

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Keysight / Agilent N2647SM* at our website: ***Click HERE***

Agilent N2640A WireScope™ Pro

Fast Handheld LAN Cabling Certification and Field-Applicable Alien Crosstalk Measurement

Technical Data, Software Release 3.0

WireScope Pro – An Expandable Platform

WireScope Pro supports copper cable certification to TIA Categories 3 to 6A and ISO Classes C to E, Class E_A and F limits. Sweeping a full 1 GHz in a few seconds, it boosts Cat 6A and Class F autotest measurement times to industry leading speed, and provides a future proof platform.

Unique Alien Crosstalk Testing Methodology

In combination with Agilent's newly developed Alien Crosstalk Stimulators, WireScope Pro secures critical 10 Gigabit Ethernet installations and upgrades. The new SwiftAXT (Sweep Interleaved Frequency-domain Technique for Alien Crosstalk) technology offers a breakthrough in measurement time, cost of ownership, degree of automation and ease of use, making the method uniquely field suitable and convenient.

Faster Measurement and Optimized Workflow

Once connected, the DualRemote Pro unit operates entirely remote controlled. User interactions, including restarting running tests, happen on the near end only. The re-designed Fiber SmartProbes eliminate the need to swap fibers for dual-wavelength testing and calibration, optimizing the test throughput and accuracy.



Features and Benefits

- **Accelerated service deployment with the industry's fastest, automated LAN cabling and fiber certification.**
- **Unique cost-effective Alien Crosstalk measurement technique to test cables to full 10 GBASE-T compliance.**
- **NEW! Professional Network Test option lets cabling installers and solution integrators turn up and troubleshoot networks with one set of testers (see datasheet, p/n 5989-7957EN for details).**
- **Future-proof 1 GHz frequency range exceeds Category 6A, Class E_A and F requirements.**
- **Proper certification across PoE Midspan devices and AC coupled structured cabling.**
- **Dual-wavelength Fiber SmartProbes boost test throughput and accuracy.**
- **ISO/IEC Level IV accuracy, independently certified by ETL.**
- **Truly field portable with extreme battery life, bright and easy 6" color touch screen user interface.**

Agilent Technologies

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Feature	WireScope 350	WireScope Pro
Autotest Measurement Time	25 sec (1 – 350 MHz)	9 sec (1 MHz – 1 GHz)
Frequency Range	1 MHz – 350 MHz	1 MHz – 1 GHz
Supported TIA Categories	3/5/5e/6	3/5/5e/6/6A
Supported ISO Classes	C, D, E	C, D, E, E_A, F
Measurement Accuracy	exceeds TIA Level III	ISO Level IV
Alien Crosstalk Measurement	not available	optional
Talkset , full-duplex	via copper cables	via copper and fiber cables
Fiber Measurement on two wavelengths	single wavelength probes, require fiber swapping	dual-wavelength probes, no fiber swapping
Removable Memory	128 MByte CF card	256 MByte USB drive
Rechargeable Battery	Ni-MH, 5-8 hours of typical use	Li-Ion, 8 hours of typical use
Dimensions (H x W x D)	228 x 114 x 66 mm (8.9" x 4.5" x 2.6")	232 x 126 x 86.7 mm (9.1" x 5" x 3.4")
Weight (excluding adapters)	approx. 1.2 kg (2.6 lbs)	approx. 1.36 kg (3 lbs)

Ease of Use

Based on the proven WireScope 350 user interface, the WireScope Pro is extremely easy to operate and to learn. The Autotest function makes it a single touch of a button to perform a complete cable characterization.
The support for USB Flash Drives not only expands the storage capacity, but also makes it easy to transfer test data, user profiles and test settings, and to install software upgrades.

Future Proof Architecture

WireScope LAN cabling testers are known to be future proof. WireScope Pro provides investment protection as it grows with the users' needs, offering a lower cost Category 6 product and supporting software upgrades later as needed.

General Specifications

Test Parameters

- Supported frequency range: 1 MHz to 1 GHz
- Complies with ISO/IEC 61935-1/Ed. 2 Level IV Accuracy

Power Supply

- Removable/Rechargeable Li-Ion batteries provide 5 to 8 hours of continuous operation.
- AC Power adapter: 100~240 V AC, 12 V/3.3 A DC, plugs directly into the battery which can be recharged separate from the instrument.

Memory

- 64 MByte internal flash memory, 15.6 MByte user accessible. Allows to store 4,800 measurement summaries, or 160 records with all graphical details.
- 256 MByte USB Flash Drive included. Allows to store 69,300 measurement summaries, or 2,345 records with all graphical details.

Connectivity

- SmartProbe Interface Connector
- Universal Serial Bus (USB 1.1) port
- Talkset interface: 3.5 mm stereo jack
- Auxiliary 10/100BASE-T RJ45 interface for remote control and display export.

Software Upgrade

Semi-automated software upgrade using USB Flash Drive or special USB cable (included).

User Interface

56 mm x 150 mm (2.2" x 5.9")
touch-sensitive color LCD display

Dimensions

Size: 232 mm x 126 mm x 86.7 mm (9.13" x 4.96" x 3.41")

Weight: approx. 1.36 kg (approx. 3.0 lbs.)

Environmental Conditions

Operating Temperature
0°C to +40°C

Storage Temperature
–10°C to +55°C

Relative Humidity
10% to 80%

Operating Altitude
up to 3000 meters

Pollution Degree: 2

ETL Certificate Number

3103597CRT-001-002 (Cat 6A)
3103597CRT-001-003 (Class F)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

N2644A Series Category 6A Universal Channel and Permanent Link SmartProbes, Class F [2] Channel and Permanent Link SmartProbes

Universal Channel and Permanent Link SmartProbes enable the WireScope Pro to certify LAN cables, permanent links and channel adapters. Once inserted in the module bay of the WireScope Pro, both, SmartProbes and instrument, are automatically set up and ready to perform standards-based cable certification tests.

General Specifications

Size: 79.5 mm x 60.5 mm x 44 mm (3.1" x 2.4" x 1.7"), excludes cable

Operating Temperature
0°C to +40°C

Storage Temperature
–40°C to +55°C



Measurement Parameter	Range	Resolution	Accuracy
Length	0 – 180 m at NVP > 0.6 0 – 330 m at NVP > 0.6, single ended	0.5 m at NVP = 0.7	± 1 m
Propagation Delay and Skew	0 – 1100 ns	±1 ns	± 6 ns
Attenuation	60 dB	0.1 dB	[1]
Near End Crosstalk (NEXT)	90 dB	0.1 dB	[1]
Equal Level Far End Crosstalk (ELFEXT)	90 dB	0.1 dB	[1]
Resistance [3]	5 – 1000 Ohm	1 Ohm	±5%
Network Specifications			
Cabling Standards	TIA/EIA-606-A and TIA/EIA-568-B Category 3 through 6A ISO/IEC 11801, EN 50173 and Australia/New Zealand Classes C, D, E, E_A and F UTP, STP and SCTP cabling		
Ethernet	IEEE 802.3 10BASE-T, 100BASE-TX, 1000BASE-T, 10GBASE-T		
Legacy Networks	IEEE 802.5 Token Ring and IBM Type 1 TP PMD interfaces		
Supported Tests	Attenuation (Insertion Loss) Near End Crosstalk (NEXT) in pair-to-pair and/or PowerSum format Equal Level Far End Crosstalk (ELFEXT) Return Loss Loop Resistance [3] Wiremap [3] Cable length (dual-ended and single ended test) Total Propagation Delay and Delay Skew between pairs		

[1] If not mentioned otherwise, specifications are according to ISO Level IV definition.

[2] The term "Category 7" has been widely used as a synonym of ISO/IEC Class F, yet it is not a TIA/EIA standardized term. Product labels and documentation may contain either term. Future documents and labels will use the term "Class F".

[3] Available only for DC coupled structured cabling.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

N2647MM Multimode (850 nm/1300 nm) and N2647SM Single Mode (1310 nm/1550 nm) Fiber SmartProbes

Dual-wavelength Fiber SmartProbes allow the WireScope Pro to measure length and propagation delay on optical fiber links. Also, they enable high-performance optical loss and power measurement.

Laser Safety (N2647SM)

Fabry-Perot Class 1 Laser Product in accordance with IEC 60825.1 and FDA 21 CFR 1040.10

General Specifications

Size: 79.5 mm x 64 mm x 44 mm (3.1" x 2.5" x 1.7")

Connectors
2 x SC (Transmitter, Receiver)

Operating Temperature
0°C to +40°C

Storage Temperature
–40°C to +55°C



Specification	N2647MM Multimode SmartProbe	N2647SM Single Mode SmartProbe
Power Meter		
Detector Type	InGaAs	InGaAs
Calibrated Wavelengths	850 nm, 1300 nm	1310 nm, 1550 nm
Measurement Accuracy	±0.25 dB at –20 dBm [1] [2]	±0.25 dB at –20 dBm [1]
Power Measurement Range	0 to –42 dBm	0 to –50 dBm
Transmitter		
Source Type	LED	Fabry-Perot Laser
Center Wavelength	850 nm, 1300 nm (nominal)	1310 nm ± 30 nm, 1550 nm ± 30 nm
Output Power	≥ –20.5 dBm (into 50/125 µm fiber) ≥ –19 dBm (typical, into 62.5/125 µm fiber)	≥ –6 dBm (into 9/125 µm fiber)
Laser Stability	n/a	±0.1 dB (1 hour, after 5 minutes warm-up)
Fiber Network Specifications		
Cabling Standards	ANSI/EIA/TIA 568A, 568.3, ISO/IEC 11801	ANSI/EIA/TIA 568A, 568.3, ISO/IEC 11801
Ethernet	10GBASE-SR, -SW, -LX4 1000BASE-SX, -LX, -LX10	10GBASE-LR, -LW, -ER, -EW, -LX4 1000BASE-LX, -LX10
Legacy Networks	100BASE-FX 10BASE-FL, -FB, Token Ring	100BASE-LX10
ATM/SONET	ATM-155 (UNI 3.1), ATM-155 SWL, ATM-622, ATM/SONET OC-3, -OC-12	ATM-622, ATM/SONET OC-3, OC-12, OC-48
FDDI/Fiber Channel	FDDI, Fiber Channel-SX, -LX	FDDI
Propagation Delay		
Accuracy (whichever is greater)	±2% or ±3.6 ns	
Resolution	4.2 ns	
Measurement Range	0 to 300 µs	
Fiber Length		
Accuracy (whichever is greater)	±2% or ±0.72 m	±2% or ±0.72 m
Resolution	0.83 m at Refractive Index 1.4785	0.83 m at Refractive Index 1.4785
Distance Range	0 to 8 km for 1.50 dB/km at 1300 nm [3]	0 to 50 km for 1.50 dB/km at 1310 nm [4]

[1] At room temperature, 23°C ± 3K

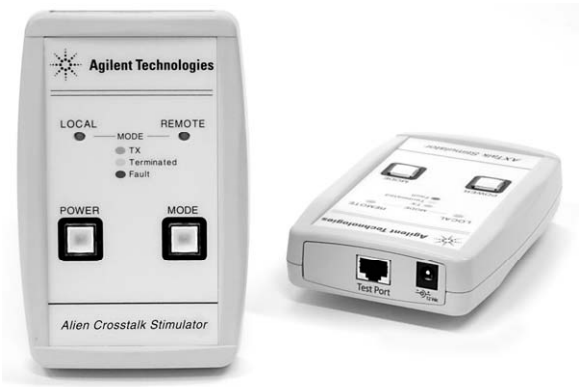
[2] With 50/125 µm fiber

[3] Assumes double-ended configuration with 12 dB max link loss. Divide by 2 for single-ended configurations.

[4] Assumes double-ended configuration with 25 dB max link loss. Divide by 2 for single-ended configurations.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

N2648A Alien Crosstalk Test Kits – Validation of Structured Cabling for 10GBASE-T Transmission



SwiftAXT – A Scalable Measurement Approach

Agilent's new Sweep Interleaved Frequency-domain Technique for Alien Crosstalk Testing (SwiftAXT) is a revolutionary concept inspired by the need to test Alien Crosstalk in 10GBASE-T ready network cabling. It radically simplifies the field verification of structured cabling for the deployment of 10GBASE-T. It is as straightforward as simple, modeled after the real network – where cable bundles join and split, come from, and end in different places, and have a wide range of lengths.

Unique Alien Crosstalk Testing Methodology

To measure Alien Crosstalk, WireScope Pro and DualRemote Pro are attached to the disturbed ("victim") cable. A pair of Alien Crosstalk stimulators is connected to both ends of each disturber cable. Crosstalk from one to 32 disturber cables can be captured simultaneously, at no expense in measurement time. Every stimulator pair stimulates each frequency of interest. The coupled Alien Crosstalk signal is received by WireScope Pro and DualRemote Pro at the local and at the far end of the victim cable. Precision timing control is the key to accurately measuring the Alien Crosstalk in one measurement sweep – from any number of disturber cables, in less than 5 minutes.

A Small Tool, Yet Highly Capable

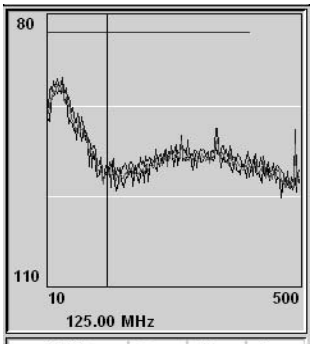
The Alien Crosstalk Stimulator is a palm-sized signal generator. It operates in two modes: a transmitter producing test signals, and a termination. At all times, the device can be commanded from its counterpart at the other end of the disturber cable. Both devices of a connected pair indicate their operating mode, and fault conditions like weak or missing power supply, or a broken connection.

Features and Benefits

- **Implements ISO/IEC 61935-1 Ed. 3 and IEEE 802.3an recommendations for Alien Crosstalk testing**
- **Test results on the instrument, without post-processing**
- **Unparalleled speed, highly efficient through parallel stimulation of disturbers**
- **Simple, straightforward procedure avoids operator failures**
- **Works with cable bundles from 2 to 12 and beyond**
- **Works with complex layouts such as split and joint bundles**
- **Tracking mode to identify the worst disturber cable**
- **Test results integrate with ScopeData Pro II software**

Real-time Spectral Analysis of External Noise

In addition to Alien Crosstalk, external noise caused by high-frequency signal sources, has the potential to disturb transmission networks. The WireScope Pro's external noise analysis tool measures the received noise on a wire pair across the frequency range of interest, and compares its spectrum against the receiver noise limit of –141.9 dBm/Hz (IEEE 802.3an clause 55.5.4.4). It offers an effective way to characterize cables in a live network environment, by capturing the footprint of network traffic in adjacent cables and of other disturbing signals. Providing objective information on the nature and severity of noise being picked up, it uncovers the hidden sources of marginal network performance.



1(4,5)	Curr	Max	Avg
Data@Cursor (dBm/MHz)	-96.6	-95.6	-96.3
Worst Data (dBm/MHz)	-86.4	-85.4	-86.8
Freq@Worst (MHz)	28	137	31

Features and Benefits

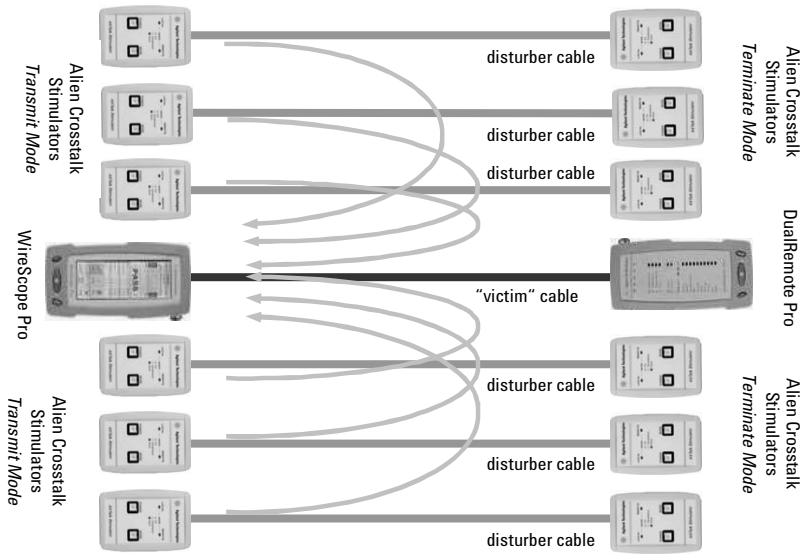
- **Displays spectral profile of current and maximum external noise over 10 to 500 MHz**
- **Compares external noise to the –141.9 dBm/Hz receiver noise limit** (IEEE 802.3an clause 55.5.4.4)
- **Characterize structured cabling in a live environment**
- **Uncover the hidden sources of temporary network degradations**

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Alien Crosstalk Field Testing with SwiftAXT

The WireScope Pro and DualRemote Pro are connected to the ends of the "victim" cable. All disturber cable ends are connected to Alien Crosstalk stimulators. All user interactions happen at the near end!

- Simply click *Alien Crosstalk Test* on the WireScope Pro and follow the on-screen instructions:
- Turn on all stimulators and set the near end units to *Transmit* mode – the far end units automatically enter the *Terminate* mode.
- *Start* triggers the PSANEXT and PSAACRF measurement.
- When instructed, set the near end stimulators to *Terminate* mode.
- *Continue* completes the near end PSAACRF and far end PSANEXT measurement.



SwiftAXT Alien Crosstalk Test Concept (6 around 1), near end transmitting)

General Specifications

Test port: RJ-45

Battery: 9 V block cell, not included. High-performance Alkaline type needed for 60 minutes of operation.

AC Power Adapter, included:
100~240 V AC, 12 V/3.3 A DC.

Operating power: 1.3 W

Size: 140 mm x 91.4 mm x 27.9 mm
(5.5" x 3.6" x 1.1")

Weight: approx. 160 g
(approx. 5.64 oz.)

Operating Temperature
+10°C to +40°C

Storage Temperature
–40°C to +70°C

Relative Humidity
95% at up to 31°C temperature

N2648A Alien Crosstalk Stimulator	
RF Frequency Range	1 MHz to 500 MHz
RF Output Power	1.5 dBm ± 2 dB
WireScope Pro and DualRemote Pro Receiver	
Dynamic Range	–100 dBm to –50 dBm at 1 to 500 MHz
Alien Crosstalk Measurement Uncertainty	±2 dB
Alien Crosstalk Measurement Floor	< –95 dB
External Noise Measurement Range	–100 dBm/MHz to –50 dBm/MHz at 10 to 500 MHz or –160 dBm/Hz to –110 dBm/Hz at 10 to 500 MHz
External Noise Display Refresh Rate	3 sec
Applicable Test Standards	IEEE 802.3an 10GBASE-T (Clauses 55.7.3.1, 55.7.3.2) TIA TSB 155 TIA 568-B.2-10 IEC 61935-1 Ed. 3
Supported Tests All parameters measured from near end and far end	Power Sum Alien Near End Crosstalk (PSANEXT) Average Power Sum Alien Near End Crosstalk (Avg PSANEXT) Power Sum Attenuation to Alien Crosstalk Ratio Far End (PSAACRF) Average Power Sum Attenuation to Alien Crosstalk Ratio Far End (Avg PSAACRF)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Ordering Information

All WireScope Pro Product Kits contain:

(1) WireScope Pro, (1) DualRemote Pro, (2) AC Power Adapters, (2) Battery Packs, (2) Hanging Straps, (2) Category 6A/ Class E_A Universal Channel SmartProbes, (2) Category 6A/ Class E_A Universal Permanent Link SmartProbes, (1) Screen Cover, (2) Dust Caps, (1) USB Cable, (2) Headsets, (1) ScopeData Pro Management Software, (1) WireScope Pro User's Guide, (1) WireScope Pro Utilities CD Kit, (1) 256 MB USB Flash Drive, (1) Stylus with Spiral Cord

N2643A Professional Certification Kits come in a Hard Carrying Case. The basic test kits (N2640A, N2642A) come in a Soft Carrying Case. N2643A and N2642A test kits include (1) Auto Lighter DC Power Adapter.

Category 6A/ Class E_A/ Class F [1] Test Kits

All Category 6A/ Class E_A/F Test Kits include a software license for Category 6A/ Class E_A/ Class F Cable Test, Alien Crosstalk Test and External Noise Measurement.

Alien Crosstalk Stimulators and vendor specific **Class F SmartProbes** must be ordered separately.

N2640A-200 WireScope Pro Category 6A/ Class E_A/F Certification Kit (Copper cable only)

N2642A-230 WireScope Pro Category 6A/ Class E_A/F and Multimode Fiber Certification Kit

N2642A-240 WireScope Pro Category 6A/ Class E_A/F and Single Mode Certification Kit

N2643A-250 WireScope Pro Category 6A/ Class E_A/F Multimode and Single Mode Professional Certification Kit

Category 6/ Class E Test Kits

N2640A-100 WireScope Pro Category 6/ Class E Certification Kit (Copper cable only)

N2642A-130 WireScope Pro Category 6/ Class E/ Multimode Fiber Certification Kit

N2642A-140 WireScope Pro Category 6/ Class E/ Single Mode Fiber Certification Kit

N2643A-150 WireScope Pro Category 6/ Class E/ Multimode and Single Mode Professional Certification Kit

Recommended Alien Crosstalk Test Kits

All N2648A Alien Crosstalk Test Kits include (1) SwiftAXT User's Guide, Calibration Certificates, Release Notes.

Important Note: WireScope Pro units with serial numbers lower than SG47250001 and DualRemote Pro units with serial numbers lower than SG47260001 require factory calibration to enable Alien Crosstalk testing.

N2648A-100 Alien Crosstalk Test Kit with one pair of stimulators, includes (2) Alien Crosstalk stimulators, (2) STP patchcords, (2) AC Power adapters.

N2648A-150 Alien Crosstalk Test Kit with 3 pairs of stimulators, includes (6) Alien Crosstalk stimulators, (6) STP patchcords, (2) AC Power adapters, (2) DC Power distribution kits for up to 6 stimulators.

N2648A-200 Alien Crosstalk Test Kit with 6 pairs of stimulators, includes (12) Alien Crosstalk stimulators, (12) STP patchcords, (2) AC Power adapters, (2) DC Power distribution kits for up to 6 stimulators.

Category 6A/Class E_A SmartProbes (each set includes two units)

N2644A-100 Category 6A/ Class E_A Universal Channel SmartProbe

N2644A-101 Category 6A/ Class E_A Universal Permanent Link SmartProbe

N2644A-102 Category 6A Cross-Cable Permanent Link SmartProbe

Class F [1] SmartProbes (each set includes two units)

Important Note: the N2641A-300 Class F Precision Calibration SmartProbe is required for user calibration prior to all Class F measurements.

N2641A-300 Class F Precision Calibration SmartProbe.

N2644A-104 Siemon Class F TERA Channel SmartProbe

N2644A-105 Siemon Class F TERA Permanent Link SmartProbe

N2644A-106 Nexans Class F Permanent Link SmartProbe

N2644A-107 GG45 and ARJ45 Class F Channel SmartProbe

N2644A-110 Leoni/Kerpen EC7 Class F Permanent Link SmartProbe

Dual-Wavelength Fiber SmartProbes

N2647MM Dual-wavelength Multimode Fiber SmartProbe with SC interfaces. Includes 2 SC duplex patch cords 62.5/125 µm, 2 SC duplex patch cords 50/125 µm, 2 SC calibration adaptors, and software.

N2647SM Dual-wavelength Single Mode Fiber SmartProbe with SC interfaces. Includes 2 SC duplex patch cords, 2 SC calibration adaptors, and software.

[1] The term "Category 7" has been widely used as a synonym of Class F, yet it is not a standardized term. Product labels and documentation may contain either term. Future documents and labels will use the term "Class F".

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Other SmartProbes

N2644A-001 Bare Wire SmartProbe (set of 2 units)

N2644A-065 Siemon S210 A Block SmartProbe (single unit)

N2644A-066 Siemon S210 B Block SmartProbe (single unit)

Optional Accessories

N2643A-100 Upgrade License for Category 6A/7/ Class E_A/F Cable Test, Alien Crosstalk Test and External Noise Measurement

NEW! N2640A-010 Professional Network Test Software License for WireScope Pro (for details, refer to the technical datasheet, p/n 5989-7957EN)

N2641A-090 Replacement Accessories Bundle, WireScope Pro

N2641A-095 256 MB USB Flash Drive, WireScope Pro

N2605A-132 Soft Carrying Case

N2641A-134 Hard Carrying Case, WireScope Pro

N2641A-135 Rechargeable Battery Pack, WireScope Pro

N2641A-097 Special USB Cable, WireScope Pro (pack of 5 cables)

N2595A-094 Auto Lighter DC Power Adapter

N2641A-080 Universal AC Adapter, WireScope Pro

N2648A-001 Alien Crosstalk stimulator, single replacement unit

Agilent Network and Digital Solutions

Enabling service and device innovation for computing and communications

Agilent Technologies is a worldwide leader in testing computer and communications devices, elements, systems and services that enable high-speed computation and communications. The test portfolio includes:

- multiservices test solutions for converging network infrastructure enabling component, network elements manufacturers and service providers to accelerate the delivery of next-generation devices for applications from backbone, metro, enterprise, access, to backplanes.
- digital microwave solutions for high-speed communications busses and backplanes that allow more complete characterization of new devices and designs with easy, accurate and repeatable BER, jitter and protocol performance measurements.
- a broad range of optical test solutions used by component and equipment manufacturers, aerospace & defense companies, universities and service providers to characterize the latest in high performance and low cost photonic devices and networks.

www.agilent.com

www.agilent.com/find/wirescope

Sales, Service and Support

United States
1 800 829 4444
1 800 829 4433 (FAX)

Canada
1 877 894 4414
1 888 900 8921 (FAX)

Europe
(31) (0) 20 547 2111
(31) (0) 20 547 2190 (FAX)

Latin America
(55) 11 4197 3600
(55) 11 4197 3800 (FAX)

Australia
1 800 629 485
1 800 142 134 (FAX)

Hongkong
800 930 871
(852) 2506 9233 (FAX)

Singapore
1800-375 8100
(65) 6755 0042 (FAX)

Malaysia
1 800 888 848
1 800 801 664 (FAX)

China
800 810 0189
800 820 2816 (FAX)

Taiwan
0800 047 866
0800 286 331 (FAX)

India
1800 112 929
1800 113 035 (FAX)

Thailand
(66) (2) 268 1345
(66) (2) 268 1346 (FAX)

Japan
0120 421 345
0120 421 678 (FAX)

This information is subject to change without notice.

Copyright © 2006–2008 Agilent Technologies

February 29, 2008

5989-5203EN

Agilent Technologies

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP