
/TLC

Additional Manual for
TEX-LCD series
and TEX-LIGHT series

Manufactured by



Italy



File Name: 03_TLC_ING_1.0.indd

Version: 1.0

Date: 01/02/2008

Revision History

Date	Version	Reason	Editor
01/02/2008	1.0	Prima Edizione	J. H. Berti

/TLC - Additional Manual
Version 1.0

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1. General Description

The telemetry option, whether internal or external, supports connectivity to the whole range of units of RVR's **TEX-LCD** and **TEX-LIGHT** family of products. This section describes the features introduced with **/TLC** version (option with external telemetry without modem) and the necessary steps for their proper configuration.

The telemetry option supports:

- Remote alarm reporting by sending SMS messages through a GSM modem or through a PSTN modem (dial-up) by sending an alarm message string to a connected PC.
- Telemetry, with all equipment parameters sent to the "TELECON" software through an RS232 connection.
- Remote controlling through an RS232 connection to the "TELECON" software or through certain predetermined SMS messages if an external GSM modem is connected.
- Telemetry on internet across 10Base-T LAN/Ethernet network through **TCP-IP -INT/TEX** external interface connection.

1.1 Remote alarm monitoring

- Alarm generation parameters are listed below:
- Exciter output power (forward power good "PgD");
- Reflected power at the exciter (reflected power good "PgR");
- Temperature state (OVER TEMPERATURE);
- Audio Signal Level;
- Mains voltage state (present or missing).

Factory default settings are as follows:

ALARM	TIME	THRESHOLD
Forward Power (Fwd Pwr)	25 Sec.	Power Good (PgD)
Reflected Power (Rfl Pwr)	25 Sec.	Power Good (PgR)
Audio	325 Sec.	20 kHz
Over Temperature	25 Sec.	72°C
Mains Power (Mains)	25 Sec.	

Table 1.1

An inhibit time (start time) after power-on is provided to ensure false alarm prevention. When this inhibit time times out, the thresholds of alarm generation parameters are checked and remote alarms are sent if needed.

Alarm generation technique is outlined in the figure below; remote alarm delay, i.e. the amount of time the system waits before issuing a remote alarm after an alarm condition occurs is indicated in table 1.1. When appropriate, a new line is added to the alarm log stored in **/TLC**, up to six lines maximum.

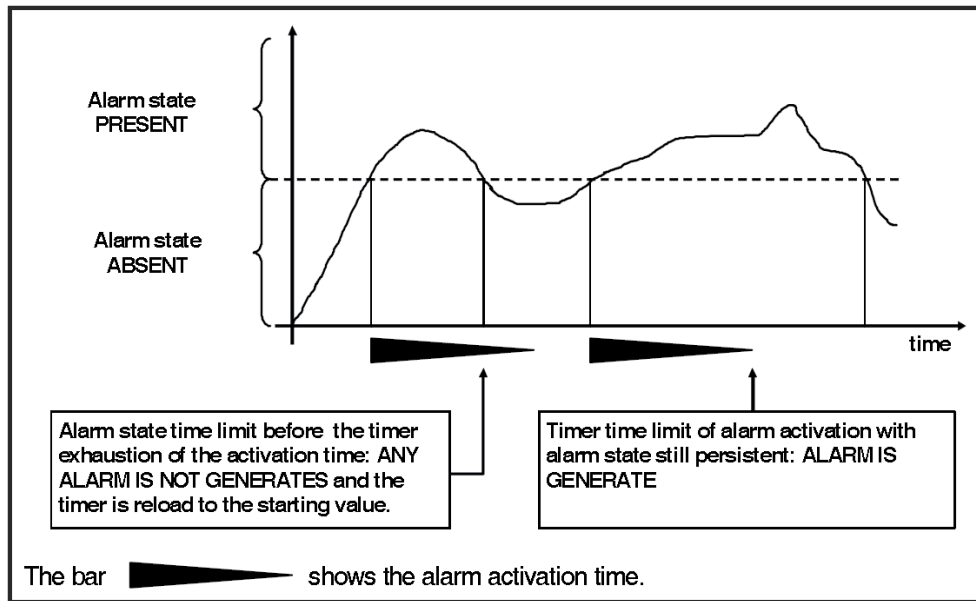


Figure 1.1

The alarm log may be reviewed using the “TELECON” software or through SMS (see relevant section).



WARNING: The mains alarm is triggered from the battery charger board; as a result, this board is required even when no batteries are installed. In the configuration without batteries, no alarm is generated; instead, an SMS message indicating a normal condition is sent upon next start-up.

When any one of the parameters listed above changes state, a text message with the following information is sent via modem (if fitted):

- Station Name.
- Station ID.
- State of measurements.

EX1.

TLC ID:01-Station Name-
Fwd Power OK-
RFL Power OK-
Over Temp OK-
Audio OK-
Mains OK-

EX2.

TLC ID:01-Station Name-
Alarm Fwd Power-
RFL Power OK-
Over Temp OK-
Alarm Audio -
Alarm Mains -

1.2 Telemetry

Equipment telemetry consists in the remote monitoring of all operating parameters and can only be achieved through serial cable or modem connection to the “TELECON” software.

1.3 Remote control

When the exciter is connected to the internal telemetry unit, it can be controlled from a PC.

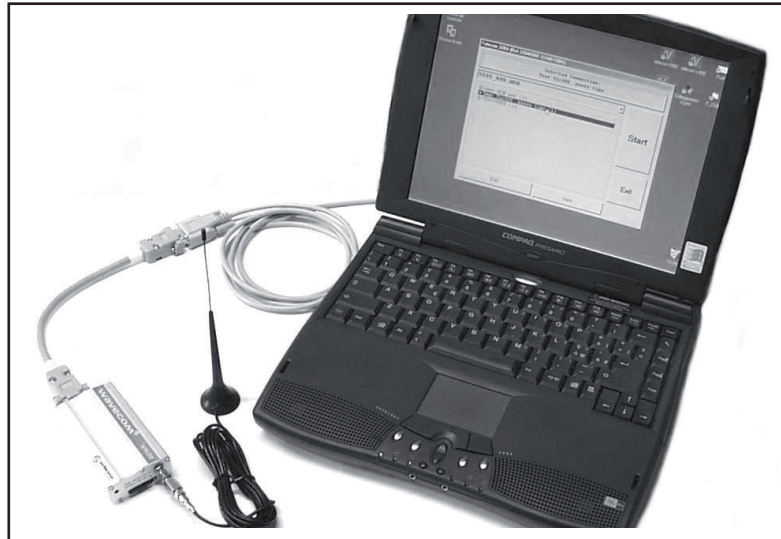


Fig.1.2: Example of Modem-to-PC connection

The “TELECON” software establishes connection with the station and enables the following remote operations: alarm reset, transmitter power on/power off, power supply reduction, dummy load testing, etc., data evaluation to locate possible faults, identification of parts required for repair.

An alternative remote controlling option uses SMS messaging through a common GSM phone (if connected with an external GSM modem), in which case the equipment will respond as indicated in table 1.2.

Before querying the system using SMS messages, establish a connection using the “TELECON” software and set the provider service centre number and the telephone numbers authorised to send these commands to the devices.

The internal and external telemetry options support the following commands:

Command	Response	Description
INFO	Station: " <i>station name</i> "- ID: "station identifier"- FWD: " <i>absolute value</i> "- RFL: " <i>absolute value</i> "- Temp: " <i>absolute value</i> "- TX On (or TX Off)- Alarm Present / Alarm Absent	Transmitter status information
INFO1	Alarm SMS message	Forces the transmission of an alarm SMS msg
TXON	Station: " <i>station name</i> "- ID: "station identifier"- TX is On -	Transmitter power-on
TXOFF	Station: " <i>station name</i> "- ID: "station identifier"- TX is Off -	Transmitter power-off
ALARM	Station: " <i>station name</i> "- ID: "station identifier"- Alarm: "Alarm log"	Alarm log
RESET	Station: " <i>station name</i> "- ID: "station identifier"- ALARM RESET OK-	Clear Alarm Log
RESMOD	-- none --	Resets and re-initialises modem

Table 1.2



Note: Response time to SMS commands may vary with different GSM network providers; as a general rule, response time should not exceed 7-10 minutes maximum.

2. Remote Alarm Reporting Configuration

Firstly, you will have to set certain parameters in the (internal or external) telemetry option using the “TELECON” software. Connect the PC serial port COM to the RS232 connector on the rear panel of the /TLC option using a standard Male DB9 - Female DB9 serial cable.

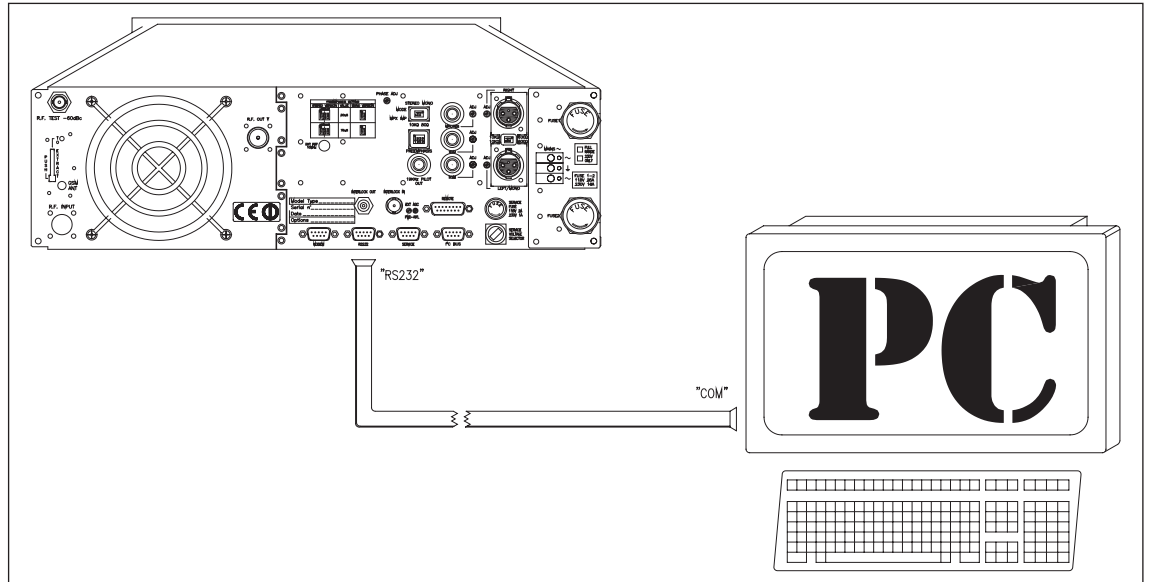
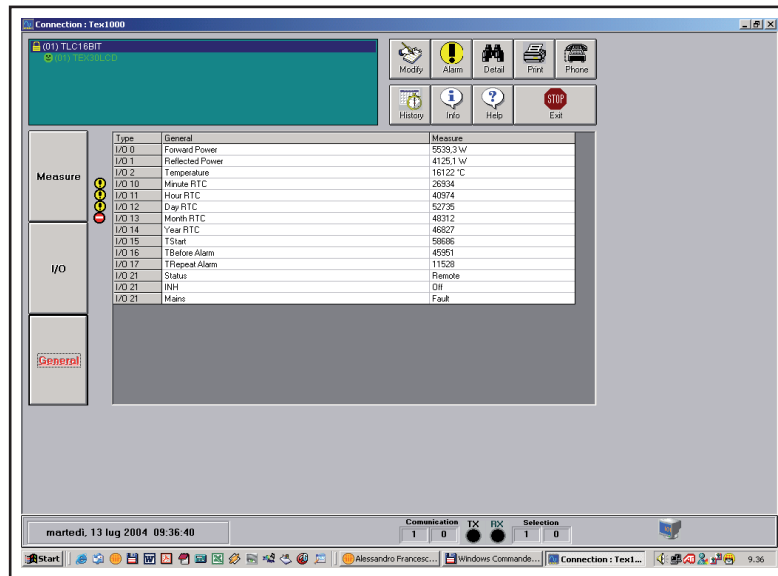


Fig.2.3: Example of connection between TEX-LCD unit with /TLC option and PC

When using the “TELECON” software for the first time, select the station and then enter:

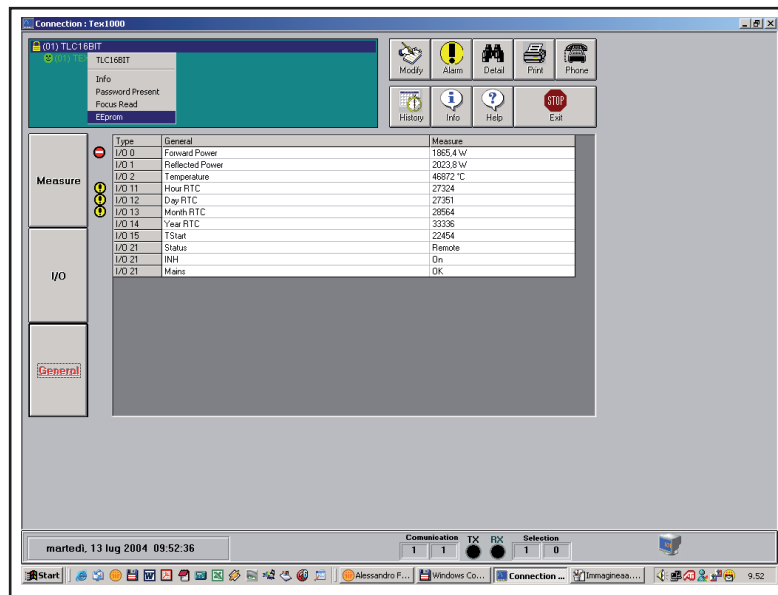
- COM port used,
- Baud rate (set to 9600),
- type of connection (set to direct, via cable).

When you have entered the correct data, click the “Start” button to confirm and the “TELECON” main screen appears, as shown in the figure:



Use this screen to change Start time. To edit this parameter, click the “TStart” box with the left mouse button (default setting is 300sec., the equivalent of 5 min.); this opens a window where you can change the setting. Press Enter to confirm.

Double click the green label in the top left corner of the TELECON screen and select “Eeprom” (as shown in the figure below).



In the open menu, press this key to view station parameters.

- Select the “General” data category and set the 5 parameters:
- **STATION ID:** Station identifier;
- **STATION NAME:** (max 18 characters);

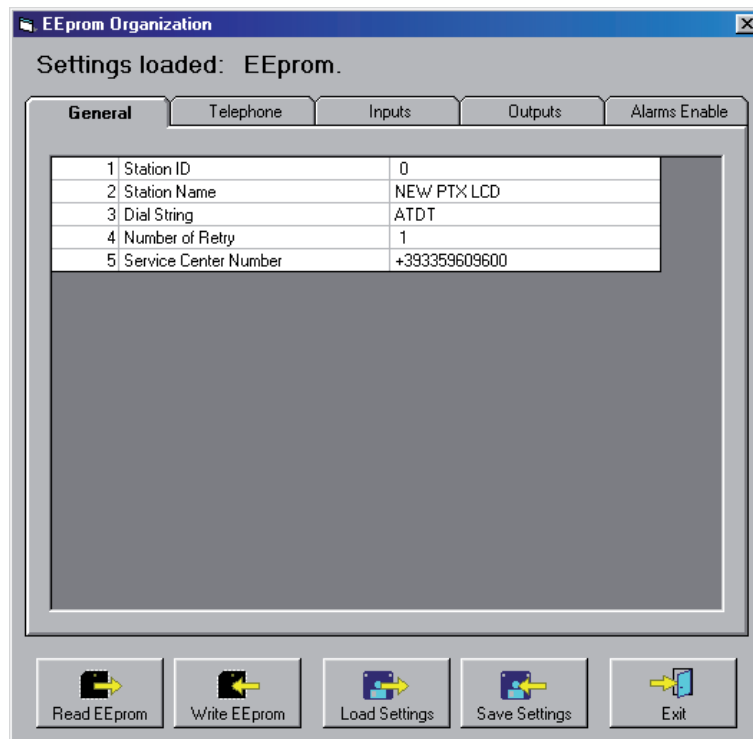
- **DIAL STRING:** required setting for a GSM modem is ATDT;
- **NUMBER OF RETRY:** number of alarm transmission repetitions;
- **SERVICE CENTER NUMBER:** number of GSM provider service centre for SMS transmission and reception; place country code before number.

Example with Italian service providers:

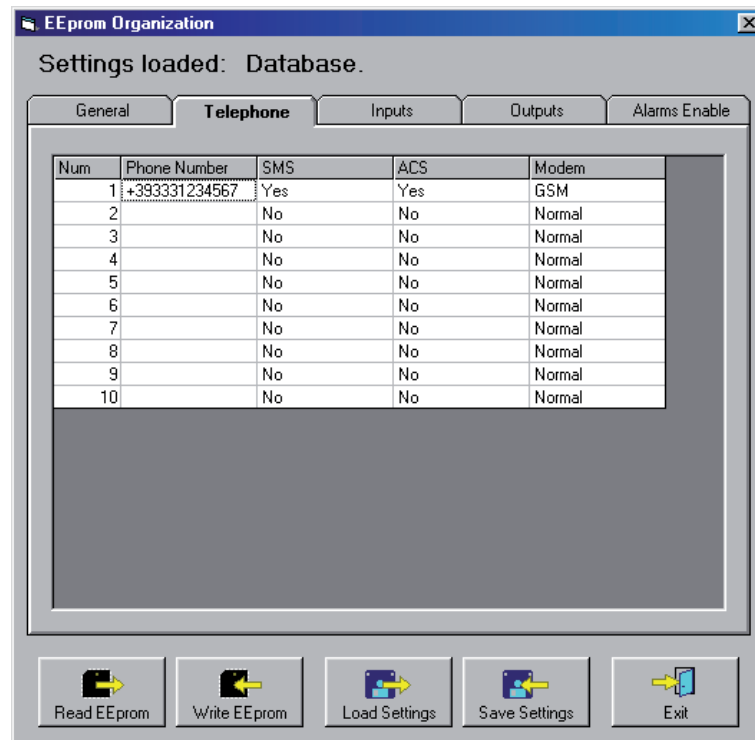
TIM: +393359609600

VODAFONE: +393492000200

WIND: +393205858500



Now select the "Telephone" data category and set the following:



- PHONE NUMBER: GSM phone numbers recognised by the station to which you want the alarms sent;
- SMS: select “YES” to enable transmission of SMS commands to system;
- ACS: select “YES” to enable SMS reception.



Note: For correct transmission, place country code (+XX) before set numbers (Use +39 for Italy).



When all parameters are set, press this key and the internal or external Telemetry option will store the information.

When finished, click “Exit” to exit the remote station programming window.

Back into “TELECON” standard interface, click the “General” measurement selection button to set thresholds and operation times for the various alarms according to the principles outlined in Section “Alarm Management”.



Note: When setting alarm thresholds, allow a margin of some percent points with respect to normal operation parameters.

3. TEX-LCD/TLC External Description

This section describes the components found on the rear panel of the internal telemetry option \TLC.

3.1 Rear Panel TEX-LCD (2 HE)

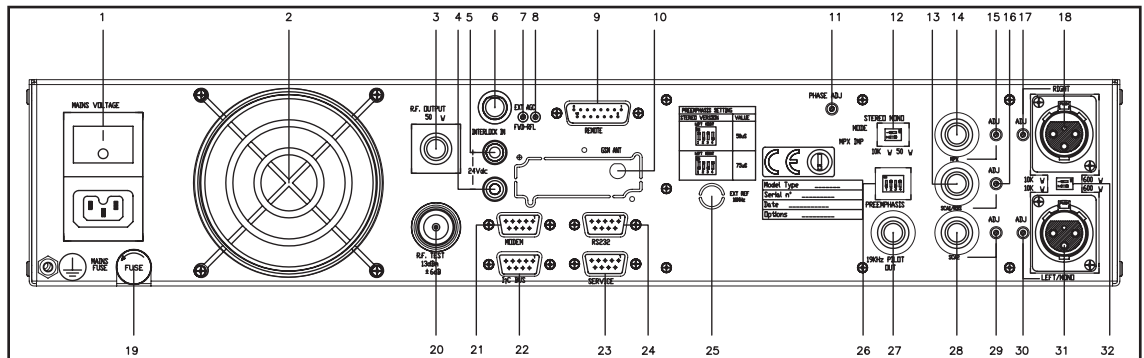


figure 3.1

- | | |
|-------------------|--|
| [1] PLUG | VDE plug for mains voltage. |
| [2] VENTOLA | Fan for the forced ventilation of the exciter. |
| [3] R.F. OUTPUT | RF output connector, N-type, 50 Ω |
| [4] 24 VDC IN- | External 24Vdc supply input. Negative (black). |
| [5] 24 VDC IN- | External 24Vdc supply input. Positive (red). |
| [6] INTERLOCK OUT | Interlock output BNC connector: when the transmitter goes into stand-by mode, the (normally floating) central conductor is switched to ground. |
| [7] FWD EXT. AGC | Trimmer to set output power limitation according to FWD fold input. |
| [8] RFL EXT. AGC | Trimmer to set output power limitation according to RFL fold input. |
| [9] REMOTE | DB15 telemetry connector. |
| [10] GSM ANT | TEX-LCD: Not present.
TEX-LCD/TLM: SMA connector for GSM.
TEX-LCD/TLC: Not present. |
| [11] PHASE ADJ | Pilot tone phase trimmer. |
| [12] MODE/MPX IMP | Dip-switch used to select transmission mode (STEREO or MONO) and MPX input impedance (50 Ω or 10 k Ω). |
| [13] SCA/RDS | BNC connector for unbalanced SCA1/RDS input. |
| [14] MPX | Unbalanced MPX input BNC connector. |
| [15] MPX ADJ | Trimmer for MPX input level adjustment. |
| [16] SCA/RDS ADJ | Trimmer for SCA1/RDS input level adjustment. |
| [17] RIGHT ADJ | Trimmer di regolazione dei livelli dell'ingresso destro |
| [18] RIGHT | Right audio channel input XLR connector. |
| [19] FUSE BLOCK | Fuse carrier. Use a screwdriver to access the fuse. Contains the general protection fuse. |
| [20] R.F. TEST | Output with level 13 dBm lower than output power level, suitable for modulation monitoring. Not suitable for spectrum analysis. |
| [21] MODEM | TEX-LCD: Not present
TEX-LCD/TLM: DB9 Connector for GSM modem connection.
TEX-LCD/TLC: Power supply output for external modem or TCP/IP-INT-TEX interface. |

[22] I ² C BUS	<i>TEX-LCD</i> : Non present <i>TEX-LCD/TLM o /TLC</i> : DB9 connector for I ² C bus network. Usually not used, or used for special operations depends on customer requirements.
[23] RS232	<i>TEX-LCD</i> : Not present. <i>TEX-LCD/TLM o /TLC</i> : DB9 connector for serial, direct or modem communications.
[24] SERVICE	DB9 connector for factory setting.
[25] EXT REF 10MHz	BNC connector for synchronism signal for external devices.
[26] PREEMPHASIS	Preemphasis dip-switch, provides two settings: 50 or 75 μ s. Preemphasis affects the right and left inputs in stereo mode and the mono input. MPX inputs are not affected by preemphasis setting.
[27] 19 kHz PILOT OUT	Tone output BNC connector, may be used to synchronise external devices such as RDS coders.
[28] SCA2	BNC connector for unbalanced SCA2 input.
[29] SCA2 ADJ	Trimmer for SCA2 input level adjustment.
[30] LEFT-MONO ADJ	Trimmer di regolazione dei livelli dell'ingresso sinistro-mono
[31] LEFT-MONO	Left-mono audio channel input XLR connector.
[32] IMPEDANCE	Dip-switch used to select balanced audio input impedance (600 Ω or 10 k Ω).

3.2 Rear Panel TEX-LCD (3 HE)

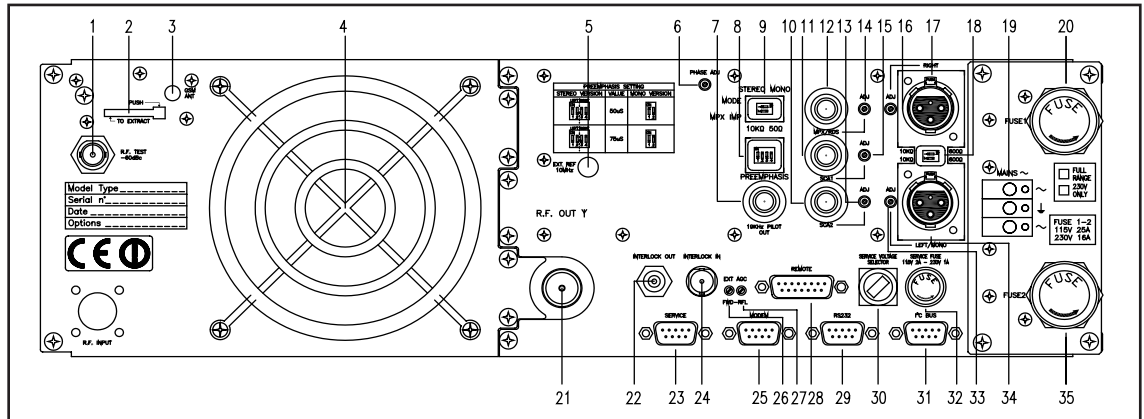


Figura 6.2

- | | |
|---|---|
| <p>[1] R.F. TEST</p> <p>[2] GSM SLOT-IN</p> <p>[3] GSM ANT</p> <p>[4] AIR FLOW</p> <p>[5] 10MHz</p> <p>[6] PHASE ADJ</p> <p>[7] 19 kHz PILOT OUT</p> <p>[8] PREEMPHASIS</p> <p>[9] MODE/MPX IMP</p> <p>[10] SCA2</p> <p>[11] SCA1</p> <p>[12] MPX</p> <p>[13] SCA2 ADJ</p> <p>[14] MPX ADJ</p> <p>[15] SCA1 ADJ</p> <p>[16] RIGHT ADJ</p> <p>[17] RIGHT</p> <p>[18] IMPEDANCE</p> <p>[19] MAINS</p> <p>[20] FUSE 1</p> <p>[21] R.F. OUTPUT</p> <p>[22] INTERLOCK OUT</p> <p>[23] SERVICE</p> <p>[24] INTERLOCK IN</p> <p>[25] MODEM</p> | <p>Output with level -60 dB lower than output power level, suitable for modulation monitoring. Not suitable for spectrum analysis.</p> <p>Reserved for future implementations.</p> <p><i>TEX-LCD</i>: Not present
<i>TEX-LCD/TLM</i>: SMA connector for GSM
<i>TEX-LCD/TLC</i>: Not present</p> <p>Air grille.</p> <p>Reserved for future implementations.</p> <p>Pilot tone phase trimmer.</p> <p>Tone output BNC connector, may be used to synchronise external devices such as RDS coders.</p> <p>Preemphasis dip-switch, provides two settings: 50 or 75 μs. Preemphasis affects the right and left inputs in stereo mode and the mono input. MPX inputs are not affected by preemphasis setting.</p> <p>Dip-switch used to select transmission mode (STEREO or MONO) and MPX input impedance (50 Ω or 10 kΩ).</p> <p>BNC connector for SCA2 input.</p> <p>BNC connector for SCA1 input.</p> <p>Unbalanced MPX input BNC connector.</p> <p>Trimmer for SCA2 input level adjustment.</p> <p>Trimmer for MPX input level adjustment.</p> <p>Trimmer for SCA1 input level adjustment.</p> <p>Trimmer for right input level adjustment.</p> <p>Right audio channel input XLR connector.</p> <p>Dip-switch used to select balanced audio input impedance (600 Ω or 10 kΩ).</p> <p>Connectors for 115-230 V 50-60 Hz mains power supply.</p> <p>Mains power supply fuse</p> <p>RF output connector, N-type for TEX500-LCD and 7/16" for TEX1000LIGHT, TEX1000-LCD and TEX1300-LCD.</p> <p>Interlock output BNC connector: when the transmitter goes into stand-by mode, the (normally floating) central conductor is switched to ground.</p> <p>DB9 connector for factory setting.</p> <p>Interlock input BNC connector: the exciter is forced in stand-by mode when the inner conductor is grounded.</p> <p><i>TEX-LCD</i>: Not present
<i>TEX-LCD/TLM</i>: DB9 Connector for GSM modem connection.
<i>TEX-LCD/TLC</i>: Power supply output for external modem or TCP/IP-INT-TEX interface.</p> |
|---|---|

[26] FWD EXT. AGC	Trimmer to set output power limitation according to FWD fold input.
[27] RFL EXT. AGC	Trimmer to set output power limitation according to RFL fold input.
[28] REMOTE	DB15 telemetry connector.
[29] RS232	<i>TEX-LCD</i> : Not present <i>TEX-LCD/TLM o /TLC</i> : DB9 connector for serial, direct or modem communications.
[30] SERVICE VOLTAGE SEL.	115-230V mains voltage selector.
[31] I ² C BUS	<i>TEX-LCD</i> : Non present <i>TEX-LCD/TLM o /TLC</i> : DB9 connector for I ² C bus network. Usually not used, or used for special operations depends on customer requirements.
[32] SERVICE FUSE	Service fuse.
[33] LEFT ADJ	Trimmer for left input level adjustment.
[34] LEFT	Left audio channel input XLR connector.
[35] FUSE 2	Mains power supply fuse.