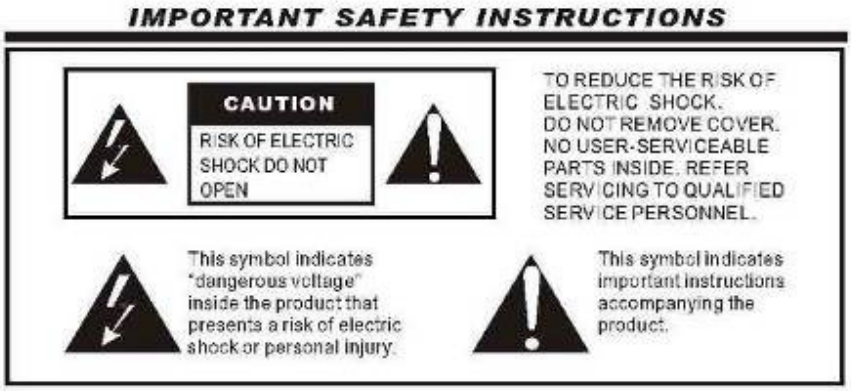
# Kingkong Digital Satellite, Cable, Terrestrial Meter

# Users Manual

**Safety instructions for product with Lithium battery**




**WARNING:** Do not use this product in place where is possible to touch or immerse in water. Do not put the product near flower vase, washbowls, kitchen sinks, laundry tubs, swimming pools, etc.

**WARNING:** Do not place it near the fire or heater. Please keep the working temperature within -20 to 60 degrees centigrade to prevent danger of fire.

**WARNING:** As unit is with rechargeable lithium battery built-in, for the first time use, please plug the power into the DC port until it is full charged and the unit can only be charged with the matched adaptor.

**WARNING:** In case of leakage, overheating, explosion or fire, don't dismantle or change the battery, or solder the battery. Consult your local dealer for technical service if it is required to open

**WARNING:** Don't charge the battery with charging source that exceeds the specified range

**WARNING:** Do not use the charger when there is short circuit or damage of the power source, or it may possibly lead to damage to the charger, fire or even electric shock.

**WARNING:** Don't charge in wet environment, for example bathroom. Keep it away from water containers.

**WARNING:** Don't pull the adaptor, touch the power or power socket with wet hand in case of electric shock, or other personal injury.

**WARNING:** Don't charge in the environment where there is direct sunlight, high temperature, wet air or high vibration. Please make sure charging temperature range from 0 to 45 degrees centigrade.

**WARNING**: Please charge every three mouths when stored for a long time

without use, otherwise it may possibly damage the product. Please make sure storing temperature range from -20 to 45 degrees.
**Note:** To ensure proper use of this product, please read this User manual carefully and retain for further reference.

**Attachments:** Never add any attachments or equipment without manufacturer consent, or it may result in the risk of fire, electric shock, or other injury.

**Object and Liquid Entry:** Never open to put any kind of objects into this METER, as they may touch dangerous voltage points or short-out parts that could result in fire or electric shock. Never spill any liquid on the METER.

**Note:** Moisture may be formed on the lens in the following conditions:
- when the unit is suddenly moved from a cold environment or an air-condition room to a warm place.
- after a heater has been turned on immediately.
- in a steamy or very humid room.

If the moisture forms inside the unit, it may not operate properly. To fix this problem, turn on the power and wait about two hours, until the moisture evaporates.

**Parts Replacement:** When the unit parts need to be replaced, user should make sure the service technician use the replacement parts specified by the manufacturer or having the same characteristics as the original part. Unauthorized replacement may put the unit in the risk of fire, electric shock or other hazards.

**Safety Check:** When all the maintenance and repairs are done, user is required to request the service technician to conduct an overall safety check to ensure the machine is in the proper condition.

## 2. Environment protection

**Attention!**
The symbol above indicates that the used products cannot be mixed with other waste, and it requires proper disposal..
**Information on Disposal for Users (private households) in the European Union**
Used electrical and electronic equipment must be treated separately and in

accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment. Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge. In some countries, your local retailer may also take back your old product without charge if you purchase a new similar one. Please contact your local authority for further details. If your electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements. By disposing of this product correctly, you will help ensure that the waste undergoes the necessary treatment, recovery and recycling, to prevent potential negative effects on the environment and human health, which could otherwise arise due to inappropriate waste handling.

## 3. Basic parameter

| | |
|---|---|
| Rated Capacity | 4100mAH |
| Storing temperature | -20℃～40℃ |
| Charge temperature | 0℃～45℃ |
| Working temperature | -20℃～60℃ |

| SYMBOL | CHARGE LEVEL |
|---|---|
|  | 75%~100% |
|  | 30%~75% |
|  | 10%~30% |
|  | <10% |
|  | Charge in progress |

**Battery Charging**

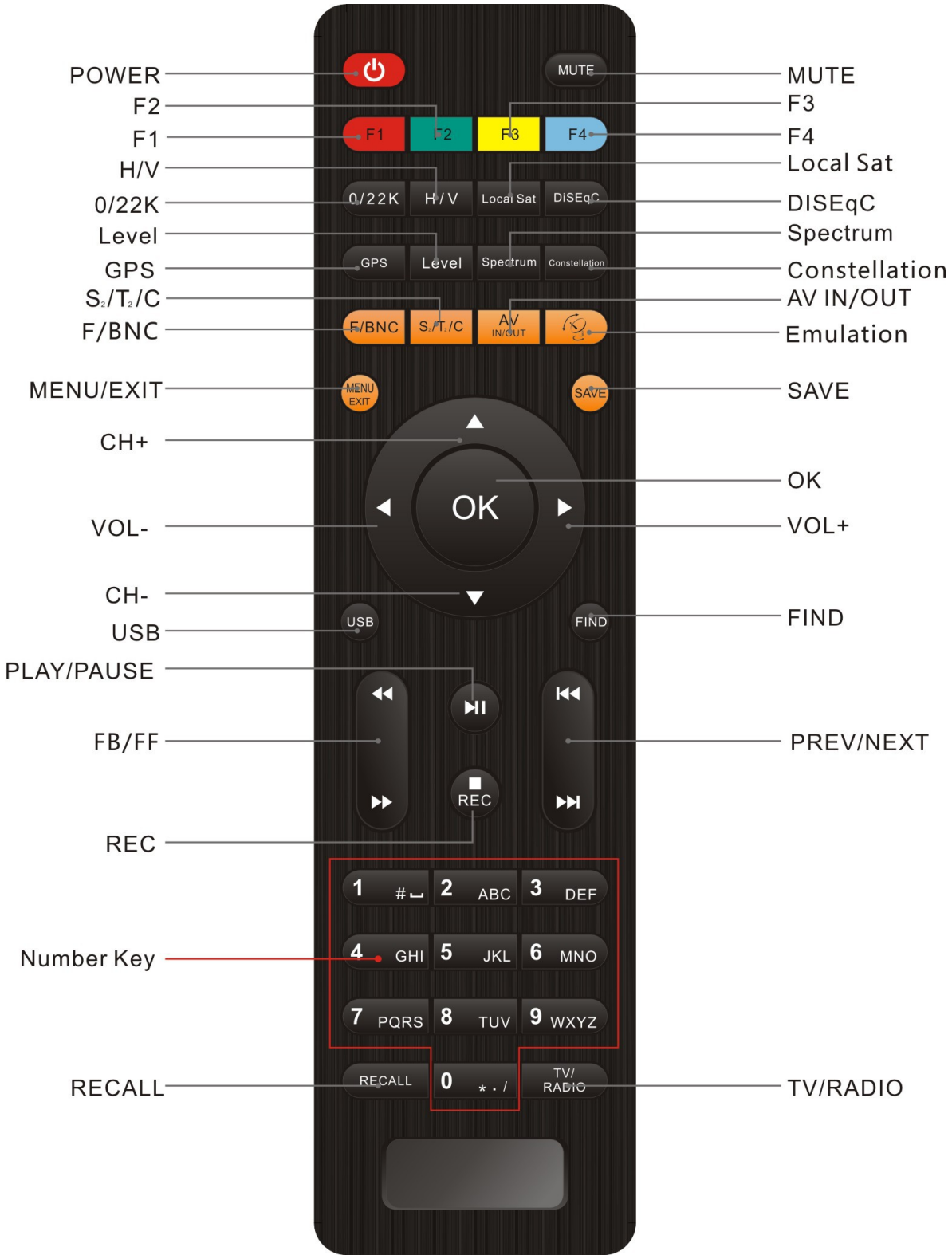
To fully charge the battery, connect the instrument to the external DC charger without activating the power on process. The time it takes to recharge it depends on the condition of the battery, if they are very low, it will take about 4 hours and the charger indicator should remain lit.

When the battery charging process is completed with the instrument Off, the fan will stop.

**Importance:**

The instrument battery needs to be kept charging between 30% and 50% of its capacity when it is not in work. The battery needs to be fully charged for best result.

# Remote Controller




1. **POWER:** To switch OFF the power supply

2. **MUTE:** To mute or restore the sound
3. **F1/F2/F3/F4**: Multi-function keys in menu mode
4. **0/22K:** switch 22k ON or OFF during watching TV programs
5. **H/V:** switch polarity to Horizontal or Vertical during watching TV programs
6. **Local Sat:** display the local sat menu during watching TV programs
7. **DiSEqC:** press this key move to DiSEqC kits menu
8. **GPS:** press this key move to GPS menu
9. **Level:** display the Level menu during watching TV programs
10. **Spectrum:** display the spectrum menu during watching TV programs
11. **Constellation:** display the constellation menu during watching TV programs
12. **F/BNC:** To switch BNC or F-type connect
13. **S/T2/C:** To switch DVB-Satellite, Cable or Terrestrial TV system
14. **AV IN/OUT:** To switch AV signal input or output
15. **Emulation:** Display the emulation menu during watching TV programs
16. **MENU/EXIT:** Press this key can exit the current menu to last menu or close the current
17. **SAVE:** Press save key to save the screenshot
18. **CH+/CH-:** To turn the next or previous channel and to move the highlight bar for selecting options to upward or downward on the menu
19. **VOL+ /VOL-:** To adjusts the sound volume up or down and to move the highlight bar for selecting options to right or left on the menu
20. **USB:** display the USB menu during watching TV programs
21. **FIND:** display the SAT find menu during watching TV programs
22. **FF/FB:** To play back or forward faster
23. **PLAY/PAUSE:** to pause and play the file when you press play / pause key
24. **REC:** To make record of play and STOP recording
25. **PREV:** To change into the previous play
26. **NEXT:** To change into the next play
27. **Number Key:** To select TV/Radio channel and enter to programming parameters by the numeric keys and to input the character by the alphabetical keys.
28. **RECALL:** To return to the previously viewed channel
29. **TV/RADIO:** To switch between TV and RADIO.

# Features

Full Measurement for DVB-S2 & DVB-T2 & DVB-C
Asynchronous Serial Interface Supported
Annex A/C Supported by DVB-C tuner
Real-time and multi-Analyzing Spectrum
Constellation Chart
GPS /LCN
BER, S/N (MER), FEC Measurement
Auto Search, Blind Search, NIT Search, Manual Search
Satellite Name & Degree Auto Detective & Display
Auto DiSEqC1.0/DiSEqC1.1/DiSEqC1.2, USALS
MDU & Unicable
Local satellites list showing automatically
Transport Stream Recording Supported
H.264 HDTV 1080P
AV-OUT for External Display, TV
AV-IN Function for STB
Easy upgrading by Ethernet & USB & RS232 Port
Satellite List Editable by Editor via PC
FTP, Data Backup
Conax/CA Embedded
Common Interface Supported
13V/18V, 22K supported
Dish Antenna Angle Calculator
Multi-Language OSD: English, German, French, Spanish, Italian, etc.
Global/Local Satellite list
Build-in GPS receiver
7 Inch High Definition TFT LCD Screen
LED (Red/Green) & Audio Indication for Signal Lock

# Glossary

**Selecting the measurements**

The type of measurements available depends on the operating band (cable/terrestrial of satellite).

**DVB-S/S2 System**

**Level:** Level measurement of the currently tuned carrier

**C/N:** Ratio between the modulated signal power and the equivalent noise power for a same bandwidth

**MER:** Modulation error ratio

**CBER:** BER measurement (Bit error rate) for the digital signal before error correction (BER before FEC)

**VBER:** BER measurement (Bit error rate) for the digital signal after error correction (BER before Viterbi)

**DVB-C and DVB-T system**

**Chanel power:** Channel power is measured assuming that power spectral density is uniform throughout channel bandwidth.
To measure it correctly, it is indispensable to define the CHANNEL BW.

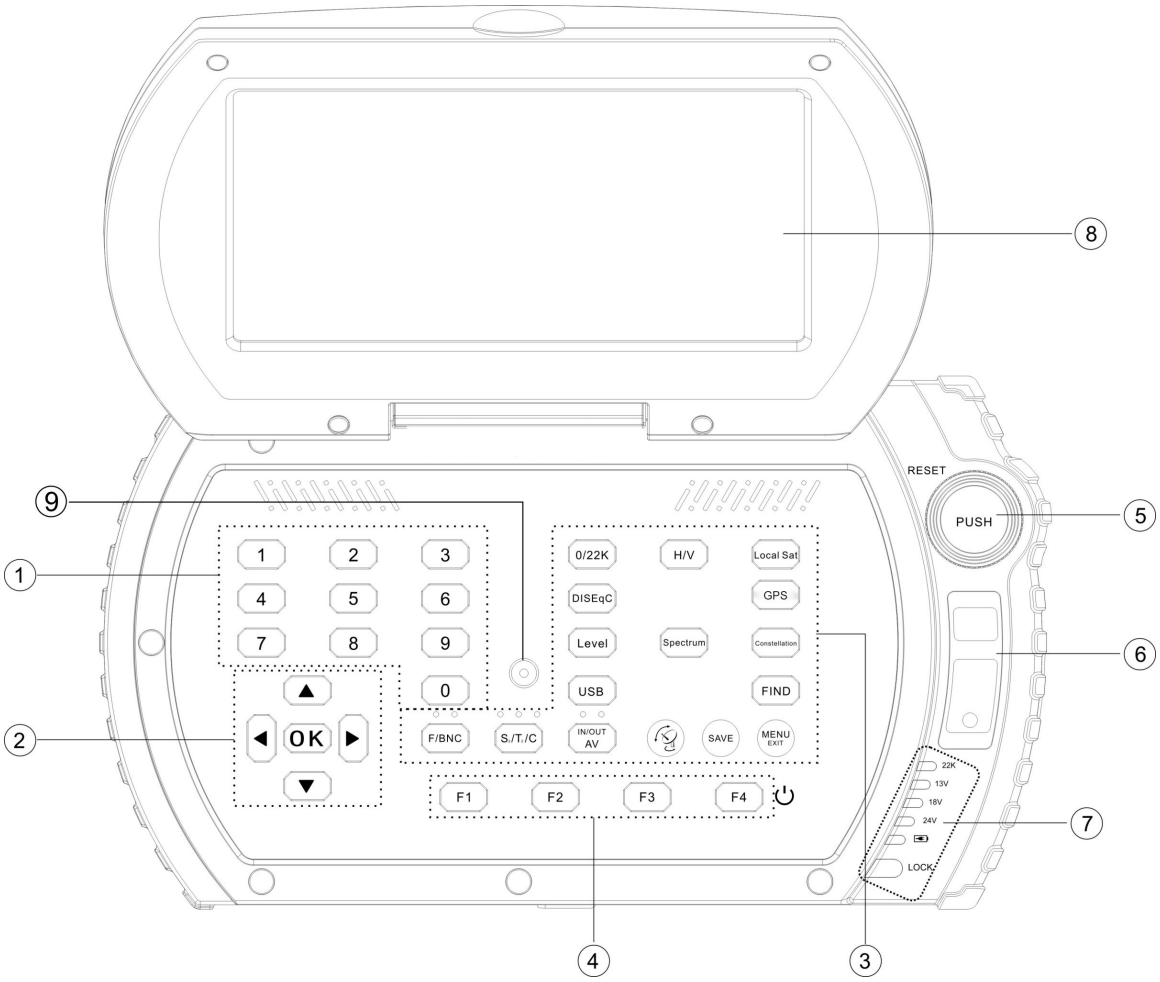
**C/N:** out-channel measurement, Noise level is measured at $f_{noise}=f_{tuning}\pm 1/2*$ Channel BW, to measure it correctly digital channel must be tuned at its central frequency

**MER:** Modulation error ratio

**CBER:** BER measurement (Bit error rate) for the digital signal before error correction (BER before FEC)

**VBER:** BER measurement (Bit error rate) for the digital signal before error correction (BER after FEC)

## Front panel




(1) **Number keyboard**: press number key to select channel

(2) **Cursors**: through the different menus and submenus that appear in the monitor

(3) **Main key board**: 16 keys to select functions and entering alphanumeric data

**0/22K**: switch 22k ON or OFF during watching TV programs

**H/V**: switch polarity to Horizontal or Vertical during watching TV programs

**Local sat**: display the local sat menu during watching TV programs

**DiSEqC**: press this key move to DiSEqC kits menu

**GPS**: press this key move to GPS menu

**Level**: display the Level menu during watching TV programs

**Spectrum**: display the spectrum menu during watching TV programs

**Constellation**: display the constellation menu during watching TV programs

**USB**: display the USB menu during watching TV programs

**Find**: display the SAT find menu during watching TV programs

: To switch BNC or F-type connect

The LED remains lighted when the equipment works with the connected type

: To switch DVB-Satellite, Cable or Terrestrial TV system

The led remains lighted when the equipment works with the TV system

: To switch AV signal input or output

The led remains lighted when the equipment works with the AV signal status


: Display the emulation menu during watching TV programs

: Press save key to save setting parameters

: Press this key can exit the current menu to last menu or close the current menu, and display the main menu during watching TV programs

(4) **Function key**: different function on the submenus

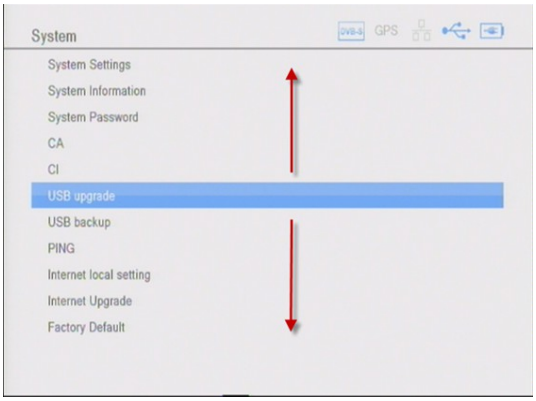
***F4: one of its functions is to power on/off the equipment (press F4 key for 1 to 2 seconds to power on, 2 to 3 seconds to power off)..***

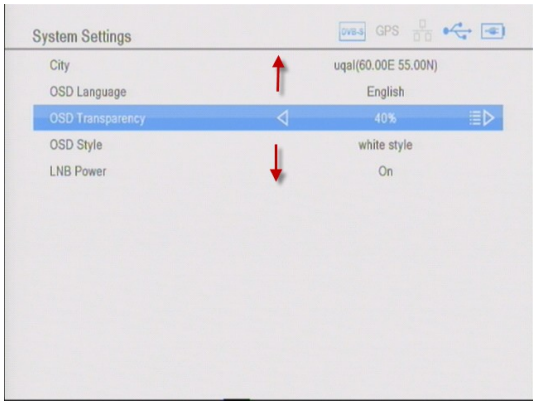
(5) **Rotary selector-button**: this has many different functions:

**a.** Reset button: to forced power off the instrument if any irregularity happening during operating process (hold the rotary selector pressed for six seconds);

**b.** Press one time to enter to the menu; turning, moving between the various on screen menus and submenus, and valid of the different options.

*Example:*




When the rotation - movement in the menu or submenu (up / down), by pushing button - enter to submenu; by the rotation movement in submenu; by pushing selection an item in submenu and go back to previous menu level.

(6) **LED display**: display signal strength

When the equipment is connected to the POWER, the charger LED remains lighted

(7) **Indicator light**: display LNB status

(8) **Monitor**: 7 Inch High Definition TFT LCD Screen

(9) **Gradienter**: measure if the device has been placed horizontal

## Interface

**HDMI**: Audio and Video output socket for TV set with HDMI Input Jack only.

**Ethernet**: Network port, you can get a new software update from this port.

**RS232**: To transfer the data to PC by RS-232 cable

**CA**: supported Conax condition access

**USB**: 1 USB2.0 Port, USB media player to play back the media in USB flash disk or USB HDD or USB card reader with memory card.

**CI**: support common interface

**AV IN/OUT**: to switch AV signal input for equipment or output for external equipment

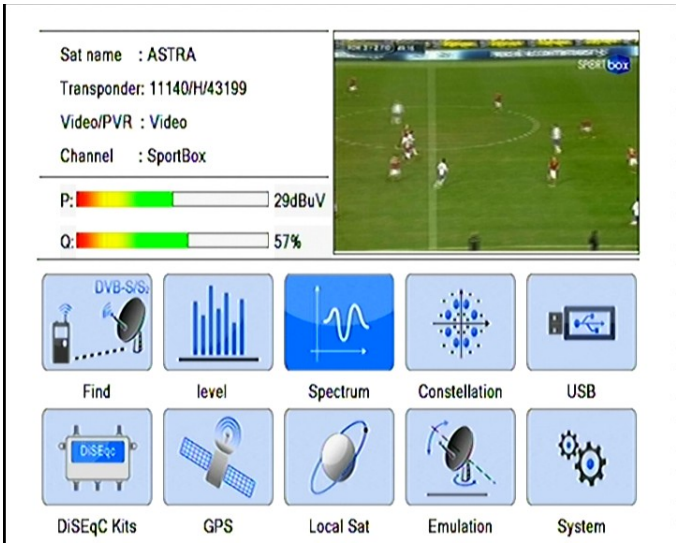
**DVB-S/S2 F-Female connector**: Connect the coaxial cable from LNB of your Dish by F-female connector

**DVB-S/S2 BNC**: Connect the coaxial cable from LNB of your Dish by BNC connector

**T2/T/C connector**: Connect the coaxial cable

# Introduction of Main Menu

## 1. DVB-S/S2 System




There are ten menu items in the Main menu, as following:

1) **Sat Find**:
   Used for program searching.
2) **Level**:
   Used for connecting the antenna and set DiSEqC
3) **Spectrum**:
   Used to display and save the spectrum within a frequency range
4) **Constellation**:
   Used to display the signal phase and quality of current frequency
5) **USB**:
   Used to display and save the spectrum within a frequency range
6) **DiSEqC Kits**:

Used to display the signal phase and quality of current frequency

7) **GPS**:

Used to show local geography information and the number of GPS Sat in use

8) **Local Sat**:

Used to view and search the local satellite

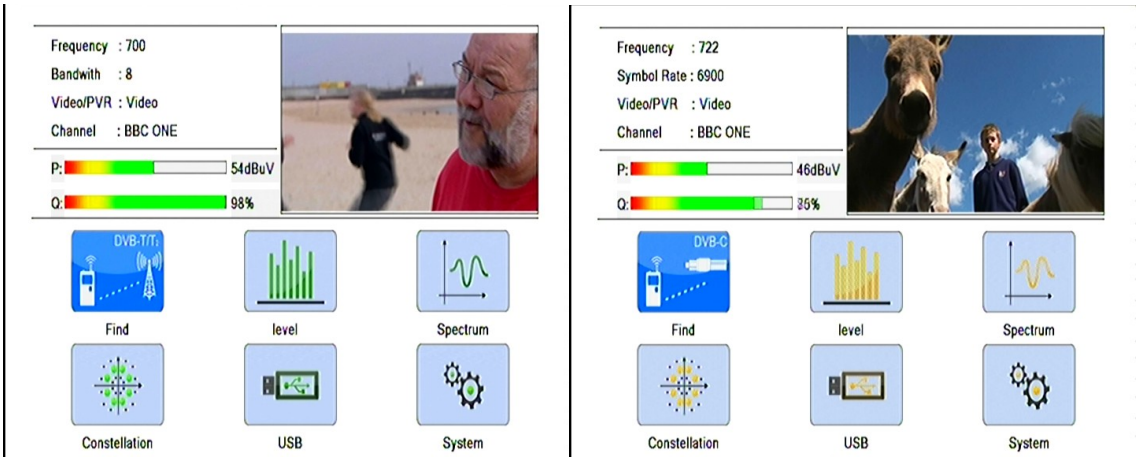
9) **Emulation**:

Used for calculating the required azimuth, elevation angle and polarization angle.

10) **System**:

Including property settings for the system, USB upgrade or backup, Internet setup and upgrade, and restore to factory defaults.

## 2. DVB-T System / DVB-C System




1) **Find**:

Used for program searching.

2) **Level**:

Used for connecting the antenna and set DiSEqC

3) **Spectrum**:

Used to display and save the spectrum within a frequency range

4) **Constellation**:

Used to display the signal phase and quality of current frequency

5) **USB**:

Used to display and save the spectrum within a frequency range

6) **System**:

Including property settings for the system, USB upgrade or backup, Internet setup and upgrade, and restore to factory defaults.

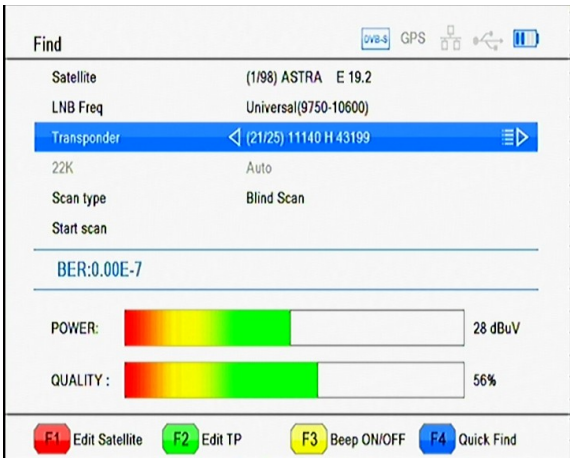
# Operating Description

# Ⅰ. SAT FIND

## 1. DVB-S/S2 System

On the DVB-S/S2 system, press S2/T2/C key to switch other system when the focus on the main menu.

### 1.1 Description of Menu Item




**1) Satellite**:

Options of the satellite name and satellite longitude. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired satellite.

**2) LNB Freq**:

LNB Frequency option. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired LNB frequency.

**3) Transponder**:

Transponder option which include three parameters: frequency, polarization and symbol rate. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired transponder.

**4) 22K**:

22K switch which include **On** and **Off** options. There is no need to make choice as it becomes **Auto** when the LNB Freq is selected **Universal**.

**5) Scan type**:

Search Type options. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired search type.

**6) Start scan**:

Press the button, it will start program searching by the scan type you choose.

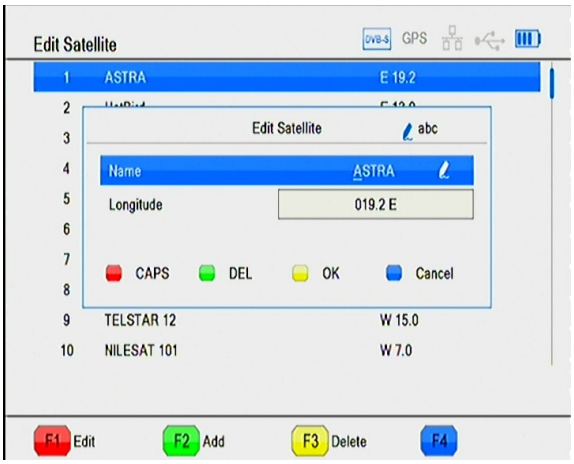
### 1.2 Description of Menu Information

**1) Level**:
Show the strength of signal.
**2) Quality**:
Show the quality of signal.
**3) BER**:
Short of Bit Error Rate, show the error rate of signal.
**4) Sat Name Identify**:
Show satellite name or satellite longitude detected from the network automatically.

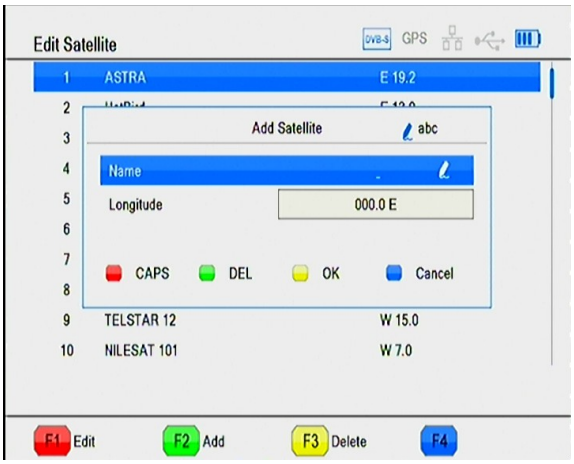
## 1. 3 Description of Menu Help

**1) F1**:
Press to enter the Satellite edit menu.


On the satellite edit menu:
Press [**RED**] button to Edit satellite when the cursor on the satellite list, you can edit the satellite name and longitude



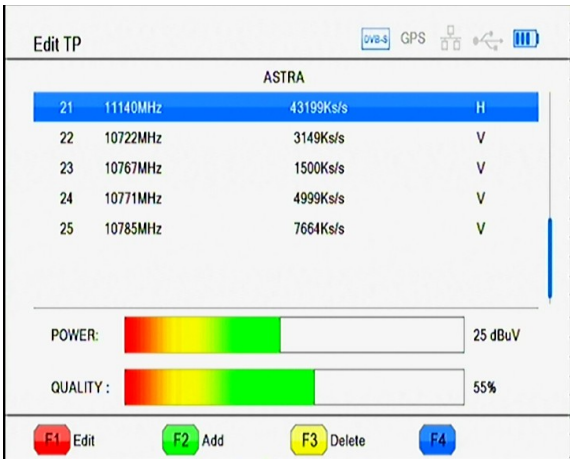
Press [**Green**] button to add the satellite



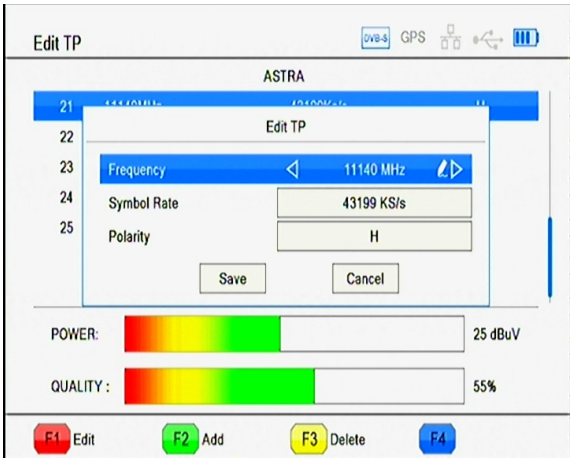

Press [**Blue**] button to delete the satellite


**2) F2**:

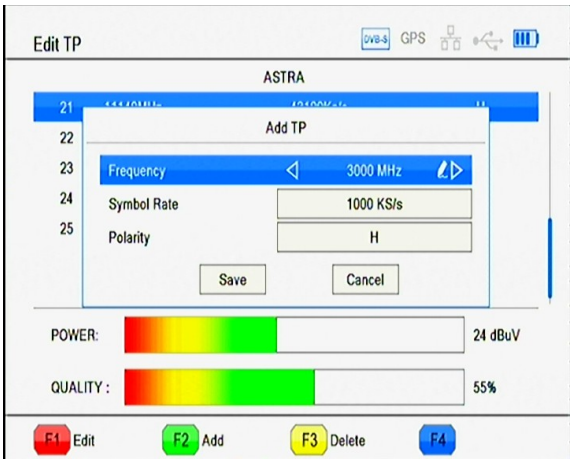
Press to enter the transponder edit menu.



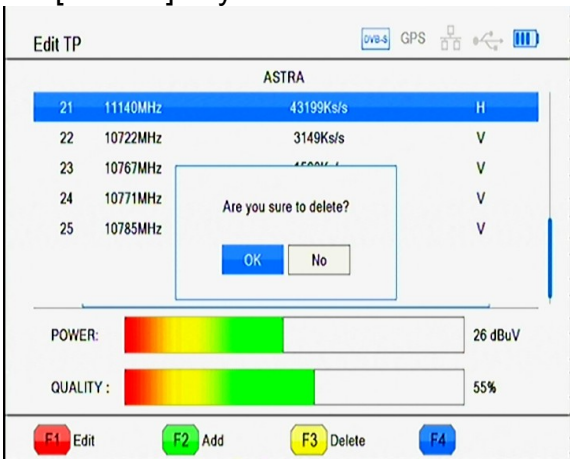
On the transponder edit menu:
- [**Red**] key: To edit TP Frequency / Symbol Rate / Polarity




- [**Green**] key: To add a new TP



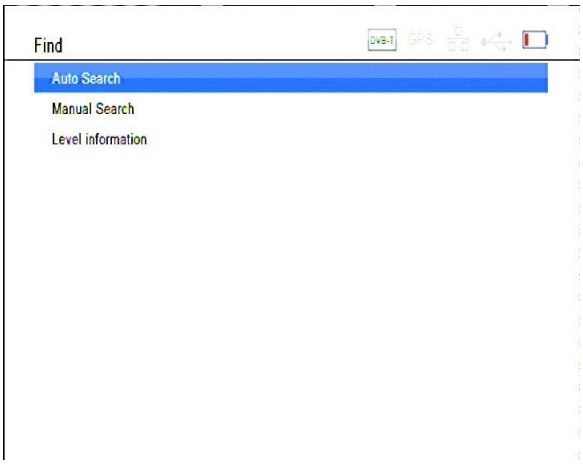

- [**Yellow**] key: To delete the certain TP which you don't want.



- [**Blue**] key: It is used to begin to search a selected TP in the TP list which is highlighted.

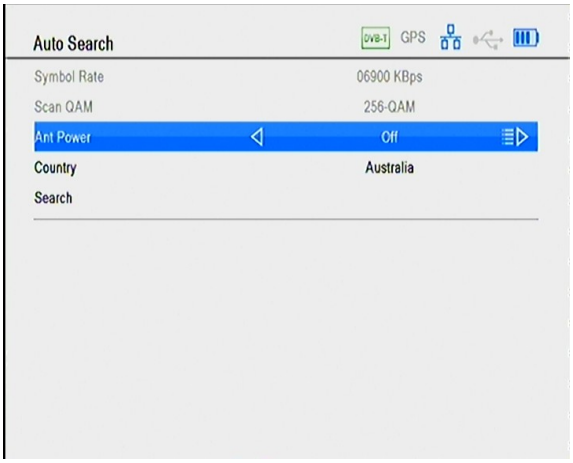
## 2. DVB-T/T2 System

To operate the system DVB-T/T2, click **S2/T2/C** until the main menu and enter the sub-menu **Find.** Here you can select the type of search: **Automatic search**, **Manual search** or look at signal **Level information**, to make lists of favorite needed to assess the level of channels.




### 2.1 Description of Menu Item

### 1) Auto search




On the Auto search mode, the equipment will scan channel by default transponder list.

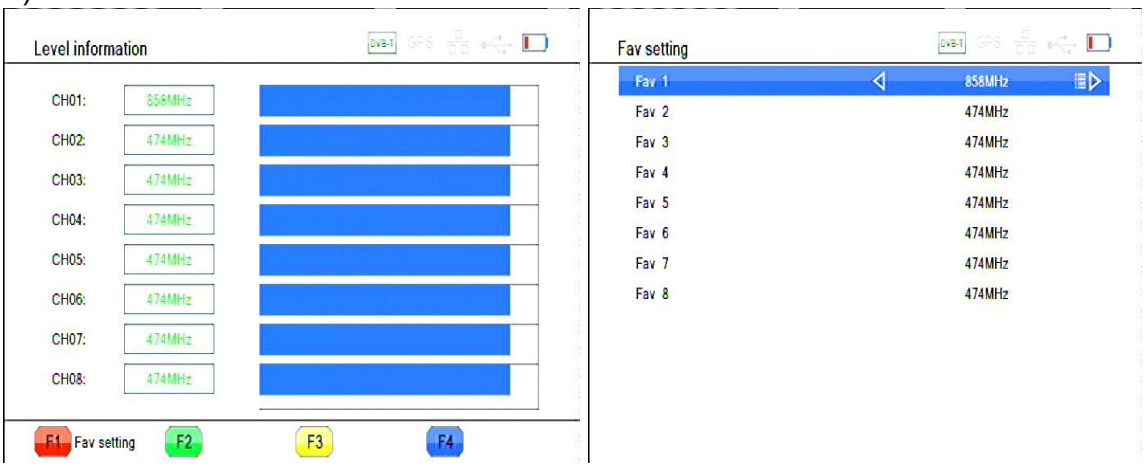
### 2) Manual search


When the cursor on the Search, press OK key to start channel search by current transponder.

The manual search support NIT search when your select Network search mode is ON.

The Antenna power mode support “OFF/5V/12V/24V”.

3) Level information




On the level information menu, it will display some transponder level information.

You can press F1 button to setting transponder form CH01 to CH 08.

## 2.2 Description of menu information

**Auto search:**

**1) Symbol Rate:**

Determined automatically.

**2) Scan QAM:**

Selected automatically.

**3) Ant Power:**

Allow you to power the amplifier active antenna via coaxial cable. Antenna to the amplifier can be submitted: **5V, 12V, 18V, 24V** or off the power if the antenna is passive.

**4) Country:**

Allow you to choose a standard for digital terrestrial broadcasting for different countries.

**5) Search:**

Allow automatic channel search, according to the selected standard.

**Manual search:**

**1) Frequency:**

Allow you to enter the desired frequency to search using the number buttons, or select a frequency from the list of frequencies.

**2) Bandwidth:**

Allow you to select the width of the digital signal. Available to select three values: **6MHz, 7MHz** and **8MHz**.

**3) Network Search:**

To search for all channels on the same frequency of the data transmitted over the network provider for all frequencies.

**4) Ant Power:**

Allow you to power the amplifier active antenna via coaxial cable. Antenna to the amplifier can be submitted**: 5V, 12V, 18V, 24V** or off the power if the antenna is passive.

**5) Search:**

Allow you to search channels for the selected criteria.

### 2.3 Description of the help menu

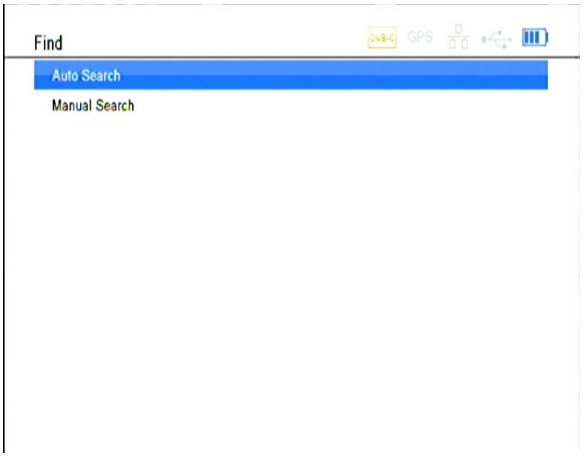
**1) F1:**

Press **F1** to edit a list of favorite frequencies. There can be selected eight preferred frequencies. Select one of eight frequencies, click **OK**, and select from the list the desired frequency for the entry in the memory of favorite frequencies.

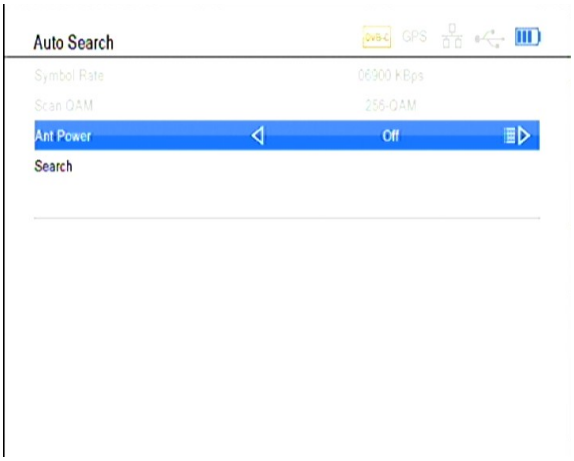
## 3. DVB-C System

On the DVB-C system, press **S2/T2/C** key to switch other system when the focus on the main menu.

### 3.1 Description of Menu Item

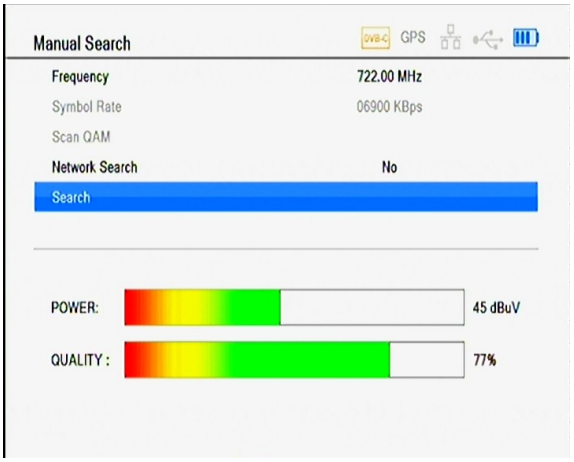



### 1) Auto search




On the auto search mode, the equipment will scan channel by default transponder.

### 2) Manual search




On the manual search mode, the equipment will scan channel by current parameter.

The equipment will detector the symbol rate with network.

### 3.2 Description of the Menu Information

**1) Symbol Rate:**

Determined automatically.

**2) Scan QAM:**

Selected automatically.

**3) Search:**

Allows automatic channel search.

# II. Level

## 1. DVB-S/S2 System

On the DVB-S/S2 system, press **S2/T2/C** key to switch other system when the focus on the main menu


### 1. 1 Description of Menu Item

**1) Satellite:**

Options of the satellite name and satellite longitude. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired satellite.

**2) LNB Freq:**

LNB Frequency option. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired LNB frequency.

**3) Transponder:**

Transponder option which include three parameters: frequency, polarization and symbol rate. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired transponder.

**4) 22K:**

22K switch which include **On** and **Off** options. There is no need to make choice as it becomes **Auto** when the LNB Freq is selected **Universal**.

## 1. 2 Description of Menu Information

**1) C / N:**

Measurement of the carrier-frequency signal-to-noise.

**2) Power:**

Display the channel power.

**3) MER:**

It is the ratio of total power perfect digital channel to the power coming into the real input signal to the erroneous packets. The higher the value MER, the better the signal.

**4) BER:**

Shows the number of erroneous bits received divided by the total number of bits transmitted.

## 2. DVB-T/T2 System

On the DVB-S/S2 system, press **S2/T2/C** key to switch other system when the focus on the main menu.


## 2. 1 Description of Menu Item

### 1) Frequency

When focusing on the Frequency option, press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired frequency.

**2) Bandwidth**

When focusing on the bandwidth option, press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the OK button to select the desired bandwidth.

## 2. 2 Description of Menu Information

**1) C / N**

Measurement of the carrier-frequency signal-to-noise

**2) Power**

Display the channel power

**3) MER**

It is the ratio of total power perfect digital channel to the power coming into the real input signal to the erroneous packets. The higher the value MER, the better the signal.

**4) PBER**

Measurement of BER (error rate) for the digital signal after processing and correction (after decoder Viterbi).

**5) BER**

Show the number of erroneous bits received divided by the total number of bits transmitted.

## 3. DVB-C System

On the DVB-S/S2 system, press **S2/T2/C** key to switch other system.


### 3.1 Description of the menu items

**1) Frequency**

The choice of frequency transmission of digital signals. Click **OK** to display the list of all frequencies, using the cursor keys to select the desired frequency and press the **OK** button to confirm your selection.

**2) Symbol Rate**

Determined automatically.

**3) Scan QAM**

Selected automatically.

### 3.2 Description of the Information Menu

**1) C / N**

Measurement of the carrier-frequency signal-to-noise.

**2) Power**

Display the channel power.

**3) MER**

It is the ratio of total power perfect digital channel to the power coming into the real input signal to the erroneous packets. The higher the value MER, the better the signal.

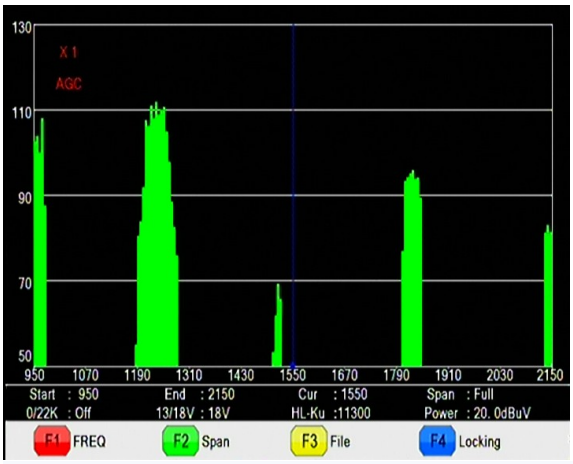
**4) BER**

Shows the number of erroneous bits received divided by the total number of bits transmitted.

# III. Spectrum

## 1. DVB-S/S2 System

### 1.1 Description of Menu Information




**1) Start:**

Start frequency of spectrum.

**2) End:**

End frequency of spectrum.

**3) Cur:**

Current frequency of spectrum, marked with a green vertical line.

**4) Span:**

Frequency coverage of spectrum:

Move the **Rotary selector-button** to moving the focus

Press **Spectrum** button to switch FFT and AGC mode

Press **Level** button to switch different display scale.

By turning the **Rotary selector-button**, you can change the frequency by controlling the movement of the **vertical blue line** and observing the current frequency.

Click on the **Spectrum** to toggle the automatic gain control to manual control.

### 1. 2 **Description of Menu Help**

**1) FREQ:**

Press **F1** key to set **Start** and **End** frequency of spectrum.

**2) Span:**

Press **F2** key to set **Frequency coverage** of spectrum.

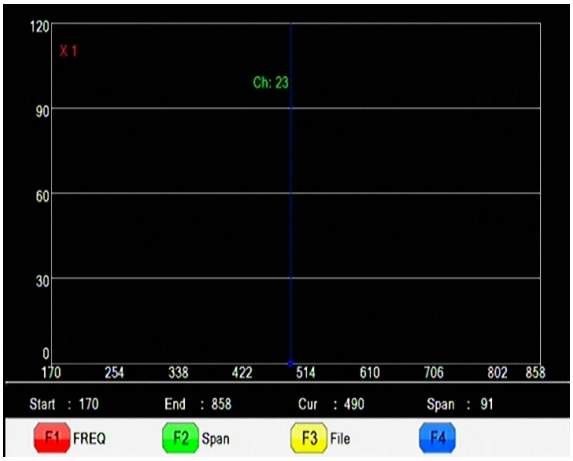
**3) File:**

Press **F3** key to Capture the Current picture and save in the USB device.

**4) Locking:**

Press **F4** key to locking the current frequency.

## 2. **DVB-T/T2 system**




**1) Start:**

Start frequency of spectrum.

**2) End:**

End frequency of spectrum.

**3) Cur:**

Current frequency of spectrum, marked with a green vertical line.

**4) Span:**

Frequency coverage of spectrum:

Move the **Rotary selector-button** to moving the focus

Press **Spectrum** button to switch FFT and AGC mode

Press **Level** button to switch different display scale.

By turning the **Rotary selector-button**, you can change the frequency by controlling the movement of the **vertical blue line** and observing the current frequency.

Click on the **Spectrum** to toggle between displaying the measurement scale.

## 2.1Description of Menu Help

**1) FREQ:**

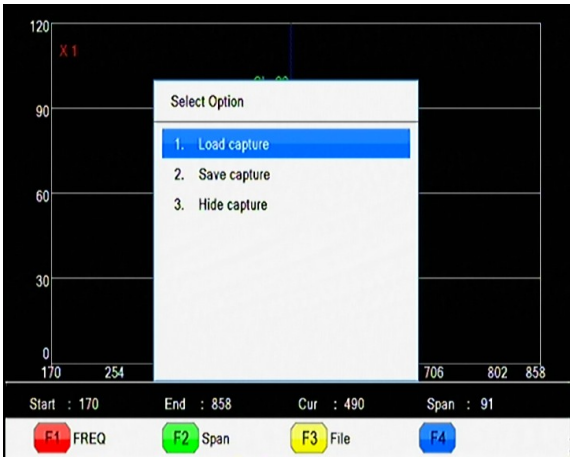
Press **F1** key to set **Start** and **End** frequency of spectrum.

**2) Span:**

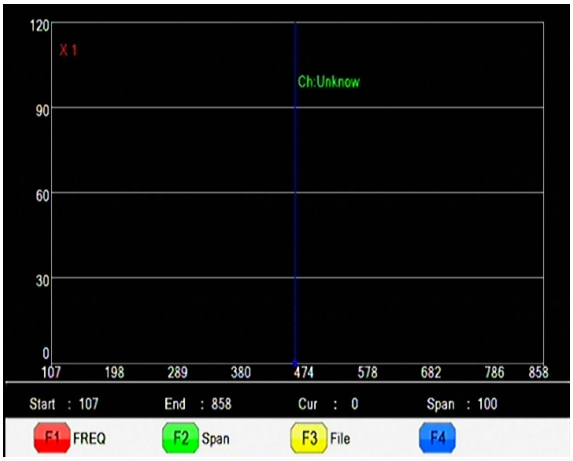
Press **F2** key to set **Frequency coverage** of spectrum.

**3) File:**

Press **F3** key to **Capture** the **Current picture** and save in the **USB** device.




3. **DVB-C System**




**1) Start:**

Start frequency of spectrum.

**2) End:**

End frequency of spectrum.

**3) Cur:**

Current frequency of spectrum, marked with a green vertical line.

**4) Span:**

Frequency coverage of spectrum:

Move the **Rotary selector-button** to moving the focus

Press **Spectrum** button to switch FFT and AGC mode

Press **Level** button to switch different display scale

By turning the **Rotary selector-button**, you can change the frequency by controlling the movement of the **vertical blue line** and observing the current frequency.

Click on the **Spectrum** to toggle between displaying the measurement scale.

### 3.1Description of Menu Help

**1) FREQ:**

Press **F1** key to set **Start** and **End** frequency of spectrum.

**2) Span:**

Press **F2** key to set **Frequency coverage** of spectrum.

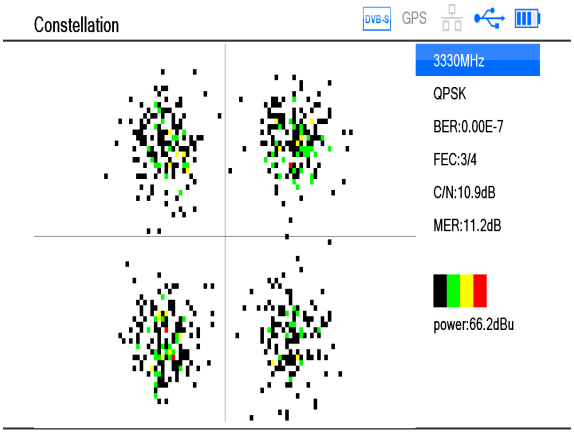
**3) File:**

Press **F3** key to Capture the Current picture and save in the USB device


# IV. Constellation

## 1. DVB-S/S2 system

### 1.1 Description of Menu Information




**1) xxxMHz:**

Frequency of current TP

**2) QPSK:**

Displays the current phase, there may be **QPSK, 8PSK, 16PSK or 32PSK**.

**3) BER:**

Short of Bit Error Rate: show the error rate of signal.

**4) FEC:**

Short of Forward Error Correction, display FEC rate of the current frequency signa.

**5) C/N:**

Displays signal carrier to noise ratio of the current frequency.

**6) MER:**

Display modulation error ratio of the current frequency.

**7) Power:**

Display the signal quality of the current frequency.

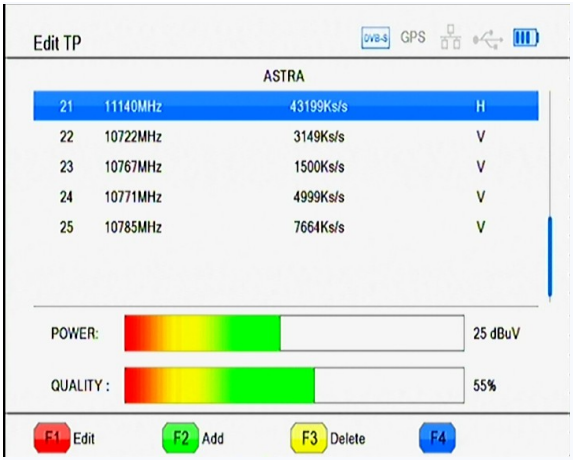
**8) Sat Name Identify:**

Display the actual satellite name and satellite longitude of current frequency when signal is locked.

## 1.2 Description of Menu Help

**1) F1:**

Press to enter the TP LIST menu, choose a certain TP to display its constellation.




2) **F2:**

Press to enter the level menu, which displays information of current satellite constellation, including satellite name, satellite longitude, current TP parameters, C/N, power, MER, BER.


**3) F3:**

Press to caption the current screen

## 2. DVB-T/T2 system


## 2.1 Description of Menu Information

**1) xxxMHz:**

Frequency of current TP

**2) TX Mode:**

Modulation mode

**3) RAGER:**

The number of current carriers received

**4) BER:**

Shows the number of erroneous bits received divided by the total number of bits transmitted.

**5) MER:**

It is the ratio of total power perfect digital channel to the power coming into the real input signal to the erroneous packets. The higher the value MER, the better the signal.

**6) C / N:**

Show the relationship between the modulated signal power and the equivalent noise power at the same bandwidth.

**7) POWER:**

Display the channel power.

## 2.2 Description of Menu Help

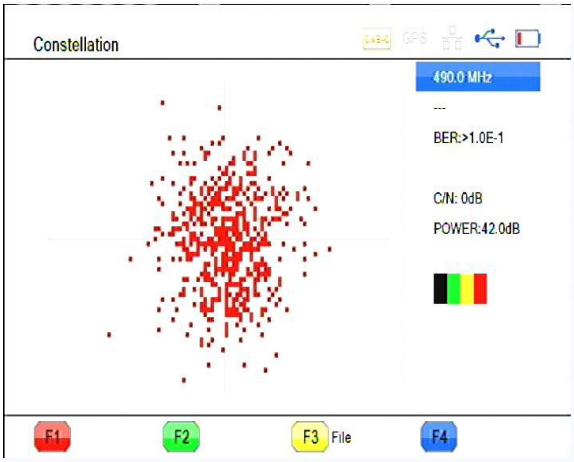
1) **F2:**

Press F2 to edit modulation mode


**2) F3:**

Press F3 key to Capture the Current picture and save in the USB device.

## 3. DVB-C system




### 3.1 Description of Menu Information

**1) xxxMHZ:**

Frequency of current TP.

**2) BER:**

Short of Bit Error Rate: show the error rate of signal.

**3) C/N:**

Displays signal carrier to noise ratio of current frequency.

**4) Power:**

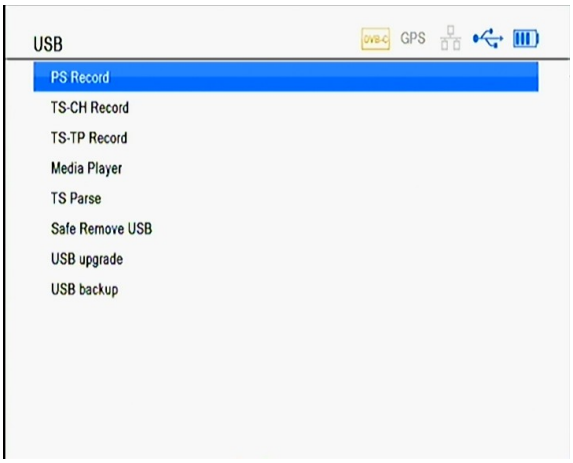
Display the channel power.

### 3.2 Description of Menu Help

**1) F3:**

Press F3 key to Capture the Current picture and save in the USB device.

# V. USB




**1. PS Record**

Press this key, the recording program is **PS stream**.

When highlight on the PS Record item, press **OK** button to start recording of current program with PS stream format.

You can press **STOP** key to stop the current recording.

**2. TS-CH Record**

When highlight on the TS-CH record item, press **OK** button to start recording of current program with TS stream format.

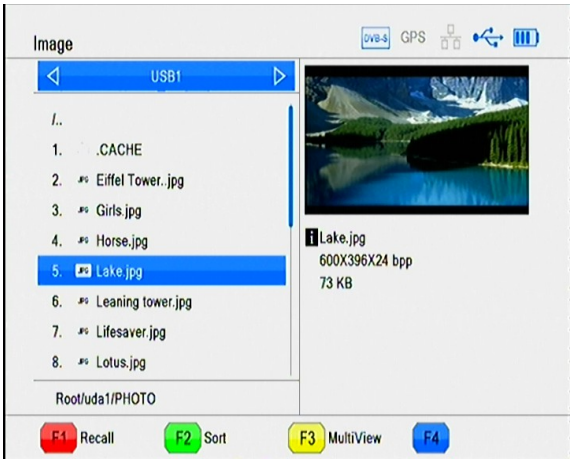
**3. TS-TP Record**

When highlight on the TS-TP record item, press **OK** button to start recording of current transponder with TS stream format.

**4. Media Player**

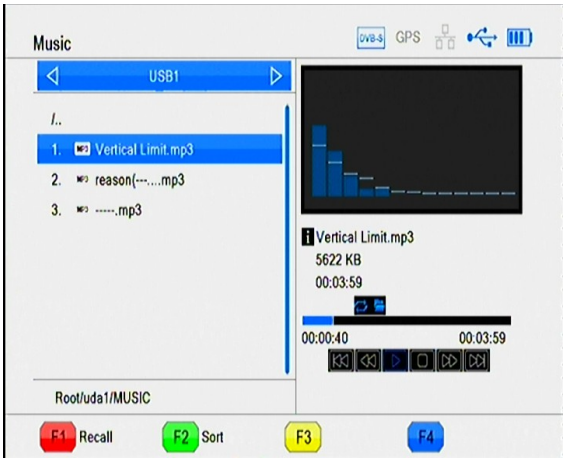
If you want to view media files which are stored in your USB device, select **Music**, **Photo** or **Movie** in the main menu. The screen shows up the supported **MP3** files stored in your USB device.

**Note:** If no USB Memory Device (like HDD or USB Memory Stick) inserted to the equipment, this menu will be not available.

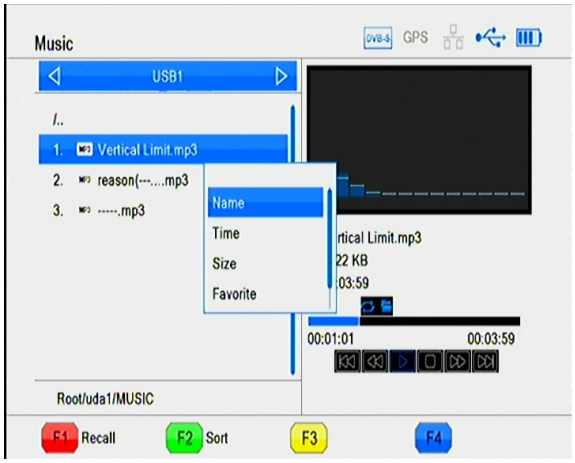



This menu provides the media playback functions, including 4 kinds of Media type, **Record, Music, Image, Video**; users can switch the present playing type by pressing **F1** button, in the top of the menu, the highlight icon shows the media type.

1). In "**Music**" menu, you can choose the Music file (**MP3** file) and enjoy the music.

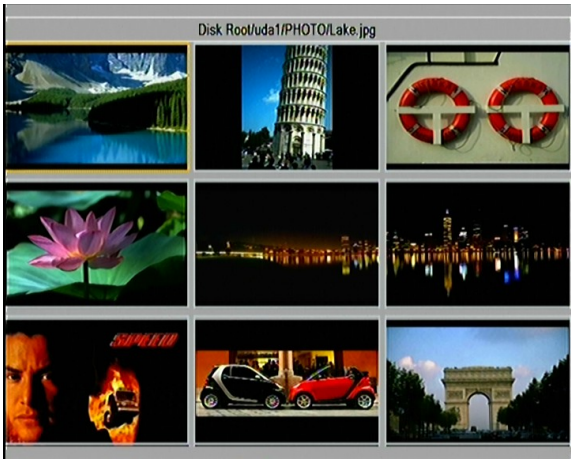



[**Green**] button: To sort by some mode

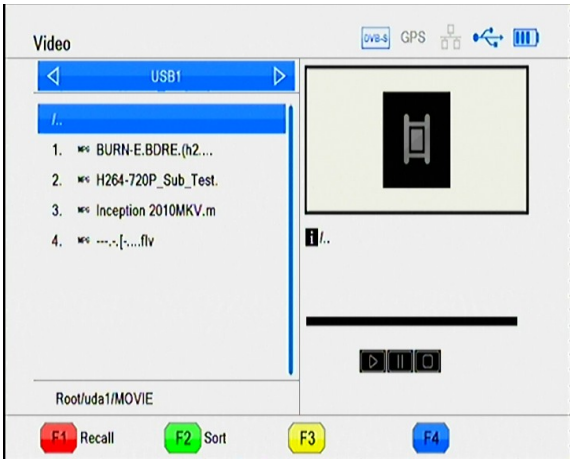


2) The menu for **Photo** offers the similar functions with the music menu. See Music Menu for the detailed Photo operation.

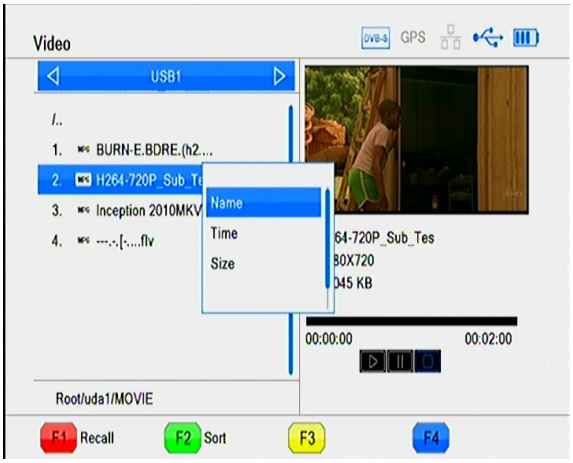
[**Green**] button: To sort by some mode with photo file.
[**Yellow**] button: To display all of picture with multi-view mode




3) The menu for **Video** offers the similar functions with the **Music** menu



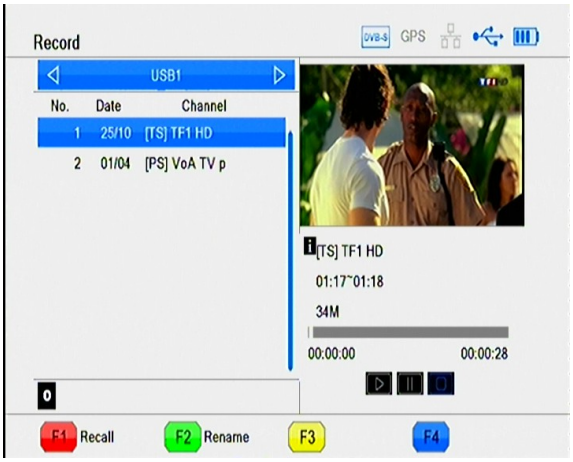

Press **F2** key to sort by some mode




You can do **fast forward**, **fast backward** and seek with trick keys on remote controller.

- **FB** (fast backward) and **FF** (fast forward) keys support **x2, x4, x8, x16, x24**.
- **PLAY / PAUSE** keys: to pause and play the file when you press play / pause key.
- **STOP** key: To stop the playing file.
- **PREV** key: To move to the previous file.
- **NEXT** key: To move to the next file.
- **STEP** key: To Jump forward by chapter.

## 4) The menu of **Record**




Press **F2** key to rename the recording file:

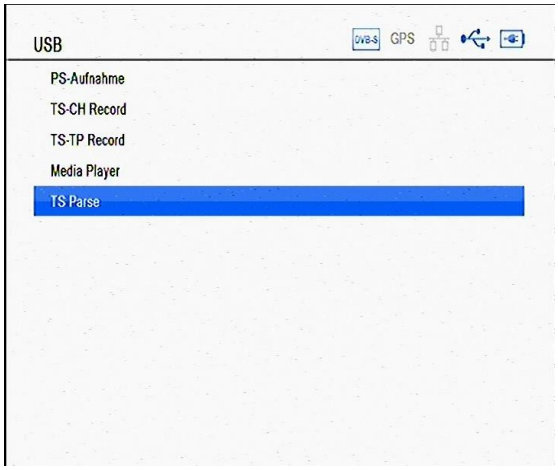
You can do fast forward, fast backward and seek with trick keys on remote controller.

- **FB** (fast backward) and **FF** (fast forward) keys support **x2, x4, x8, x16, x24**.
- **PLAY / PAUSE** keys: to pause and play the file when you press play / pause key.
- **STOP** key: To stop the playing file.

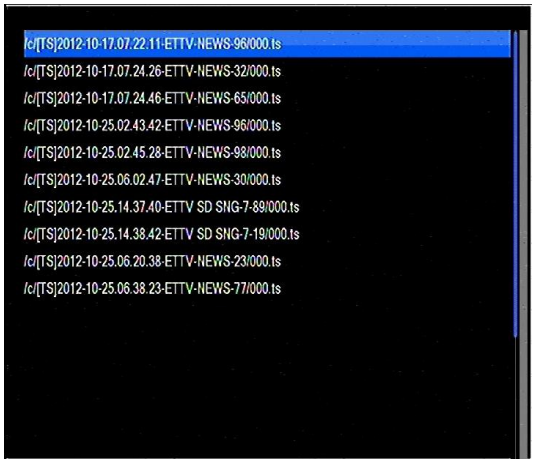
- **PREV** key: To move to the previous file.
- **NEXT** key: To move to the next file.
- **STEP** key: To Jump forward by chapter.

## 5. TS- Parses

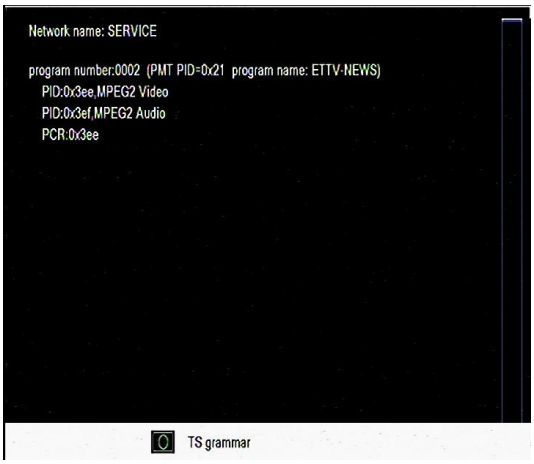
1). Connect USB storage device, enter TS Parse menu:



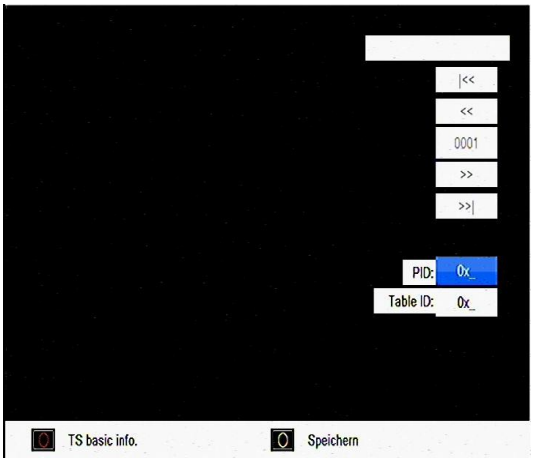

2). Select TS file which is required to analyze:



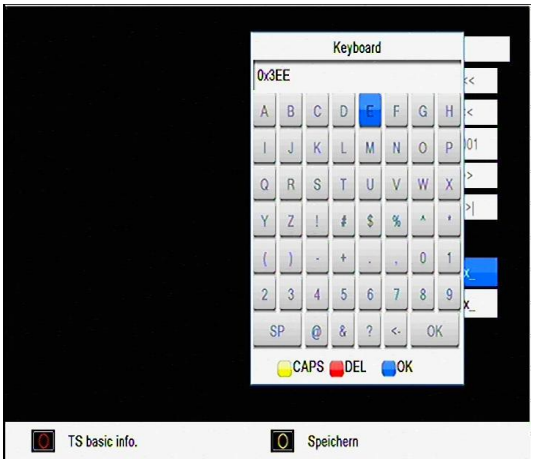

3). Press **OK** button:

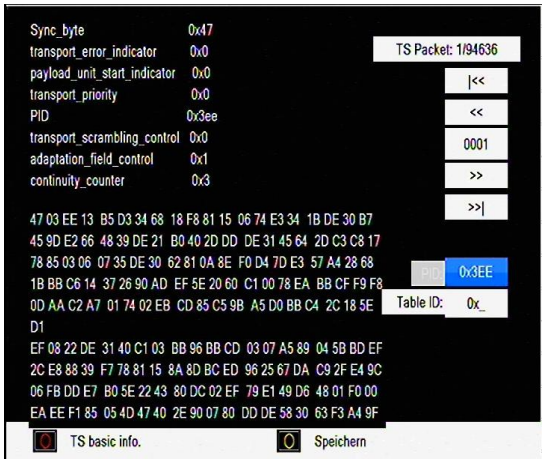



4). Press [**Green**] button to enter TS grammar:




5). Press number keyboard to insert PCR data, then it will show detail analysis:




## 6. USB upgrade

Press to enter USB upgrading menu when the USB is connected.

When you enter “**Upgrade by USB**” menu, you can download new software to this receiver by external USB memory device. (Upgrade Mode has options: total flash, firmware, user date).

1) “**total flash**” : You can upgrade whole file to you equipment flash. Please rename your new file name to be the format “.**abs**”, which means any other string is acceptable, but the extension name must be “.**abs**”. Then Press **OK** key to start upgrade by USB.
2) “**firmware**” : the upgrade without “bootloader”.

### 7. USB backup

Press to enter USB backup menu when USB is connected.

When you enter “Backup by USB” menu, you can store the changed parameters and searched channels, etc.

1) Insert the external USB memory device to USB slot of this receiver.
2) Select the mode you want to backup among “user data”, “total flash”, etc.
3) Press “start” to start backup for USB memory device.

# VI. DiSEqC Kits

### 1. Description of Menu Item


**1) Satellite:**

Option of the satellite name and satellite longitude. Press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired satellite.

**2) LNB Freq:**

LNB Frequency option. Press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired LNB frequency.

**3) Transponder:**

Transponder option which includes three parameters: frequency, polarization and symbol rate. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired transponder.

**4) 22K:**

22K switch which include **On** and **Off** options. There is no need to make choice as it becomes **Auto** when the LNB Freq is selected **Universal**.

**5) Diseqc1.0:**

Diseqc1.0 port option. Press the **OK** key to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the satellite connection port.

**6) Diseqc1.1:**

Diseqc1.1 cascading options: including first cascade port and second cascade port. Press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired Cascade type and port.

**7) Motor Type:**

Motor type options, including **Fixed**, **Diseqc1.2** and **USALS**. Press the ◀ button or ▶ button to select the motor type used.

***NOTE: How to set-up DiSEqC 1.2 Motor or USALS Positioner***

**DiSEqC 1.2 Set-up**

- ✧ **Position No. & Save**: You can press ◀ ▶ buttons or number keys to input Position No.
- ✧ **Go to X**: You can go to **X**-position or go to **Reference**.
- ✧ **West / East**: To adjust antenna position to **EAST** or **WEST** by pressing ◀ ▶ button
- ✧ **Save**: After select "**Satellite**" and "**Position No & Save**", press **OK** button to save the position.
- ✧ **Recalculation**: Press **OK** button to recalculate the position of satellite antenna motor.
- ✧ **Delete All**: To delete all satellite positions. This item is only valid in "**DiSEqC1.2**" Mode.
- ✧ **Limit Setup**:
  - To setup the East limit and West limit of antenna position by pressing ◀ ▶ buttons. Press **OK** button to save the each limits.
  - **Go to Reference**: If you press **OK** button, it will go to the center position of the positioner.

**USALS Set-up**

- ✧ Input the **Local Longitude** and **Local Latitude** of your present location. **USALS** can move dish automatically.
- ✧ Go to Motor Setting to setup the followings
- ✧ Select satellite and transponder to move the dish to the right place.
- ✧ **Limit Setup**:

- To setup the **East** limit and **West** limit of antenna position by pressing ◀ ▶ buttons. Press **OK** button to save the each limits.
- Go to Reference: If you press **OK** button, it will go to the center position of the positioner.

**8) Limit setup:**

This menu item exists only when the Motor Type is chose **Diseqc1.2** or **USALS**. Press the button to enter the Motor limit position setup menu.

**2. Description of Menu Information**

**1) Level:**

Show the strength of signal.

**2) Quality:**

Show the quality of signal.

**3. Description of Menu Help**

**1) F1:**

Press to enter Auto Diseqc1.0 menu, which can detect the satellites connected to Diseqc1.0 port automatically.

**2) F2:**

Press to show the constellation corresponding to current satellite and transponder.

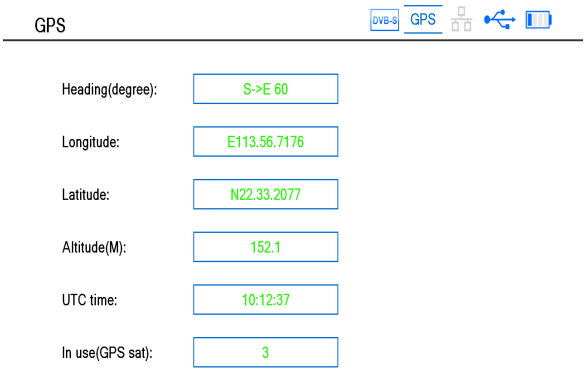
**3) F3:**

Press to enter SAT FIND menu, whose satellite and transponder chosen is consistent with DiSEqC Kit menu.

# VII. GPS

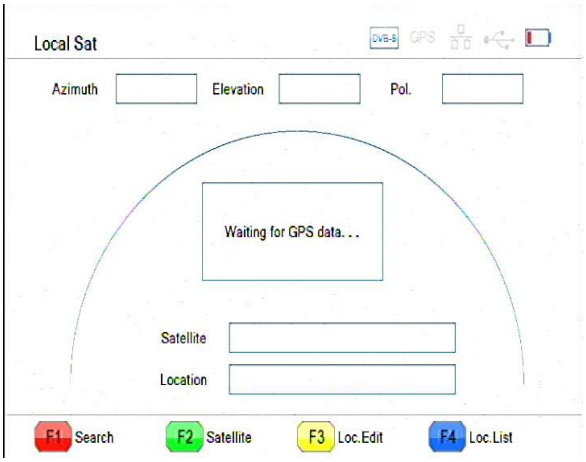
**1. Description of Menu Information**

Enter GPS, it will show local geography information, including heading, longitude, latitude, altitude, and UTC time, and it will also the number of GPS Sat in use.

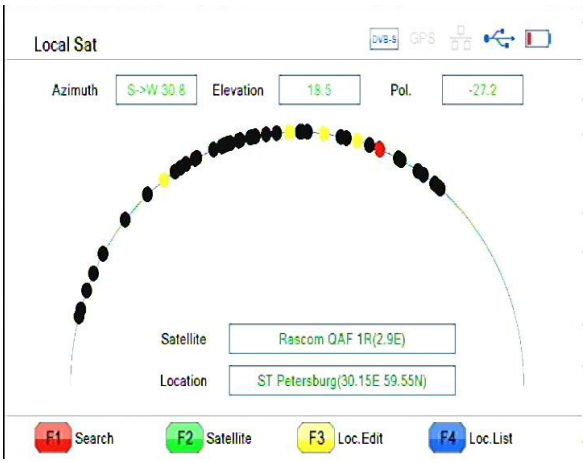



# VIII. Local Sat

When you first entry to the local sat menu, need to wait for GPS data




If accept the GPS data, the Location will display location longitude and latitude




## 1. Description of Menu Item

**1) Location:**

Press **F4** to display a list of cities (locations). Use the cursor keys to select the current location. After this, the screen will display the arc of available satellites (60 degrees to each side). The red dot shows the selected satellite and the windows at the top shows you the azimuth, elevation and position of the satellite relative to the South (the highest of the satellite in orbit.) Using the rotary knob or the cursor keys to select the desired satellite and the satellite box you will see the name and position in orbit.

**2. Description Information Menu**

**1) Azimuth**:

Display the desired azimuth antenna to tune into a satellite in the selected region.

**2) Elevation:**

Displays desired angle antenna for lifting the current satellite in the region concerned.

**3) Pol:**

Display the desired angle of polarization antenna for the current satellite in the region concerned.

**4) Level:**

Show the strength of signal.

**5) Quality:**

Show the quality of signal.

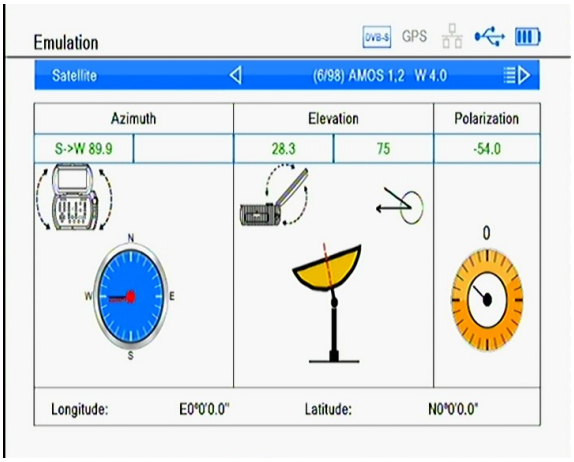
**3. Description of Menu Help**

**1)** ◀ / ▶: Press the ◀ / ▶ to switch the current satellite.
**2) F1:** Press to enter the Search menu, searching for current satellite programs.
**3) F2:** Press to enter the Satellite Edit menu
**4) F3**: Press **F3** to display the edit menu cities.
**5) F4:** Press to display local list
Press up/down key to move the highlight to choose the current location

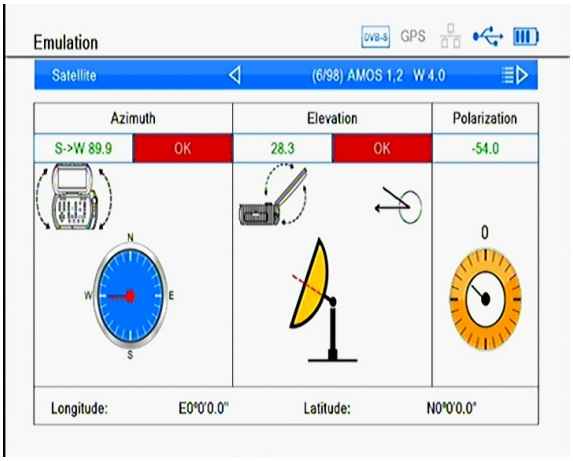
If press the **F3** button you can see the window with local city list:

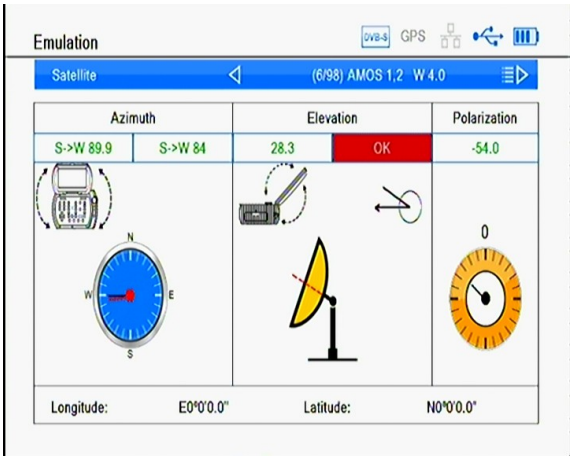

**F1:** to edit the location longitude and latitude
**F2:** to add the local city
**F3**: to delete the local city

# IX. Emulation



Press ◀ / ▶ key to select the satellite and the one wanted to set First, you can move the screen up or down to set elevation, it likes the LNB face to the satellite on the elevation menu, the left item display the emulation elevation parameter, if the practical elevation set correct, the right item will display **OK**.
The second step, move the equipment left or right to set emulation azimuth parameter, if the practical azimuth set correct, the right item will display **OK**.




## 1. Description of Menu Item

**1) Satellite:**

Option of the satellite name and satellite longitude. Press the OK key to get a drop-down list, move the cursor with the arrow keys and press the OK button to select the desired satellite.

Move the equipment left or right to set azimuth
Move the screen up or down to set elevation

## 2. Description of Menu Information

**1) Azimuth:**

Show the required antenna azimuth to align current satellite in the current region.

**2) Elevation:**

Show the required antenna elevation angle to align current satellite in the current region.

**3) Polarization:**

Show the required antenna polarization angle to align current satellite in the current region.

**If the compass no working, please make the equipment move to like "8" pattern**

# X. System

## 8. System settings

When with highlight on the system setting item, press **OK** button and entry system setting menu will display like:

**1) City:**

Options of city or area. Press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired city.

**2) OSD Language:**

Press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired language.

**3) OSD Transparency:**

Press the **OK** button to get a drop-down list, move the cursor with the arrow keys and press the **OK** button to select the desired transparency.
There are **5 levels** of transparency, **10%, 20%, 30%, and 40%** and "**OFF**" (means no transparency function).

**4) OSD style**

Press the **OK** button to get an OSD style list, move the cursor with the arrow key to switch the OSD style

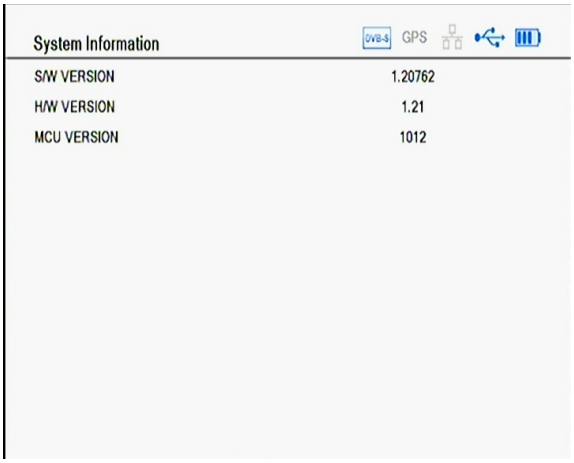
**5) LNB Power:**

LNB power supply options.

LNB Power: The receiver will supply power to satellite antenna in "**On**" mode.

## 9. System information

Enter Information menu, it will show information about this equipment




## 10. System password

Select "system password" menu and there will be pop-up message to input the password. Default password is "**0000**"

## 11. CA

We provide CA slots for user. Receiver has been built in smart card module with **CONAX** system. By using cards provided by operators in this system, it is possible to watch many scrambled channels coded in this system. This menu shows detailed information about card inserted into card reader module. It allows inserted in order to help messages visible on the bottom of the screen.

**Note:**

**All information showed in this menu and submenu is coming from inserted card. If anything is wrong, it could be card problem. After inserting the card correctly at any time, a message-box will show on the screen with message**

**about detecting the card, in "card info" menu all available information will be displayed**

## 12. CI

We provide CI slot for user to use. Using different CAM & cards provided by different CAS operator, user can view many type or scrambled channels.

We provide this menu to display the detail information of the CAM & cards inserted in the slots. User can check all this information by the message at the bottom of each menu.

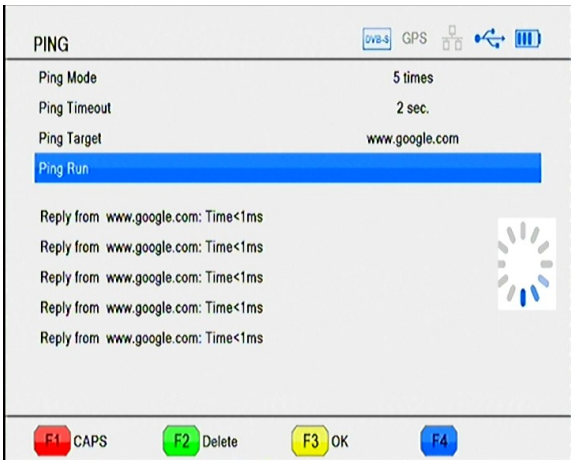
When you insert the CAM correctly at any time, a message will be showed in the screen to tell you which CAM has been detected by the receiver and it is available now.

**Note:**

**All information showed in this menu and submenu is coming from inserted card. If anything is wrong, it could be card problem. After inserting the card correctly at any time, a message-box will show on the screen with message about detecting the card, in "card info" menu all available information will be displayed**

## 13. PING

When you enter “Internet PING” menu, you will see a screen like below:




Set Ping Mode option for **5** times or forever

Set Ping time out by **1~10** sec.

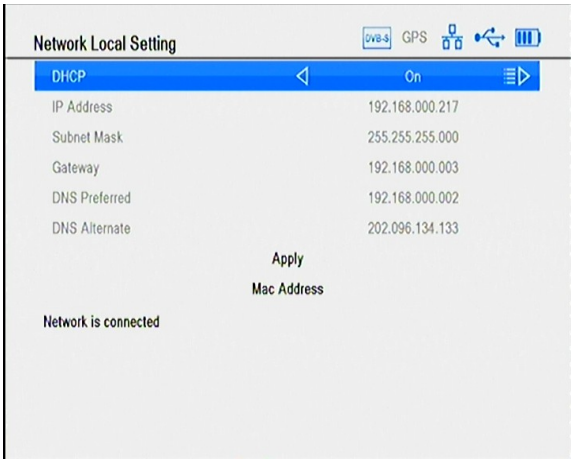
Set Ping Target by **String** or **Number**

When the highlight on the Ping Run, press **OK** key to run **PING** function

## 14. Internet local setting

Press to enter internet local setting menu.

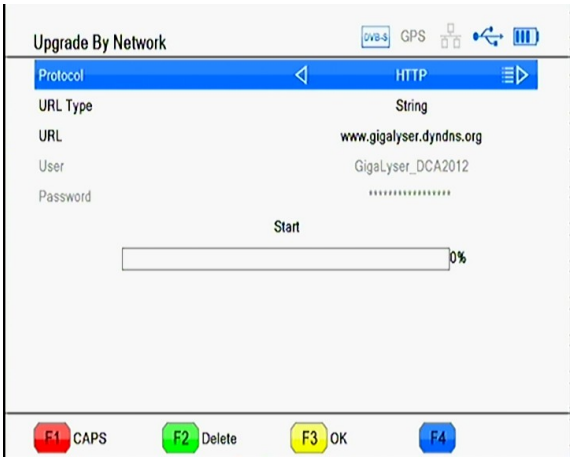
When you enter “Network Local Setting” menu, you can select DHCP or input the IP address manually.




The default setting for network is **DHCP** and it will be able to automatically obtain network settings. If you select DHCP "**OFF**", you can input **IP Address**, **Subnet Mask**, **Gateway**, **DNS Preferred**, **DNS Alternate** and **Mac Address**. And select Apply to save the changed figures.

## 15. Internet Upgrade

Press to enter internet upgrade menu.




When you enter "Upgrade By Network" menu, you will see a screen like below:

**1)** Set Protocol options for HTTP and upgrading will be processed according to HTTP protocol.

**2)** Set Protocol options for FTP and file will be able to be transferred according to FTP protocol.

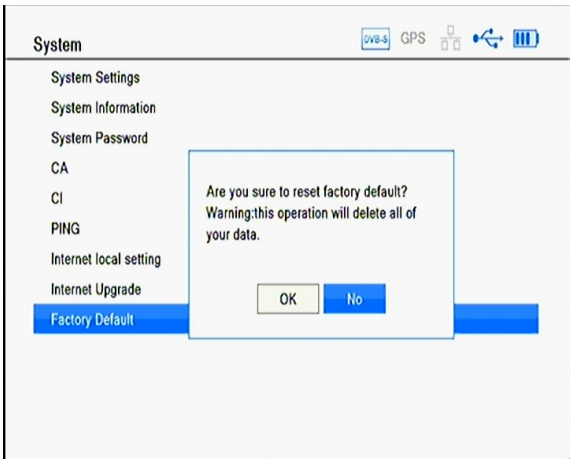
**3)** Set URL Type option for String and you can access to the URL by string (alphabet)

**4)** Set URL Type options for Number and you can access to URL by IP numbers

**5)** Press "**OK**" button for upgrading

## 16. Factory Default

Press to enter factory default menu.




When you press **OK** button in the "**Factory Default**" item, It will show a warning message to inquiry you "**The operation will delete all of your data**".
If you select "**Yes**" option, the all revised parameters of the receiver will reset to default value. **Please carefully to use this function.**

# XI. Specifications

| | | | |
|---|---|---|---|
| DVB-S/S2 | tuner | Connector | F type, male |
| | | Frequency range | 950MHz-2150MHz |
| | | LNB supply | 13/18V,max500mA |
| | | LNB switch control | 22KHz |
| | | Power range | 45 dBμV to 100 dBμV |
| | | Impedance | 75Ω |
| | demodulator | Front end | QPSK/8PSK/16APSK |
| | | Symbol rate | 2Mbps~45Mbps |
| | | Spectral inversion | Auto conversion |
| DVB-C | tuner | Connector | BNC |
| | | Frequency range | 110MHz-862MHz |
| | | Bandwidth | 6/7/8 Mhz, |
| | | Power range | 44 dBμV to 114 dBμV |
| DVB-T/T2 | demodulator | Front end | 16/32/64/128/256QAM |
| | | Symbol rate | 1000 to 7000 Kbauds |
| | tuner | Carriers | 2K/8K |
| | | Frequency range | 110MHz-862MHz |
| | | Bandwidth | 6/7/8 Mhz, |
| | | Power range | 45 dBμV to 110 dBμV |
| | | Impedance | 75Ω |
| | demodulator | Front end | QPSK/16QAM/64QAM/256QAM |
| | | Carriers | 2K/8K |
| System Resource | | Processor | 32bit processor |
| | | SDRAM | 16Mbytes |
| | | FLASH | 2Mbyte |
| Video Decoder | | MPEG 2 | ISO/IEC 11172-2 MPEG1,ISO/IEC |

| | | |
|---|---|---|
| | | 13818-2 MPEG2 MP@HL, |
| | Data Rate | ISO/IEC 14496,MPEG4 Compliant Support SP@l3 to ASP@L5, |
| | Resolution | ISO/IEC 14496-10 AVC high, Profile @ level 4.1 Main profile @ level 4.1 |
| | Video format | PAL/NTSC |
| MPEG Audio | Decoding | MPEG1 Layer1/2,MPEGII LayerII |
| | Mode | Mono/Stereo/Left/Right |
| | Sampling rates | 32,44.1 and 48KHz |
| Port | Connector | USB,RS232,Ethernet,AV-OUT, DC |
| Power Supply | Li-ioN Battery | 4100 mAH |
| | Supply voltage | 15V 1.5A |
| | charger | 90-240V |
| Battery | Temperatur e range: | -20 °c - 60 °c |
| Consumption | | Max. 22 W |
| Panel Connectors | Digital tuner input | F type, Male |
| Physical Specification | Size | 255x143x55mm |
| | Weight(Net) | 1.35kg |
| Monitor | Display Screen | 7.0 Inch TFT |
| | Signal Strength Display | Yes |