

LDG FTL-Meter External Meter for Yaesu FT-857 and FT-897 Version 1.0



LDG Electronics

1445 Parran Road
St. Leonard MD 20685-2903 USA
Phone: 410-586-2177
Fax: 410-586-8475
ldg@ldgelectronics.com
www.ldgelectronics.com

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INTRODUCTION

LDG pioneered the automatic, wide-range switched-L tuner in 1995. From its laboratories in St. Leonard, Maryland, LDG continues to define the state of the art in this field with innovative automatic tuners and related products for every amateur need.

Congratulations on selecting the LDG Electronics FTL-Meter. The FTL-Meter provides accurate and precise metering for a wide range of receive and transmit parameters. While many users will choose to display S-meter readings on receive, and Power Output on transmit, several other useful readings are available.

The FTL-Meter plugs into the external meter jack on the FT-857 or FT-897 radio. Like the original FT-Meter, the FTL-Meter is highly portable, making it ideal for DXpedition use, but the FTL-Meter provides a much larger meter face for easier readability from even farther away.

JUMPSTART, OR “REAL HAMS DON’T READ MANUALS!”

Ok, but at least read this one section before operating the FTL-Meter:

1. Configure the FT-857 or FT-897 for normal operation.
2. Plug the FTL-Meter into the radio’s meter jack using the right angle plug. The meter jack is on the bottom of the front panel, under the FUNC button on the FT-857, and just to the right of the main tuning knob on the FT-897.
3. Optionally, connect a 12 volt, 250mA DC power supply to the 2.5x5.5mm coaxial power jack (center positive). This only is needed for powering the backlight; the meter will function without 12V.
4. Using the radio’s extended menu system, under menu items number 60 and 61, select the desired parameters to display on the meter for receive and transmit.
5. Operate the radio normally; the meter will continuously display the selected receive and transmit values.

SPECIFICATIONS

- Giant, 4.75" (diagonal) 500 μ A analog meter movement.
- S-meter, Discriminator, or Battery Voltage readout on receive.
- Power Output, SWR, Modulation, ALC, or Battery Voltage on transmit.
- Externally powered cool blue backlighting with adjustable brightness.
- On/Off switch for backlight.
- Dimensions: 5.2w x 4.2h x 4.5d inches. Weight: 14 oz
- Backlight requires 12VDC, 250mA. 2.5 x 5.5mm jack, center positive.

GETTING TO KNOW YOUR FTL-METER

Your FTL-Meter is a quality, precision instrument that will give you many years of outstanding service; take a few minutes to get to know it.

Front Panel:



The front panel of the FTL-Meter shows seven calibrated scales:

- **S:** Received signal strength
- **ALC:** Automatic Level Control voltage, on transmit. Shares the S-meter scale.
- **PWR:** Transmit power output in watts
- **SWR:** Transmit Standing Wave Ratio
- **MOD:** Transmit modulation percentage
- **VOLT:** Battery voltage, in transmit or receive
- **DISC:** FM discriminator reading on receive

The FTL-Meter displays different scales on receive and transmit. Selection of which scales is made in the radio's setup menu. There are no controls on the FTL-Meter; operation is fully automatic.

Back Panel:

The rear panel of the FTL-Meter has two jacks, a rocker switch, and two access holes for adjustments.



The DC Coax jack accepts a 2.5 x 5.5mm coaxial DC power cable, 12V, 250mA, center positive. External power is only required if use of the internal backlight is desired. The meter functions correctly otherwise without it.

The jack marked "Radio" accepts an 1/8" stereo plug, the other end of which plugs into the meter jack on the FT-857 or FT-897. If desired, a standard headphone extension cable may be used to place the FTL-Meter farther from the radio.

The rocker switch is used to turn the internal backlight on and off. It may be desirable to turn off the internal backlight when attempting to conserve battery power.

The brightness of the backlight may be adjusted with a small flat blade screwdriver. Carefully insert the screwdriver into the hole labeled "Brightness", and gently turn the potentiometer left or right until the desired brightness is achieved.

The full-scale reading may be adjusted by turning the potentiometer marked "FS" on the rear of the meter. See the section on Calibration for details.

INSTALLATION

The FTL-Meter is intended for indoor use only; it is not water-resistant. If you use it outdoors, (QSO Party outdoor barbecue, for example) you must protect it from rain.

Place the FTL-Meter in a convenient location near the FT-857 or FT-897. The included cable has a six foot reach.

FT-857 Installation:

The meter jack on the FT-857 is located under the front panel, near the FUNC button. Plug the right-angle end of the included 1/8" stereo cable into the meter jack. Plug the other end of the cable into the jack marked "Radio" on the rear of the FTL-Meter.



If desired, connect a suitable power supply (12VDC @ 250mA) to the DC Power jack on the rear of the FTL-Meter, using the supplied 2.5 x 5.5mm center-positive power cable. This power connection supplies power to the backlight only. If the backlight feature is not desired, simply leave the DC power unconnected, and the meter will still function normally.

FT-897 Installation:

The meter jack on the FT-897 is located under the front panel, just to the right of the main tuning knob. Plug the right-angle end of the included 1/8" stereo cable into the meter jack. Plug the other end of the cable into the jack marked "Radio" on the rear of the FTL-Meter.



If desired, connect a suitable power supply (12VDC @ 250mA) to the DC Power jack on the rear of the FTL-Meter, using the supplied 2.5 x 5.5mm center-positive power cable. This power connection supplies power to the backlight only. If the backlight feature is not desired, simply leave the DC power unconnected, and the meter will still function normally.

SETUP

Yaesu included two menu items in the extended menu system of the FT-857 and FT-897 transceivers, to allow configuring an external meter such as the FTL-Meter. In order to access those menu items, first, the extended menu system must be enabled if it is not already.

Press and hold the **FUNC** button on the transceiver to enter menu mode. Rotate the **SELECT** knob until menu 1, "EXT MENU" is showing. Turn the main tuning knob until EXT MENU is "ON". This enables the extended menu system.

Initial Calibration

As shipped from the factory, the FTL-Meter is calibrated, but may require some adjustment due to shipping or other factors. When the radio is off, the needle on the FTL-Meter should rest at the "1:1" line on the SWR scale. If it does not, insert a flat blade screwdriver into the plastic screwhead under the meter face on the front panel of the FTL-Meter. Gently turn the screw in either direction until the needle rests on 1:1.

Next, the full scale reading of the meter should be calibrated. With the transceiver turned on, enter menu mode, and rotate the **SELECT** knob until menu item 60 "MTR ARX SEL" is showing. Now rotate the main tuning knob until "FS" is displayed. This tells the transceiver to output a full-scale reading signal on the meter jack, for calibration. Verify that the needle is now resting on the very right-hand edge of the red