

**LDG DM-7800  
Dual Meter for  
Icom IC-7800**



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# LDG DM-7800 Dual Meter for Icom IC-7800

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## **Introduction**

Congratulations on selecting the LDG DM-7800. The DM-7800 provides dual external meters for the Icom IC-7800, showing a wide variety of software-selectable parameters.

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. Connect the DM-7800’s cable to the Meter jack on the back of the IC-7800.
2. Connect the provided 12V DC input jack to the Power jack on the back of the IC-7800.  
The 2.5 mm side goes to the meter and the 2.1 mm side goes to the IC-7800. This is only needed to illuminate the meter faces.
3. Select the desired parameters to be displayed from the radio’s ACC menu.
4. Operate your transceiver normally.

## Specifications

Power requirement: 12 volts, 100 ma (for meter illumination only)

Input: Single cable, plugs into External Meter jack of IC-7800

Meters: 4.5”, 7 scales

Meter illumination: blue-white LED backlight, adjustable brightness

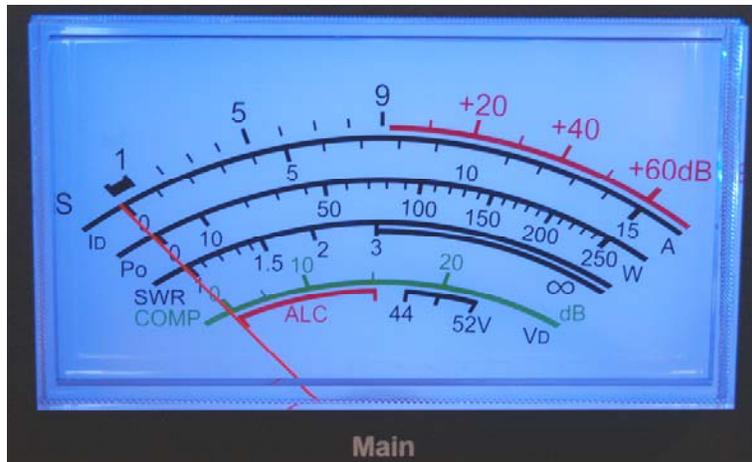


## Getting to know your DM-7800

Your DM-7800 is a quality, precision instrument that will give you many years of outstanding service; take a few minutes to get to know it.

The DM-7800 provides two identical 4 1/2 “ meters to compliment the “virtual” meters on the IC-7800’s LCD panel. One meter is dedicated to the Main receiver, one to the Sub receiver. Each can show S-Meter reading, final amplifier voltage and current, power output, SWR, compression level and ALC level. Each meter’s function can be set independently in the IC-7800’s setup menu. The front panel also provides zero-set adjustments, should the meters ever need to be zeroed.

Both meters are illuminated by high-visibility blue-white LEDs from behind. This backlighting is very attractive, easy on the eyes during long operating sessions, and makes it easy to read the meters precisely.



On the back of the DM-7800, there are two connections: the input cable (permanently attached), and the DC input jack (matching 5.5 x 2.5mm plug (center positive) and power cable provided).

There are three screwdriver adjustments on the back: meter illumination brightness (controls brightness of both meters together), and separate full-scale calibration settings for the Main and Sub meters.

Note that the DM-7800 is designed specifically for the IC-7800 transceiver; it will not work correctly with any other radio.



## **Installation**

The DM-7800 is intended for indoor use only; it is not water resistant. If you use it outdoors (Field Day, for example) you must protect it from rain.

Turn your radio off before starting the installation. Position your IC-7800 in a convenient spot on your operating desk, anywhere within reach of its rear interface and power cables

Your DM-7800 includes a matching power cable that will connect to the coaxial DC Out jack on the back of the IC-7800. The radio has a 2.1mm jack and the meter has a 2.5mm jack. If you cannot distinguish between the two ends, plug the power cable into the meter first. Only the 2.5mm end will fit the meter. Then plug the 2.1mm end into the Aux Power jack on the back of the radio

Next, connect the stereo 1/8" plug from the meter to the stereo 1/8" Meter jack on the back of the radio. Your meter is now ready for use. The backlight LEDs on the meter will come on when the radio is turned on. Position the radio and meter for normal use.

If you wish to power the DM-7800 from another source other than the radio, a separate power cable is provided. This cable has a 2.5mm power plug on one end and stripped and tinned wires on the other end. The red wire would go to +12 volts DC and the black wire would go to ground. Use a suitable power supply that can provide up to 100 mA.

## **Setup**

### Zero setting

Your DM-7800's meters were set to zero at the factory, but it's possible to become uncalibrated during shipping. Place the DM-7800 on a level surface and carefully examine the meter needles with the radio powered off. Both needles should rest on the zero setting on the Po scale. If they do not, use a small flat-blade screwdriver to gently adjust the zero-set screw on the front panel beneath each meter until the needle is exactly zeroed. Only very small movements of the adjustment screws are required.

### Full Scale Calibration

Connect the DM-7800 to the IC-7800 by plugging the provided cable into the Meter jack on the back of the radio, near the center of the row of connectors. Power up the radio normally.

Place the IC-7800 in SET mode by pressing the [EXIT/SET] button. You may have to press it several times to get all the way out to the base menu. Then, press [F-7.SET] to select the set mode. Press [F-2.ACC] to select the Accessory set menu.

Press [F-2.↓] repeatedly until External Meter Level (M) is displayed. This setting allows you to calibrate the Main external meter to full scale. Set the level to a value of 100%.

Press [F-2.↓] once more to select the External Meter Level (S) setting screen, and set the level to a value of 100%.

The DM-7800 Main meter should now be calibrated at full scale. If it is not, use a small cross-point (Phillips) screwdriver to carefully adjust the FS Main potentiometer on the back of the DM-7800 until the needle corresponds to the radio's reading. Repeat if needed for FS Sub adjustment.

### Meter Brightness

Using a small cross-point (Phillips) screwdriver, carefully adjust the Brightness control to set the meter backlight to the desired brightness. The brighter you set the backlight, the more current the backlight consumes.



### Parameter Selection

Each meter displays the S-Meter reading during receive, but is capable of displaying a different parameter on transmit. You can select the same parameter for both meters, or a different parameter for each.

Press [F-2.↑] twice; External Meter Output (M) is displayed to set parameters for the Main meter. Rotate the main tuning dial until the desired parameter is selected. Choices are:

- Auto (S-Meter on receive, parameter selected by the radio's METER switch on transmit)
- Po (power out)
- SWR (Standing Wave Ratio)
- ALC (Automatic Level Control level)
- COMP (Compression level)
- Vd (final amplifier voltage)
- Id (final amplifier current)

Press [F-2.↓] once to select External Meter Output (S) to set parameters for the Sub meter. Repeat the selection process described above. When you are done, press [EXIT/SET] twice to save the settings and exit the SET mode.

This completes meter setup. You should only have to zero the meter and set full scale once (if at all) when you initially install the meter. You can repeat parameter selection as often as you like to display different parameters as your needs change.

## **Operation**

To operate your DM-7800 you just, well, operate. The DM-7800 has no operating controls and requires no input from you. Use your IC-7800 normally; the DM-7800 will continuously display the selected parameters.

## **Application Notes**

### Base Station Use

Your DM-7800 can go practically anywhere on your operating desk. Some obvious choices are on top of the radio, beside your computer monitor, or on your operating desk.

### Mixed Meter Use

Note that you can use the DM-7800 in combination with the virtual meters on the IC-7800's LCD display. The parameters selected for display on the DM-7800 in no way effect the operation of the virtual meters on the radio's LCD panel. For example, you could display Power Output on the virtual meter and SWR on the DM-7800 while transmitting

### Software Updates

While Icom has done a great job on the IC-7800, there could be more options for the external meter selection made available. For example, the Main meter really needs two menus, one for the setting during receive and one for transmit. Also, the Sub meter would benefit from having two menus.

It's an obvious desired arrangement to have the RF power on the left external meter and the SWR on the right external meter during transmit while allowing both meters to function as S meters on receive.

Perhaps a future update of the IC-7800 firmware will allow for more flexibility in the meter selection menus.

## **Care and Maintenance**

Your DM-7800 is maintenance-free. The outer case may be cleaned as needed with a soft cloth slightly dampened in a mild household cleaning solution.

As with any modern electronic device, your DM-7800 can be damaged by temperature extremes, water, impact or static discharge.

## **Technical Support**

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

## **Warranty and Service**

Your product 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 product to us for service, package it carefully, keeping in mind that we will re-use your packaging to return the unit to you. Download the return form from our web site ([www.ldgelectronics.com](http://www.ldgelectronics.com)), fill it out and return it with your tuner. 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 LDG product 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.

Visit LDG's web site for support, sales and for information on exciting new products from LDG. You can find us on the web at [www.ldgelectronics.com](http://www.ldgelectronics.com).

