

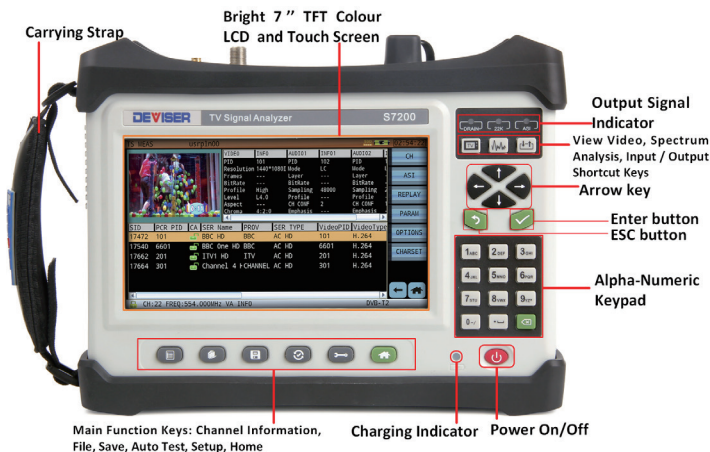
# S7200

## TV Signal Analyzer

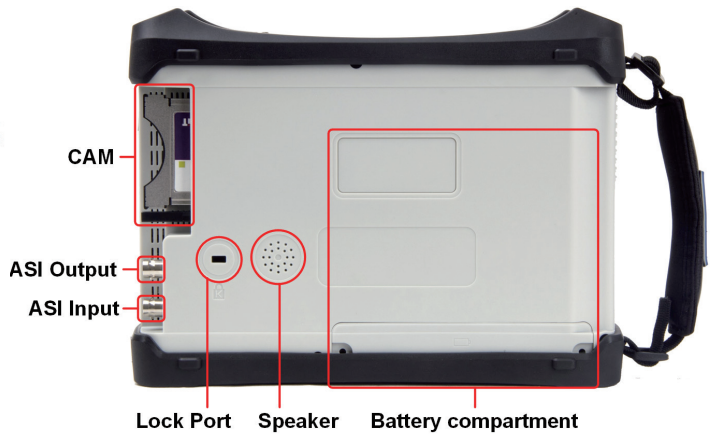
1. All IN ONE Digital TV Analyzer : DVB-C/C2, DVB-T/H, DVB-T2, ATSC, ISDB-T, DVB-S/S2
2. Decodes Multiple Video Standards: MPEG-2/4, VC-1, H.264 and H.265 for 4K, 1080p, 720p and 576i
3. Handheld TS Analyzer
4. Spectrum Analyzer
5. IPTV Analyzer
6. WiFi Analysis and Communication Module
7. Capacitive Touch Screen



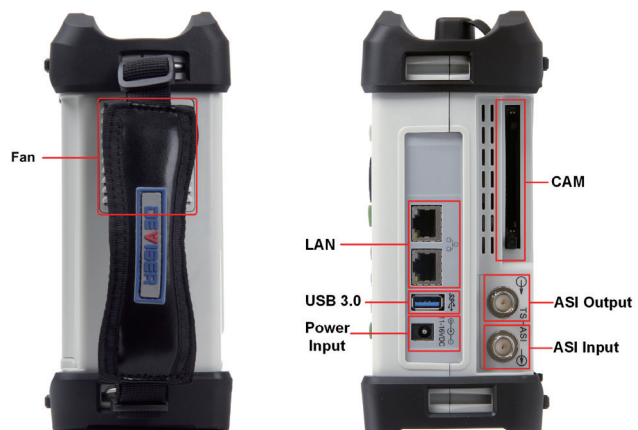
# Physical Information



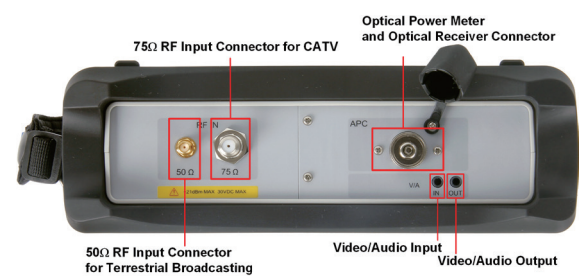
S7200 Front Panel Overview



S7200 Back Panel Overview



S7200 Left and Right Side Overview



S7200 Top Side Overview

# S7200

## TV Signal Analyzer

### Main Features

- Supports all major signal standards: DVB-C(J.83 Annex A/B/C)/C2, DVB-T/H, DVB-T2, ATSC, ISDB-T, DVB-S/S2
- Digital/Analog TV and Digital Satellite TV analysis
- Transport stream analyzer and monitoring via TS-ASI input &RF input
- Fast spectrum analysis with 5 ~ 2150 MHz frequency, Max span 1200MHz
- DSP Technology supports video decoding for multiple standards: MPEG-2, MPEG-4, H.264 and H.265 for 4K,1080p, 720p and 576i, support PAL/NTSC/SECAM color system
- Support SD&HD Video format
- CAM module (Conditional Access Module) for encrypted channels
- TS-ASI input and output
- IPTV analysis option
- TS record and TS replay, Very High speed (>95Mbps) Transport Stream record &analysis
- Optical Power Measurement and Optical Receiver option
- Double 1000M LAN and USB interface
- Inside WiFi Analysis and Communication Module option
- External GPS Dongle option
- High resolution touchscreen: 7" TFT LCD with bright display for diverse lighting conditions.
- W253mm xH194mm xL84mm, light weight.
- Operation time >5 hours on full charge.

### Model Guide

Module	Configuration	Comments
Basic Model		
S7200	DVB-C (J.83 Annex A/C)/S/S2/T/H/T2, ASI Input and Output	
S7200-ATSC	DVB-C (J.83 Annex A/B/C)/S/S2/T/H/T2, ATSC, ASI Input and Output, Spectrum Emission Mask	
S7200-ISDB	DVB-C (J.83 Annex A/C)/S/S2/T/H/T2, ISDB-Tb, ASI Input and Output	
Additional Options		
01 Software Option	DVB-C2	DVB-C2 support
02 Software Option	SATA	Serial AT Attachment Disk
03 Software Option	MPEG TS	TR 101 290 Transport Stream Analysis
04 Software Option	IPTV	IPTV Analysis
05 Software Option	WiFi Analysis	802.11 a/b/g/n Wi-Fi Analysis
06 Software Option	4K and H.265	Support 4K resolution video display, H.265 video decoding
07 Hardware Option	CAM	DVB-CI Conditional Access Module for Channel Decryption
08 Hardware Option	OPT	Optical Receiver and Power Measurement
09 Hardware Option	GPS	GPS Dongle
10 Accessory Option	Power Adaptor Plug Cord (Unite States)	
11 Accessory Option	Power Adaptor Plug Cord (United Kingdom)	
12 Accessory Option	Power Adaptor Plug Cord (Australia)	

## Features

### TV Monitoring

The S7200 provides analog and digital TV monitoring. DSP Technology enables you to decode multiple video formats and standards in both SD & HD: MPEG-2, MPEG-4, H.264 and H.265 for 4K, 1080p, 720p and 576i; as well as PAL/NTSC/SECAM color systems, with a CAM (Conditional Access Module) for encrypted channels.



Figure-1 1080p Decode



Figure-2 Fullscreen Picture Display

### Easy-to-Use Touchscreen Interface

The S7200's menu structure is designed to recall a Windows environment. Featuring touch icons and a navigation keyboard, it is easily mastered with minimal training.

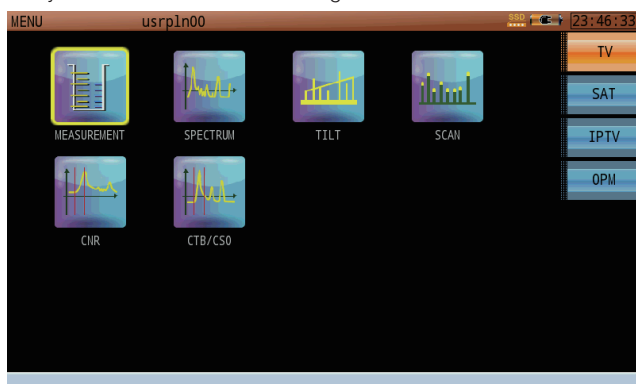


Figure-3 TV Main Menu

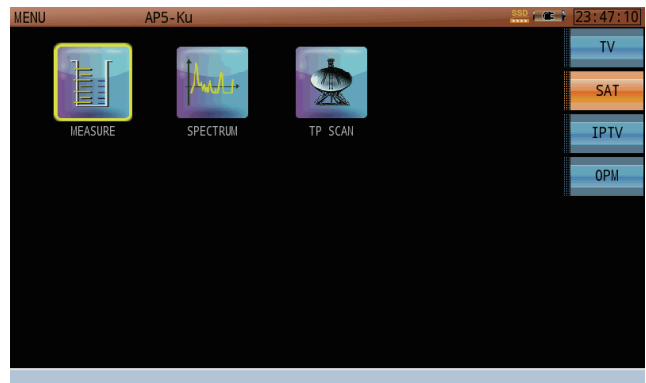


Figure -4 Satellite Main Menu

### Spectrum Measurement

Featuring integrated high-speed spectrum analysis capability, the S7200 covers TV & Broadcasting signals (5-1220MHz) as well as Satellite IF signals (950-2150MHz).

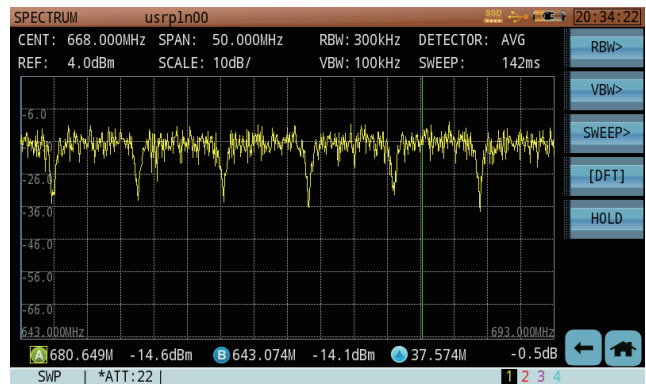


Figure-5 Cable Digital TV Signal Spectrum

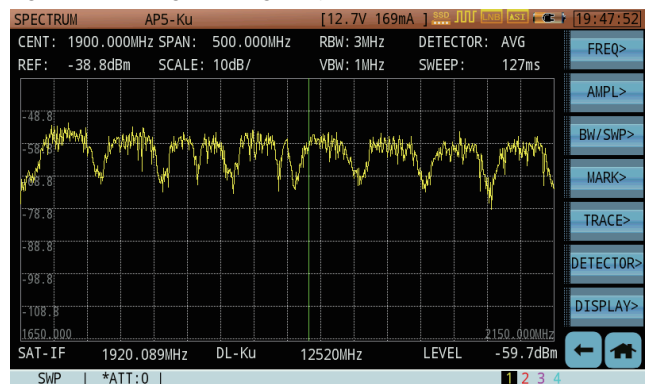


Figure-6 Satellite Signal Spectrum



### DVB-S/S2 Signal Analysis

The S7200 supports the DVB-S/S2 digital broadcast standard, providing power level, MER, BER, & constellation measurements.

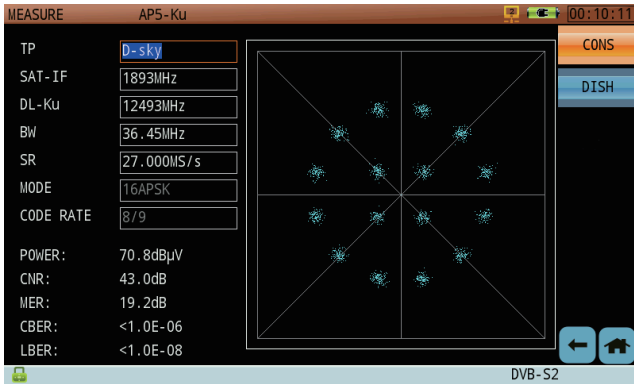


Figure-7 DVB-S2 16APSK Constellation

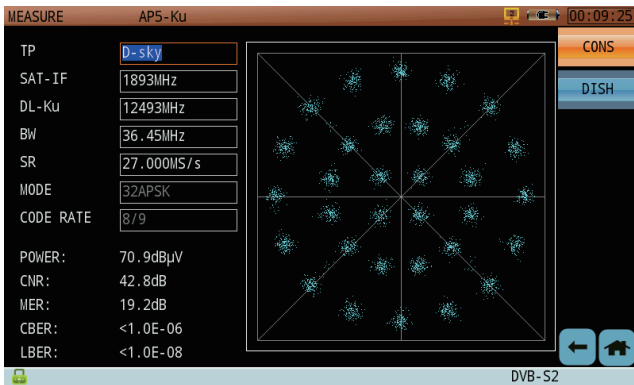


Figure-8 DVB-S2 32APSK Constellation

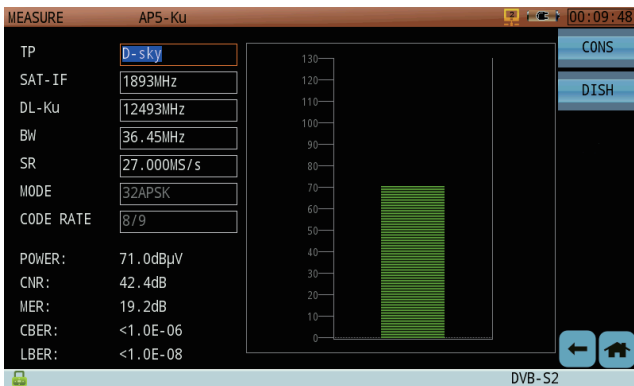


Figure-9 DVB-S/S2 Signal Measurement



Figure-10 Display Max. 12 Transponders Signal Quality to Align Dish Antenna

### Remote Feeding and Control Signal Setting

The S7200 provides feeding power of 5/13/15/18/21V, with a maximum power of 5W. The 22-kHz control signal is compatible with DiSEqC 1.2 and SaTCR.



Figure-11 Remote Feeding and Control Signal Setting

### DVB-C Signal Analysis

Full support for the J.83 standard enables power level, MER, BER, and constellation measurements. Use the Error Vector Spectrum (EVS) tool to quickly find interference signals under the QAM mask.

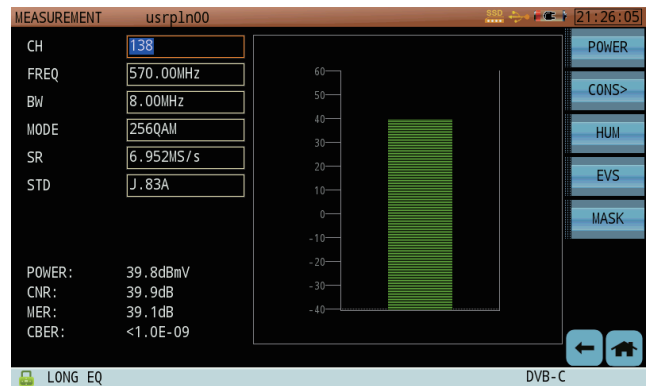


Figure-12 DVB-C Signal Quality Measurement



Figure-13 DVB-C Constellation Measurement

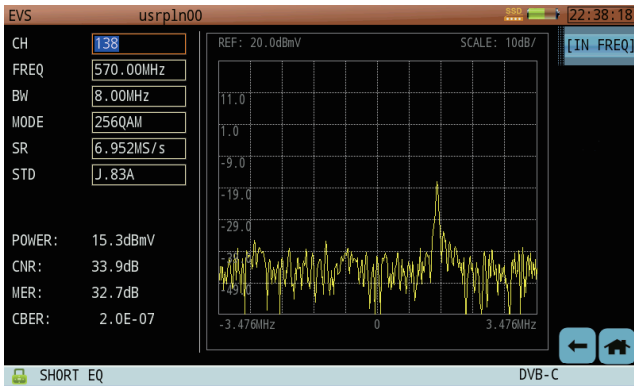


Figure-14 Frequency Domain EVS Measurement

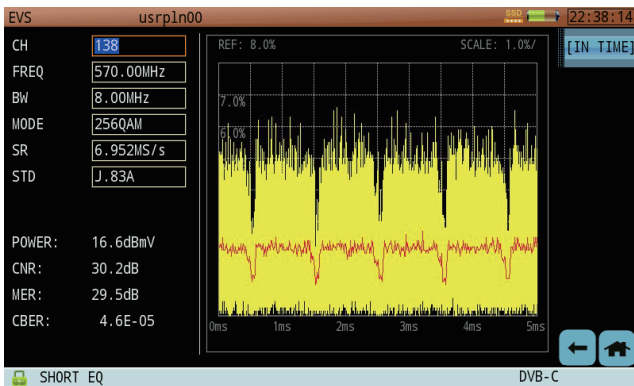


Figure-15 Time Domain EVS Measurement

### DVB-C2 Signal Analysis

The S7200 also supports the DVB-C2 standard, providing power level, MER, BER, and constellation measurements (including 64, 256, 1024, and 4096QAM).

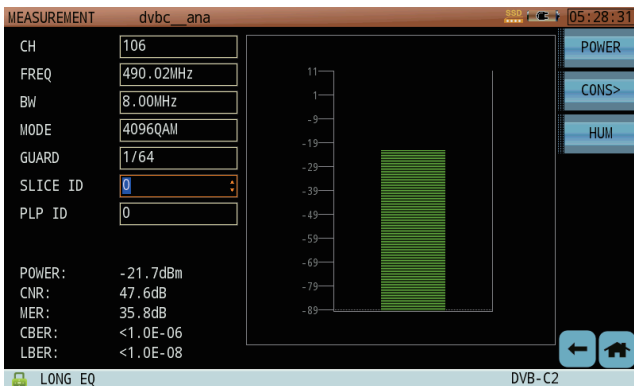


Figure-16 DVB-C2 Signal Quality Measurement

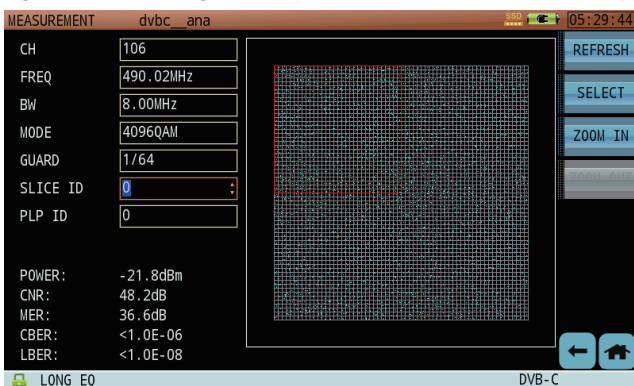


Figure-17 DVB-C2 4096QAM Constellation

### DVB-T/T2 Signal Analysis

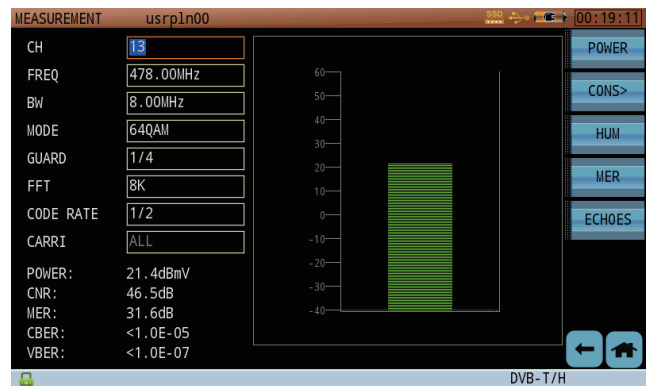


Figure-18 DVB-T Signal Measurement

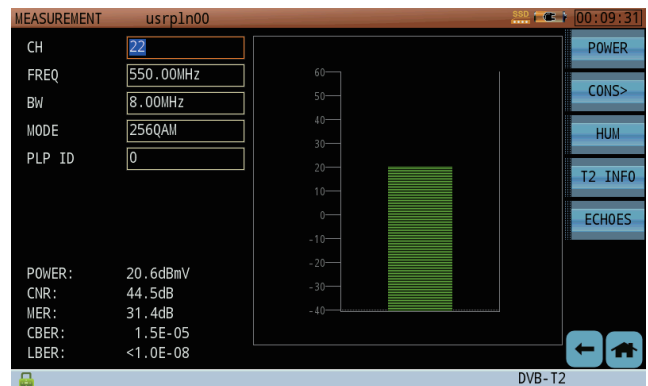


Figure-19 DVB-T2 Signal Measurement



Figure-20 DVB-T Constellation

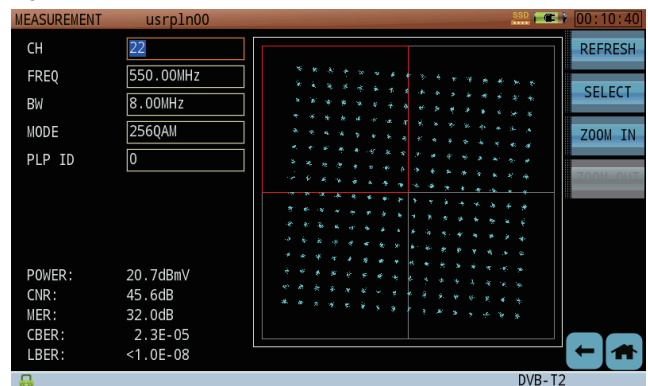


Figure-21 DVB-T2 Constellation

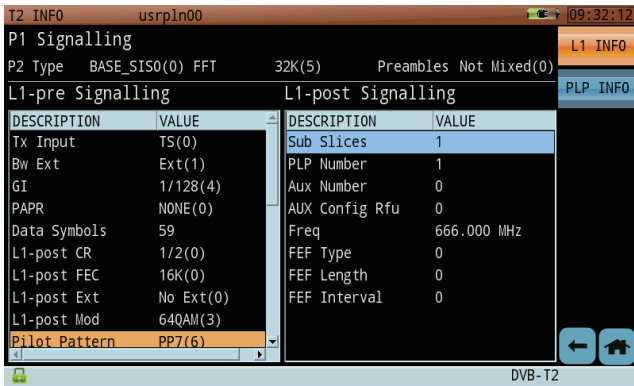


Figure-22 DVB-T2 Signal Information

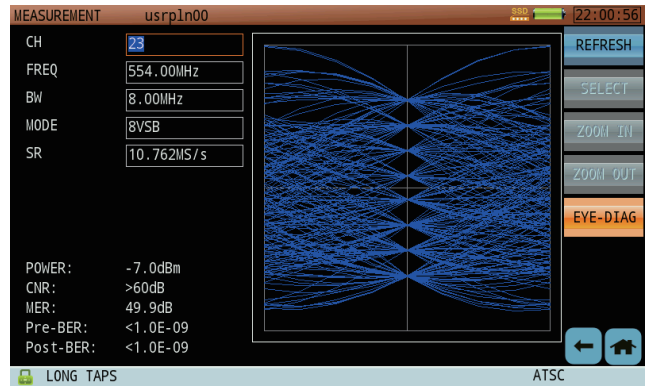


Figure-26 8VSB Eye Diagram

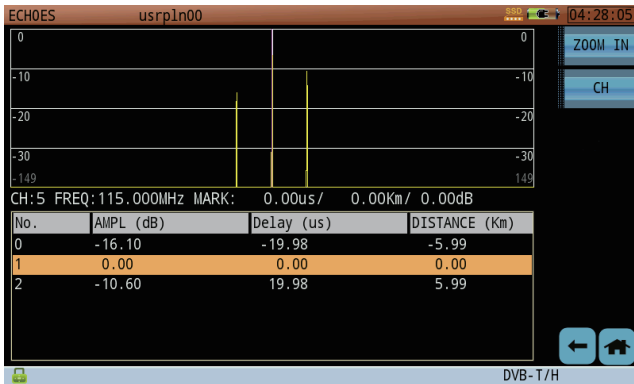


Figure-23 Echo Pattern Display to Locate

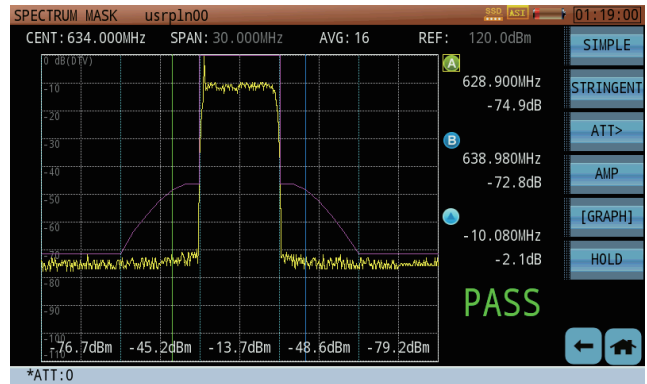


Figure-27 8VSB Spectrum Mask

**ATSC Signal Analysis**

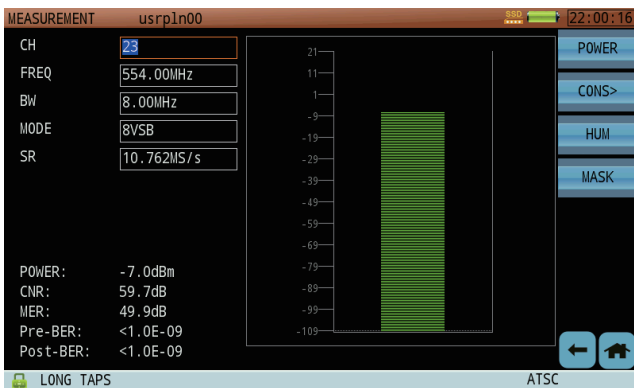


Figure-24 8VSB Signal Quality Measurement

**ISDB-Tb Signal Analysis**

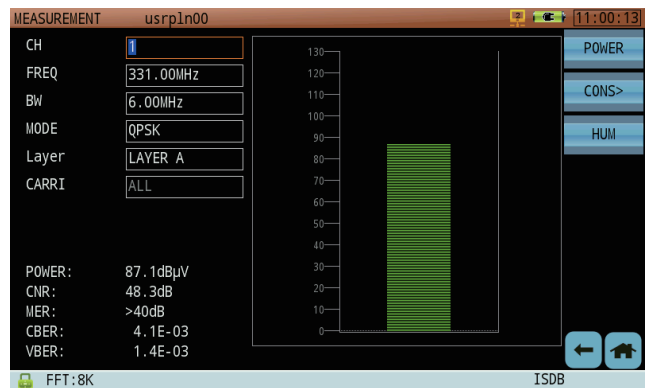


Figure-28 ISDB-Tb Signal Quality Measurement

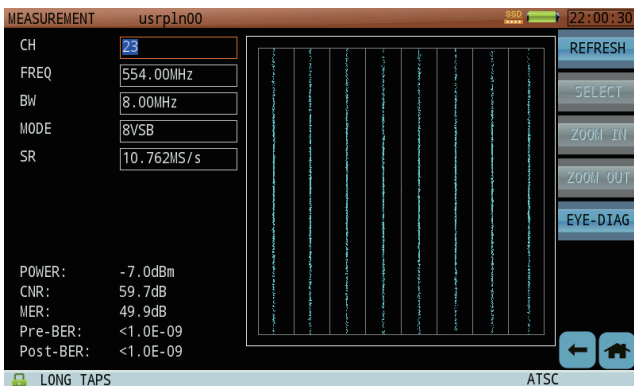


Figure-25 8VSB Constellation Measurement



Figure-29 ISDB-Tb Constellation Measurement

### Transport Stream Analysis and Monitoring

The S7200 allows real-time analysis and monitoring of MPEG Transport Streams via TS-ASI input & RF output. Featuring TR101 290 3-level monitoring, it lists PSI/SI and transport stream program information, and details of all programs running in a TV network or a transponder. 32GB of storage can save hours of TS footage for instant replay and analysis.

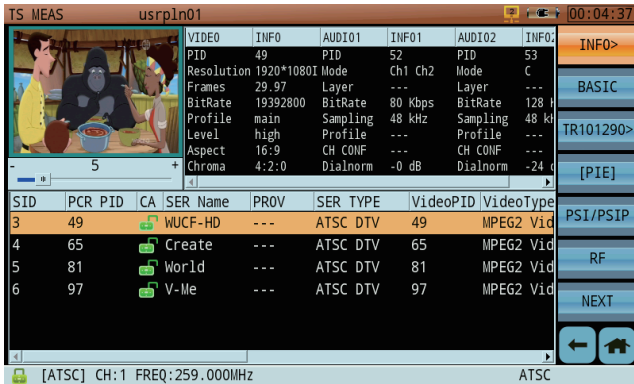


Figure-30 Programs decode Monitoring and list

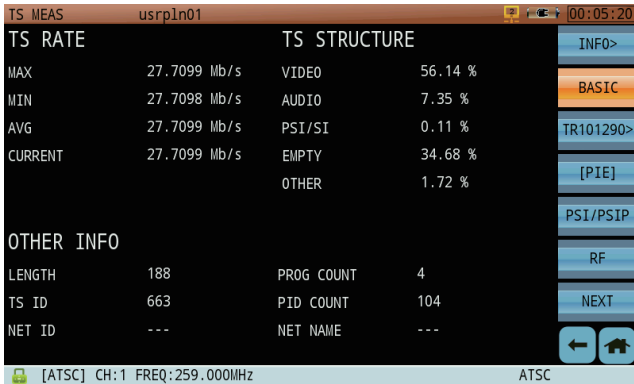


Figure-31 Basic information of TS

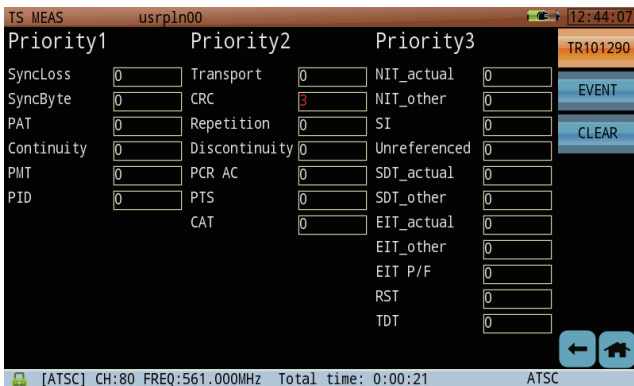


Figure-32 TR101 290 three level monitoring

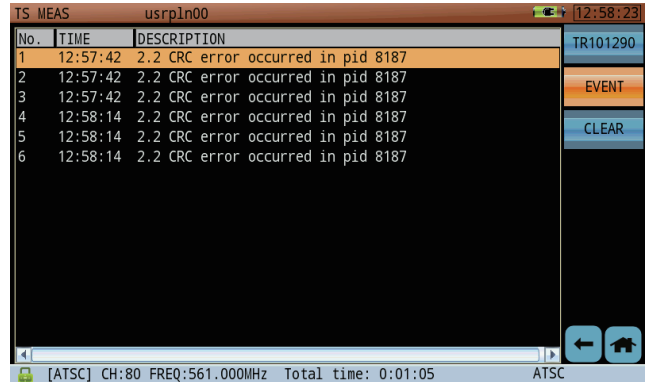


Figure-33 TR101 290 monitoring error event list

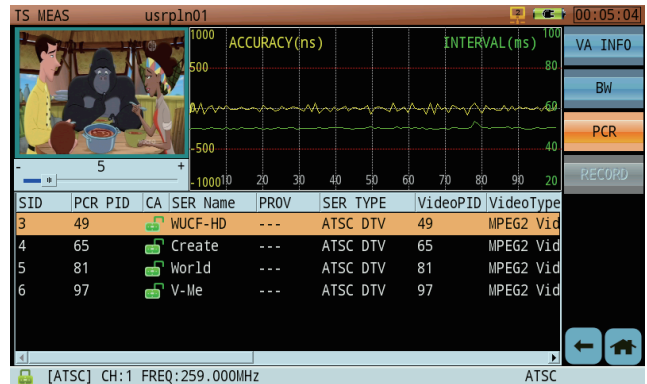


Figure-34 PCR interval and PCR accuracy monitoring

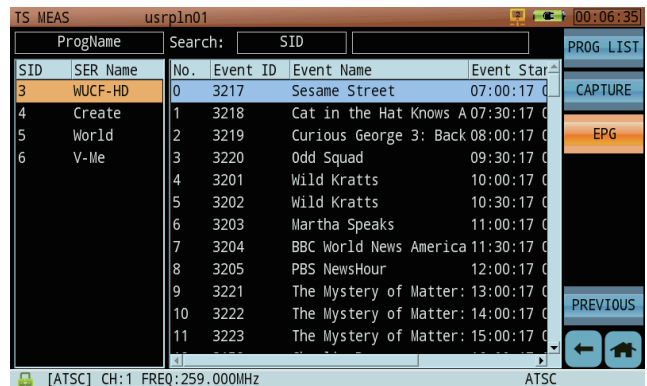


Figure-35 EPG

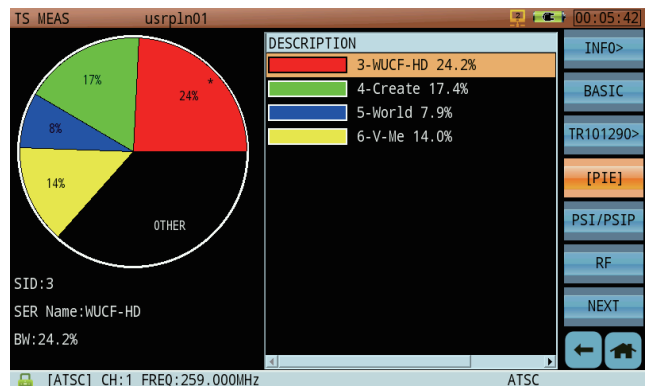


Figure-36 Pie Graph Bandwidth Statistical



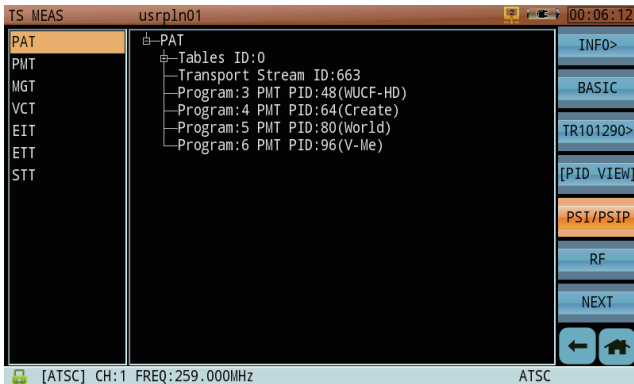


Figure-37 PSI/SI tree list

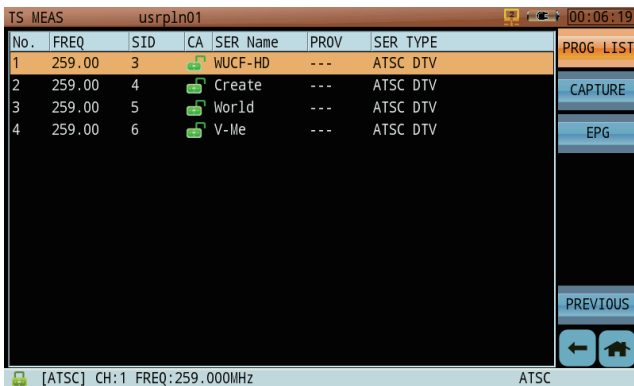


Figure-38 Program list for a transponder or TV system

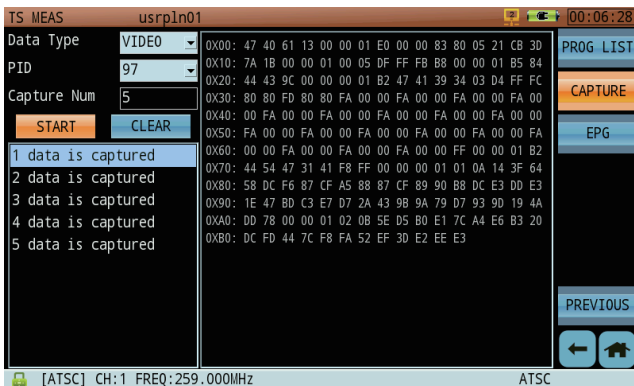


Figure-39 PID capture

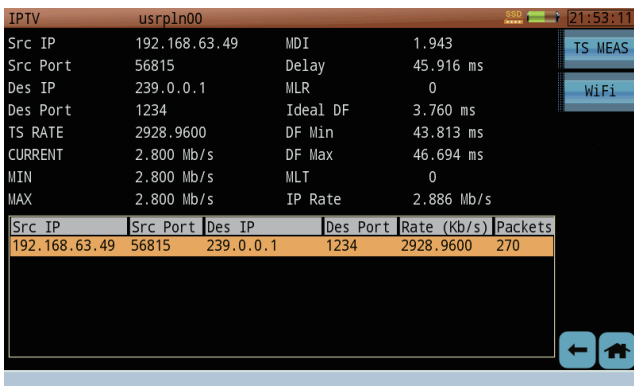


Figure-40 IPTV Analysis

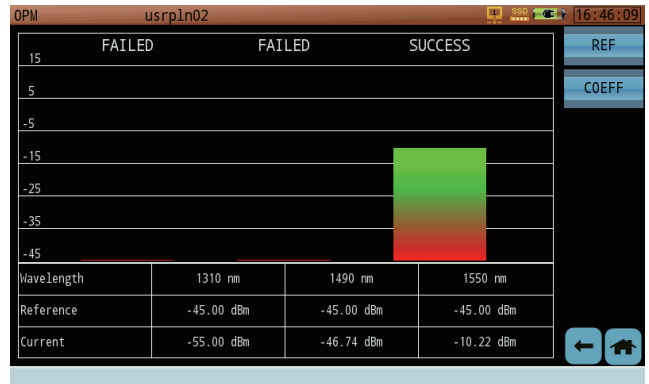


Figure-41 Optical Power Measurement

### WiFi Analysis

The WiFi Analysis function supports both 2.4G and 5G frequency bands, as well as the 802.11 a/b/g/n standards.

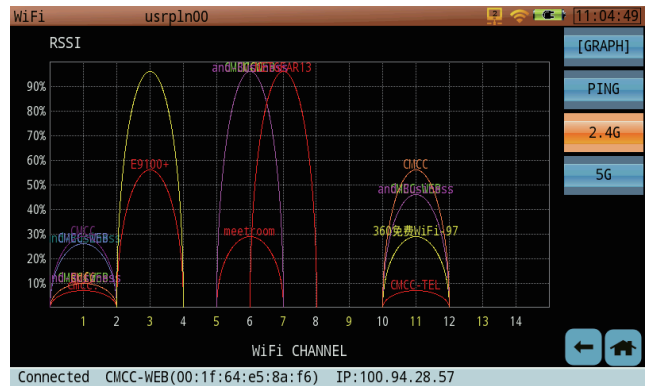


Figure-42 2.4GWiFi Channel - Graphical Display

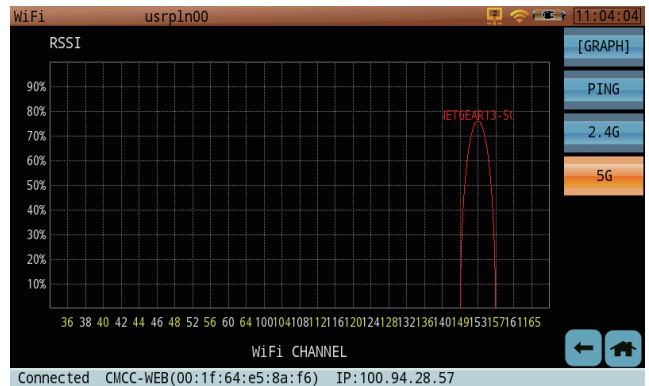


Figure-43 5GWiFi Channel - Graphical Display

## Specifications

Spectrum Analysis	
Frequency Range	5 MHz ~ 1220MHz (TV) 950 MHz ~ 2150 MHz (Satellite)
Frequency Span	0 MHz ~ 1215MHz (TV) 0MHz ~ 1200 (Satellite)
Frequency Step	1 kHz (TV & Satellite)
Resolution Bandwidth (-3dB)	30kHz, 100kHz, 300kHz, 1MHz, 3MHz
Level Measurement Range	-50dBmV ~ +60dBmV (TV), -30dBmV ~ +60dBmV (Satellite)
Accuracy Of Measurements	<1.5 dB
Measurement Detector	Positive Peak, Negative Peak, Sample, Average
Reference Level	-30dBmV ~ +60dBmV
Markers	2 vertical markers
Analog TV Measurement	
Standards	B/G, I, D/K, L/L', M/N
Color Standards	PAL, SECAM, NTSC
Frequency Step	10 kHz
Hum Measurement	1% ~ 15%
C/N	> 50dB
Level Measurement Range	-30dBmV ~ +60dBmV
Accuracy Of Measurements	< 1.5 dB
Level Resolution	0.1 dB
DVB-C Measurement	
Frequency Range	42~1002MHz
Modulation Type	16/32/64/128/256 QAM ITU-T J.83 ANNEX A/B/C
Symbol Rate	1.8 MS/s ~ 7.0 MS/s
Power Level Range	-30dBmV ~ +50dBmV
Level Resolution	0.1 dB
Power Level Accuracy	±1.5 dB (C/N>20 dB)
MER Measurement	~42dB
MER Accuracy	±2.0dB
BER	1E-3~1E-9
Constellation	√
DVB-C2 Measurement	
Power Level Range	-30dBmV ~ +50dBmV
Power Level Accuracy	±1.5 dB(C/N > 20 dB)
Guard Interval	1/64, 1/128
Bandwidth	6MHz and 8MHz
Spectrum Inversion	Auto
PLP Code Rates	2/3, 3/4, 4/5, 5/6, 8/9, 9/10
PLP Constellation	16, 64,256, 1024, 4096QAM
Data Slices	Type 1 & 2 supported, width up to 7.61MHz
Cell ID	Detected from Transmitter Station

Network ID	Detected from Transmitter Station
C2 System ID	Detected from Transmitter Station
DVB-T/H Measurement	
Frequency Range	42~1002MHz
Modulation Type	QPSK, 16 QAM, 64 QAM
Power Level Range	-35dBmV ~ +50dBmV
Level Resolution	0.1 dB
Power Level Accuracy	±1.5 dB (C/N >20 dB)
MER Measurement	> 35 dB
MER Accuracy	±2.0 dB
CBER/VBER	√
Constellation	√
Echo Pattern	√
DVB-T2 Measurement	
Frequency Range	42~1002MHz
Modulation Type	QPSK, 16 QAM, 64 QAM, 256QAM
Power Level Range	-35dBmV ~ +50dBmV
Level Resolution	0.1dB
Power Level Accuracy	±1.5 dB(C/N >20 dB)
MER Measurement	>38dB
MER Accuracy	±2.0 dB
CBER/LBER	√
Constellation	√
Echo Pattern	√
T2-MI	√
ATSC Measurement	
Modulation Type	8 VSB
Power Level Range	-35dBmV ~ 50dBmV
Level Resolution	0.1 dB
Power Level Accuracy	±1.5 dB(C/N >20 dB)
MER Measurement	>40 dB
MER Accuracy	±2.0 dB
BER	√
Constellation	√
ISDB-Tb Measurement	
Modulation Type	QPSK, 16 QAM, 64 QAM
Modulation Bandwidth	6MHz
Power Level Range	-35dBmV ~ 50dBmV
Power Resolution	0.1dB
Power Level Accuracy	±2.0dB (C/N>20dB)
MER Measurement	> 40dB
MER Accuracy	±2.0dB
CBER	1E-1~1E-5
VBER	1E-1~1E-7
Constellation	√
DVB-S/S2 Measurement	
Modulation Type	QPSK, 8PSK, 16APSK, 32APSK

Symbol Rate	2 - 45 MS/s (DVB-S) 1 - 45 MS/s (QPSK DVB-S2) 1 - 45 MS/s (8PSK DVB-S2) 1 - 45 MS/s (16APSK DVB-S2) 1 - 38 MS/s (32APSK DVB-S2)
Power Level Range	-20 - 50dBmV
Level Resolution	0.1 dB
Power Level Accuracy	±1.5 dB (C/N>20dB)
MER Measurement	> 25 dB
MER Accuracy	±2.0 dB
BER	DVB-S (CBER/VBER); DVB-S2 (CBER/LBER)
Constellation	√
<b>Video/Audio Decoder</b>	
Video	MPEG1/2/4, H.264, H.265, VC-1
Video Resolution	4K, 1080p, 720p and 576i
Audio	MPEG1/2/4, AAC
CAM Module	EN50221 (DVB-CI) PCMCIA interface
TS-ASI Input And Output	√
TS Record	√
<b>TS Analyzer</b>	
Standard Interface	En 50083-9(DVB SPI, ASI)
DVB-ASI Interface	75 Ω BNC
DVB-ASI Clock	270 MHz
DVB-ASI Max Data Rate	0 to 72 Mbps
DVB-ASI Output Signal Level	1.0 Vp-p nominal
DVB-ASI Return Loss	> 15dB
DVB-ASI Input Level	800 mV +/- 10%
Real time Decoder	Display the real time television pictures (through CA system). Including program numbers, program names, provider information, video & audio PIDs
TR101290 Priority 1, 2 & 3 Monitoring	TR 101 290 Priority 1, 2 & 3 real time monitoring, not include buffer test related parameters
Base Information	Count the PIDs percent according to the type of the streams. Videos, Audios, PSI/SI, Null Packages
PID List	Display all the PIDs in current stream
Program Information	The detail information about a program if it isn't be encrypted. The video resolutions and audio compress rate
PCR Monitoring	Calculate PCR interval and PCR accuracy
PSI/SI List	Display the PSI/SI information by tree view. Including PAT,PMT,CAT,(NIT,SDT,RST,TDT, EIT options)
Program Info	EPG
PID Capture	Capture a specified PID by it's type: Video, Audio, PSI(PAT,PMT,NIT,TDT,RST,SDT,EIT) etc. And display the data in HEX format
Transport Stream Record and Replay	SSD disk for TS record

<b>IPTV Analysis</b>	
Support Protocol	UDP, RTP
Support Transport Type	MPEG-2 TS over IP
Broadcast Type	Unicast, Multicast
Unicast max stream rate	<20Mbps
Multicast max stream rate	<50Mbps
<b>WiFi Analysis</b>	
Frequency	2.4G, 5G
Support Standard	802.11 a/b/g/n
Security Mode	WPA/WPA2/WPA-PSK/WPA2-PSK
Test Parameters	SSID, Level, Channel
<b>Optical Power Measurement</b>	
Measurement Wavelength	1310nm, 1490nm, 1550nm
Measurement Range	-50dBm ~ 27dBm
Accuracy	±0.17dB (±3%)
Linearity	0.07dB/10dB
Resolution	0.01dBm
Interface	FC\SC\ST/APC General Optical Adaptor
<b>Optical Receiver</b>	
Dynamic Range of Conversion	<+10dBm
RF Band Converted (Optical Cable and DTT links)	From 65MHz ~ 1000MHz
RF Band Converted (Optical IF-Satellite Installations)	From 950MHz ~ 2150MHz
<b>Interface</b>	
RF Input	75Ω F (Cable TV) 50Ω SMA (DVB-T/T2, ATSC, ISDB-T)
USB	1 USB 3.0
LAN	2 100/1000 M
CAM	1 PCMCIA
TS-ASI Input / Output	2 75Ω BNC
DC Supply Input	12V / 5A
GPS Input	USB Dongle
video/audio input video/audio output	Headphone interface
<b>General</b>	
Display	7 inches TFT LCD 800 × 480 pixels, Capacitive Touch Screen
AC/DC Adapter	AC 100 - 240 V/50-60 Hz DC 12 V/5 A
Battery	Li-ion, 7.4 V/13 Ah
Charge Time	around 5 Hours
Working Time	>5 Hours
Remote Feeding	5/13/15/18/24 V, Max. 5 W
22 kHz Control Signals	DiSeqC 1.2 and SaTCR
Dimension (W×H×L)	253 mm × 194 mm × 84mm
Weight	around 2.4 kg
Working Temperature	-10°C ~ +50°C