SAT/CATV/TV
Signal Analyzer
DSA 1490, DSA 1490-ASI

The DSA 1490 is an all format TV/RF signal analyzer providing today's engineer a complete portable tool in resolving digital video broadcast, transport, or reception challenges. Capable of testing and analyzing digital satellite signals, digital TV broadcast channels, cable QAM channels, and ASI MPEG streams, it is an all-in-one analyzer. The DSA 1490 features a color touch control screen eliminating multiple menus and pushbuttons achieving a new plateau in user friendliness. Selections are virtually at your finger tip. The large 7 inch screen further provides unprecedented resolution so you won't miss problems when analyzing critical constellation and spectrum analyzer test screens. An HDMI interface permits test screen viewing on a larger HDMI monitor or for interface to a multi-viewing system.

The DSA 1490 provides powerful digital TV/RF analysis including MER, BER, PER, EVM, noise margin, constellation, and spectral analysis tests. A pass or fail quality indication simplifies interpretation. Additionally, the modulation type, FEC value, encryption type, MPEG services, video/audio program IDs, and MPEG format descriptors are displayed providing advanced RF and MPEG signal analysis.

The DSA 1490 provides a full arsenal of unique special tests and control features to assist technicians in troubleshooting all satellite, cable and TV reception systems. Advanced features include an integrated Spectrum Analyzer, Auto Discovery, SatFinder, DiSEqC commands, Dual LNB monitoring, SCR commands, BarScan, Tilt, Leakage, Ingress, and Logger tests. The DSA 1490 comes equipped with a protective case, DiSEqC switch, AC power adapter, USB cable, connectors, and SMART software.

KEY FEATURES

- TOUCH SCREEN greatly simplifies navigation and the user experience making a complex measurement instrument simple and fun to use

- Satellite tuner 930-2250 MHz with transponder navigation available for all worldwide satellites - analyzes DSS, DVB-S/S2, QPSK, 8PSK.

- Digital satellite measurements including Constellation, MER, PER, EVM, aBER, bBER, Noise Margin, Level/Power and Spectrum Analyzer

- Unique satellite dish pointing and aligning features including Sat Pointer, Sat Finder, Max Hold, Dual LNB, and Buzz & Noise Margin Graph, insure dish installation ease and accuracy

- All DiSEqC commands - SCR with automatic search, USALS motor protocol

- Exclusive "DISCOVERY" detects a transponder's or channel's digital modulation type, frequency/bandwidth and symbol rate eliminating setup guesswork

- TV/CATV Tuner 4-1000 MHz analyzes both analog and digital broadcast and cable TV/RF signals. Full support for QAM A/B/C and optional inputs for 8VSB, DVB-T/T2 or ISDB-T

- Unique TV/cable features including leakage, tilt, barScan and logger

- Detects and measures all MPEG2/4 HD signals, show services list, A/V PIDs, and displays video of free-to-air programs. (Interface slot for Conditional Access)

- Data Logger for automatic transponder or TV channel testing and measurement data captures

- Bright 7 inch, high resolution 16:9 – TFT color screen provides unprecedented constellation, spectrum analyzer and video testing resolution

- > 3 hour battery time – includes a "BATTERY SAVING" feature, auto shutoff timer and display backlight control to extend battery use time

- ASI Input verifies ASI signal presence and provides MPEG stream and A/V services information. (DSA 1490-ASI)

- ASI output interfaces the demodulated TV-RF MPEG transport stream to a monitor or dedicated MPEG Analyzer. (DSA 1490-ASI)

- SMART software for firmware updates, channel/transponder tuning plans and log file management

- DOLBY AC3, AC3E, DD+ decoding (Optional)

APPLICATIONS

- Satellite dish installation and precision alignment for satellite uplink/downlink, broadcast, military, or government communications facilities, etc

- Maintenance and troubleshooting of satellite farms, antenna farms, and head ends among broadcast, telco, cable, and satellite delivery networks

- Satellite or broadcast signal analyzing/monitoring where space conservation is critical, such as in remote satellite trucks.

- Maintenance and troubleshooting of complex TV-RF & ASI video/audio reception and distribution paths

- Testing or troubleshooting satellite, digital TV broadcast, CATV digital or analog equipment, such as modulators, receivers, decoders

- Decode TV- RF MPEG transport stream services for ASI monitoring or output to a dedicated MPEG Analyzer. (DSA 1490-ASI ONLY)

SPECIFICATIONS
All Format TV Digital Signal Analyzer DSA 1490, DSA 1490-ASI

SATELLITE MEASUREMENT

Frequency Range:	SAT: 930 - 2.250 MHz
Measure Tuning:	By satellite transponder or freq.
Digital Modulation types:	QPSK – 8PSK – COFDM – QAM, DVB-S/S2, DSS,
Digital Measurements:	Power, noise margin, Pre-Viterbi (bBER), After-Viterbi (aBER), PER,(8PSK), MER, EVM
Dynamic range:	30 to 126 dBµV
Measurement Accuracy:	1.5 dB typical
Constellation Diagram:	DVB-S/S2, QPSK, 8PSK
Analog Measurement:	Level

TV/CABLE MEASUREMENT

Analog Measurement

Frequency Range:	CATV: 4 – 1000 MHz
Dynamic range:	5 - 126 dBµV (-50 to 66 dBmV)
Measure Tuning:	By RF channel or freq.
Freq. Resolution:	25 KHz
Analog Measurement:	Video level, audio level, A/V ratio, C/N
Measurement Accuracy:	+/- 1.5 dB (1.0 dB typical)
Level Measurement Resolution:	0.1 dB
A/V Ratio:	1.5 dB typ. (2 dB max.)
C/N Ratio:	30 to 45dB +/-1.5dB Max; 45-50dB +/-2dB
Measure Filter Bandwidth:	100 Khz @ -3 dB

Digital Measurement

Digital Cable Modulation types:	QAM 16-32-64-128-256 (J-83 Annex A & B), J-83 Annex C
Digital TV Modulation types:	8VSB (optional)
	DVB-T/T2 (optional)
	ISDB-T (optional)
Digital Measurements:	Level, Noise Margin, Pre-Viterbi (bBER),After-Viterbi (aBER), MER, block errors
BER Measurement:	bBER/aBER up to 1 x 10-9
MER Measurement:	10 dB to 40dB
Constellation Diagram:	16-32-64-128-256 QAM

MPEG2/4 SPECIAL FUNCTIONS

MPEG Program/Services ID:	A/V PIDs, service ID #, video services name list
Modulation Parameters ID:	Modulation type, FEC, symbol rate,
Service Encryption Detection:	yes/no (clear) indicator by service
Encryption/CA System ID:	Encryption type indicated
MPEG Header Data:	Video format, aspect ratio, MPEG profile/level, audio format, language
MPEG2/4 Demodulator:	Demodulated video displayed (free to air)
	Encrypted services require CAM & C.I.

SATELLITE SPECIAL FUNCTION

Auto Discovery "HELP":	Digital Ch. RF modulation type, S.R, freq./bandwidth ID
LNB S.C.R.:	Single cable router test – 8 user/freq. auto test
DiSEqC:	Digital sat. equip. control, 1.2, (a-b-c-d, USALS)
Dual LNB Dish Alignment:	Simultaneous 2 transponder monitoring-DiSEqC switch
"Sat finder" Function:	Test 1 to 3 transponders - confirm lock, SR & freq./BW
L BAND Attenuation Test:	Atten. of 3 L-band freq. from measured reference
LNB Volts:	Selectable 5, 12, 13, 18, 24 V
LNB Tests:	current mA, local oscillator frequency error

TV/CABLE SPECIAL FUNCTIONS

AutoDiscovery "HELP":	Digital Ch. RF modulation type, S.R, Freq./bandwidth ID
Antenna Reception Peaking:	Buzzer & noise margin graph test
Ingress Test:	5-65 MHz spectrum display
Leakage Test:	115-140MHz, field intensity uV/m
Bar Scan Test:	Multi-CH. level via bars
Tilt Test:	Ch. 1/Ch.2 level ratio – BarScan display

OTHER SPECIFICATIONS

DC@RF Volts:	5,12,18,24
Memory Plans:	99 with 199 transponders per plan
Logger Plans:	99 logger plans
Display:	6.5 inch 16:9 TFT LCD backlit display
Firmware Upgrades:	USB via software
USB Port:	USB 2.0, type B connector
Built-in Battery Operation:	3-4 Hrs
Power Save:	LCD backlight auto off timer, brightness adj.
Dimensions:	4.5 x 9.6 x 7 inches (HWD)
Weight:	Approx. 5.5 lbs
Case Covers:	ABS plastic
Standard Accessories Includes:	Soft padded case
	AC power adapter
	12V Lighter adapter cable
	USB 2.0 cable
	A/V cable
	DiSEqC two way switch

ORDERING INFORMATION

DSA 1490	Base model
DSA 1490-ASI	Base with ASI in/out analyzing features
DSA-DOLBY	Option – Adds Dolby AC3, AC3E decoding