

VIavi DSAM Serie

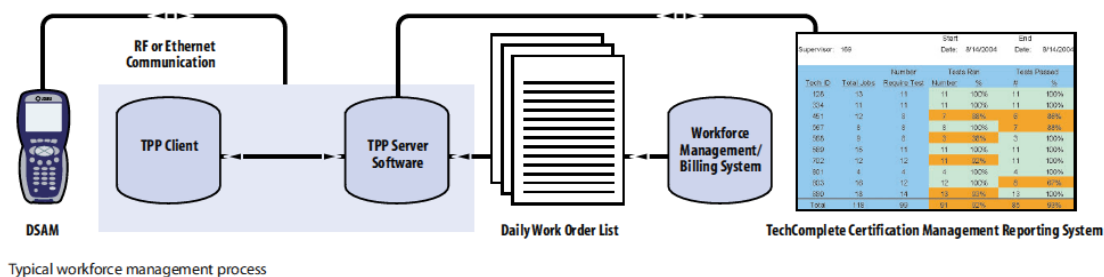
DIGITAL SERVICE ANALYSIS METER

Das DSAM 2000 / 2300 / 3300 / 6300 bietet neben allen wichtigen analogen und digitalen HF-Messfunktionen umfangreiche Möglichkeiten Messungen auf Docsis- bzw. IP-Ebene durchzuführen. Seine extrem robuste Bauweise und große Funktionsvielfalt machen das DSAM zu dem idealen Messinstrument für Triple Play-Dienste und den täglichen Feldeinsatz.

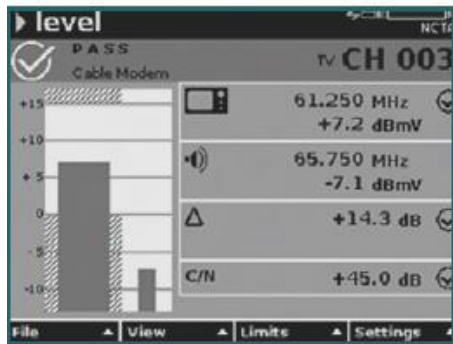
Mittels dem bewährten Forward-Sweep-Systems (Vorweg-Wobbelung) werden über analoge und digitale Video-Träger Referenzen gebildet und das ganze Spektrum über diese ständig gescannt und analysiert. Beim Return Sweep erfolgt in Verbindung mit dem SDA 5500 (HE-Unit) die Prüfung des Rückwegs an beliebigen Stellen des Netzes.



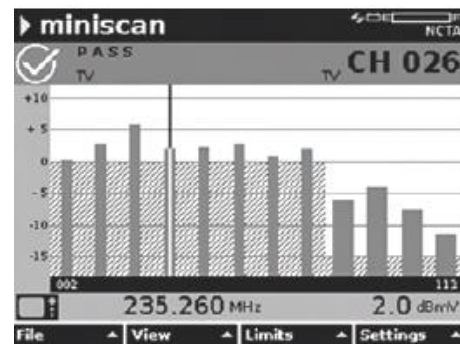
- Messung von Docsis 3.0 (8xDS/4xUS)
- Datendurchsatz-Messung von gebondeten Kanälen:
- Bis zu 400 Mbps DS/120 Mbps US
- Gigabit Ethernet Port
- Verbesserte Messung von digitalen Trägern
- Deep Interleave Video BER
- MER bis 45 dB möglich
- DQI-Messungen (Digital Quality Index)
- Integrierter Vorverstärker
- – 45 dBmV Ingress Scan
- Verbesserter C/N an 20dB-Testpunkten
- Verfügbar mit 42, 65 oder 85 MHz-Duplexer
- Zertifiziert mit CableLabs
- Rückwärtskompatibel mit Docsis 1.0, 1.1, 2.0
- Inklusive aller Features von vorhergehenden Modellen



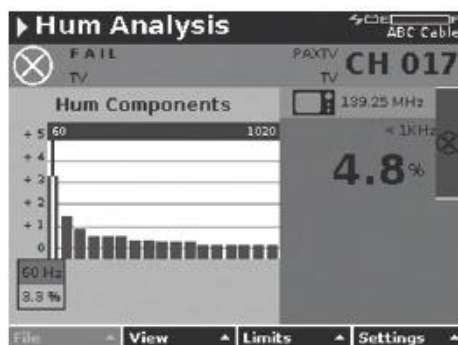
FEATURES - ABHÄNGIG VOM DSAM MODELL



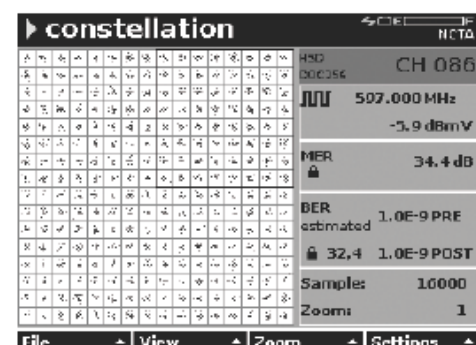
Pegel- und C/N-Darstellung bei analogen Signalen



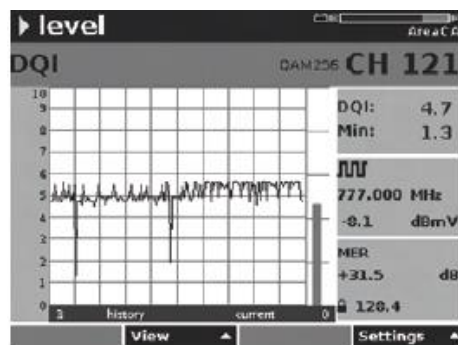
MiniScan misst Pegel bei bis zu 12 Kanälen gleichzeitig



Anzeige von Brumm-Abstand (elektrische Interferenzen)



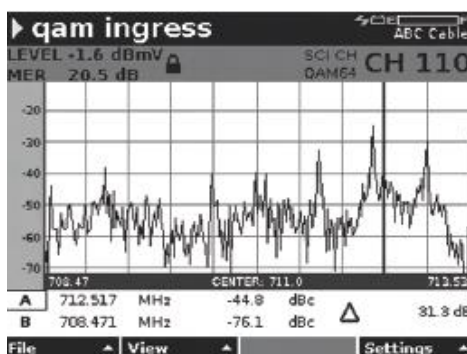
Konstellationsdiagramm



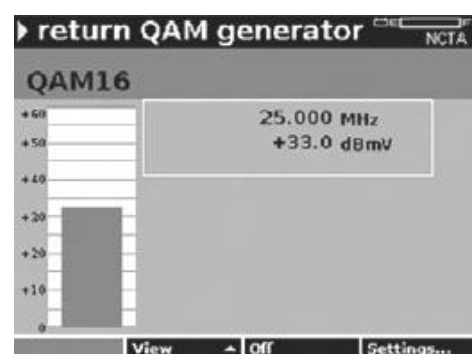
Digital Quality Index – zeigt kurzfristige digitale Fehler



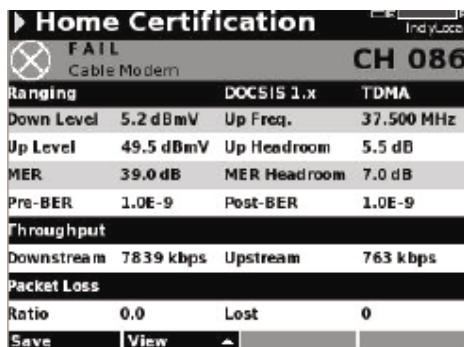
MER / BER / Errored Seconds-Anzeige



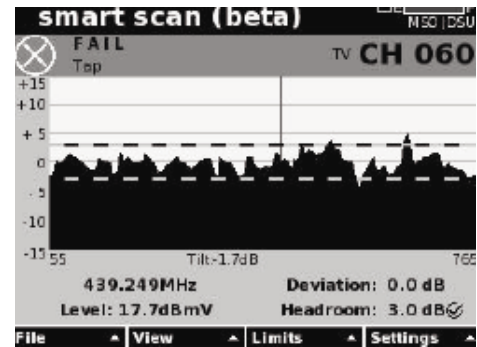
QAM Ingress: schwer sichtbarer Ingress an einem digitalen Träger



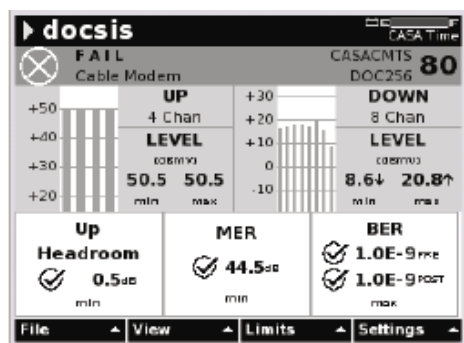
QAM16-Transmitter überträgt Signal retour zum HE



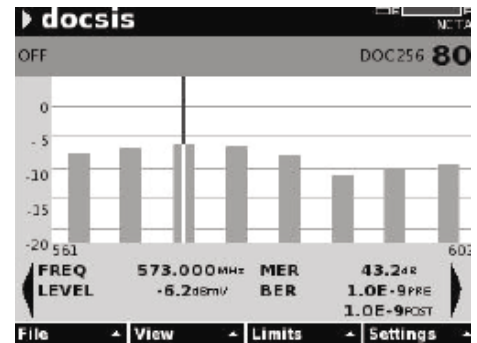
Home Certification sorgt für einheitliche Messungen



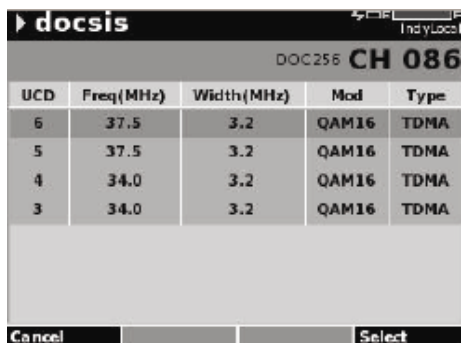
Smart Scan bietet übersichtliche Darstellung zur Problemanalyse zwischen Tap und Modem



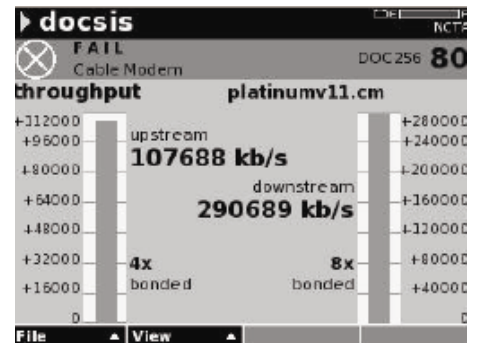
Worst Performance Darstellung bei DOCSIS 3.0-Trägern



DOCSIS 3.0 Detail-Darstellung der gebondeten Kanäle



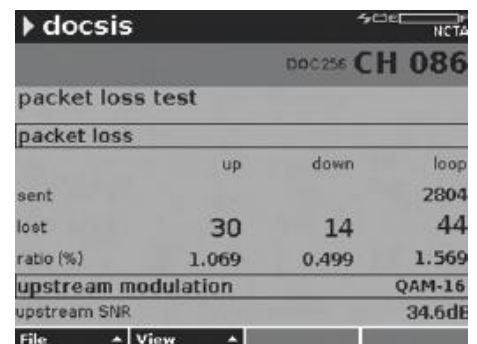
Analyse von einzelnen RW-Trägern bei DOCSIS 3.0



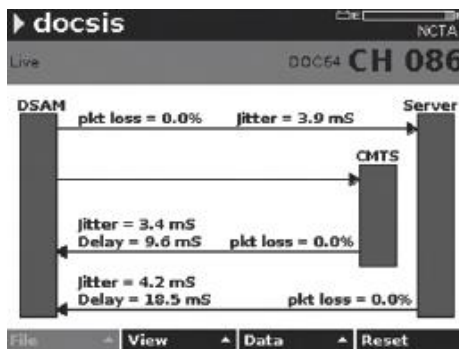
DOCSIS 3.0-Datendurchsatzmessungen bis zu 8 DS- und 4 US-Kanälen



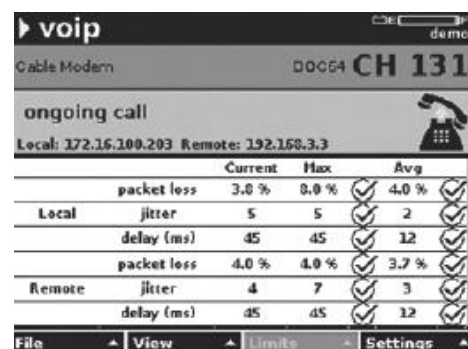
Anzeige der HF-Parameter v. DSAM-Kabelmodem



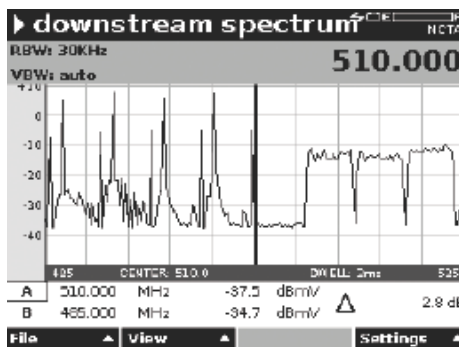
Packet Loss bei Up- und Downstream / Upstream SNR



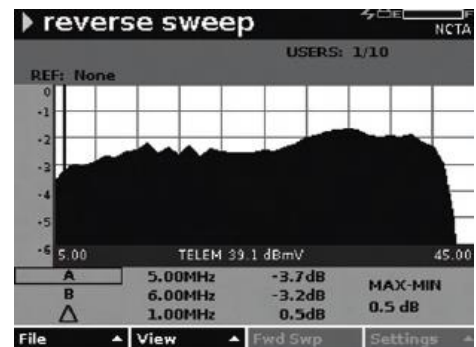
VoIP Check: Packet Loss, Jitter, Delay, MOS, R-value



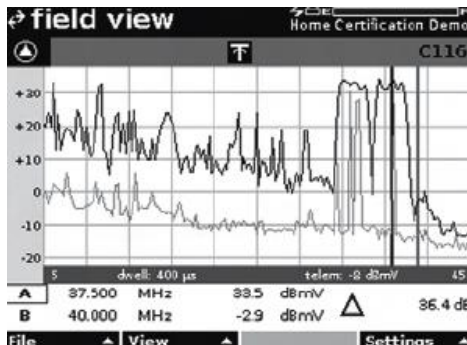
True VoIP Check: Live-Analyse durch DSAM eMTA



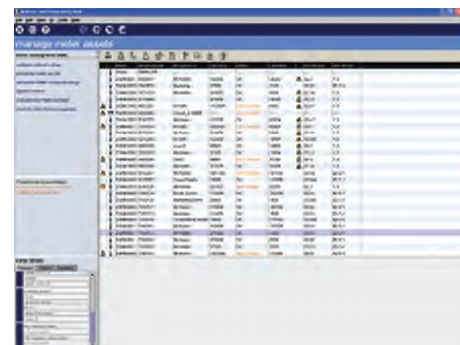
Analyzer-Funktion für Down- und Upstream



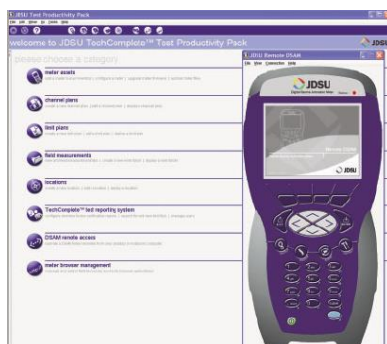
Vorwärts- und Rückweg-Wobbeln (DSAM6000) möglich



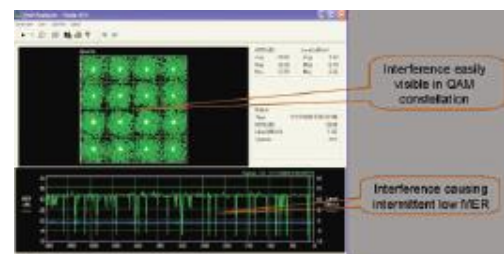
FieldView: Rückweg-Spektrum vom PathTrak-System



TPP: DSAM-Auswertungs- und Management-Tool



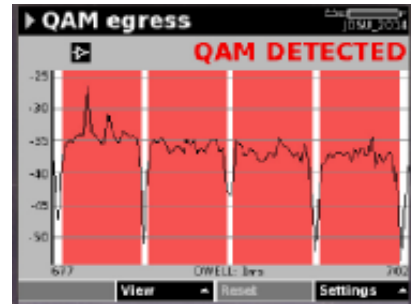
TPP Software ermöglicht Technikern die DSAMs von der Ferne upzugraden und zu konfigurieren



Verwendung des DSAM mit PT und RPM-3000-Karten



DSAMobile App für iPad®, iPhone® und iPod touch®



Findet Signalverlust schnell und kosteneffizient



Ermöglicht WiFi-Prüfung und komfortable Daten-Synchronisierung

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.
Autotest	WiFi Support (USB)**	Opt.	Opt.	Opt.	Opt.
	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
Miscellaneous	Web Browser	Opt.	Opt.	Opt.	Opt.
	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.

TECHNISCHE DATEN

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)	
		Modulation Type	64, 128 and 256 QAM
LEVEL MEASUREMENT DIGITAL		Constellation Points	2000, 4000, 8000, 16000, 32000 or 64000
Modulation Types	QPSK, QAM (DVB, ACTS), QPR		
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 (Msps)	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
		DSAM SWEEP SPEZIFICATIONS (OPTIONAL)	
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	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
		Stability	±0.5 dB, normalized (dependent on Stability of referenced Carriers)
BER	Pre- and Post-FEC 10 ⁻⁴ ... 10 ⁻⁹	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
		Transmit Level	8-58 dBmV
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)	STANDARD COMPLIANCE	
		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 Restistance MIL-STD-810F Safety Emissions EN 55022, CE, FCC, Safety Immunity EN 61000, CE, FCC	
Display	320 x 240, Grayscale, Selectable Back Light	Dimensions with Battery (with QAM HW Option) (W x H x D)	12 x 25 x 12.1 cm
Language Support	(User Interface and Help System)	Weight without Battery (without QAM HW Option)	1.2 kg
	English in all Models	Weight without Battery (with QAM HW Option)	1.4 kg
	No Charge Second Language Option of Spanish, French, German, Hungarian, Japanese, Polish or Chinese	Battery Weight	0.6 kg

Dimensions with Battery (without QAM HW Option)	12 x 25 x 12.1 cm	Storage and Pperating Temperature Range	-20-50°C
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ZUBEHÖR

- Akku
- Ladeteil
- Schutztasche
- Bedienungsanleitung



BESTELLINFORMATIONEN

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 duplex frequency to match return path.