

Validator™

Ethernet Speed Certifier



Key Features

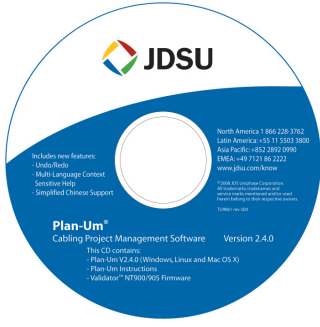
- Conducts Bit Error Rate (BER) testing to speed certify Ethernet data transmission speed up to 1000BASE-T (1 Gb/s)
- Measures Signal-to-Noise Ratio and Skew to uncover impairments to Ethernet data transmission
- Tests for opens, shorts, split pairs, miswires, and reversals and measures distance to opens and shorts—supports all network, telco, and coax cables
- Includes Plan-Um® software to create network layout; document cable tests; show network topology; and record moves, adds, and changes

Applications

- Verify proper operation of Ethernet cable runs
- Certify speed capability of cable runs to support 10/100/1000 Mb/s Ethernet applications
- Document network topology including moves, adds, and changes

The Validator™ offers a complete solution to test and speed certify the data-carrying capabilities of 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 are able to support the speed capabilities of active equipment. The Validator can be used as a cost-effective alternative to full TIA/ISO cable certification in environments where ensuring cable runs support Ethernet speeds up to Gigabit Ethernet is adequate.

To certify Ethernet speed performance of cable runs, the Validator 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 Validator also reports on signal quality that can impact high-speed data transmission by measuring signal-to-noise ratio (SNR). Skew measurements report on the signal time delay between pairs that can impact Ethernet data transmission. Finally, the Validator 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.



Plan-Um® software

Cabling Installation and Planning Software

Validator includes the powerful Plan-Um® planning and reporting software for planing network architectures and organizing cable information and test results. Plan-Um helps set up each job, defines 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 to see the network architecture and a way to document moves, adds, and changes.

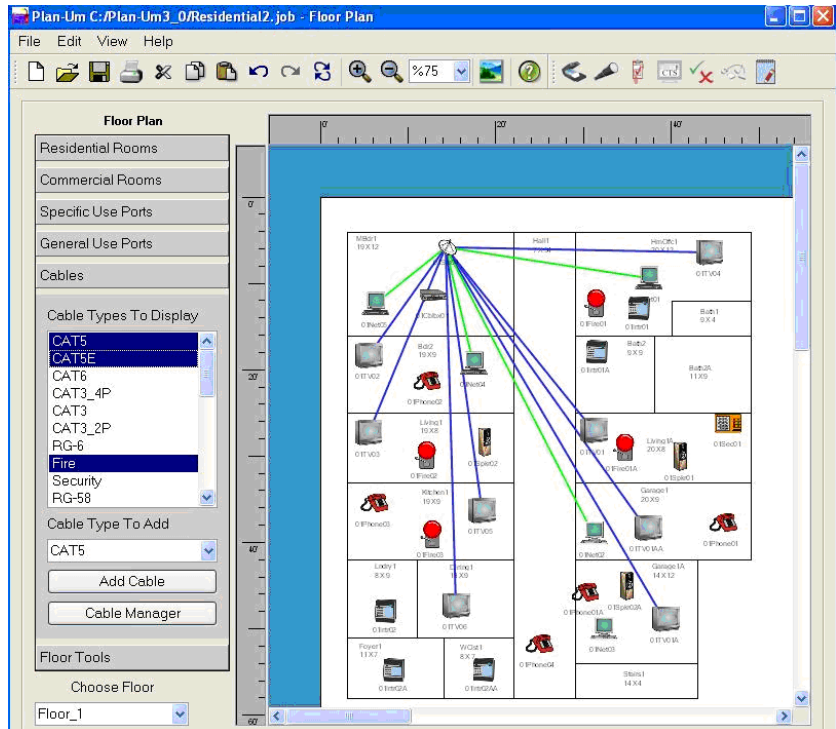
Used in conjunction with Plan-Um, Validator provides confidence in the physical properties of cable runs and the overall capability of the network.

Plan the job, conduct tests, document results

1 Layout

- Create custom floor plans or import existing floor plans
- Show specific ports: network, tele- phone, 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

ID	Type	Top Jack	Use	Length	Floor	Room	Bundle Type	Bundle #	Color	Proposed Plot
1	BTM65	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
2	BTM64	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
3	BTM63	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
4	BTM62	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
5	BTM61	Security	ZWave	Security	?	UNTESTE	NA	NA	?	NO DATA
6	BTM60	Security	ZWave	Security	?	UNTESTE	NA	NA	?	NO DATA
7	BTM59	Security	ZWave	Security	?	UNTESTE	NA	NA	?	NO DATA
8	BTM58	Security	ZWave	Security	?	UNTESTE	NA	NA	?	NO DATA
9	BTM57	Security	ZWave	Security	?	UNTESTE	NA	NA	?	NO DATA
10	BTM56	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
11	BTM55	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
12	BTM54	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
13	BTM53	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
14	BTM52	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
15	BTM51	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
16	BTM50	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
17	BTM49	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA
18	BTM48	CAT5	Data	Network	?	UNTESTE	NA	NA	?	NO DATA



3

2 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

ID	Type	From	To	Result
Cable001	CAT3	01 Net01	01 Panel01	✓ PASS
Cable002	CAT5	01 Net02	01 Panel01	U ₀ ip 100Mb
Cable003	CAT5E	01 Net03	01 Panel01	U ₀ ip 1000Ml
Cable004	RG-6	01 TV01	01 Panel01	✓ PASS
Cable005	CAT5E	01 Net04	01 Panel01	U ₀ ip 1000Ml
Cable006	CAT5E	01 Net05	01 Panel01	✗ FAIL
Cable007	CAT6	01 Net06	01 Panel01	U ₀ ip 1000Ml

Length	Skew	SNR
Max: 300 ft	Max: 35ns	Min: 20dB
A: 11.4 ft	0.0	30.8
B: 10.9 ft	0.0	31.4
C: 10.7 ft	0.0	31.0
D: 10.3 ft	0.0	30.8

BERT Results: 0 errors

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

3 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 Validator test unit

VALIDATOR™ JDSU

Date: 12.10.04
Time: 1:30 pm

Cable Test Schedule

<p>Site Information</p> <p>Job ID: 041112 Residential John Homeowner (555) 777-8888 john@wahoo.org 8769 Generic Street</p> <p>Springfield MS 39763 USA</p>	<p>Contractor Information</p> <p>Test-Um Inc. Noah Xiong (800) 383-1500 nxiong@test-um.com 808 Calle Plano</p> <p>Camarillo CA 93012 USA</p>
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Certified by: _____ (INSTALLER SIGNATURE) _____ (INSTALLER COMPANY)

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

Specifications
General

Display	Color back-lit liquid crystal display (LCD)
Operating System	Linux
Keypad	Full navigations set with alphanumeric data entry and soft-key functions

Interfaces

- USB device port
- Compact flash card (included)

Test Connectors

- 8-position shielded modular jack (data)
- 6-position modular jack (telephone)
- F-coax (video) and dual banana jack (security, speaker, etc.)

Cable Types

- Shielded or unshielded twisted pair
- Telephone, coax, speaker wire, security, fire, and alarm

Cable Length

Maximum cable length for testing for split pairs is up to 457.2 m (1,500 ft), depending upon cable type

Electrical

Power source	AC adapter/lithium ion rechargeable, removeable batteries
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Environmental

Operating temperature	0 to 45°C (32 to 113°F)
Storage temperature	–20 to 70°C (–4 to 158°F)
Humidity	10 to 85%, non-condensing

Physical
Main Unit

Size	22.9 x 11.4 x 5.3 cm (9 x 4.5 x 1.8 in)
Weight	710 gms (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 gms (12 oz) with battery

Ordering Information
Validator Ethernet Speed Certifier Kit

(Choose the model with the appropriate AC adapter cables)

North America	NT950
Australia	NT950-AUS
Europe	NT950-EURO
Italy	NT950-ITAL
United Kingdom	NT950-UK
Without AC adapter cables	NT950-WOAC

- **Validator and Validator-NT** each includes smart remote, two lithium ion rechargeable batteries (NT93), two AC adapter/charger units, 1.83 m (72 in) USB cable assembly (NT94), compact flash card, two 19 cm (7.5 in) RJ12 to RJ12 cables for no-fault connection to RJ11 or RJ45 jacks (TP20), two F-connector plug to BNC jack adapters (TP62), two 30.48 cm (1 ft) patch cables with RJ45 connectors (TP55), two 60.96 cm (2 ft) RJ45 to 8 alligator clips cord sets (TP68), two sacrificial cables for RJ45 mod plug (TP74), Plan-Um cabling installation and planning software (NT940), and deluxe carrying case.

Accessories

Lithium ion rechargeable battery	NT93
1.83 m (72 in) USB cable assembly	NT94
Cable speed certified labels, roll of 100	NT95
Smart remote for Validator	NT925
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
Plan-Um cabling installation and planning software	NT940



Validator and smart remote



Validator Ethernet Speed Certifier Kit (NT950)

Test & Measurement Regional Sales

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