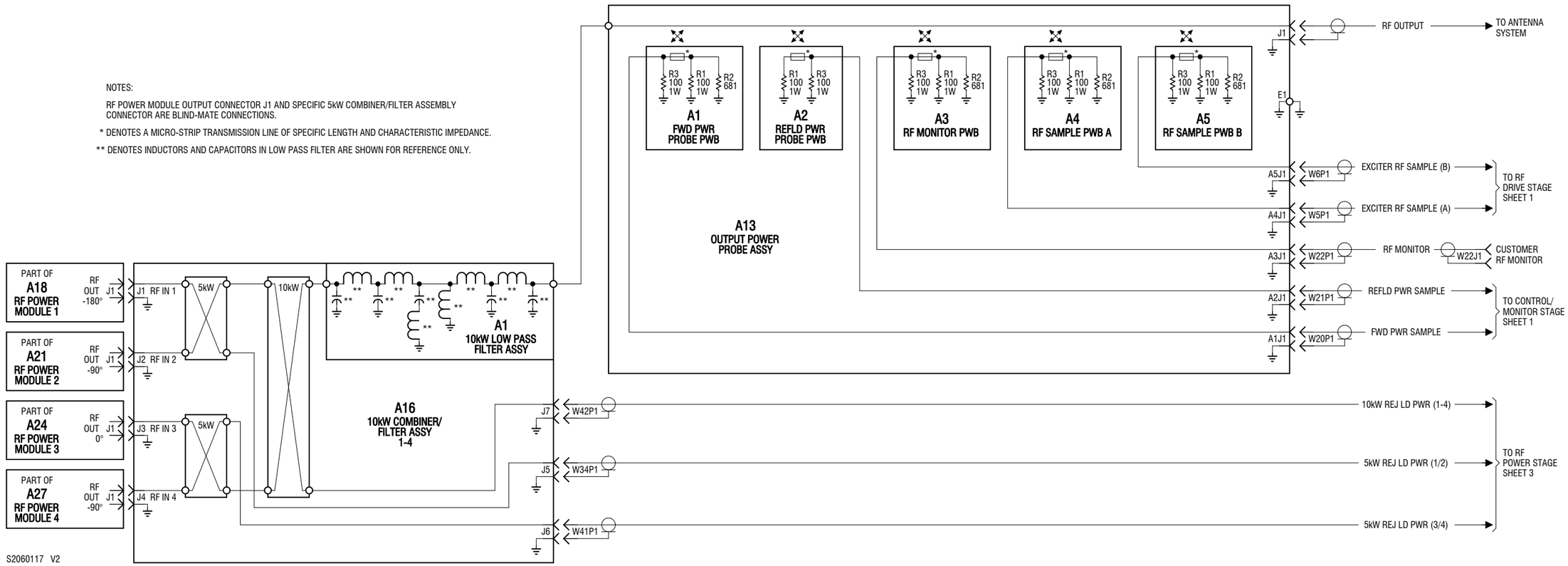


Figure SD-8: NV10/NV7.5 Transmitter - RF Power Stage (Sheet 2 of 3)

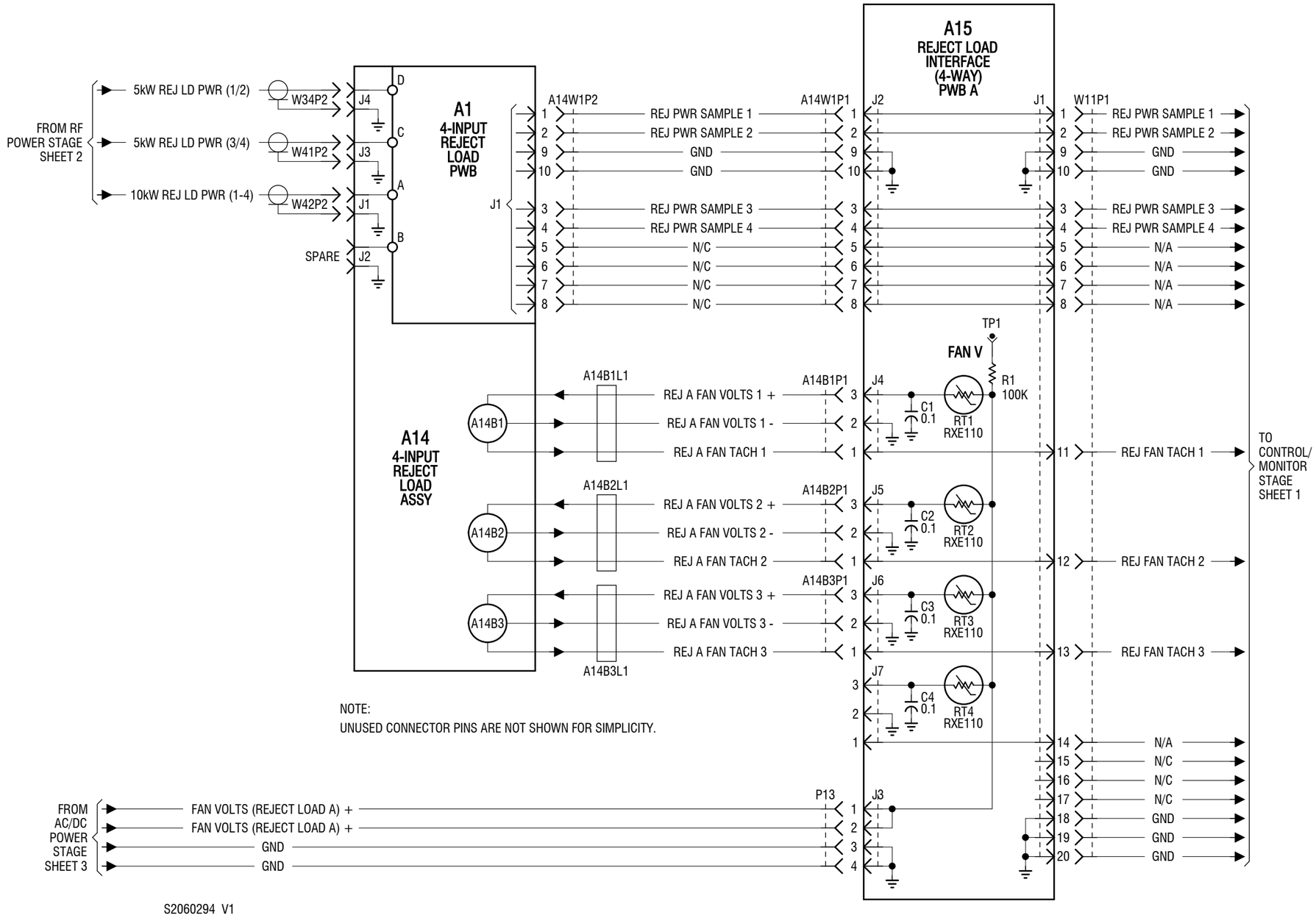


Figure SD-9: NV10/NV7.5 Transmitter - RF Power Stage (Sheet 3 of 3)

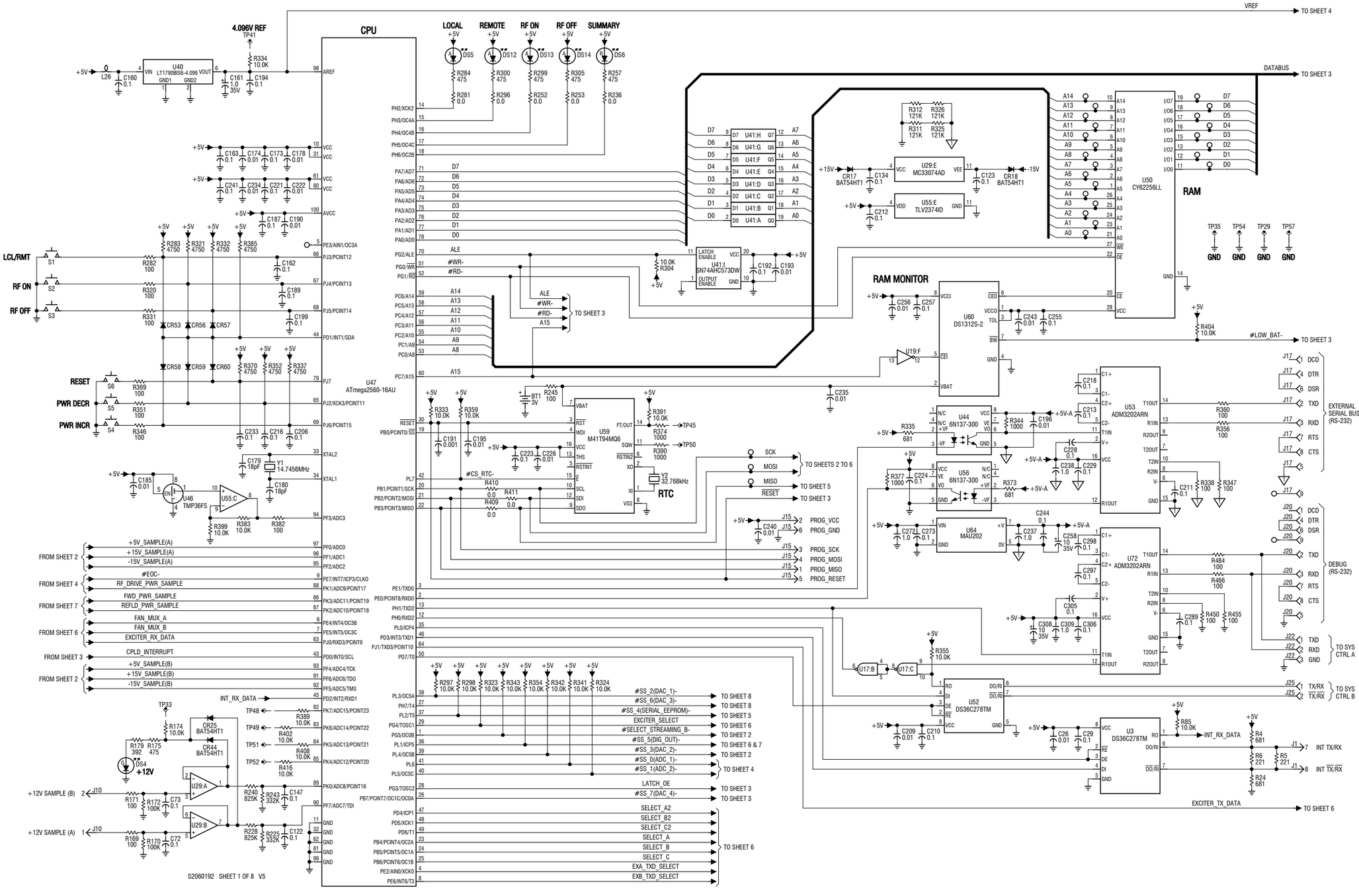
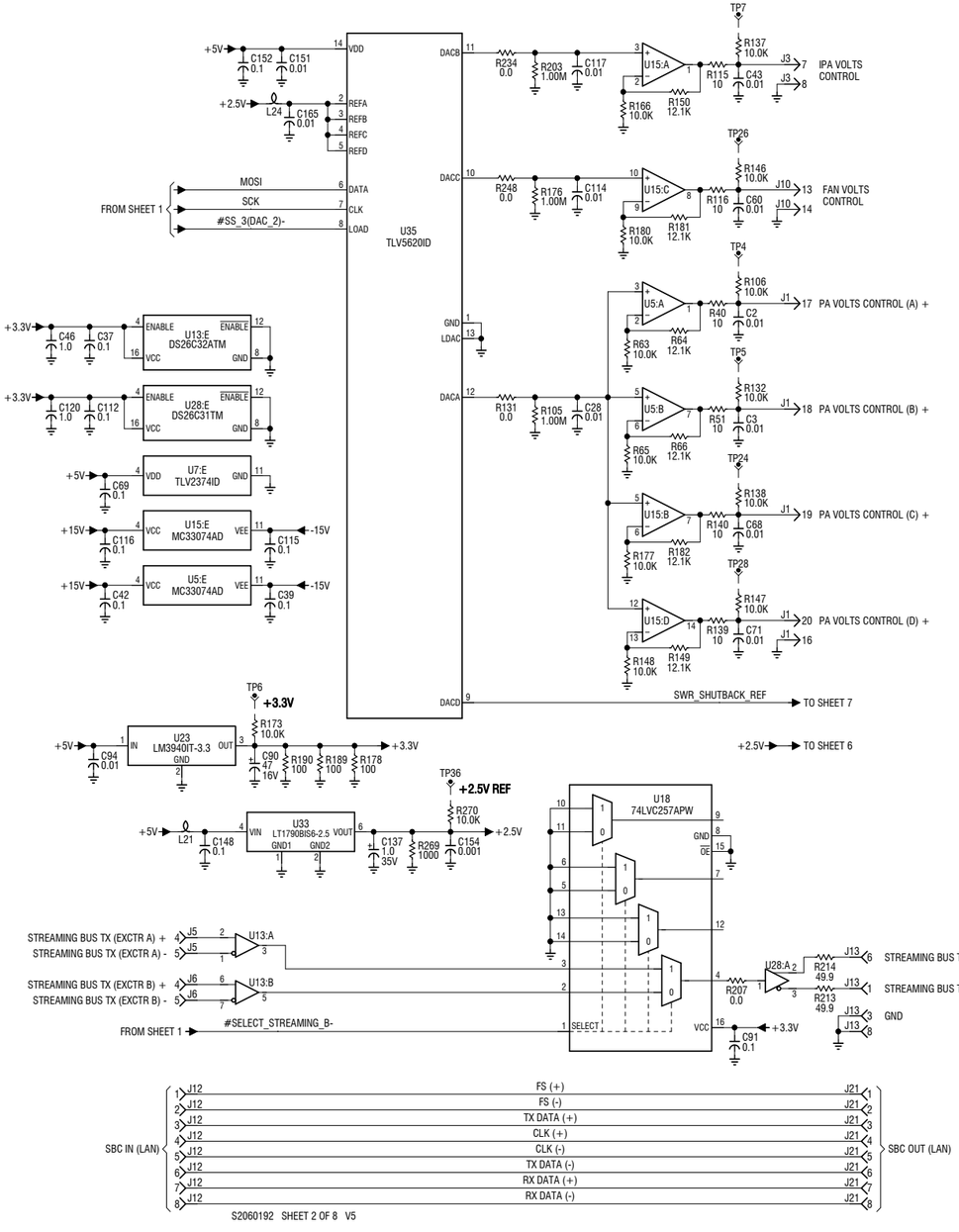


Figure SD-10: NAPC156A Control/Interface PWB (Sheet 1 of 8)



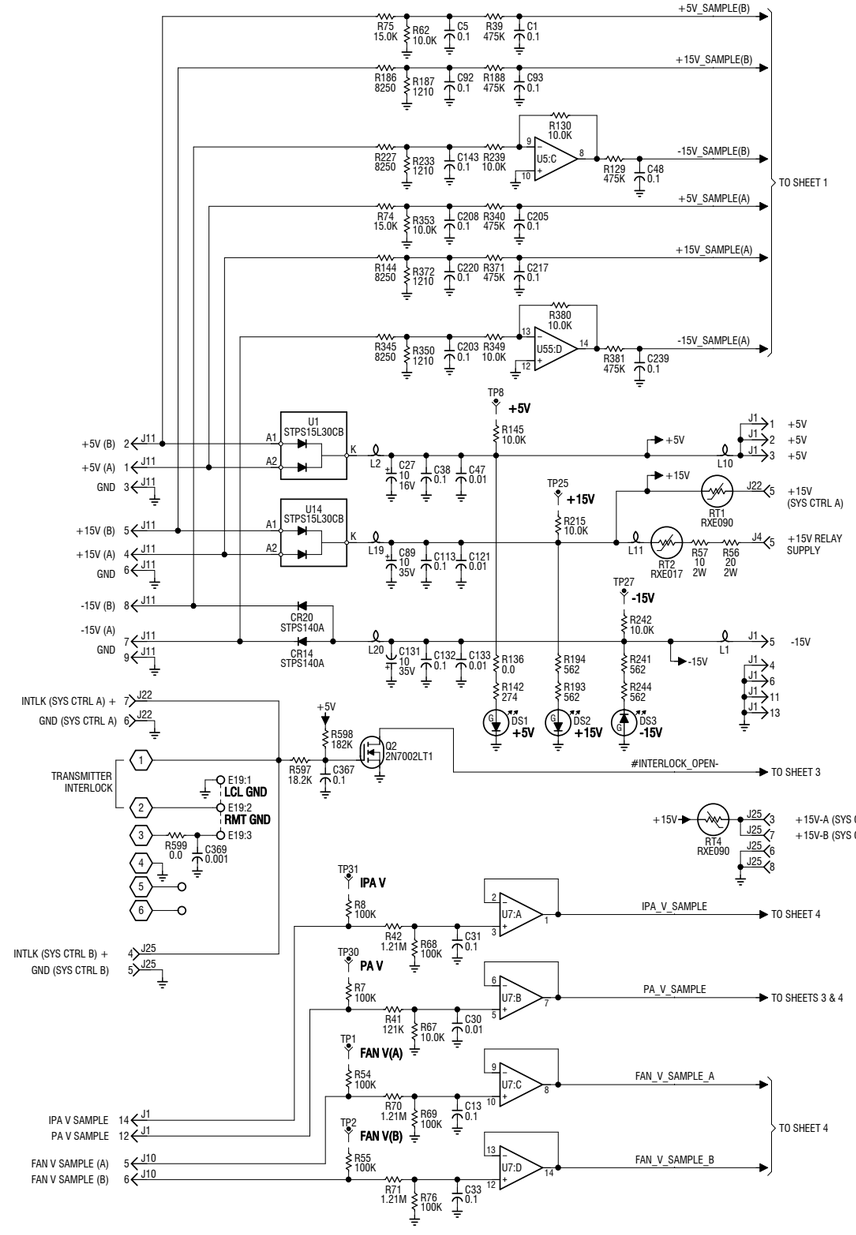


Figure SD-11: NAPC156A Control/Interface PWB (Sheet 2 of 8)

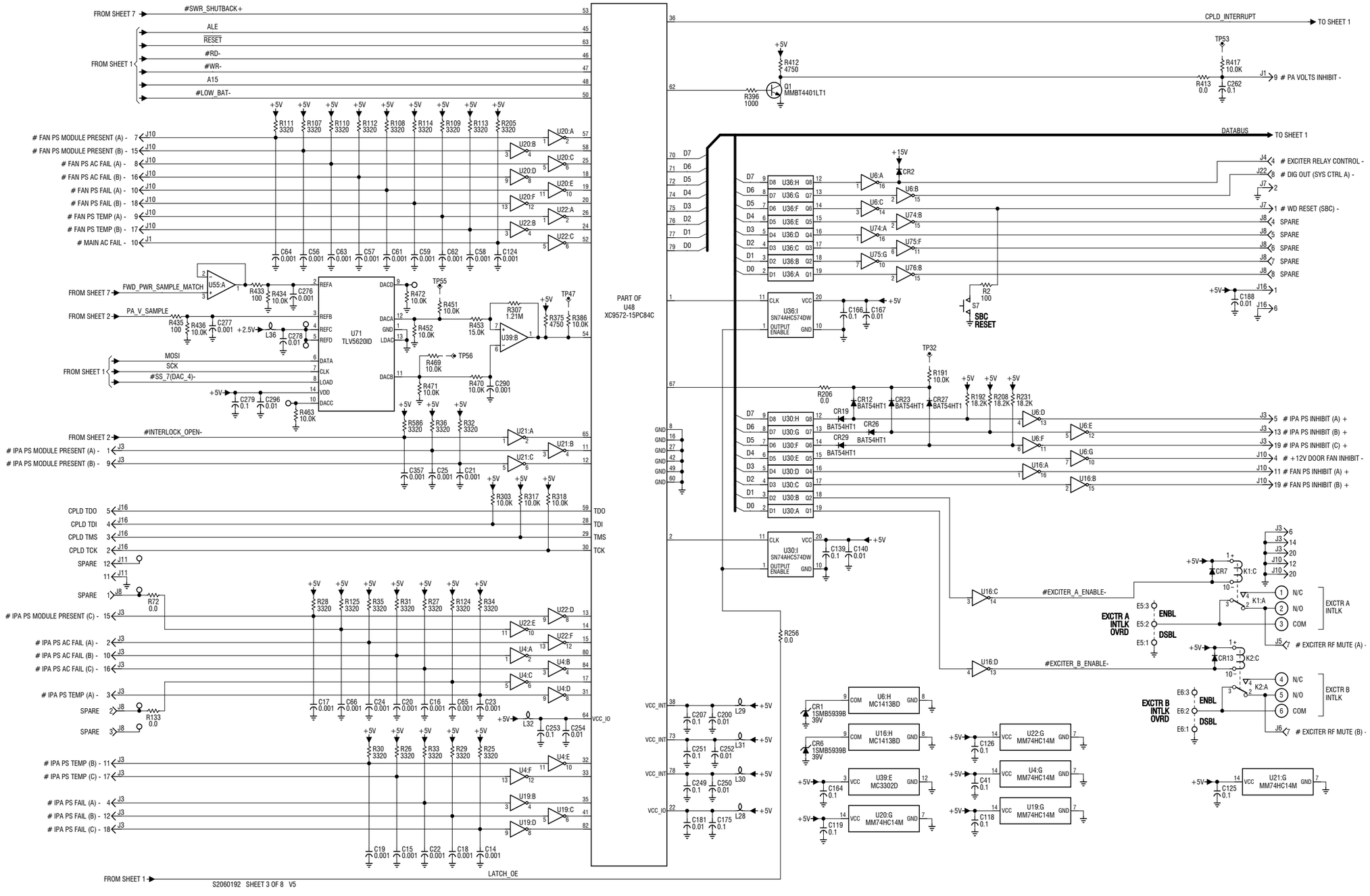


Figure SD-12: NAPC156A Control/Interface PWB (Sheet 3 of 8)

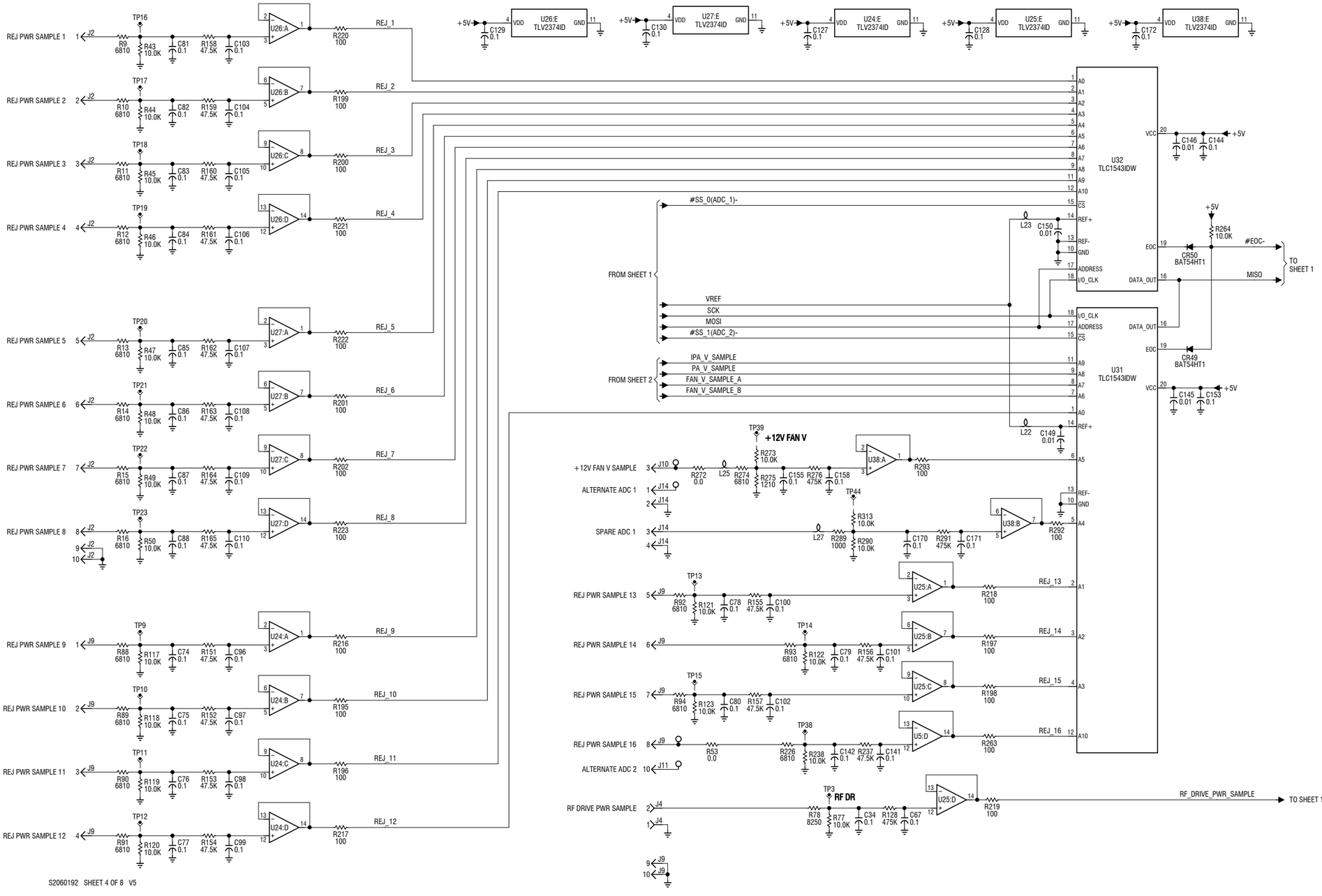


Figure SD-13: NAPC156A Control/Interface PWB (Sheet 4 of 8)

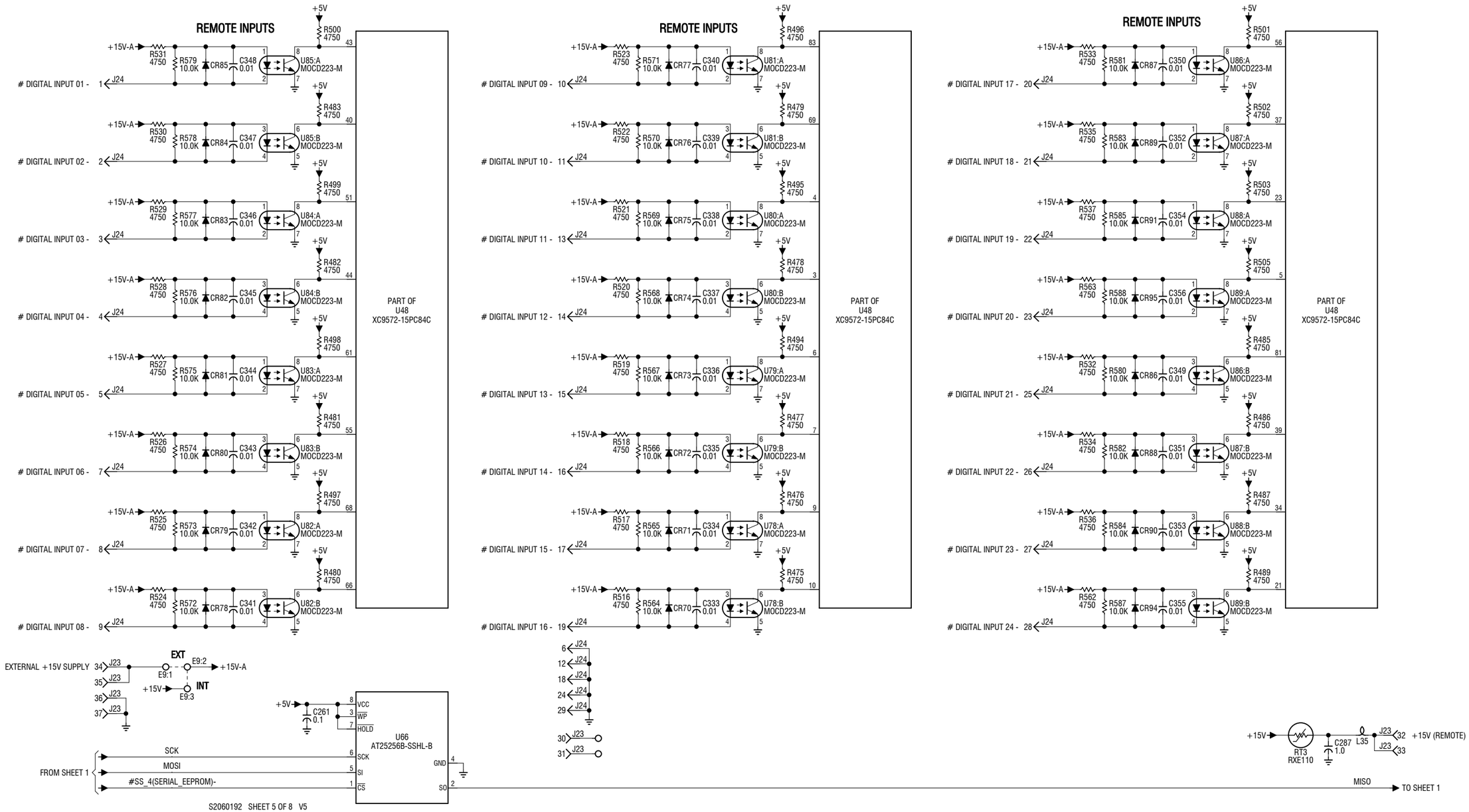


Figure SD-14: NAPC156A Control/Interface PWB (Sheet 5 of 8)

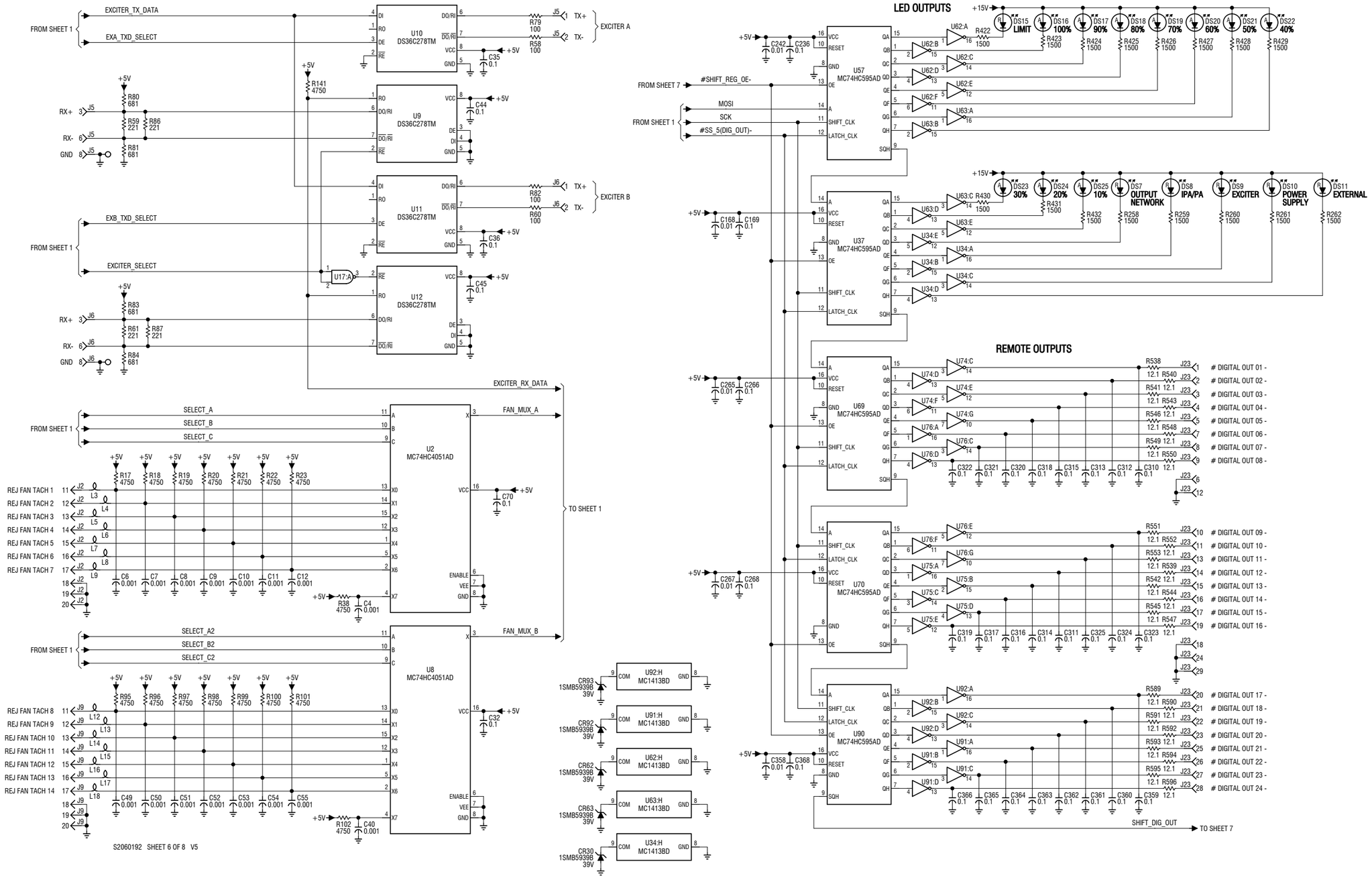


Figure SD-15: NAPC156A Control/Interface PWB (Sheet 6 of 8)

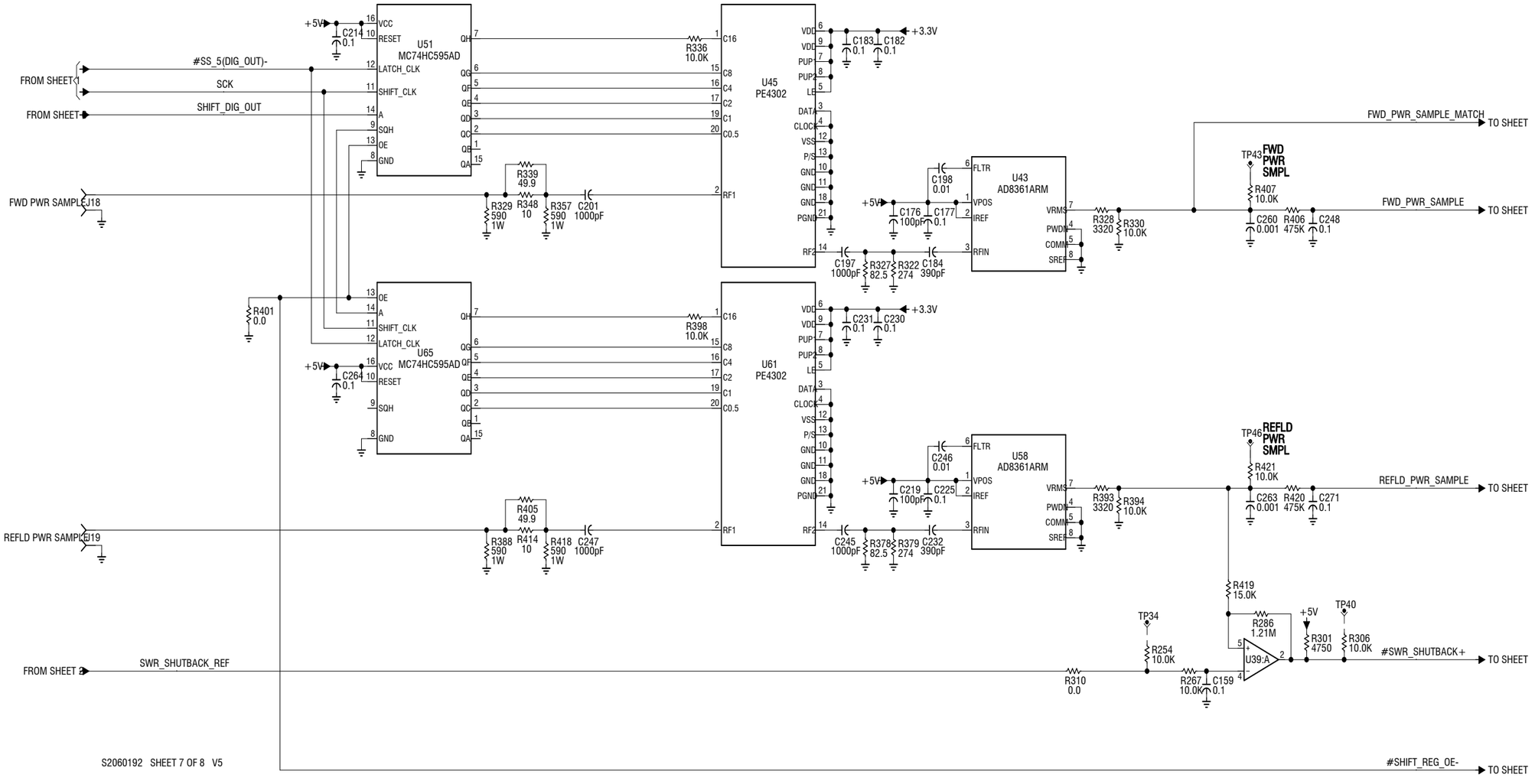
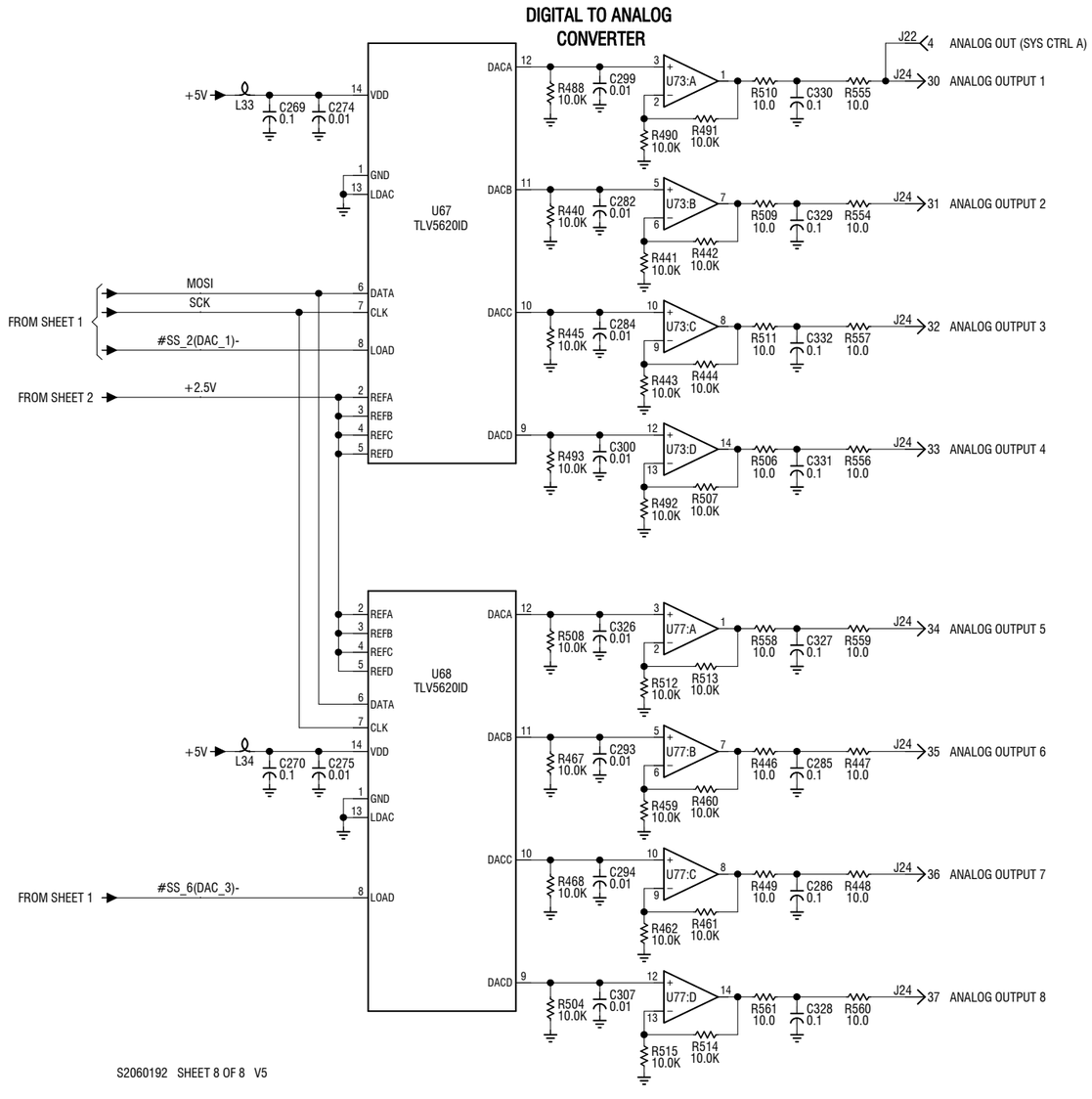
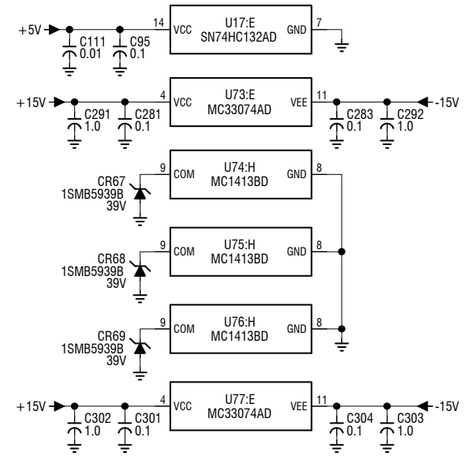


Figure SD-16: NAPC156A Control/Interface PWB (Sheet 7 of 8)





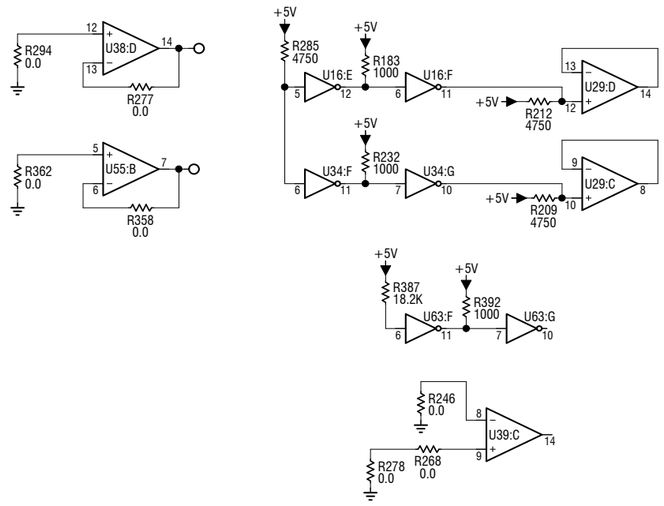


Figure SD-17: NAPC156A Control/Interface PWB (Sheet 8 of 8)

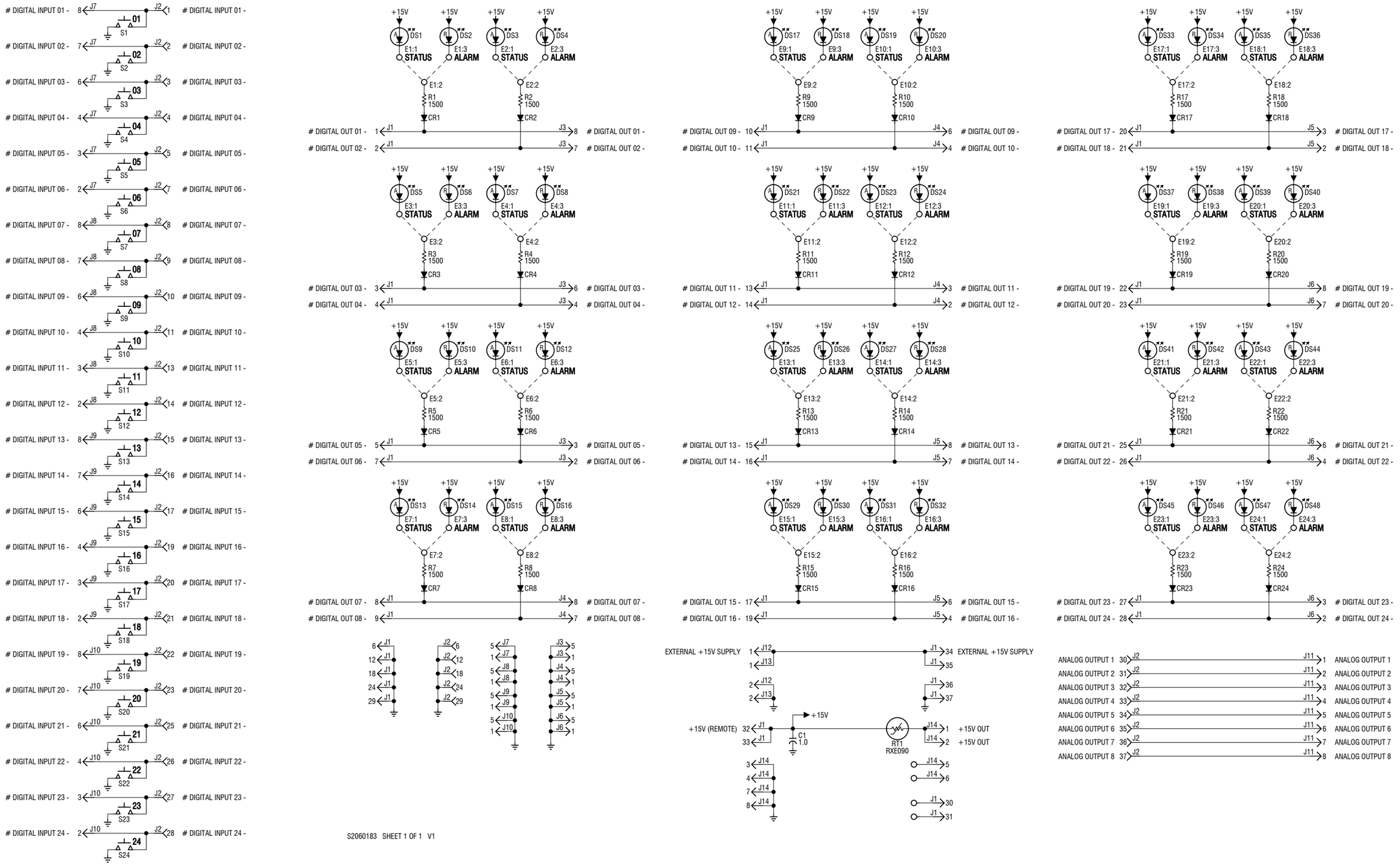


Figure SD-18: NAPI115A Remote Interface PWB

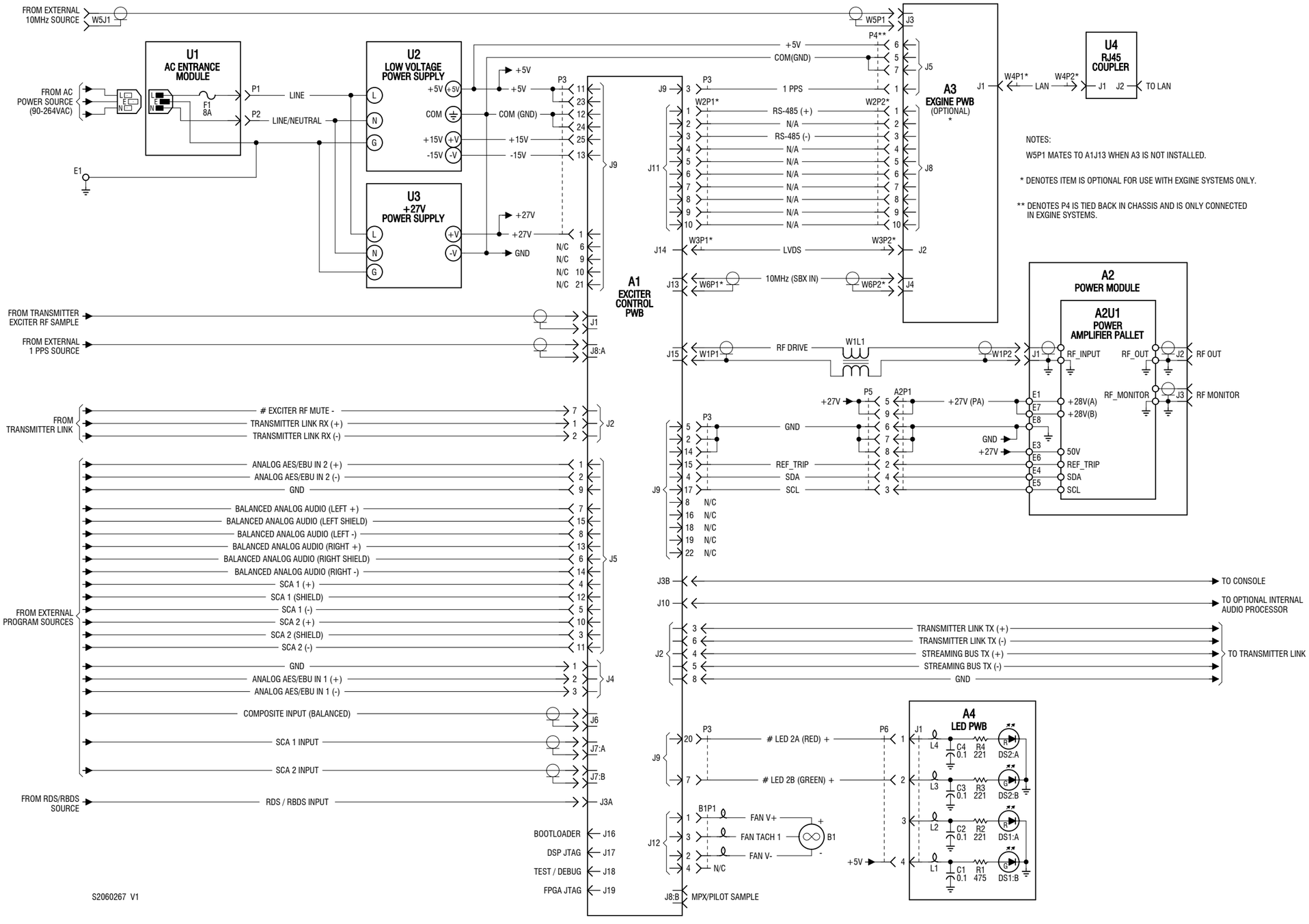


Figure SD-19: NAE104A and /01 NVE50 Exciter

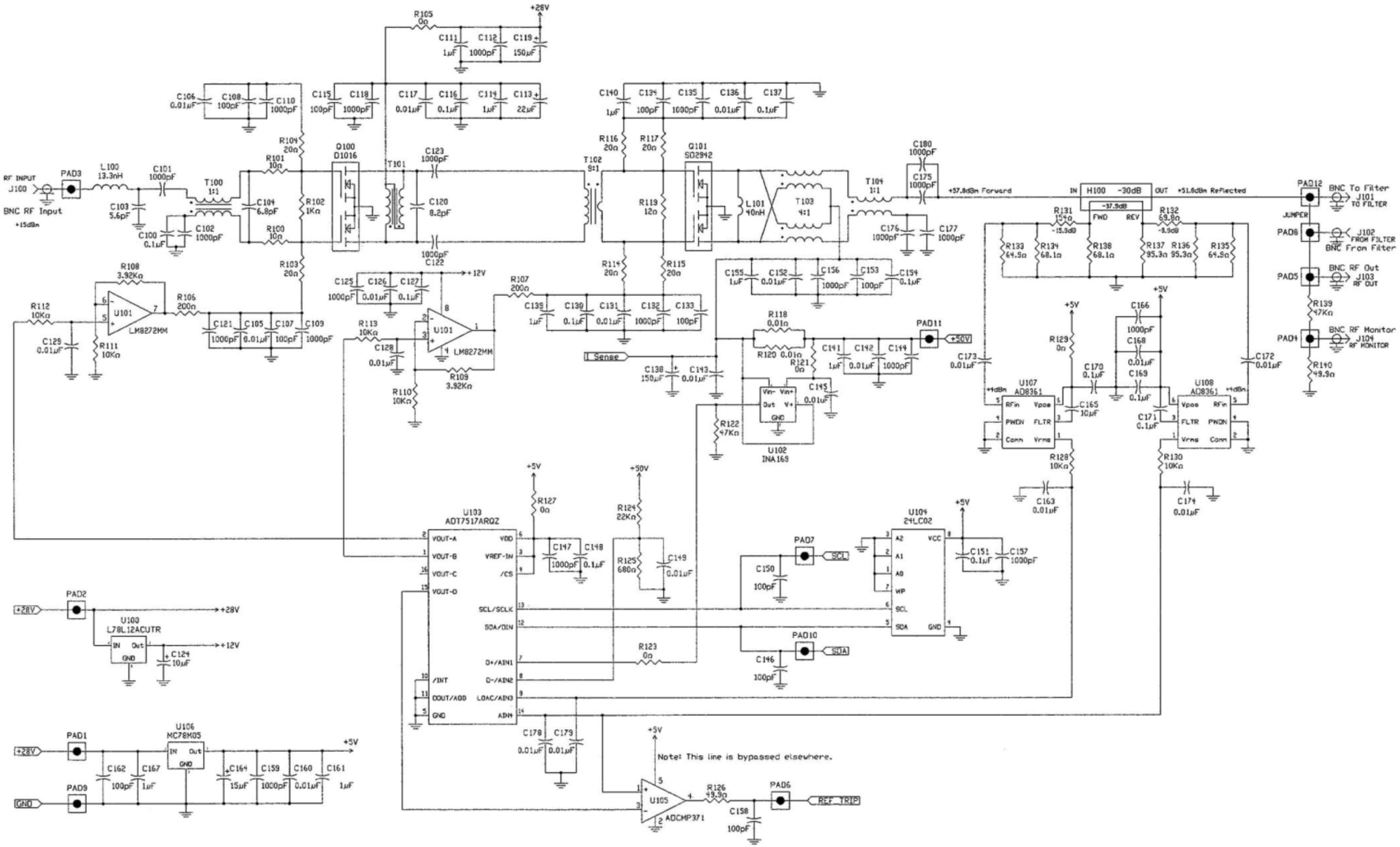


Figure SD-20: Power Amplifier Pallet (CD2011B)

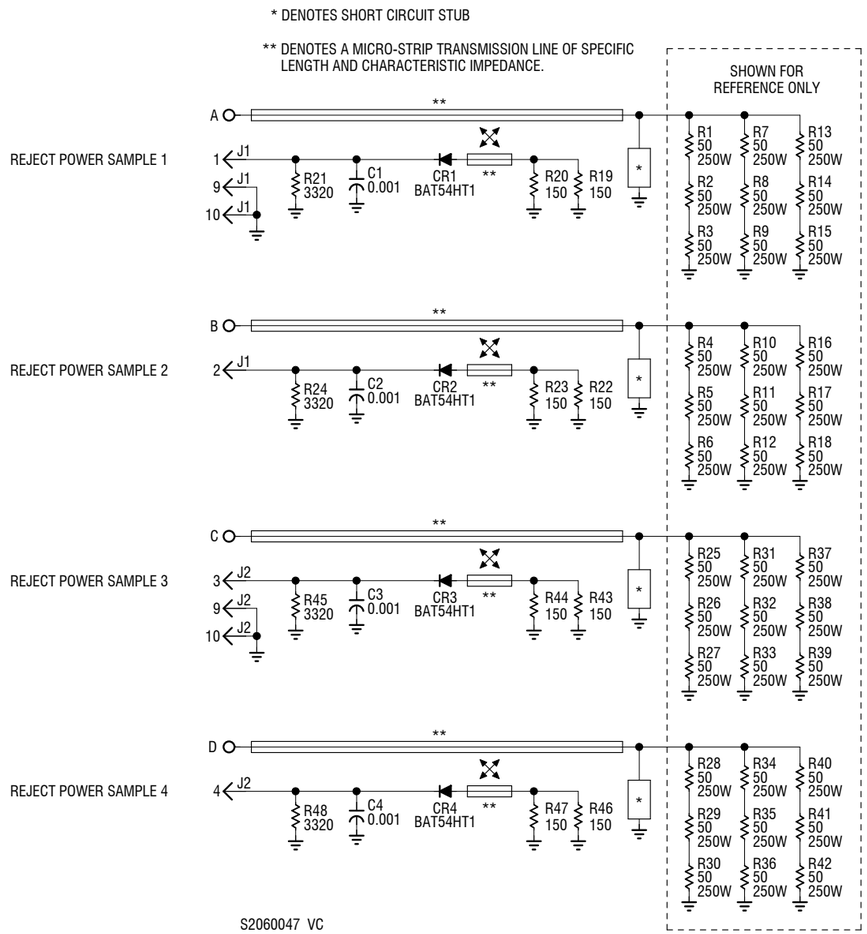


Figure SD-21: 4-Input Reject PWB (206-8082)

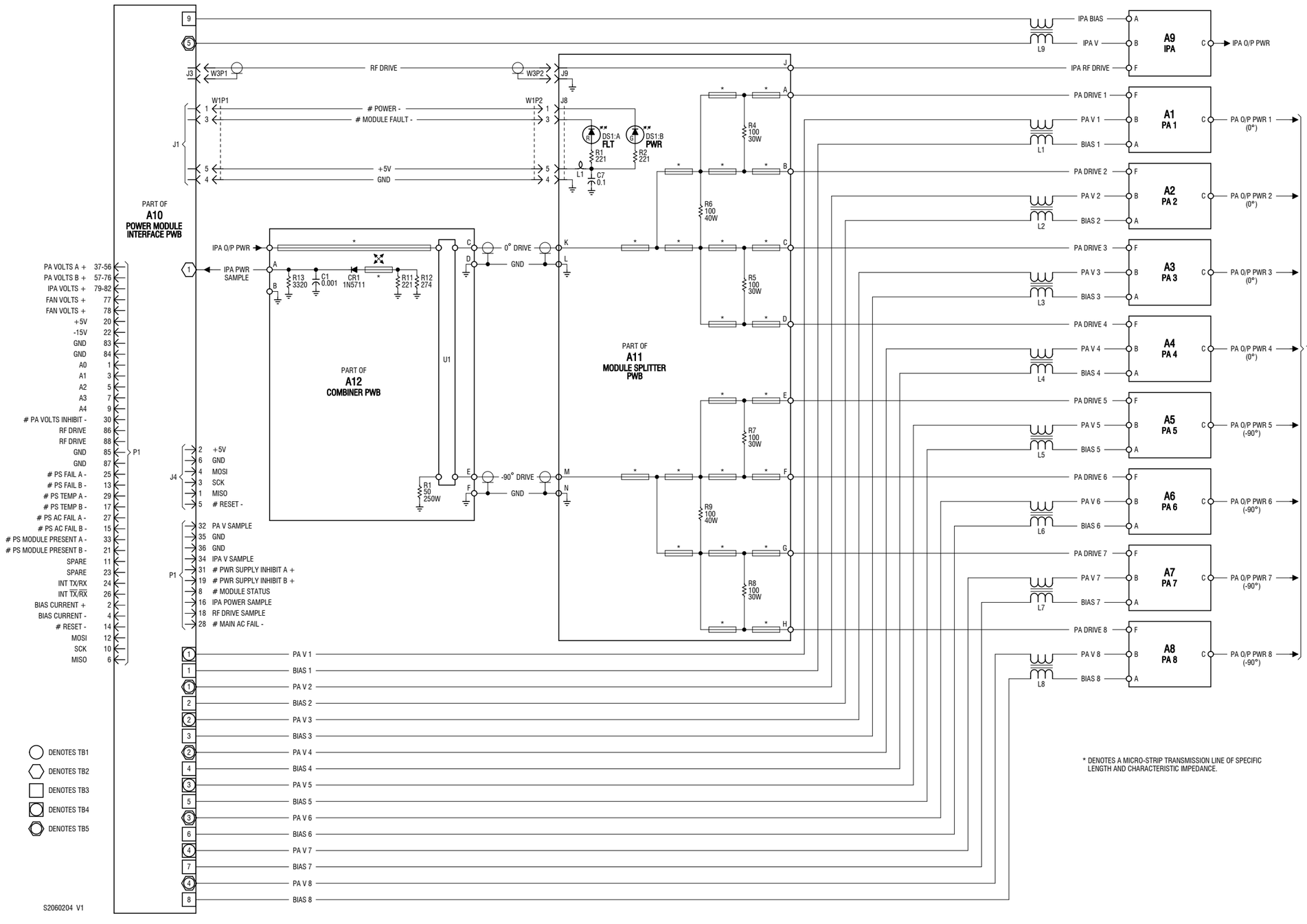


Figure SD-22: NAA56/01D RF Power Module (Sheet 1 of 2)

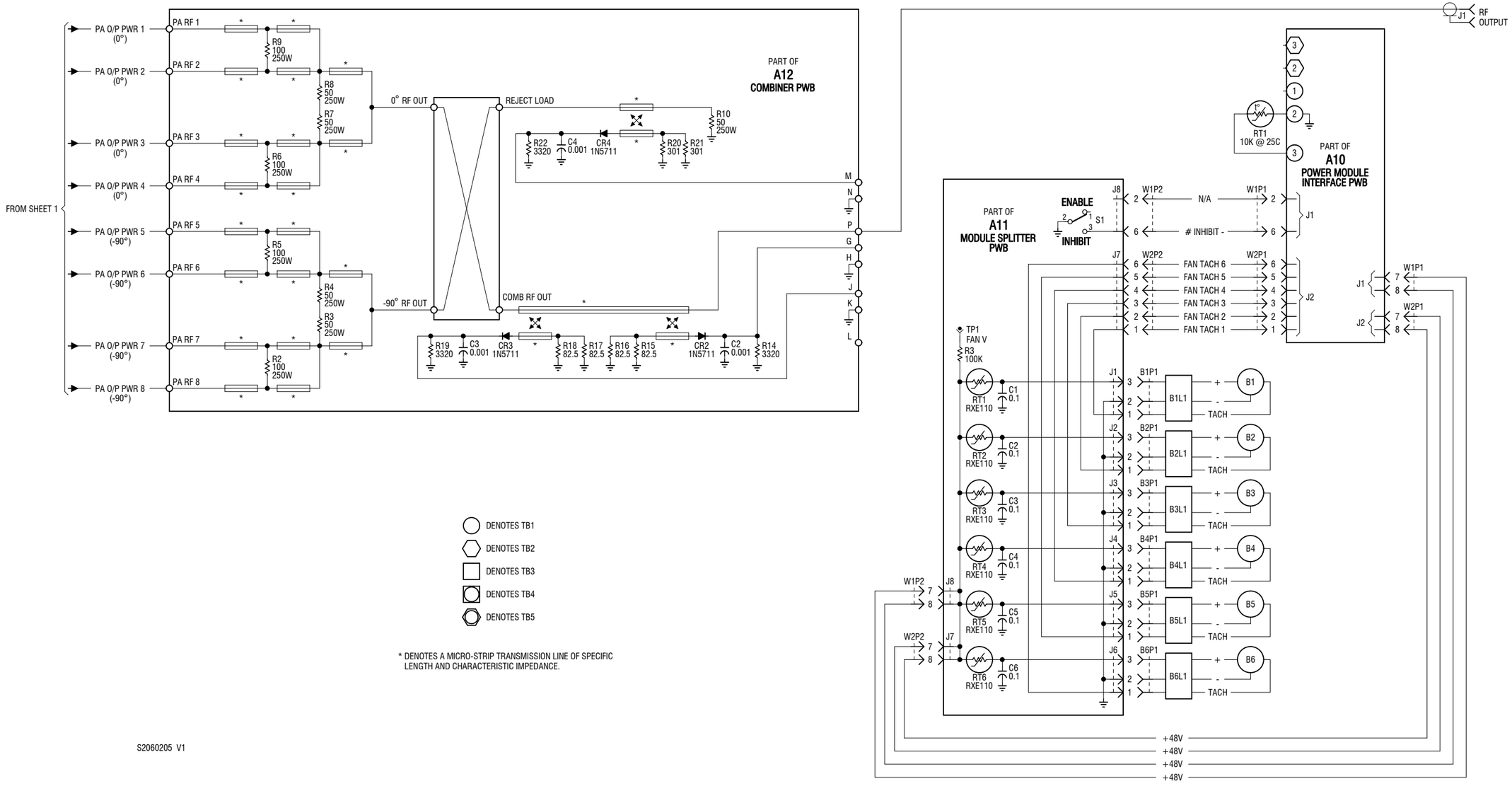


Figure SD-23: NAA56/01D RF Power Module (Sheet 2 of 2)

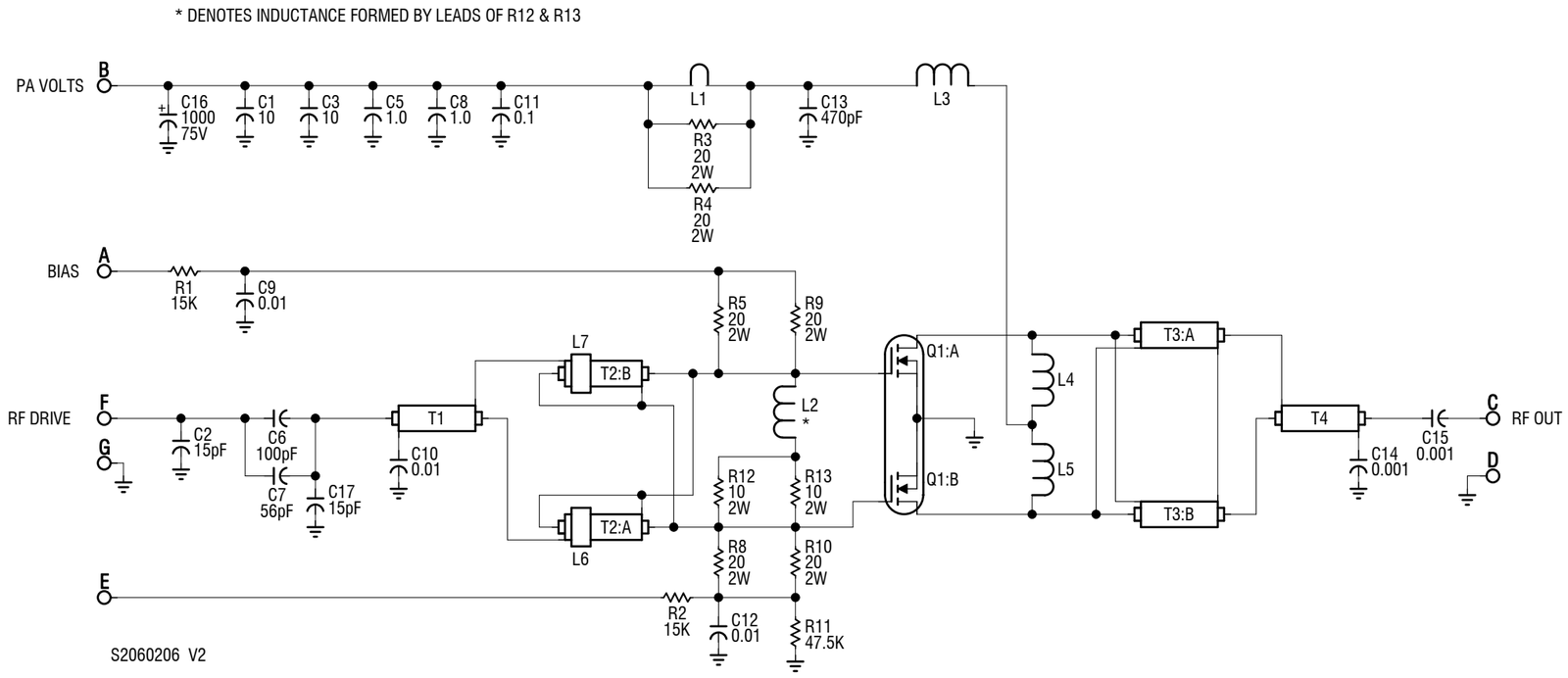


Figure SD-24: NAPA20C/01 Power Amplifier PWB

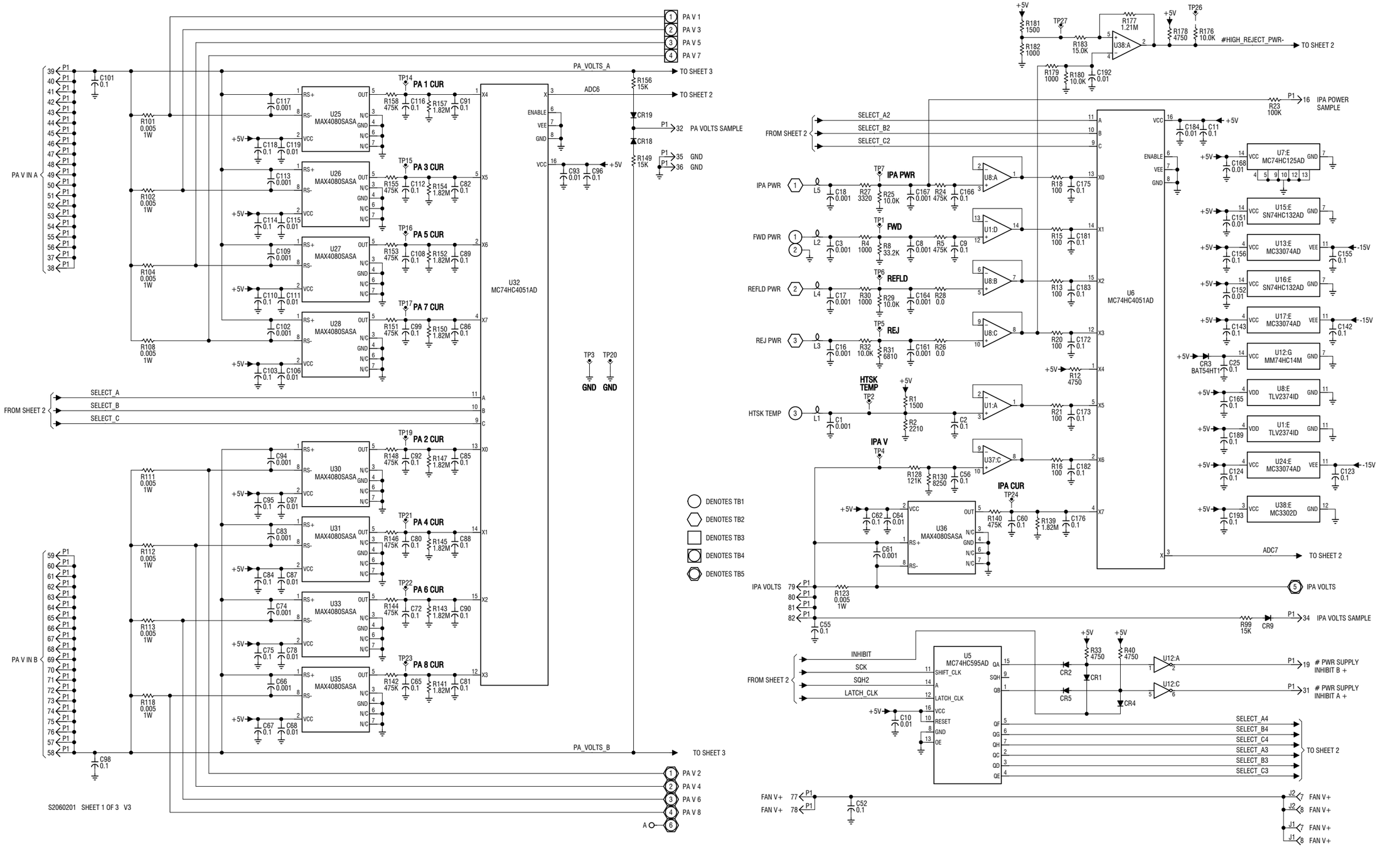


Figure SD-25: NAPI104/03 Power Module Interface PWB (Sheet 1 of 3)

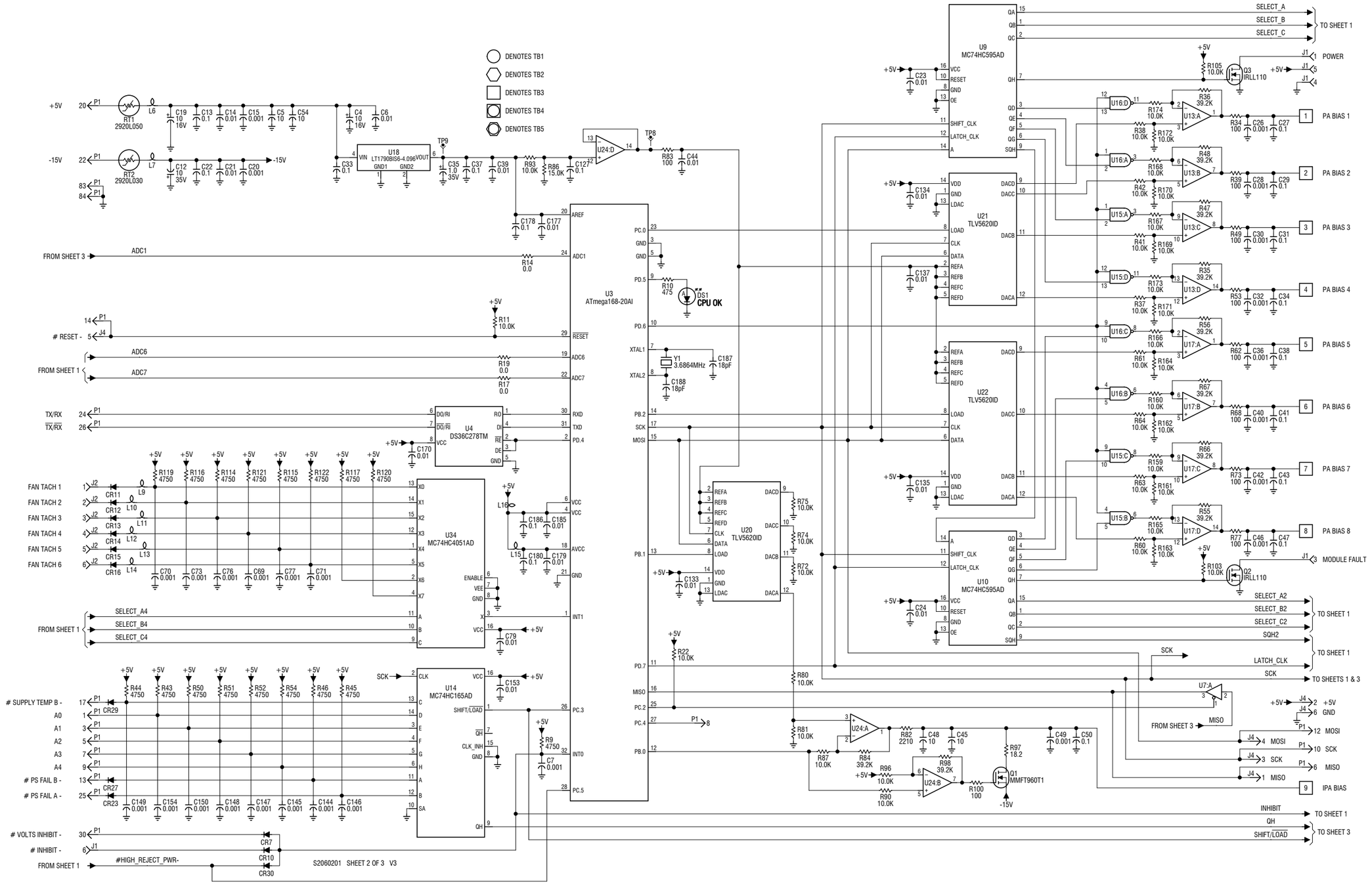


Figure SD-26: NAPI104/03 Power Module Interface PWB (Sheet 2 of 3)

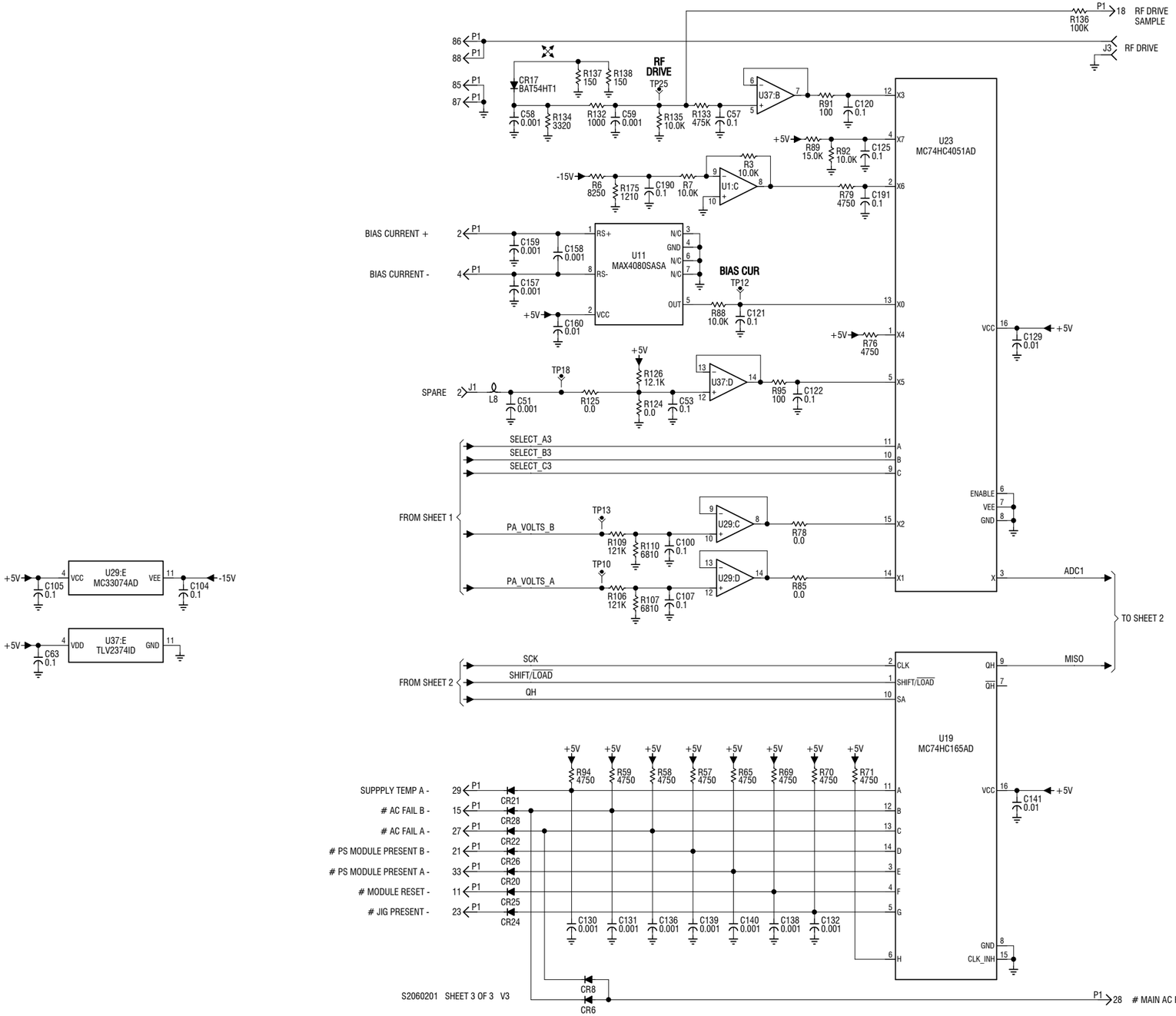
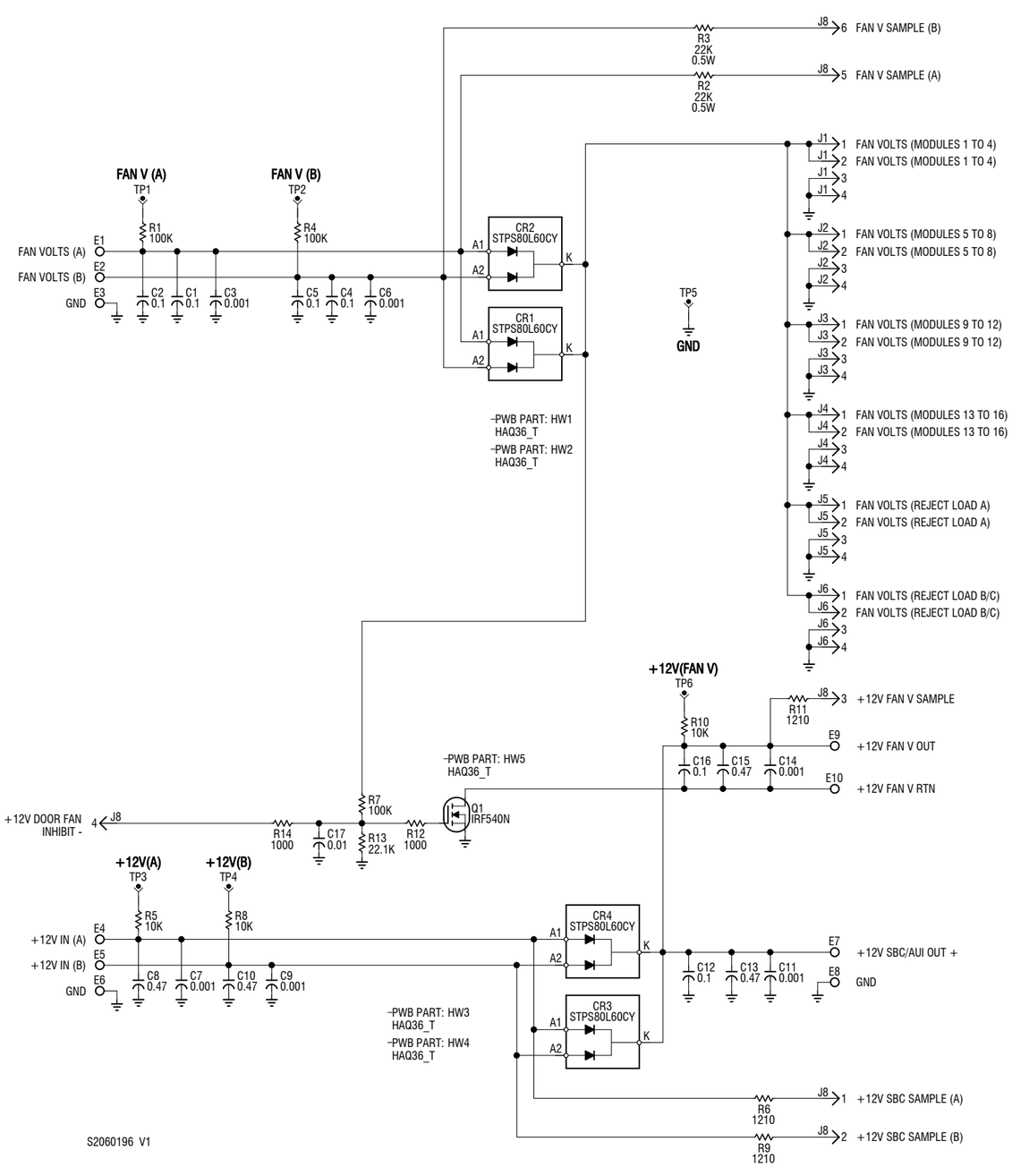


Figure SD-27: NAPI104/03 Power Module Interface PWB (Sheet 3 of 3)



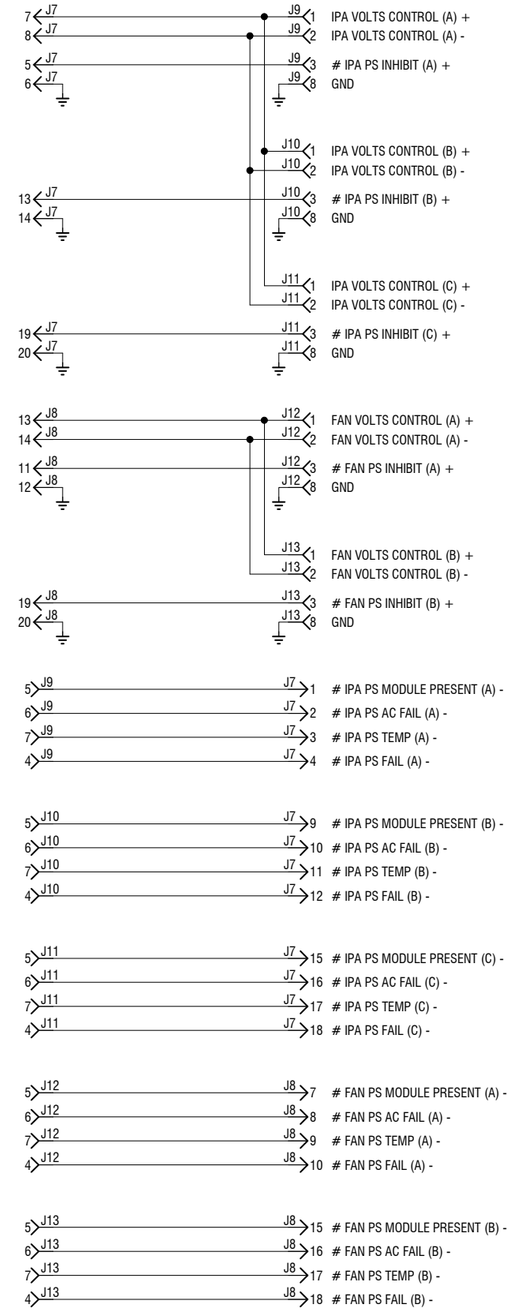


Figure SD-28: NAPI112B Power Supply Distribution PWB

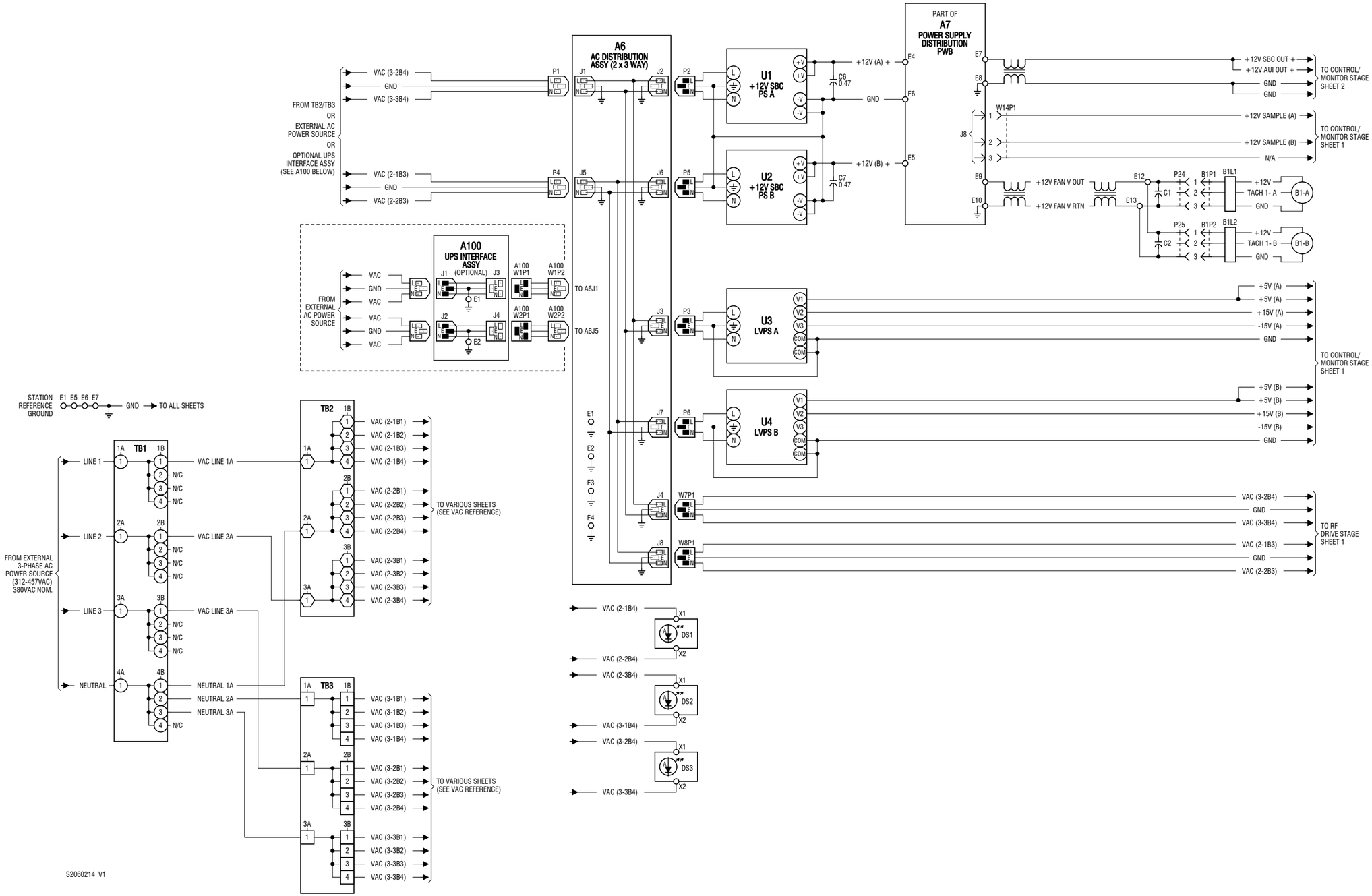


Figure SD-1B: NV10/NV7.5 Transmitter - Ac-Dc Power Stage, 3-Phase, 312-457 V ac (Sheet 1B of 3)

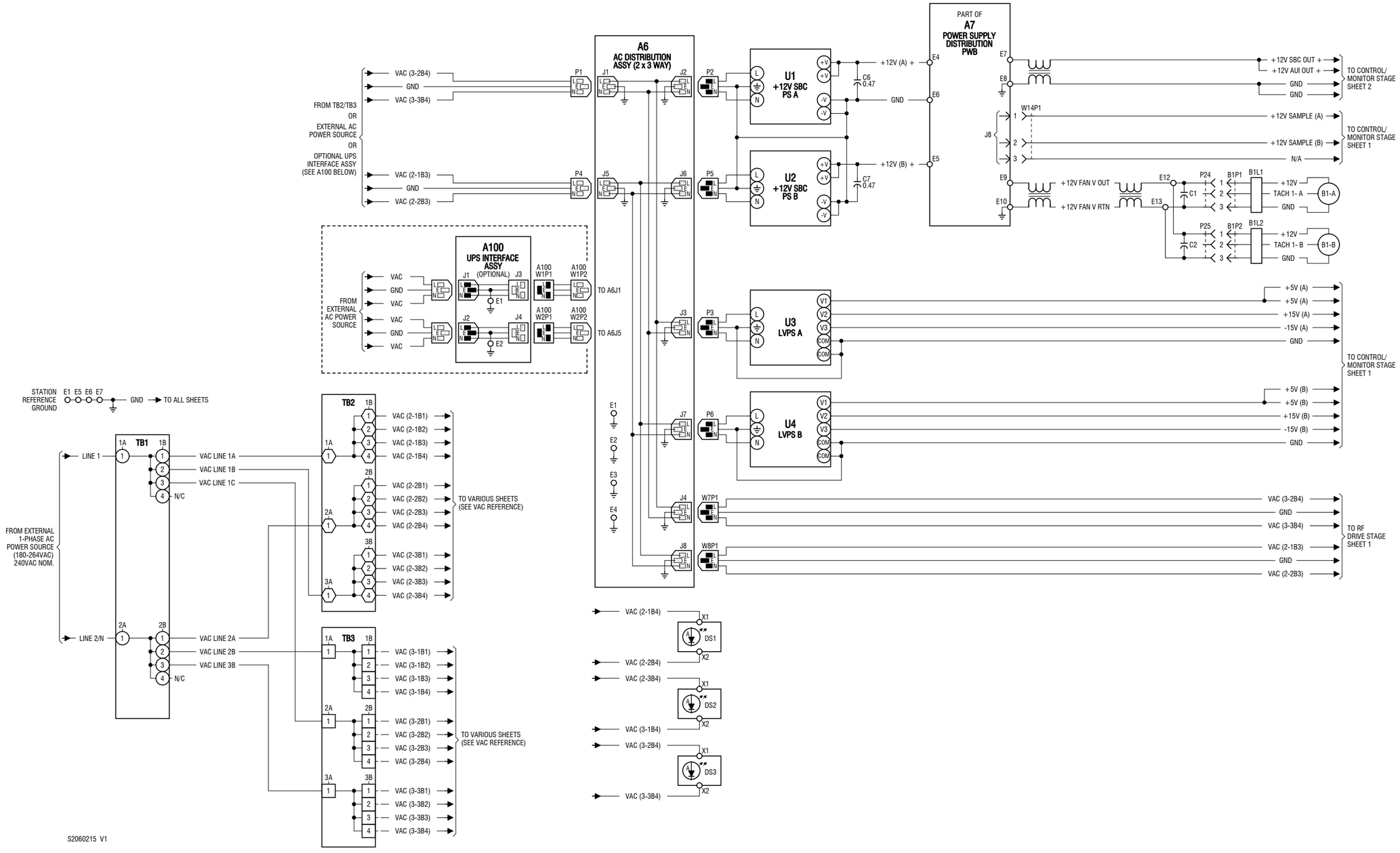


Figure SD-1C: NV10/NV7.5 Transmitter - Ac-Dc Power Stage, 1-Phase, 180-264 V ac (Sheet 1C of 3)

Section 6: Mechanical Drawings

This section contains mechanical drawings for assemblies of the transmitter. Dimensional drawings may be included. Refer to Table 6.1 on page 6-2 for an itemized list.

Assembly detail drawings for assemblies and modules that have separate manuals are not included. Refer to the appropriate maintenance manual for the assembly detail of these assemblies.

Identifying mechanical drawings

Each mechanical drawing in this section is identified by a number that is both the figure number and the page number. The numbers are assigned sequentially and are prefixed by the letters MD. Drawings in this section are listed in Table 6.1 on page 6-2.

Content of mechanical drawings

Mechanical drawings are illustrations that depict the location of electrical components and show assembly outline detail. Dimensional information is included, where appropriate.

When a module or assembly is the subject of its own assembly detail drawing, and it is also shown in a higher level assembly, the detail depicted in the higher level assembly may have minor differences from the module or assembly actually installed. In this case, always refer to the assembly detail drawing of the module or assembly for detailed information.

Locating a part or assembly on a mechanical drawing

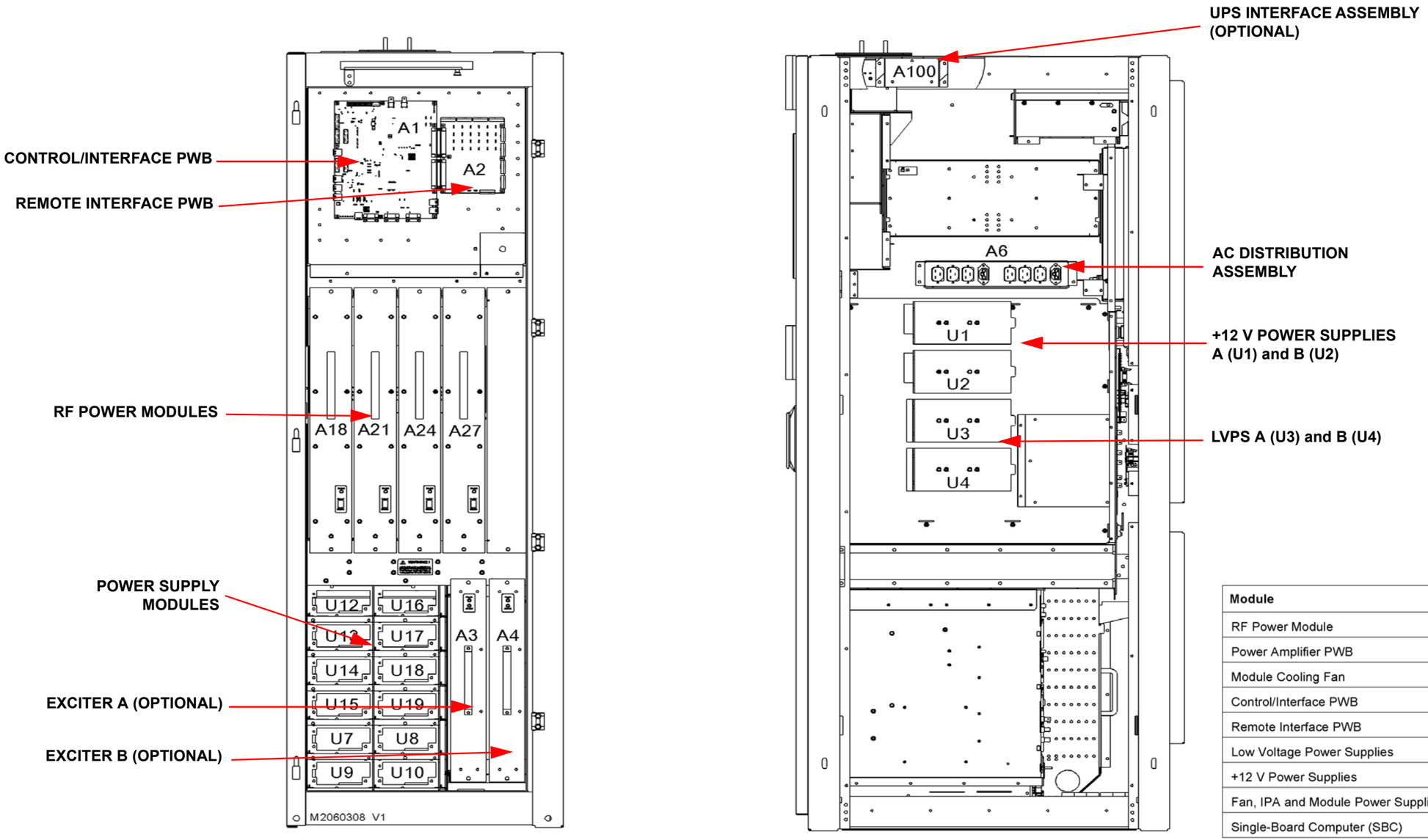
1. When a part or assembly is assigned a reference designation (e.g., A2A1 or A2A1R1), refer to the family trees in Section 3, "Parts Lists" on page 3-1. Follow the family tree branches to the block that contains the desired reference designation and Nautel nomenclature (e.g., NAPI104/03 Power Module Interface PWB). Note the reference designations and Nautel nomenclatures of all higher assemblies in the path.
   Example: A18 NAA56/01D RF Power Module > A18A10 NAPI104/03 Power Module Interface PWB.

2. Refer to Table 6.1 on page 6-2. Use the reference designation and Nautel nomenclature to identify the appropriate mechanical drawing.
   Example: NAPI104/03 Power Module Interface PWB is shown on schematics MD-16.

3. If necessary, refer to the referenced figure (e.g., MD-16) in the mechanical drawings at the end of this section and locate the next, lower-level assembly. Then, repeat this procedure until the desired part or assembly is found.

Table 6.1: List of Mechanical Drawings

Figure #	Title
MD-1	NV10/NV7.5 Transmitter (Front and Right Side Views)
MD-2	NV10/NV7.5 Transmitter (Rear View)
MD-3	NAPC156A Control/Interface PWB
MD-4	NAPI115A Remote Interface PWB
MD-5	NAE104A and /01 NVE50 Exciter
MD-6	NAI21 RF Drive Splitter/Changeover Assembly
MD-7	Ac Distribution Assembly (206-5150)
MD-8	NAPI112 Power Supply Distribution PWB
MD-9	Power Supply Interface PWB (206-4060)
MD-10	NAFP109A Power Probe Assembly
MD-11	NAL07A 4-Input Reject Load Assembly
MD-12	Reject Load Interface PWB (206-4084)
MD-13	NAPI111 Module Backplane PWB
MD-14	NAA56/01D RF Power Module
MD-15	NAPA20C/01 Power Amplifier PWB
MD-16	NAPI104/03 Power Module Interface PWB
MD-17	NAPI105/01A Module Splitter PWB
MD-18	Module Combiner PWB (206-1150)



Module	Replacement Procedure
RF Power Module	See page 1-25
Power Amplifier PWB	See page 1-32
Module Cooling Fan	See page 1-33
Control/Interface PWB	See page 1-33
Remote Interface PWB	See page 1-34
Low Voltage Power Supplies	See page 1-35
+12 V Power Supplies	See page 1-37
Fan, IPA and Module Power Supplies	See page 1-38
Single-Board Computer (SBC)	See page 1-41

FRONT DOOR AND SIDE PANEL REMOVED FOR CLARITY

Figure MD-1: NV10/NV7.5 Transmitter (Front and Right Side Views)

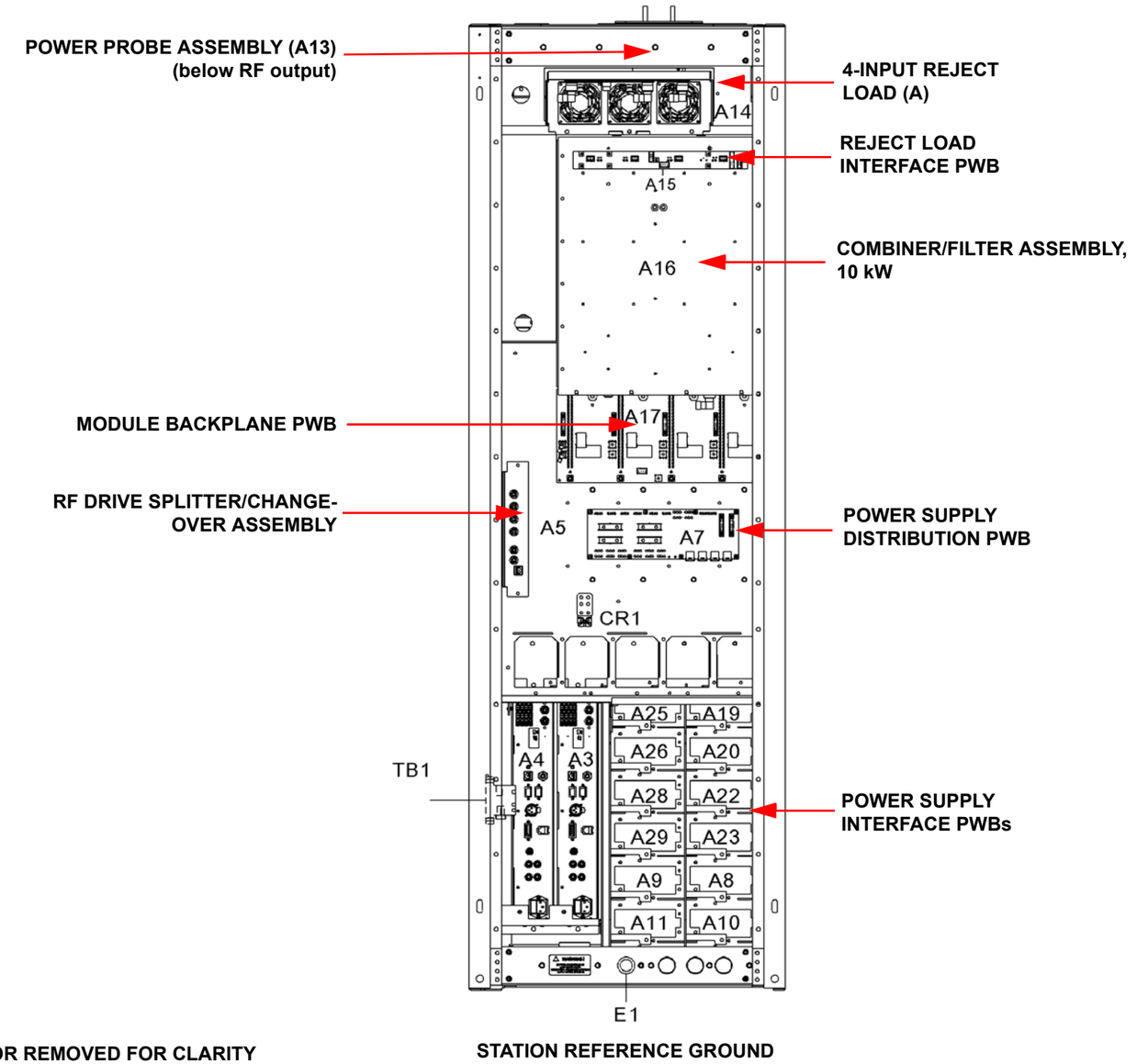


Figure MD-2: NV10/NV7.5 Transmitter (Rear View)

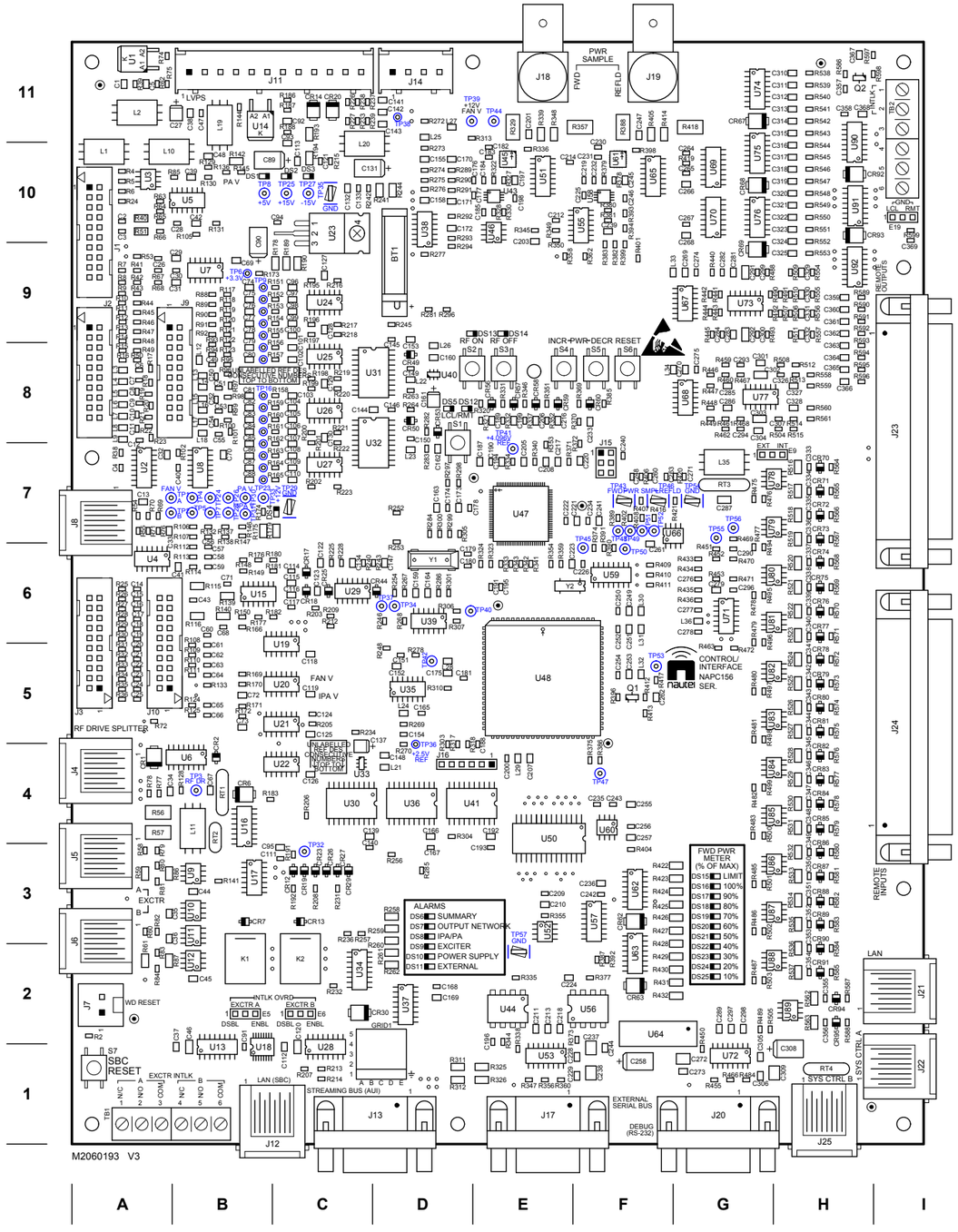


Figure MD-3: NAPC156A Control/Interface PWB

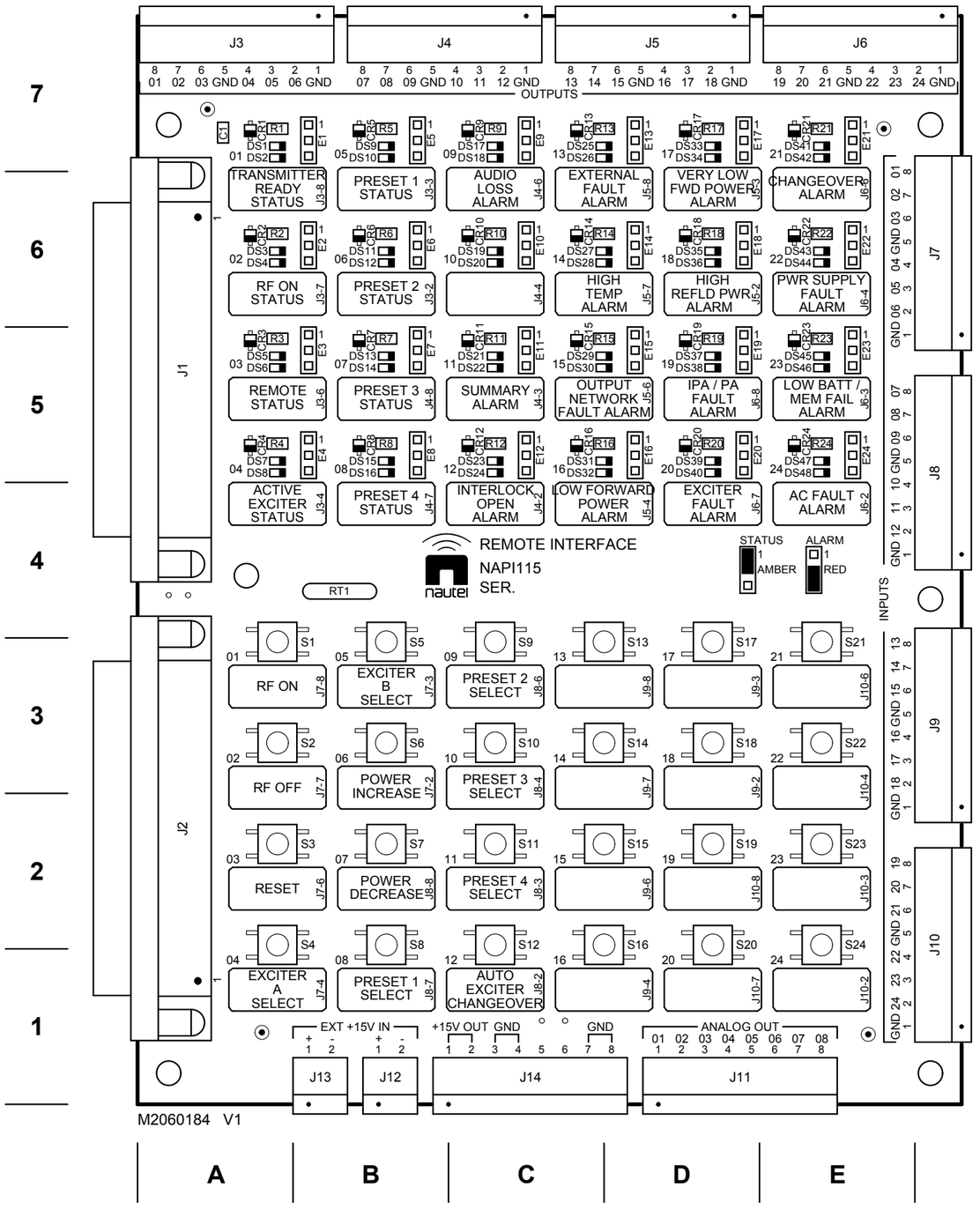
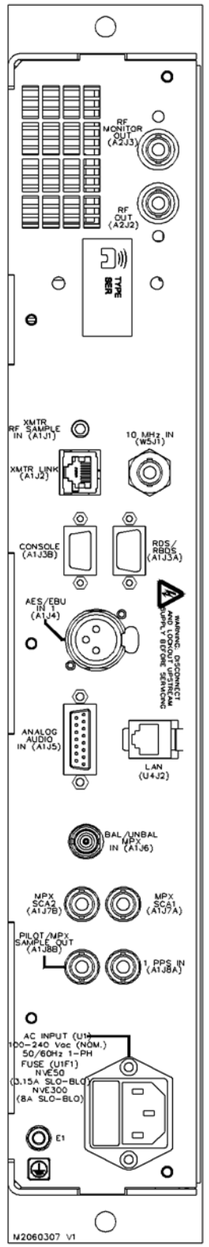
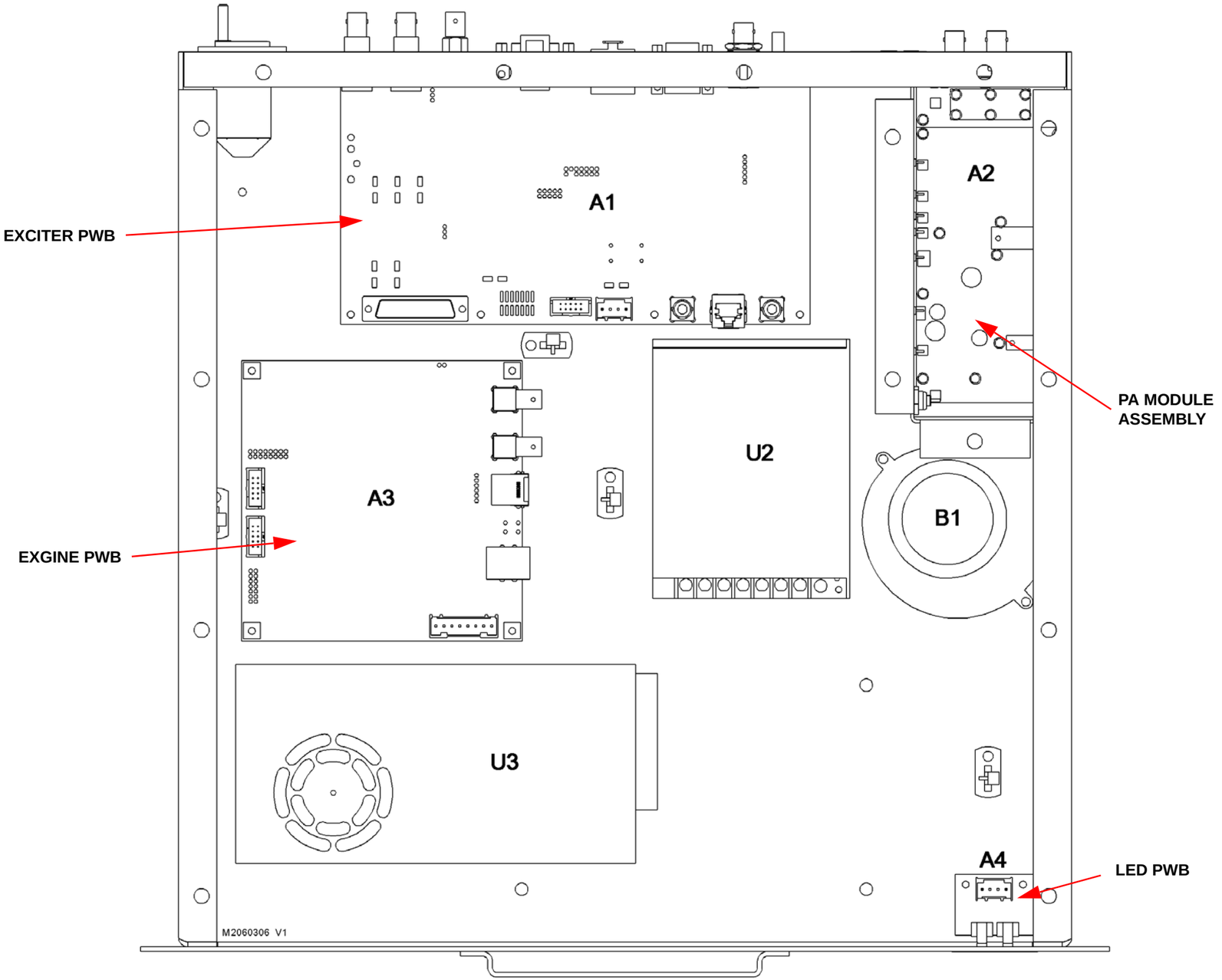


Figure MD-4: NAPI115A Remote Interface PWB



BACK VIEW



TOP VIEW

Figure MD-5: NAE104A and /01 NVE50 Exciter

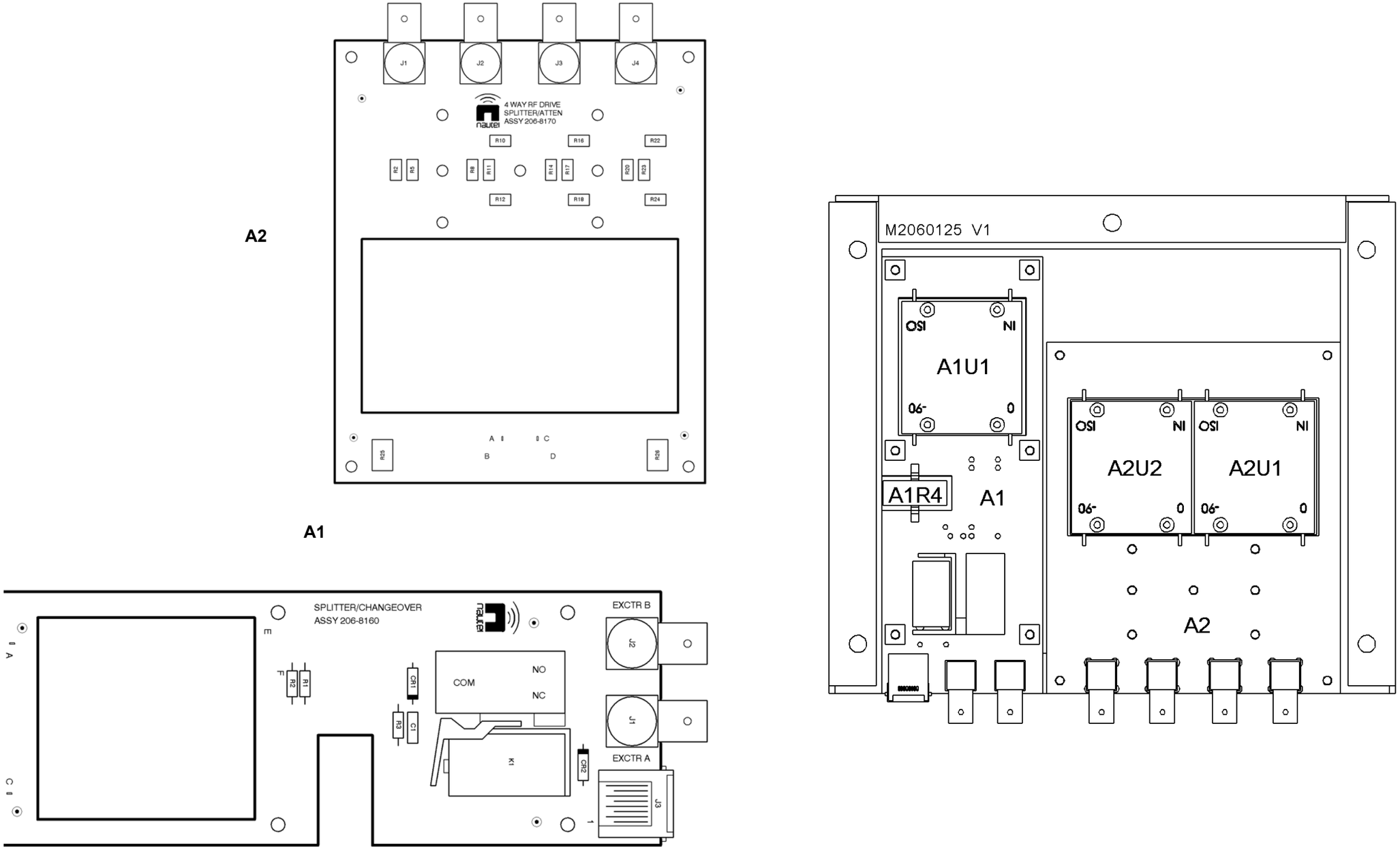


Figure MD-6: NAI21 RF Drive Splitter/Changeover Assembly

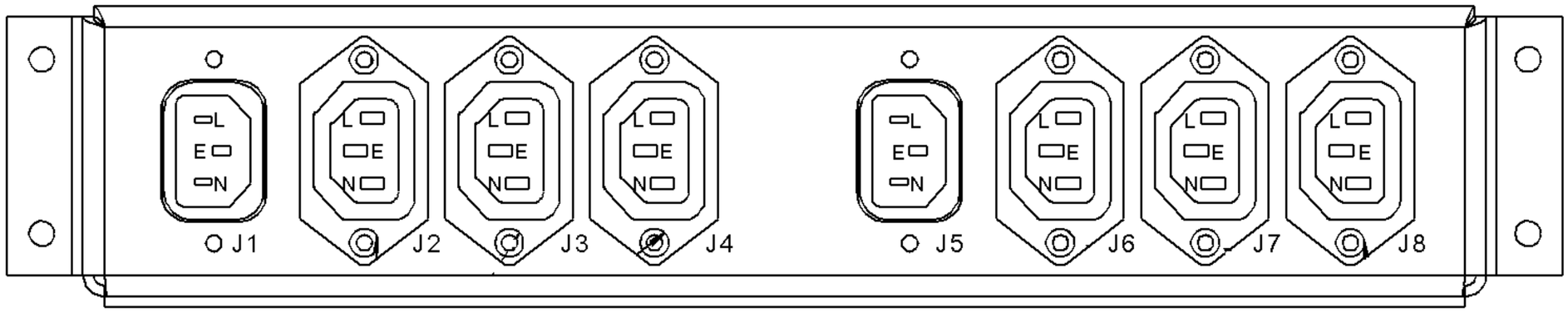


Figure MD-7: Ac Distribution Assembly (206-5150-01)

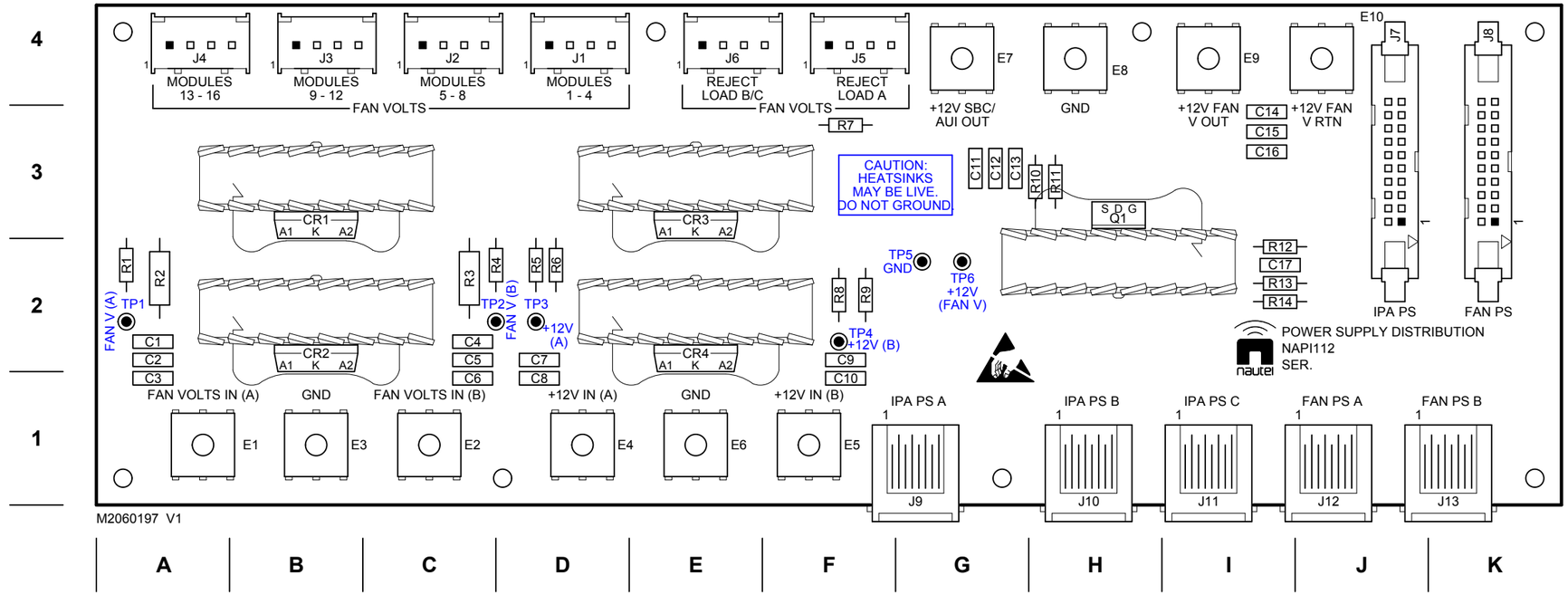


Figure MD-8: NAPI112B Power Supply Distribution PWB

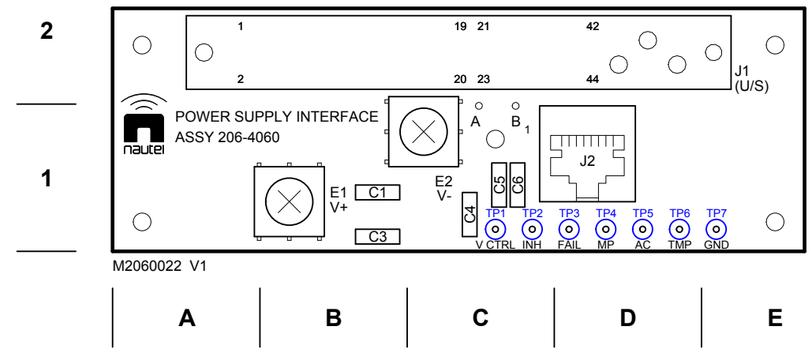
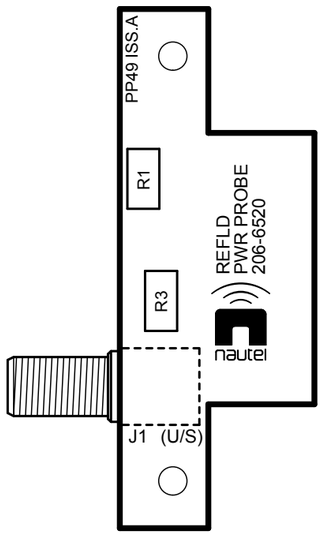


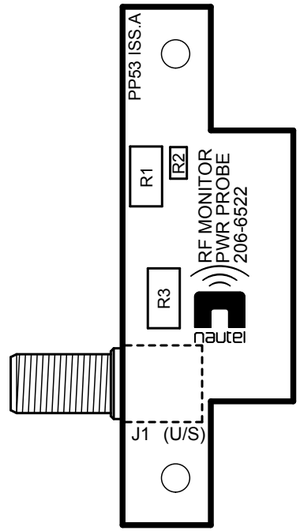
Figure MD-9: Power Supply Interface PWB (206-4060)

A2

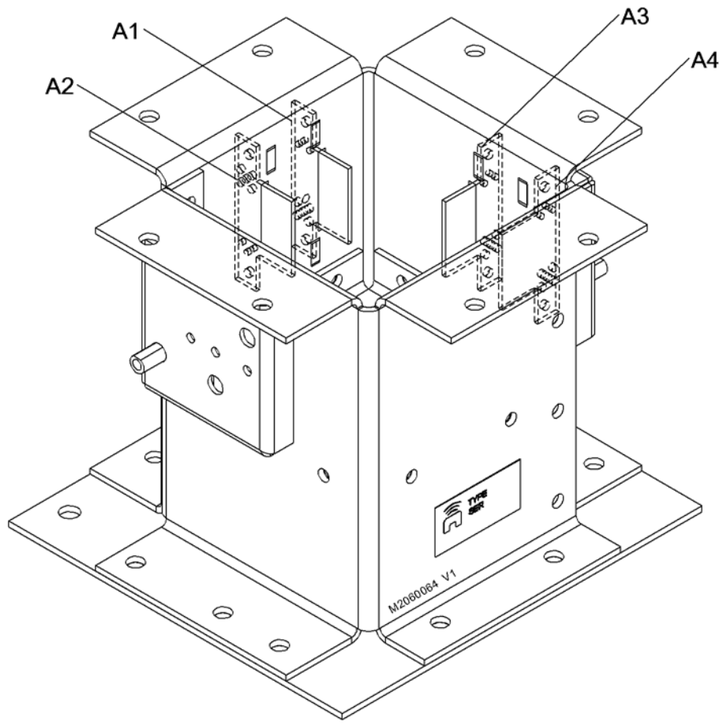


M2060071 V1

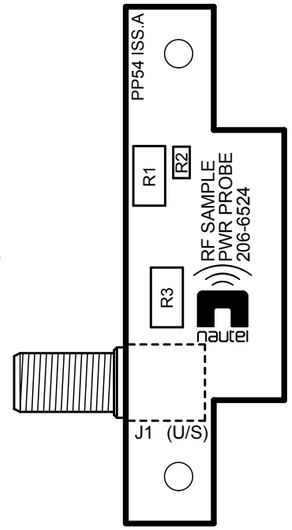
A3



M2060072 V1



A1, A4, A5



M2060070 V1

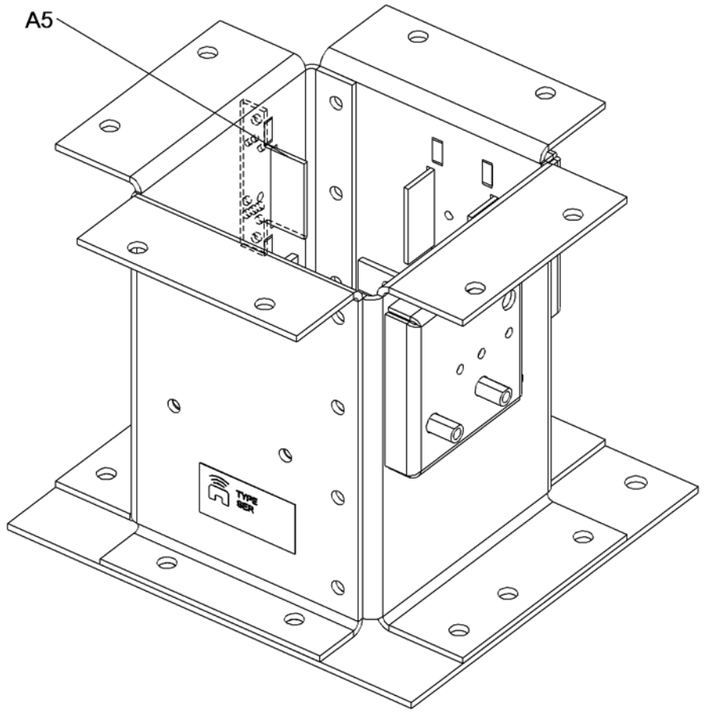


Figure MD-10: NAFP109A Power Probe Assembly

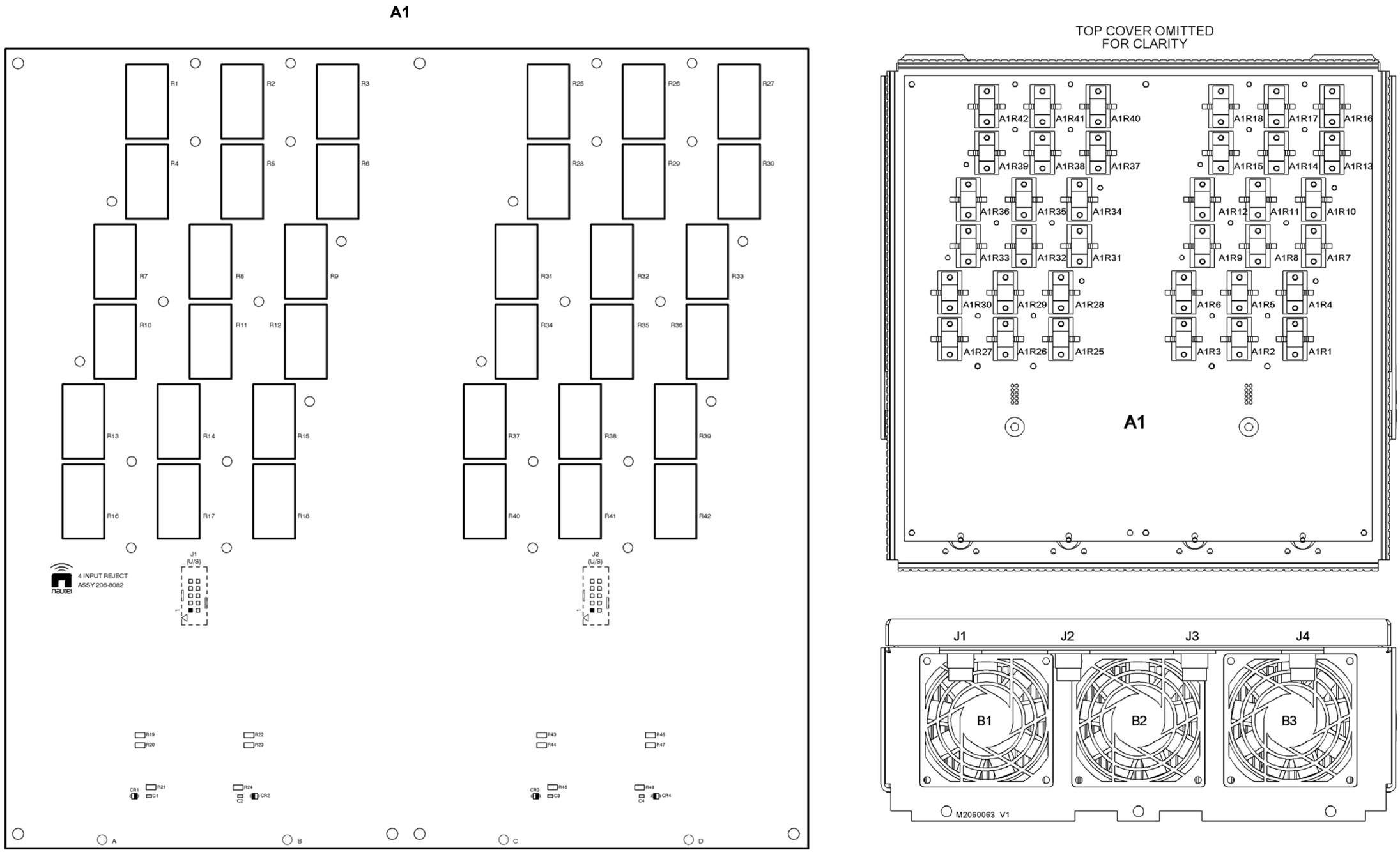


Figure MD-11: NAL07A 4-Input Reject Load Assembly

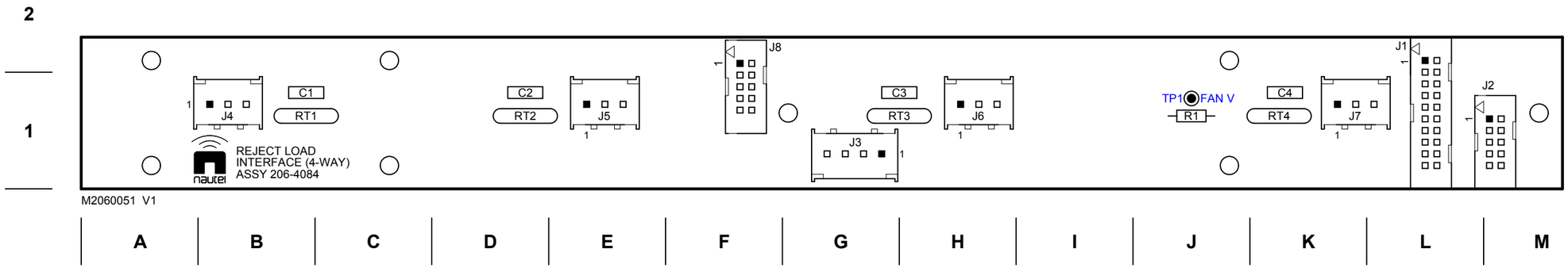


Figure MD-12: Reject Load Interface PWB (206-4084)

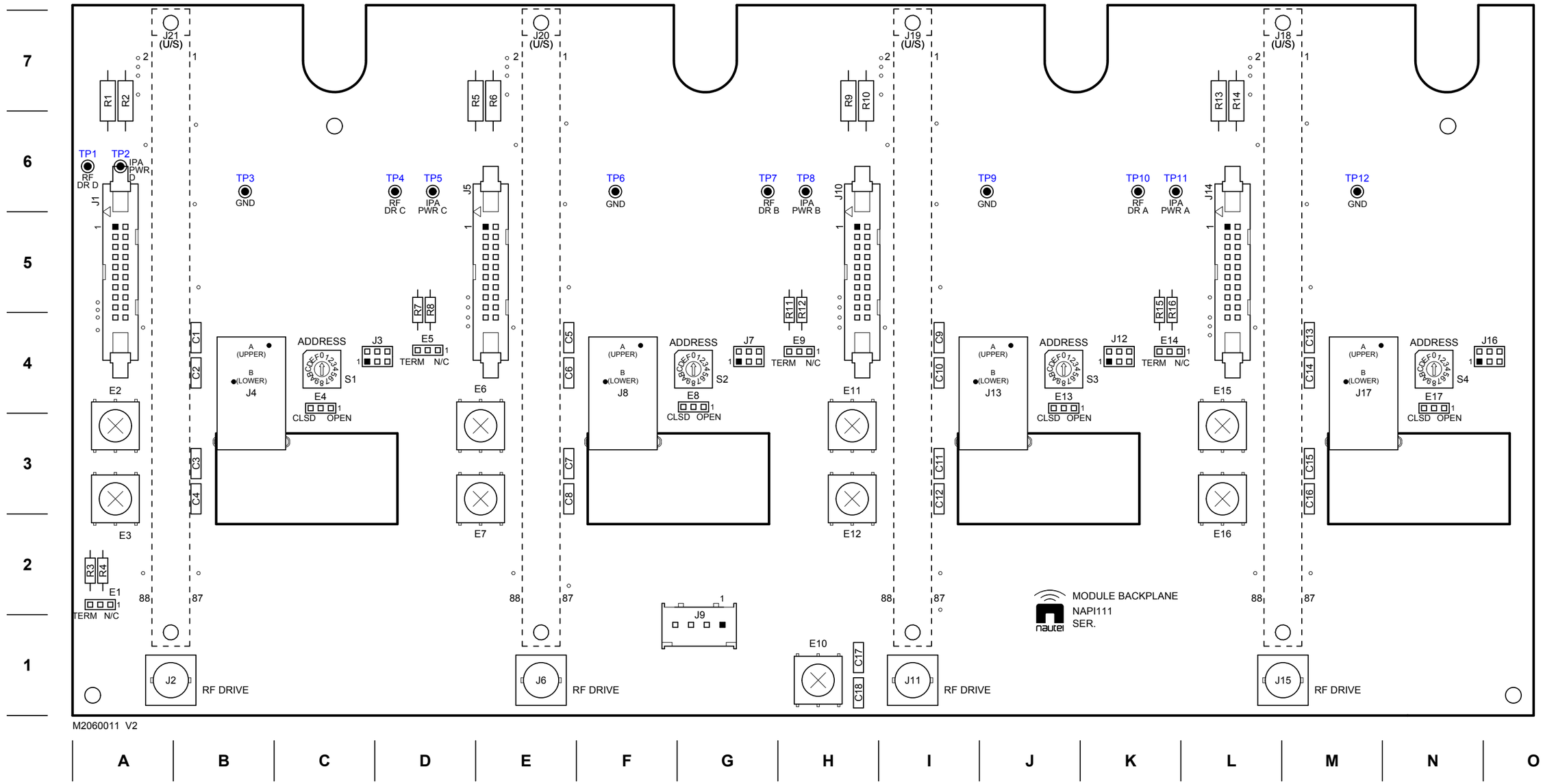


Figure MD-13: NAPI111 Module Backplane PWB

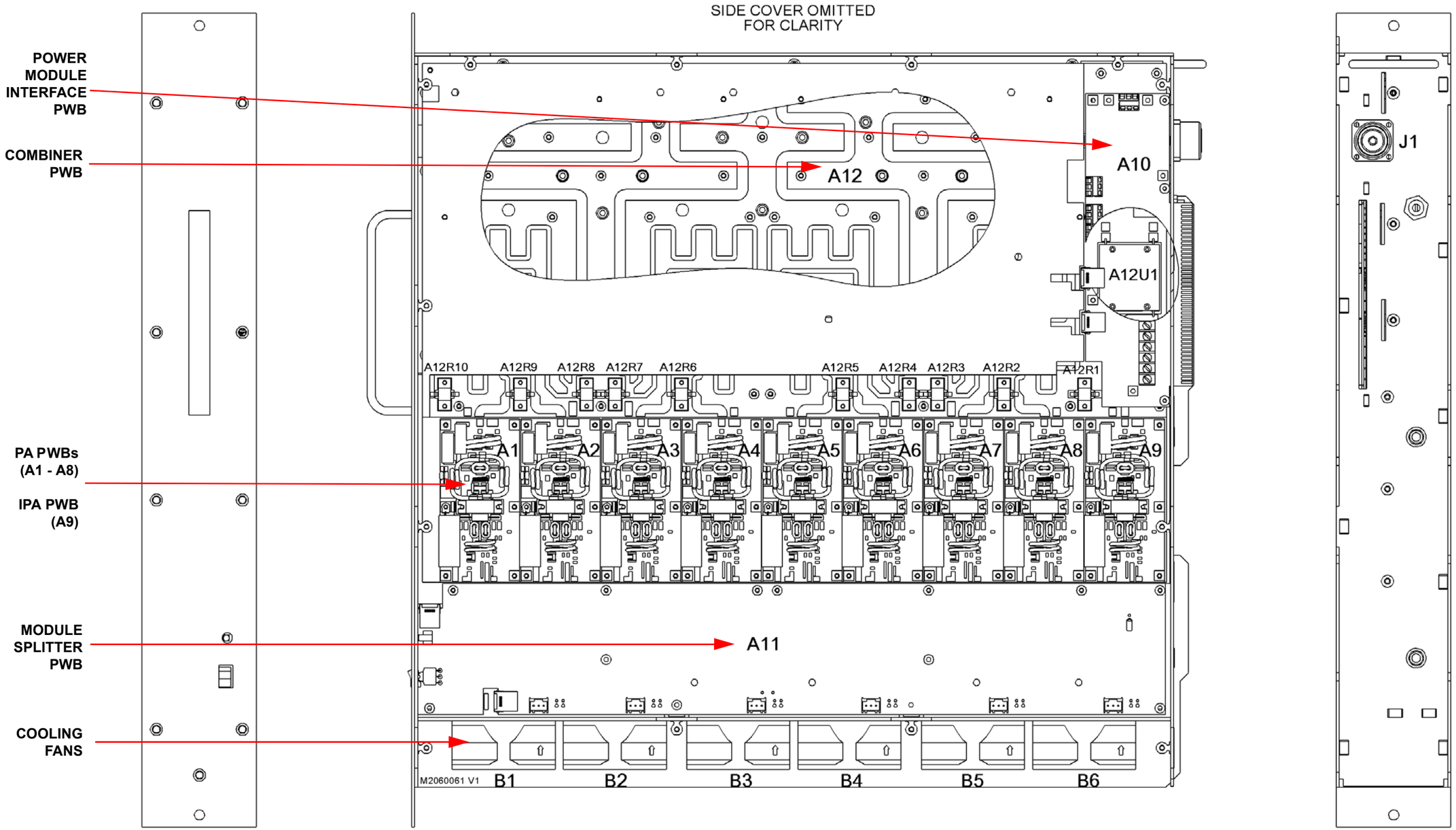


Figure MD-14: NAA56/01D RF Power Module

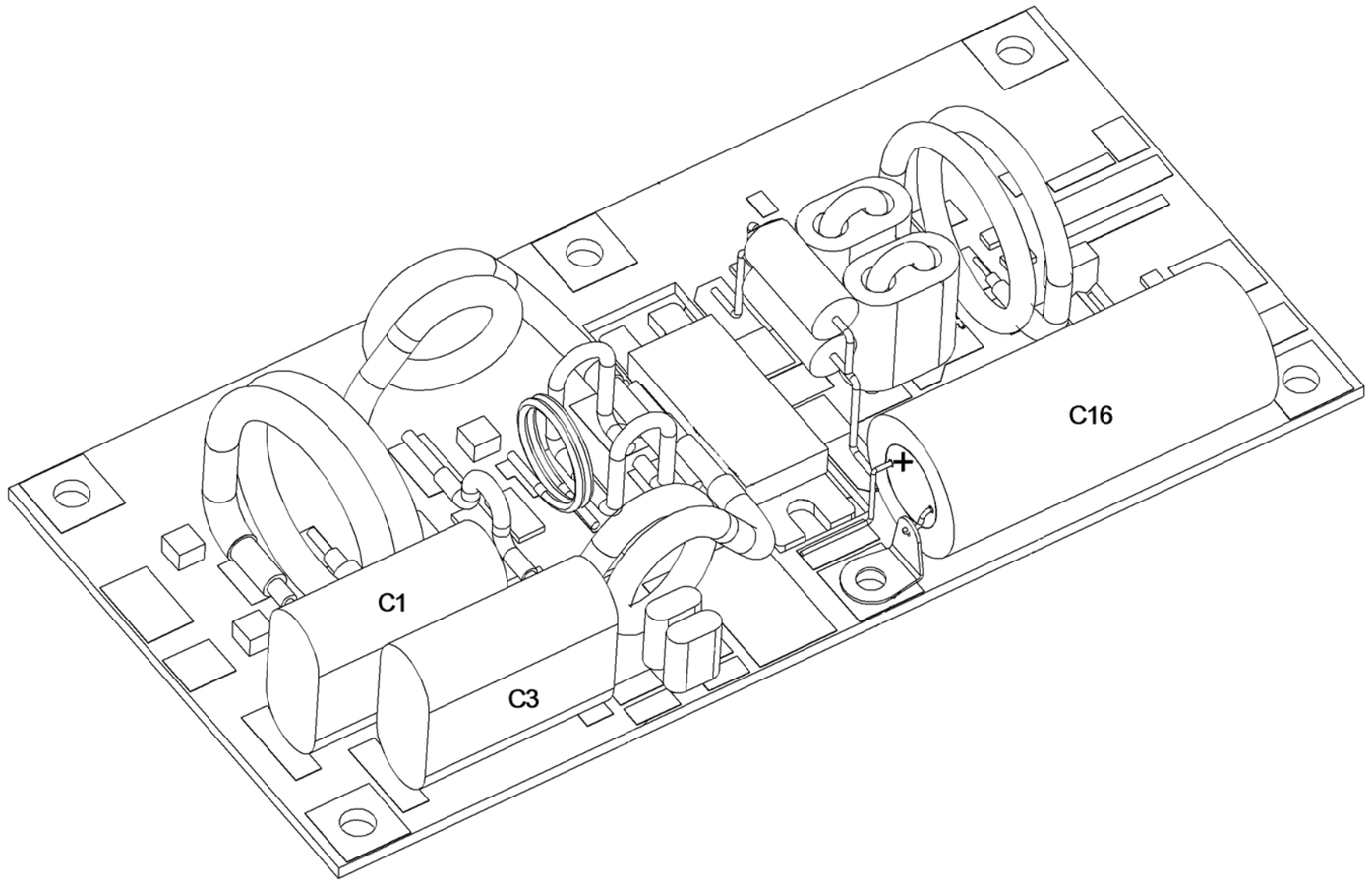


Figure MD-15: NAPA20C/01 Power Amplifier PWB

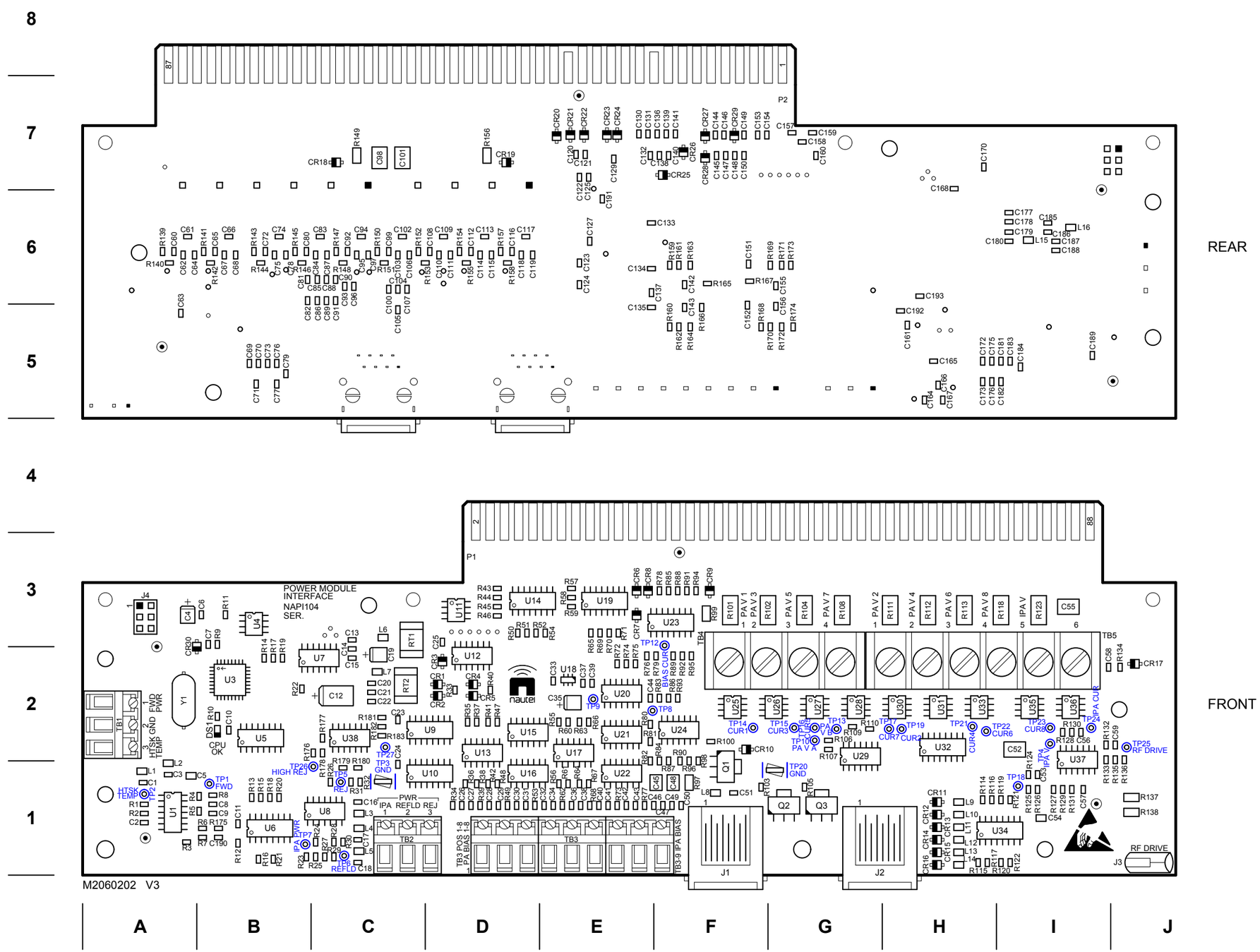


Figure MD-16: NAPI104/03 Power Module Interface PWB

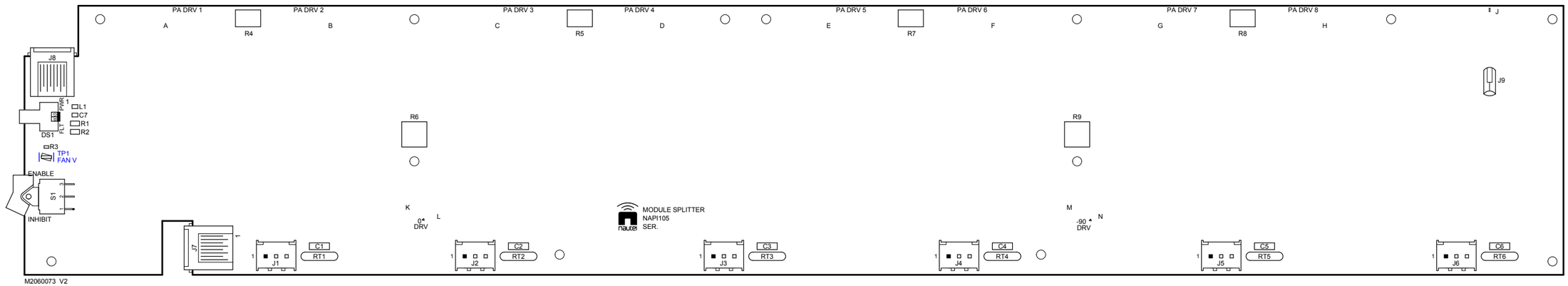


Figure MD-17: NAPI105/01A Module Splitter PWB

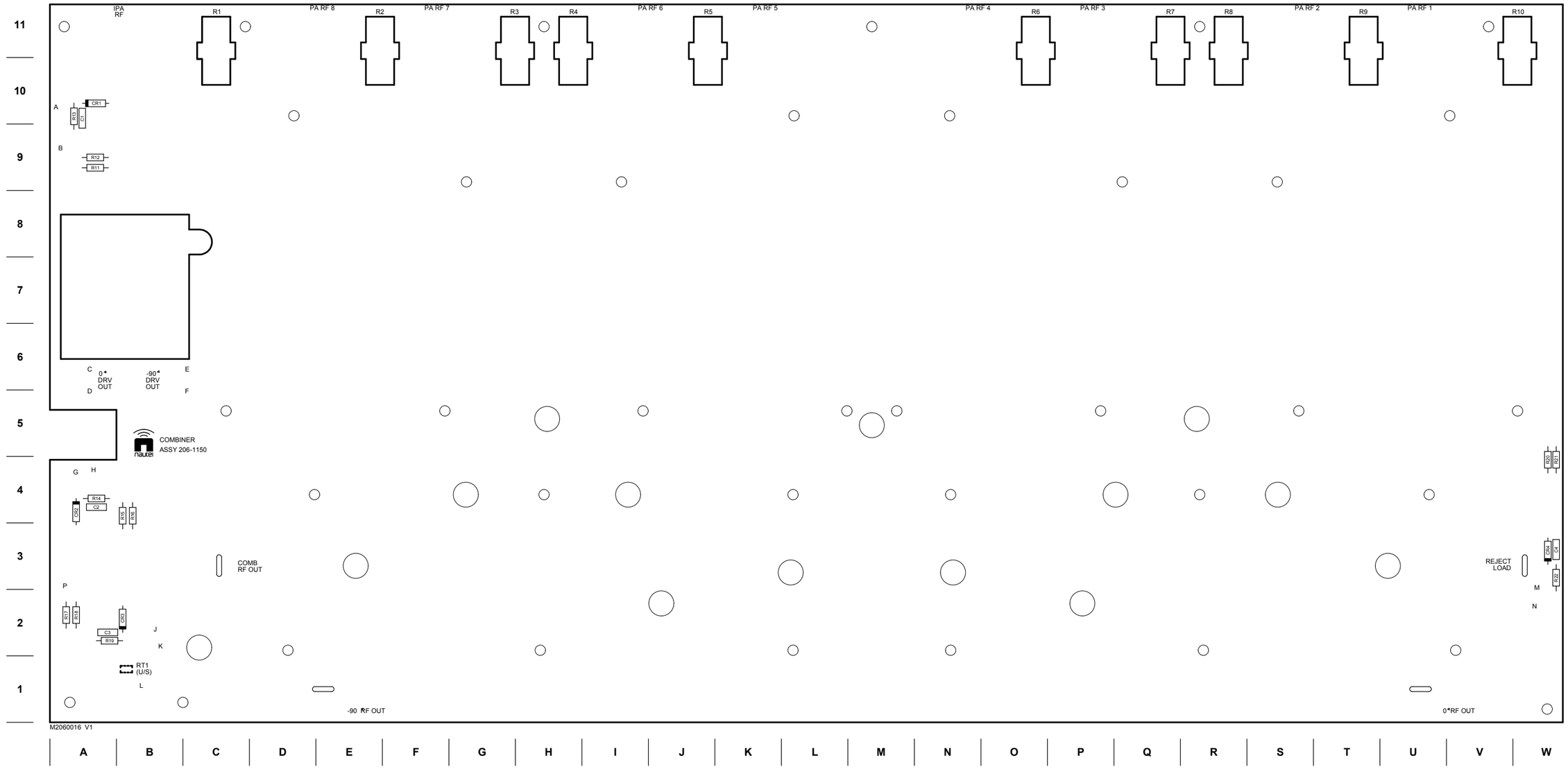


Figure MD-18: Module Combiner PWB (206-1150)

Section 7: List of terms

This section defines some of the terms that are used in Nautel documentation.

AES-EBU. Audio Engineering Society/European Broadcasting Union (AES/EBU) is the name of a digital audio transfer standard. The AES/EBU digital interface is usually implemented using 3-pin XLR connectors (the same type connector used in professional microphones). One cable carries both left-channel and right-channel audio data to the receiving device.

AUI. The Advanced User Interface is the 17-inch front panel that allows for extensive control and monitoring of the transmitter.

Cutback. A reduction in RF output power, caused by the occurrence of multiple shutbacks within a pre-defined period.

DHCP. Dynamic Host Carrier Protocol.

DSP. Digital Signal Processing.

EEPROM. Electrically Erasable Programmable Read-Only Memory.

Foldback. A reduction in RF output power, caused by transmitter not acheiving the desired set point power level (typically this is related to high VSWR).

HD Radio. High Definition (HD) Radio is another term for In-Band-On-Channel (IBOC) technology. HD Radio is a trademark of iBiquity Digital Corporation.

IBOC. Nautel In-Band-On-Channel technology provides high quality digital audio over existing FM radio channels.

Intermediate Power Amplifier (IPA). Refers to circuitry within the transmitter's RF power modules which amplifies the exciter's RF output to a level sufficient to drive the final RF amplifiers.

LED. Light Emitting Diode (also referred to as lamp).

LUT. Look-Up Table.

MER. Modulation Error Ratio. This ratio quantifies (in decibels) the performance of a digital radio transmitter.

OFDM. Orthogonal Frequency Division Multiplexing is a digital data encoding method that uses multiple narrowband carrier frequencies.

Preset. A setting that controls power level, frequency and audio parameters. The NV10/NV7.5 allows you to pre-program multiple presets.

PWB. Printed Wiring Board.

SBC. Single Board Computer. Refers to the CPU and associated components located on the back of the transmitter's front door.

Shutback. A complete, but temporary loss of RF output power, caused by any one of a variety of faults, including high VSWR, high reject load power, RF drive failure, or an open external interlock.

Shutdown. A complete and permanent loss of RF output power. Typically follows repeated cutback, foldback or shutback events.

Surge protection panel. An electrical panel that protects equipment from electrical surges in the ac power supply, antenna or site ground caused by lightning strikes.

TCP. Transmission Control Protocol. This is a connection based message delivery protocol that provides error-checked delivery of a stream of data.

UDP. User Datagram Protocol. This is a connectionless based data delivery protocol that doesn't provide error-checked delivery acknowledgement.

VSWR. Voltage standing wave ratio. This is an expression of the ratio of forward voltage to reverse voltage on the feedline and antenna system. An ideal VSWR of 1:1 provides maximum transmitter-antenna efficiency.

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