ValidatorPRO™ and ValidatorPRO-NT™

Ethernet Network Management Tools

Key Features

- Measures optical power on single mode and multimode fiber
- Conducts BER testing to speed certify Ethernet data transmission speed up to 1000BASE-T (1 Gb/s)
- Measures SNR and skew to uncover impairments to electrical Ethernet data transmission
- Tests for opens, shorts, split pairs, miswires, and reversals and measures distance to opens and shorts—supports all copper network, telco, and coax cables
- Measure PoE voltage and current (NT only)
- Performs port discovery to detect advertised Ethernet speed and displays capabilities of network devices (NT only)
- Pings network devices to verify connectivity to active equipment (NT only)
- Discover and display essential information regarding functionality of 802.11 b/g/n wireless devices (NT only)
- Includes Plan-Um® software to create network layout; document cable tests; show network topology; and record moves, adds, and changes

Applications

- Certify speed capability of electrical Ethernet cable runs to support 10/100/1000 Mb/s Ethernet applications
- Ensure configuration and connectivity with active network devices
- Measure optical power and insertion loss
- Discover and display essential information regarding functionality of 802.11 b/g/n wireless devices
- Document network topology including moves, adds, and changes

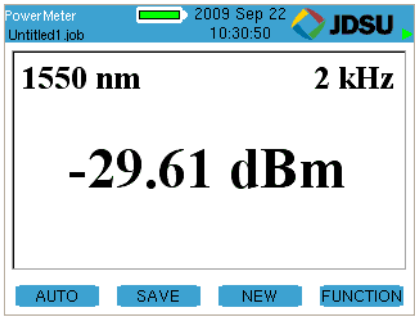
Building on the capabilities of the JDSU Validator and Validator-NT, the JDSU ValidatorPRO series of Ethernet Network Management Tools offers a complete solution to test copper and fiber Ethernet cables. The ValidatorPRO Ethernet speed certifier with integrated optical power meter and accompanying Plan-Um cable management software delivers the power to test both copper and fiber cabling, determine if cables can support Gigabit Ethernet, and perform troubleshooting for cable installations. The ValidatorPRO performs all tests offered by the Validator and Validator-NT, including speed certifying the data-carrying capabilities of copper Ethernet network cables up to 1 Gb/s by testing for noise in the network, detecting faults in the cabling wiring, and ensuring that cables can support the speed capabilities of active equipment.

To certify Ethernet speed performance of cable runs, the ValidatorPRO series of handheld testers conducts bit error rate (BER) tests by sending data packets down specified cable runs at defined data rates to check for errors at the maximum throughput of the link. The ValidatorPRO also reports on signal quality that can impact high-speed data transmission by measuring signal-to-noise ratio (SNR). Skew measurements provide the signal time delay between pairs that can impact Ethernet data transmission. The ValidatorPRO also provides continuity testing that detects opens, shorts, miswires, split pairs, reversals, and high-resistance faults while accurately measuring distance to faults and total cable length.

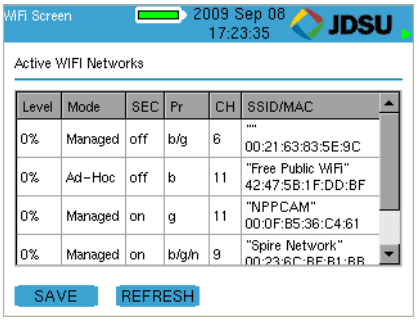
Test fiber and copper (telco, network, and coax) cables

The ValidatorPRO includes an integrated optical power meter that measures optical power at 850/1300/1310/1490/1550 nm on multimode or single-mode fiber to address an increasing number of Ethernet networks that now include optical links.

The ValidatorPRO-NT version includes a comprehensive set of features for testing a network's active network capabilities: measure Power over Ethernet (PoE) to ensure the correct power is available on the correct pins, use port discovery to ensure the correct speed and duplex capability are available; connect at gigabit Ethernet and run ping tests to verify connectivity to IP hosts; discover network devices using Cisco Discovery Protocol (CDP) or Link Layer Discovery Protocol (LLDP), discovery and display essential information regarding functionality and configuration of 802.11 b/g/n networks.



Shows optical power levels in dB or dBm



Shows available wireless networks and relevant information

Plan-Um Cabling Installation and Planning Software

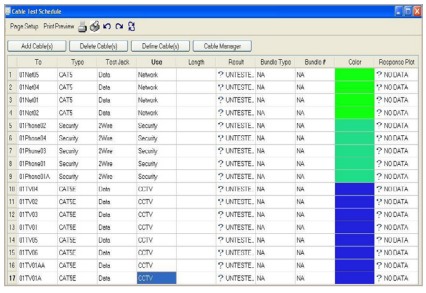
ValidatorPRO includes the updated powerful Plan-Um planning and reporting software used to plan network architectures, organize cable information, estimate cable length requirements, and document test results. Plan-Um helps set up each job, defines the scope of the job, aids in testing cable runs, and produces reports for the installer and customer. The Network Tools feature provides a quick view of the network architecture and lets users document moves, adds, and changes.

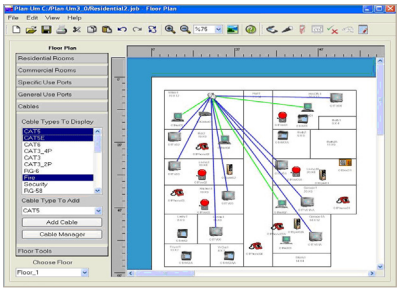
Used in conjunction with Plan-Um, ValidatorPRO provides confidence in the physical properties of cable runs and the overall capability of the network.

Plan the job, conduct tests, document results

❶ Layout

- Create custom floor plans or import existing AutoCAD or Visio files
- Show specific ports: network, telephone, cable
- Indicate cable runs
- Print or e-mail layout for approval
- Save layouts for future jobs
- Automatically create cable test schedule
- Cable list shows run start and end points



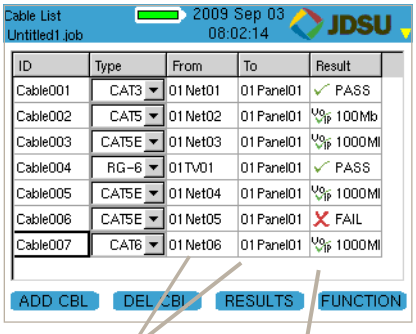


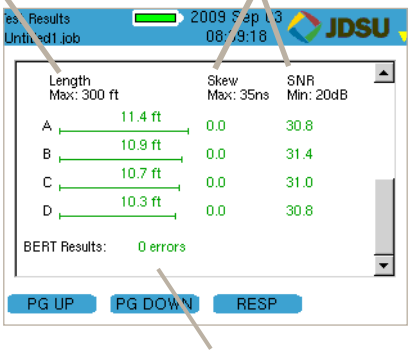
❷ Speed Certification and Continuity Test

- Certifies Ethernet transmission speed up to 1 Gb/s using full Bit Error Rate (BER) test by sending data packets across cable runs
- Conducts measurements to detect noise and delay that affect data transmission: Skew and overall SNR

Measures cable length and distances to opens and shorts using advanced TDR technology

Skew and SNR results





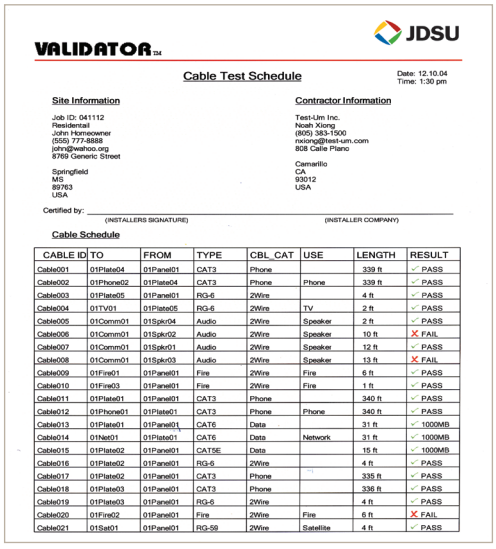
Wiremaps individual runs to locate and identify cable routes

Tests telephone, network, coax, and security/alarm cables for continuity, proper termination, and polarity

Shows the actual error rate in the BER test

❸ Document and Archive

- Verifies all tests are done against the plan
- Shows PASS/FAIL, cable length, and speed rating
- Provides end-of-job report for billing purposes
- Stores finished jobs for reference to support moves, adds, and changes
- Can store data on a PC or directly on the ValidatorPRO test unit



VALIDATOR

JDSU

Cable Test Schedule

Date: 12.10.04
Time: 1:30 pm

Site Information

Job ID: 041112
Residential
John Homeowner
(555) 777-8888
john@wahoo.org
8769 Generic Street

Springfield
MS
89763
USA

Contractor Information

Test-Um Inc.
Noah Xiong
(805) 383-1500
nxiong@test-um.com
808 Calle Plano

Camarillo
CA
93012
USA

Certified by: _____
(INSTALLERS SIGNATURE) (INSTALLER COMPANY)

Cable Schedule

CABLE ID	TO	FROM	TYPE	CBL_CAT	USE	LENGTH	RESULT
Cable001	01Plate04	01Panel01	CAT3	Phone		339 ft	PASS
Cable002	01Phone02	01Plate04	CAT3	Phone	Phone	339 ft	PASS
Cable003	01Plate05	01Panel01	RG-6	2Wire		4 ft	PASS
Cable004	01TV01	01Plate05	RG-6	2Wire	TV	2 ft	PASS
Cable005	01Comm01	01Spkr04	Audio	2Wire	Speaker	2 ft	PASS
Cable006	01Comm01	01Spkr02	Audio	2Wire	Speaker	10 ft	FAIL
Cable007	01Comm01	01Spkr01	Audio	2Wire	Speaker	12 ft	PASS
Cable008	01Comm01	01Spkr03	Audio	2Wire	Speaker	13 ft	FAIL
Cable009	01Fire01	01Panel01	Fire	2Wire	Fire	6 ft	PASS
Cable010	01Fire03	01Panel01	Fire	2Wire	Fire	1 ft	PASS
Cable011	01Plate01	01Panel01	CAT3	Phone		340 ft	PASS
Cable012	01Phone01	01Plate01	CAT3	Phone	Phone	340 ft	PASS
Cable013	01Plate01	01Panel01	CAT6	Data		31 ft	1000MB
Cable014	01Net01	01Plate01	CAT6	Data	Network	31 ft	1000MB
Cable015	01Plate02	01Panel01	CAT5E	Data		15 ft	1000MB
Cable016	01Plate02	01Panel01	RG-6	2Wire		4 ft	PASS
Cable017	01Plate02	01Panel01	CAT3	Phone		335 ft	PASS
Cable018	01Plate03	01Panel01	CAT3	Phone		336 ft	PASS
Cable019	01Plate03	01Panel01	RG-6	2Wire		4 ft	PASS
Cable020	01Fire02	01Panel01	Fire	2Wire	Fire	6 ft	FAIL
Cable021	01Sat01	01Panel01	RG-59	2Wire	Satellite	4 ft	PASS

JDSU

ValidatorPRO and ValidatorPRO-NT Ethernet Network Management Tools

Specifications

General

Display	Color back-lit FSTN liquid crystal display (LCD)
Operating System	Linux
Keypad	Full navigations set with alphanumeric data entry and soft-key functions
Memory	Non-volatile memory: internal NAND flash memory Volatile memory: 128 MByte DDR2 SDRAM memory
Languages supported (GUI)	English, French, Italian, German, Spanish, Portuguese, Korean, and Simplified Chinese

Interfaces

- USB 2.0 host port (for external memory sticks)
- Optical Power meter for 850/1300/1310/1490/1550 nm wavelengths. –45 to +10 dBm dynamic range for 850 nm and -50 to +10 dBm for all other frequencies. ±0.20 dB accuracy. ±0.06 dB linearity. Measured in dB or dBm. Auto wavelength selection with 270, 330, 1 k, 2 kHz modulation
- Wi-Fi 2.4 GHz 802.11 b/g/n standards with MIMO technology. Support 64/128-bit WEP encryption, WPA, WPA2, and CISCO CCX security

Test Connectors

- 8-position shielded modular jack (data)
- 6-position modular jack (telephone)
- F-coax (video) Male connector w/sacrificial adapter
- 2.5 mm universal push pull (UPP) (Fiber)

Cable Types

- Shielded or unshielded twisted pair network cable
- Telephone
- Coax
- Single-mode and multimode fiber cable

Cable Length

Maximum cable length:	2,000 ft (600 meters)
Maximum cable length for testing of split pairs:	Up to 100 meters (327 ft),depending upon cable type
Cable length accuracy	±5% (after performing both unit and cable calibration)

Electrical

Power sources:	AC adapter; auto cigarette lighter power adapter; lithium-ion rechargeable, removable batteries

Environmental

Operating temperature	0 to 50°C (32 to 122°F) (normal operation, not charging battery) 0 to 45°C (32 to 113°F) (charging battery)
Storage temperature	–20 to 60°C (–4 to 140°F)
Operating humidity	10 to 85% RH, non-condensing
Shock and Vibration minimum	2 ft drop (free fall from stationary) on concrete
Safety:	EN 61010-1
EMI/EMC:	EN 61326-1:2006
Altitude:	4000 m

Agency Certifications and Compliance

Main and Remote units:	CE
Battery:	CE
AC wall adapter:	CE, PSE, UL
Auto cigarette lighter power:	CE

Calibration

Traceable Calibration Period:	2 Years
Self-Calibration Period:	30 days for unit calibration Perform cable calibration whenever changing cable type being measured.

Physical

Main Unit Size	22.9 x 11.4 x 5.3 cm (9 x 4.5 x 1.8 in)
Weight	710 gm (1 lb 9 oz) with battery

Remote

Size	14.2 x 11.2 x 4.4 cm (5.6 x 4.4 x 1.8 in)
Weight	341 gm (12 oz) with battery

Ordering Information (Models, options and accessories)

	Part #
ValidatorPRO Ethernet speed certifier with integrated optical power meter	NT1150
ValidatorPRO-NT Ethernet speed certifier with integrated optical power meter including active network tests	NT1155

ValidatorPRO and ValidatorPRO-NT each include the following:

One smart remote, one set 1-8 wiremapping remotes (RJ11/RJ45) (TP612), two lithium-ion rechargeable batteries (NT93), two universal AC adapter/charger units, one 1.83 m (72 in) USB client-to-PC connection cable (series A plug to series B plug), two 19 cm (7.5 in) RJ12-to-RJ12 cables for no-fault connection to RJ11 or RJ45 jacks, two 30.48 cm (1 ft) patch cables with RJ45 connectors, two 60.96 cm (2 ft) RJ45 to 8 alligator clips cord sets, two sacrificial cables for RJ45 mod plug, one coupler F-jack to F-jack, USB drive including Plan-Um cabling installation and planning software, user guide (product manual), firmware, and quick start guide, Deluxe carrying case, Printed quick start guide, 100 "speed certified" cable labels, one 12 V vehicle charger

Accessories

Lithium-ion rechargeable battery	NT93
1.83 m (72 in) USB cable assembly	NT94
Cable speed certified labels, roll of 100	NT95
19 cm (7.5 in) RJ12-to-RJ12 cable for no-fault connection to RJ11 or RJ45 jacks	TP20
30.48 cm (1 ft) patch cable with RJ45 connectors	TP55
F-connector plug to BNC jack adapter	TP62
60.96 cm (2 ft) RJ45 to 8 alligator clips cord set	TP68
Sacrificial cable for RJ45 mod plug	TP74
Set of 20 (1–20) Coax ID-only remotes	TP311
Set of 20 (1-20) RJ45 ID-only remote identifiers	TP312
Set of 20 (1-20) RJ11 ID-only remote identifiers	TP314
OLS-5 Optical MM LED Source 850/1300 nm, ST connector type	2255/01
OLS-6 Optical SM Laser Source 1310/1550 nm, FC connector type	2255/02
Inspection & Cleaning Kit 200/400X FBP Probe, HD3-P4 Display, FBPT Tips (SC, LC), FMAE Adapters, (U25M, U12M), Bulkhead/Patchcord Cleaning Tools (2.5 mm & 1.25 mm), Case and power supply/charger	FBP-SM05-C
Inspection and Cleaning Kit - same as FBP-SM05-C but with HD3 Display	FBP-SM03-C
Visual Fault Locator - Pocket Size, 2.5 mm (SM and MM)	FFL-050
1.25mm UPP adapter	FITP-UPP12

ValidatorPRO NT1150
ValidatorPRO-NT NT1155

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