VIAVI   360 DSP

HOME CERTIFICATION METER

Trilithic's 360 DSP is the first meter designed specifically to simplify Home Certifications. Built from the ground up, tailored specifically for the needs of fulfillment, this meter is ideal for standardizing processes and procedures for installation and service. The 360 DSP also includes a price point that makes it feasible for system operators to outfit their entire fleet. Tailored for the challenges faced by installers, contractors, and service techs, this go-to next-gen meter comes equipped with all of the powerful troubleshooting tools for the advanced tech, yet helps simplify decision making and streamlines standard processes and procedures for the more novice tech. This improves tech efficiencies, the overall health of the entire system, and allows techs to grow with the meter.

- Return Spectrum Analysis (4 to 110 MHz)
- Level Measurement
- C/N Measurement
- QAM Measurement (MER/BER/Constellation/EQ)
- Complete Channel Plan Scan with Tilt Measurement
- Ping, Trace Route, VoIP & Throughput Measurements
- Cable Modem Statistics
- Auto Discovery of Channel Plans
- Advanced Home Certification Capabilities Simplify Installation and Troubleshooting
- Intuitive Color Touch Screen with Simple Pass/Fail Indicators Reduce Installer Entry Errors and Improves Decision Making
- Next-Generation Autotest Apps Streamline Certification
- Convenient Multiple Standard Tests in a Single Autotest App Help to Standardize Tech Processes & Procedures
- Powerful Troubleshooting Tools Improve the Overall Health of the System

SPECIFICATIONS

LEVEL MEASUREMENT	
Channel Bandwidth	6 MHz and 8 MHz
Amplitude Range	-40 dBmV to +50 dBmV
Modulation Types	Analog: NTSC, PAL B/D/G/H/I/K/N and SECAM B/D/G/H/I/K Digital: 16/32/64/128/256 QAM Annex A, 64/256 QAM Annex B/C,OFDM 4K/8K*
Analog Measurement Accuracy	±0.75 dB @ 77° F (25° C); ±2.0 dB from 0 to 122° F (-18 to 50° C)
Digital Measurement Accuracy	±0.75 dB @ 77° F (25° C); ±2.5 dB from 0 to 122° F (-18 to 50° C)
Display Resolution	0.1 dB
SPECTRUM MEASUREMENT	
Frequency Range**	Return Path: 4 to 205 MHz Forward Path: 5 to 1250 MHz
Dual Return Path Diplexers	42 MHz: 4 to 42 MHz 85 MHz: 4 to 85 MHz
Manually Adjustable Resolution Bandwidth	Return Path: 300 kHz Forward Path: 10, 30, 100, and 300 kHz; 1 and 3 MHz
Auto Ranging Resolution Bandwidth	10 kHz: Span ≤ 3.5 MHz 30 kHz: Span ≤ 12.0 MHz 100 kHz: Span ≤ 35.9 MHz 300 kHz: Span ≤ 300 MHz 1 MHz: Span ≤ 359.2 MHz 3 MHz: Span ≥ 359.3 MHz
Display Spans	Return Path: 4 to 42 MHz, 4 to 65 MHz, 4 to 85 MHz or 4 to 205 MHz Forward Path: User-selectable in 1 kHz steps
Display Scale	1, 2, 5, 7.5 or 10 dB/division

Display Range	8 vertical divisions (when marker bar is hidden)
Spurious Free Dynamic Range	60 dB @ 25° C (77° F) (+50 dBmV)
Sensitivity (terminated)	Return Path: -40 dBmV (4 to 205 MHz) Forward Path: -40 dBmV (5 to 1250 MHz)
DIGITAL CHANNEL MEASUREMENT	
Deep Interleave Compatibility	Yes
Downstream MER	40 ±2 dB @ +6 dBmV RF Input Level 34 ±2 dB @ -6 dBmV RF Input Level
Downstream BER	Method: True BER, derived from code words not from MER Standard: ITU J.83 annex A, B, C Range: 1 E-7 to 1 E-9 @ -6 dBmV RF Input Level
Symbol Rates	≥ 2 MSPS; ≤ 6.952 MSPS

* DOCSIS 3.1 option equipped meters only

CABLE MODEM MEASUREMENT (360 AND 1G DSP ONLY)	
Protocol Support	DOCSIS 1.1 / 2.0 / 3.0 / 3.1* SNMP V1, V2c, V3
Compliance Certificates	FCC
CM Diplexer	85 MHz: 5 to 85 MHz
Receiver Demodulation	Frequency (edge to edge): 108 to 1218 MHz Channel Bandwidth: 6 MHz Signal Level: -15 to 15 dBmV DOCSIS 3.0 Demodulation: 64 QAM, 256 QAM DOCSIS 3.0 Data Rate: Up to 1.2 Gbps with 32 downstream channel bonding (DOCSIS 32x8) DOCSIS 3.1 Demodulation: Multi-Carrier OFDM 16 to 4096 QAM* DOCSIS 3.1 Data Rate: Up to 2.5 Gbps with 2 OFDM 196 MHz Downstream Channels*
Transmitter Modulation	Frequency (edge to edge): 5 to 85 MHz Signal Level: Controlled by CMTS though power ranging function DOCSIS 3.0 Modulation: QPSK, 8 QAM, 16 QAM, 32 QAM, 64 QAM, and 128 QAM (SCDMA only) DOCSIS 3.0 Data Rate: Up to 320 Mbps with 8 upstream channels bonding DOCSIS 3.1 Modulation: Multi-Carrier OFDMA BPSK to 4096 QAM* DOCSIS 3.1 Data Rate: Up to 1 Gbps with 2 OFDMA 96 MHz Upstream Channels*
CARRIER-TO-NOISE MEASUREMENT (IN-SERVICE, NON-SCRAMBLED STANDARD CHANNELS ONLY)	
Minimum Input Level for Full Range	+10 dBmV
Dynamic Range	50 dB
Resolution	< 0.5 dB
TILT MEASUREMENT	
Max Number of Carriers	14 (dependent on favorite channel setup)
High/Low Delta Resolution	0.1 dB
Scan	Video, audio, pilot, and digital carriers
ANALOG AND DIGITAL HUM (IN-SERVICE, NON-SCRAMBLED STANDARD CHANNELS ONLY)	
Minimum Input Level	0 dBmV
Range	0 to 5%
Resolution	0.10%
Accuracy	±0.5%
FREQUENCY DOMAIN REFLECTOMETER (360 DSP ADVANCED AND PRO MODELS, 1G DSP)	
Velocity of Propagation	Adjustable from 60.0 to 99.0% in 0.1% increments
Working Distance	Minimum: 755 feet (230 meters) @ VoP of 60.0% Maximum: 1247 feet (380 meters) @ VoP of 99.0%
Amplitude Range	0 to -80 dBRL
Distance Accuracy	5 feet
SOURCE GENERATOR (ADVANCED AND PRO MODELS, 1G DSP)	
Modulation	CW, 16 QAM, 32 QAM, 64 QAM, 128 QAM, 256 QAM, OFDM (4K/8K)*
OFDM Subcarrier Modulation	16 to 4096 QAM, PLC Configurable*
Frequency Range	5 to 85 MHz
Source Width	CW: 50 kHz QAM: 6 MHz OFDM: 6 to 24 MHz*
Amplitude	CW: Adjustable from 10 to 55 dBmV QAM: Adjustable from 10 to 45 dBmV OFDM: Adjustable from 10 to 40 dBmV*
QAM Symbol Rates	0.64, 1.28, 2.56, 5.12 MSPS
QAM Error Rates	BER: Adjustable from 0 to 1.00E-2 MER: > 38 dB
CW Source Accuracy	±2 dB

PHYSICAL	
Construction	Rubber overmolded plastic housing
Control	Glow in the dark keypad and LCD touchscreen and/or via a wireless connection to a mobile device such as a laptop, tablet, iPad® or iPhone®, or Android® handset
Display	Color LCD touchscreen, 180/360: 480 x 272 pixels (approx 4" x 2.25"); 1G: 800 x 480 pixels (approx 4.5" x 2.75")
Annunciators	Audible annunciator for key strokes
Antenna	Internal WiFi antenna, 2 dB gain
Flashlight	High-intensity LED (0.25W)
Dimensions w/o Case (H x W x D)	8.6 x 6.1 x 2.00 in (21.84 x 15.94 x 5.08 cm)
Dimensions w/ Case (H x W x D)	9.6 x 7.1 x 3.00 in (24.38 x 18.03 x 7.62 cm)
Weight w/o Case	2.9 lbs (1.32 Kg)
Weight w/ Case	3.9 lbs (1.79 Kg)
AVAILABLE INTERFACE TYPES	
Tx Test Port	75 Ohm Replaceable F-Type Connector Source Generator Output Transmission Only
Tx/Rx Test Port	75 Ohm Replaceable F-Type Connector Upstream and Downstream RF Measurements DOCSIS 3.1 Modem
Ethernet	RJ45 Management Port (10/100 Mbps)
WiFi	802.11 b/g/n 2.4/5 GHz WiFi Adapter
USB	USB 2.0 Type-A Standard Port
BATTERY AND POWER	
Operating Time	8 to 10 hours, dependent on use
Charge Time	4 hours
Battery	Two 2600 mAh @ 7.4V Li-Ion internal batteries, factory replaceable
Power Adapter	**Input: 100 to 240 VAC ~ 50 to 60 Hz, 1.2A Max** **Output: 15 VDC, 3.34A**
ENVIRONMENTAL	
Storage and Operating Temperature	-18° to +50° C (0° to 122° F)

ORDER INFORMATION

MODEL	DESCRIPTION	PART NUMBER
360 DSP	DOCSIS Installation and Service Meter	TRI-DSP-360-D31-BASE
360 DSP Advanced	Adds FDR and Source Generator	TRI-DSP-360-D31-ADV
360 DSP Pro	Adds Upstream Traffic Control Plus, Upstream Linear Distortion Measurements, and QAM Error Vector Spectrum Analysis	TRI-DSP-360-D31-PRO
OPTIONAL ACCESSORIES	**DESCRIPTION**	**PART NUMBER**
I/O-15	Precision test cable	TRI-ACCY-RF-TEST-CBL
I-Stop 1 GHz Test Probe	Ingress troubleshooting probe	TRI-ISTOP-1000MHZ or TRI-ISTOP-1250MHZ
TLB-46	Return measurement low-pass filter	TRI-TLB-46-LPF
MP-80A	USB Optical Power Meter	MP-80A
P5000i USB Fiber Scope	USB Fiber Scope	FBP-P5000i
Replacement fitted case		TRI-DSP-180-CASE-REPL, TRI-DSP-360-CASE-REPL, or TRI-DSP-1G-CASE-REPL
Replacement shoulder strap		TRI-DSP-STRAP-REPL
Replacement charger (no power cord)		TRI-DSP-PWR-ADPT-NEW
ORDERING INFORMATION		
Seeker Home Leakage Companion Kit Seeker HL Source Transmitter, Antenna and Case		TRI-LKG-HL-METER-KIT DSP
Meter Leakage Software Option		TRI-DSP-SW-HL-LKG-OPT

FEATURE MATRIX

Modell	180 DSP LITE	180 DSP	360 DSP	1G DSP
ANALOG NTSC/PAL CHANNEL MEASUREMENTS				
Video/Audio Level	■	■	■	■
Delta V/A	■	■	■	■
Carrier-to-Noise	■	■	■	■
Hum	Option	■	■	■

Modell	180 DSP LITE	180 DSP	360 DSP	1G DSP
DIGITAL QAM CHANNEL MEASUREMENTS				
Level	■	■	■	■
Pre/Post BER	■	■	■	■
MER	■	■	■	■
Constellation	■	■	■	■
Equalizer	■	■	■	■
BER vs Time	■	■	■	■
Errored Seconds	■	■	■	■
Severely Errored Seconds	■	■	■	■
Hum	Option	■	■	■
DIGITAL OFDM CHANNEL MEASUREMENTS*				
Average Level	■	■	■	■
Max P/V	■	■	■	■
In-Channel Tilt	■	■	■	■
PLC Constellation	■	■	■	■
PLC Level	■	■	■	■
PLC Pre/Post BER	■	■	■	■
PLC MER	■	■	■	■
Decoder Stress vs Time	■	■	■	■
Default Profile Summary	■	■	■	■
CABLE MODEM STATISTICS				
Priority			■	■
Channel Frequency			■	■
Tx/Rx Level			■	■
Signal-to-Noise Ratio			■	■
Pre/Post BER/CWER			■	■
MER			■	■
CABLE MODEM OFDM MEASUREMENTS*				
Summary for All Profiles			■	■
Advanced Profile Statistics			■	■
Multiple Profile Selection			■	■
Continuous Pilot Distributed MER			■	■
Subcarrier Measurement Details			■	■
NET TESTS				
Ping	■	■	■	■
Trace Route	■	■	■	■
Throughput	■	■	■	■
VoIP	■	■	■	■
Modem Speed Test			■	■
MISCELLANEOUS FEATURES				
Tilt Measurement	■	■	■	■
Channel Plan Auto Discovery	■	■	■	■
Channel Plan Scan	■	■	■	■
Multi-language support	■	■	■	■
Create jobs right on the meter	■	■	■	■
Interactive basic RF installation process	■	■	■	■
Forward Spectrum Analysis (5 to 1250 MHz)	Option	■	■	■
Return Spectrum Analysis (4 to 205 MHz)	■	■	■	■
Built-in web browser, real-time data transmission	■	■	■	■
Multi-user support	■	■	■	■
WiFi Survey			■	■
Frequency Domain Reflectometer		Advanced	Advanced	■
Source Generator (CW, QAM & OFDM*)		Advanced	Advanced	■
Upstream Traffic Control Plus			Pro	■
Upstream Linear Distortion Measurement			Pro	■
QAM Error Vector Spectrum Analysis (Ingress under QAM)			Pro	■
Cable Modem Sweep				Sweepless
Forward Passive Sweep				Sweepless
Forward Active Sweep (w/8300A FST)				Sweep
RSA High-Resolution Return Sweep (w/8310 RSA)				Sweep
SSR High-Speed Return Sweep (w/9581 SST)				Sweep
SST Compare with 9581 SST				Sweep
Home Leakage Test	Option	Option	Option	Option
Full-featured TDR				Option

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