ST-5810 / ST-5610

## Universal TV Signal Level Meter

February 3, 2022

- The Information in this presentation is confidential and proprietary to SATLINK and may not be disclosed without permission of SATLINK. SATLINK has no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation and SATLINK strategy and possible future developments, products and or platforms directions and functionality are all subject to change and may be changed by SATLINK at any time for any reason without notice. The information on this document is not a commitment, promise or legal obligation to deliver any material, code or functionality. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for particular purpose, or non-infringement. This document is for information purposes and may not be incorporated into a contract. SATLINK assumes no responsibility for errors or omissions in this document, except if such damages were caused by SATLINK intentionally or grossly negligent.
- All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance or these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

- ❖ Ideal tool to test and measure the quality of TV and satellite signals, ensuring the signal levels are delivered as required.
- ❖ Performs 'Satellite Finder' and 'Field Strength Meter' features in one integrated unit.
- ❖ Intends for use by TV service technicians or installers at a price point that makes it feasible for system operators to outfit the entire fleet.
- ❖ Allows preliminary understanding of the quality status of the equipment and the network status of digital/analog TV broadcasting.
- ❖ Compatible with both digital and analog TV channels with both strong and comprehensive performances through a truly convenient and pragmatic device.
- ❖ The single most essential piece of instrumentation required for a Cable TV, Satellite TV and Over-the-Air TV network.
- ❖ Effectively and accurately measure the digital and analog TV channels in all broadcasting media.
- ❖ Streamlines basic RF installation and make the installer's or contractor's job easier.

- ❖ Supports all digital TV standards – DVB-S/S2, DVB-T/T2, DVB-C/C2, J.83 A/B/C, ATSC 1.0/3.0
- ❖ All-in-one digital TV installation meter
- ❖ Fast and reliable signal data processing with patented dual-frequency spectrum scan and capture module
- ❖ Pre-loaded channel plans for all TV standards
- ❖ Automatic channel discovery to build regional channel plan
- ❖ Android operating system with capacitive touch panel to support multi-touch operation
- ❖ High-resolution color LCD display
- ❖ High capacity lithium battery for long operation and storage hours
- ❖ Specific details of measurement statistics to validate channel quality
- ❖ Audible tone to reflect signal strength
- ❖ DVB-S/S2 specific – LNB power compensation, dCSS MDU application, satellite DisEqc rotor test, antenna angle calculation, built-in table of global satellite and transmitters
- ❖ USB interface for firmware upgrade, channel plan editing and measurement result file transfer
- ❖ Intuitive graphical user interface and easy navigation user scenarios
- ❖ Lightweight and easy-to-carry handheld design

❖ Spectrum Analysis

❖ Channel Measurement – Level, QAM, MER, SNR, BER, (Pass/Fail) Limits

❖ Constellation

❖ Tilt

❖ SNR Monitor

❖ Multi-Channel Scan

❖ Channel Discovery and Channel Editor

❖ Report (File) Management

❖ Satellite specific – Multi-Transponder Scan, DiSEqC dCSS Switch Test, Rotor Test, Angle Calculation, Satellite and Transponder Editor
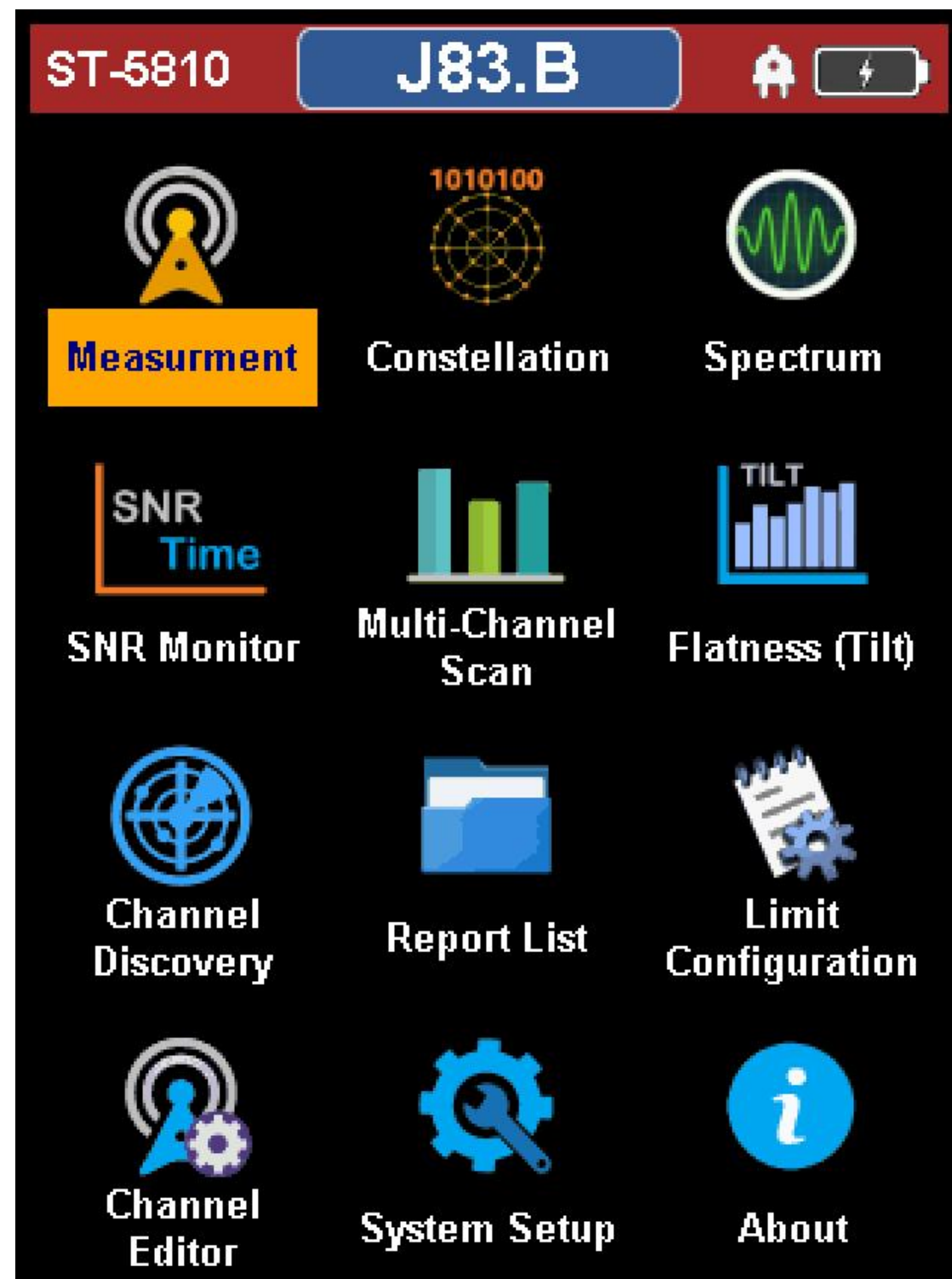
DVB-C/C2, J.83 A/B/C, DVB-T/T2, ISDB-T/B/C, ATSC 1.0/3.0

DVB-S/S2 Specific

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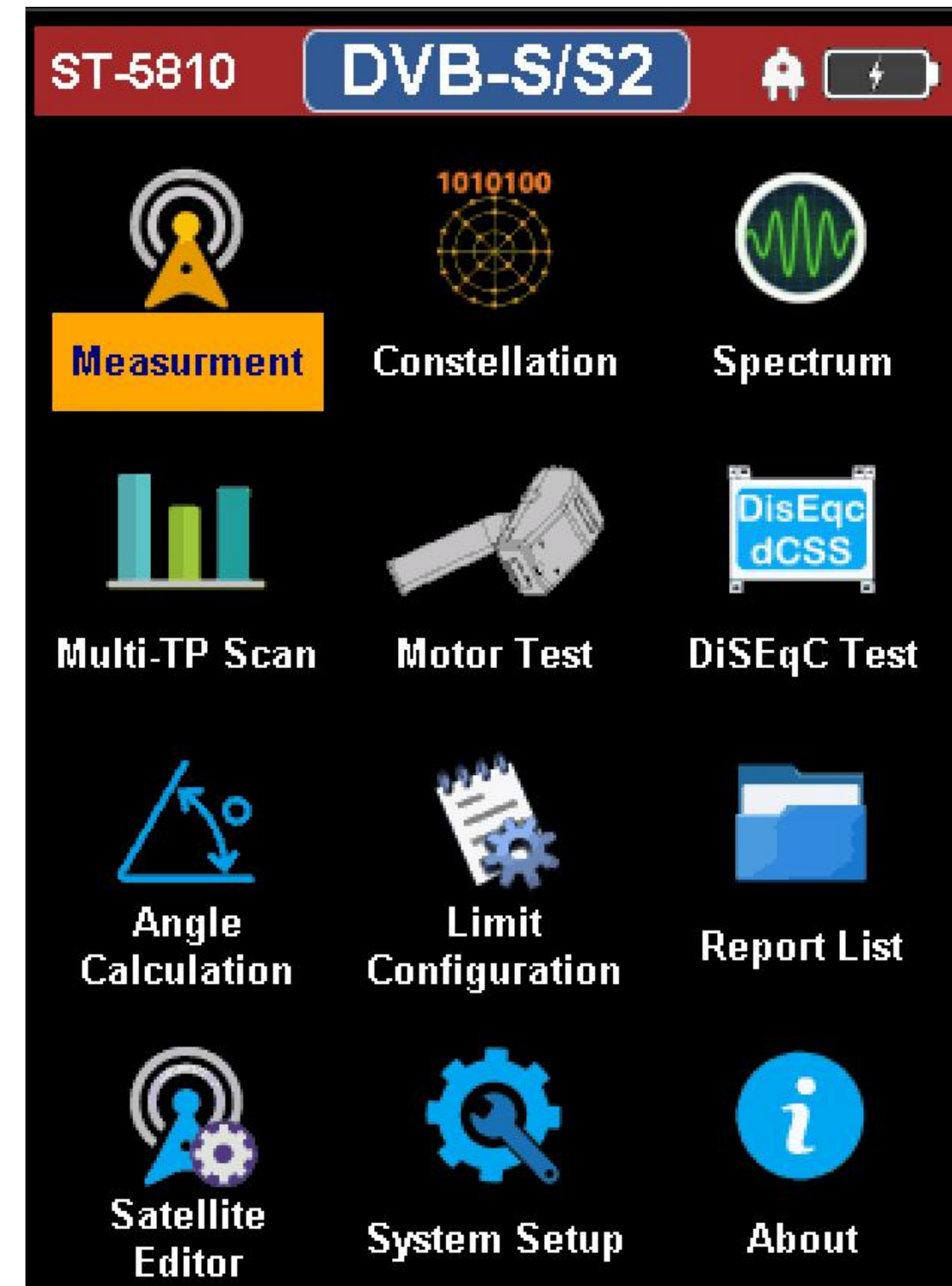
Spectrum Trace
Multi-touch operations can be used to zoom in/out, scroll left/right/up/down and pan over the spectrum trace

Item	Settings	Frequency
Start	481 MHz	Amplitude
Center	506 MHz	Marker
Stop	531 MHz	Trace
Span	50 MHz	Next

481.0MHz 506.0MHz 531.0MHz

American J.83B ▼ CH1 - 506MHz ▼

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

| Freq | 500 | SRate | 5056 | ➦ |

Item	Settings	Frequency
Reference	-50 dBm	Amplitude
dB/Div	5 dB	Marker
Attenuator	0 dB	
Unit	dBm	Next

481.0MHz 506.0MHz 531.0MHz

American J.83B ▼ CH1 - 506MHz ▼

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

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.

A   B △ 16.67 MHz 0.6 dB

481.0MHz 506.0MHz 531.0MHz

Marker A

Marker B

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

American J.83B ▼ CH1 - 506MHz ▼

Marker Measurement

Marker On/Off

A   B △ 16.67 MHz 0.3 dB

481.0MHz 506.0MHz 531.0MHz

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

American J.83B ▼ CH1 - 506MHz ▼

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

481.0MHz 506.0MHz 531.0MHz

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

American J.83B ▼ CH1 - 506MHz ▼

Run/Pause trace measurement

SATLINK

Installation report

Longitude	W118.1	Latitude	N34.0
Address	Los Angeles		
Addition			

Spectrum Curve

Unit(dBm)

50.0MHz 500.0MHz 950.0MHz

Cancel   Save

Save trace measurement report

SATLINK

Channel Measurement

Power level measurement of selected channel/frequency

Power level of selected channel/frequency

Level

-67.4 dBm

SNR	MER	BER
28.8 dB	26.0 dB	<1.0e-9

Pass

Other measurement values (SNR, MER, BER ....)

Selected View Mode

View Mode A | Report

American J.83B ▼ | CH1 - 506MHz ▼

Save measurement report

View Mode A

Network profile selection

Change frequency manually for power level measurement

Pass

View Mode B

Drop down to list channels of current Network profile for selection

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

SSI 0%
SQI 61%

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

View Mode C

Level	SNR	MER
-67.7 dBm	28.7 dB	26.0 dB
Constellation	Symbol Rate	PER
64QAM	5036 KSS	<1.0e-9
PreRS_Ber	Carrier Offset	Interleve Mode
<1.0e-9	4 KHz	Enhanced
I Depth	J Depth	
128	1	

View Mode C | Report

SATLINK
Installation report

Longitude	W118.1	Latitude	N34.0
Address	Los Angeles		
Addition	Channel 1		

Signal Parameter
J83.B

| Signal | Mode | PWR | SNR | BER |
| 1 | 506.000MHz | 64QAM | -67.9dBm | 28.5 | <1.0e-9 |

Cancel | Save

Constellation

Tap to select zoom in quadrant

Constellation diagram

Power level

Mode	Level	
64QAM	-67.3 dBm	🔍

American J.83B ▼ | CH1 - 506MHz ▼

Modulation type

Zoom In / Out

Dropdown of Network profile for selection

Change frequency manually for constellation diagram

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)

DTV Standards Compliance

DVB-S	ETSI EN 300-421 v1.1.2
DVB-S2	ETSI EN 302-307 v1.4.1
DVB-C	ETSI EN 300-429 v1.2.1
DVB-C2	ETSI EN 302-769 v1.2.1
DVB-T	ETSI EN 300-744 V1.6.1
DVB-T2	ETSI EN 302-755 v1.3.1
ISDB-T	ARIB STD-B31 v2.2
ISDB-S	ARIB STD-B20
ISDB-C	ITU-T J.83, J.183, JCTEA STD-002
J.83A/B/C	ITU-T J.83 v3.0
ATSC 1.0	ATSC A/53
ATSC 3.0	ATSC A/321, A/322, A/330

Spectrum Analysis

Band Mode	Satellite or Terrestrial/Cable
Min. Resolution	10 kHz
SPAN Range	Satellite: 25 to 1200MHz; Terrestrial/Cable: 25 to 950MHz
Input Frequency Range	Satellite: 900 to 2150MHz; Terrestrial/Cable: 50 to 1000MHz
Trace Mode	Auto, Max Hold
Frequency Display Mode	TP Frequency or IF Frequency
Frame Speed	10 frames/sec. (typical)
Attenuator	0 to 60dB
Average	1 to 20
Marker	2 Markers
dB/Div Resolution	5 to 20dB
Unit	dBm or dBuV
Measurement	Run / Pause Switchable

General

LCD	3.95", 480 x 3RGB x 320, 16-bit Color
Touch Panel	Capacitive Touch
Active touch area	55.68mm x 83.52mm
Power Adapter	12VDC / 1A
Battery	2Cell / 2500mAh
Power Consumption	8W max.
Dimension (W x D x H)	8.27' x 3.07' x 1.06' (210 x 78 x 27mm)
Interface	USB 2.0 x 1
Funciton	Firmware Upgrade; Satellite/TP and Terrestrial/Cable Channel Plan Modification

Cable

DVB-C2

Input Frequency	50MHz to 900MHz
Bandwidth	6MHz, 8MHz
Guard Interval	1/64, 1/128
Modulation	16, 32, 64, 128, 1024QAM
Code Rate	2/3, 3/4, 4/5, 5/6, 8/9, 9/10
Data Slices	Types 1/2
Interleaving Modes	4, 8 Symbols or Best-Fit Time

DVB-C

Input Frequency	50MHz to 900MHz
Symbol Rate	1.7M to 7.2M symbols/sec.
Roll-Off Factor	0.15
Modulation	16, 32, 64, 128 and 256QAM

J.83 A/B/C

Symbol Rate	A: 5.056941, B: 5.360537, C: 5.6M symbols/sec.
Roll-Off Factor	0.18, 0.12
Modulation	64, 256QAM

Satellite

DVB-S/S2

Connector	75Ω F
Input Frequency	950 to 2150MHz
Input Level	-80 to -10dBm
LNB Power Supply	14V / 18V / OFF, Imax 650mA
Port Switch	DisEqc 1.0, DisEqc 1.1
Motor Control	DisEqc 1.2, USALS
Symbol Rate	1M to 45M symbols/sec.
Roll-Off Factor	0.35 / 0.25 / 0.2
Modulation	DVB-S2: 8PSK/QPSK; DVB-S: QPSK
Code Rate	DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 DVB-S2 QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 4/5, 5/6, 8/9, 9/10 DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 7/8
Satellite Database	Europe, Asia, American, Atlantic

dCSS

Band	EN50494 8UB, EN50607 32UB
UB Center frequency	Preset or User Defined
Satellite Number	EN50494 2-Satellite, EN50607 4-Satellite
Pin Code	✔

ATSC

ATSC 1.0

BandWidth	6MHz
Modulation	8VSB
Code Rate	2/3

ATSC 3.0

BandWidth	6MHz, 7MHz, 8MHz
FFT Size	8K, 16K, 32K
Features	Mandatory Modulation and Coding Combinations
	All Guard Interval Pattern
	Single and Multiple PLPs
	SISO and MISO Transmission
	TDM, FDM and LDM (Layered Division Multiplexing)
	ATSC Link Layer Protocol (ALP) Output
	Emergency Alert System (EAS) Flag Output
	Channel Bonding

Terrestrial

DVB-T2

Input Frequency	50MHz to 900MHz
Bandwidth	1.7MHz, 5MHz, 6MHz, 7MHz, 8MHz
FFT Size	1K, 2K, 8K, 4K, 16K, 32K
Modulation	16, 32, 64, 128, 256QAM
Code Rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6
PLPs	Single or Multiple PLPs
T2-Lite Profile	✔
SISO/MISO Transmission	✔

DVB-T

Input Frequency	50MHz to 900MHz
Bandwidth	6MHz, 7MHz, 8MHz
FFT Size	2K, 8K
Modulation	QPSK, 16, 64QAM
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8

ISDB-T

Input Frequency	50MHz to 900MHz
Bandwidth	6MHz, 7MHz, 8MHz
FFT Size	2K, 4K, 8K
Guard Interval	1/4, 1/8, 1/16, 1/32
Modulation	QPSK, 16, 64QAM
Code Rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6

ISDB-S

Symbol Rate	28.86M symbols/sec.
Roll-Off Factor	0.35
Modulation	BPSK, QPSK, TC8PSK
Code Rate	BPSK: 1/2 QPSK: 1/2, 2/3, 3/4, 5/6, 7/8 TC8PSK: 2/3

ISDB-C

Symbol Rate	5.274M symbols/sec.
Roll-Off Factor	0.13
Modulation	64QAM, 256QAM
Features	Transport Streams Multiplexing Frame (TSMF) Channel Bonding