

## Flexiva FAX FM Radio Transmitters



20 kW FM Radio Transmitter  
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# Flexiva™ FAX Overview



- FM air- cooled, Quad-mode operation: FM, FM+HD, HD only, and DRM+ (Capable)
- Hot pluggable PA modules
- Hot pluggable power supplies
- Incorporates FAX Compact Exciter, FlexStar Exciter and other lower cost GatesAir exciter options as well as other manufacturers
- RoHS & CE Compliant
- Power efficiency >68 % with low operating costs
- Has Backup control and Lifesupport when Micro Module fails



# Flexiva™ FAX Overview

- Easily install UPS capability for Exciters – Size UPS depends on exciters and aux equipment installed
- Dual Exciters – Auto Switching built-in
- Air plenum – front mounted to rack; ducted air system out top (Optional)
- SFN and N+1 and Main/Alt systems available
- Emergency Stop Button option available
- AC Distribution Panel Standard on 20 kW and higher power models and optional for 5/10 kW Transmitters –Incorporated into GatesAir rack



# Flexiva™ FAX Overview



FAX Low Power (50W – 3.5kW)

FAX High Power (5kW – 80kW)



50W

FM RF Output

40kW

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## FAX Rated Power All Modes (Watts)

Output Power - Max Watts	FAX5K	FAX10K	FAX20K	FAX30K	FAX40K
Nominal Power	5,000	10,000	20,000	30,000	40,000
FM Analog Power Range	500-5,500	1,000-11,000	2,000-22,000	3,000-33,000	4,000-44,000
FM+HD -20 dBc	5,050	10,100	20,200	30,300	40,400
FM+HD -14 dBc	4,679	9,358	18,250	27,375	36,500
FM+HD -10 dBc	3,630	7,260	14,132	21,000	28,000
HD Only -20 dBc	2,000	4,000	8,000	12,000	16,000
HD Only -14 dBc	1,850	3,700	7,400	11,000	14,800
HD Only -10 dBc	1,550	3,700	6,200	9,300	12,400

- Superior AC to RF efficiency for lower power consumption & lower operating cost, smaller footprint
- LDMOS transistor performance:
  - 50 Volt device architecture
  - Highest device power density available
  - Higher gain device, fewer driver stages
  - Virtually zero long-term  $I_{dq}$  drift, for simpler design with fewer parts
  - Improved reliability and stability
- High Efficiency Switch mode AC-DC power supplies (97 %)
- Low Loss Power Block splitting/combining (Wilkinson type)
- Field serviceability to pallet level – Not FET
- Compact, simple and rugged design

# Flexiva™ FAX Overview



## 10 kW Power Block

- Basic Building Block for transmitters 10 kW to 40 kW
- 5 kW Transmitter has same chassis but fewer PA and PS Modules – Different RF Drive Chain
- 20 kW and higher have multiple 10 kW blocks plus combiners and reject loads
- LCD Controller Panel - contains all of the operational controls, status LED's, and displays information about transmitter operation
- Master controller in PA Block 1 for multi unit transmitters



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# Flexiva™ FAX Overview



- Capable of using any GatesAir Exciter
- Can use any third party exciter (May require Internal APC to IPA)
- LCD Controller Panel - contains all of the operational controls, status LED's, and displays information about transmitter operation



# Flexiva™ FAX Overview



- PA modules (7 plus IPA)  
PA's Hot swappable  
IPA Automatic Changeover

- Power Supply modules (7)  
Hot swappable  
1:1 with PA module

- Control

Multi-Unit Controller for transmitters of 20 kW or higher power. Same PCB as System Interface

System Interface Card includes ON/OFF control when Micro fails. In FAX20/30/40 acts as MUX Control

Multi-Unit Control Panel

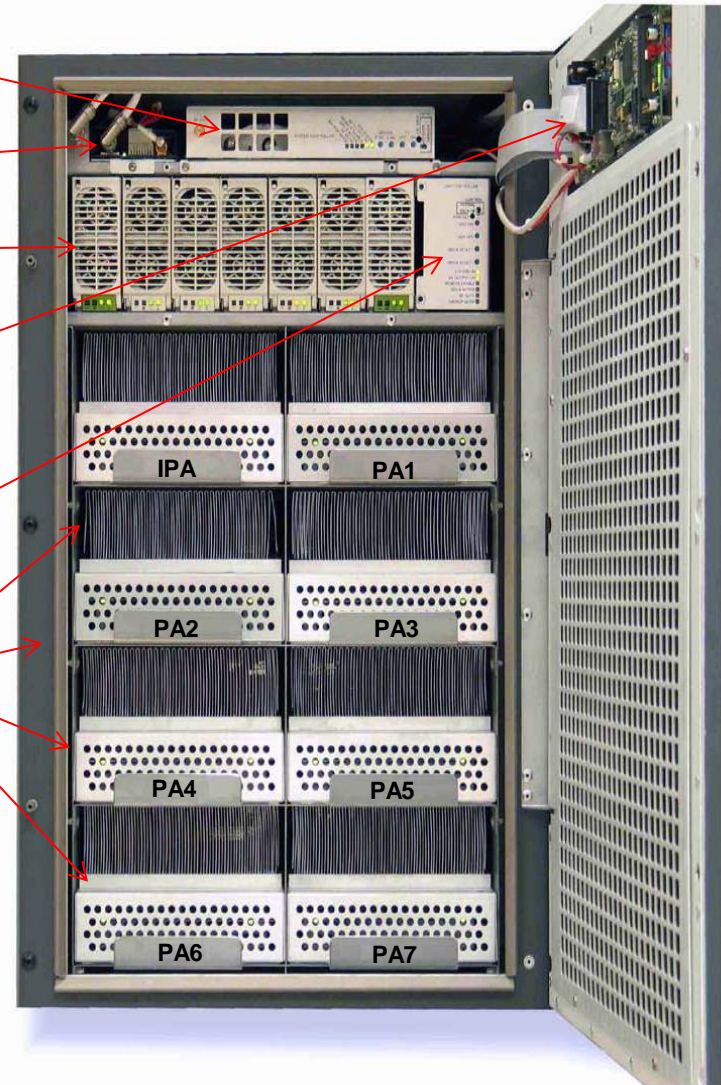
RF Switch

Power Supplies 1-7

Control/Display and Micro

Power Block Controller/ System Interface

IPA and PA Modules

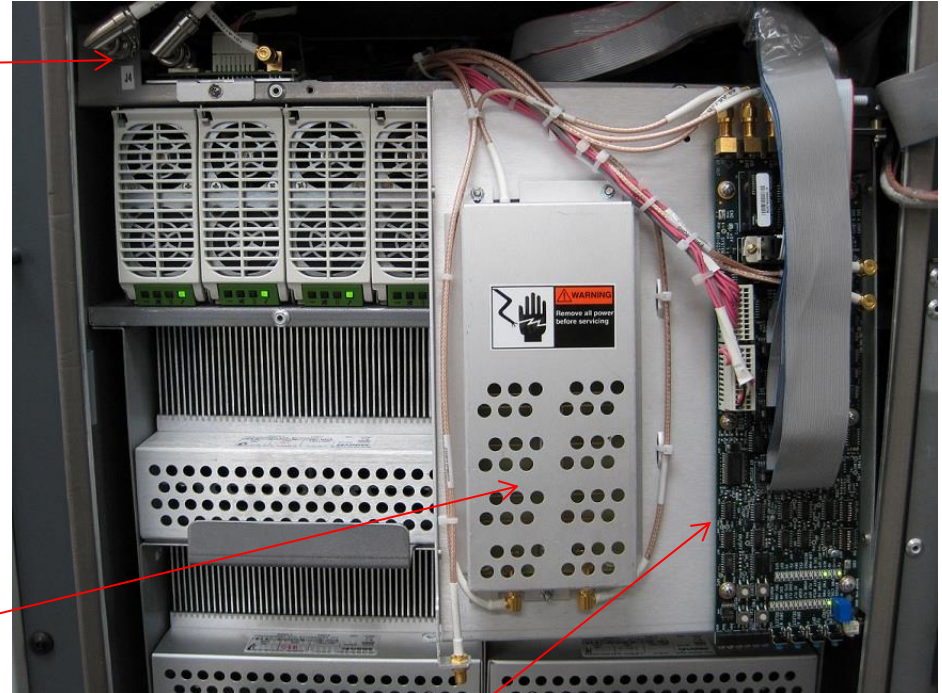


# Flexiva™ FAX Overview



IPA Switch Board

X-Way Splitter  
for drive to  
each Power  
Block in  
FAX20/30/40  
(20 kW shown)



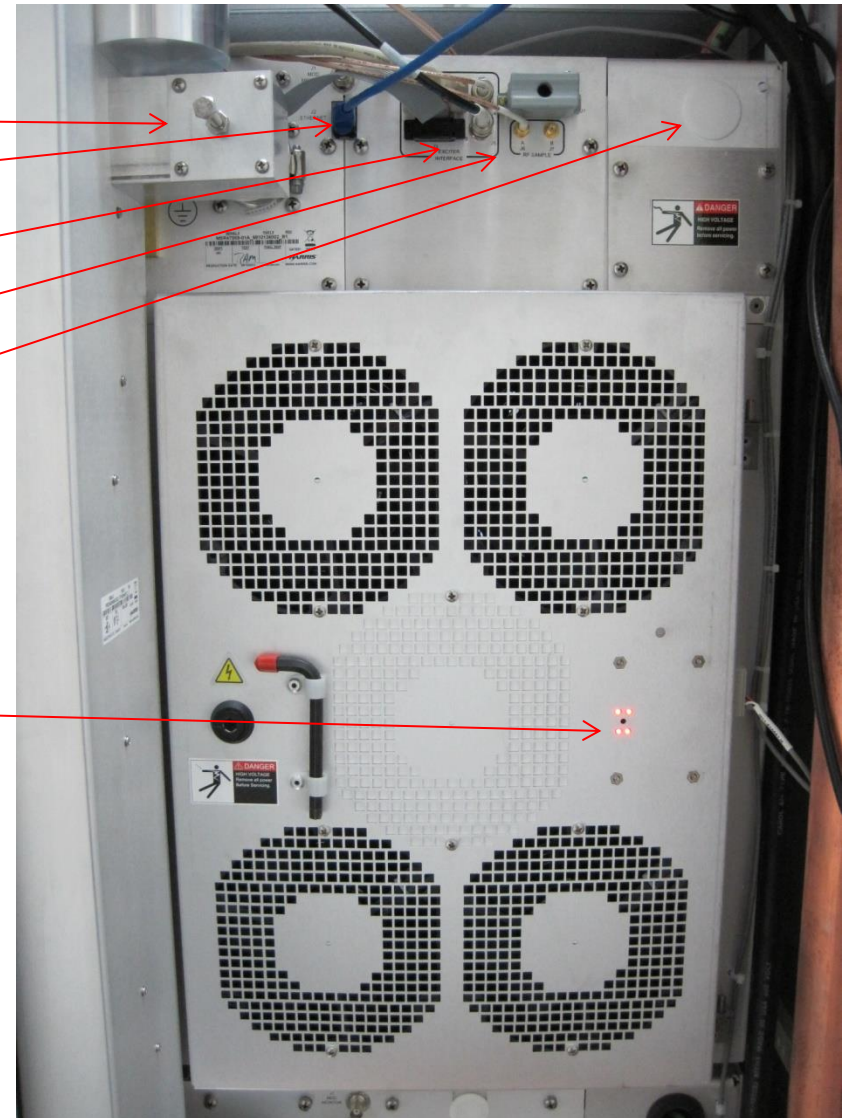
Multi-Unit Control Board FAX20/30/40

Same hardware as the System Interface Board –  
This board overrides some functions on System  
Interface for FAX20/30/40

# Flexiva™ FAX Overview



- RF output 1-5/8" EIA Un-flanged
- Rear Ethernet
- Exciter Interface
- User Remote
- AC Input
- Fan Faults



**Exciter, Ethernet and User Remote connections are only on Power Block 1 in multi-power block transmitters**

# Flexiva™ FAX Overview



## FAX 40 kW Rack-up

Power Block 1 always contains the LCD and the Multi-System Control Module

Exciter B

Exciter A

Power Block 1

Power Block 2-4 contain Power Block Display board that has status LED's on it

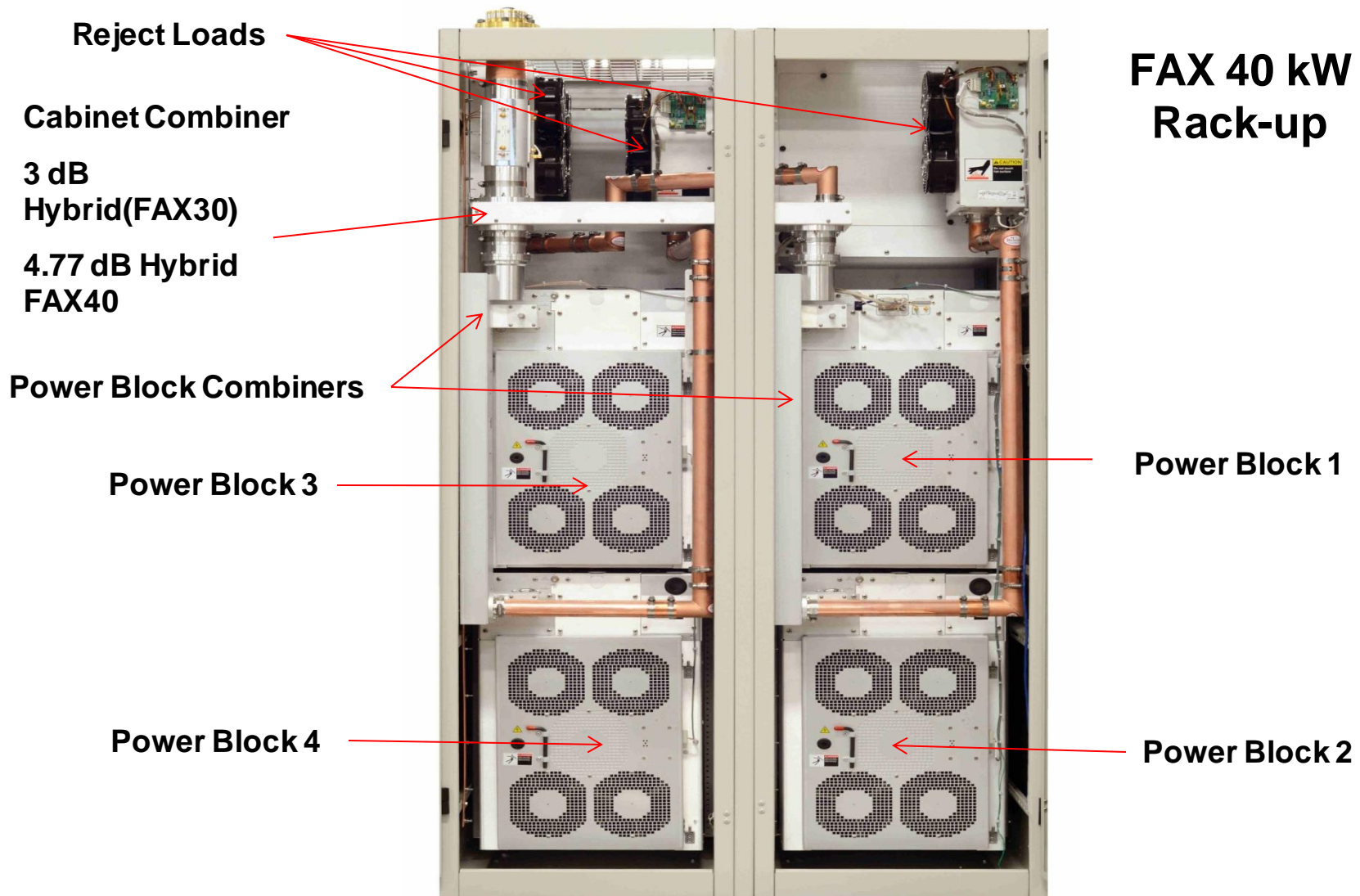
Power Block 2



Power Block 3

Power Block 4

# Flexiva™ FAX Overview



**FAX 40 kW  
Rack-up**

**Reject Loads**

**Cabinet Combiner**

**3 dB  
Hybrid(FAX30)**

**4.77 dB Hybrid  
FAX40**

**Power Block Combiners**

**Power Block 3**

**Power Block 4**

**Power Block 1**

**Power Block 2**

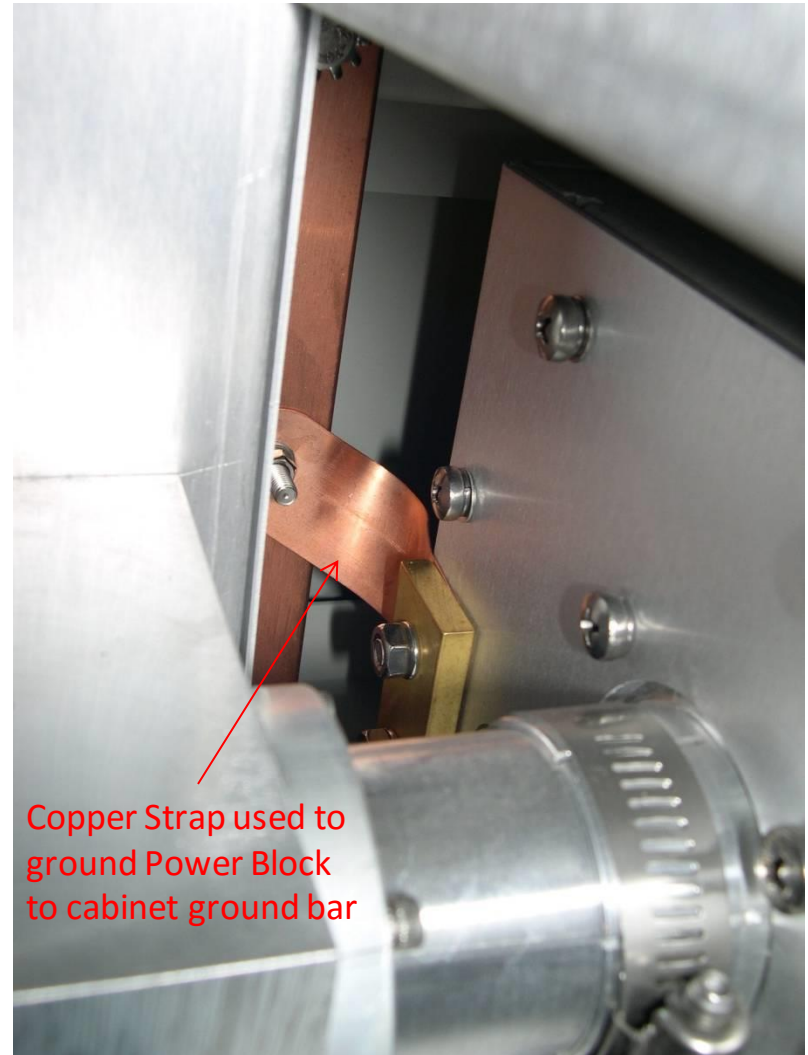
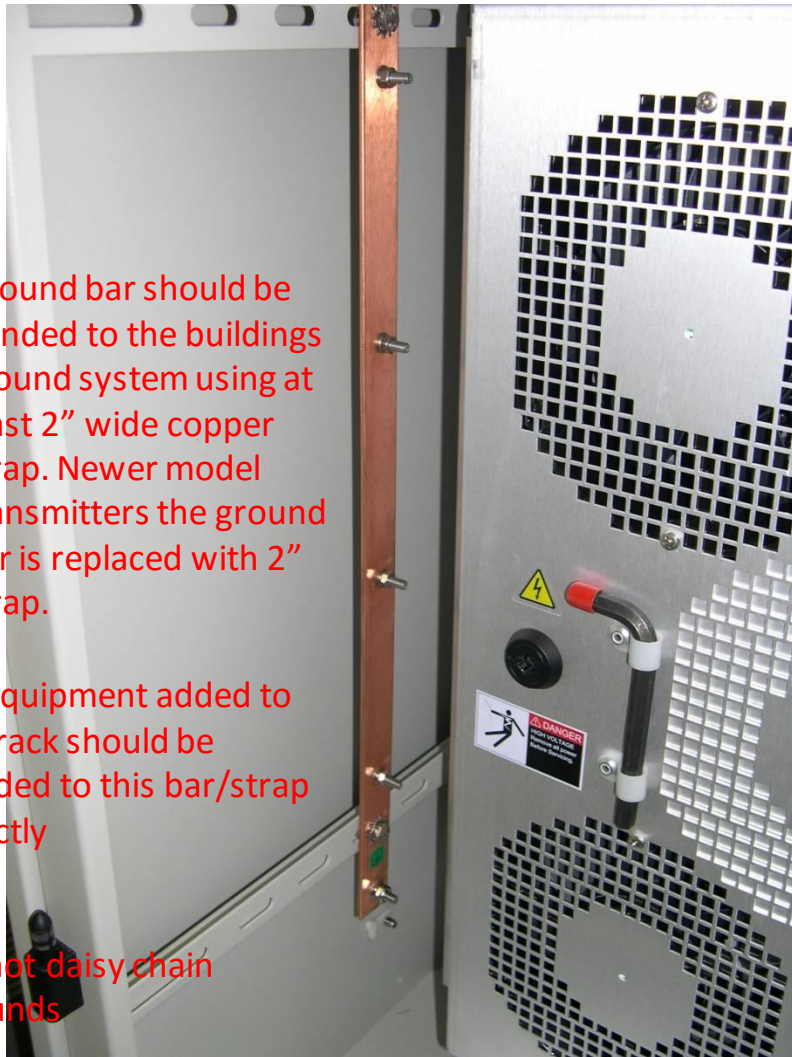
# Flexiva™ FAX Overview



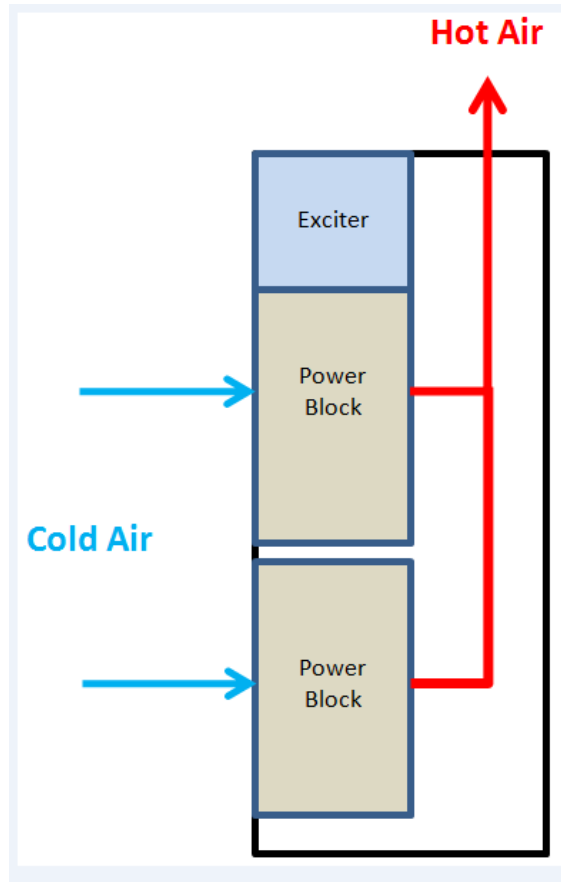
Ground bar should be bonded to the buildings ground system using at least 2" wide copper strap. Newer model transmitters the ground bar is replaced with 2" strap.

All equipment added to the rack should be bonded to this bar/strap directly

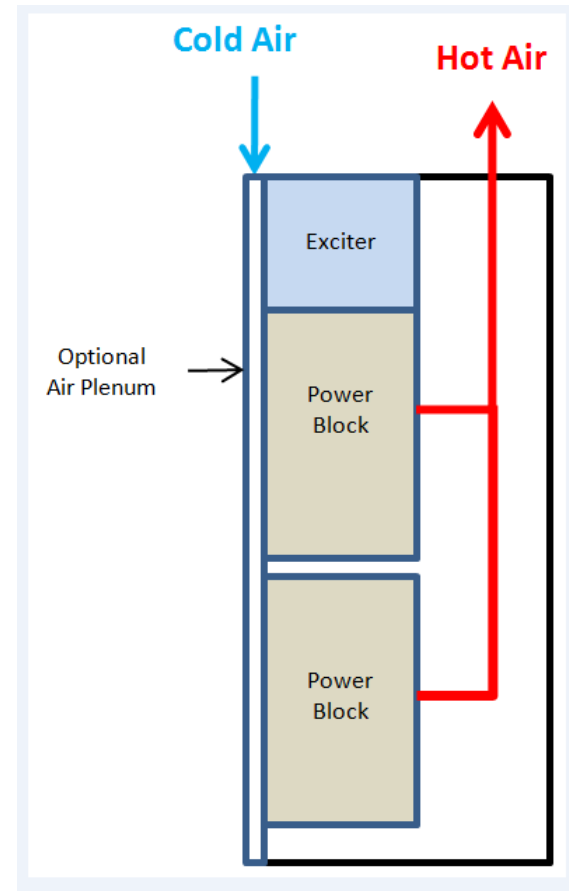
Do not daisy chain grounds



Copper Strap used to ground Power Block to cabinet ground bar



Standard Rack



Optional Air Plenum

## Cooling Options