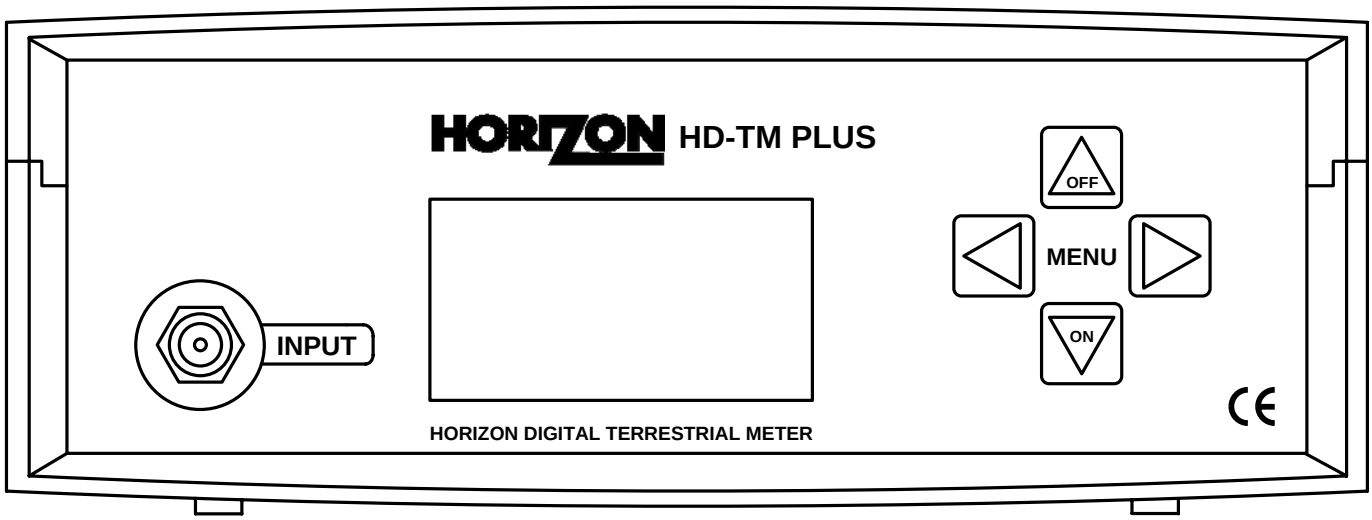
HD-TM USB PLUS
Terrestrial Meter



User Manual

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Contents

Please read through the instructions carefully before using your new hardware to familiarise yourself with all of the features available.

Overview

The all-new HD-TM USB Plus is the latest offering from Horizon Global Electronics Ltd to satisfy the need to measure and confirm installation of both Digital and Analogue Terrestrial Media installations. The HD-TM USB Plus offers an easy to use, fast, accurate and affordable solution for ease of alignment and Terrestrial signal identification. As needed with this type of system for the installation engineer, the meter is fast on start up and recognition of signal information in both Full scan and Short scan modes, with an easy to read screen, Logging Report and Slope comparison.

Fully compliant for DVB-T applications as well as offering multi-lingual support, this meter is sufficient for the majority of global Terrestrial users.

The HD-TM USB Plus comes as a complete kit with mains charger, car charger and USB cable for data transfer, holding over 200 transmitter signatures and 500 data logging entries.

The HD-TM USB Plus' maintained up-to-date transmitter settings can also be easily downloaded from the Horizon Global Electronics Ltd website **w*ww.horizonhge.com***

Please note that your new *HD-TM USB Plus* is NOT compatible with the settings for Horizon's legacy terrestrial meter (the original *HDTM*). Make sure when downloading new settings from our website that you use *HD-TM USB Plus* settings (and not *HDTM* settings), or your meter will not work correctly.

Safety

This symbol is intended to alert users of possible hazard or risk in operating this unit.

- **Do NOT expose this meter to rain or moisture!**
- Clean only with a soft dry cloth.
- Always use the protective case and cover provided.
- Care should be exercised when using the carry strap as it can present a choking hazard: only use when slipping or falling is not a possibility.
- Read the instructions fully before operating your unit for the first time.
- Do not disassemble your unit or interfere with the internal components; this will void your warranty and there is a possibility of electric shock. **"If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired".**
- Only use the provided mains lead as using other types may cause damage to your unit, which will void your warranty and may cause electric shock.

Replacement accessories are available directly from Horizon Global Electronics Ltd. Should repair or service be required contact Horizon Global Electronics Ltd by calling us on **+44 (0)1279 417 005** or via our website ***www.horizonhge.com***

You can change the pre-loaded Terrestrial transmitters which are currently in the memory of the HD-TM USB Plus by going to the ***www.horizonhge.com*** web site.

Calibration

Horizon Global Electronics Ltd is now offering an annual Meter Recalibration service, so that you can be sure that your HD-TM USB Plus is always performing to a reliable standard and giving you the most accurate results for your installation needs. For more details on Meter Recalibration please contact us directly at Horizon Global Electronics by calling us on **+44 (0)1279 417 005** or via our website ***www.horizonhge.com***

Transmitters

Over the next few years more and more transmitters will be switching over to digital only transmissions. You can keep your meter selections up to date by visiting the ***www.horizonhge.com*** web site and downloading the required transmitter updates. You will find switch over dates and other transmitter information is provided by your national broadcaster. **Please check the Horizon Global Electronics Ltd. web site regularly for updates.**

Accessories

Your HD-TM USB Plus is supplied with this Instruction Manual and these items below. Check that you have all the following parts. If any items are missing please contact your supplier.

Only manufacturer's replacement parts should be used, otherwise safety of the meter may be impaired

DC Car Charger Lead
Fitted with 2 Amp Fuse

USB Lead

AC Mains
Charger Lead

Battery Pack

Rain Cover
(should be fitted at all times)

F to UHF adaptor

F-F Barrel

2x 10dB attenuator

Carry Case

Quick start Guide

The AC mains lead should match your region. If your mains charger lead is not correct for your region one can be obtained from Horizon Global Electronics Ltd or a local supplier/importer.

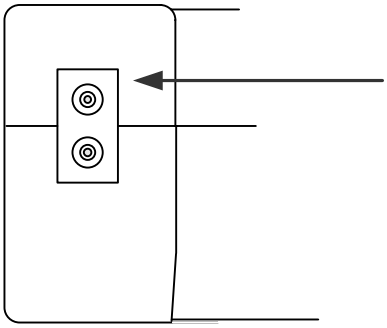
Note: The items shown above are subject to change without notice.

Please dispose of the cardboard packaging carefully and recycle where possible.

Battery Charging

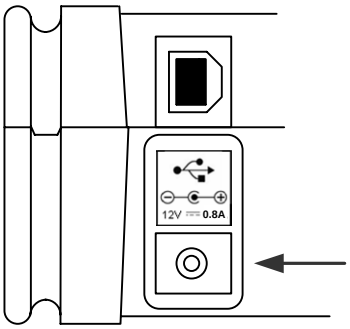
The meter will **not** be fully charged when you receive it. We recommend you charge it for an initial 8 hours before use. If your meter is not being used for a long period of time, we recommend disconnecting the battery. You can also top up your battery from your vehicle with the in-car DC Adapter supplied. You should top up the charge every 2 weeks. The battery pack is replaceable, and additional battery packs are available from Horizon Global Electronics Ltd or your local supplier/importer. From a full overnight charge you can expect your meter to operate continuously for in excess of 6 hours.

Note: The meter will not operate while the unit is being charged.



Charging with the AC lead

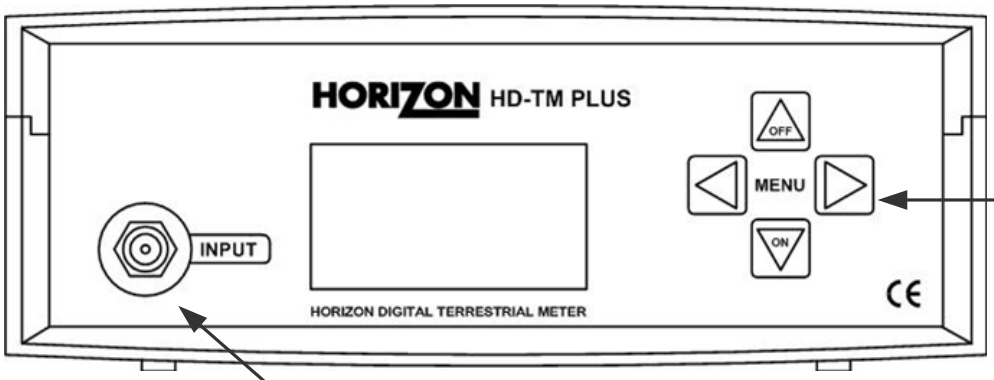
Open the flap at the back of the HD-TM USB Plus fabric case to access the mains inlet. Plug the mains lead into this port and the other end to your local supply socket.



Charging from a vehicle

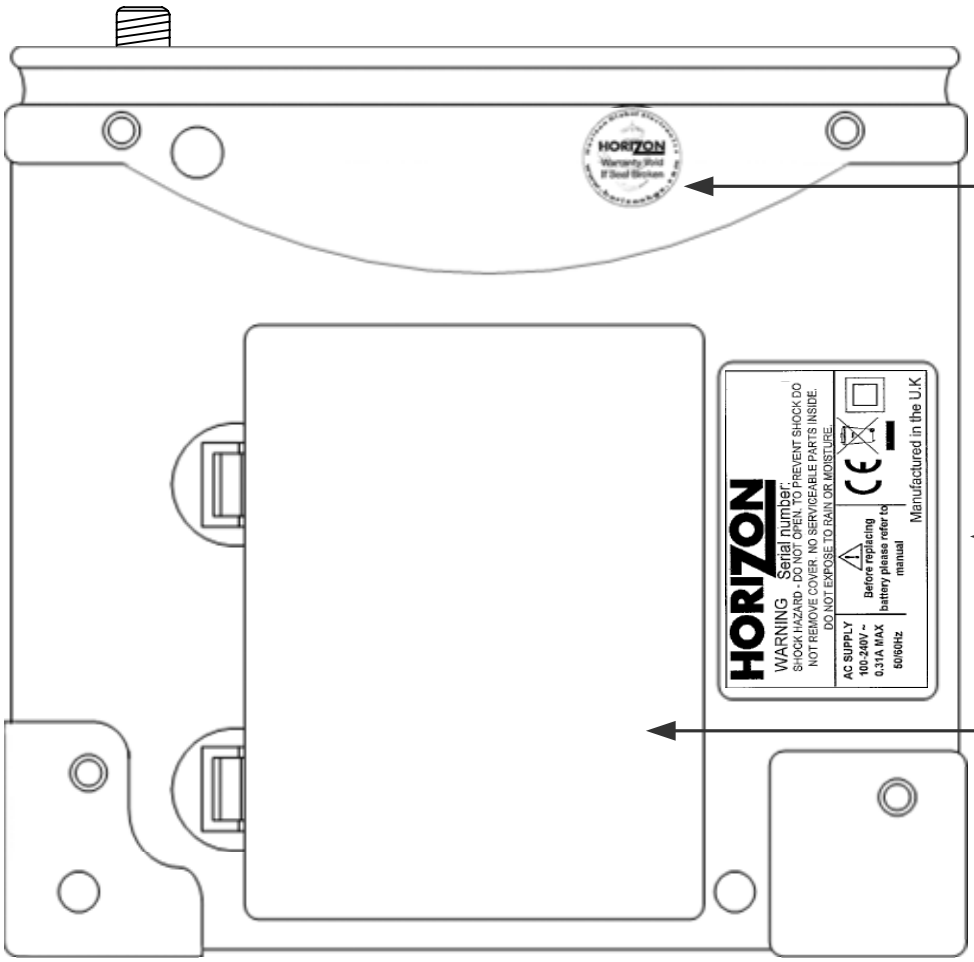
The vehicle 12V DC charge port is on the right side of the unit. Plug the car charger lead into the 12V socket and the other end to the vehicle's "aux" socket. Please note that on certain vehicles the aux socket is switched off unless the vehicle is running. Do not charge from a vehicle with a higher battery voltage or positive ground! For in-vehicle charging only use the lead supplied. The use of another lead may damage the meter and will void the warranty. The HD-TM USB Plus can remain connected to either power source in "***Trickle"*** charge state for an extended period of time.

Your HD-TM USB Plus



Keypad

RF Input

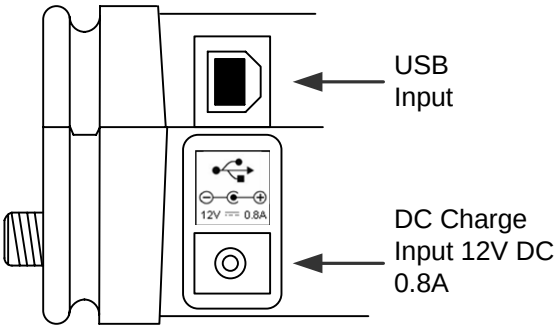


Tamper proof warranty seal

Serial number

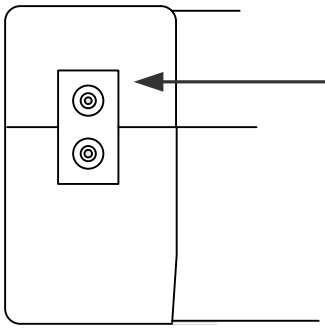
Battery cover

Only use HD-TM USB Plus Ni-Mh replacement battery packs (supplied and fitted).



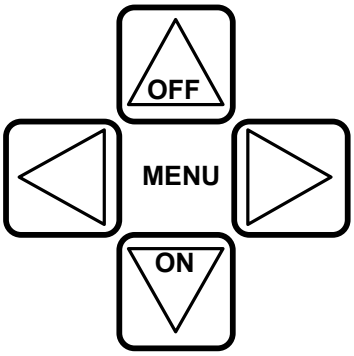
USB Input

DC Charge Input 12V DC 0.8A



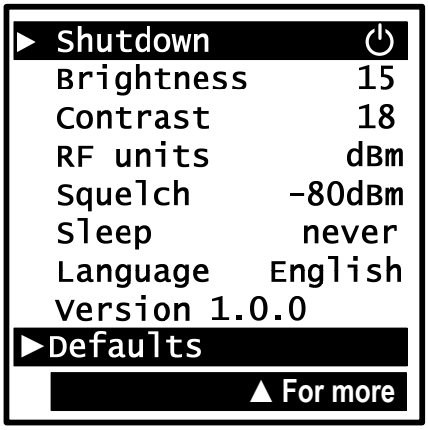
AC Charge Input
100 – 240 V ~
0.31A Max
50/60 Hz

Setup menu



The HD-TM Plus keypad. All of your meter functions are accessed from here.

To access the setup menu on your HD-TM USB Plus while your meter is off press the **OFF** button once.



Use the up and down keys to scroll through the available options and the left or right keys to change the value highlighted. Here we can adjust the **LCD Brightness** from 0 (Minimum) to 16 (Maximum), or **LCD Contrast** from 0 (almost transparent) to 63 (totally dark).

By pressing the down key we can scroll down for more options.

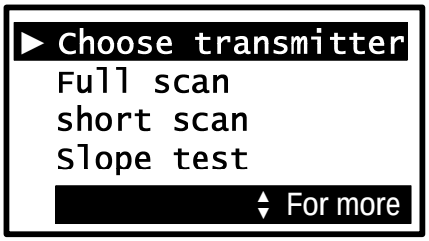
The **RF units** option will enable you to select **dBm, dBuV or dBmV** as a preferred method of measurement.

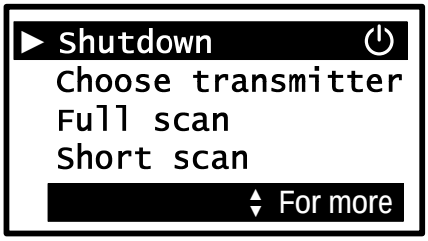
The **Squelch** function is for setting a level under which signals are ignored during scanning. This is to prevent accidental identification of unwanted terrestrial services.

Above we can set a **Sleep** time for the meter (in minutes) for the meter to automatically shut down. This can be set to **Never** if you do not wish to have an auto shutdown (to a maximum of 30 minutes).

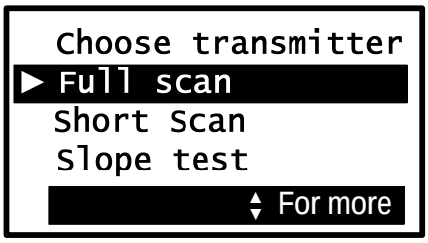
The current default Language is **English**. French, German, Italian and Spanish are also available.

Switch on your meter by pressing the **On** button and (after the start up logo and copyright screens) you will be presented with the main menu; from here you can **Choose transmitter**, before starting a **Full scan** (all channels) or **Short scan** (a number of pre-determined channels) and a **Slope test.** There are also options to select a **Manual Scan**, to **Log** either a single MUX or an entire transmitter's MUXes, and to set the Masthead **Antenna amp** supply (which enables the 5V or 12V power supplied to a Masthead amplifier if it is required for your installation).

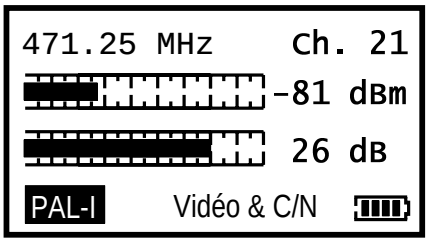




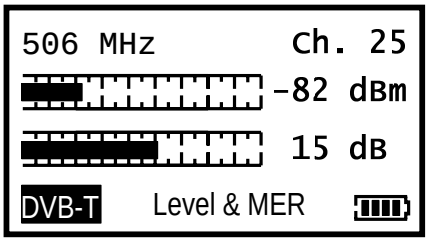
Pressing the **Off** button will bring up the main menu (Choose transmitter, Full scan, etc) in "Full Scan" and "Short Scan" modes. In "Choose Transmitter" mode it will instead scroll upward to highlight a selectable Main Menu option at the top of the list; in "Manual Scan" it returns from a "locked signal" information display to the channel range. Pressing the **Off** button once again scrolls the menu up and highlights the Shutdown selection. The meter may also be shut down by pressing and holding the **Off** button for a few seconds.



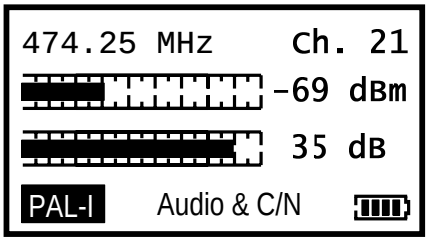
On Selecting **Full Scan** the full channel range will be scanned. Once a service has been found the scan will stop and the carrier type and measurement information will be presented.

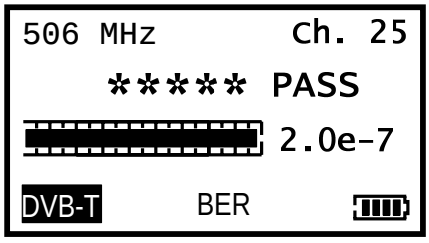


Pressing the **Left** or **Right** arrow key will tune up or down the range of frequencies until it next locates a valid signal. This can be done at any time within the Full Scan mode (including the spectrum and parameter screens). **Note:** If the input signal exceeds -20dBm then > -20dBm will be shown; use the supplied attenuators for the measurement of high signal levels.

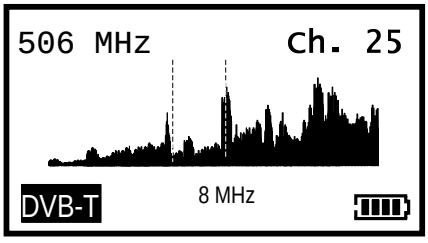


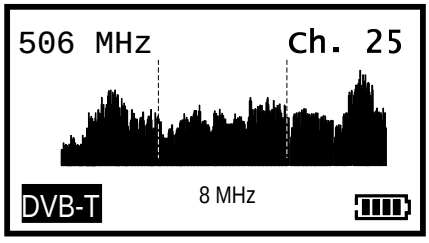
If analogue services have been identified the **Video Level** will initially be displayed (in this example as dBm) as well as the **Carrier to Noise** value in dB, and the carrier type (e.g.: PAL-I) will be indicated. If digital services have been identified then the **Video Level**, **MER** and carrier type (DVB-T) are displayed.





Pressing the **On** button will show the Audio Carrier Level if the signal is analogue, or the Quality of a digital carrier (including a BER-derived **PASS/FAIL** 5-star indicator).

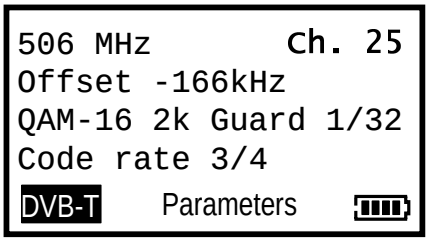


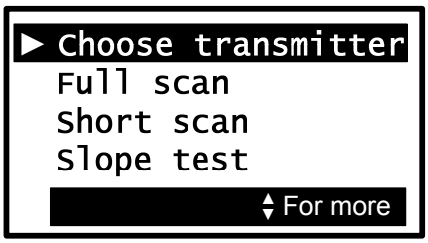


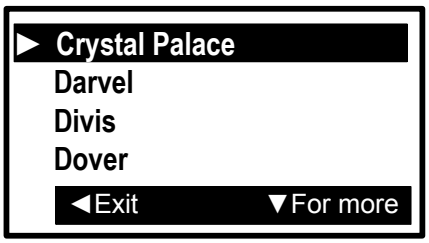
Pressing the **On** button once more brings up a spectrum display indicating the RF levels in this frequency range. The following screen displays the central portion of this range – the band that contains the channel itself (6, 7 or 8MHz).

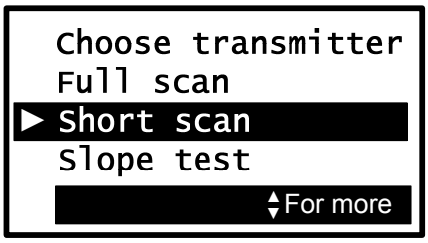
Pressing the **On** key once more will acquire the carrier parameters if the signal is digital. Once the acquisition process is complete, additional information is available. QAM constellation type displays along with Frequency Offset in MHz, Guard Level and FEC code rate.

There are two methods of selecting a transmitter, from the complete list of UK and Ireland transmitters or more easily via the region sub list.





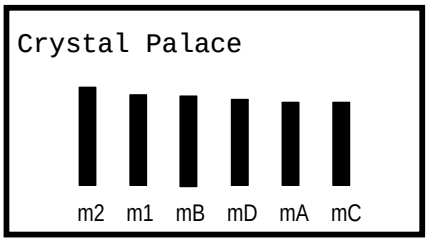




The **Short scan** feature gives the same information as a full scan, but only scans those digital channels known to be used by a particular transmitter. This makes for a faster scan, but requires that you have chosen a transmitter before this mode can be used. **Left** and **Right** change the channel to the next locked MUX, and the **On** key cycles through the signal, spectrum and parameter screens.

There is also the option to select a transmitter by choosing your region and then select a transmitter from that region list. Region lists are much shorter making it easier to find the transmitter you need quickly.

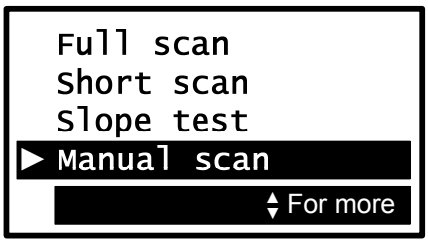
Slope test

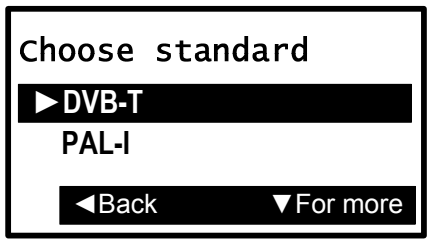


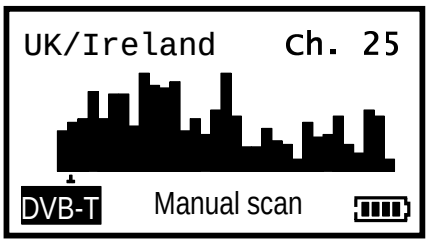
The Slope test function will enable you to compare RF levels of up to 6 predetermined MUX frequencies for the transmitter that you have selected. These levels are shown in a histogram format.

On pressing the down key the slope calculation will take place. The selected spot frequency (in this example m2) has a level of -58 dBm and is now referred to as a 0 dB level; the other measurements shown (m1, mB, mD, mA and mC) are relative to that zero reference level. By using the up and down keys to select m2, m1, mB, mD, mA or mC, the highlighted selection then becomes the 0dB reference level.

Manual scan







The **Manual Scan** mode allows you to step through each channel manually to find the desired channel. First you select a standard (DVB-T/PAL-I) and press the **Right** arrow button to continue. A spectrum is then displayed, indicating the RF level at each channel. An arrow beneath this spectrum points to the currently selected channel, and this may be moved using the **Left/Right** buttons until the desired channel(s) are found. The meter will indicate a valid channel by emitting an audible tone and the carrier type indicator changing, and pressing the **On** button will display the channel, spectrum and parameter information as in the other scan types.

Settings Download

From the ***www.horizonhge.com*** web site you will be able to navigate to the HD-TM USB Plus download page, and from there you can download a complete list of transmitters for your selected country as a single download.

Please note that your new *HD-TM USB Plus* is NOT compatible with the settings for Horizon Global Electronics legacy terrestrial meter (the original *HDTM*). Make sure when downloading new settings from our website that you use *HD-TM USB Plus* settings (and not *HDTM* settings), or your meter will not work correctly. Ensure your transmitter lists are up to date by regularly visiting the Horizon Global Electronics web site.

HD-TM Plus Downloads

Select Region

UK/Ireland

Email to:

Send By Email

Download Now

Note: Please ensure that you have saved and logged measurements on your PC prior to uploading transmitters to your meter, as this operation will also erase the log memory.

USB driver installation

Ensure your PC has access to the internet before you proceed.

1) Connect the meter for the first time to a PC equipped with USB port(s), If the USB drivers don't automatically load, then the "Found New Hardware Wizard" will appear.

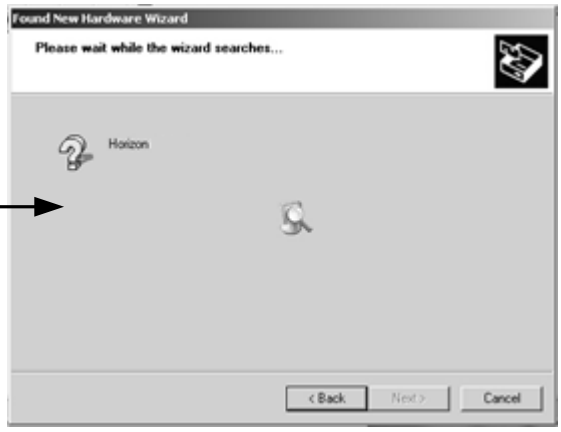
Select "**Yes, this time only**".
Then click "**Next**"

2)

Select "Install the software automatically"

Then click "**Next**"

3) While your PC is searching for the drivers a window like this will appear.



4)

The first stage of the driver installation is now complete; your computer will now proceed to download the additional driver required.

Click the "**Finish**" Button.

Continued...

5)

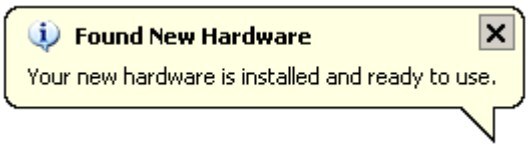
To complete the installation of the new additional driver for the USB Serial Port, click the "**Next**" Button.

6) While your PC is searching for the drivers, a window like this will appear.

7)

The HD-TM USB Plus driver installation is now complete. You can now visit the ***www.horizonhge.com*** website for downloads.

Click the "Finish" Button.

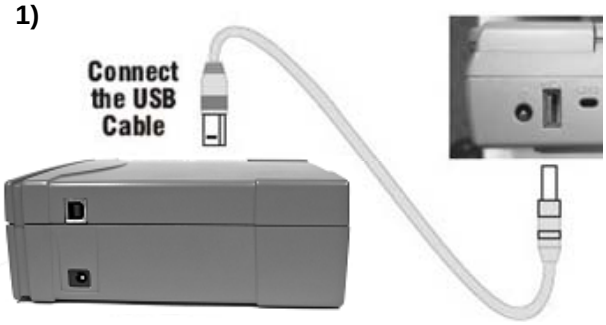


In the unlikely event of the driver download not automatically taking place the manual driver installation package is available for download from the ***www.horizonhge.com*** web site.

Transferring data

Now that your USB drivers are installed, you can download selections from the ***www.horizonhge.com*** website for updates. Please follow the steps illustrated below to upload new selections to your meter.

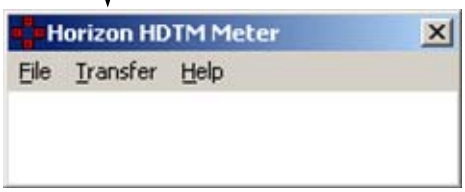
1)



Wait for the HD-TM USB Plus to display "**USB Mode**"

While establishing communication the display may flash and the sounder may beep. This is normal.

2) Then click Transfer



After a few seconds a progress bar will appear...

3)

When complete you will see a popup window that says " Transfer Complete!". Click "OK" and close the program.

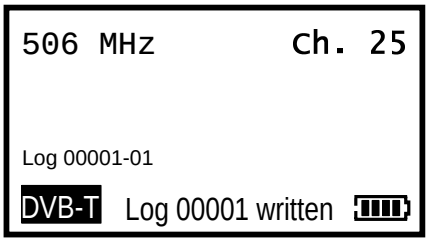
Disconnect the meter from the computer, power it up and it will be ready for use.

Trouble shooting file transfer problems.

If you get the error message "**USB Port Error**", check that the USB interface connection is correctly made and that the USB cable is undamaged.

Logging

A log function is also available so that you can store sequential measurements within your meter for download to your PC and insertion into your installation documentation at a later time. The logging application is available for download via the ***www.horizonhge.com*** web site.



Specifications & Features

- 128x64 pixel backlit monochrome screen.
- Field-replaceable input connectors.
- Variable bandwidth to 8MHz.
- Frequency range 49MHz (VHF band) to 861MHz (UHF band), analogue and digital channels.
- Rapid scan over full band.
- Selectable active transmitter channels via Short scan for easier installations.
- Signal squelch adjustable from -85dBm to -45dBm.
- Input levels from -92dBm to -20dBm.
- Clear indication of digital and analogue channels.
- Digital RF level indication by bar graph and in dBm, dBuV or dBmV.
- MER value by bar graph and in dB.
- 5-Star digital signal quality indicator with PASS/FAIL notification.
- Display of QAM value and symbol rate for digital carriers.
- Support for QAM rates up to 256.
- Automatic 2k/8k Constellation type detection.
- Analogue Video level by bar graph and in dBm, dBuV or dBmV.
- Analogue Video signal C/N ratio by bar graph and in dB.
- Analogue Audio level by bar graph and in dBm, dBuV or dBmV.
- Selectable Slope channels for equalization (up to 6 MUXes).
- Input Impedance 75 Ohms.
- High capacity Ni-MH 3300mAh battery for 7 hours of operation from a single charge.
- Results logging for quality verification (500 entries, up loadable to PC).
- USB-2 B-type socket for PC connection.
- Masthead Amplifier 5 or 12V 100mA (max) supply.

Notes

LIMITED WARRANTY

Horizon will, at our option, repair or replace any HORIZON HD-TM USB Plus found to be defective in manufacture within the warranty period (1 year).

The warranty period is determined by the date of HD-TM USB Plus purchase. Keep your receipt as proof of purchase. Otherwise the warranty is determined by date of manufacture.

This warranty does not apply to damage caused by accident, misuse, or tampering with the unit or seals. This does not affect your statutory rights.

DECLARATION OF CONFORMITY

Manufacturer: Horizon Global Electronics Ltd

Address: Unit 3, West Side, Flex Meadow, Harlow, Essex, CM19 5SR

Declares that the Horizon HD-TM USB Plus complies with the following directives and standards.

Safety EN610 10-1:2001 EMC 61326:1997

All Horizon products are ROHS compliant.

Technical Department
Horizon Global Electronics

July 2009

CE

CONTACT DETAILS

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