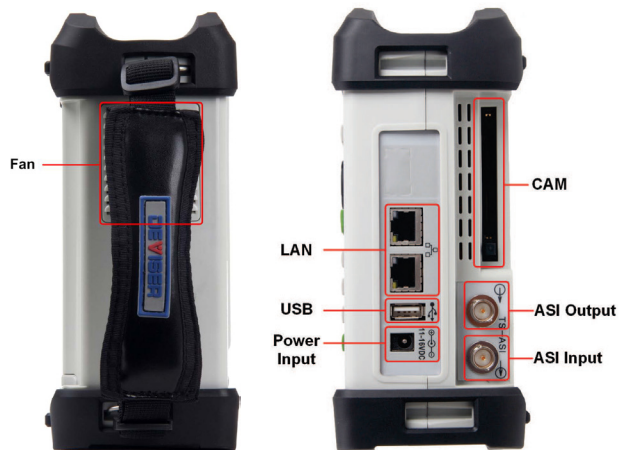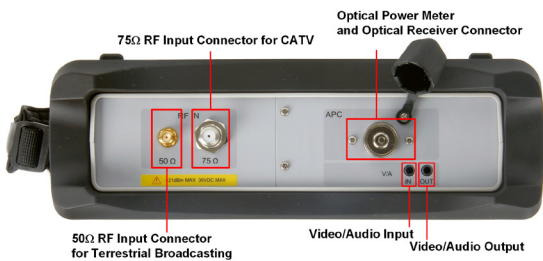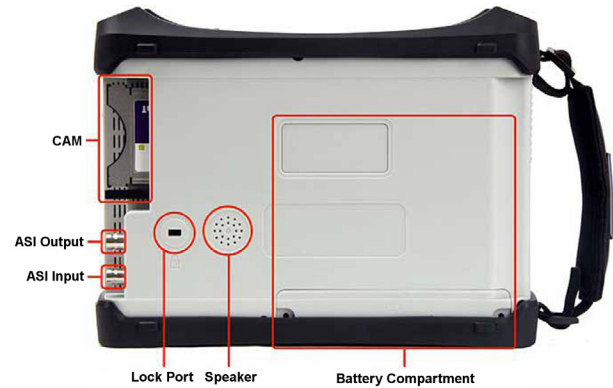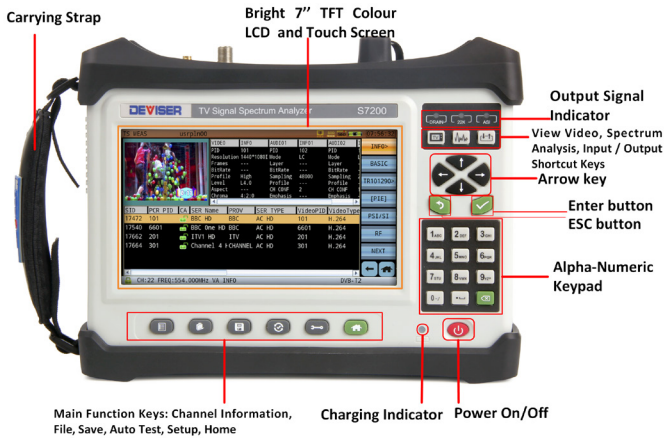# S7200
TV Signal Spectrum Analyzer

Key Benefits

- All-in-one Digital TV Analyzer, 4 ~ 2150 MHz
- DVB-C/C2, DVB-T/H/T2, ATSC, ISDB-T/T$_B$, DTMB, DVB-S/S2, DAB/DAB+ modulation
- Decodes multiple video standards: MPEG-2/4, H.264/H.265, VC-1, AVS/AVS+
- Compatible with 4K, 1080p, 720p, and 576i
- Supports DVB-CI and BISS 1/E
- Transport Stream Analysis: RF, ASI, and IP input
- IPTV Analysis (by option)
- Optical power meter and optical receiver (by option)
- WiFi Analysis and Communication Module (by option)
- Capacitive touchscreen

Carrying Strap

Bright 7'' TFT Colour LCD and Touch Screen

Output Signal Indicator

View Video, Spectrum Analysis, Input / Output Shortcut Keys

Arrow key

Enter button
ESC button

Alpha-Numeric Keypad

Main Function Keys: Channel Information, File, Save, Auto Test, Setup, Home

Charging Indicator   Power On/Off

CAM

ASI Output

ASI Input

Lock Port   Speaker   Battery Compartment

75Ω RF Input Connector for CATV

Optical Power Meter and Optical Receiver Connector

50Ω RF Input Connector for Terrestrial Broadcasting

Video/Audio Input

Video/Audio Output

Fan

LAN

USB

Power Input

CAM

ASI Output

ASI Input

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: VC-1 Format 1080p Decoding

Spectrum Analysis

Featuring an integrated high-speed spectrum analyzer, the S7200 covers TV & broadcasting signals (5 ~ 1220 MHz) as well as satellite IF signals (950 ~ 2150 MHz), with dynamic range up to 80dB and sweep ime as low as 20ms.
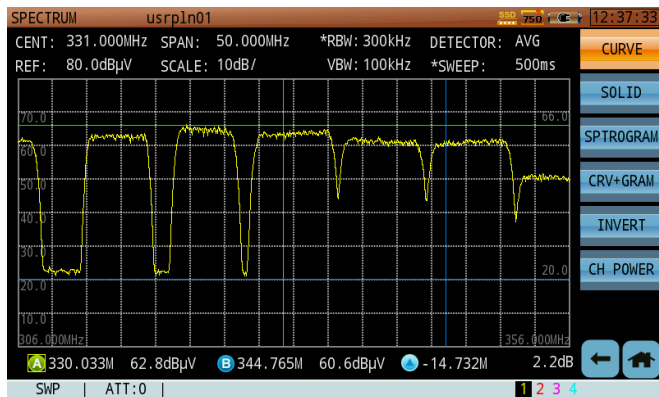

Figure 2: Digital Cable TV Spectrum Analysis

DVB-S/S2 Signal Analysis

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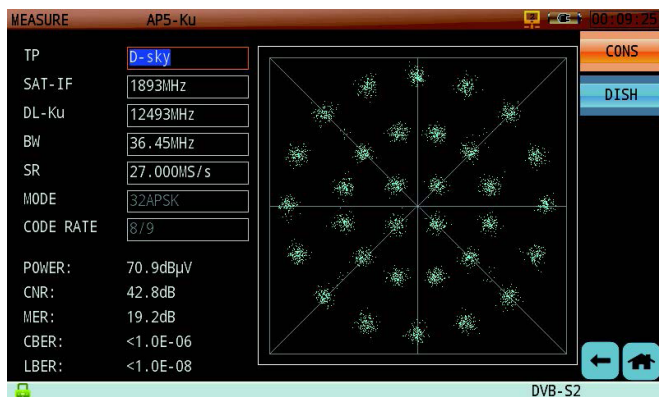

Figure 3: DVB-S2, 32 APSK Constellation

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. (Support for J.83 Annex A, B, and C varies by model.)
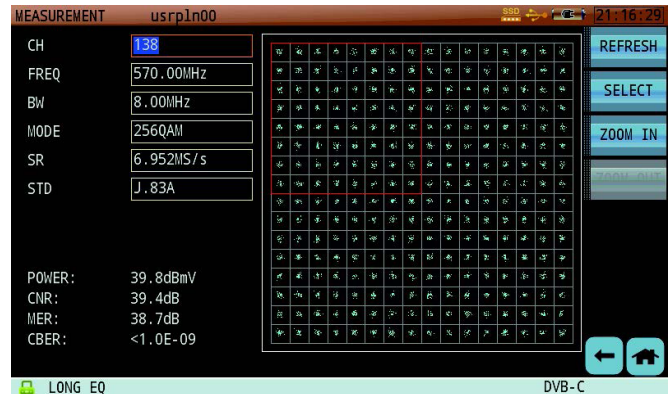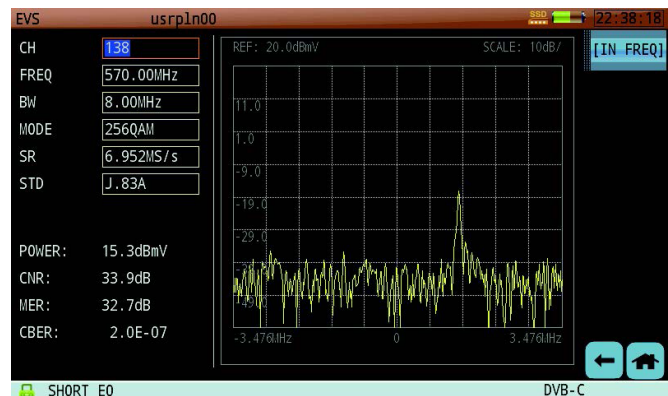

Figure 4: DVB-C Constellation

Figure 5: Frequency-Domain EVS Measurement
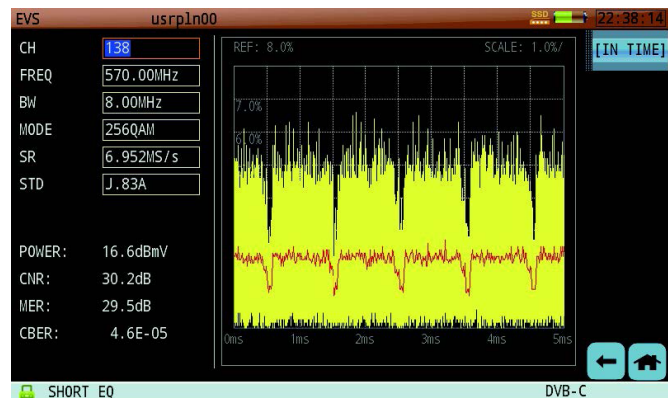

Figure 6: Time-Domain EVS Measurement

DVB-C2 Signal Analysis

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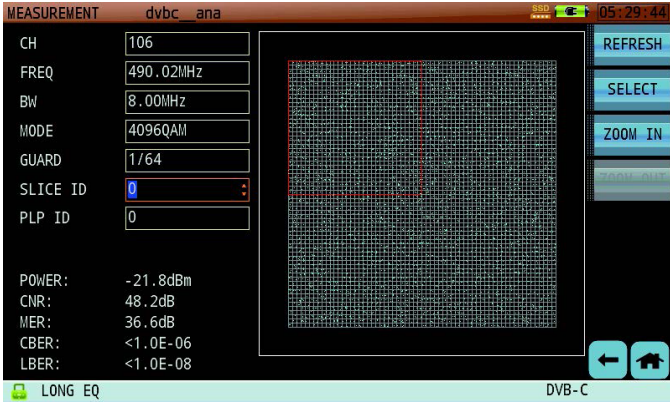

Figure 7: DVB-C2 4096 QAM Constellaton

DVB-T/T2 Signal Analysis

The S7200 supports the DVB-T/T2 standard, providing power level, MER, BER, constellation, and echo analysis measurements.
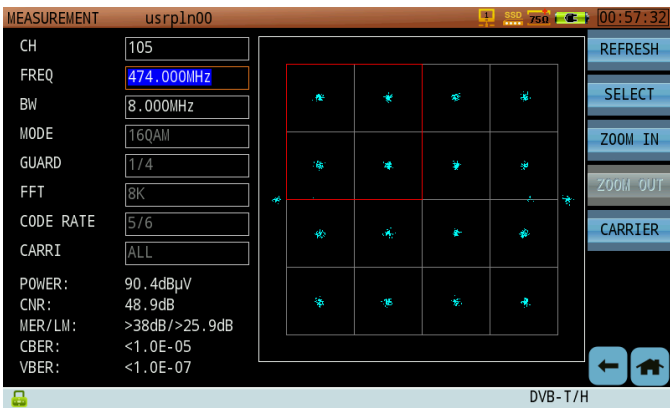
Figure 8: DVB-T Constellation
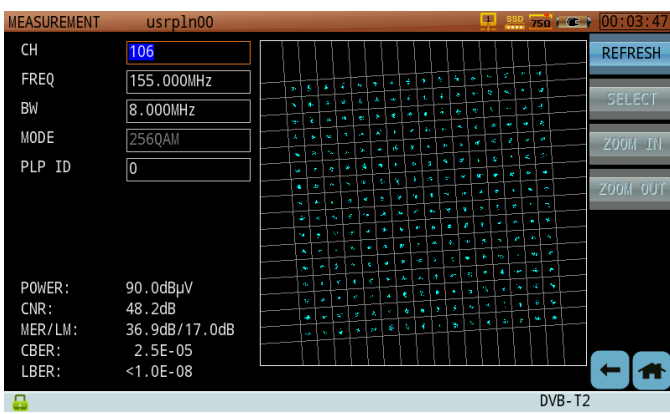
Figure 9: DVB-T2 Constellation
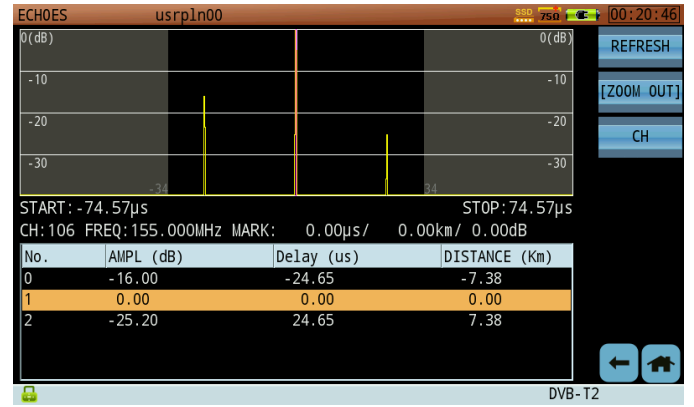
Figure 10: Echo Pattern Location

DAB/DAB+ Signal Analysis

The S7200 supports the DAB/DAB+ standard, providing power level, MER, and BER measurements.

Figure 11: DAB Signal Measurement

ATSC Signal Analysis

The S7200 (ATSC model) supports the ATSC standard, providing power level, MER, BER, constellation eye diagram, and spectrum emission mask measurements.
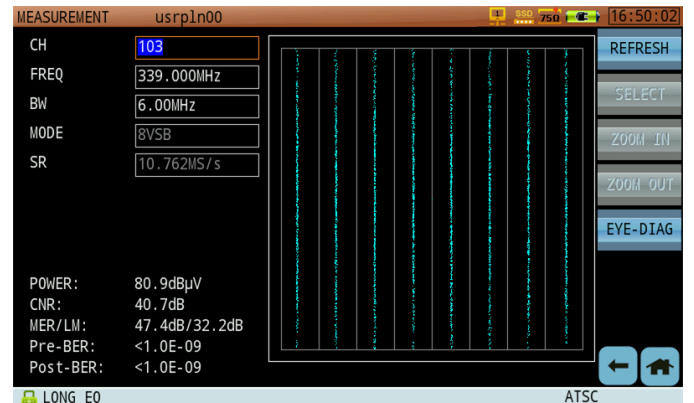
Figure 12: 8VSB Constellation
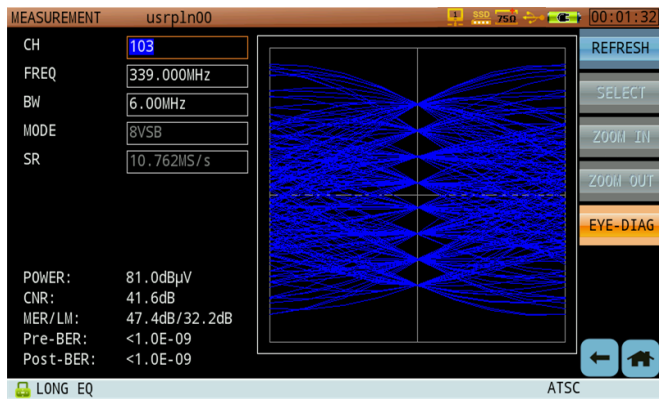
Figure 13: 8VSB Eye Diagram
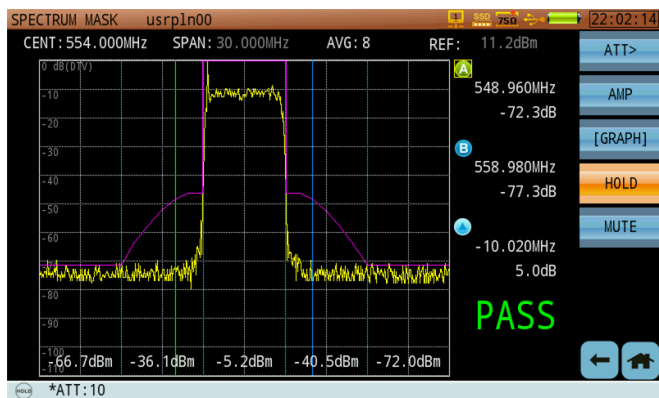
Figure 14: 8VSB Spectrum Mask

ISDB-T/T$_B$ Signal Analysis

The S7200 (ISDB model) supports the ISDB-T/ISDB-T$_B$ standards, providing power level, MER, BER, & constellation measurements..
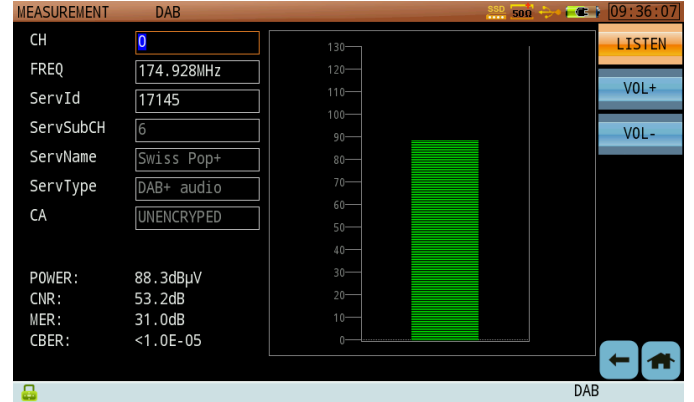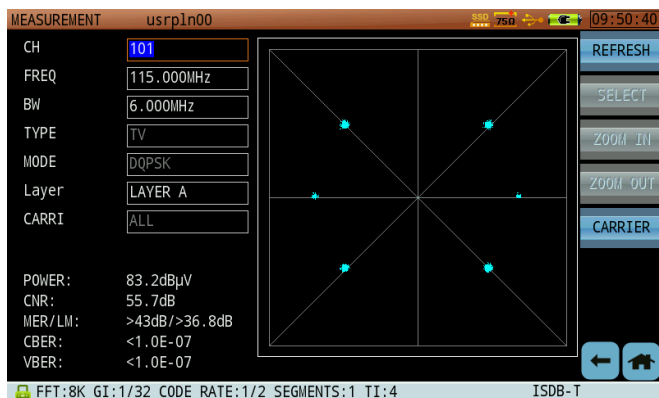

Figure 15: ISDB-T$_B$ Constellation

Transport Stream Analysis

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. 128GB of storage – with optional SSD add-on – saves hours of TS footage for instant replay and analysis.
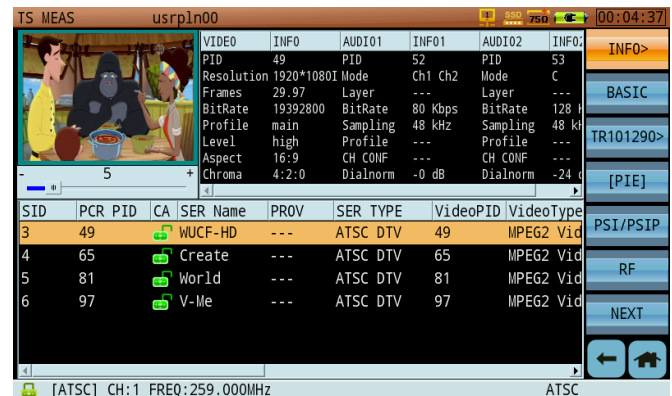
Figure 16: Program Decoding & Monitoring
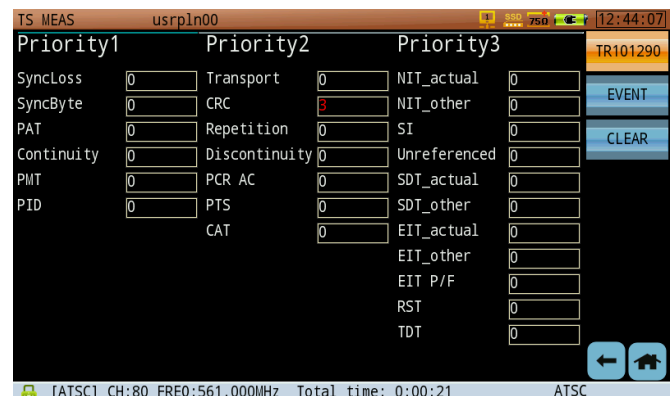
Figure 17: TR 101 290 three-level monitoring
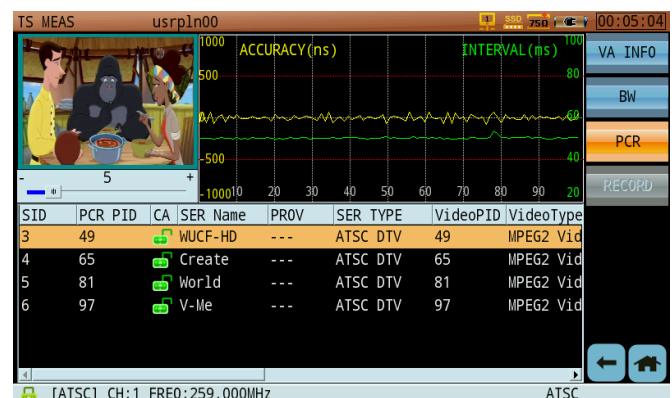
Figure 18: PCR Interval & Accuracy Monitoring
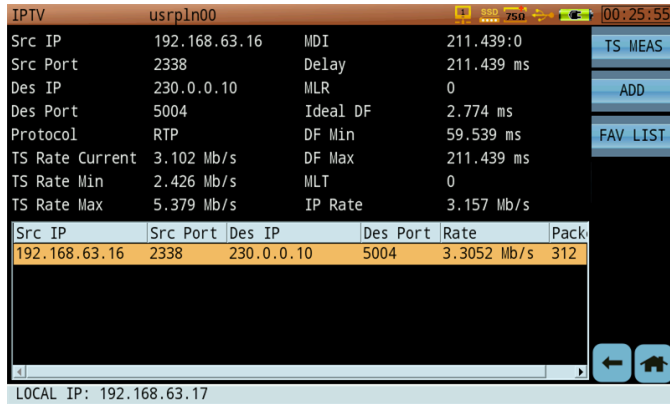
Figure 19: IPTV Analysis

Figure 20: Optical Power Measurement

WiFi Analysis

The WiFi Analysis function supports 2.4G and 5G frequency bands, as well as the 802.11 a/b/g/n standards.
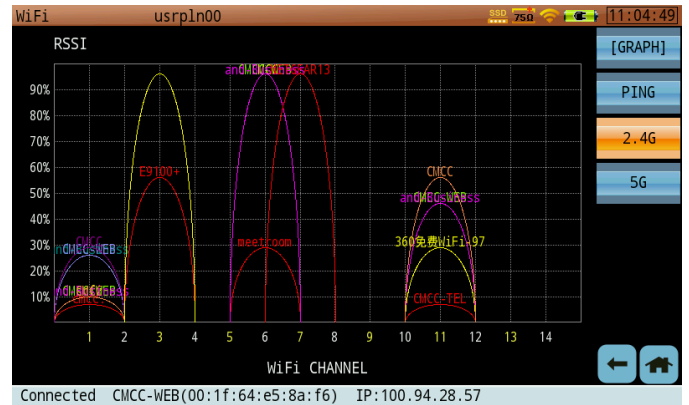
Figure 21: 2.4G WiFi Channel - Graphical Display

DEVISER

Specifications

Spectrum Analysis		TV	Satellite
Frequency range		4 MHz ~ 1220 MHz	950 MHz ~ 2150 MHz
Frequency span		0 MHz ~ 1216 MHz	0 MHz ~ 1200 MHz
Frequency step		1 KHz	
Resolution bandwidth, -3dB		30 KHz, 100 KHz, 300 KHz, 1 MHz, 3 MHz	
Power level	Range	-50 ~ +60 dBmV	-30 ~ +60 dBmV
	Accuracy	<1.5 dB	<1.5 dB
Detector mode		Positive peak, negative peak, sample, average	
Reference level		-30 ~ +60 dBmV	
Markers		2 vertical & 2 horizontal markers	

| Analog TV Measurement		
Standards		B/G, I, D/K, L/L', M/N
Color standards		NTSC, PAL, SECAM
Frequency step		10 KHz
HUM measurement		1% ~ 15%
C/N		>50 dB
Power level	Range	-30 ~ +60 dBmV
	Accuracy	<1.5 dB
Level resolution		0.1 dB

DVB-C Measurement		
Frequency range		42 MHz ~ 1002 MHz
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
Level resolution		0.1 dB
Power level	Range	-30 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
MER measurement	Level	~42 dB
	Accuracy	±2.0 dB
BER		1E-3 ~ 1E-9
Constellation		✓

DVB-C2 Measurement		
Power level	Range	-30 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
Guard interval		1/64, 1/128
Bandwidth		6 MHz, 8 MHz
Spectrum inversion		Auto
PLP code rates		2/3, 3/4, 4/5, 5/6, 8/9, 9/10
PLP constellation		16 / 64 / 256 / 1024 / 4096 QAM
Data slices		Type 1 & 2 supported; up to 7.61 MHz wide
Cell ID		Detected from transmitter station
Network ID		Detected from transmitter station
C2 System ID		Detected from transmitter station

DAB/DAB+ Measurement		
Frequency range		167.392 MHz ~ 239.968 MHz
Power level	Range	-30 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
MER measurement	Level	3 dB ~ 31 dB
	Accuracy	±2.0 dB
CBER		1E-5 ~ 1E-1

DVB-T/H Measurement		
Frequency range		42 MHz ~ 1002 MHz
Modulation type		QPSK, 16 / 64 QAM
Level resolution		0.1 dB
Power level	Range	-35 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
MER measurement	Level	>35 dB
	Accuracy	±2.0 dB
CBER/VBER		✓
Constellation		✓
Echo pattern		✓

DVB-T2 Measurement		
Frequency range		42 MHz ~ 1002 MHz
Modulation type		QPSK, 16 / 64 / 256 QAM
Level resolution		0.1 dB
Power level	Range	-35 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
MER measurement	Level	>40 dB
	Accuracy	±2.0 dB
CBER/LBER		✓
Constellation		✓
Echo pattern		✓
T2-MI		✓

ATSC Measurement		
Modulation type		8VSB
Level resolution		0.1 dB
Power level	Range	-35 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
MER measurement	Level	>40 dB
	Accuracy	±2.0 dB
BER		✓
Constellation		✓

ISDB-T$_B$ Measurement		
Modulation type		QPSK, 16 / 64 QAM
Modulation bandwidth		6 MHz
Level resolution		0.1dB
Power level	Range	-35 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
MER measurement	Level	>40 dB
	Accuracy	±2.0 dB
CBER		1E-1 ~ 1E-5
VBER		1E-1 ~ 1E-7
Constellation		✓

Specifications (continued)

DVB-S/S2 Measurement		
Modulation type		QPSK, 8 PSK, 16 APSK, 32 APSK
Symbol rate	DVB-S	2 ~ 45 MS/s
	QPSK DVB-S2	1 ~ 45 MS/s
	8PSK DVB-S2	1 ~ 45 MS/s
	16APSK DVB-S2	1 ~ 45 MS/s
	32APSK DVB-S2	1 ~ 38 MS/s
Level resolution		0.1dB
Power level	Range	-20 ~ +50 dBmV
	Accuracy	±1.5 dB (C/N > 20 dB)
MER meas.	Level	>25 dB
	Accuracy	±2.0 dB
BER	CBER/VBER	DVB-S
	CBER/LBER	DVB-S2
Constellation		✓

Video/Audio Decoder	
Video	MPEG-2 / 4, H.264, H.265, VC-1, AVS/AVS+
Video resolution	4K, 1080p, 720p, 576i
Audio	MPEG-1 / 2, AAC/AAC+, DRA
CAM	EN50221 (DVB-CI), PCMCIA interface
TS-ASI input & output	✓
TS recording	✓

Transport Stream Analyzer	
Standard interface	En 50083-9 (DVB SPI, ASI)
Real-Time Decoder	Displays real-time TV feed (through CA system), including program names& numbers, provider information, and video & audio PIDs.
TR 101 290: Priority 1, 2, and 3 Monitoring	TR 101 290 Priority 1 / 2 / 3 real-time monitoring, not including buffer test related parameters.
Base Information	Counts PID % according to stream type. Video, audio, PSI/SI, and null packages.
PID List	Displays all PIDs in the current stream.
Program Information	Displays detailed information on unencrypted programs, including video resolution and audio compression rate.
PCR Monitoring	Calculates PCR interval and PCR accuracy.
PSI/SI List	Displays PSI/SI information in tree format. Includes PAT, PMT, and CAT. (NIT, SDT, RST, TDT, EIT by option only)
PID Capture	Captures a specific PID by type: video, audio, PSI (PAT, PMT, NIT, TDT, RST, SDT, EIT, etc). Displays in HEX format.
TS Record & Replay	SSD for transport stream recording.

Transport Stream Analyzer (DVB-ASI Parameters)	
Interface	75 Ω BNC
Clock	270 MHz
Max data rate	0 ~ 72 Mbps
Output signal level	1.0 Vp-p nominal
Return loss	>15 dB
Input level	800 mV ± 10%

IPTV Analysis		
Support protocol		UDP, RTP
Support transport type		MPEG-2 TS over IP
Broadcast type		Unicast, multicast
Maximum stream rate	Unicast	< 20 Mbps
	Multicast	< 50 Mbps

WiFi Analysis	
Frequency	2.4G, 5G
Supported standards	802.11 a/b/g/n
Security mode	WPA / WPA2 / WPA-PSK / WPA2-PSK
Test parameters	SSID, Level, Channel

Optical Power Measurement	
Wavelengths	1310 nm, 1490 nm, 1550 nm
Power level range	-50 ~ +27 dBm
Accuracy	± 0.17 dB (± 3%)
Linearity	0.07 dB / 10 dB
Resolution	0.01 dBm
Interface	FC / SC / ST / APC General Optical Adapter

Optical Receiver	
Conversion dynamic range	< 10dBm
RF band converted (optical cable & DTT links)	65 ~ 1000 MHz
RF band converted (optical IF-satellite installations)	950 ~ 2150 MHz

Interface	
RF input	75 Ω F (cable TV) 50 Ω SMA (DVB-T/T2 / ATSC / ISDB-T / DTMB)
A/V input & output	3.5mm multi-pole jack
USB	1x USB 3.0 port
LAN	2x RJ-45 100M / 1000M ports
CAM	1x PCMCIA
TS-ASI input/output	2x 75 Ω BNC
GPS input	USB dongle

General		
Display		7" TFT LCD, 800 x 480 pixels capacitive touchscreen
Power adapter	AC	100 ~ 240V / 50 ~ 60Hz
	DC	12V / 5A
Battery		Li-ion, 7.4V / 13Ah
Charge time		~5 hours
Operating time		>5 hours
Remote feeding		5 / 13 / 15 / 18 / 24V, max 5W
22kHz control signals		DISEqC 1.2 and SaTCR
Operating temperature		-10°C ~ +50°C
Dimensions (WxHxL)		~ 10.0" x 7.6" x 3.3" (253mm x 194mm x 84mm)
Weight		~ 5.3 lbs (2.4 kg)

Ordering Information

Model	Configuration	Order Number
Basic Model		
S7200	DVB-C(J.83 Annex A/C)/S/S2/T/T2, ASI,H.265, 4K	0110.7200.07
S7200-ISDB	DVB-C(J.83 Annex A/B/C)/S/S2/T/T2, ASI, H.265, 4K, ISDB-T$_B$	0110.7200.08
S7200-ATSC	DVB-C (J.83 Annex B)/S/S2/T/T2, ASI, H.265, 4K, ATSC, Spectrum Emission Mask	0110.7200.09
Option List		
1	DVB-C (J.83 Annex A/C)	2110.7200.13 (S7200-ATSC only)
2	16/32 APSK demodulation	2110.7200.11
3	DVB-C2	2110.7200.01
4	Transport Stream Analysis	2110.7200.02
5	IPTV	2110.7200.03
6	CAM/BISS	2110.7200.04
7	Optical Receiver and Power Meter w/ SC optical adapter (default)	2110.7200.05: Optical Receiver & Power Meter 6110.0400.04: substitute FC optical adapter 6110.0400.05: substitute ST optical adapter
8	Solid State Drive (128 GB)	6110.0400.02
9	WiFi Analysis	2110.7200.06
10	DAB/DAB+	2110.7200.10
11	English Instruction Manual (Hard Copy)	6110.0600.44
12	Power Adaptor Plug Cord (United States)	6290.0500.04
13	Power Adaptor Plug Cord (United Kingdom)	6290.0500.05
14	Power Adaptor Plug Cord (Australia)	6290.0500.06
15	1-Year Product Warranty Extension	4110.7200.00