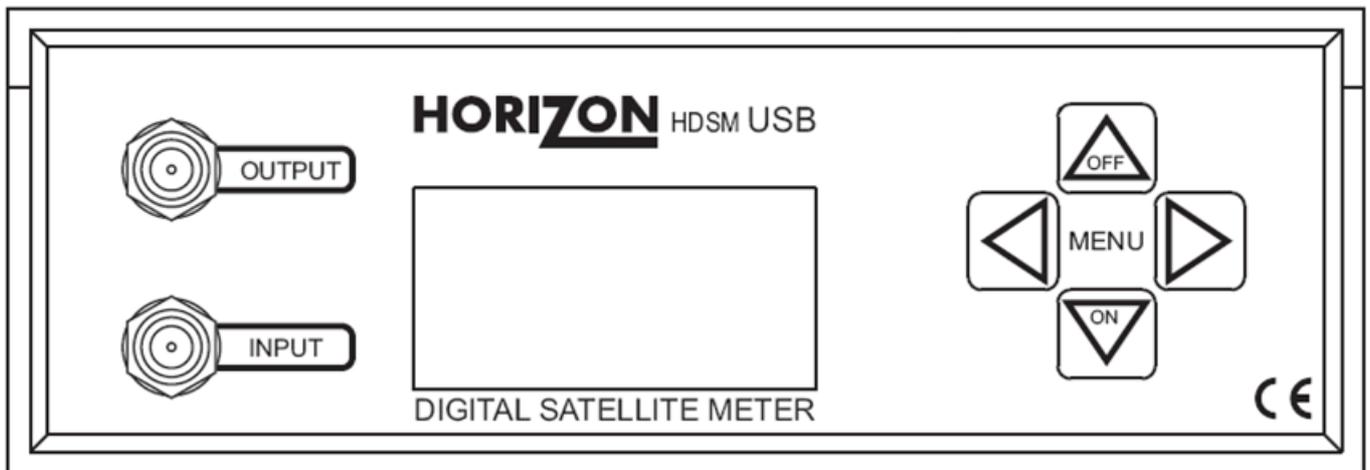




USER MANUAL HDSM USB and USB PLUS

Horizon **Digital Satellite Meter**



Issue No: KM996/1.3

Horizon Global Electronics Ltd
www.horizonhge.com

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Thank you for choosing to buy the Horizon Global Electronics HDSM USB / USB PLUS satellite meter. Please read through the instructions carefully before using your meter to familiarise yourself with all of the new features available.

The HDSM USB / USB PLUS is a compact, lightweight and easy to use satellite installation meter featuring an easy to read display that shows signal strength and digital signal quality. Finding your satellite is easy: use the left or right arrow keys to scroll through the selections, and your HDSM USB / USB PLUS will lock onto the satellite shown in the display when it is in range. Everything you need is supplied with your meter, which includes a mains charging lead, in-car charger and USB lead. The rain cover and leather case are already fitted.

The HDSM USB / USB PLUS can also be easily re-programmed from the Horizon Global Electronics website www.horizonhge.com with your choice of satellites, or with the default file for your region.

Spare battery packs are available directly from Horizon Global Electronics and can be replaced without voiding your warranty. Replacement leather cases, rain covers, USB leads, mains charging leads and in-car chargers are also available directly from Horizon Global Electronics Ltd.

Safety

Safety Instructions



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

- Do NOT expose this meter to rain or moisture!
- Clean only with a dry cloth.
- Always use the protective case and cover provided.
- Read the instructions fully before operating your unit for the first time.
- 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.
- 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 battery, mains lead and DC car charger lead provided, as using other types may cause damage to your unit, which will void your warranty and may cause electric shock. Replacement battery packs are available directly from Horizon Global Electronics Ltd.

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

Accessories

Your HDSM USB / USB PLUS is supplied with this Instruction Manual and these items below. Please check if you have all the following. 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**

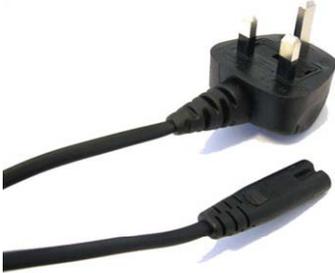
 **DC Car Charger Lead**
Fitted with 2 Amp Fuse



USB Lead



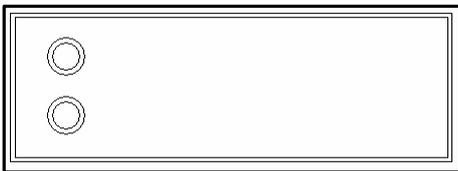
 **AC Mains Charger Lead**



 **Battery Pack**



 **Rain Cover**
(should be fitted at all times)



Leather Case



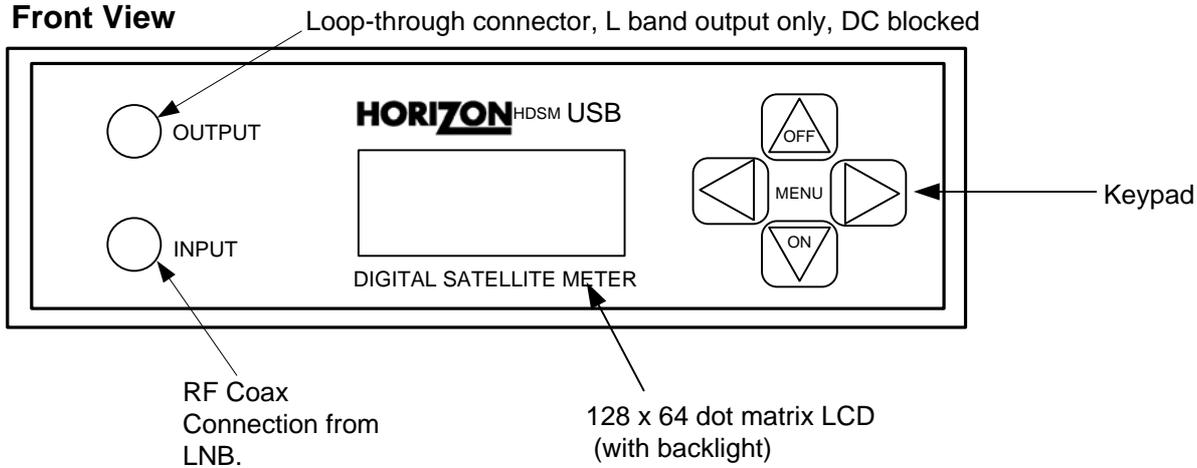
The mains lead should match your region. If your mains charger lead is not correct for your region one can be obtained from Horizon or a local supplier/importer.

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

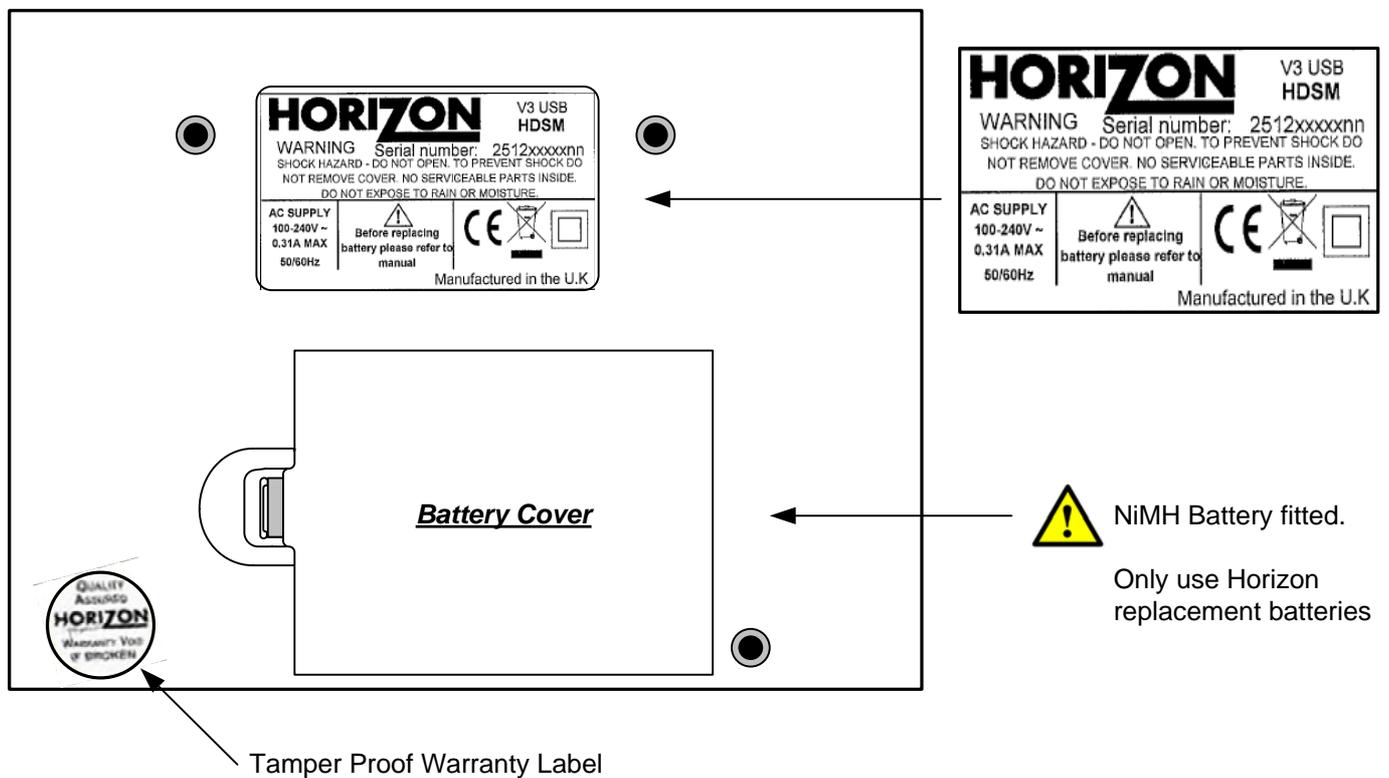
Please dispose of the packaging carefully and recycle where possible.

Your Meter

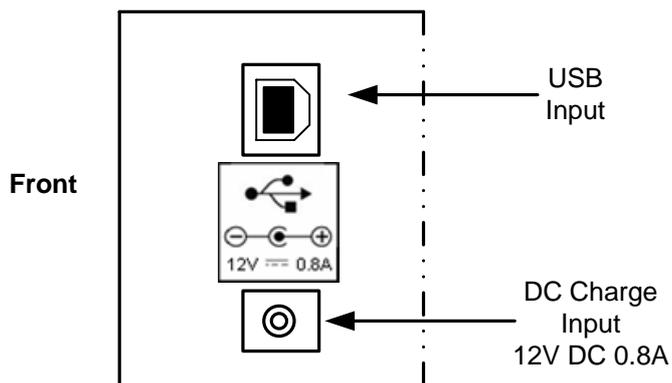
Front View



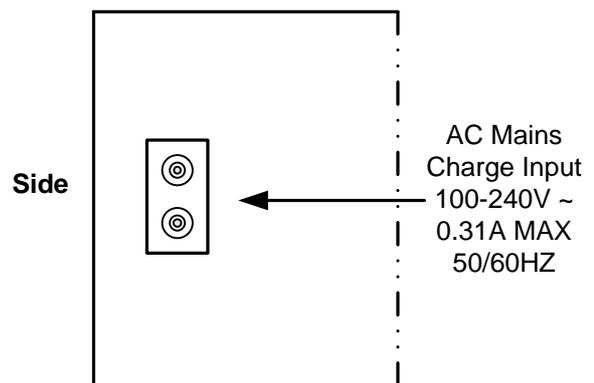
Back View



Side View



Rear View



Battery Charging

The meter will NOT be fully charged when you receive it. We recommend you charge it for an initial 24 hours before use. If your meter is not being used for a long period of time, we recommend disconnecting the battery.

The battery pack is replaceable. To replace the batteries: slide the meter out of its protective case, open the cover on the bottom of the unit and disconnect the batteries. If the pack has been disconnected, the meter will indicate flat battery (0%). You will still be able to use the meter in this state if the battery pack has been charged. To restore the correct charge reading, charge as shown below until "Trickle" or "Float Charge" is indicated. You can also top up your battery from your vehicle with the DC Adapter supplied.



Charging with the mains lead

On the bottom of the case there is a small velcro flap which covers the AC Mains input for charging.



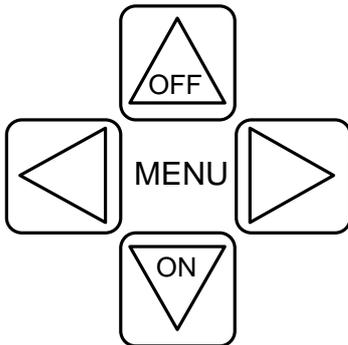
Charging from a vehicle

The vehicle 12V DC charge port is on the right side of the unit. Plug the car charger lead into the bottom 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.

For in-vehicle charging only use the lead supplied. The use of another lead may damage the meter and will void the warranty. The HDSM can remain connected to either power source in "**Trickle**" charge state for an extended period of time. If the meter is left on charge for over 24 hours the meter will switch to "**Float Charge**" - this is a low cycle charge state and the meter can remain on charge without damaging any internal components or the battery pack.

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

Using Your Meter



The HDSM USB / USB PLUS keypad.
All of the meter functions are accessed from here.

Once your dish mounting has been securely installed in a suitable direction connect the LNB to your HDSM meter with a short length of cable (1.5m or 4 feet being ideal): note that this cable is **not** supplied – you should use a high quality satellite cable, such as CT100. Tip: Your dish clamp should be just nipping the metal work allowing you to adjust the dish position, and it should hold when you release.

To turn the meter on press the  once and the animated Horizon logo will appear.

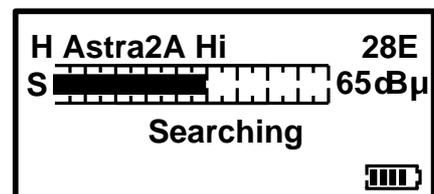
The next screen will display the meter information, including model, version, satellite list loaded and battery percentage. The third line indicates the file loaded into the meter.



Use the LEFT or RIGHT arrow keys to cycle through the satellites available until the desired one is shown.

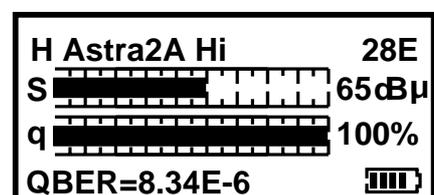


Point the dish in the approximate direction of the required satellite, and slowly sweep the dish across the sky, adjusting your elevation at the end of each sweep. Whilst you are sweeping the sky the rate of beeps will change as you pass each satellite; the scale on the meter will also change.



You may wish to use the auto-ranging function whilst unlocked to re-centre the displayed signal level. Do this, for example, if the bar goes blank but there is still a good signal level. To use the auto-range function press the ON button once (twice in Locked mode).

Once you have located your satellite the HDSM will change tone and "Found" will be displayed on the screen. Peak up on your selected satellite by making fine azimuth, elevation and polarisation adjustments to get the S and Q values as high as possible. Securely tighten the fixing bolts whilst keeping an eye on the display to ensure the best performance from your antenna.

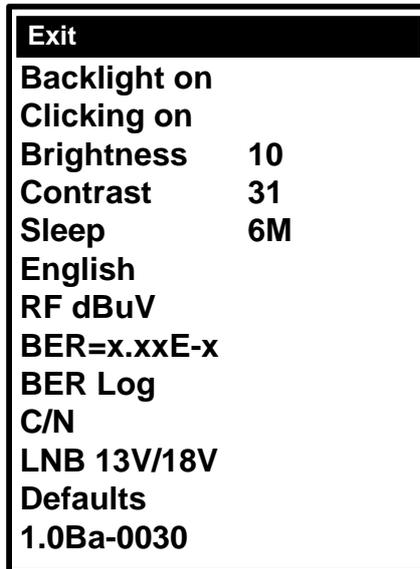


Using Your Meter

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Setup Menu

To access the Setup Menu ensure your HDSM USB / USB PLUS is off and press the UP key once. The following options are available from this menu.



By using the keypad as cursor keys you can navigate through the set up menu using UP and DOWN, and change values by using LEFT and RIGHT keys. Once you have made your selections return to the top of the menu highlighting **Exit** and press the left or right key to apply the changes and switch the meter off.

You can also go back to the default setup by selecting **Defaults**. This operation will not affect any of the satellite settings stored in memory.

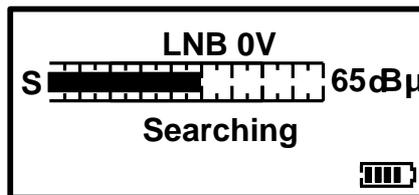
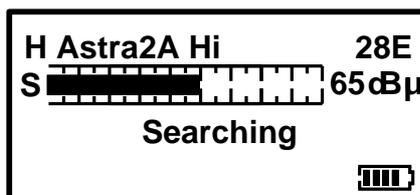
n.b. The full menu is shown here, whereas only four options are visible at any one time on the LCD display.

Alternative languages are available for menu items and on-screen information. The RF can be displayed in either dBuV or Linear modes. The BER numerical display can be changed so that "Found" only is displayed. BER can be measured in Linear mode for better sensitivity or Logarithmic form. The 1.0Ba-0030 reference may vary; it is for Horizon use only and does not affect any meter functions.

The HDSM USB / USB PLUS supports many languages, selectable from this menu page: English, French, Spanish, Italian, German, Dutch, Polish and Scandinavian.

Note: MER measurements can also be made by changing **C/N** to **MER** in the setup menu. Results will be logged as C/N (Carrier-to-Noise ratio) or MER (modulation error ratio) according to this setting (HDSM USB PLUS only).

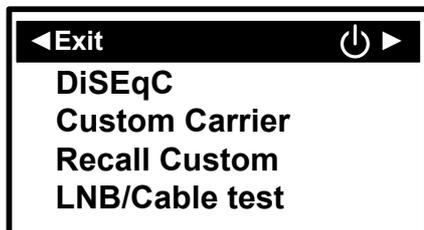
LNB Voltage: This feature enables you to switch the LNB supply voltage off. Whilst the LNB Voltage is set to 0 Volts the Satellite name on the top line of the display will alternate with "**LNB 0V**" to indicate that no LNB voltage is applied. This selection will remain active until it has been changed back to LNB 13V/18V even if the meter is switched off.



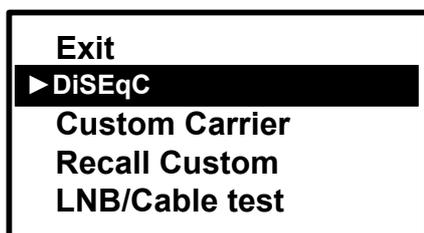
Note: While the LNB Voltage has been selected as 0V then the top line of the display will alternate as illustrated above.

HDSM USB Sub Menu

Your HDSM USB has new extras available from the **sub menu**. These features and more are also available on the HDSM USB PLUS.

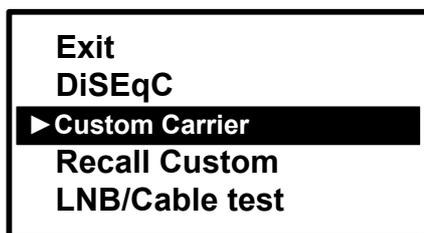


To access the sub menu press the UP button once from the searching screen. Using the keypad as cursor keys you can select the various options. At any time you can press and hold the UP button to switch the meter off. When **Exit** is highlighted, you can also use the RIGHT button to switch the meter off.



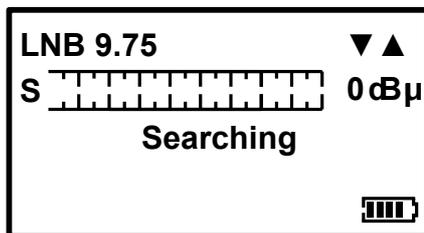
The DiSEqC LNB function allows you to send a DiSEqC switch command. The DiSEqC menus are explained in detail on page 11.

DiSEqC 4 Position switches, Option A and B, Dual Horn and SMATV Switch commands are supported.



Custom carrier mode is a new feature which enables you to specify your own carrier to lock on to. This can be very useful for optimising a specific service once the satellite has been located - and this feature can be used for VSAT installation too. You can also store this selection separately from your predefined selections.

Using the Custom Carrier feature



Once you have made your selection press the right arrow key to set your frequency.

Select your local oscillator first by using the UP and DOWN keys. Various local oscillators are available and some have 22KHz tone available also. The Local Oscillators are shown in the table below.

9.75		17.25	Ka-Band
10.6	22KHz tone on	18.25	Ka-Band
10.0		18.75	Ka-Band
10.25		19.25	Ka-Band
10.5		19.75	Ka-Band
10.7			
10.7	22KHz tone on	5.15	C-Band
10.75		5.76	C-Band
10.75	22KHz tone on	5.95	C-Band
11.25			
11.25	22KHz tone on		
11.3			
11.3	22KHz tone on		

Continued...

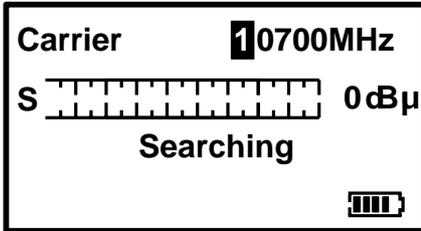
HDSM USB Sub Menu

Continued...

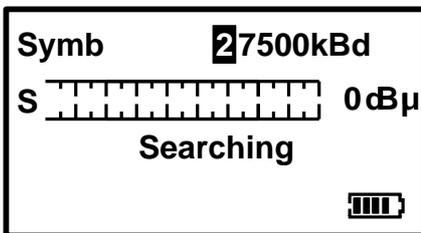
Using the Custom Carrier feature

Now that the local oscillator has been set you can proceed to select your desired frequency.

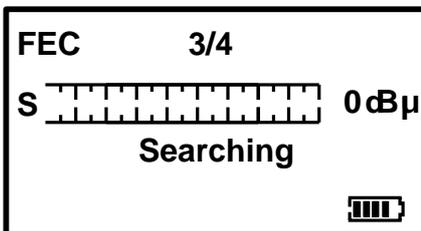
Note: The local oscillator selected will dictate the available frequency range.



You can set the desired frequency by using the UP and DOWN arrow keys to change the highlighted number and LEFT and RIGHT to step to the next one. Once you have your desired frequency, press the right arrow to step on to the Symbol Rate screen. Note that you will not be able to select out-of-range values (e.g. 20700MHz in Ku band mode).

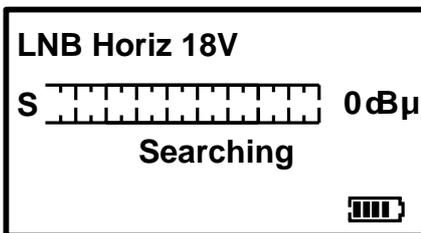


In much the same manner that you defined the frequency, set the Symbol Rate to match the wanted signal: highlight the numbers with the LEFT or RIGHT key and change the value with the UP and DOWN arrow keys. Symbol rates from 01000 to 45000 can be set. Once you have the desired symbol rate press the RIGHT arrow to step on to the FEC screen.



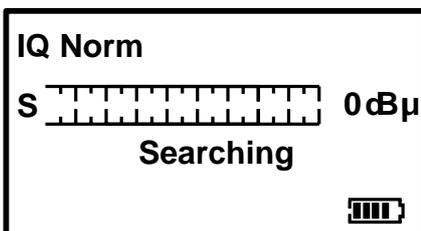
From this screen we can select the desired FEC. If the FEC is unknown then select **Any** and the HDSM USB / USB PLUS will try them all when searching from the Custom Carrier. The FEC's available are show in the table to the right. Press the RIGHT arrow to step on to the LNB voltage screen.

1 / 2
2 / 3
3 / 4
5 / 6
7 / 8
Any



On this screen we can select the LNB voltage: 18 Volts for Horizontal or 13 Volts for Vertical. Press the RIGHT arrow button to step on to the IQ screen.

Note: If you are using a block type LNB for VSAT installation, 18 Volts is typically selected to power this kind of LNB, as the polarisation is manually adjusted. Consult your LNB documentation for its operational requirements.



Here we can select IQ unswapped (Norm) or Swap. Sometimes IQ Swap is required to obtain a lock but for most of the time this is left selected to Norm (Normal). use the Swap selection if you failed to obtain a lock so far.

Press the right arrow key to step onto the Save and Exit screen once you have made your selection.

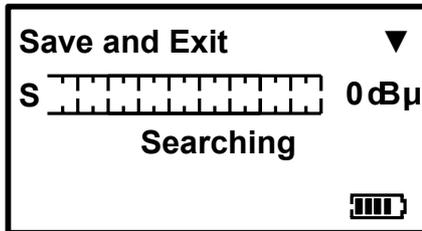
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HDSM USB Sub Menu

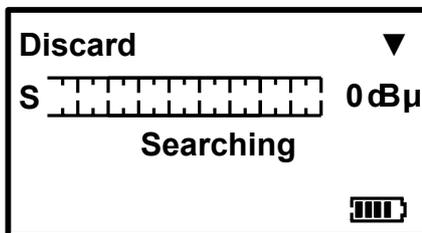
Continued...

Using the Custom Carrier feature

Now that all of your parameters have been set, you have the option to save your custom carrier to memory that's separate from the predefined selections.



Pressing the DOWN arrow on this screen will save your custom carrier to memory and exit to searching mode, where you can now use your custom carrier settings to find the desired service. If you prefer not to save your settings press the RIGHT arrow to step on to the Discard screen. If you wish to use your custom carrier at a later installation, this can be recalled by using the Recall Custom option from the sub menu.



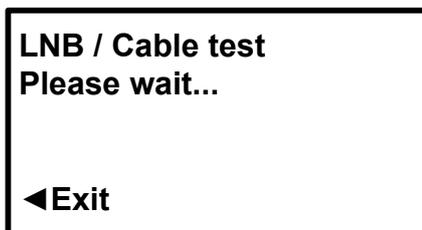
By pressing the DOWN arrow on this screen all of the values you have set will be discarded and the meter will return to searching mode on the last satellite selected before entering Custom Carrier mode. Alternatively, use the RIGHT button to cycle through the custom carrier options to set another carrier of your choice.

Note: The HDSM USB / USB PLUS is only compatible with DVB QPSK modulated carriers and will not show a lock on other types of modulation such as DigiCipher, DVB-S2 8PSK or turbo encoded services. When using lower symbol rates (less than 04000) it may take a few seconds to obtain a lock, and it will require much slower motion when pointing your antenna.

Tip: Common carrier configurations can result in a multiple lock situation. For example, carriers that have an FEC of 3 / 4 and a Symbol Rate of 27500 will probably lock on multiple satellites. Where possible, look for unique Symbol Rates that are unlikely to be duplicated on other satellites at the defined frequency.

LNB / Cable Test

The LNB / Cable test is a quick function to check for possible fault conditions and will indicate if there is a problem.



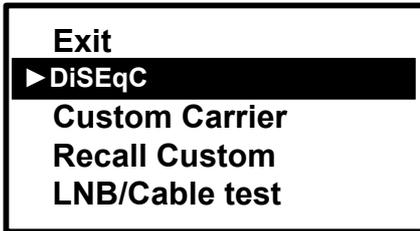
The test results will appear after a few seconds as indicated in the table below.

LNB / Cable OK
LNB Fault
LNB / Cable Fault

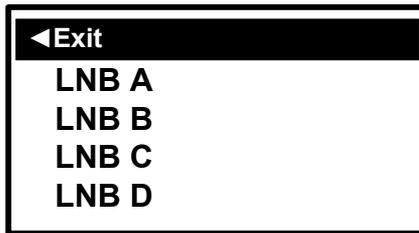
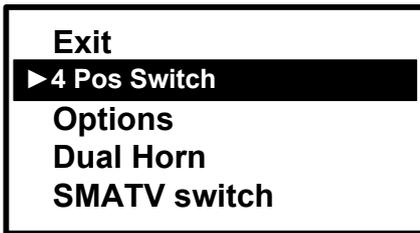
Note: The above function is for indicative purposes only.

HDSM USB Sub Menu DiSEqC

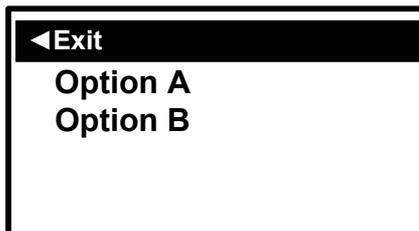
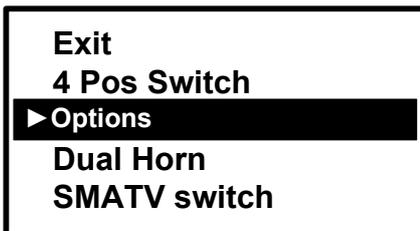
The DiSEqC Switch functions are available from the sub menu of the HDSM USB and USB Plus.



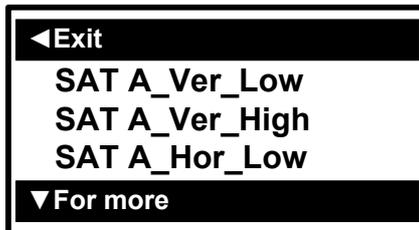
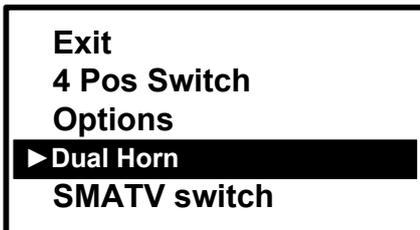
From the sub menu DiSEqC function shown here you can select a variety of DiSEqC switch commands to suit the needs of your installation. Press the right arrow button to access the the different options available. Once a DiSEqC command has been selected with the right arrow key the command will be sent and you will be returned to the last satellite selected.



The 4 Position Switch option gives you the selections of A,B,C and D and these selections can be used with a conventional 4 way DiSEqC switch. Selecting **Exit** here will take you back to the sub menu.



The Options selection enables you to send Tone Burst commands (A or B). Selecting **Exit** here will take you back to the sub menu.

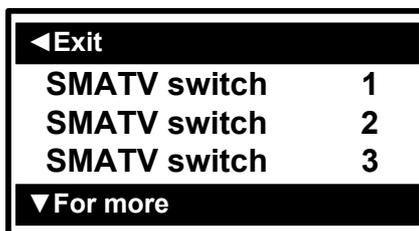
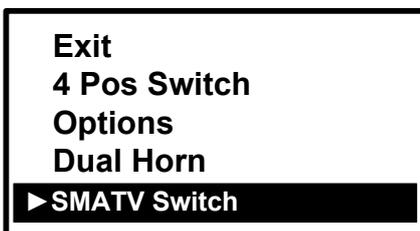


The Dual Horn option is for use with dual feed LNB assemblies enabling you to select the band and polarisation available individually. Selecting **Exit** here will take you back to the sub menu.

The following selections are available from the Dual Horn menu.

Satellite A Vertical Low	Satellite A Horizontal Low	Satellite B Vertical Low	Satellite B Horizontal Low
Satellite A Vertical High	Satellite A Horizontal High	Satellite B Vertical High	Satellite B Horizontal High

For SMATV switch systems the following DiSEqC command options are available.



The SMATV switch option is for use with systems with up to 16 inputs. Selecting **Exit** here will take you back to the sub menu.

HDSM USB PLUS Menu

Note: The following additional features are only available on the Sub Menu for HDSM USB PLUS.

Spectrum mode

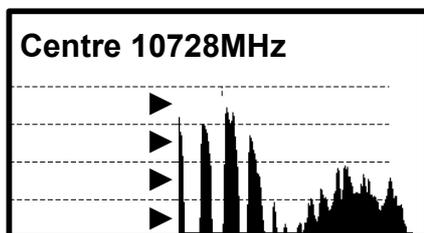
Spectrum mode is available from the Sub-menu (press the UP arrow while the signal level or carrier/noise display is on screen). Scroll down to highlight "Spectrum", and press the RIGHT arrow. The screen will change to display the spectrum.

The graphic will be centred on the frequency of the selected transponder: in our example of a Low Band setting, the display is centred on 10728MHz. The span (range of frequencies displayed on screen) is set by default to 240MHz; which gives a display of 8 adjacent carriers at 30MHz spacing. By pressing the DOWN button, you can cycle through a range of spans from 60MHz (to zoom in on one carrier in particular) to 1200MHz.

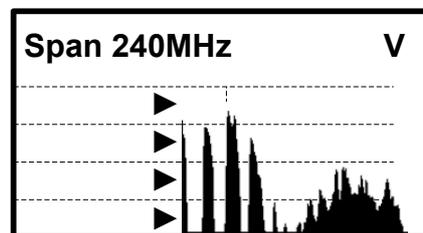
Centre the chosen frequency on the display by pressing the LEFT and RIGHT buttons. Note that you will not be able to go beyond the limits for each band, which are indicated by arrows pointing right (lowest frequency) or left (highest). Note that the Low Band coverage extends from 10700MHz to 11600MHz, and the High Band from 11550MHz to 12750MHz, so there is some overlap between the Low and High Band for Universal LNB's.

RF level is shown by a solid band at each sampled frequency (see image). There will be areas of low-level signal between the carriers, and the bigger the distance between peaks and valleys, the better the carrier-to-noise ratio. Good C/N ratio is important for trouble-free reception!

The top line of the screen alternates between "Centre" plus the selected frequency (shown at the dotted vertical line in the centre of the display) and "Span" plus the frequency span in MHz. In "Span" view, the polarisation of the carrier (H)orizontal or (V)ertical is shown. If High Band is in use, and 22KHz is enabled, the tone symbol \square will appear next to the Polarity.



The Spectrum information bar at the top of this screen will alternate between the current frequency and span in use



Note: You can exit spectrum mode at any time by pressing the UP button once. This will return you to the searching screen on the selection that you made previously.

In low signal level conditions use the **► Spectrum**  option to increase the amplitude so that carriers may be seen.

Tip: If you have defined a custom carrier you can view it in spectrum mode too.

Logging

Before using the logging function acquire the satellite that you have chosen, ensuring that the received levels are as good as they can be. Then access the Sub-menu by pressing the UP button once; navigate down and highlight the "Log as 00000" line. By pressing the right arrow at this point the levels from your satellite selection will be stored in to the memory and numbered; this number will increment each time you store your measurements. Note this number down on your job sheet as you will need to refer to it later when downloading the log information from your meter later.

The logging software required to extract the stored values is available from the Horizon Global Electronics download web page for HDSM products. Instructions are provided with the software as a printable PDF document.

HDSM USB PLUS Menu

Continued...

Note: The following additional features are only available on the Sub Menu for HDSM USB PLUS.

Constellation diagram

Provided the meter is locked to a DVB QPSK modulated carrier, Constellation mode is available from the Sub-menu (press the UP button while the signal level or carrier/noise display is on screen). If there is no lock, the option will be "greyed out". This type of diagram is almost meaningless when it cannot display formatted QPSK data – dots would appear randomly in each quadrant, and there would be no visible pattern.

In the Sub-menu, scroll down to highlight "Constellation", and press the RIGHT arrow. The screen will change to the QPSK constellation display and a listing of the current transponder settings.

The graphic displays the 4 quadrants of a QPSK signal. A "good" display will show a cluster of dots towards the outer corner of each quadrant. The more concentrated the cluster, the better the quality of the received signal; dots "straying" from the cluster indicate noise on the signal, phase errors, and other unwanted artefacts.

The aim is to achieve the best result possible, which a thorough alignment of the LNB should achieve. With the constellation diagram, you get reassurance that the adjustments have been done well.

At the right side of the screen is a list of the parameters for the currently chosen transponder:

Frequency in MHz: this is the measured frequency after "pull-in" by the meter's AFC, so the displayed value may differ slightly from the nominated value in the configuration file;

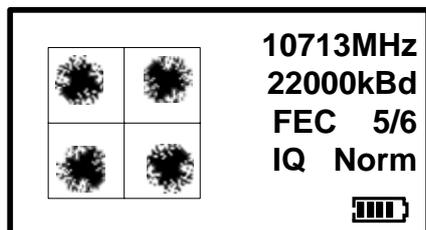
Symbol Rate in kiloBaud (kiloSamples / Second): the data rate is critical in identifying and locking to the selected carrier;

FEC (forward error correction) value: data on the selected carrier will conform to one of a short list of standard FEC values;

IQ Norm indicates that no IQ Swap is not present.

At bottom right, there is a display of the charge state of the battery pack.

Tip: The constellation diagram can be used down stream from the LNB to trace problems caused by faulty components that introduce noise and affect the quality of the digital signal.

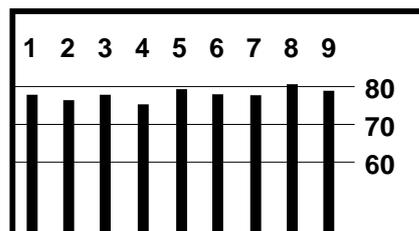


This illustration shows how a typical QPSK constellation diagram would be represented.

Note: The following feature is only available on the HDSM USB PLUS.

Histogram function

The HDSM USB PLUS also has an additional feature of a histogram display; this can be used in SCR (Single Cable Router) environments to measure up to 9 different frequencies simultaneously. Settings for this function can be downloaded from the Horizon Global Electronics web site. The scale on the right hand side of the display gives an indication of level in dBuV.



Note: The histogrammic function can only be selected when downloaded as an additional setting.

USB Driver Installation

- 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".

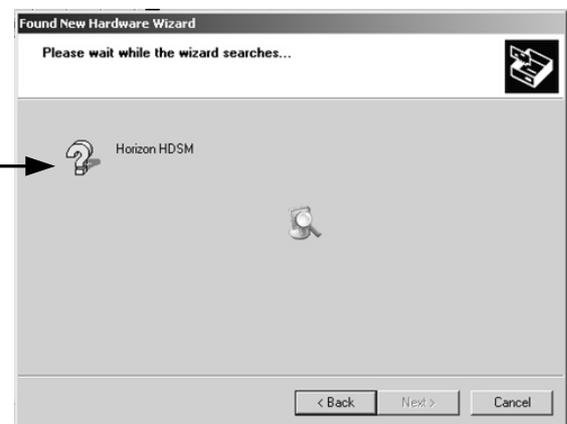
Then click "Next"



Select "Install the software automatically"

Then click "Next"

- 3) While your PC is searching for the DRIVERS a window like this will appear



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.

USB Driver Installation

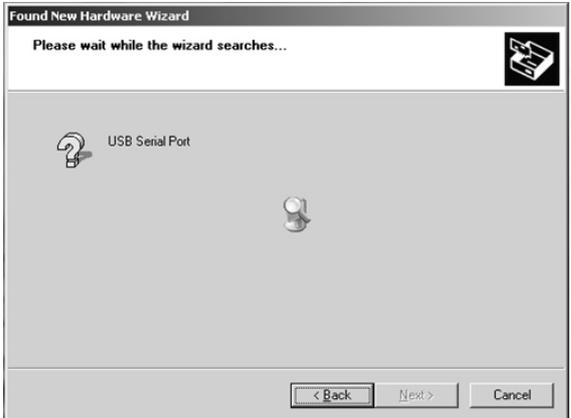
Continued...

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)



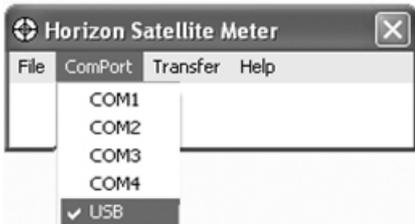
The Horizon USB driver installation is now complete. You can now visit the www.horizonhge.com website for downloads.

Click the “Finish” Button.

Transferring Data

Now that your USB drivers are installed, you can download selections from the Horizon Global Electronics Download website for HDSM - for updates or to create your preferred list. Go to www.horizonhge.com Please follow the steps illustrated below to upload new selections to your meter.

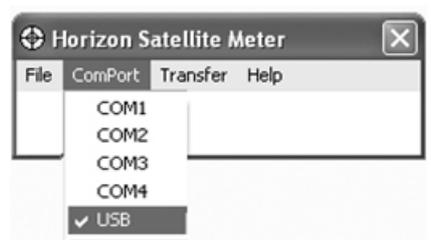
1)  Wait for the HSDM USB / USB PLUS to display "Program Mode" (while establishing communication the display may flash and the sounder may beep. This is normal). 

2) Ensure that USB is ticked on the ComPort drop-down menu as shown.  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 receive a Serial Interface error check your COM-port selection, and select the correct COM port. (USB)



If you get this error message "Error – Ack Not Received". Check that the USB interface connection is correctly made and that the USB cable is undamaged.

FAQ

Ack Not Received Error

- 1) Incorrect Com Port selected. Check to make sure USB Com Port is selected.
- 2) Battery low.

USB Port Error

- 1) Drivers not found (drivers available from website).
- 2) Check that the USB Lead is connected correctly.
- 3) USB Lead may become damaged or a poor connection may cause communication errors.
- 4) USB Port Damaged.

I2C Error Indication

An I2C error indicates that the internal electronics are not receiving correct communication with the internal tuner. Generally caused by:

- 1) Low battery power (if the meter has been left in a cold environment, this will reduce the battery life).
- 2) Connecting the LNB "hot" (i.e. while the meter is switched on) can cause a surge which will result in an I2C error. You should always connect the LNB with the meter switched off.

Meter Shutting Down

- 1) Low Battery Charge.
- 2) Sleep timer – check timer setting in the Setup menu.
- 3) LNB short circuit or drawing excessive current.

Meter does not show a lock.

Make sure you have a current download of files in your meter; if it's been a while since you have downloaded you should do so again.

Also try toggling between BER Linear & BER Log (with meter off, hold UP button down until setup display appears, scroll down to the bottom & you will see BER on left side; press the RIGHT arrow & the right side will change between linear & log. Also confirm in the setup display that you have the meter set to display 'FOUND')

Apple Mac

The software is not MAC compatible.

Storage

If you wish to store your unit for extended periods of time greater than 3 weeks disconnect the battery connectors. When required reconnect and charge overnight prior to use.

Tip: To keep your battery in good working order we recommend a full overnight charge at least once every two weeks for light usage. For every day usage we recommend to put your unit on overnight charge prior to the next working day to ensure maximum battery power is available.

Specifications

Charging

- Universal Mains Battery Charger 100V~240V ~ 0.31A MAX 50/60Hz. Intelligent charger (CE approved) with delta V delta T detection, Fast Charge then Trickle.
- DC 12V Charger 0.8 Amps (1.3 Amps peak).
- Figure 8 mains input connector.
- 2.1mm female plug for external charge via 12 Volt DC 2 Amp fused car charger.
- Run time with full charge, average 5 hours from 3.3Ah NiMH battery

Connections

- LNB input via `F` type female connector. Impedance 75 ohms with short circuit protection - 0.5 Amps automatic limiter
- Computer Interface: USB port for updating satellite settings

Operating Specifications

- RF input range 950-2150MHz - 65dBm to 25 dBm
- LNB Supply Voltage: 13V for V and 18V for H @ 250 mA nominal
- LNB Short circuit protection @ 500mA
- 64 Transponders or 32 Satellites, horizontal & vertical
- DVB, C & KU band, QPSK, VSAT compatible
- Input dynamic range – 65dBm~25dBm
- RF Level can be displayed in dBuV (general accuracy +/-1dB) or linear scale (256 steps). Feature available in setup mode.
- Input impedance 75 Ohms
- Symbol Frequency rate from 1Msps~45Msps
- C/N (carrier to noise) is displayed in dB
- Signal Strength and BER displayed together
- The Quality indicator (pre BER or bit error rate) locks on faster making it easier to identify the satellite initially; typically locks in less than 100mS
- Instead of “Found” to indicate the lock on correct satellites, the actual BER can be displayed. This Feature is available in set up mode.
- Audible and visual tune-in, with selectable and adjustable display backlight and contrast.

Spares for your meter

Description	Part Numbers
 Rain Cover	ARSUSB
 Car Charge Lead	AW992CIG
 2 Amp Fuse(F)	CF2AGQB
 Battery Pack Ni-MH 7.2V 3.3Ah	BP7233/2
USB Lead	AW998 USB
Leather Case	AL001BK

User Notes

User Notes

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Warranty

Thanks for taking the time to fill out your warranty card. Horizon will, at our option, repair or replace any HORIZON digital satellite meter found to be defective in manufacture within the warranty period (1 year).

The warranty period is determined by the date of the HDSM 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.

The warranty card is available for download from website.



Warranty Card

Product:

Serial Number:

Date Of Purchase:

Buyer's Name:

Company:

Phone No:

Email Address:

Address:

Fault Description:

Horizon Global Electronics Ltd

Unit 3 West Side
Flex Meadow
Harlow
Essex
United Kingdom

Phone: +44 (0) 1279 417005

Fax: +44 (0) 1279 417025

Email: sales@horizonhge.com

Web: www.horizonhge.com

LIMITED WARRANTY

Horizon will, at our option, repair or replace any HORIZON Digital Satellite Meter found to be defective in manufacture within the warranty period (1 year).

The warranty period is determined by the date of HDSM 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 5TJ

Declares that the Horizon Digital Satellite Meter (HDSM USB / 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 2007



CONTACT DETAILS

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Web: www.horizonhge.com

Producer ID for the purposes of WEEE regulations: WEE/BB0191UV