

**LDG FT-Meter
For Yaesu FT-857 and FT-897**



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Introduction

Congratulations on selecting the LDG FT-Meter. The FT-Meter provides accurate and precise readings for a wide range of receive and transmit parameters. While most users will choose S-Meter readings on receive and Power Output on transmit, several other useful readings are available. The FT-Meter simply plugs into the meter jack of your FT-857 or FT-897 transceiver. It is highly portable, in keeping with the popularity of these radios for use on Dxpeditons.

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

Jumpstart, or “Real hams don’t read manuals!”

Ok, but at least read this one section before you transmit:

1. Set up your transceiver for normal operations
2. Plug your FT-Meter into the meter jack. This 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. Connect a 12 volt power supply capable of delivering 100 ma to the 2.5 x 5.5 mm coaxial power jack (center positive) if desired. The 12 volt connection is for the light only; the meter will work fine without it.
4. Select the parameters you want to display on receive and transmit from the radio's extended setup menu (items 60 and 61, respectively)
5. Operate normally; the meter continuously displays the selected values.

Specifications

- **S-meter, Discriminator or Voltage on receive**
- **Power output, SWR, Modulation, ALC or Voltage on transmit**
- **Size: 3.5 x 3 x 2 inches**
- **Sensitive 500 micro-amp meter movement**
- **Light requires 12 volts at 100 ma, 2.5 x 5.5 mm jack, center positive**

Getting to know your FT-Meter

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



The front panel presents the meter face with seven calibrated scales:

- S:** Signal strength on receive, calibrated in "S" units and dB above S9
- ALC:** Automatic Level Control voltage on transmit (shares S Meter scale)
- PWR:** Transmitter output power in Watts
- SWR:** Standing Wave Ratio on transmit
- MOD:** Percent modulation on transmit
- VOLT:** Power supply voltage on receive or transmit
- DISC:** Discriminator reading on receive

You will select two of these scales for display, one for receive mode and one for transmit mode, from the radio's setup menu. You can change among them as often as you like.

There are no controls on the FT-Meter; operation is fully automatic.



On the rear panel, the 2.5 x 5.5 mm jack coaxial DC power connector is on the left. The six foot input cable which connects to the radio is permanently attached on the right.



Installation

The FT-Meter is intended for indoor use only; it is not water resistant. If you use it outdoors (packing up Mount Everest, for example) you must protect it from rain.

Position your FT-Meter in a convenient spot on your operating position, anywhere within reach of its six-foot cable. Plug the cable into your transceiver as follows:

The meter jack on the FT-857 is located on the bottom of the front panel, under the **FUNC** button on the left.



The meter jack on the FT-897 is similarly located on the bottom of the front panel, but a little right of center, just to the right of the main tuning knob.



Your FT-Meter requires 12 volts DC at 100 ma to operate the light. Connect a suitable power supply to the 2.5 x 5.5 mm coaxial DC input jack using the provided 2.5 x 5.5 mm jack coaxial power connector (center positive). If you don't want to use the meter light, simply leave the power jack unconnected; the meter itself is a passive device and will work fine without the 12 volt input.

Setup

Your FT-Meter will display any two parameters you select, one on receive and one on transmit. You specify the parameters in the radio's extended setup menu.

Press and hold the **FUNC** button on the radio to bring up the menu. Rotate the **SELECT** knob to menu item 1, labeled "EXT MENU" and turn the main tuning knob until the setting is "ON". This enables the extended menu items.

Initial Calibration

When off, the meter needle should rest on the bottom index mark of the SWR scale, labeled "1:1". If it doesn't, insert a small flat-blade screwdriver into the hole under the center of the meter face into the needle adjustment slot. Gently turn the screwdriver to center the needle on the mark.

Rotate the **SELECT** knob to menu item 60, labeled "MTR ARX SEL". Turn the main tuning knob until the menu option reads "FS". This provides a full scale meter reading for calibration. Check that the meter settles at the top of the red portion of the S Meter scale, just to the right of the +60 mark.

If the meter needs calibration, carefully open the meter case by removing the four small screws that hold the top on, and remove the top. Locate the small calibration potentiometer attached to the back of the meter and gently adjust it with a small flat-blade screwdriver until the meter is exactly at the top of the red arc. Replace the top and four screws.

Your meter is now calibrated. The meter is calibrated at the factory, but shipping or other forces may require a recalibration. You should only have to do this once, when you first set up the meter.

Receive parameter setup

Leave the **SELECT** knob on menu item 60, labeled "MTR ARX SEL" to set the parameter that will be displayed during receive. Turning the main tuning knob, you can select from the following options:

- OFF**: no meter display on receive
- VLT**: power supply voltage
- CTR**: discriminator center meter
- SIG**: received signal strength ("S" meter)

Select whichever parameter you want displayed on receive.



Transmit parameter setup

Turn the **SELECT** knob to menu item 61, labeled "MTR ATX SEL". This sets the parameter that will be displayed during transmit. Turning the main tuning knob, you can select from the following options:

- OFF**: no meter display on transmit
- VLT**: power supply voltage
- SWR**: standing wave ratio
- MOD**: deviation level
- ALC**: automatic level control voltage
- PWR**: transmit power

Select whichever parameter you want displayed on transmit.

Turn the **SELECT** knob to menu item 1, and reset the extended menu option to "OFF" if desired. Press and hold the radio's **FUNC** button to exit the setup menu.

You can repeat this process to select different parameters as often as you like. You can even change parameters while operating.



Operation

To operate your FT-Meter you just, well, operate. The meter has no controls and requires no input from you. Simply use your transceiver normally, and your FT-Meter will continuously display the selected parameters.

Application Notes

Base Station Use

Your FT-Meter can go practically anywhere on your operating desk. The six foot cable gives you a lot of latitude in where you place it. Some obvious choices are on top of the radio or beside your computer monitor. However, you could also consider the top of the soft drink fridge next to your desk.

Mobile Use

The FT-Meter is ideal for mobile operation. You can mount the meter on the dashboard with Velcro tape in any convenient location. The meter is *much* easier to read than the radio's display, especially if the radio is mounted at any distance from the driver's position.

If you choose to connect the 12 vdc input to light up the meter, be sure to use a fused power line (not provided by LDG). LDG recommends a 1 amp "fast blow" fuse.

Mobiling with the FT-Meter is great, but don't be distracted by its beautiful face; keep your eyes on the road!

Other Applications

LDG designed your FT-Meter specifically for the Yaesu FT-857 and FT-897 transceivers, and does not recommend using it in any other application. However, the meter is in fact simply a 500 micro-amp meter movement; the calibration potentiometer gives you a range of .5 - 2 ma. If you choose to use it in a different application, take care not to exceed the maximum current specification; the meter movement will be damaged or destroyed by current in excess of this specification.



Care and Maintenance

Your FT-Meter tuner is essentially maintenance-free. The outer case may be cleaned as needed with a soft cloth slightly dampened in a mild household cleaning solution. Do not use solvents of any kind on the plastic meter face.

As with any modern electronic device, your FT-Meter can be damaged by temperature extremes, water, impact or static discharge.

Technical Support

We are happy to help you with your FT-Meter. Telephone technical support is available at 410-586-2177 weekdays from 9am to 5pm Eastern Time. Inquiries by Fax at 410-586-8475 are welcome, and prompt e-mail support is available at ldg@ldgelectronics.com.

Warranty and Service

Your FT-Meter is warranted against defects in parts or workmanship for two years from purchase. The warranty does not cover damage due to abuse or exceeding specifications. This warranty applies to the original purchaser only; it is not transferable. A copy of the receipt showing the purchaser's name and the date of purchase must accompany units returned for warranty service. All returns must be shipped to us pre-paid; we will not accept units with postage due. A return form is provided on our web site for your convenience.

If you need to return your FT-Meter to us for service, package it carefully, keeping in mind that we will re-use your packaging to return the unit to you. A self-addressed return-shipping label, while not required, will help insure speedy and accurate delivery of your repaired unit. Include a full description of the problem, along with your name, address and a phone number or e-mail address where we can reach you with any questions. Repairs average about 3 to 6 weeks.

We will be glad to service your FT-Meter after the warranty period has ended. We will notify you of repair charges by phone or e-mail, and bill you after repairs are completed.

Feedback

If you have an idea to improve the FT-Meter, please send us a description. We encourage everyone who uses the FT-Meter to contact us (card, letter or e-mail preferred) telling us how well it works for you. We are also always looking for photographs of our products in use; we frequently place such pictures on our Web site (www.ldgelectronics.com).

