

USER'S MANUAL

DIGITAL SATELLITE METER / SPECTRUM ANALYZER

Please read this manual carefully before using your meter.

The technical specifications and operating guides included in this manual are subject to changes without notice.

Please charge the battery before using your meter for the first time. (Recommend as 5 hours)

In case of any inquires after a period of usage, please contact the manufacturer.

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1. DESCRIPTION

1.1 Introduction

This meter is simple and convenient for setting and aligning a satellite dish. Using the parameters of satellite, you can set and align a satellite dish quickly, easily and accurately.

Satmeter HD1 can be used for satellite spectrum line scanning, and gain the field strength and quality data. Especially with video decode, both SD and HD channels, user can check the signal quality by video and audio performance directly.

1.2 Panel



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- ①. **RF IN:** Satellite signal input port, connect directly to satellite antenna using coaxial cable.
 - ②. **LCD Screen:** Show menus and video
 - ③. **LED LIGHTS: LCD Screen:** Show menus and video.
 - 22K:** The LED turns on if 22k is available by antenna
 - 13V:** The LED turns on if 13 voltage outputs by antenna
 - 18V:** The LED turns on if 18 voltage outputs by antenna
 - LOCK:** The LED turns on if the signal locks
 - CHARGE:** The LED turns on if the device is in-charging
 - POWER:** The LED turns on if the device is working
 - ④. **LED DISPLAY:**
 - XXXX:** Show the channel number in video playing menu
 - 00XX:** Show the quality value of the input signal in menus in which strength of the inputting signal shows
 - NENU:** Show “NENU” in Main Menu
 - OFF:** Show “ OFF” when the device is in standby mode
 - AV1n:** Show “AV1n” after pressing [AV] button to display video by AV loop in
 - ⑤. **Function keys**
 - F1:** Turn LCD screen on/off (Only in video playing menu); Please refer help messages in other menus
 - F2:** Enter audio language setting menu (Only in video playing menu); Please refer help messages in other menus
 - F3:** Switch between TV and Radio channel list (Only in video playing screen); Please refer help messages in other menus
 - ⑥. **0~9 NUMBER KEYS:** Input numeric values
 - ⑦. **INFO:** Show information about the current program (Only in video playing menu)
 - ⑧. **AV:** Switch AV in/out jack to input or output AV
 - ⑨. **AV IN/OUT:** Output AV to display or input AV to show on screen
 - ⑩. **HD PORT:** Connect to TV for displaying on the TV screen
 - ⑪. **12V OUTPUT:** 12V, 800mA output port
 - ⑫. **POWER SWITCH:** Power switch
 - ⑬. **DC:** Connect with the charger cord for charging the meter.
 - ⑭. **NAVIGATION KEYS:**
 - ▲ / ▼ : Zapping channels or navigation in the menu
 - ◀ / ▶ : Decrease or increase the volume or navigation in the menu
 - OK:** Enter channel list menu (Only in video playing screen); in other menu, press to confirm your selection or operation
 - ⑮. **MUTE:** Enable or disable volume, lock tone and key tone
 - ⑯. **MENU:** Enter or exit main menu
 - ⑰. **EXIT:** Exit from the present menu and move to the previous menu
 - ⑱. **SEARCH:**
 - Go to Satellite Finding menu directly in playing video menu
 - Go to Scanning menu in Satellite Finding, Spectrum Analyzer and Auto Scan menu
 - ⑲. **SAT:** List all the satellites that has scanned success in Video playing and Channel List menu
 - ⑳. **USB Port:** Plug in USB sticks to upgrade software, export or import parameters

2. BASIC FUNCTIONS

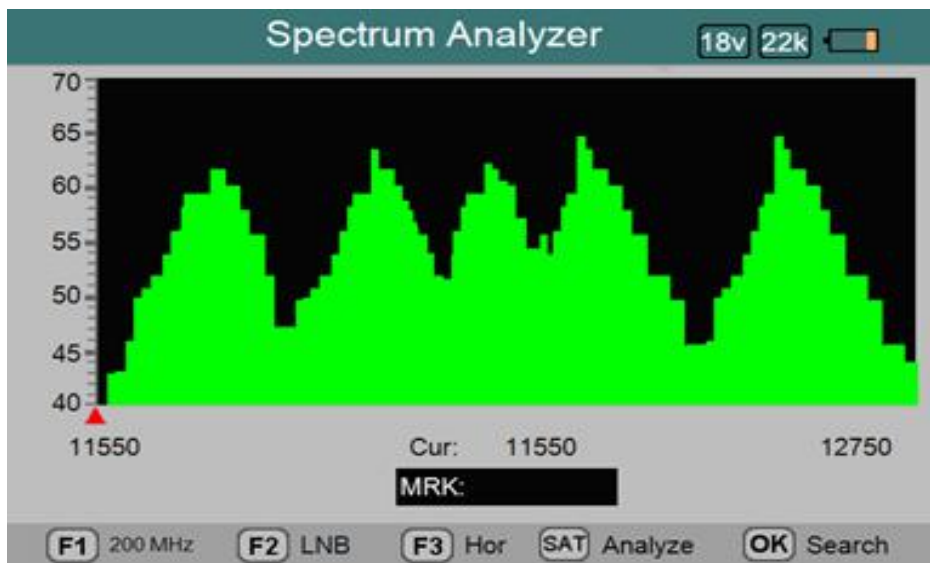
Turn on the equipment

Turn on the power switch and then the device will enter to “Main Menu”. Press [EXIT] or [MENU] to enter video playing menu. Or press OK to enter submenu to analyzer or setting parameters.



2.1 Spectrum Analyzer

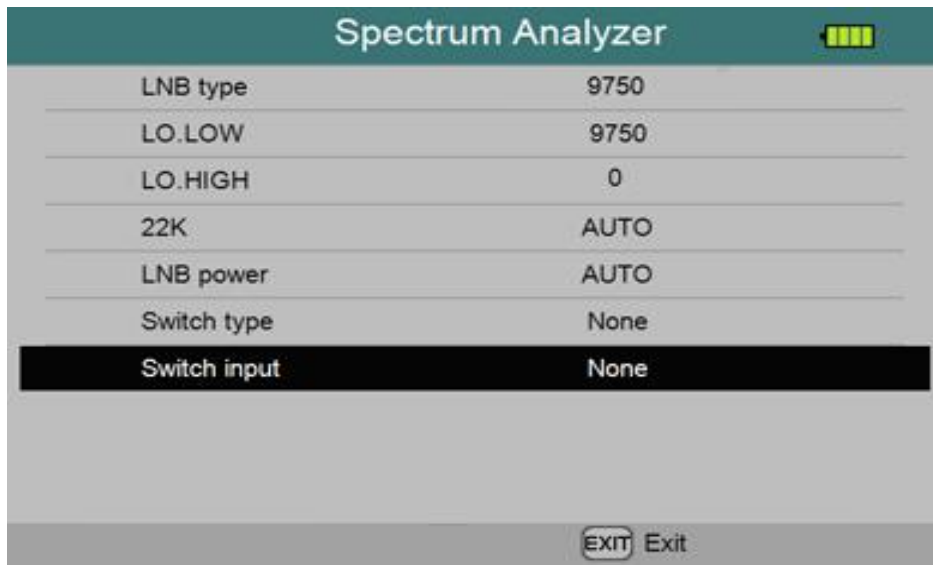
1. Press the [MENU] to display the main menu.
2. Press [OK] on <Spectrum> option to enter spectrum analyzer menu.



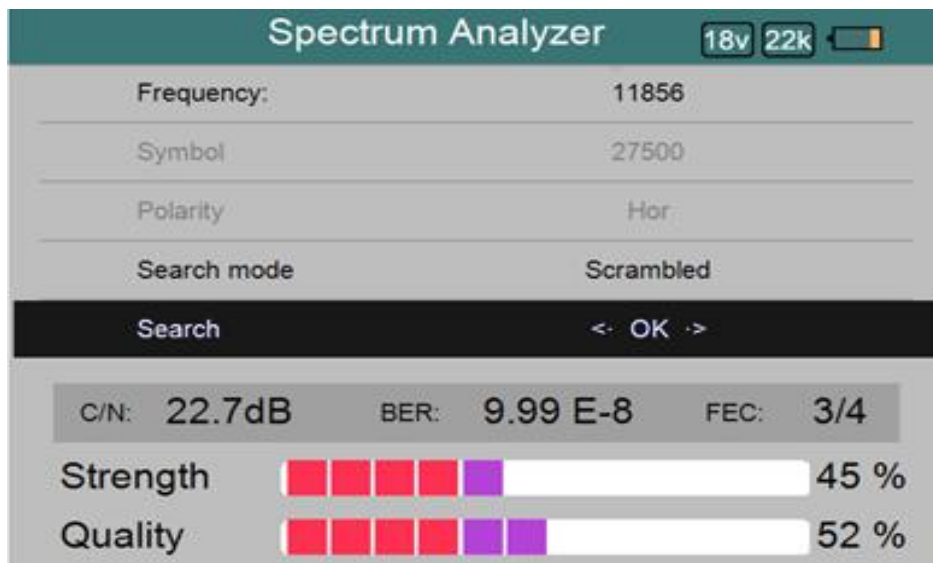
3. Press [F1] to switch SPAN of spectrum abscissa between Full, 200MHz and 400MHz, FULL as Default. The smaller span will show clearer signal status of frequencies.

4. Press [F2] to enter LNB menu to set the LNB parameters. After setting completely, press [F4] to save and press [EXIT] to return to Spectrum menu.

- **LNB Type:** Set LNB Type, press [◀/▶] button to switch.
- **LO.LOW:** Show the low local oscillator value. Use digital button to input the LO.LOW once the LNB Type is customized.
- **LO.HIGH:** Show the high local oscillator value. Use digital button to input the LO.HIGH once the LNB Type is customized.
- **22K:** Set 22K status. Press [◀/▶] button to switch between ON/OFF/Auto. Default set to Auto.
- **LNB Power:** Set the antenna power. Press [◀/▶] button to switch between Auto/13V/18V/OFF. Default set to Auto.

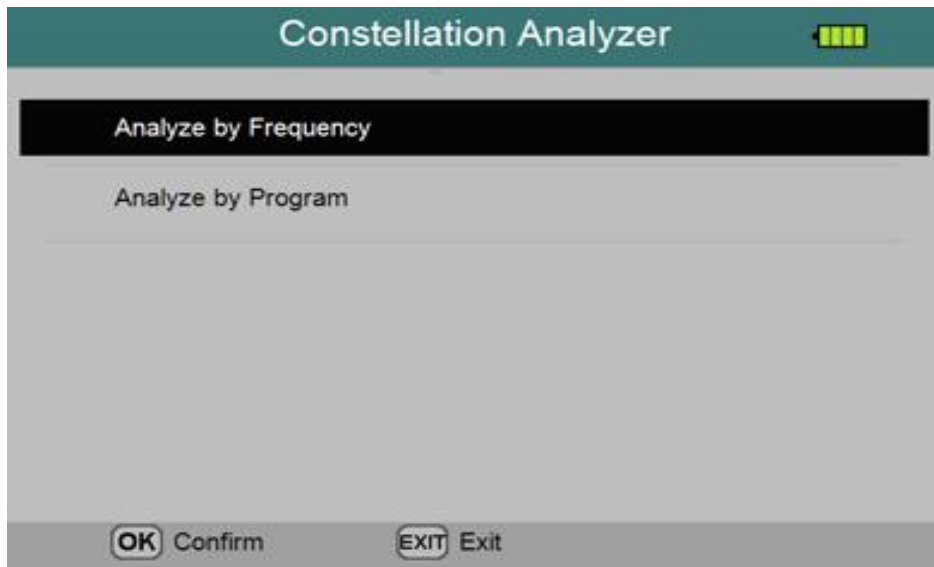


- **Switch Type:** Set DiSEqC type. Press [◀/▶] button to switch between None/DiSEqC1.0/ DiSEqC1.1. Default set to None.
 - **Switch Input:** Set DiSEqC 1.0 or DiSEqC 1.1's input port. Default set to None.
5. Press [F3] to switch between Horizontal and Vertical polarity.
 7. Press [SAT] to pause current status.
 8. Press [▲/▼] to move vertical coordinate's position, and browse the level of Hi-Lo lines.
 9. Press [◀/▶] to move Red cursor to select frequency.
 10. Press [OK] when a frequency of Abscissa is selected, system will enter Frequency searching menu, press [OK] when Search selected to start frequency searching.

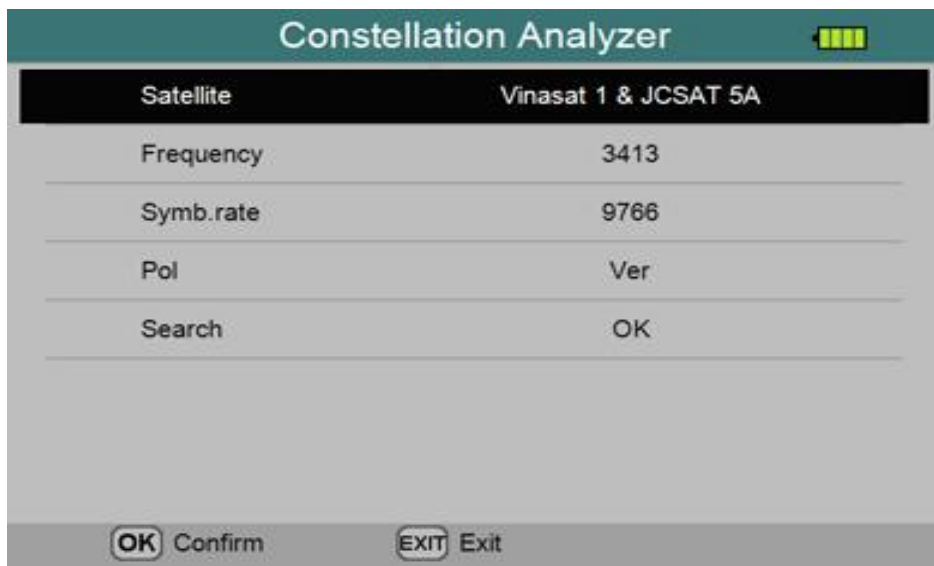


2.2 Constellation Analyzer

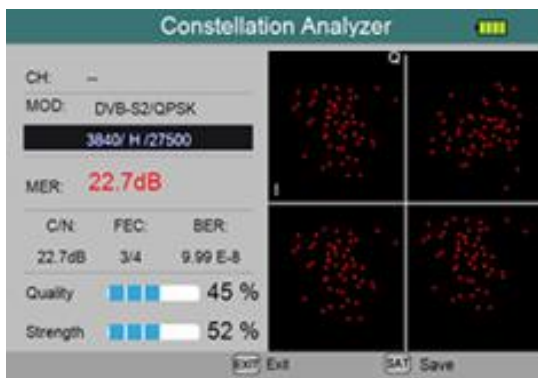
1. Press the [MENU] to display main menu.
2. Press [OK] on <Constellation> option to enter constellation analyzer menu.



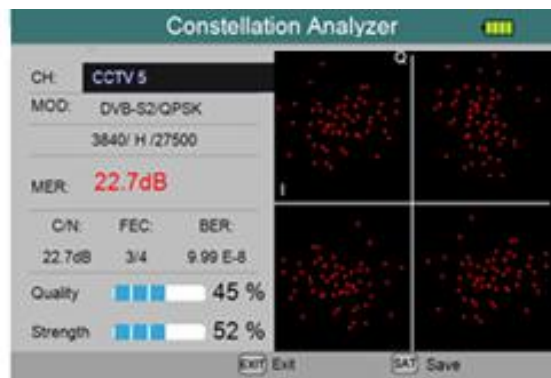
3. Press [OK] on <Analyze by Frequency> option to set satellite and transponder for constellation, as shown in below:



- **Satellite:** Show and choose the satellite. Press [◀/▶] to select satellite, or press [OK] to enter Satellite list.
- **Frequency:** Press [◀/▶] to select, the Symbol Rate and Pol will be changed correspondingly, press [OK] to enter transponder list.
- **Search:** Press [OK] to enter Constellation Analyzer interface, as shown in below:



(By Frequency)



(By Program)

Under Constellation Analyzer interface, press [SAT] to save current page to Store Data View.

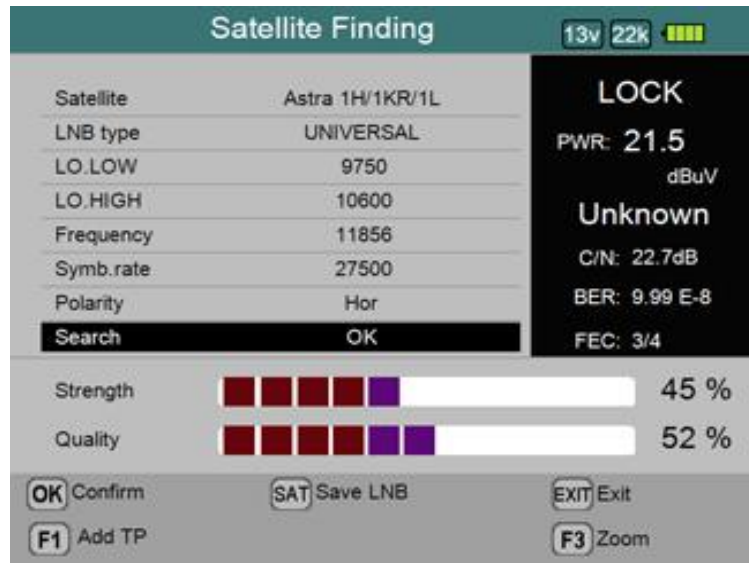
Under Constellation Analyzer interface (by Frequency), press [◀/▶] to switch between transponders of selected satellite.

Under Constellation Analyzer interface (by Program), press [◀/▶] to switch between all the channels.

3. Select Analyzer by Program to enter Constellation analyzer menu directly, as shown in above:

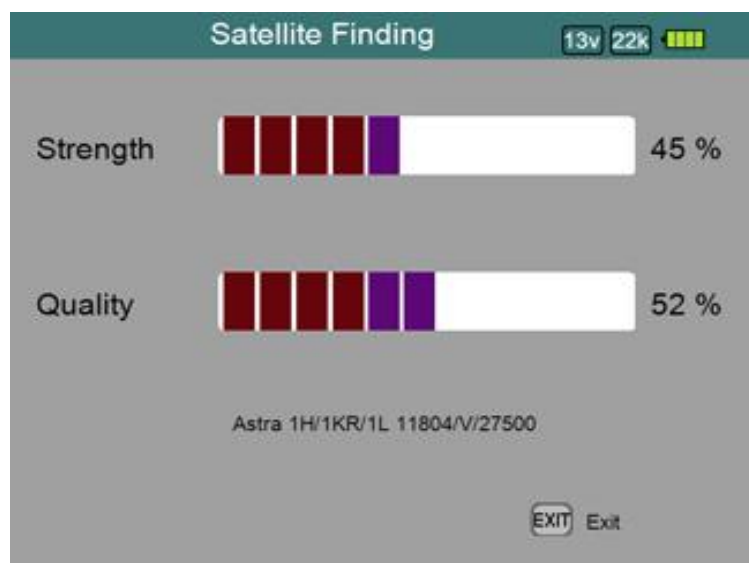
2.3 Satellite Finding

1. Press the [MENU] to display main menu.
2. Press [OK] on <Finding> option to enter satellite finding menu.



- **Satellite:** Show and choose the satellite. Press [◀/▶] to select satellite, or press [OK] to enter Satellite list.
- **LNB Type:** Set LNB Type, press [◀/▶] button to switch. Default set to UNIVERSAL.
- **LO.LOW:** Show the low local oscillator value. Use digital button to input the LO.LOW once the LNB Type is customized.
- **LO.HIGH:** Show the high local oscillator value. Use digital button to input the LO.HIGH once the LNB Type is customized.
- **Frequency:** Input the frequency by 0~9 keys directly.
- **Symb.rate:** Input the symbol rate by 0~9 keys directly.
- **Polarity:** Press [◀/▶] button to select between vertical and horizontal.
When signal locked, the signal power level, C/N, FEC, BER (after BER) will be shown, at the same time the speaker will notify.
Adjust the dish slightly to get the strongest signal.
- **Search:** Press [OK] to scan channels.

3. Press [F1] to add new transponder to satellite
4. Press [SAT] to save LNB or save testing results
5. Press [F3] to enter Zoom menu to only show strength and quality of the inputting signal



2.4 Satellite Setting

1. Press the [MENU] to enter main menu
2. Press [OK] on <Satellite> option to enter Satellite setting menu.

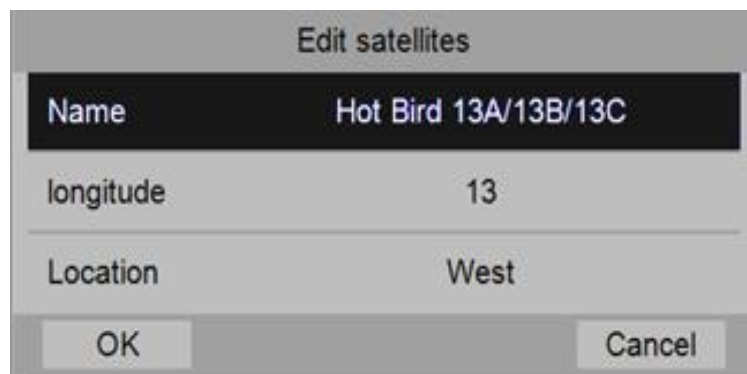


3. Press [OK] on <Edit Satellite> item to enter satellite edit menu.
Press [◀/▶] button to switch between satellite list and transponder list.

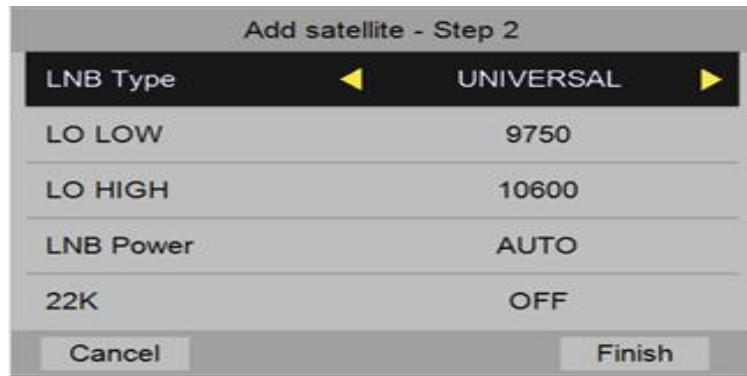
Edit satellites:



- Press [▲/▼] to navigate between satellites, and press [OK] to edit the Name, Longitude and Location information.



- Press [F2] to add new satellite.
Step1: Set the satellite name, longitude and location.
Step2: Set the antenna parameters for the satellite.



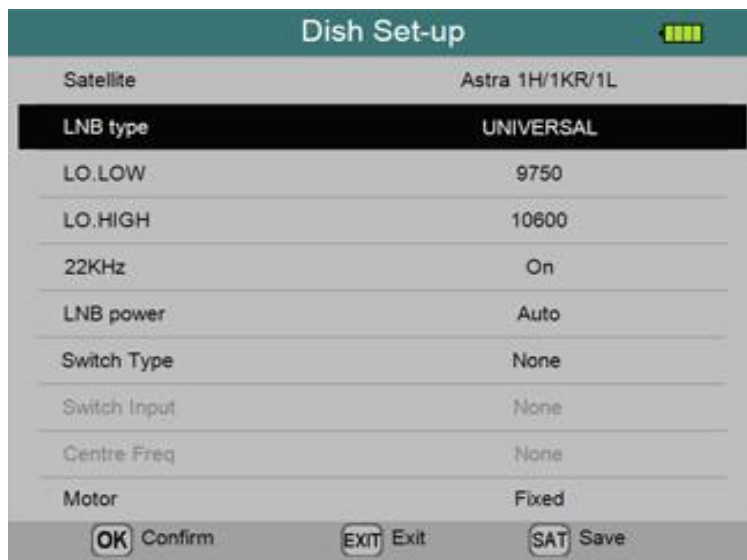
- Press [F3] to delete current selected satellite. A dialog will display on screen, user can confirm or cancel the delete operation.
- Press [SAT] to save all the modifications.

Edit Transponders:



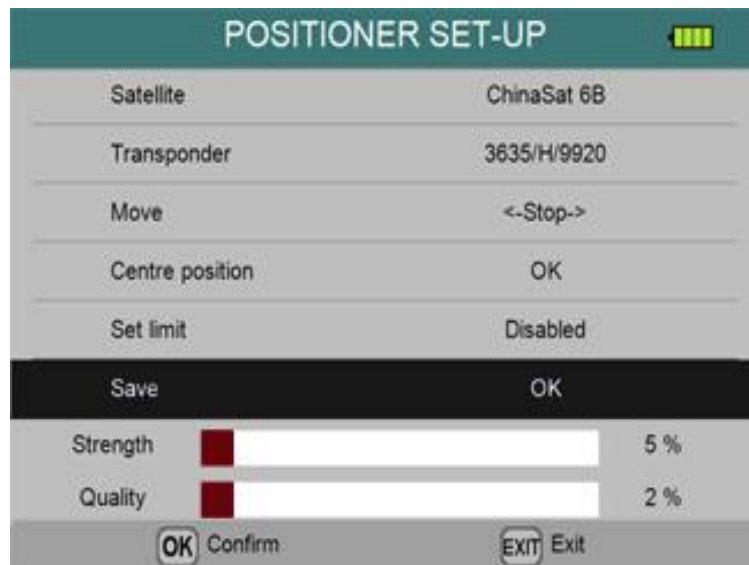
- Press [▲/▼] to navigate between transponders, and press [OK] to edit the current transponder.
- Press [F2] to add transponder.
- Press [F3] to delete current selected transponder. A dialog will display on screen, user can confirm or cancel the delete operation.
- Press [SAT] to save all the modifications.

4. Press [OK] on <Dish Set-up> option to enter dish set-up menu.



- **Satellite:** Show and choose the satellite. Press [◀/▶] to select satellite, or press [OK] to enter Satellite list.
- **LNB Type:** Set LNB Type, press [◀/▶] button to switch. Default set to UNIVERSAL.
- **LO.LOW:** Show the low local oscillator value. Use digital button to input the LO.LOW once the LNB Type is customized.
- **LO.HIGH:** Show the high local oscillator value. Use digital button to input the LO.HIGH once the LNB Type is customized.
- **22K:** Set 22K status. Press [◀/▶] button to switch between ON/OFF/Auto. Default set to Auto.
- **LNB Power:** Set the antenna power. Press [◀/▶] button to switch between Auto/13V/18V/OFF. Default set to Auto.
- **Switch Type:** Set DiSEqC type. Press [◀/▶] button to switch between None/DiSEqC1.0/ DiSEqC1.1. Default set to None.
- **Switch Input:** Set DiSEqC1.0 or DiSEqC1.1's input port. Default set to None.
- **Motor:** Set antenna motor type. Press [◀/▶] button to switch between Fixed / DiSEqC1.2/USALS. Default set to Fixed.

Press [OK] to enter to Positioner Set-up menu during Motor set to DiSEqC1.2.



- **Satellite:** Show current satellite name.
- **Transponder:** Set the transponder to detect the positioned. Press [◀/▶] to switch between transponders.
- **Move:** Set and show the antenna moving direction. Press [◀] to step to East and [▶] to West. Press [◀] or [▶] twice rapidly to move continually.
- **Center position:** Press [OK] to move the LNB to centre position.
- **Set limit:** Set the limitation of LNB move direction. Press [◀/▶] to switch between Disable/East/West.
- **Save:** Press [OK] to save current position.

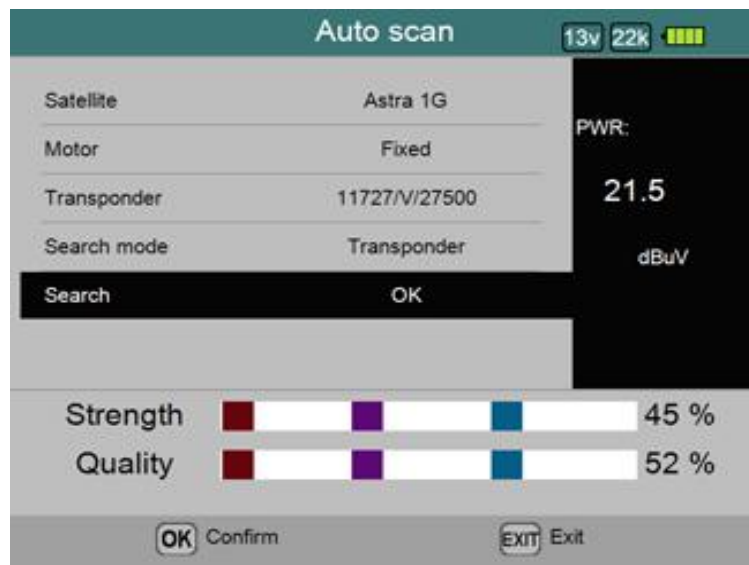
Press [OK] to enter to GOTO X SETUP-UP menu during Motor set to USALS.



Press [▲/▼] to move cursor up or down.

- **Longitude:** Input the longitude directly by 0~9 numeric buttons.
- **Location:** Set the location. Press [◀/▶] to switch between West/East.
- **Latitude:** Input the latitude directly by 0~9 numeric buttons.
- **Hemisphere:** Set the hemisphere. Press [◀/▶] to switch between South/North.
- **Move to position:** Press [OK] to move to your setting position.

5. Press [OK] on <Auto Scan> option to enter dish set-up menu.

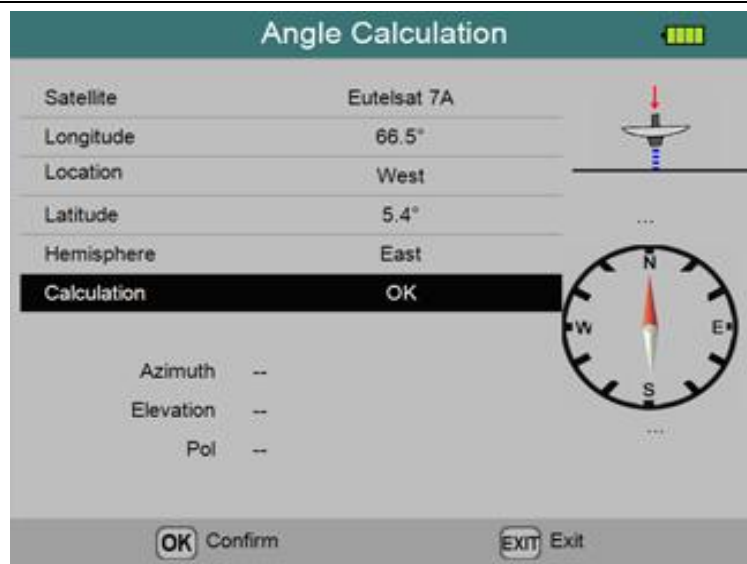


Press [▲/▼] to navigation.

- **Satellite:** Select the satellite you want to find by [◀/▶] or press [OK] to enter the satellite list to select.
- **Motor:** It is defaulted set for “DISH SET-UP” menu. It was not allowed to modify unless you enter “DISH SET-UP” menu.
- **Transponder:** Select the transponder you want, the LOCK light turns on and the warning rings when it was switched to the TP which has signals.
- **Search mode:** Select the channel mode which you want to search. Press [◀/▶] to switch between All channels and FTA.
- **Search:** Select search scope, Satellite /Transponder/Blind. Press [OK] to start scan channels.

2.5 Angle Calculation

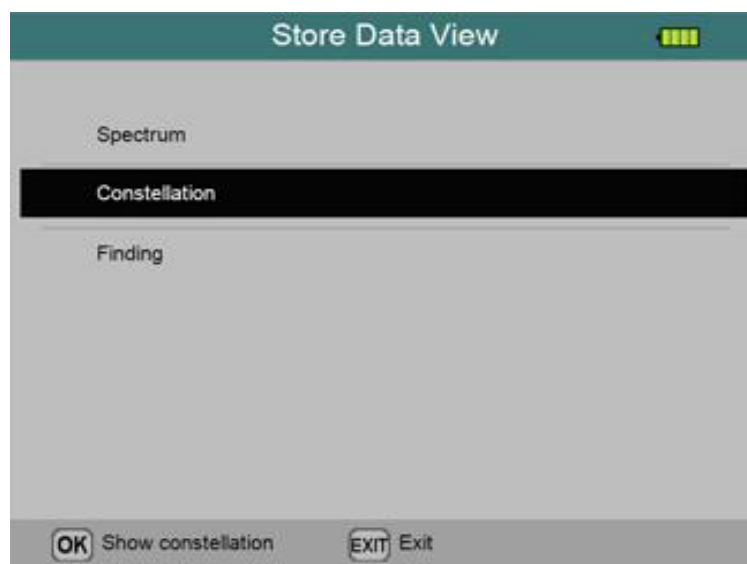
1. Press the [MENU] to display the main menu.
2. Use [▲/▼] to move cursor, press [OK] on <Angle> option, the following window will appear.



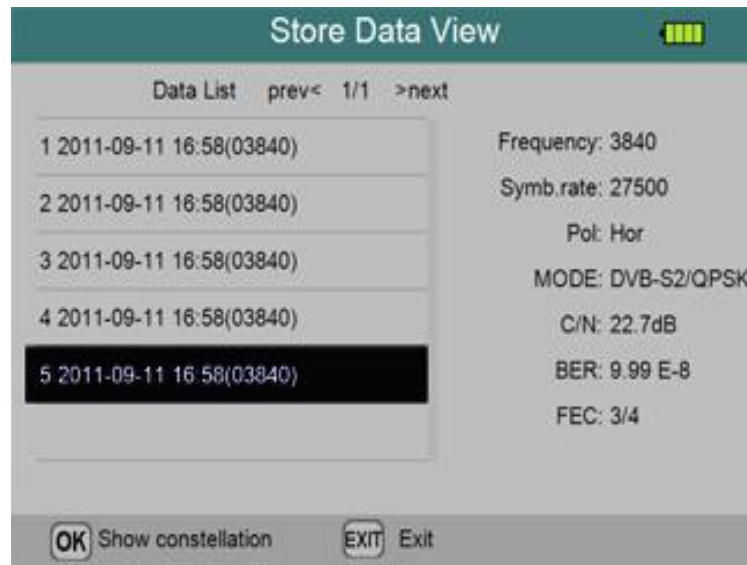
- **Satellite:** Select the satellite you want to find by [◀/▶] or press [OK] to enter the satellite list to select.
- **Longitude:** Input the longitude directly by 0~9 numeric buttons.
- **Location:** Set the location. Press [◀/▶] to switch between West/East.
- **Latitude:** Input the latitude directly by 0~9 numeric buttons.
- **Hemisphere:** Set the hemisphere. Press [◀/▶] to switch between South/North.
- **Calculation:** Press [OK] to calculate the Azimuth, Elevation and Pol. The results will be display both by Text and Pictue.
 - Azimuth:** Show the azimuth of the chosen satellite.
 - Elevation:** Show the elevation of the chosen satellite.
 - Polarity:** Show the polarity angel of the chosen satellite

2.6 Store Data View Menu

1. Press the [MENU] to display main menu.
2. Press [OK] on <Store> option to enter Store Data View menu.



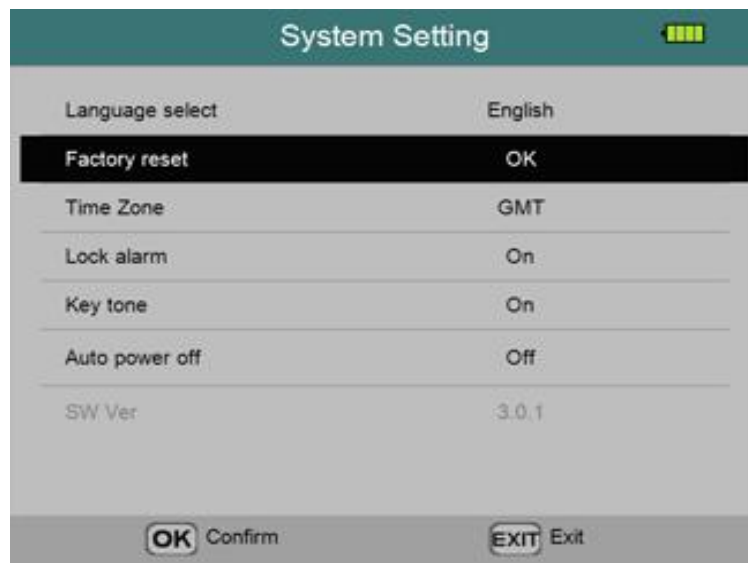
3. Press [OK] on <Spectrum> to show store spectrum data or show the constellation data.



4. Press [\blacktriangle / \blacktriangledown] to select the figures you want to display.
4. Press [\blacktriangleleft / \blacktriangleright] to turn pages for Data List.
5. Press [F3] to delete the selected records.
6. Press [OK] to enter the constellation/spectrum analyzing interface for current records.

2.7 System Setting

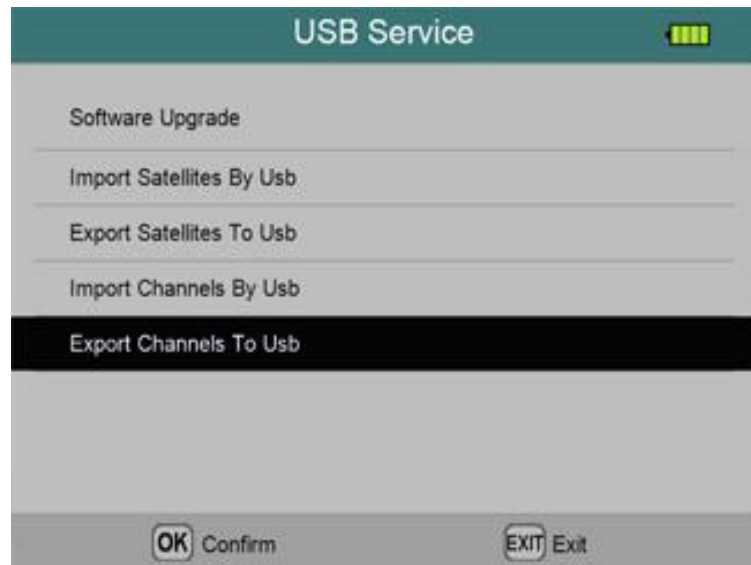
1. Press the [MENU] to display the main menu.
2. Press [OK] on <System> option to enter system setting menu.



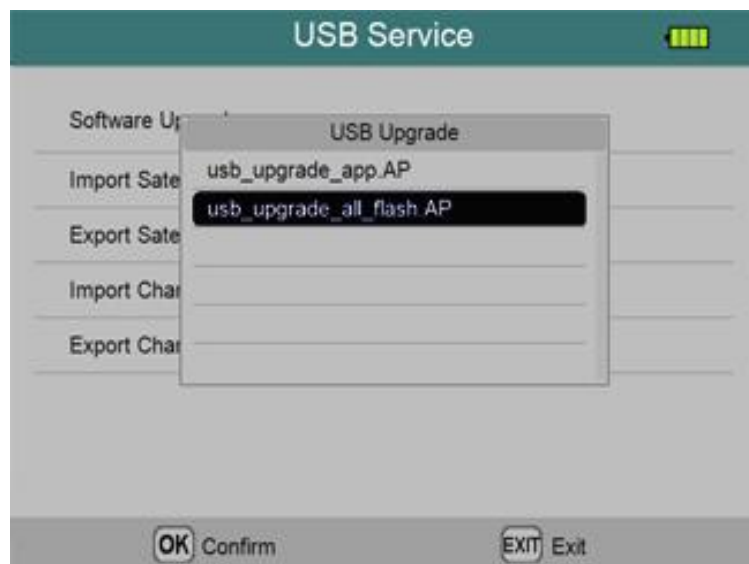
- **Language select:** Set the OSD language. Press [\blacktriangleleft / \blacktriangleright] to switch between available languages. Default set to English.
- **Factory reset:** Press [OK] to pump factory reset confirm dialog. Press [OK] again to do reset or [Exit] to cancel.
- **Time Zone:** Set the local time zone. Press [\blacktriangleleft / \blacktriangleright] to switch options. Default set to GMT.
- **Lock alarm:** Press [\blacktriangleleft / \blacktriangleright] to set the lock alarm On or Off. Default set to On.
- **Key tone:** Press [\blacktriangleleft / \blacktriangleright] to set the key tone On or Off. Default set to On.
- **Auto power off:** The finder will power off according to your setting. Press [\blacktriangleleft / \blacktriangleright] to switch options. Default set to Off.
- **SW Ver.:** Show the software version.

2.8 USB Service

1. Press the [MENU] to display the main menu.
2. Press [OK] on <USB> option, the following window will appear.



3. Press [OK] on <Software Upgrade>, all the available files in plugged USB stick will be listed in a dialog, please choose the correct one to upgrade.



4. Press [OK] on <Import Satellites By USB>, all the available files in plugged USB stick will be listed in a dialog, please choose the correct one to import.
5. Press [OK] on <Export Satellites By USB>, all the satellites and transponder parameters in the finder will be export to USB stick.
6. Press [OK] on <Import Channels By USB>, all the available files in plugged USB stick will be listed in a dialog, please choose the correct one to import.
7. Press [OK] on <Export Channels By USB>, all the channels in the finder will be export to USB stick.

2.9 Channel List

1. Press [OK] button to enter all channels list in video playing menu.



2. Press [▲/▼] to navigate between channels and press [OK] button to play your selected channel in video playing menu (whole screen mode).
3. Press [F1] to find channels by alphabet.
4. Press [SAT] to switch channel list between selected single satellite list and all channel list.



5. Press [F3] to enter to channel edit menu.

2.10 Channel Edit

1. Press [OK] in video playing menu, and then press [F3] to enter to channel edit menu.



- **Move:** press [F1] to sign the channel, press [▲/▼] to move to the position which you want to move to, and then press [OK] to confirm;
- **Lock:** press [F2] to lock or unlock the focused channel;
- **Delete:** press [F3] to delete or undelete the focused channel;
- **Satellite switch:** Press [SAT] to switch channel list between selected single satellite list and all channel list.

The device will save all modification during exit.

3. Specifications

Identification	DVB-S	DVB-S2
Demodulation	QPSK	QPSK, 8QPSK
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8,	1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 5/6, 8/9, 9/10,
Symbol Rate	2~90MSPS	
Input frequency	950-2150MHz	
Input Impedance	75Ω	
Min.level in	35dBuV (noise)	
Max.level in	90dBuV	
LNB Power and Pol	Vertical 13V, Horizontal 18V, 350mA	
Bandwidth	C/Ku-band Selectable	
Edit Satellite	Satellite Name	Maximum support 11 characters in length
	LNB Power	18V, 13V, AUTO, OFF
	LNB Type	Universal, OCS, SINGLE1, SINGLE2, SINGLE3,SINGLE4,SINGLE5 ,Customized
	22KHz	AUTO, OFF, ON
	Switch Type	DiSEQC1.0(LNB1~LNB4), DiSEQC1.1(LNB1~LNB16) SATCR, SCD 2
	Position Type	USALS, DiSEQC1.2
Satellite Finding	Display the signal strength of selected frequency	
Edit TP	Frequency, Symbol Rate, Polarity(950~2150MHz)	
Spectrum Analyzer	Display waveforms of selected frequencies	
Constellation	Constellation with 8PSK or QPSK	
Angle Calculate	Azimuth, Elevation, Polarization	
Interface	HD OUTPUT, USB, DC-JACK, AV in / out, DC 12V 800mA OUTPUT	
Software upgrade	Software upgrade via USB	
Database upgrade	Database upgrade via USB	