



# S A M Satellite Meter

User Manual



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# 1. Introduction

Thank you for purchasing our satellite alignment meter. It should provide years of trouble free operation.

Please read this guide to familiarize yourself with all features and options available.

**Be careful with satellite dish pointing not to injure others by dropping tools or hurting yourself by falling down.**

Take care of the meter and keep it warm and out of the rain.

Please note in severe cold weather the battery capacity could be greatly reduced. Store it in warm condition prior to use and keep the battery fully charged.

# 2. Supplied items

Maxpeak SAM  
Satellite Alignment  
Meter with leather case



Spare F to F Connector



USB Cable



A/C charger



Power cord for A/C  
charger



Car socket D/C charger

# 3. Getting started

Before using the instrument, a full charge should be performed (as described in chapter 4).

Then a few easy tasks have to be done. Create a user profile on our website, register the instrument to this profile and download firmware and settings to the instrument.

Please make sure your computer is connected to the internet and then follow the steps listed below:

## 1. Create a Maxpeak user profile:

- Navigate to our website: “www.maxpeak.tv”
    - In the top-right corner is a list of flags. If your preferred language is available, click its flag.
  - Create your Profile.
    - In the left side menu, under the maxpeak logotype, click ‘Login’.
    - At the login-page, click “Register New Profile” in the left side menu.
    - Follow instructions given at the registration page. Help is available from our support pages
- ① *The e-mail address entered in the procedure needs to be valid. A confirmation e-mail is sent to this address and your profile will not be enabled until you reply to it.*



## 2. Product Registration, connect to pc:

### ○ Connect the meter to the computer

- Lift rubber molding on left side of the instrument to reveal the USB socket.
- Connect the USB lead from the instruments USB socket to the computer USB interface.
- If connecting for the first time: follow the Windows driver installation process.

① *[Help with driver installation is available from our website, www.maxpeak.tv/support.php](http://www.maxpeak.tv/support.php)*  
*[If windows can't find the driver it can be downloaded from our support pages.](http://www.maxpeak.tv/support.php)*

### ○ Register product online

- Make sure the instrument is connected to the computer.
- Go to our website and login to your user profile.
- In the left side menu, Click 'Register a product'
- Follow the instructions given at the product registrations page.

① *[Help with product registration is available from our website, www.maxpeak.tv/support.php](http://www.maxpeak.tv/support.php)*



The USB socket is located under the rubber molding at the instruments left side.





Before updating firmware and download settings, remember to be logged in with a Maxpeak user profile and that the instrument is connected to the computer.

### 3. Update firmware and download settings:

#### ○ Firmware update

- Make sure to be logged in at the maxpeak website and that the instrument is connected to the computer.
- In the top right menu, click 'Products'. Then in the left menu, click 'Firmware Download'.
- Follow the instructions given at the 'Firmware Download' page.

① *[Help with firmware download is available from our website, www.maxpeak.tv/support.php](http://www.maxpeak.tv/support.php)*

#### ○ Settings download

- Make sure to be logged in at the maxpeak website and that the instrument is connected to the computer.
- In the top right menu, click 'Products'. Then in the left menu, click 'Settings Download'.
- Follow the instructions given at the 'Settings Download' page.

① *[Help with settings download is available from our website, www.maxpeak.tv/support.php](http://www.maxpeak.tv/support.php)*



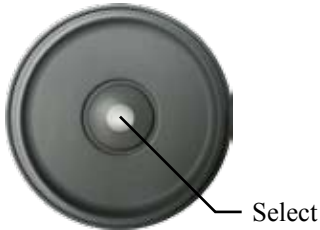
# 4. Charging procedure



The charging socket is located under the rubber molding at the right side of the instrument.



Only use the included car or wall socket chargers for charging.



Press Select to use the meter while charging

The meter is delivered with a nominal charge only. It needs 24 hours of initial charge before usage. The battery reaches full capacity after a couple of charges.

## Charging procedure:

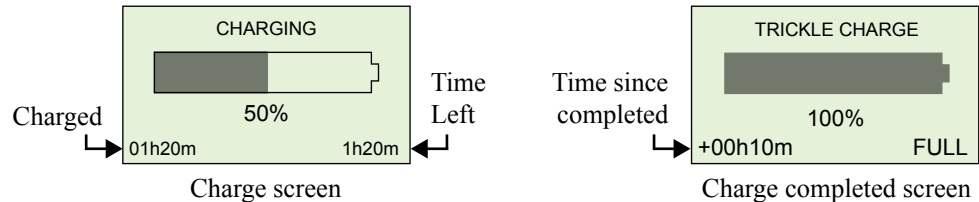
- Lift the rubber molding on the top right side of the instrument to reveal the charging socket.
- Plug the cord from either the included car<sup>1</sup> or wall socket chargers to the instrument.

**⚠** *Please note that warranty is voided if a charger other than the one supplied from Maxpeak is used.*

- Now the battery is charging. A full charge will take 3 hours (after initial charging). Charging circuit drops to trickle when fully charged.

**!** *The meter may get warm during charging. This is normal.*

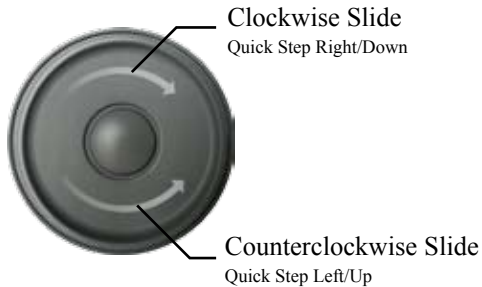
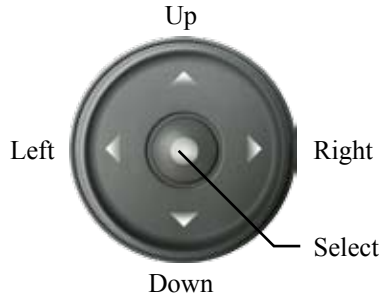
- Press Select button to put the meter in meter mode<sup>2</sup> while charging, after 10 minutes the meter returns to the standby screen



<sup>1</sup> Some vehicles need ignition turned on in order to provide power to the cigarette lighter socket.

<sup>2</sup> Using the instrument while charging may result in less accurate measurements.

# 5. Touch-wheel control



The meter is controlled using a touch sensitive wheel and a distinctive Select button at the wheels center.

- The meter is switched ON/OFF by keeping the Select button pressed.
- A shorter SELECT click<sup>1</sup> is used for data entry in the Setup view and DISEqC menu.

The wheel can be used in two ways:

- Standard four way navigation, by clicking<sup>1</sup> the wheel in each direction as shown in the top picture.
- Quick Left/Right stepping of values by sliding clockwise or counterclockwise as in the bottom picture.

# 6. Power up and shut down



Power Up:  
Keep the Select button  
pressed.



Shut Down:  
Keep the Select button  
pressed.



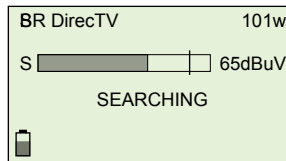
To turn the meter on, keep the Select button pressed for five seconds. At startup, the following information is displayed:



Firmware and settings file versions are displayed.

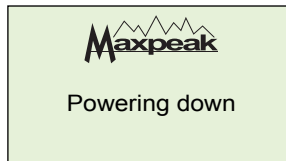
🔔 To freeze this information, keep holding the Select button.

The meter then changes to the meter view:



The meter is now up and running.  
For the functionality available, please see:  
Chapter 7 - To peak the dish  
Chapter 8 - Setup view.

To shut down the meter, keep the Select button pressed, (as when turning on the meter). When switching off, this screen is displayed:



# 7. Dish installation

First find a suitable place to install the dish. It should have a clear line of sight (use a compass to find azimuth angles (sideways)). Make sure there are no overhead obstructions like trees , buildings etc.

- Next, assemble the dish according to the dish manufacturer's instructions. Install the LNB.

Obtain the elevation and polarization for the required satellite and location, usually supplied with the dish or in the receiver software.

Preset the dish elevation (up/down) angle first. There may be a scale on the back. An inclinometer may be of use if you know the dish elevation offset angle. Set the feed rotation polarization angle also. There may be a polarization rotation scale on the LNB feed horn throat. Or in some markets the dish has screws and a scale on the back to set this. Next use a compass to roughly set the azimuth. Hook up the SAM meter to the LNB. Switch on the meter, gently move the dish until the meter changes from searching to found. Peak the dish for maximum Q. If reception is dual polarity peak the optimum Q for both polarities.

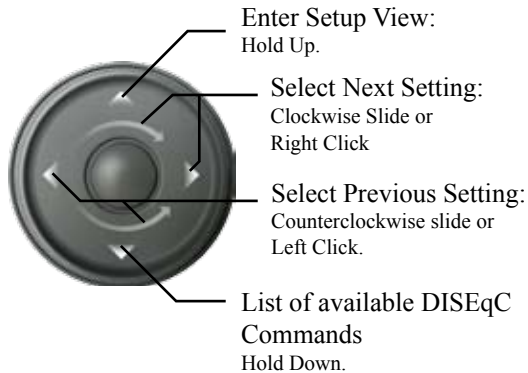
Follow all Local, State and National grounding requirements.

- ⚠ ***Be careful with satellite dish pointing not to injure others by dropping tools or hurting yourself by falling down.***

# 8. Peaking the dish



Connect the F to F lead from the LNB to the F connector at the bottom of the instrument.



- Hook up the lnb via the F to F lead.

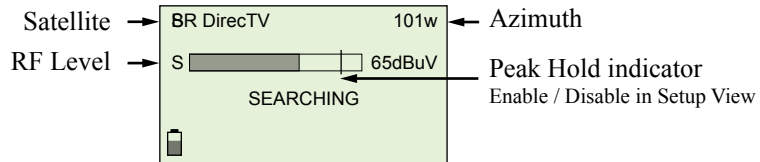
❗ Use high quality threaded F connectors for your installation. Low quality connectors will negatively affect the accuracy of the readings  
Do not use push-on F connectors as they are very unreliable, especially when they have been used a few times.

- Connect the other end to the bottom of the meter and power up.

❗ Connect the leads first and then power up the meter.

## The meter view:

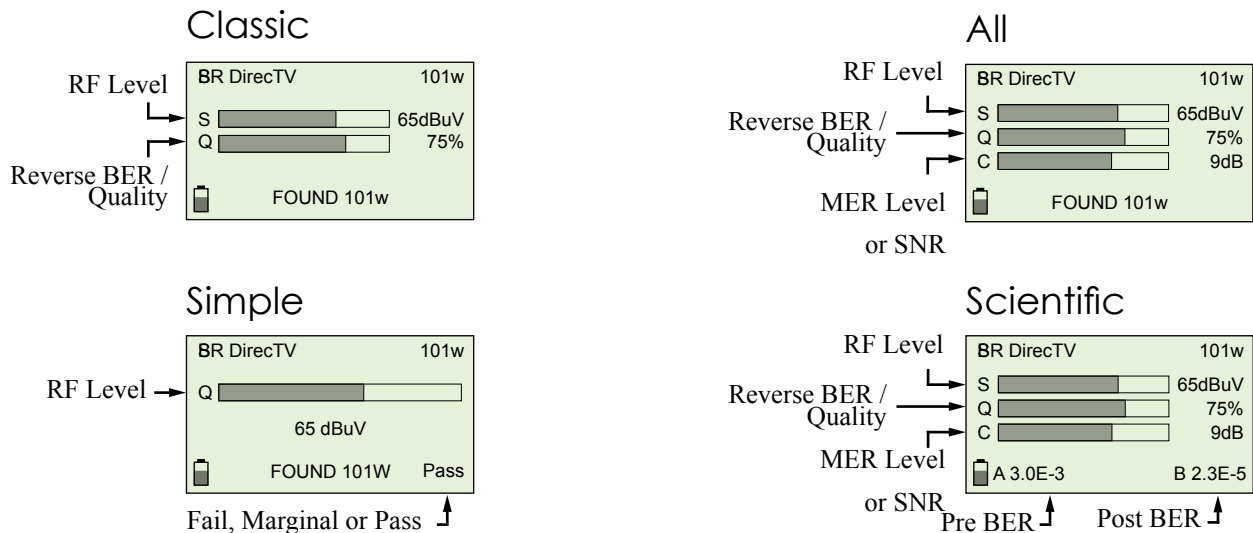
Initially the meter displays signal level and starts to search for a match.



- To choose among settings, click Left / Right or slide the wheel.
- Enter Setup view by holding Up.
- The menu of available DISEqC commands is shown by holding Down. In the DISEqC menu, choose command with Up / Down click or slide the wheel. Send selected command by clicking Select or close by clicking Select with 'Exit menu' selected.

When the dish is pointed to the correct satellite, the meter will beep twice and change from searching to FOUND to indicate identification of correct satellite. A Q<sup>1</sup> bar appears that needs to be maximized.

The information available depends on which display mode is selected. The display mode of the Meter view can be set in the Setup view. An option for S to be displayed in dBuV or dBm and an option to display M<sup>2</sup> (MER) or C<sup>3</sup> (SNR) in any of the variants can be found here as well.



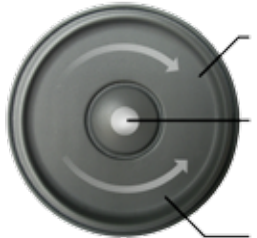
1. Q= Quality / Reverse BER (Bit Error Rate) with FEC compensation. E.g. the highest value will give best signal
2. M= MER (Modulated Error Rate). A digital level of carrier (signal)/ noise but with the phase fault in the transmission
3. C= C/N. Carrier (signal) / noise level

# 9. Setup view



Enter Setup View:  
Hold Up for 3 seconds.

Hold finger at the top to enter set up mode.



Clockwise slide or Right:  
Move Down

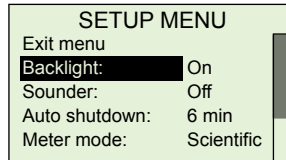
Press Select to change the selected value.

Counter Clockwise slide or Left:  
Move Up

Slide the wheel or press Left/Right to navigate the list of options

Press the center of the wheel to make a selection.

The Setup view is where settings and personal preferences are set. Enter the Setup view by holding Up on the wheel.



The following settings and choices are available:

Exit menu:		<i>Exit back to Meter view</i>
Backlight:	On, Off	<i>Display backlight. Turn off when not needed to save battery time.</i>
Sounder:	on, off	<i>Sound feedback while peaking signal. Beeps faster as signal quality increases.</i>
Auto shutdown:	never, 3-15min	<i>Time before meter shuts off to save battery, default=6 min.</i>
Meter mode:	All, Scientific, Classic, Simple	<i>The meter modes determine the data entities displayed in meter view. (see chapter 7 - Peaking the dish) for details.</i>
RF Level:	dBuV, dBm	<i>Select RF Level display.</i>
SNR/MER:	SNR, MER	<i>Select whether to display SNR or MER value</i>
Peak Hold:	On, Off	<i>A vertical hold line indicating the top value reached. This applies to all meter bars.</i>
Touch sens:	Low, Medium, High	<i>Adjust the touch wheel sensitivity.</i>
Restore to default:		<i>Restore the setup view menu values to factory defaults</i>

# 10. Battery replacement



Remove the screw located at the upper back side of the instrument.



Take away the battery lid and disconnect the current battery pack.



Attach the socket of the new battery to the connector on the instrument. Put the battery pack in place and put back the lid and screw.

The meter is powered by a replaceable NiMH battery pack. As with all batteries the pack will deteriorate with time.

! *To ensure good lifetime of the battery pack, make sure to use/discharge and recharge the meter frequently*

When the battery pack needs to be replaced, spare packs can be ordered from an authorized reseller.

! *Do not use any other kind of non authorized batteries. A different pack can damage the meter and make the warranty invalid.*

## Battery Replacement:

Changing the battery pack is a simple procedure.

- Unscrew the screw and take away the battery lid.
- Remove the battery and disconnect the plug.
- Connect the new battery pack to the plug.
- Place the pack as shown in the bottom picture to the left.
- Initially charge the meter for 24 hours as described in chapter 2 - Charging.



# 11. Specifications

- High sensitivity -75dBm
- C, Ku, Ka or L band
- Replaceable F-connector
- 75 Ohm imp 30 to 100 dBuV
- RF level as dBm or dBuV. Range -90 to -20 dBm 17 dBuV to 87 dBuV Precision+- 3 dB
- True MER or SNR displayed in dB Range 3 to 16 dB Precision +- 1dB
- Pre and Post BER in numerical value Range preBER 0.001 % to 10 % Precision +- 5 dB
- Quality displayed in % (reverse BER)
- RF, BER, MER displayed together \* Backlite graphics display 128x64 dots
- Integrated rechargeable NiMH battery 12 V (10 cells) 2250 mA
- Charged from wall adaptor or car
- Up to 80 sats dividable in sub groups
- Upgrade of settings via USB 2.0
- Upgrade of firmware via USB 2.0
- Language option via USB 2.0
- Built in audible sounder
- DiSEqC switch commands and 22 K tone
- Run time in excess of 4 hours, charge time 3 hours
- 9.5"Lx3"Wx2.5"H 28 oz.
- Charge type: Sophisticated Fast/ trickle charge with auto top off. Using Delta V/ T for long life.
- Dedicated LNB driver with auto compensation and current limit of 650 mA



The manufacture reserves the right to change this specification without prior notice.

# 12. Warranty

This product carries a manufacturer's warranty against faults or manufacturing defects for a period of 12 months from purchase.

Maxpeak reserves the right to replace or repair a faulty meter. The warranty doesn't cover moisture damage, misuse, damage caused by dropping the meter or if the meter has been opened.

Declaration of conformity:

We, the manufacturer, Maxpeak Ltd 2nd Floor Compton House 29-33 Church Road Stanmore HA7 4AR ENGLAND declares that SAM (satellite meter) meets the following standards and directives:

Low voltage : 73/23/EEC , 93/68/EEC EMC: 61000-6-1:2001 61000-6-3:2001 and amendment A11:2004  
RoHS

P Lagerstedt (Director) Bridgetown 13:th of Feb 2007



Recycle:

Please recycle the carton and packaging.

Do not throw out the NiMH battery, but please recycle instead.

Do not discard the meter at the end of useful life, again recycle.



Check our website for the latest information.

# Notes

[info@maxpeak.tv](mailto:info@maxpeak.tv)

US Distributor:

**Perfect 10 Satellite Distributing**

**3901 Progress Street**

**North Little Rock , Arkansas 72114**

**USA**

**1-800-205-8620**

**[www.perfect-10.tv](http://www.perfect-10.tv)**

**[www.maxpeak.tv](http://www.maxpeak.tv)**

