

VIAVI DSAM Series

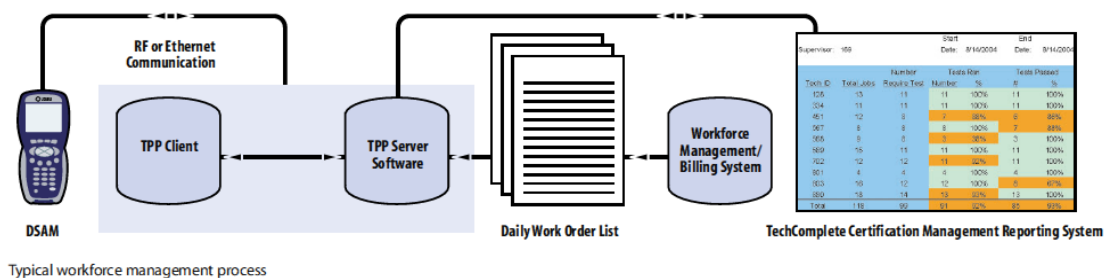
DIGITAL SERVICE ANALYSIS METER

The DSAM 2000 / 2300 / 3300 / 6300 combines all important analog and digital measurement functions with overall testing capabilities for high speed data and voice services. Due to its rugged & light weight design and overwhelming testing capabilities the DSAM is the perfect field measurement unit for triple play services.

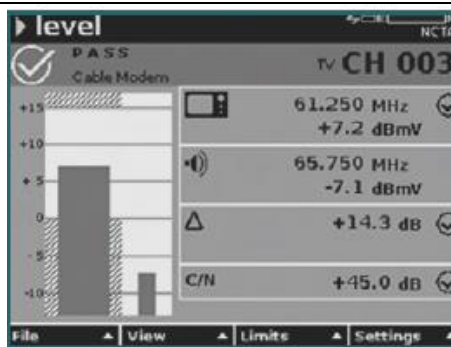
Through the well known VIAVI forward sweep concept analog and digital carriers are continuously referenced and the spectrum scanned. The return sweep option of the DSAM 6300 together with the SDA 5500 headend unit enable a single technician to check and align the return path all by himself.



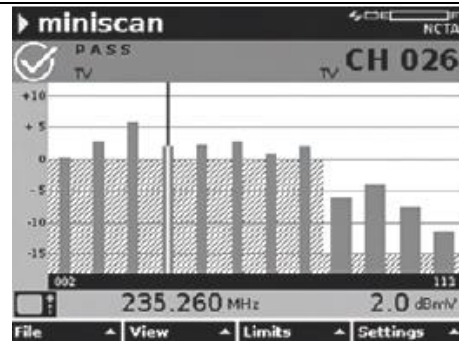
- Eight downstreams & four upstreams DOCSIS 3.0 testing
- Throughput testing of bonded services
- Up to 400 Mbps down, 120 Mbps up (8 MHz carriers)
- Gigabit ethernet port standard
- Improved digital carrier testing
- Deep interleave video BER
- MER range up to 45 dB
- DQI measurement capability
- Integrated Pre-amp
- -45 dBmV ingress scan
- Improved C/N on 20 dB test points
- Available with 42, 65, or 85 MHz diplexer
- CableLabs compliant certificates
- Legacy support for DOCSIS 1.0, 1.1, and 2.0
- Includes all measurements and features of previous models



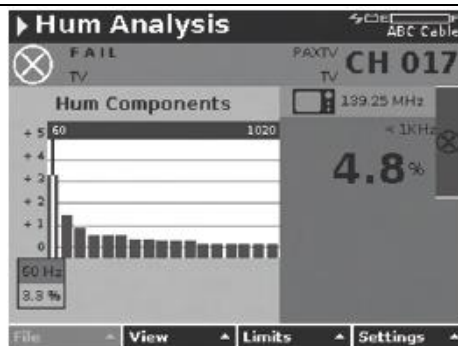
FEATURES - DEPENDING ON DSAM MODEL



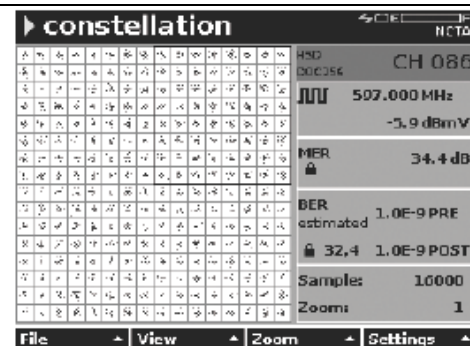
Level- und C/N display of analog signals



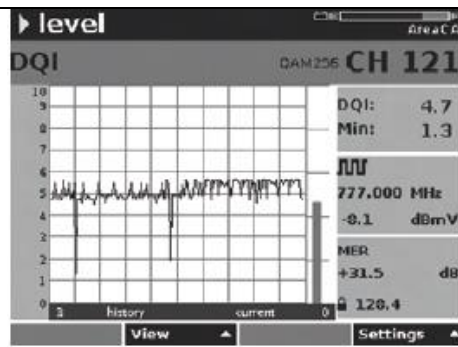
MiniScan measures level of up to 12 channels simultaneously



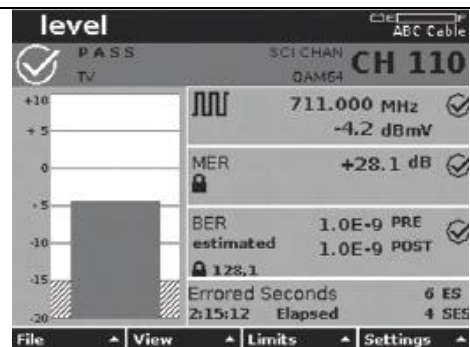
Hum analysis: electrical interferences on channels



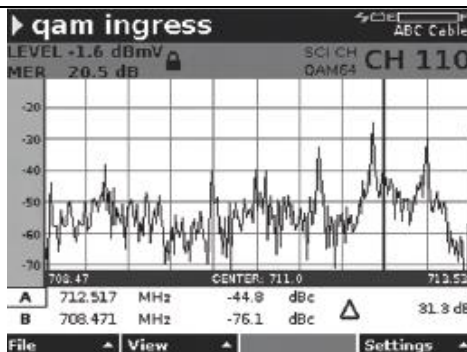
Constellation diagramm



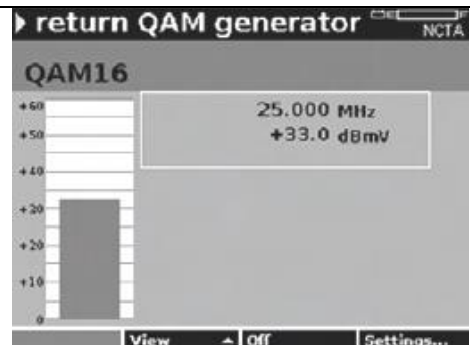
Digital Quality Index – shows short time digital impairments



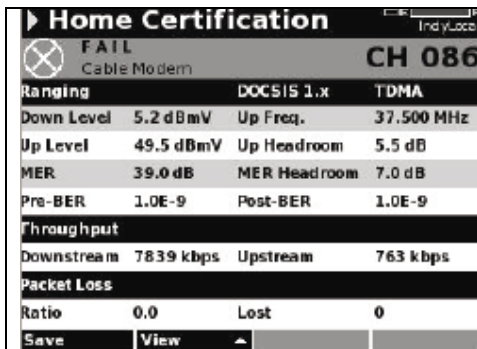
Display of MER, BER and Errored Seconds



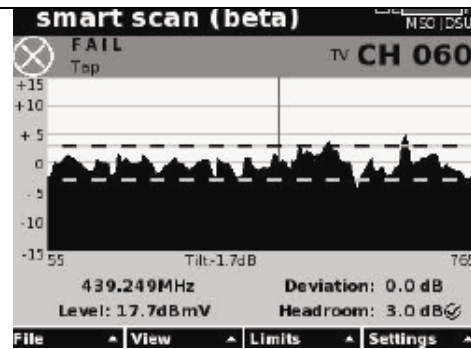
QAM Ingress: enables analysis of ingress on live digital carrier



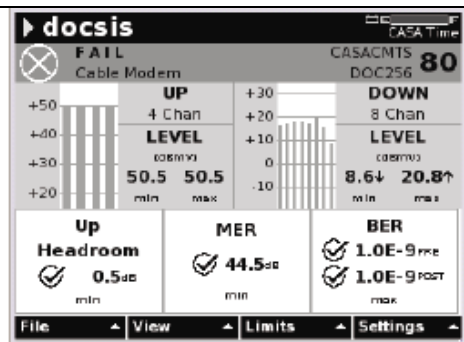
QAM16-test signal is transmitted back to headend



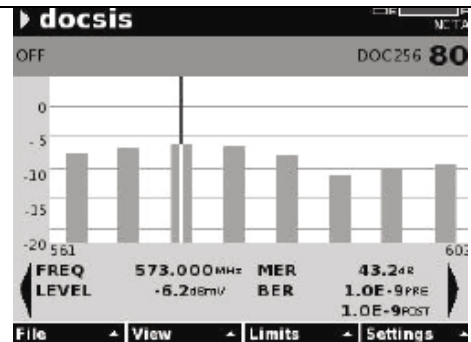
Home Certification provides consistent test methods



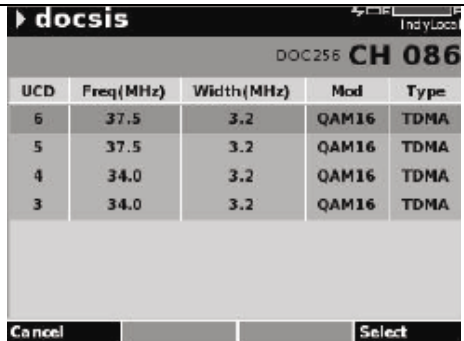
Smart Scan provides an overview for the problem analysis between tap and modem



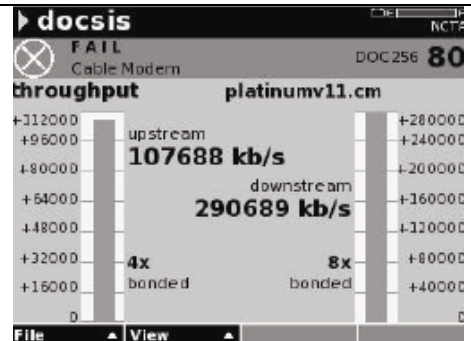
Worst Performance display of Docsis 3.0 carriers



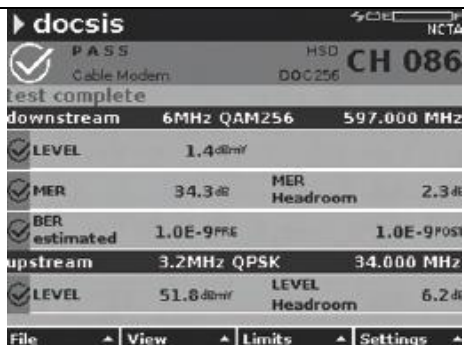
Docsis 3.0 view provides details about bonded channels



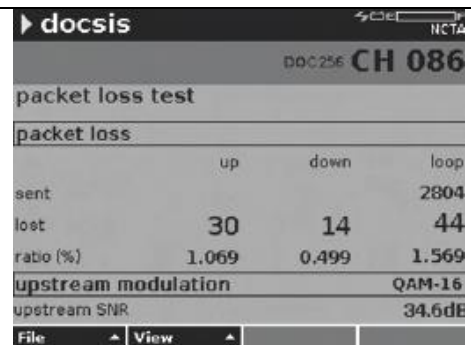
User can choose which channel to select at Docsis 3.0 measurements



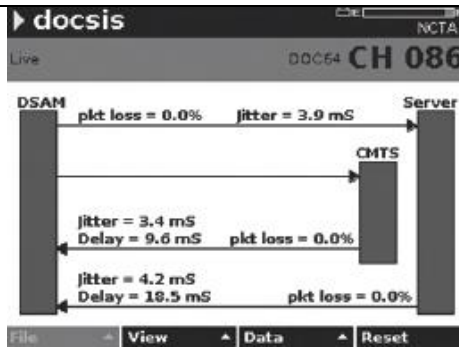
Docsis 3.0 throughput testing of up to 8 DS and 4 US channels



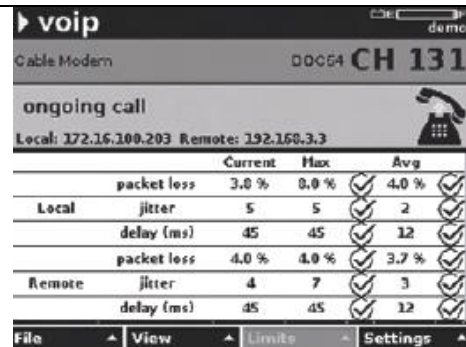
Shows RF parameters of DSAM cable modem



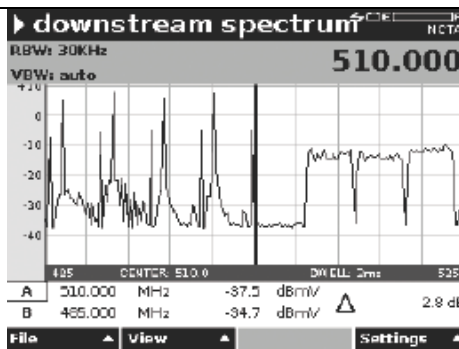
Packet Loss at up- and downstream / upstream SNR data received by CMTS



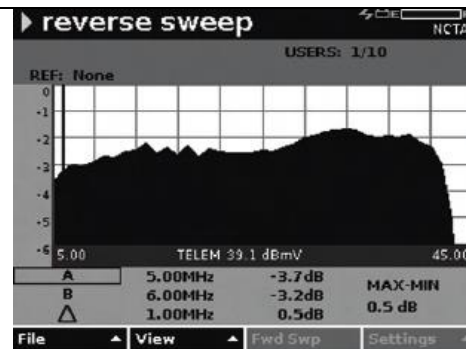
VoIP Check: Packet loss, jitter, delay, MOS, R-value



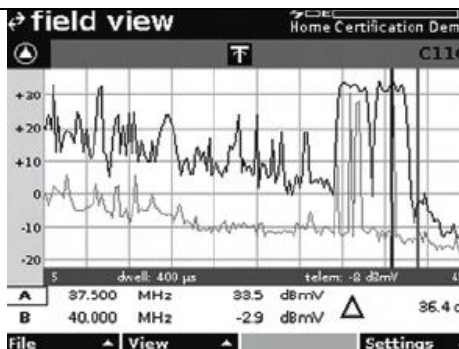
True VoIP Check: analyzing live calls of DSAM eMTA



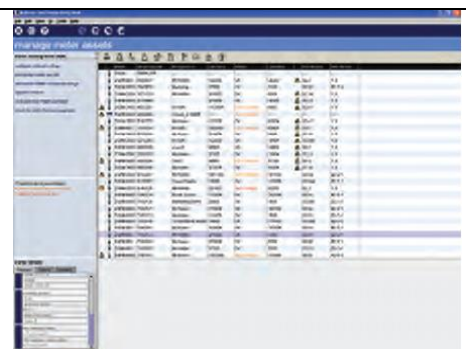
Analyzer display of down- and upstream



Forward and return sweeping (DSAM6000)



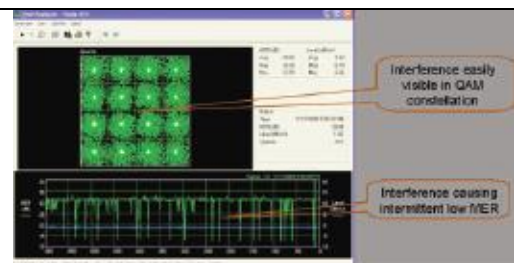
FieldView: display of return path spectrum of PathTrak system



TPP: Reporting and management tool of DSAM units



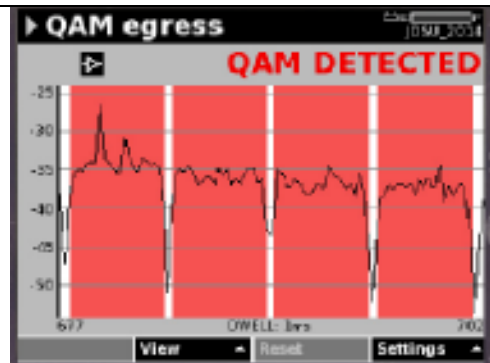
TPP software lets technicians remotely configure, update and upgrade DSAM meters



PathTrak with RPM-3000 can be used in conjunction with the DSAM



DSAMobile App for iPad®, iPhone®, and iPod touch®



Finds signal leakage quickly and cost effectively



Enables WiFi Testing and Convenient Data Sync

MODEL		DSAM 2000	DSAM 2300	DSAM 3300	DSAM 6300
Analog and digital Carrier Level Verification	Analog Video and Audio Power Levels	X	X	X	X
	Digital Power Level	X	X	X	X
	Tilt (1 ... 12 Channels)	X	X	X	X
	Mini-Scan (1-12 Channels)	X	X	X	X
	Full-Scan (1-999 Channels)	X	X	X	X
	Analog Carrier to Noise	X	X	X	X
	Signal to Hum Ratio	X	X	X	X
	SmartScan	Opt.	X	X	X
Digital QAM Carrier Quality	Spectrum Analyzer with Auto Pre-Amp	Opt.	Opt.	X	X
	MER/EVM Measurements	X	X	X	X
	Pre and Post FEC BER (64, 128, 256)	X	X	X	X
	BER for Deep Interleave (128,4 or 128,5)	X	X	X	X
	Constellation Diagramm (64, 128, 256)	Opt.	Opt.	X	X
	DQI – Digital Quality Index	X	X	X	X
	AGC Stress	X	X	X	X
	Errored/Severely errored Seconds	X	X	X	X
Upstream physical Verification	Equalizer Stress, in Channel response, Group Delay			Opt.	Opt.
	QAM Ingress	HW Opt.	HW Opt.	HW Opt.	SW Opt.
	Return Loopback				X
	Local Upstream Spectrum for Ingress Check	X	X	X	X
	Return QAM Generator	Opt.	Opt.	X	X
Docsis/EuroDocsis Testing	Spectrum Analyzer w/Auto Pre Amp	Opt.	Opt.	X	X
	Field View of the PathTrak Return Spectrum	Opt.	Opt.	Opt.	Opt.
	Docsis 2.0/1.1/1.0 testing 1 Downstream x 1 Upstream	X	X	X	X
	Docsis 3.0 Bonded Carrier testing eight Downstreams x four Upstreams	X	X	X	X
	Downstream MER/EVM, Pre- and Post-FEC BER	X	X	X	X

	Dynamic Docsis Range and Registration	X	X	X	X
	Cable Modem Configuration File Verification	X	X	X	X
	Upstream Channel Selection	X	X	X	X
	Upstream Transmit Level and Headroom	X	X	X	X
	Cable Modem and CPE MAC Cloning	X	X	X	X
	CableLabs issued Certificates	X	X	X	X
	IPv6 Compatibility–Cable Modem	X	X	X	X
	Dual MAC/BPI+ Certificates	X	X	X	X
Docsis/EuroDocsis Service Tests	Packet Loss	Opt.	X	X	X
	Throughput – Upstream and Downstream (Up to Docsis 3.0 rates)	Opt.	X	X	X
	Ping	Opt.	X	X	X
	VoIPCheck – Voice over IP testing (MOS, Packet Loss, Jitter, Delay)	Opt.	Opt.	Opt.	Opt.
Ethernet Testing	Throughput – (Docsis 2.0 Rates)	Opt.	X	X	X
	Packet Loss	Opt.	X	X	X
	Ping	Opt.	X	X	X
	View CM diagnostics Page	X	X	X	X
	Gigabit Ethernet Option throughput – (DOCSIS 3.0 Rates) up to 400 Mbps down	Opt.	Opt.	X	X
RF Network Verification	Forward Sweepless Sweep	Opt.	Opt.	Opt.	X
	Reverse Alignment				X
	Forward (Downstream) Sweep				Opt.
	Reverse (Upstream) Sweep				Opt.
	Return Loopback (requires QAM Ingress Option)				X
HFC Network Verification	Scheduled Autotest	X	X	X	X
	Proof Test	X	X	X	X
Home Network Verification	IP Tests via 10/100/1000 Ethernet Jack	Opt.	X	X	X
	Ingress Resistance Test (IRT)	X	X	X	X
	Fault Location using FDR Feature in LST-1700 remote Transmitter	X	X	X	X
	Test Point Compensation	X	X	X	X
	SmartID advanced Coax Probe Support*	X	X	X	X
	DSAMobile iPad app	Opt.	Opt.	Opt.	Opt.
	WiFi Support (USB)**	Opt.	Opt.	Opt.	Opt.
Autotest	Home Certification	Opt.	Opt.	Opt.	Opt.
	Video Autotest	X	X	X	X
	Cable Modem Autotest	X	X	X	X
	Combination Autotest (Video and Cable Modem)	X	X	X	X
	Proof of Performance (Scheduled autotest)	X	X	X	X
	Web Browser	Opt.	Opt.	Opt.	Opt.
Miscellaneous	RF or Ethernet Synchronization with TPP	X	X	X	X
	Secure Sync – RF Synchronization through Firewalls	X	X	X	X
	Optical Power Meter Support (USB) MP-60A and MP-80A*	X	X	X	X
	P5000i Fiber Inspection Scope Support*	Opt.	Opt.	Opt.	Opt.
	QAM Egress	Opt.	Opt.	Opt.	Opt.
	StrataSync Asset Management – One Year Subscription	X	X	X	X

* Firmware to support this Option is Standard and requires the Purchase of a Hardware Accessory.

** Firmware to support this Option is Optional and requires the Purchase of a Hardware Accessory.

TECHNICAL DATA

FREQUENCY		UPSTREAM SPECTRUM (INGRESS SCAN)	
Range	4.1000 MHz	Spans 4-42 MHz, 4-65 MHz, 4-85 MHz	
Accuracy	± 10 ppm at 25°C	Sweep rate <2 s	
Channel Bandwidth	Models ending in A, 8 MHz	Display scaling and range 1, 2, 5 and 10 dB/division;	
LEVEL MEASUREMENTS ANALOG		Resolution Bandwidth 280 kHz	
Signal Types	CW, Video & Audio(PAL, SECAM, NTSC)	Sensitivity -45-60 dBmV (typical)	
Range	-40-60 dBμV	DOWNSTREAM SPECTRUM (FORWARD SCAN)	
Resolution	0,1 dB	Frequency Range	4-1000 MHz
Resolution Bandwidth	280 kHz	Sweep Rate	Less than 2.5 Seconds; Display
Accuracy	± 1,5 dB Linearität @ 25°C	Display Scaling and Range	1, 2, 5 and 10 dB/division, Six vertical Divisions
Carrier to Noise	30 ... 45 dB ± 2 dB	Resolution Bandwidth	30 or 280 kHz
	45 ... 48 dB ± 3 dB	Span	10 or 50 MHz
	Input at >0 dBmV (up to 750 MHz)	Sensitivity	-35 to 60 dBmV (typical)
	Input at >0 dBmV (750-1000 MHz)	Low Pass Filter	(matches Diplexer Frequency)
HUM		Reverse Path Sensitivity	-45-60 dBmV
Accuracy	Up to 5% hum: ±0,8% From 5 to 10%: ±1.0%	CONSTELLATIONAL (OPTIONAL)	
LEVEL MEASUREMENT DIGITAL		Modulation Type	64, 128 and 256 QAM
Modulation Types	QPSK, QAM (DVB, ACTS), QPR	Constellation Points	2000, 4000, 8000, 16000, 32000 or 64000
Range	-4060 dBμV	RETURN QAM GENERATOR	
Resolution	0,1 dB	Signal Modulation	16 QAM, 64 QAM
Accuracy	± 2.0 dB typical @ 25°C	Symbol Rates (Mpsps)	1.28, 2.56, 5.12
DOWNSTREAM-QAM DEMODULATION		Frequency Range	5-42 MHz, 5-65 MHz, 5-85 MHz
Modulation Type	64, 128 and 256 QAM, ITU-T J.83 Annex A, B or C (selectable)	Supported Levels	8.0-58.0 dBmV
Input Range (Lock Range)	-15 to +50 dBμV total integrated Power from: 57-1000 MHz (42 MHz Diplexer 6 MHz Channel spacing) 83-1000 MHz (65 MHz Diplexer 6 MHz Channel spacing) 108-1000 MHz (85 MHz Diplexer 6 MHz Channel spacing) 58-1000 MHz (42 MHz Diplexer 8 MHz Channel spacing) 84-1000 MHz (65 MHz Diplexer 8 MHz Channel spacing) 109-1000 MHz (85 MHz Diplexer 8 MHz Channel spacing) 50 kHz tuning Resolution	DSAM SWEEP SPEZIFICATIONS (OPTIONAL)	
		FORWARD SWEEP	
		Requires SDA-5500 (SDA Compatible Mode)	
		REVERSE SWEEP	
		Requires SDA-5500 (Single Reverse) or SDA-5510 (Multiple Reverse) (SDA Compatible Mode)	
		SWEEP MODES	
		Frequency Range	5-1000 MHz Forward, 5-65 Reverse
		Display Span	User definable
		Display Scale/Range	Six vertical Divisions, 1,2,5, or 10 dB/division
		Sweep Pulse occupied Bandwidth	30 kHz
BER	Pre- and Post-FEC 10 ⁻⁴ ... 10 ⁻⁹	Stability	±0.5 dB, normalized (dependent on Stability of referenced Carriers)
		Sweep Rate	~ 1 s (78 Channels, including scrambled and Digital Signal Types)
MER	Range 64 QAM: 21 to 45 dB (± 2 dB) Range 128/256 QAM: 28 to 45 dB (± 2 dB)	RETURN LOOPBACK	
		Frequency Range	5-55 MHz, 5-65 MHz
Symbol Rate	Annex A, 5.057 to 6.952 Msps (64/128/256 QAM) Annex B 5.057 Msps (64 QAM) and 5361 Msps (256 QAM) Annex C 5.274 Msps (64 QAM) and 5361 Msps (256 QAM)	Transmit Level	8-58 dBmV
		STANDARD COMPLIANCE	
Display	320 x 240, Grayscale, Selectable Back Light (User Interface and Help System) English in all Models No Charge Second Language Option of Spanish, French, German, Hungarian, Japanese, Polish or Chinese	Shock and Vibration 5 Gs at 2-5 Hz Transportation Packaging I.S.T.A – Procedures 1C and 1G Drop IEC 61010 Handle Stress IEC 61010 Water Resistance MIL-STD-810F Safety Emissions EN 55022, CE, FCC, Safety Immunity EN 61000, CE, FCC	
		Dimensions with Battery (with QAM HW Option) (W x H x D)	12 x 25 x 12.1 cm
Language Support		Weight without Battery (without QAM HW Option)	1.2 kg
		Weight without Battery (with QAM HW Option)	1.4 kg
		Battery Weight	0.6 kg

Dimensions with Battery (without QAM HW Option) (W x H x D)	12 x 25 x 12.1 cm	Storage and Operating Temperature Range	-20-50°C
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ACCESSORIES

- Battery
- Charger
- Protective Bag
- Manual



ORDERING INFORMATION

DESCRIPTION	PART NUMBER
Mainframe	
Sweep technician DOCSIS, sweep and signal level meter	DSAM-6300
DOCSIS 3.0 and Return Path Diplexer (choose only one—mutually exclusive)	
42 MHz DOCSIS 3.0 Diplexer	DSAM-D3DIPLEX-42*
65 MHz DOCSIS 3.0 Diplexer	DSAM-D3DIPLEX-65*
85 MHz DOCSIS 3.0 Diplexer	DSAM-D3DIPLEX-85*
Options	
Integrated web browser	1019-00-1491
VoIPCheck	1019-00-1556
Field View w/ return signal generator	1019-00-1495
Home Certification	1019-00-1513
QAM ingress software option	DSAM-QAM-INGRESS
Forward Sweep	1019-00-1567
Reverse Sweep	1019-00-1563
Substitute 75-ohm BNC connector	1019-00-1455
DSAM Field View QAM option	DSAM-FVQAM
QAM Ingress and Return Loopback package	DSAM-QINGLOOP-OPT
DSAM WiFi software option and compatible USB WiFi adapter	DSAM-WIFI-PKG
USB optical power meter with accessories	MP-60A
USB optical power meter - high power with accessories	MP-80A MP-80 -
SmartID qty.1 — additional or replacement probe	SMARTID 1PC
SmartID 2-pack and starter kit	SMARTID 2PCS STARTERKIT
SmartID 3-pack and starter kit	SMARTID 3PCS STARTERKIT
SmartID 4-pack and starter kit	SMARTID 4PCS STARTERKIT
SmartID 5-pack and starter kit	SMARTID 5PCS STARTERKIT
SmartID 6-pack and starter kit	SMARTID 6PCS STARTERKIT
SmartID accessory kit — SmartID carrying case and USB cable	SMARTID ACC KIT
SmartID to DSAM USB Cable	SMARTID-USBCABLE
Extended hardware warranty 1 year DSAM-6300	DSAMWE6300
QAM Egress option, DSAM software only	DSAM-QAM-EGRESS
QAM Egress option, DSAM software and near-field antenna	QAM-EGRESS-NF-PKG
QAM Egress option, DSAM software, nearfield antenna and directional antenna	QAM-EGRESS-DIR-PKG
QAM Egress near-field antenna	DSAM-NEARFIELD ANTENNA
QAM Egress directional antenna	DSAM-DIRECTIONAL ANTENNA
Headend Instruments	
SDA-5500 headend sweep transceiver: provides forward sweep and single-user reverse sweep; includes line cord, channel plan transfer cable, and operator's manual	1010-00-0470
SDA-5510 headend reverse sweep manager: receives reverse sweep from up to 10 DSAMs; includes line cord, channel plan transfer cable, and operator's manual	1010-00-0472
P5000i Fiber Microscope	
Kit: FBP-P5000i digital probe, FiberChek-PRO software, case, and tips (FBPT-SC, FBPT-LC, FBPT-U25M, FBPT-U12M)	FBP-SD101
Kit: P5000i and MP-60, FiberChekPRO software, case, tips, and adapters (FBPTSC, FBPT-LC, FBPT-U25M, FBPT-U12M)	FIT-SD103
Kit: P5000i and MP-80, FiberChekPRO software, case, tips, and adapters (FBPTSC, FBPT-LC, FBPT-U25M, FBPT-U12M)	FIT-SD113

* Must choose one diplex frequency to match return path.