SDA-4040D
HFC Signal Analysis Meter

- **Fast, sensitive spectrum analyzer**

- **Full in-service Proof-of-Performance analyzer with Level, Carrier-to-Noise, HUM and Modulation measurements**

- **Cable modem analysis using Zero Span mode provides accurate, in-service, Power and C/N measurements**

- **QAM View option provides complete analysis of digital TV and Forward Cable Modem signals**
  - › **Pre/Post FEC BER**
  - › **MER**
  - › **Constellation**
  - › **Exclusive "Ingress Under the Carrier"**

- **PathTrak™ Field View option quickly pinpoints Return Path Noise/Ingress**

- **Automated 24 hour Proof-of-Performance according to FCC and CENELEC standards**

- **Technical training programs**

- **International language**

- **Rugged, weather resistant and lightweight**

Whether deploying cable modems, rolling out digital TV, or maintaining the analog spectrum, the SDA-4040D delivers precision "find and fix" measurement tools that will reduce critical test time when analyzing and qualifying broadband network performance. Priced for virtually any system budget, the SDA-4040D brings unmatched measurement performance to the network technician in a rugged "One Box" solution. And with a versatile upgrade program, the SDA-4040D can be updated as technician skill levels and system requirements expand.

Digital services testing is the centerpiece of the SDA-4040D platform. Detecting and eliminating return path noise is accomplished with a fast spectrum analyzer (detects signals down to a 5µs duration), and the industry-unique PathTrak™ Field View option. A Zero Span spectrum provides accurate, in-service power and carrier-to-noise measurements of cable modems. And the new QAM View digital analysis option adds forward path digital signal testing that includes constellation, pre/post FEC BER, MER, and exclusive QAM Ingress feature that reveals noise under an active carrier. Of course, analog signal measurements are addressed with standard features like RF level, fast-scan, tilt, in-service C/N and HUM, and FCC and CENELEC compliant auto testing.
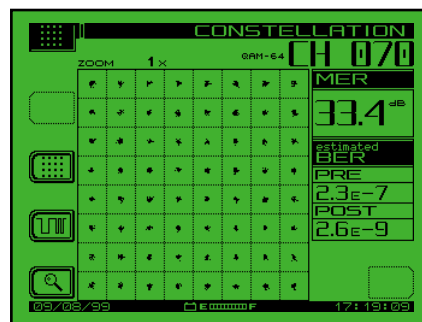
Acterna also offers comprehensive technical training programs to make sure that network field technicians become experts on the SDA-4040D. Acterna training provides detailed instruction on the time saving and practical SDA-4040D applications related to the latest broadband technology.

Preparing the Network for Digital Services

QAM View Option Ensures Quality Forward Path Digital Services

For measurement and analysis of digital TV and forward modem signals, the new QAM View option provides a full complement of digital quality measurements. Included is a 64/256 QAM constellation display with zoom, average digital power level, Bit Error Rate (BER), 21 to 35 dB Modulation Error Ratio (MER) and noise margin "cliff effect" parameter. An equalizer display shows equalizer stress and distance to fault.
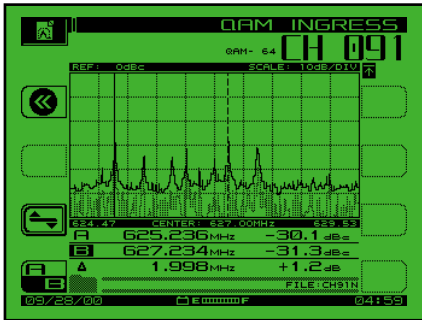

Constellation display with MER and pre/post FEC BER.

## ACTERNA
The Keepers of Communications

In addition, an exclusive QAM ingress noise mode allows technicians to see ingress/noise under an active digital carrier. This tool is invaluable for detecting forward path ingress otherwise hidden by conventional spectrum views.


QAM ingress feature shows noise/ingress under an active carrier.

Reverse digital modem signal.

In-service Cable Modem Analyzer

For "bursty" digital signals such as TDMA technologies used on cable modems for reverse services, the SDA-5000 offers two choices. The first is a one-button cable modem analyzer and the second is an advanced Zero Span capabilities to make the measurement. The one-button cable modem analyzer quickly shows carrier to noise measurements while the zero span option utilizes a time domain display to allow power measurements while the modem is in service. Both methods are compatible with global cable modem standards.
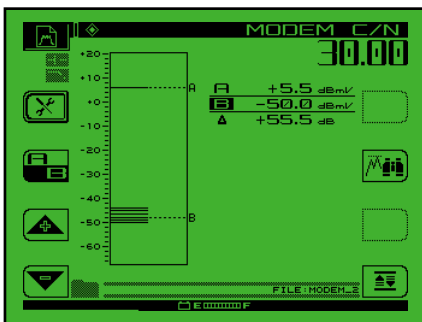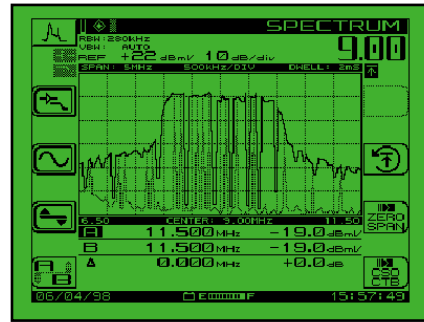

Single button, in-service C/N measurements on TDMA return path cable modem signals (DOCSIS, EuroDOCSIS, EuroModem).
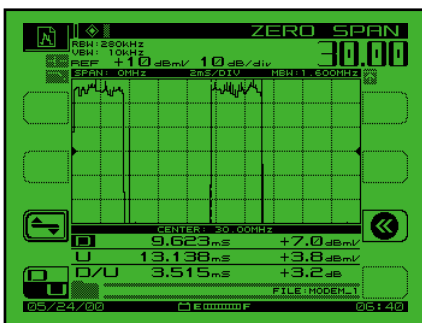
Zero-span/time-domain expert mode, showing the TDMA bursty return path cable modem power ramp of 3.5ms.

Fast-Update Spectrum Display for Detecting Ingress in the Field

The spectrum mode has the speed and versatility to effectively troubleshoot difficult system problems. A programmable dwell time allows the meter to stay on each frequency longer to catch more ingress. Peak hold mode captures and saves transient bursts (like evasive return path electrical noise). The SDA-4040D detects signals as fast as 5µs, in both Zero Span and continuous modes. The pre-amp and low-pass filter on the SDA-4040D assures that ingress can be measured on devices with bi-directional testpoints or testpoint values of 30dB or more.
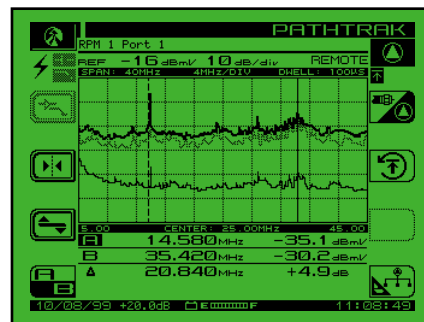
PathTrak Field View Option

When your network is equipped with the PathTrak Performance Monitoring System, system technicians can benefit from the ultimate ingress fighting tool—the PathTrak Field View option for the SDA-4040D. With Field View, the SDA-4040D receives a return path headend spectrum broadcast from the PathTrak unit, and then compares it with a return path spectrum at any field testpoint. The side-by-side spectrum comparison instantly reveals whether the ingress source is originating at the technician's current testpoint or at a different location. The comparative spectrum technique slashes noise/ingress troubleshooting time, since the technician can immediately verify whether corrective action performed in the field (local trace) results in improvement in the headend spectrum (remote trace).

PathTrak Field View option compares headend node spectrum with field test-point spectrum.

Sweepless Sweep® Provides Non-Intrusive Frequency Response

The trademarked Sweepless Sweep passively provides frequency response information about a network by measuring active carriers. The SDA-4040D stores the levels of all active carriers at one reference point in the network, and then compares the relative levels to another point within the network; just like referenced sweep, but without the need for a transmitter!
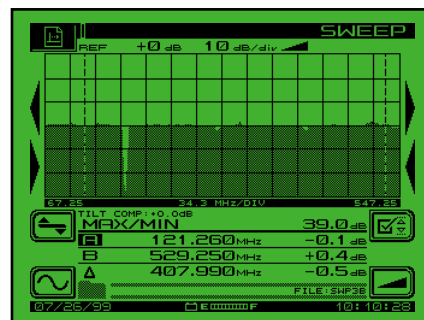
Sweepless Sweep Display.

Powerful Graphic Displays and Common User Interface Allows Technicians to Learn Fast

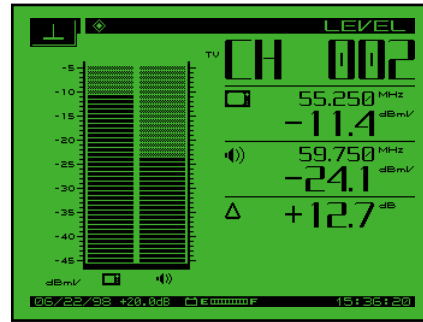All measurements results are presented to the user in clear, highly informative, summary displays. The graphics present the information in a way that the technician wants to see it—no further interpretation is required. For example, testpoint compensation values are entered at the start of testing. Displays then calculate actual levels automatically, minimizing field errors.
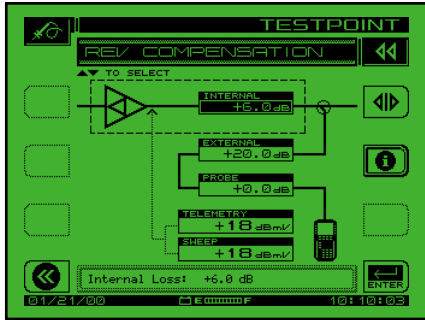
Graphical reverse testpoint compensation.

With SDA series products, all levels of instruments are familiar to the technician, regardless of which is learned first. That's because the same user interface conventions are used across all product families. The learning curve for a progressing technician is considerably shorter than alternative test equipment. This means urgent upgrade projects make the most efficient use of limited resources when SDA series products are used.

The Navigator user interface, common on all Acterna meters.

Comprehensive Testing

The SDA-4040D provides an extensive set of signal analysis features designed for proving, and improving, network quality. All tests utilize a practical user interface that normally requires only a one-button keystroke.

Level Measurement

The SDA instruments provide a comprehensive single-channel display with tuned channel, video frequency and level, audio frequency and level, and the difference between video and audio carrier levels.

The single-channel level display shows both video and audio levels (either single or dual sound/NICAM) and the difference between the two.
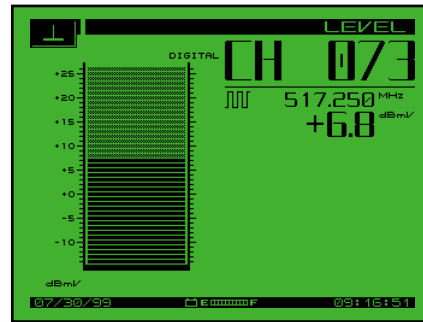
Digital channel average power measurements can be made using the digiCheck™ feature.

Making accurate digital average power measurements is addressed with the digiCheck measurement function. The digiCheck feature is compatible with most "non-bursty" digital modulations in use today (i.e., 16, 32, 64, and 256 QAM, QPR, QPSK, VSB, CAP16, etc.).

Analog and Digital Signal Limits

Analog signal threshold limits have always been a technician's favorite feature of Acterna instruments. Automatic limit checks provide a quick go/no-go status for audio and video levels. The SDA series extends this capability with a dedicated digital limit set that can be applied exclusively to the forward digital carriers defined in a channel plan. By assigning separate analog and digital limits, test time is reduced since no calculation is necessary to determine if analog and digital level relationships are within system specifications. Analog and digital limit capabilities are available in both the scan and autotest modes.

Tilt Measurement

Tilt is the easiest and most efficient tool for balancing amplifiers. For cable plants requiring multiple tilt measurements, such as comparing today's tilt measurement with a historical record, and then making an additional measurement for a new wider channel plan, the user simply uses markers to indicate the tilt channels that define the new limits.
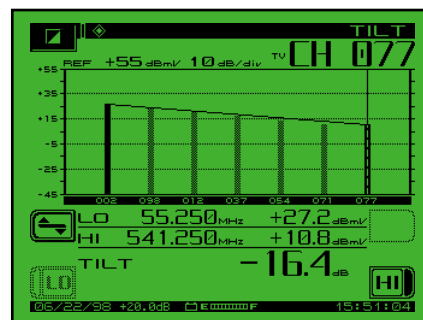

Tilt mode performs automatic tilt calculations between any 2 of 9 designated carriers.
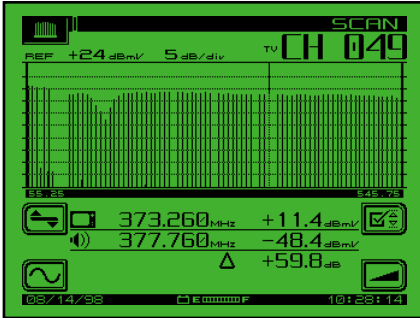
The CTB/CSO mode is used for automatically making intermodulation measurements.

Scan Measurement

Scan mode provides a quick graphical view of the entire channel plan with bars representing the video level for each channel. Both video and audio may be displayed.
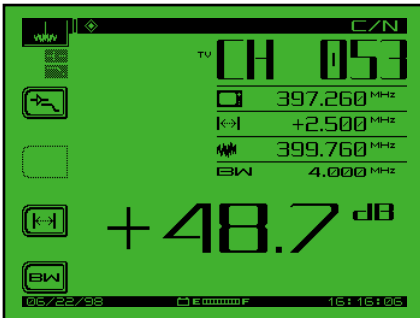
Limit checks can be instantly viewed after identifying channel of interest with a marker in scan mode display.

Carrier-to-Noise Measurement: In-Service

Carrier-to-noise measurement (on non-scrambled channels) is just as easy, and there is no need to remove modulation from the video carrier. No tunable preselector filter is needed.

In-service carrier-to-noise.

Hum Measurement: In-Service

Measuring hum on a channel (non-scrambled) is as simple as pressing the "HUM" key. And since the instrument is battery powered, the measurement is independent of ground loops, therefore isolated from the line (mains). Hum reveals itself as either single (60 Hz) or double (120 Hz) horizontal bars across the video screen. The level of either can be measured.
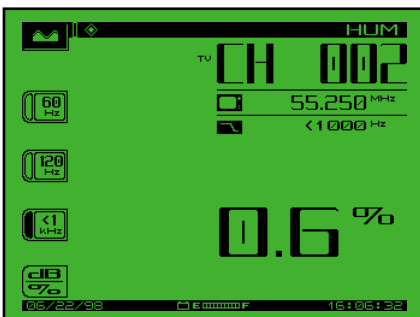
In-service "HUM" (PAL and NTSC compatible).

Modulation Measurement

Includes NTSC, PAL and SECAM formats. Demodulation of the audio is done for both AM and FM. FM is used to hear audio distortion on the FM radio channels or the sound of the TV program. AM is used to recognize shortwave interference signals in the reverse band.
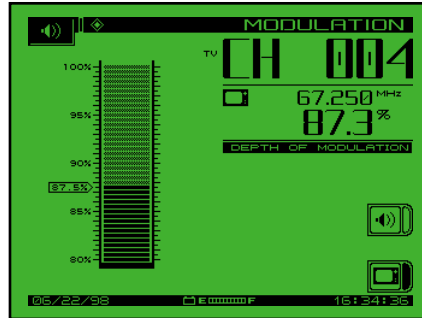
Depth of modulation.

Extensive Automated Test Capability

Automated tests can be scheduled to perform either 24-hour FCC compliance tests, or initiated immediately to log performance at individual nodes, amplifiers or other testpoints. A wide range of tests can be performed automatically, including signal levels, C/N, hum and depth of modulation. The operator designates which tests to perform on which channels. Because these tests are non-intrusive, it is easy to test all parameters on all channels at anytime.

After a test is performed, the results can be displayed on the SDA screen. A pass/fail indication can be set on a variety of limits for FCC/CENELEC or other government standards, or to system preferences. Data taken during any automated test, or sequence of automated tests, can be viewed immediately with a pass/fail indication for each of the limits. Specific stored measurement results may be viewed on demand. Automated test results can be printed directly to a serial printer or uploaded to a PC using StealthWare to store and include in custom reports.
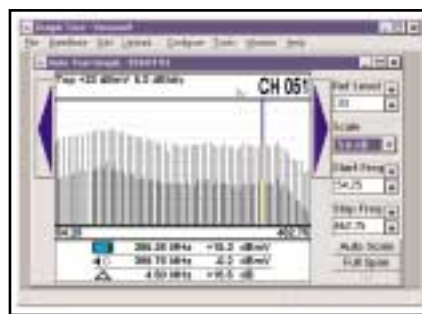
The detailed scan graph offers user-adjustable marker, scale reference level and tilt for maximum signal evaluation.

Data Analysis with StealthWare
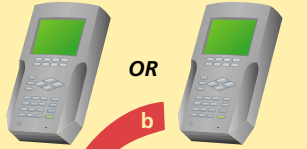
Any stored SDA measurement information can be up-loaded to a PC using StealthWare, a Windows™ based data management package. Stored sweep, scan, or spectrum screens can be viewed on the PC and analyzed with marker movement and readout information just the same as on the actual unit. A sweep graph overlay function allows comparison of multiple RF response variations over time. StealthWare also allows the operator to build channel plans and edit site locations, which can be downloaded to multiple SDA instruments. Additionally, channel plans can be uploaded to the PC, modified in StealthWare, and then downloaded back to the SDA instrument.

Upgrading the SDA-4040D to SDA-5000

Your test equipment investment is protected with the Acterna upgrade program. As system requirements change, the SDA-4040D can be upgraded to the SDA-5000 for forward and reverse sweep capabilities at any of the Acterna worldwide service centers. And if you own a model SAM-4040D, you can upgrade to the SDA-4040D with an in-the-field firmware change only!

Start with any SAM 4040 or 4040D
Optional:
PathTrak FieldView (4040D)

a) Firmware b) Hardware & Firmware

SAM 4040D   **SAM 4040**

OR

b

a
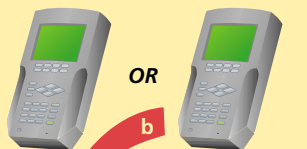
Upgrade to SDA-4040D
Standard: Optional:
DigiCheck   PathTrak
ZeroSpan   FieldView
Dig Spectrum
Add **Option 4** for:
QAM View

SDA-4040D

QAM View option

Any Stealth can upgrade to SDA-5000 for:
5 x faster sweep
256 QAM compatible sweep
Improved TP Comp setup
for reverse sweep

a) Firmware b) Hardware & Firmware

SSA-1000   **3SR**

OR

b

a
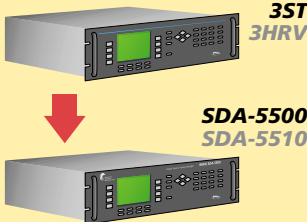
SDA-5000 units can be purchased with, or upgraded to:
QAM View
PathTrak Field View

SDA-5000

QAM View option

Any 3ST can be upgraded to SDA-5500 for faster forward sweep and digital signal sweep compatibility

Any 3HRV can be upgraded to SDA-5510.

3ST
3HRV

SDA-5500
SDA-5510

Stealth to SDA Series–Product Upgrade/Replacement Guide

Stealth Model	SDA Replacement
3SR	SDA-5000
3SR + 3SRV option	SDA-5000 with Option 1
3SR + 3SRT option	SDA-5000 with Option 2
3ST	SDA-5500
3HRV	SDA-5510
SSA-1000	SDA-5000 with Option 2 (firmware only)
SAM 4040	SDA-4040D
SAM-4040D	SDA-4040D (firmware only)

Acterna "One Box" Solutions

The SDA-4040D signal analysis meter delivers a "One Box" solution to help deploy and maintain quality video and data services in the HFC network. With the same durability and measurement accuracy as its venerable SAM predecessor, the SDA-4040D is designed with the speed, spectrum and advanced QAM analysis to test both traditional analog video and the latest digital formats. The versatile combination of standard features and available options allow the meter to be customized, or upgraded to the SDA-5000, to meet virtually any system requirements.

Analog Testing
• Non-Intrusive Sweepless Sweep
• RF Level, Fast Scan, Tilt
• In-service Carrier to Noise, HUM, Depth of Mod.
• Fast Spectrum Display with CTB/CSO
• Auto Testing/24 Hour Testing (FCC & CENELC Compliant)

Return Path Testing
• PathTrak Field View option Pinpoints Return Path Noise
• Zero Span Spectrum mode
• DOCSIS/DAVIC Compatible Cable Modem Analysis

Advanced Digital Testing
• digiCheck Average Power
• QAM View Digital Analysis option with MER, Pre/Post FEC BER, Constellation, and Exclusive Noise/Ingress Under the Carrier Measurement

Customer Support

Acterna offers quality, cost-effective support programs that address all of your technical support needs. With over 20 fully equipped Cable Networks accredited service centers worldwide, Acterna provides local product maintenance, and calibration and upgrades, along with technical training services.

CarePlanSM Customer Support Package

The Acterna CarePlan is a proactive technical support program designed to safeguard your investment throughout its complete lifecycle.

Key benefits of the CarePlan include:
• Cost-effective product maintenance support
• Annual calibration certification program
• Proactive hardware and software upgrades
• Technical support

Technology Training

Acterna provides a comprehensive Cable Networks technology training program designed to help you and your teams understand the changing needs of today's advanced networks.

Training seminars include:
• HFC Basics
• Sweep and Balance Forward and Return
• Sweep 101 "Bootcamp"

Specifications

FREQUENCY
Range . . . . 5 to 1,000 MHz
Accuracy . . . . ± 10 ppm at 25°C; ± 10 ppm drift over temp.;
. . . . ± 3 ppm/year aging
Resolution Bandwidths . . . . 30, 280 kHz and 2MHz
. . . . (30 kHz for CTB/CSO only)
Tuning Resolutions . . . . 10 kHz
Sweep Resolution. . . . . 250 kHz maximum

LEVEL MEASUREMENT
Range . . . . -40 to +60 dBmV
Resolution . . . . 0.1 dB
Accuracy . . . . ±1.0 dB from -20 to +50°C[1,2]
Log Linearity . . . . ±0.5 dB[1]
Flatness . . . . ±0.5 dB[3]
Signal Types. . . . . CW, single carrier, video
. . . . (single or dual audio/NICAM), audio, digital
Uncertainty for Digital Carrier. . . . .
. . . . additional ±0.5 dB (digital types 16/32/64/256 QAM,
. . . . QPR, QPSK, VSB, CAP-16, DVB/ACTS and
. . . . TDMA using zero-span spectrum mode) @280 kHz RBW

CARRIER-TO-NOISE[4]
In-service measurement. Non-scrambled channels only. No preselec-
tion required for 78 channels or less. Best dynamic range at
+10dBmV or higher input.
Range . . . . ≥ 52 dB[1]
Resolution . . . . < 0.5 dB

HUM MEASUREMENT
In-service measurement. Carrier > 0 dBmV. Non-scrambled channels
only
Range . . . . 0 to 10%
Resolution. . . . . <0.2%
Accuracy . . . . +/- 0.7%

DEPTH OF MODULATION
Assumes presence of white reference on any VITS line. Non-scram-
bled channels only. Audio demodulation of AM and FM carriers
Range . . . . 80 to 100%
Resolution . . . . <0.5% at 85%
Audio Demodulation. . . . . AM and FM Carriers

TILT MEASUREMENT
Up to 9 pilot carriers or video channels with tilt and level measure-
ments on the highest and lowest.
Hi-Lo Δ Resolution 0.1dB

SCAN MODE
All video, audio, pilot carrier, and digital channel levels displayed.

SWEEPLESS SWEEP MODE
Frequency Range . . . . 5-1000 MHz
Display Span. . . . . user definable
Display Scale/Range . . . . 6 vertical divisions 1, 2, 5, or 10dB/division
Sweep Pulse Occupied Bandwidth . . . . 30 kHz
Stability. . . . . +/- 0.5 dB, normalized
. . . . (dependent on stability of referenced carriers)
Sweep Rate . . . . ~1 second (78 Channels, including
. . . . scrambled and digital signal types)
Channel Plan Templates (user editable) . . . .
. . . . China-1; China-2; France; HDTP-NL; Ireland; Japan;
. . . Jerold; Jerold-HRC; Jerold-IRC; NCTA; NCTA-HRC; NCTA-SUB
. . . . NCTA-IRC; NTSC-Broadcast; OIRT-D/K; PL-B/G; PAL-UK

SPECTRUM MODE
Spans . . . . . . 3, 5, 10, 20, and 50 MHz (0.3, 0.5, 1, 2, and 5 MHz/div.)
Sweep Rates . . . . ~1 second updates with spans of 50, 20,
. . . . 10 & 5 MHz ~1.7 second updates with 3 MHz span
Display Scaling and Range . . . . 0.5, 1, 2, 5, and 10 dB/div.
. . . . 6 vertical divisions
Dwell . . . . programmable 0-25 ms
Spurious Free Dynamic Range . . . . 60 dB[3]

Sensitivity Without Preamp . . . . -40 dBmV 5 - 550 MHz
. . . . -35 dBmV 550 - 1000 MHz
Sensitivity With Preamp . . . . -50 dBmV 5 - 550 MHz
. . . . -45 dBmV 550 – 1000 MHz
Max. Level With Preamp . . . . +50 dBmV

ZERO-SPAN MODE
Video BW . . . . >1MHz, 100 kHz, 10 kHz, 100 Hz
Resolution BW. 2 MHz, 280 kHz, 30 kHz
Measurement BW Compensation . . . programmable 1 kHz-99 MHz
Pulse Measurement Accuracy . . . . nominal level in 10 μs
. . . . +/- 2 dB from nominal in 5 μs
. . . . (>1 MHz VBW, 280 kHz RBW)
Sweep Times. 100 μs to 20 s (1,2,5 settings)

INTERMODULATION DISTORTION (CSO/CTB)
Range[5] . . . . ≥ 60 dB
Resolution . . . . 0.1 dB

DATA STORAGE
Files types that can be stored: Sweepless Sweep, autotests, tilt graphs,
channel plans, and scan graphs. Spectrum graphs (normal, normal
with max hold, and CSO/CTB) can also be stored. Memory space is
allocated on demand. All files stored as data, not as screen picture.
Typical mix of files for 78-channel plan 8 channel plans, 16 sweep ref-
erences 80 sweep traces; 40 scan files 20 spectrum displays; 20
autotests

SERIAL INTERFACE
RS232; Epson, IBM, Seiko and Diconix Printers

INPUT CONFIGURATION
Connector Type . . . . 75Ω Type F Female
. . . . (Optional 75Ω Type BNC Female)
Maximum Sustained Voltage . . . . AC 100V DC 140V

GENERAL
Display . . . . 320x240 dot matrix LCD, selectable back light
Dimensions . . . . 15.2 x 27.9 x 8.9cm
. . . . (6"x11"x3.5")
Weight . . . . 2.3 kg (5.1lbs)
Temperature Range Operating . . . . -20 to +47°C (-4 to 117°F)

POWER SOURCES
Battery . . . . Extended-life replaceable nickel metal
. . . . hydride, 12V/3.5A-hr 4 hours cont. use on a single charge

NOTES
1) Typical Specifications
2) Relative to 25°C
3) @25°C and +20dBmV
4)

Carrier to Noise Ratio
Depth of Measurement Characteristics[1]

5)

CSO / CTB Characteristics[1]
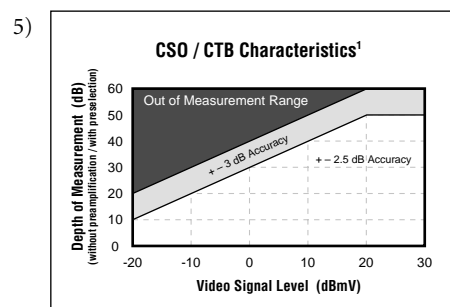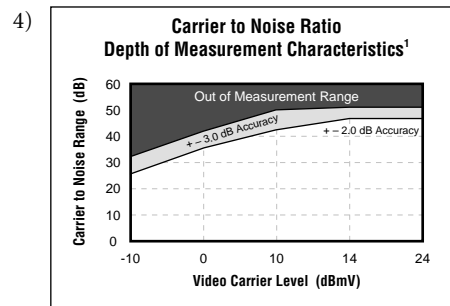
PATHTRAK FIELD VIEW (OPT 3 REQUIRED)
Update Rate . . . . 2x/second (remote trace)
. . . . ~1x/second (local trace)
Display Scaling. . . . . .5/1/2/5/10/20dB/div.
Selectable Nodes . . . . 14 (selectable via PathTrak HCU)

QAM VIEW OPTION (OPT 4)
The QAM View option can be factory installed in any new or existing SDA Series instrument. The specifications and features are in addition to the standard measurement features of the SDA Series. When ordering, please specify OPT 4A for 8MHz, DVB-C, ITU-T J.83 Annex A, or OPT 4B for 6MHz, DVS-031, ITU-T J.83 Annex B.

MODULATION TYPE
. . . . 64/256 QAM, DVB-C, ITU-T J.83 Annex A (OPT 4A)
. . . . 64/256 QAM, DVS-031, ITU-T J.83 Annex B (OPT 4B)

CHANNEL BANDWIDTH
8 MHz (OPT 4A); 6 MHz (OPT 4B)

MEASURABLE INPUT RANGE (LOCK RANGE)
64 QAM . . . . -20 to +50 dBmV (typical)
256 QAM . . . . -15 to +50 dBmV (typical)

FREQUENCY TUNING
50 to 860 MHz (Digital QAM mode)
Resolution . . . . 50 kHz

BER (BIT ERROR RATE)
64 QAM Pre-FEC/OPTs 4A and 4B . . . . 10-4 to 10-9
64 QAM Post-FEC/OPTs 4A and 4B . . . . 10-4 to 10-9
256 QAM Pre-FEC/OPT 4A and 4B . . . . 10-4 to 10-9
256 QAM Post-FEC/OPT 4A and 4B . . . . 10-4 to 10-9

MER (MODULATION ERROR RATIO)
64 QAM / Option 4A . . . . 22-35 dB
Accuracy . . . . ±2.0 dB (typical, see chart below)

64 QAM / Option 4B . . . . 21-35 dB
Accuracy . . . . ±1.5 dB

256 QAM / Option 4A . . . . 28-35 dB
Accuracy . . . . ±2.0 dB (typical, see chart below)

256 QAM / Option 4B . . . . 28-35 dB
Accuracy: . . . . ±1.5 dB
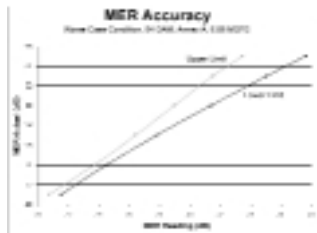
EVM (ERROR VECTOR MAGNITUDE)
64 QAM / Option 4A . . . . 1.2% - 5.2%
Accuracy . . . . ± 0.5% (1.2% - 2.0%)
. . . . ± 1.0% (2.1% - 4.0%)
. . . . ± 1.4% (4.1% - 5.2%)

64 QAM / Option 4B . . . . 1.2% - 5.8%
Accuracy . . . . ± 0.5% (1.2% - 2.5%)
. . . . ± 1.1% (2.6% - 5.8%)

256 QAM / Option 4A . . . . 1.1% - 2.5%
Accuracy . . . . ± 0.6%

256 QAM / Option 4B . . . . 1.1% - 2.5%
Accuracy . . . . ± 0.5%

QAM LEVEL MEASUREMENT
Signal types . . . . 64 QAM, 256 QAM
Range . . . .-20 to +45 dBmV
Accuracy . . . . +/- 1.0 dB
Flatness . . . . +/- 0.5 dB
Linearity . . . . +/- 1.0 dB
Temperature. . . . . +/- 0.5 dB (typical)

MEASURABLE QAM INGRESS
64 QAM . . . . - 25 to -40 dBc
256 QAM . . . .-30 to -40 dBc
Accuracy . . . . ± 3.0 dB

GRAPHIC DISPLAY
Digital summary (including MER/EVM, Pre/Post FEC BER, Equalizer Stress, Carrier Offset, Symbol Rate) with limit/margin test results, QAM level. IQ constellation with zoom. Adaptive Equalizer Display (8 feed forward/24 feedback), Frequency Response, Group Delay. Ingress/Noise Under the Carrier.

POWER SOURCE
Note: Option powered from SDA Series nickel metal hydride battery. Operating time is specified for continuous use in QAM View mode. Option includes high output charger.
Charge Time. . . . . ~4 hours
Operating Time. . . . . 2.5 hours continuous use (typical)
Universal AC Charger/Adapter
 Input. . . . . 100-250 VAC, 50-60 Hz, 0.5A
 Output. . . . . Charge15V @ 750 ma

PHYSICAL
(total SDA-5000 size with OPT 4)
Dimensions
. . . . 15.2 x 26.7 x 10.8 cm
. . . . 6" x 10.5" x 4.25"
Weight . . . . Approx. 3.5 kg (7.7 lbs)
Operating Temperature Range. . . . .-20 to 45°C (-4 to 113°F)

Ordering Information

Model SDA-4040D Signal Analysis Meter

1010-00-0471	Digital / Analog HFC Analyzer. Includes: Extended-life nickel metal hydride battery, universal charger/AC adapter, canvas carrying case and operators manual.

Options

SDA-OPT3A	PathTrak Field View Interoperation for model SDA-4040D (requires PathTrak HCU)
SDA-OPT4A/B	QAM View digital analysis including 64/256 Constellation, MER, Pre/Post FEC BER, and exclusive QAM ingress under the carrier feature. Please specify OPT version 4A or 4B when ordering.
SDA-OPT4A	64/256 QAM, DVB-C, ITU-T J.83 Annex A (8 MHz)
SDA-OPT4B	64/256 QAM, DVS-031, ITU-T J.83 Annex B (6 MHz)
SDA-OPT5	BNC connectors replace standard F type connectors
StealthWare	Windows™ Compatible Data Management Software for all SDA, Stealth, MicroStealth, and CLI products.

Optional Accessories

SDA-CASE1	Replacement soft carrying case for all SDA instruments without QAM View option installed. Compatible with standard and extended life batteries.
SDA-CASE2	Replacement soft carrying case for all SDA instruments with QAM View option installed.
SDA-NIMH	Spare extended life battery.
SDA-NIMCA	Universal charger/AC adapter for extended-life nickel metal hydride battery.
SDA-NIMK	Extended life battery kit. Includes extended life battery, universal charger/AC adapter and soft carrying case (SDA-CASE1).

Note: Specifications, terms, and conditions are subject to change without notice.

CNIN0166020I AE

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