



# ST-5810 / ST-5610

Universal TV Signal Level Meter

DVB-C/C2, DVB-S/S2, DVB-T/T2, ISDB-T(b), ATSC 1.0/3.0

## Operation Manual

[www.satlinkcn.com](http://www.satlinkcn.com)

[www.starlink7.com](http://www.starlink7.com)



## Notices

Copyright © 2020 Fujian Satlink Electronics Co., Ltd. All rights reserved.

Copyright © 2020 StarLink LLC. All rights reserved.

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Satlink Electronics Co., Ltd. as governed by United States and international copyright laws.

## Copyrights & Trademarks

All of the company names and/or brand names and/or product names referred to in this document, in particular, the name "Satlink", "ST-5810", "ST-5610", its logo and device, are either registered trademarks or trademarks of Satlink Electronics Co., Ltd. pending registration in accordance with relevant national laws. All other registered trademarks or trademarks are the property of their respective owners.

## Warranty

The material contained in this document is subject to change without notice. Satlink makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Satlink shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material. Since some countries or states do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this Warranty is held invalid or unenforceable by a court of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

## Assistance

Product maintenance agreements and other customer assistance agreements are available for Satlink products. For sales assistance or technical support, contact Satlink Sales and/or Service office.

## Warning

Using the supplied equipment in a manner not specified by Satlink may impair the protection provided by the equipment.

## End of Life Recycling and Disposal Information

Do not dispose of Waste Electrical and Electronic Equipment (WEEE) as unsorted municipal waste. For proper disposal return the product to Satlink. Please contact our local offices or server centers for information on how to arrange the return and recycling of any of our products.

## EC Directive on Waste Electrical and Electronic Equipment (WEEE)

The Waste Electrical and Electronic Equipment Directive aims to minimize the impact of the disposal of electrical and electronic equipment on the environment. It encourages and sets criteria for the collection, treatment, recycling, recovery, and disposal of waste electrical and electronic equipment.

## Table of Contents

- 1. INTRODUCTION .....5
  - 1.1 Overview and Functions..... 5
  - 1.2 Important Safeguards and Precautions ..... 5
  - 1.3 Convention Used In This Manual..... 5
  - 1.4 Copyright ..... 6
  - 1.5 Safety Notices..... 6
  - 1.6 Warranty..... 6
    - 1.6.1 Limitation of Warranty..... 7
  - 1.7 Statement of FCC Compliance..... 7
  - 1.8 Glossary of Acronyms ..... 7
- 2. WALKTHROUGH ..... 10
  - 2.1 Identify Components ..... 10
  - 2.2 Navigating Functions ..... 11
  - 2.3 Display Screen ..... 12
    - 2.3.1 Home ..... 12
    - 2.3.2 Measurement Screen ..... 12
    - 2.3.3 Configuration Screen..... 13
  - 2.4 Battery Charging..... 13
  - 2.5 Package..... 13
- 3. OVERVIEW ..... 14
  - 3.1 Key Features ..... 14
  - 3.2 System Setup ..... 16
  - 3.3 About..... 16
- 4. MEASUREMENT ..... 17
  - 4.1 Channel Plan ..... 17
    - 4.1.1 Network (Profile) Editor ..... 17
    - 4.1.2 Channel Plan Editor ..... 19

---

4.2 Channel Discovery .....	20
4.3 Limit Configuration .....	21
4.4 Power Level.....	22
4.5 Constellation.....	23
4.6 Spectrum Analysis .....	24
4.6.1 How To Identify Channel Frequency From Spectrum Trace .....	26
4.7 Signal-Over-Noise Ratio (SNR) Monitoring .....	27
4.8 Multi-Channel Scan .....	28
4.9 Tilt .....	29
4.10 Report List .....	30
5 DVB-S/S2 SPECIFIC .....	31
5.1 Measurement .....	31
5.2 Multi-Transponder Scan .....	32
5.3 DiSEqC Switch Test .....	33
5.4 Rotor Control .....	34
5.5 Angle Calculation.....	35
5.6 Limit Configuration.....	36
5.7 Satellite and Transponder Editor.....	37
6. REFERENCE .....	38
6.1 Customer Service .....	38
6.2 Testing and Calibration Statement .....	38
6.3 Express Limited Warranty .....	38
6.4 Safty Instructions.....	39
6.5 Coax Cable .....	39
6.6 FCC Class B Equipment .....	39
6.7 Declaration of Conformity for Products Marked With the FCC Logo – USA Only.....	39
6.8 Declaration of CE Conformity for EU.....	39

## 1. INTRODUCTION

### 1.1 OVERVIEW AND FUNCTIONS

ST-5810 is the new signal level meter presented by SatLink. With cutting edge technologies and advanced platform, ST-5810 supports universal digital TV standards to analyze signals in real time, including spectrum analysis, demodulation parameters, and constellation to provide you with optimal features for reduced cost. The device is the ideal signal level meter for broadcasting TV installations. It is durable, has many features, and is light weighted, rugged, simple to use in a wide range of conditions with one hand.

Automatic channel discovery and user defined channel plans may be stored and loaded to perform complete test of all channels in the selected channel plan to specific limits.

Patented real time spectrum analysis methodology is used to provide precise spectrum scan and analysis functions over Satellite TV, Terrestrial TV, Cable TV and Over-The-Air TV signals in all frequency range. dCSS MDU and DisEqc applications are also supported.

ST-5810 equips with capacitive touch panel and high-resolution LCD screen. Together with friendly and intuitive graphical user interface, the learning curve of operating ST-5810 is minimal.

With its low-cost and high-performance feature set, ST-5810 can be used to measure and validate all kinds of TV service deployed by service providers with following key features.

#### Highlights

- Compatible with all digital TV standards - DVB-S/S2, DVB-T/T2, ISDB-T/S/C, ATSC 1.0/3.0, DVB-C/C2, J.83 A/B/C
- Fast and reliable signal data processing
- Patented dual-frequency spectrum scan and capture module
- Rich spectrum analysis functions
- Specific details of measurement statistics for channel quality
- Constellation for all kinds of digital TV signals
- Antenna/LNB angle calculation
- Satellite motor DisEqc and dCSS MDU application support
- dCSS MDU support
- LNB power compensation
- Audible tone to reflect signal strength
- High-resolution LCD display
- Capacitive touch panel
- Friendly and intuitive graphical user interface
- High-capacity lithium battery for long operation and storage hours
- USB interface for firmware upgrade and file transfer
- Built-in parameters for global satellites and transmitters

### 1.2 IMPORTANT SAFEGUARDS AND PRECAUTIONS

Utmost care has been taken in the manufacture of the ST-5810. Please keep the following instructions in mind while using the tester.

- Please keep the tester away from fire, extremely hot areas, water or moisture of any kind.
- Do not service your tester by yourself.
- Opening the tester housing will void the warranty.
- Always follow the instructions to configure and maintain.

### 1.3 CONVENTION USED IN THIS MANUAL

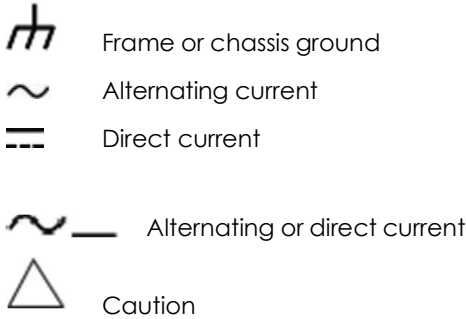
This manual has several standard conventions for presenting information.



Dangerous voltage



Protective ground



## 1.4 COPYRIGHT

All rights reserved. Reproduction, adaptation, or translation without prior written permission is prohibited, except as allowed under the copyright laws. The information contained in this document is subject to change without notice.

SatLink and StarLink makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

SatLink shall not be liable for errors contained herein or for incidental or consequential damage in connection with the furnishing, performance, or use of this material.

## 1.5 SAFETY NOTICES

Observe the following safety precautions whenever you operate any SatLink instrument. Failure to comply with these and other specific warnings and cautions is violation of SatLink's safety standards of design, manufacturing, and intended use of the measurement device. SatLink assumes no liability for the operators' failure to comply with these precautions.

Do not use this product if it shows visible damage, fails to perform, has been stored in unfavorable conditions, or has been subject to severe transportation stresses. Make the product inoperative and secure it against any unintended operation. Contact your SatLink representative for assistance.

Do not operate the instrument in the presence of flammable gases or fumes.

To avoid possibility of severe injury or death, observe the following precautions when using any SatLink equipment:

- Do not remove system cover, and do not perform electrical tests if there are signs of shipping damage to the outer enclosure.
- When connecting test cables to a line, do not touch the cable's metal contact points, or allow the cable leads to touch each other.
- Use only the supplied power cords and connect only to a properly grounded wall outlet. Do not use extension cords that do not have a protective ground conductor.

## 1.6 WARRANTY

This SatLink product is warranted against defects in material and workmanship for a period of 24 months from date of shipment. During the warranty period, SatLink will, at its option, either repair or replace products which prove to be defective.

For warranty service or repair, this product must be returned to an authorized service center designated by SatLink. The buyer shall prepay shipping charges to SatLink or the service center and SatLink or the service center shall pay the shipping charges to return the product. However, the buyer is responsible for all duties and taxes to receive the product after service or repair.

SatLink warrants that its software and firmware are designated by SatLink for use with SatLink equipment, and will execute its programming instructions when properly installed on that instrument. SatLink does not warrant that the operation of the instrument, software, or firmware will be uninterrupted or error-free but strive to insure the best operating condition as per specifications and datasheets.

### 1.6.1 LIMITATION OF WARRANTY

Unauthorized repair or update, physical damage or improper operational voltage (at the power supply or RF input) will void this warranty. The main lithium battery is covered for a period of 1 year.

The foregoing warranty shall not apply to defects resulting from improper or inadequate use or maintenance by buyer. Buyer-supplied software or interfacing, unauthorized modifications or misuse, operation outside of the environment specifications for the product.

No other warranty is expressed or implied. SatLink specifically disclaims the limited warranty of merchantability and fitness for a particular purpose.

### 1.7 STATEMENT OF FCC COMPLIANCE

The ST-5810 complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

In some situations, operation of this equipment in a residential area may cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

### 1.8 GLOSSARY OF ACRONYMS

AAC	Advanced Audio Coding
AC-3	Dolby AC-3 audio coding
ACPR	Adjacent Channel Power Ratio
AEC	Audio Engineering Society
AES	Advanced Encryption Standard
ATDMA	Advanced Time Division Multiple Access
ATSC	Advanced Television Systems Committee
AVG	Average
BAT	Bouquet Association Table
BER	Bit Error Rate
BPCP	Bidirectional Coded Picture
CAT	Conditional Access Table
CCIR	International Radio Consultative Committee
CCN	Carrier-to-Composite Noise Ratio
CRC	Cyclic Redundancy Check
CSO	Composite Second Order Beat
CTB	Composite Triple Beat
CM	Cable Modem
CLDI	Chrominance-Luminance Delay Inequality
CLGI	Chrominance-Luminance Gain Inequality
CMTS	Cable Modem Terminal System
CPE	Customer Premise Equipment
CVBS	Composite Video Broadcast Signal Color Video Blanking and Sync
	Composite Video, Blanking, Synchronization
	Composite Video Bar Signal
CW	Continuous Wave
DAVIC	Digital Audio Video Council
DCT	Discrete Cosine Transform
DFT	Discrete Fourier Transform
DG	Differential Gain
DHCP	Dynamic Host Configuration Protocol
DIT	Discontinuity Information Table

DOM	Depth of Modulation
DNS	Domain Name System
DOCSIS	Data-Over-Cable Service Interface Specifications
DP	Differential Phase
DTS	Decoding Time Stamp
DVB	Digital Video Broadcasting
DVB-C	Digital Video Broadcasting-Cable
EAP	Extensible Authentication Protocol
EBU	European Broadcasting Union
ECM	Entitlement Control Message
EIA	Electronic Industries Association
EIT	Event Information Table
EMM	Entitlement Management Message
eMTA	Embedded multimedia terminal adapter
EPG	Electronic Program Guide
ES	Elementary Stream
ETSI	European Telecommunications Standards Institute
ETT	Extended Text Table
EVM	Error Vector Magnitude
EVS	Error Vector Spectrum
ES	Errored second
FCC	Federal Communications Commission
FDD	Frequency division duplex
FEC	Forward Error Correction
FFT	Fast Fourier Transform
FIP	Fiber Inspection Probe
FM	Frequency Modulation
FSK	Frequency-Shift Keying
FTP	File Transfer Protocol
GCR	Ghost Cancellation Reference
GOP	Group of Pictures
GPS	Global Positioning System
HD	High Definition (video)
HFC	Hybrid Fiber-Coaxial
ICP	Intra Coded Picture
ICR	In Channel Frequency Response
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical & Electronics Engineers
IMD	Intermodulation Distortion
IP	Internet Protocol
IRD	Integrated Receiver Decoder
ISO	International Organization for Standardization
ITU	International Telecommunications Union
JCTEA	Japan Cable Television Engineering Association
LAN	Local Area Network
LSB	Least Significant Bit
LTE	Long term evolution
MAC	Media Access Control layer
MER	Modulation Error Ratio
MGT	Master Guide Table
MPE	Multi-Protocol Encapsulation
MPEG	Moving Pictures Expert Group
MSB	Most Significant Bit
MSD	Minimum Signal Duration
NCTA	National Cable Television Association
NEG	Negative peak
NIT	Network Information Table
NTSC	National Television Standards Committee
NVOD	Near Video On Demand
OFDM	Orthogonal frequency division multiplexing
OFDMA	Orthogonal frequency division multiple access
OPM	Optical Power Meter
PAL	Phase Alternate Line
PAT	Program Association Table

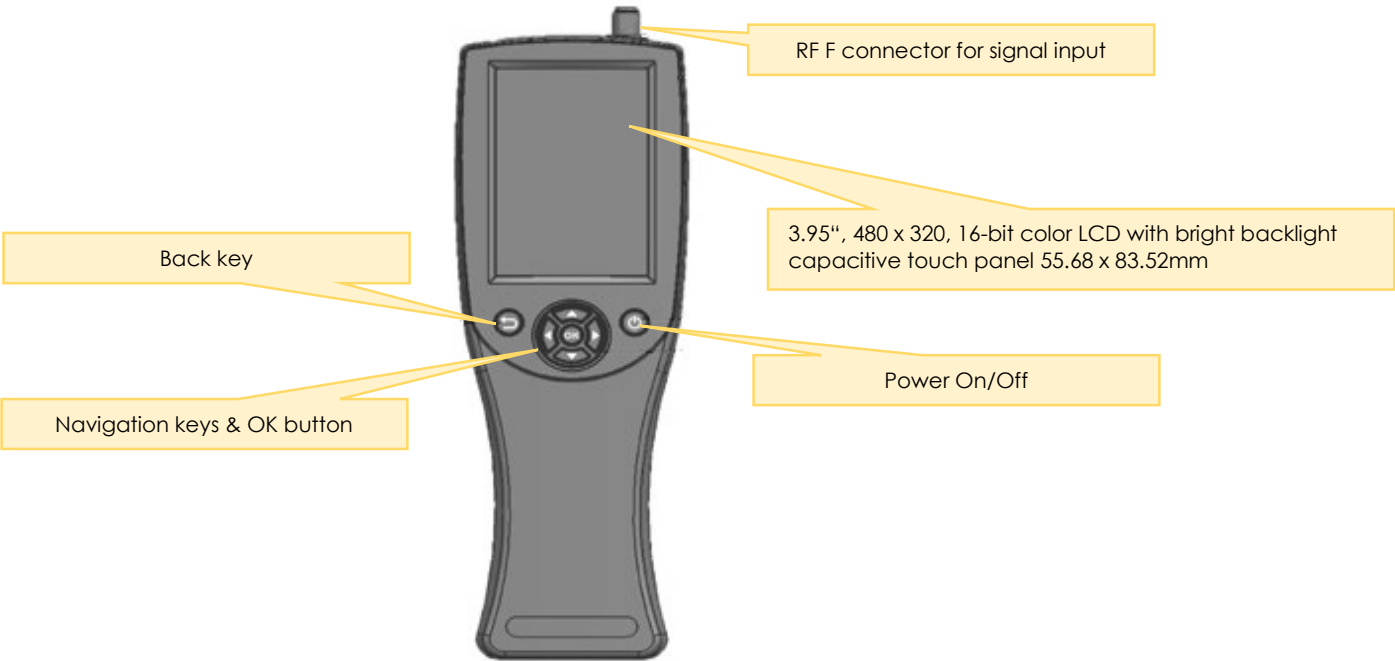


PCP	Predictive Coded Picture
PCR	Program Clock Reference
PDCCH	Physical downlink control channel
PES	Packetized Elementary Stream
PID	Packet Identifier
PMT	Program Map Table
POS	Positive Peak
POI	Probability Of Intercept
PING	Packet Internet Groper
PPPoE	Point to Point Protocol over Ethernet
PSI	Program Specific Information
PSIP	Program and System Information Protocol
PSK	Phase Shift Key
PTS	Presentation Time Stamp
QAM	Quadrature Amplitude Modulation
QPSK	Quadrature phase shift keying
RMS	Root Mean Square
RBW	Resolution Band Width
RRT	Ratings Text Table
RSSI	Received signal strength indicator
RST	Running Status Table
RF	Radio Frequency
SAM	Sample detector
SES	Severely errored second
SCDMA	Synchronous Code Division Multiple Access
SC-FDMA	Single carrier frequency division multiple access
SCTE	Society of Cable Telecommunication Engineers
SD	Standard Definition (video)
SDT	Service Description Table
SES	Severely errored second
SECAM	Sequential Color and Memory Sequential Couleur avec Memoire
SI	Service Information
SIT	Selection Information Table
SMPTTE	Society of Motion Picture and Television Engineers
SNR	Signal-to-Noise Ratio
SSID	Service Set Identifier
ST	Stuffing Table
STB	Set Top Box
STC	System Time Clock
STD	System Target Decoder
STT	System Time Table
TDMA	Time Division Multiple Access
TDD	Time division duplex
TDT	Time and Date Table
TFTP	Trivial File Transfer Protocol
TKIP	Temporal Key Integrity Protocol
TOD	Time Of Day
TOT	Time Offset Table
TS	Transport Stream
TSDT	Transport Stream Description Table
TVCT	Terrestrial Virtual Channel Table
UCD	Upstream Channel Descriptor
UE	User equipment
UTC	Coordinated Universal Time
VBW	Video Band Width
VCT	Virtual Channel Table
VFL	Visual Fault Locator
V/A	Video to Audio carrier level ratio
VITS	Vertical Interval Test Signal
VoIP	Voice over Internet Protocol
VSB	Vestigial Sideband Modulation
WiFi	Wireless Fidelity
WEP	Wired Equivalent Privacy
WPA-PSK	Wi-Fi Protected Access -Pre-shared key

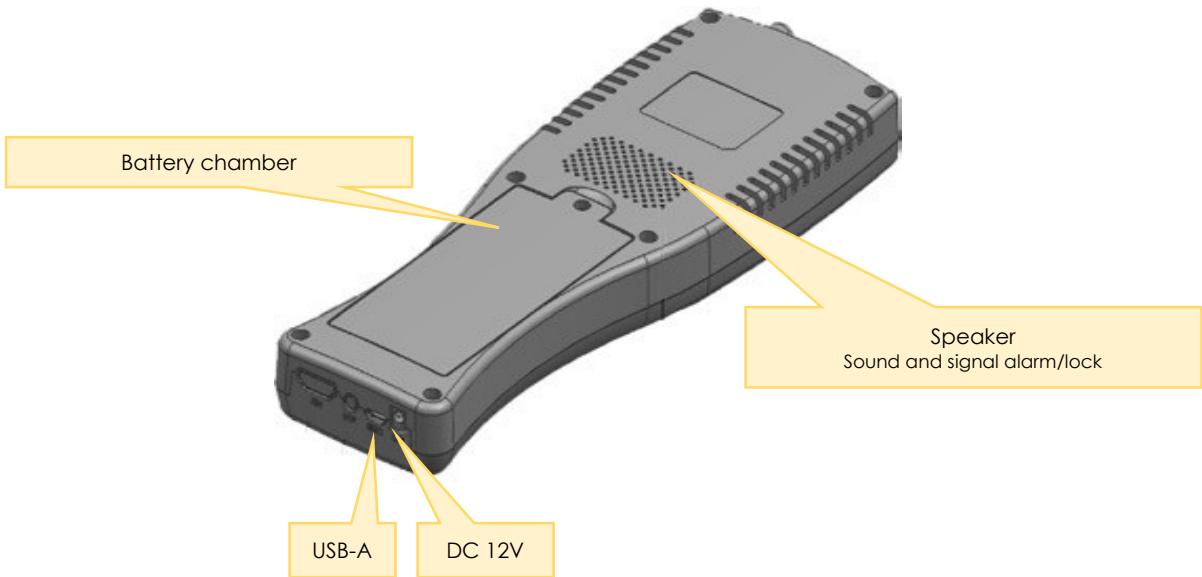
## 2. WALKTHROUGH

### 2.1 IDENTIFY COMPONENTS

#### Front Panel

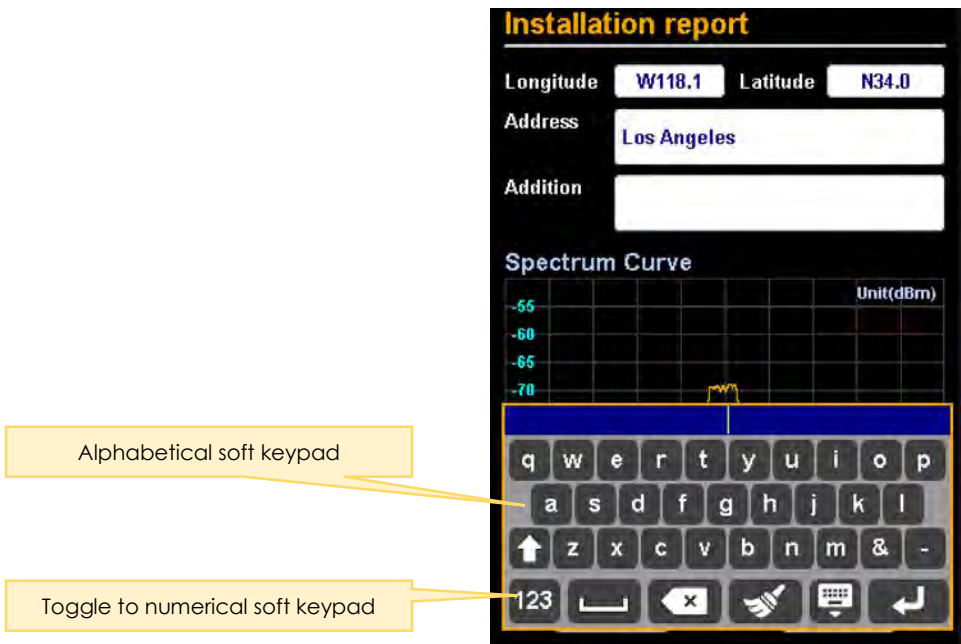
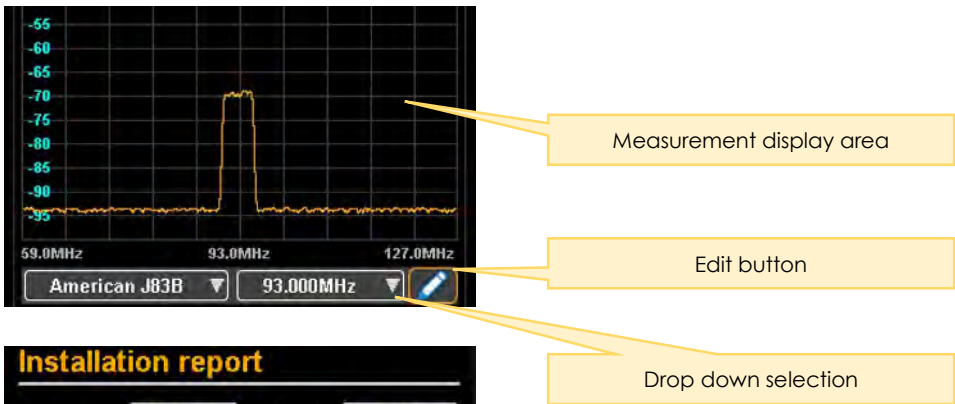
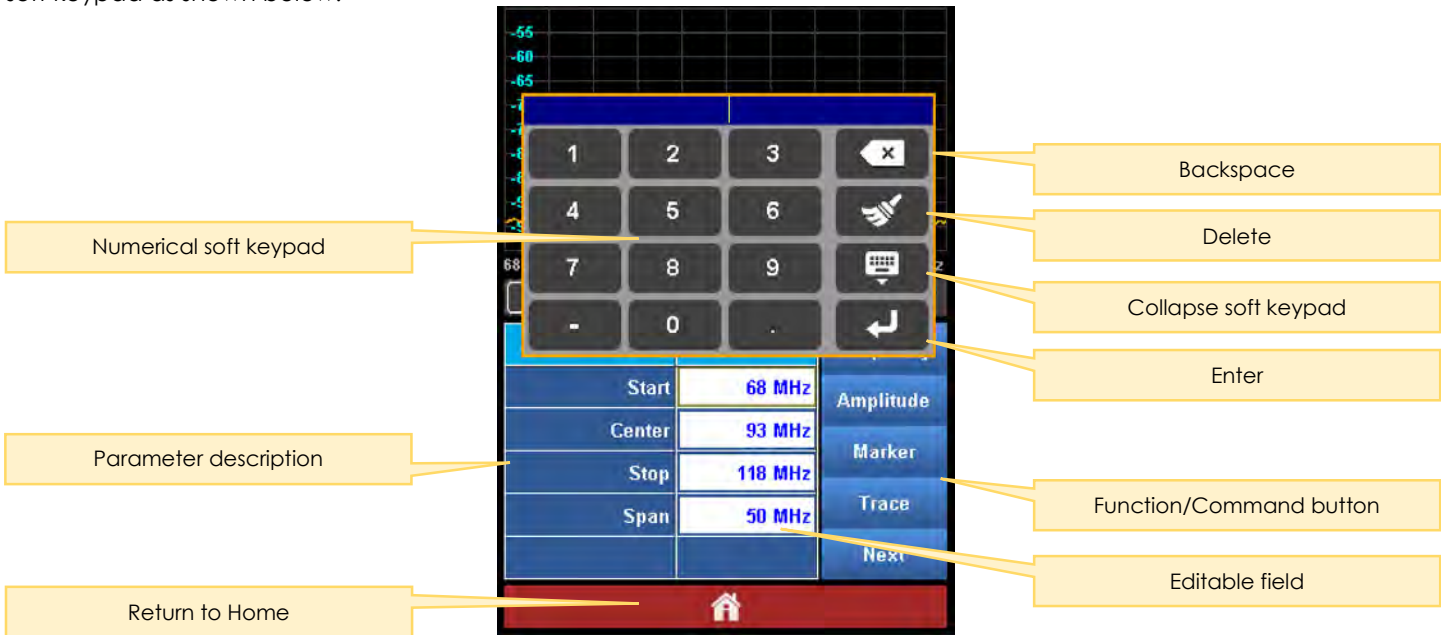


#### Back Panel



## 2.2 NAVIGATING FUNCTIONS

Several methods are used to navigate the ST-5810 functions, including context sensitive Home button and alphanumerical soft keypad as shown below.



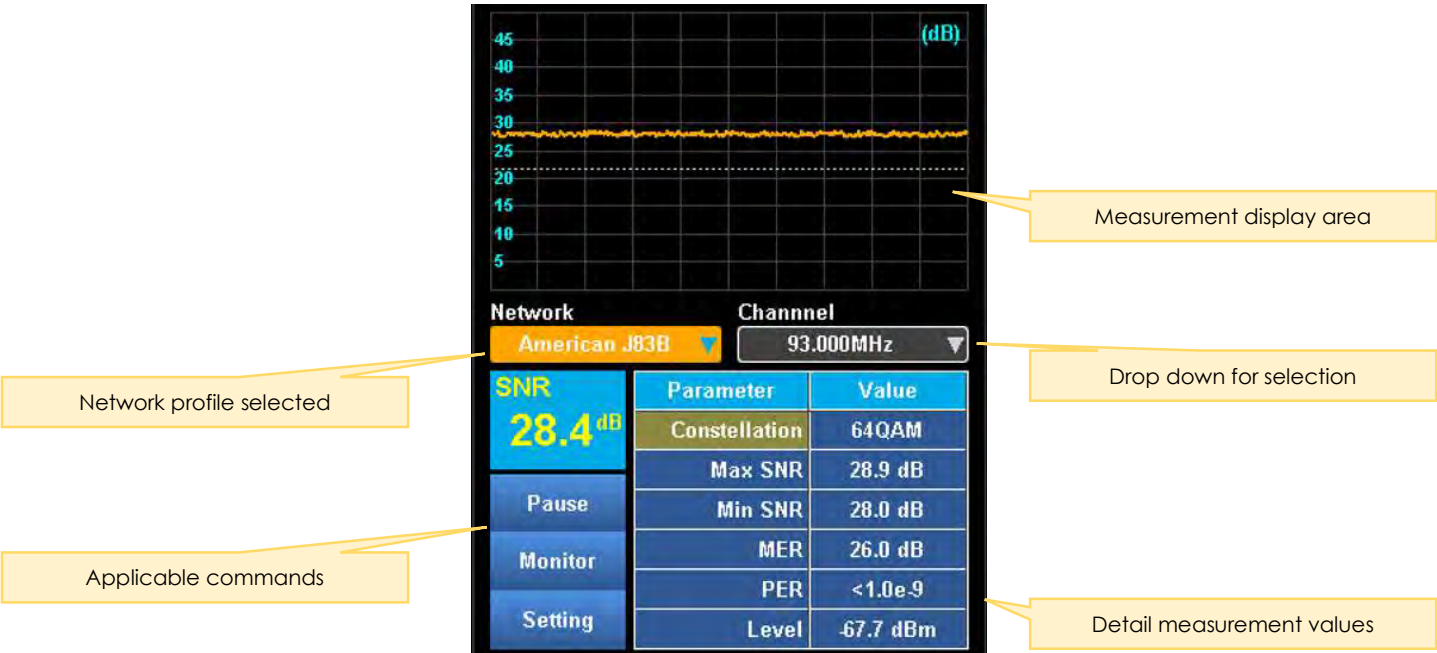
### 2.3 DISPLAY SCREEN

ST-5810 equips with 3.95" high-resolution LCD display and capacitive touch panel to enrich excellent user experience. Its smart-phone UI style makes the operation friendly and intuitive without learning curve.

#### 2.3.1 HOME



#### 2.3.2 MEASUREMENT SCREEN



### 2.3.3 CONFIGURATION SCREEN

The screenshot displays two configuration tables. The first table, 'Common Setting', has four rows with columns for No., Item, Value, and Enabled. The second table, 'SNR Threshold Setting', has two rows with columns for No., Const, Coderate, Threshold, and Enabled. Callouts indicate that the 'Item' column in the first table is for parameter description, the 'Enabled' column is for parameter status, and the 'Value' and 'Threshold' columns are editable fields with popup soft.

Common Setting			
No.	Item	Value	Enabled
1	Max Level	-10.0 dBm	✓
2	Min Level	-75.0 dBm	✓
3	Max TILT	10.0 dB	✓
4	BER	1.0e-7	✓

SNR Threshold Setting				
No.	Const	Coderate	Threshold	Enabled
1	64QAM	- -	23.0 dB	✓
2	256QAM	- -	29.5 dB	✓

### 2.4 BATTERY CHARGING

The ST-5810 has built-in 7.4V/2000mAh Li-Ion battery installed. When fully charged, it can be used for up to 8 hours. When the battery capacity drops below 10%, the battery symbol shows red at the top of the display screen. If the charge drops below 6.4V, the ST-5810 shuts off automatically to protect the battery. The ST-5810 cannot be turned on again until it's recharged.

To charge the ST-5810 battery, connect the battery charger to the charge socket on the bottom of ST-5810 (see chapter 2, section 2.: Identify Components) and plug the charger into an AC outlet. The battery must be charged with the SatLink charge cube provided with the ST-5810. Using other charge cube may damage the battery.

A full charge will be achieved in less than three hours. The charging status may be observed by tapping the Power button or turn the unit on while the charger is connected. The charging progress will be seen with a charging bar and an approximate percentage of charge. The ST-5810 can be operated while the batter

### 2.5 PACKAGE

The ST-5810 comes with the followings:

- ST-5810 Universal Signal Level Meter with protective rubber bumper
- 7.4V/2000mAh Li-Ion battery (installed)
- AC to DC power adapter and battery charger 100-240VAC 50/60Hz
- USB-C to USB-A data cable
- Operation manual

### 3. OVERVIEW

ST-5810 supports digital TV analysis and measurement of all broadcast TV standards – DVB-S/S2, DVB-T/T2, ISDB-T/C/S, DVB-C/C2, J.83A/B, and ATSC 1.0/3.0 over Satellite TV, Terrestrial TV, Cable TV and Over-the-Air Broadcasting TV in full frequency range. **ATSC 1.0/3.0 features are only available on ST-5810.**

Before using the tester, dedicated digital TV standard needs to be selected by dropping down the selection box from the top of the display screen as shown below. Depending on the regional requirement, your tester may not be configured to list all digital TV standards for selection. Contact your local sales channel for optional standards to be enabled in case required settings are missing.



#### 3.1 KEY FEATURES

##### Level Measurement

When tuned to a single channel, the ST-5810 displays bar graphs for the video and audio carriers or power of a digital channel. It also shows numeric readouts of the carrier amplitudes and V/A difference or digital power.

##### QAM Measurement

The ST-5810 is capable of measuring the channel power of QAM, QPSK, and COFDM signals. This function also enables the measurement of pre- and post-BER and MER for QAM modulated signals. The QAM measurement mode also features a single channel spectrum display and an optional Constellation diagram is available to enable users to find errors more quickly.

##### BER Measurement

The BER Measurement function displays the ratio of corrupted bits to total bits in the QAM signal. The analyzer dwells on the selected channel, counting good bits and watching for individual corrupted bits. The BER graph shows errored bits as vertical lines that expand horizontally across the display with advancing time.

##### Tilt Measurement

The Tilt Measurement function displays a graph showing the amplitudes of up to twelve user-selected video carriers. This display also shows the calculated difference in amplitude (tilt) between the highest and lowest channels in the user-selected group. The ST-5810 can also display a numeric list that shows the amplitudes of the carriers in the group.

##### Multi-Channel Scan

The Channel Scan Measurement function displays the full span of video and audio carriers in the selected user channel plan. This mode is useful to make a quick check of your system's overall flatness and amplitude.

Amplitude limits can be imposed on the display and the frequency marker can be used to isolate any suspect channel that appears in the display.

### Spectrum Analysis

The ST-5810 can also provide a spectral display of the selected channel including intermodulation products or other undesired signals that may be present.

For a digital channel, this measurement shows the actual shape of the modulation "haystack" to determine if there are any problems with the digital transmission system. This feature provides you with a powerful tool for checking in-channel flatness or mismatches that might affect digital transmission quality.

### Limit Measurement

The ST-5810 can perform a complete test of all analog channels in the selected user channel plan to specified limits. All channels are listed with Pass or Fail results, and the user may select any channel to review its individual test results. In addition, results for the entire channel plan, such as Maximum  $\Delta$  Video and Maximum  $\Delta$  Adjacent Channel, are seen on the test result display.

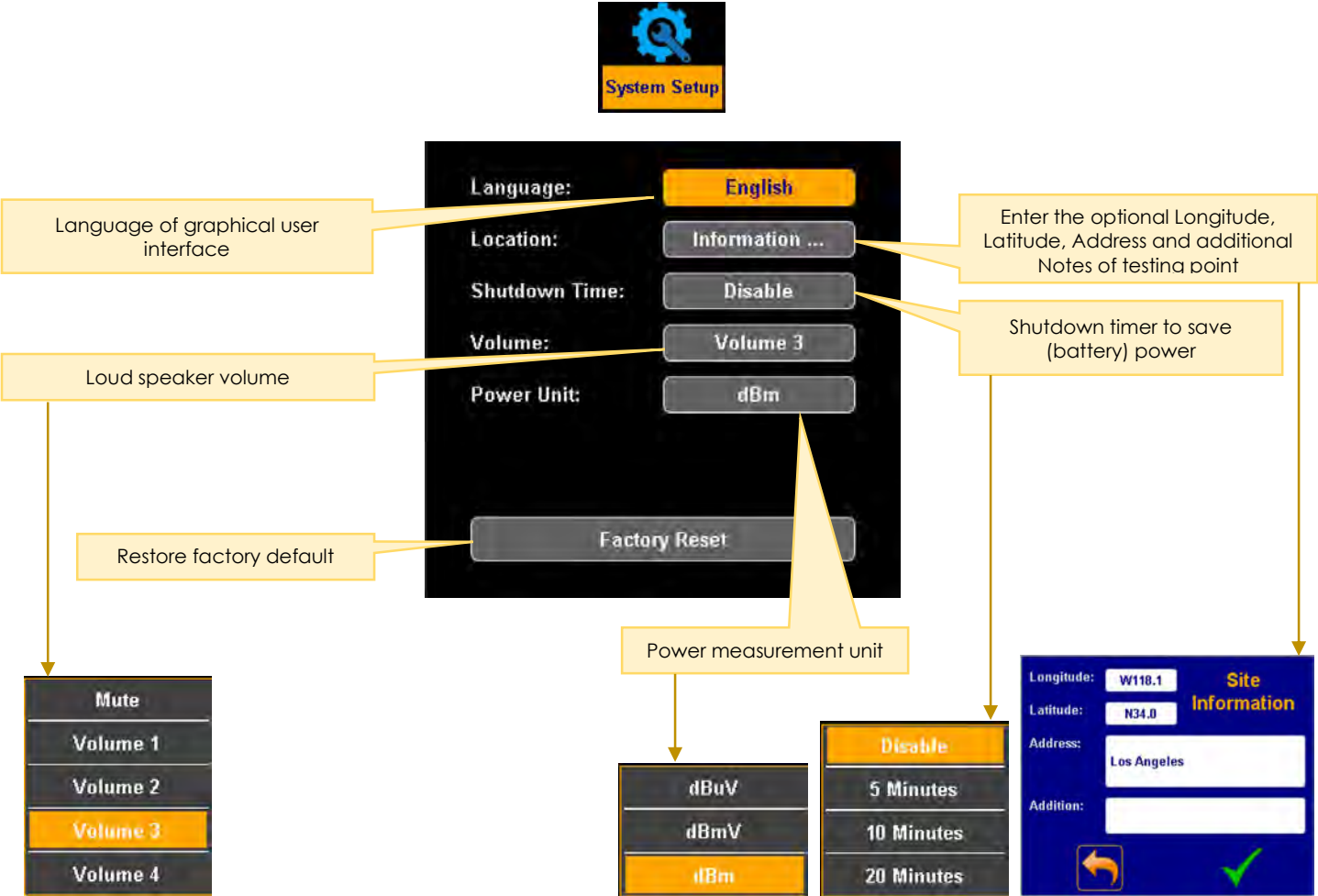
### SNR Measurement

The ST-5810 can perform measurement of the Signal-to-Noise Ratio (or SNR) of Analog (NTSC, PAL) non-scrambled channels.

### Measurement Report Saving and Viewing

Power Level, Tilt, Spectrum, Channel Scan, Limit measurements can be saved and transferred through the USB-C to local computer. The ST-5810 has the capability to store the amplitudes of all video and audio carriers. These data records can be captured in memory and later recalled or uploaded.

### 3.2 SYSTEM SETUP



### 3.3 ABOUT

The About command will show firmware version and the serial number of the instrument.





## 4. MEASUREMENT

Different measurement functions can be available for different TV standards. Following sections cover most of the general measurement functions. Special notes are added in case the measurement function described doesn't apply to specific TV standard.

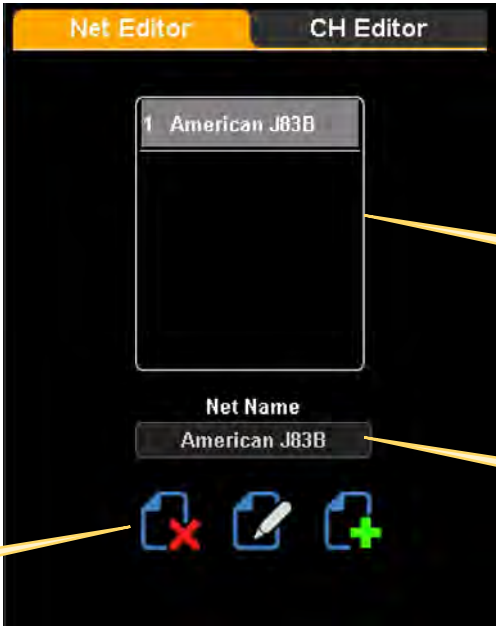
### 4.1 CHANNEL PLAN

TV channel lineup can be discovered or composed and saved on the unit for easily traversing different channels in different measurement modes without entering channel frequency. If channel number and channel frequency are known to the user, channel plan can be composed by using Channel Editor function described below. Otherwise, Channel Discovery function can automatically discover available TV channels from the input signal.

#### 4.1.1 NETWORK (PROFILE) EDITOR

All information of channel lineup is grouped and saved under Network (profile). Network profile can be selected and loaded before the measurement gets started. Multiple Network profiles can be saved with different channel lineup information, but only one Network profile can be selected at once for measurement purpose. Depending on the TV signal type enabled, a default Network profile might be available for selection. If default Network profile is unavailable, it's easy to create one by using the Add button.



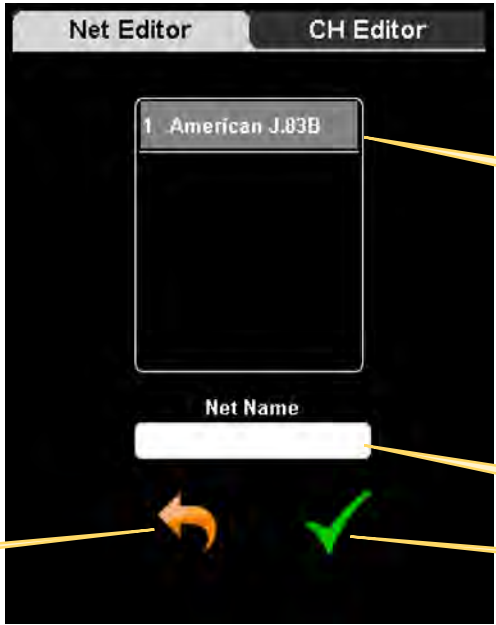


Network profile list

Selected Network profile name

Delete, Edit, Add Network profile

Manage Network profile



List of existing Network profiles

Network profile name

Cancel

OK

Add Network profile

4.1.2 CHANNEL PLAN EDITOR

Channel information can be manually edited from or added to the existing Network profile.

**Net Editor** | **CH Editor**

American J83B ▼ Current CH Num: 152

84	591.000MHz	6000	CH85
85	597.000MHz	6000	CH86
86	603.000MHz	6000	CH87
87	609.000MHz	6000	CH88
88	615.000MHz	6000	CH89
89	621.000MHz	6000	CH90

Freq: 621, SRate: 5056, Ch No: CH90

Buttons: [Delete] [Edit] [Add]

Tips: User can search existing transponder or channel by <Discovery Channel> function, and insert the new signal to current network table.

Callouts:
 

- Dropdown of Network profile for selection
- Channel list with selected channel highlighted
- Information of selected channel
- Command buttons to Delete, Edit or Add channel

**Net Editor** | **CH Editor**

American J.83B ▼ Current CH Num: 8

1	500.000MHz	6000
2	506.000MHz	5056
3	512.000MHz	6000
4	518.000MHz	6000
5	524.000MHz	6000
6	530.000MHz	6000

Start Freq: [ ], Band: 6000, Start ChNo: [ ], Ch Count: [ ]

Buttons: [Back] [Add] [Single add mode] [Multiple add mode]

Tips: User can search existing transponder or channel by <Discovery Channel> function, and insert the new signal to current network table.

Callouts:
 

- Channel information to add
- Starting channel frequency
- Channel bandwidth
- Starting channel number
- Channel count to add
- Add single channel
- Add multiple channels Note: consecutive multiple channels are added in step of bandwidth (6MHz, 7MHz, or 8MHz)

Channel frequency: 506

Symbol rate: 5056

Channel number: [ ]

Buttons: [Back] [Add]

### 4.2 CHANNEL DISCOVERY

TV channel lineup can be discovered and saved by ST-5810 for easily traversing different channels in different measurement modes without entering channel frequency. Every existing analog and digital channel can be detected in real time to determine the overall frequency response of the signal. To discover channels available on the RF signal received, enter following parameters before hitting Start button:



**Find Signal**

Discovered channel count: 6

Channel discovery progress bar: 75%

Scan Freq: 140.0 MHz

Save channel list to current Network profile

Start/Stop button of channel

Depending on the modulation standard, (channel) bandwidth can be 6000Hz (6MHz ATSC/J.93B), 7000Hz (7MHz DVB-C J.83A) or 8000Hz (8MHz DVB-C J.83A, DVB-S, DVB-T)

Channel discovery frequency range

List of channels discovered:

6000	
2	116.0MHz 6000
3	122.0MHz 6000
4	128.0MHz 6000
5	134.0MHz 6000
6	140.0MHz 6000

Dropdown of Network profile for selection: America J.83

Parameter	Value
Bandwidth	6000 KHz
Start Freq	110 MHz
Stop Freq	862 MHz
Scan Mode	Fast Mode

Slow Mode / Fast Mode



A message box will confirm the number of new channels discovered and saved to the selected Network profile.

### 4.3 LIMIT CONFIGURATION

Limit is the threshold of measurement values to be justified for pass and fail condition. Limit configuration allows user to enable, disable and change specific threshold values for measurement condition justification. A Pass or Fail status is displayed during real time or static measurement according to limit settings.



**Limit Configuration**  
Mode: J83.B

**Common Setting**

No.	Item	Value	Enabled
1	Max Level	-10.0 dBm	X
2	Min Level	-75.0 dBm	✓
3	Max TILT	10.0 dB	✓
4	BER	<1.0e-9	✓

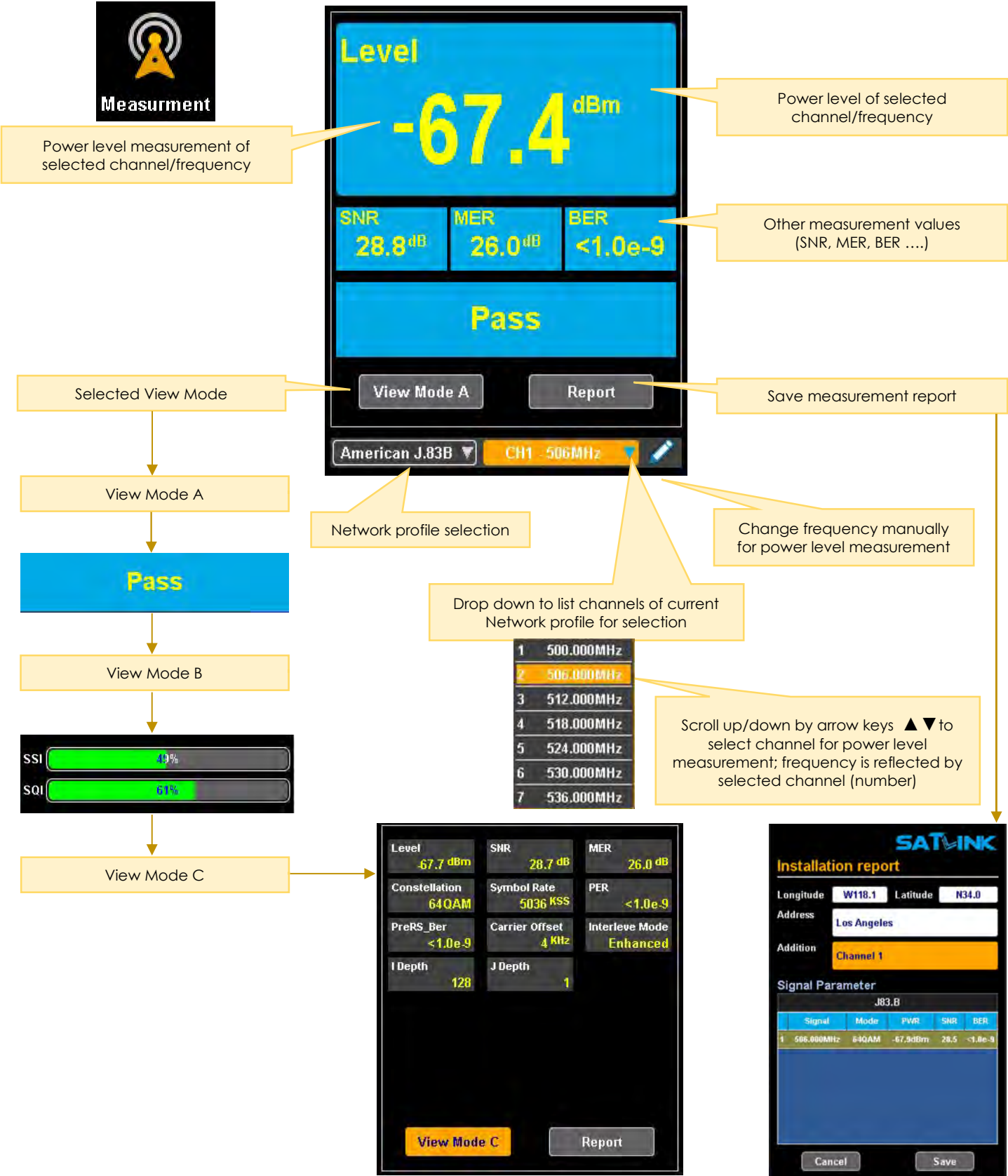
**SNR Threshold Setting**

No.	Const	Coderate	Threshold	Enabled
1	64QAM	+-	23.0 dB	✓
2	256QAM	+-	29.5 dB	✓

Callouts:

- Limit category (points to 'Common Setting')
- Limit description (points to 'Max Level')
- TV standard enabled (points to 'Mode: J83.B')
- Limit status: Enabled with check mark; tap to toggle (points to 'X' in the Max Level row)
- Limit/Threshold value (points to '-10.0 dBm' in the Max Level row)

4.4 POWER LEVEL



### 4.5 CONSTELLATION

Quadrature Amplitude Modulation, QAM is a form of modulation that is a combination of phase modulation and amplitude modulation. The QAM scheme represents bits as points in a quadrant grid know as a constellation diagram. Constellation diagrams are used to graphically represent the quality and distortion of a digital signal. In practice, there is always a combination of modulation errors that may be difficult to separate and identify, as such, it is recommended to evaluate the measured constellation diagrams using mathematical and statistically methods.

The interface displays a constellation diagram with a grid of points. Callouts include: 'Tap to select zoom in quadrant' pointing to a quadrant; 'Constellation diagram' pointing to the main grid; 'Power level' pointing to the '-67.3 dBm' display; 'Modulation type' pointing to the '64QAM' display; 'Zoom In / Out' pointing to a magnifying glass icon; 'Change frequency manually for constellation diagram' pointing to a pencil icon; 'Dropdown of Network profile for selection' pointing to the 'American J.83B' dropdown; and 'Drop down to list channels of current Network profile for' pointing to a list of channels.

1010100  
Constellation

Tap to select zoom in quadrant

Constellation diagram

Power level

Modulation type

Zoom In / Out

Change frequency manually for constellation diagram

Dropdown of Network profile for selection

Drop down to list channels of current Network profile for

1	500.000MHz
2	506.000MHz
3	512.000MHz
4	518.000MHz
5	524.000MHz
6	530.000MHz
7	536.000MHz

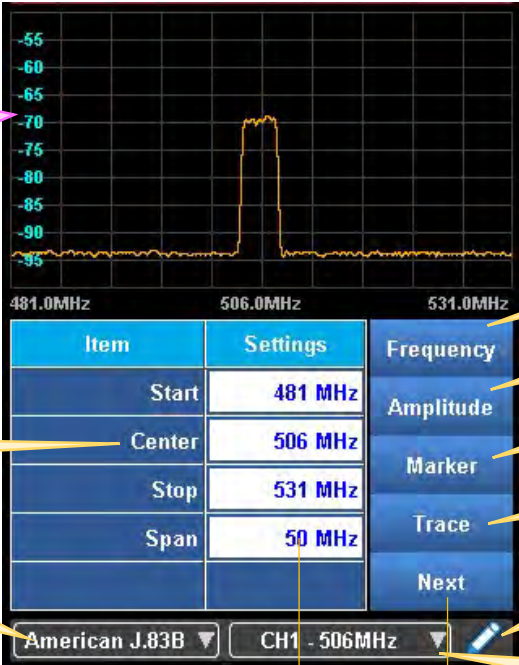
Scroll up/down by arrow keys ▲▼ to select channel for power level measurement; frequency is reflected by selected channel (number)

4.6 SPECTRUM ANALYSIS

A spectrum analysis measures the magnitude of an input signal versus frequency within the full frequency range of the instrument. The primary use is to measure the power of the spectrum of known and unknown signals/channels. In addition to display the frequency spectrum of the target channels by utilizing the strong point of wide span, a real-time spectrum analysis can help with most modern RF measurement challenges, like: discovery of rare, short duration events; seeing weak signals masked by stronger ones; observing signals masked by noise, finding and analyzing transient and dynamic signals; capturing burst transmissions, glitches, switching transients...etc.



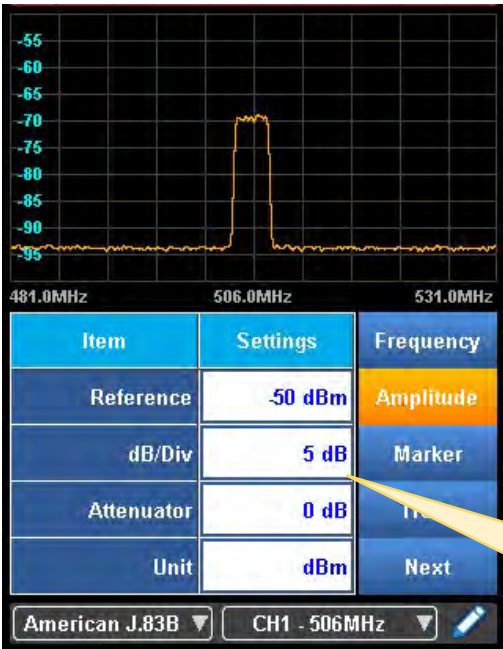
**Spectrum Trace**  
Multi-touch operations can be used to zoom in/out, scroll left/right/up/down and pan over the spectrum trace



Frequency Range and Span

Dropdown of Network profile for selection

- Frequency (range) settings
- Amplitude (range) settings
- Marker settings
- Trace settings
- Change frequency manually for power level measurement
- Drop down to list channels of current Network profile for



- 20 MHz
- 50 MHz
- 100 MHz
- 200 MHz
- 500 MHz
- FullBand
- Pause
- Report
- Back

Freq 500 SRate 5056

- Pause trace measurement
- Save spectrum analysis report
- Go back to previous menu

Frequency span selection, including Full Band

Amplitude settings  
Reference: -80 to 0 dBm  
dB/Div: +2 to 20 dB  
Attenuator: 0 to 40 dB in 5 dB step  
Unit: dBm/dBuV

**For better measurement result, the input signal is better attenuated to be lower than 67dBuV to avoid component oversaturation.**



Marker A

Marker B

	Marker A	Marker B	
Level	-94.1 dBm	-93.5 dBm	Amplitude
Freq	497.7 MHz	514.3 MHz	Marker
OnOff	ON	ON	Trace
			Next

Marker Measurement

Marker On/Off

Item	Settings	Frequency
Max Hold	ON	Amplitude
Min Hold	ON	Marker
Average	3	Trace
		Next

Max Hold, Min Hold and Average (1 to 20) settings  
 Note: Average 1 means real time spectrum. Greater the average, better the filtering effect for glitches or burst noise.

Pause

Item	Settings	Run
Max Hold	ON	Report
Min Hold	ON	
Average	3	Back

Run/Pause trace measurement

**SATLINK**

**Installation report**

Longitude **W118.1** Latitude **N34.0**

Address **Los Angeles**

Addition

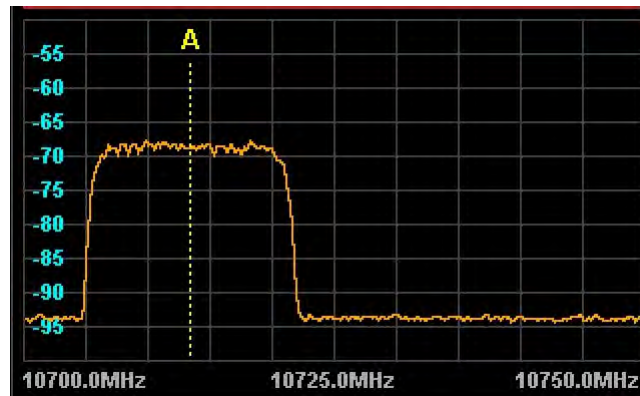
**Spectrum Curve** Unit(dBm)

Save trace measurement report

#### 4.6.1 HOW TO IDENTIFY CHANNEL FREQUENCY FROM SPECTRUM TRACE

The center frequency of TV channel can also be identified by following steps below

- Identify the spike of TV channel from the spectrum trace
- Zoom in to the area and set the frequency span to be 50MHz
- Enable a Marker (either A or B) and move the marker to the center of the spike
- Read the frequency of marker position as the center frequency of specific TV channel



### 4.7 SIGNAL-OVER-NOISE RATIO (SNR) MONITORING

Signal over Noise Ratio monitoring records the history of SNR over time. SNR is defined as the ratio of signal power to the noise power, often expressed in decibels, to compare the level of a desired signal to the level of background noise. A ratio higher than 1:1 (greater than 0 dB) indicates more signal than noise.

**SNR Monitor**

SNR measurement over time

Current SNR measurement value: **28.8 dB**

Pause SNR monitoring

SNR measurement of current selected channel/frequency

Dropdown of Network profile for selection: American J.83B

Drop down to list channels of current Network profile for: CH1 - 506MHz

Parameter	Value
Constellation	64QAM
Max SNR	28.9 dB
Min SNR	28.0 dB
MER	26.0 dB
PER	<1.0e-9
Level	-67.0 dBm

Parameter	Setting
Speed	Fast
Beep Mode	OFF
Threshold	23.0 dB

Sampling speed

Threshold/Limit to trigger alarm

### 4.8 MULTI-CHANNEL SCAN

Multi-channel scan performs fast scan on selected channels/frequencies to measure power level, SNR, QAM, MER and BER. Measurement values are summarized in tabular format.



American J83B Current Selected : 5

1	93.000MHz	6000	CH95	✓
2	99.000MHz	6000	CH96	✓
3	105.000MHz	6000	CH97	✓
4	111.000MHz	6000	CH98	✓
5	117.000MHz	6000	CH99	✓

**Stop** Report

Signal	PWR	SNR	Mode	BER
1 93.000MHz	-67.1dBm	28.9dB	64QAM	<1.0e-9
2 99.000MHz	-67.1dBm	28.3dB	64QAM	<1.0e-9
3 105.000MHz	-67.8dBm	28.9dB	64QAM	<1.0e-9

Select channel(s) to scan

Start/Stop multi-channel scan

Save report

Multi-channel measurement values

**SATLINK**

### Installation report

Longitude **W118.1** Latitude **N34.0**

Address **Los Angeles**

Addition

Signal Parameter

J83.B				
Signal	Mode	PWR	SNR	BER
1 93.000MHz	64QAM	-67.1dBm	28.9dB	<1.0e-9
2 99.000MHz	64QAM	-67.1dBm	28.3dB	<1.0e-9
3 105.000MHz	64QAM	-67.8dBm	28.9dB	<1.0e-9
4 111.000MHz	64QAM	-66.9dBm	28.4dB	<1.0e-9
5 117.000MHz	64QAM	-67.8dBm	28.4dB	<1.0e-9

**Cancel** Save

4.9 TILT

The Tilt measurement helps to quickly measure the flatness of a TV system and the gain of the splitters / taps by showing the power level measurement of all channels in bar chart and tabular formats.



Power level chart

Warning message if power level limit is triggered

Dropdown for Network profile selection

Tilt scan

Tilt measurement configuration

Power level table

Summary of power measurement of selected channel

Enable/Disable selection

Sort channels in ascending / descending order by power level

Channel	Level
146 CH152 - 963 MHz	-91.0 dBm
147 CH153 - 969 MHz	-93.3 dBm
148 CH154 - 975 MHz	-89.4 dBm
149 CH155 - 981 MHz	-88.2 dBm
150 CH156 - 987 MHz	-88.9 dBm
151 CH157 - 993 MHz	-89.3 dBm
152 CH158 - 999 MHz	-85.0 dBm

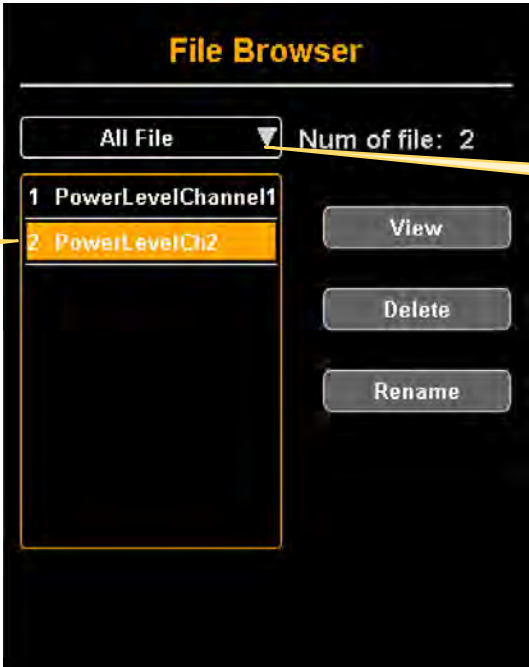
Item	Value	Summary
Limit	Failed	Sort Decrease
Flatness	10.9 dB	Sort Increase
Average	-89.5 dBm	Back
Ch No. - Max	CH91 - 627 MHz	
Power Max	-84.1 dBm	
Ch No. - Min	CH117 - 753 MHz	
Power Min	-95.0 dBm	

Channel	Level	EN	Select All
1 CH95 - 93 MHz	- -	✓	Clear List Back
2 CH96 - 99 MHz	- -	✓	
3 CH97 - 105 MHz	- -	✓	
4 CH98 - 111 MHz	- -	✓	
5 CH99 - 117 MHz	- -	✓	
6 CH14 - 123 MHz	- -	✓	
7 CH15 - 129 MHz	- -	✓	

Channel	Level	Summary
1 CH117 - 753 MHz	-95.0 dBm	Sort Decrease
2 CH30 - 261 MHz	-94.8 dBm	Sort Increase
3 CH41 - 327 MHz	-94.8 dBm	Back
4 CH75 - 531 MHz	-94.8 dBm	
5 CH27 - 243 MHz	-94.7 dBm	
6 CH130 - 831 MHz	-94.7 dBm	
7 CH24 - 225 MHz	-94.6 dBm	

### 4.10 REPORT LIST

The Report List browses the file system stored on the instrument. Measurement report file can be viewed, deleted or renamed.



File list

Dropdown for file type selection



5 DVB-S/S2 SPECIFIC

There are additional functions available for DVB-S/S2 testing

- Motor Test
- Angle Calculation

Meanwhile, most DVB-S/S2 configuration and measurement apply to satellite (profile) with transponders (TP) list compared to network (profile) with TV channel plans of other DVB standards.

5.1 MEASUREMENT



### 5.2 MULTI-TRANSPONDER SCAN

Multiple transponders of selected satellite can be scanned for power level, SNR, modulation type and BER.

The screenshot shows a software interface for satellite transponder scanning. At the top, a dropdown menu is set to 'C\_Galaxy 15'. Below it is a list of seven transponders, each with a number, a signal ID, and a checkmark. A 'START' button is positioned to the right of the list. Below the list is a 'Report' button. At the bottom, a table displays the scan results for the first three transponders. Callouts point to these elements: 'Dropdown for Satellite selection' points to the 'C\_Galaxy 15' dropdown; 'Transponder list of selected Satellite' points to the list of transponders; 'Measurement values of selected transponder(s)' points to the results table; 'Start/Stop multi-transponder scan' points to the 'START' button; 'Enable/Disable transponder(s) to be scanned' points to the checkmarks in the transponder list; and 'Save report' points to the 'Report' button.

Current Selected : 3

	Signal	PWR	SNR	Mode	BER
1	3720-H-29270	-67.8dBm	28.8dB	8PSK	<1.0e-9
2	3740-V-31250	-67.8dBm	28.5dB	8PSK	<1.0e-9
3	3780-V-31250	-67.3dBm	28.7dB	8PSK	<1.0e-9

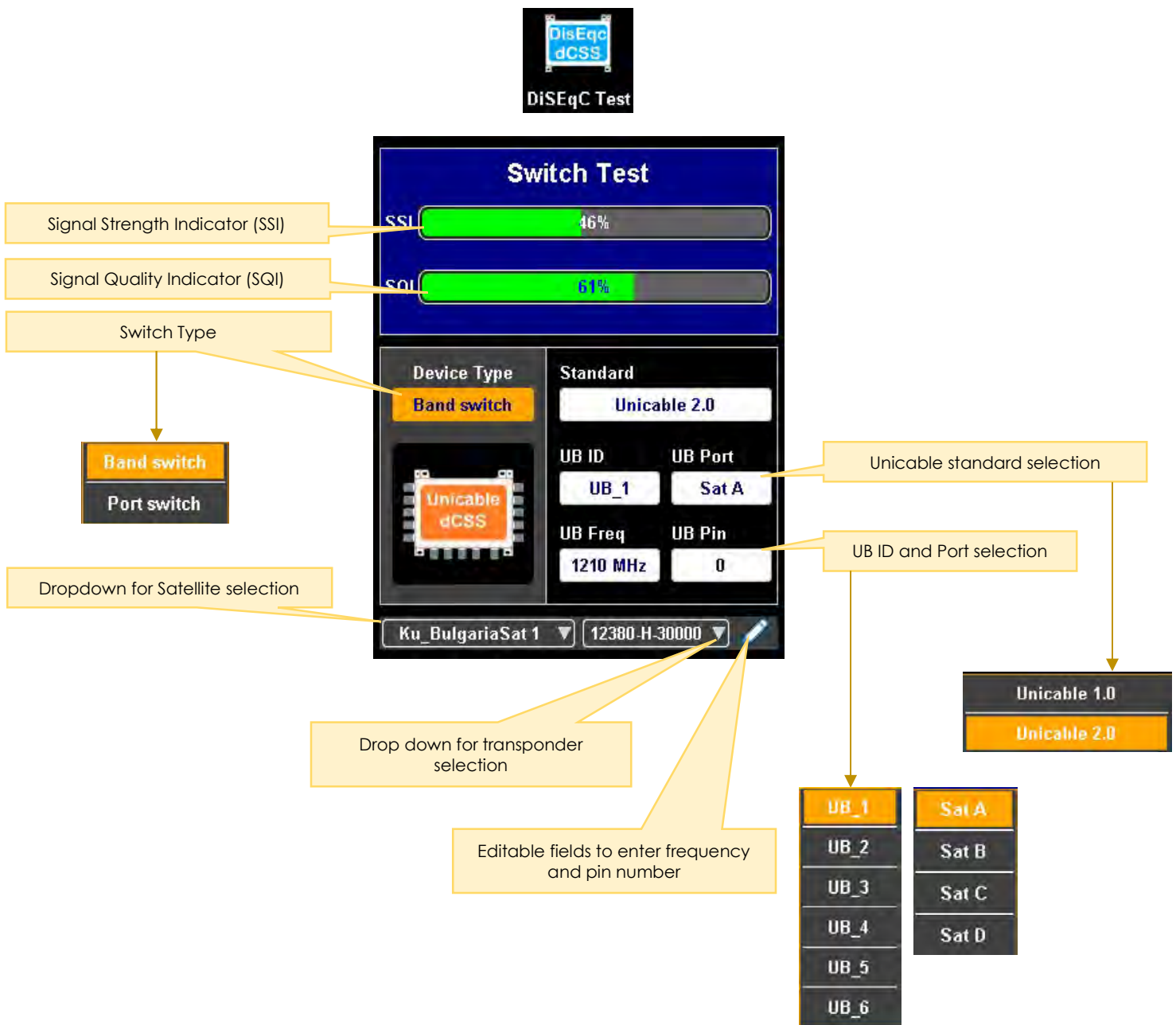


### 5.3 DISEQC SWITCH TEST

DiSEqC (Digital Satellite Equipment Control), is a special communication protocol for use between a satellite receiver and a device such as a multi-dish switch or a small dish antenna rotor.

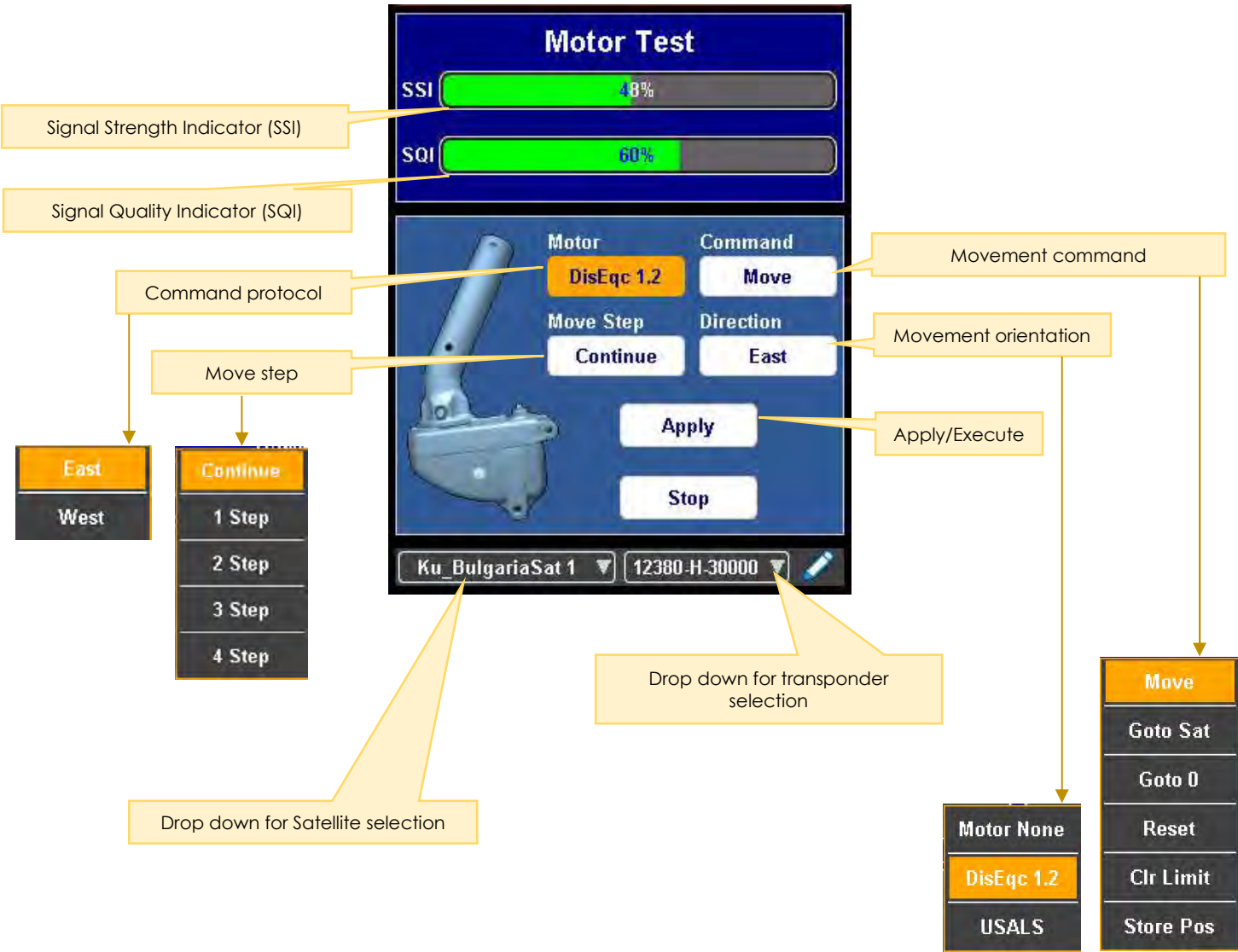
Single-cable distribution (Unicable) is a satellite TV technology that enables the delivery of broadcast programming to multiple users over a single coaxial cable, and eliminates the numerous cables required to support consumer electronics devices.

A digital channel-stacking switch (dCSS) IC is a multiple-input multiple-output device. It typically has N 1.2 GHz inputs that can be cascaded to additional chips as required (to expand output capacity). These inputs are fed into a large N-pole M-Throw switch that outputs to M mixers. Each mixer path then translates only the user requested transponder to a predetermined fixed frequency within the 950-2150 MHz band. This fixed frequency is unique for each tuner on the single cable output. Each tuner in the STB always stays at this fixed frequency while the dCSS IC translates the user requested content down the cable to this exact frequency. This architecture requires no hardware change to the STB design.



### 5.4 ROTOR CONTROL

DiSEqC (Digital Satellite Equipment Control) commands can be issued to control the antenna rotor to switch between more popular satellites. Universal Satellites Automatic Location System (USALS) protocol can also be selected to issue commands to control the rotor. DiSEqC 1.3 refers to a receiver which uses USALS in conjunction with the DiSEqC 1.2 protocol.



### 5.5 ANGLE CALCULATION

The angle of satellite dish can be calculated to point to selected satellite.



Satellite		Position	
C_AMC B		W139.0	
Dish Type		Longitude	
Axi_symmetric		W118.1	
Offset Angle		Latitude	
0		N34.0	
Calculate			

Drop down for Satellite selection

Angle calculated

Dish type or enter offset angle

Editable fields to enter position of dish for angle calculation

Axi\_symmetric

Offset

Calculate angle

## 5.6 LIMIT CONFIGURATION

Limit is the threshold of measurement values to be justified for pass and fail condition. Limit configuration allows user to enable, disable and change specific threshold values for measurement condition justification. A Pass or Fail status is displayed during real time or static measurement according to limit settings.

The screenshot displays the 'Limit Configuration' screen for 'Mode: DVB-S/S2'. It is divided into two main sections: 'Common Setting' and 'SNR Threshold Setting'.

**Common Setting Table:**

No.	Item	Value	Enabled
1	Max Level	-10.0 dBm	✓
2	Min Level	-75.0 dBm	✓
3	BER	1.0e-7	✓

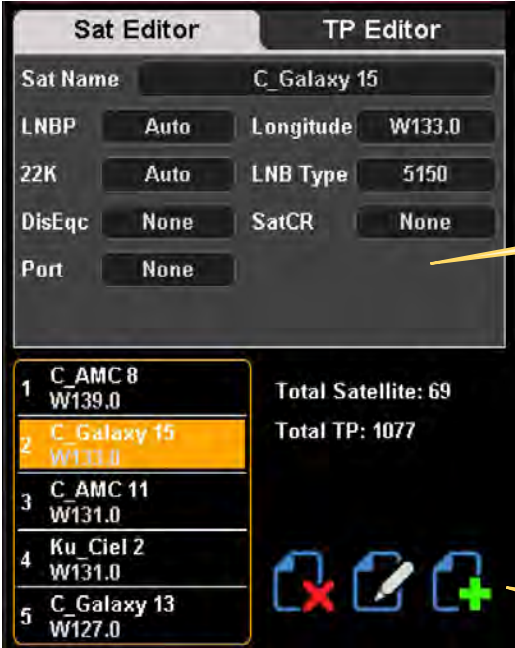
**SNR Threshold Setting Table:**

No.	Const	Coderate	Threshold	Enabled
1	QPSK	1/2	4.0 dB	✓
2	QPSK	3/5	4.5 dB	✓
3	QPSK	2/3	5.5 dB	✓
4	QPSK	3/4	6.5 dB	✓
5	QPSK	4/5	7.0 dB	✓
6	QPSK	5/6	7.5 dB	✓

**Callouts:**

- Limit category:** Points to the 'Item' column in the Common Setting table.
- Limit description:** Points to the 'Item' column in the SNR Threshold Setting table.
- Limit/Threshold value:** Points to the 'Value' column in the Common Setting table and the 'Threshold' column in the SNR Threshold Setting table.
- Limit status: Enabled with check mark; tap to toggle:** Points to the 'Enabled' column in both tables.

5.7 SATELLITE AND TRANSPONDER EDITOR

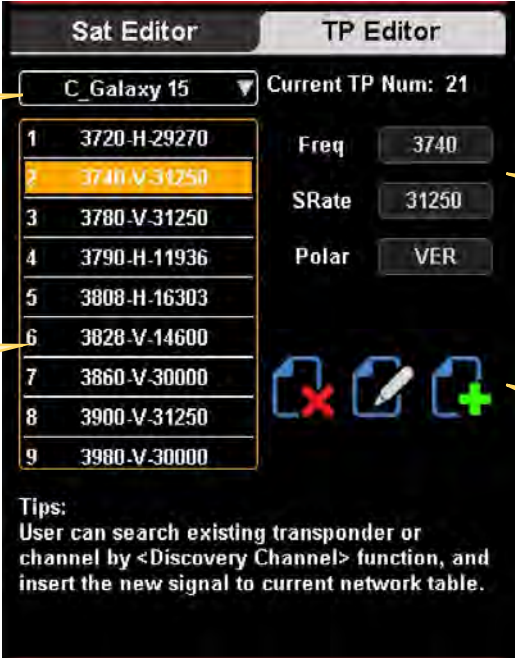


Satellite information

Satellite list for selection

Delete, Edit, Add satellite

Satellite Editor



Transponder information

Dropdown for Satellite selection

Transponder list of selected Satellite for selection

Delete, Edit, Add transponder of selected satellite

## 6. REFERENCE

### 6.1 CUSTOMER SERVICE

General Satlink Customer Service offered by StarLink is available from 8:00 AM to 5:00 PM Pacific Standard Time (California, USA).

Customer Service performs the following functions:

- Answers customer questions over the phone on such topics as product operation and repair.
- Facilitates prompt repair of malfunctioning test sets.
- Provides information about product upgrades.

A Return Merchandise Authorization (RMA) Number is required before any product may be shipped to StarLink facility in USA for repair. Out-of-warranty repairs require both an RMA and a Purchase Order before the unit is returned. All repairs are warranted for 90 days.

Contact Customer Service at:

StarLink LLC

1030 E El Camino Real, #158

Sunnyvale, CA 94087

U.S.A.

Tel: +1 408.931.0958

Web: <http://www.starlink7.com> E-mail: [support@starlink7.com](mailto:support@starlink7.com)

### 6.2 TESTING AND CALIBRATION STATEMENT

Satlink certifies that this product was manufactured, tested, and verified according to the applicable Satlink manufacturing and test procedure(s). These formal procedures are designed to assure that the product meets its required specifications.

This product has no user-adjustable settings. During normal usage, periodic calibration is not a requirement. However, if the product fails during the self-verification test, during power up, the product can be returned to the manufacturer for evaluation and repair.

### 6.3 EXPRESS LIMITED WARRANTY

A. Hardware Coverage. COMPANY warrants hardware products against defects in materials and workmanship. During the warranty period COMPANY will, at its sole option, either (i) refund of CUSTOMER'S purchase price without interest, (ii) repair said products, or (iii) replace hardware products which prove to be defective; provided, however, that such products which COMPANY elects to replace must be returned to COMPANY by CUSTOMER, along with acceptable evidence of purchase, within twenty (20) days of request by COMPANY, freight prepaid.

B. Software and Firmware Coverage. COMPANY warrants software media and firmware materials against defects in materials and workmanship. During the warranty period COMPANY will, at its sole option, either (i) refund of CUSTOMER'S purchase price without interest, (ii) repair said products, or (iii) replace software or firmware products which prove to be defective; provided, however, that such products which COMPANY elects to replace must be returned to COMPANY by CUSTOMER, along with acceptable evidence of purchase, within twenty (20) days of request by COMPANY, freight prepaid. In addition, during the warranty period, COMPANY will provide, without charge to CUSTOMER, all fixes, patches, new releases and updates which COMPANY issues during the warranty period. COMPANY does not warrant or represent that all software defects will be corrected. In any case where COMPANY has licensed a software product "AS IS," COMPANY'S obligation will be limited to replacing an inaccurate copy of the original material.

C. The warranty period for Hardware, Software and Firmware will be One (1) Year from date of shipment to CUSTOMER. The COMPANY may also sell warranty extensions or provide a warranty term of three years with the original sale, which provide a longer coverage period for the test set chassis, software and firmware, in which case the terms of the express limited warranty will apply to say specified warranty term.

D. Only for CUSTOMER. COMPANY makes this warranty only for the benefit of CUSTOMER and not for the benefit of any subsequent purchaser or licensee of any merchandise.

E. LIMITATION ON WARRANTY. THIS CONSTITUTES THE SOLE AND EXCLUSIVE WARRANTY MADE BY COMPANY WITH RESPECT TO HARDWARE, SOFTWARE AND FIRMWARE. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED. COMPANY SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE. COMPANY'S LIABILITY UNDER THIS AGREEMENT WITH RESPECT TO A PRODUCT, INCLUDING COMPANY'S LIABILITY FOR FAILURE AFTER REPEATED EFFORTS TO INSTALL EQUIPMENT IN GOOD WORKING ORDER OR TO REPAIR OR REPLACE EQUIPMENT, SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OR LICENSE FEE FOR THAT PRODUCT, NOR SHALL COMPANY IN ANY EVENT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, ARISING FROM OR RELATED TO THE SALE OF THE MERCHANDISE HEREUNDER, INCLUDING BUT NOT LIMITED TO DAMAGES ARISING FROM OR RELATED TO LOSS OF BUSINESS, LOSS OF PROFIT, LOSS OF GOODWILL, INJURY TO REPUTATION, OVERHEAD, DOWNTIME, REPAIR OR REPLACEMENT, OR CHARGE-BACKS OR OTHER DEBITS FROM CUSTOMER OR ANY CUSTOMER OF CUSTOMER.

F. No Guaranty, Non-application of Warranty. COMPANY does not guaranty or warrant that the operation of hardware, software, or firmware will be uninterrupted or error-free. Further, the warranty shall not apply to defects resulting from:

- (1) Improper or inadequate maintenance by CUSTOMER;
- (2) CUSTOMER-supplied software or interfacing;
- (3) Unauthorized modification or misuse.

## 6.4 SAFTY INSTRUCTIONS

Basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and personal injury, including the following:

- (1) Do not use this product near water – for example, near a bathtub, kitchen sink, laundry tub, or swimming pool, or in a wet basement; only clean with dry cloth.
- (2) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus including amplifiers that produce heat.
- (3) Do not remove the cover of the Channel Filter, cover the modulator with thick or heavy objects.
- (4) Use only the power cord indicated in this manual if applicable.

## 6.5 COAX CABLE

If applicable, the coaxial cable screen shield needs to be connected to the Earth at the building entrance per ANSI/NFPA70, the National Electrical Code (NEC), in particular Section 820.93, "Grounding of Outer Conductive Shield of a Coaxial Cable," or in accordance with local regulation.

## 6.6 FCC CLASS B EQUIPMENT

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by implementing one or more of the following measures:

- Reorient or relocate the device
- Increase the separation between the device and receiver
- Connect the device to an outlet on a circuit different from that to which the receiver is connected (applicable only to power line products)
- Consult the dealer or an experience radio or television technician for help.

## 6.7 DECLARATION OF CONFORMITY FOR PRODUCTS MARKED WITH THE FCC LOGO – USA ONLY

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by implementing one or more of the following measures:

- Reorient or relocate the device
- Increase the separation between the device and receiver
- Connect the device to an outlet on a circuit different from that to which the receiver is connected (applicable only to power line products)
- Consult the dealer or an experience radio or television technician for help.

## 6.8 DECLARATION OF CE CONFORMITY FOR EU

Manufacturer: SatLink Electronics Co., Ltd.

No. 26, Zishan Road, Jiangnan High-Tech Park, Licheng District Quanzhou, Fujian Province, China

Objects: ST-5810, ST-5610

This declaration of conformity is issued under the sole responsibility of the manufacturer for products of Digital TV Signal Level Meter that support multi-channel DVB-T, ISDB-T, DVB-C (J.83B/A/C), and ATSC standards.

The object(s) of the declaration described above are in conformity with the relevant Community harmonization legislation:

- Low Voltage Directive (2014/35/EU)
- Electromagnetic Compatibility Directive (2014/30/EU)
- Radio Equipment Directive (2014/53/EU) And their amendments.

References to the relevant harmonised standards, including the date of the standard, used in relation to which the conformity is declared:

- ETSI EN 301 48901 v2.2.3: 2019-11
- ESTI EN 301 489-53 v1.1.1: 2019-04
- ESTI EN 303 372-2 v1.1.1: 2016-04
- EN IEC 62368-1:2020+A11:2020

Where applicable, the Most Technology Service Co., Ltd. performed above specification conformity test and issued certificate # MOSTCT20040749 in accordance with local regulation.



Fujian Satlink Electronics Co., Ltd. Copyright © 2021, All Rights Reserved.

Jiangnan High Technology Industrial Zone Licheng District, Quanzhou, Fujian, China  
[www.satlinkcn.com](http://www.satlinkcn.com)  
sales@satlinkcn.com

North, Central and South America Distribution

StarLink LLC  
[www.starlink7.com](http://www.starlink7.com)  
support@starlink7.com