

# Validator™ and Validator-NT™

## Ethernet Network Management Tools



### 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
- Identifies cable termination on active Ethernet ports with hub flash
- Performs port discovery to detect advertised Ethernet speed and displays capabilities of network devices (Validator-NT)
- Pings network devices to verify connectivity to active equipment (Validator-NT)
- 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
- Ensure configuration of and connectivity with active network devices
- Document network topology including moves, adds, and changes

The Validator™ series of Ethernet Network Management Tools—Validator and Validator-NT™—offer 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.

To certify Ethernet speed performance of cable runs, the Validator series handheld testers conduct 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. Both Validator and Validator-NT also report 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 series units provide continuity testing that detects opens, shorts, miswires, split pairs, reversals, and high-resistance faults while accurately measuring distance to faults and total cable length.

The Validator-NT includes a comprehensive set of features to test the active network capabilities of a network: port discovery for speed and capability detection of active devices up to 1 Gb/s; ping test to verify connectivity to IP hosts on or off the local network; and discovery of network devices using Cisco Delivery Protocol (CDP).





Plan-Um® software

## Cabling Installation and Planning Software

Validator and Validator-NT include the powerful Plan-Um® planning and reporting software for planning 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 way to see the network architecture and a way to document moves, adds, and changes.

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

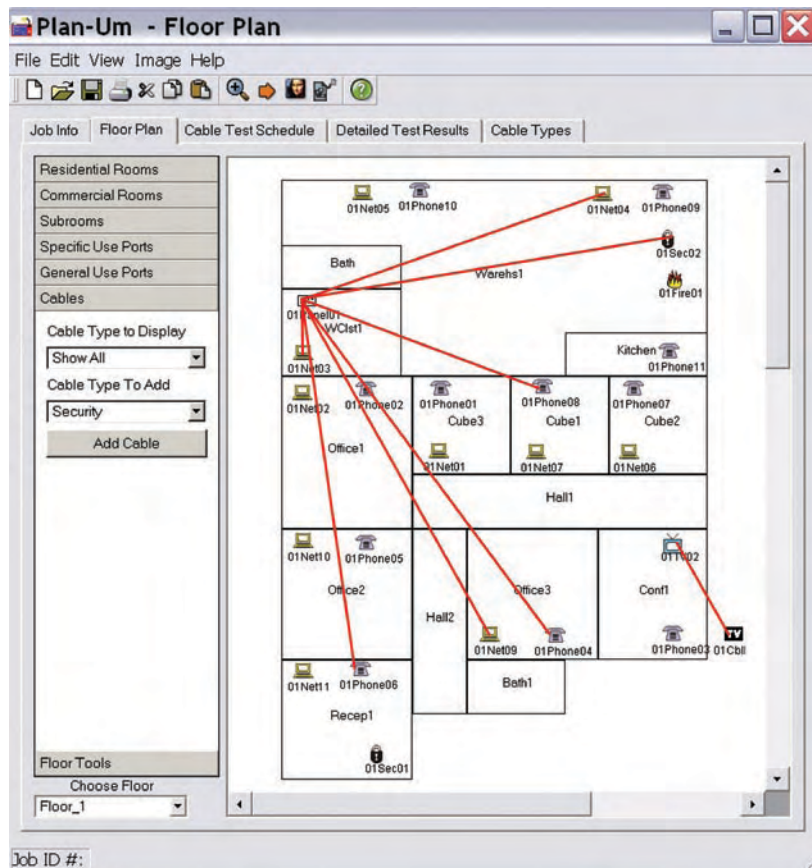
**Define the job, conduct speed and continuity tests, and document results.**

### 1) 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
- Each cable run is displayed for cross-checking

ID	To	From	Type	Length	Status
1	01Net01	01Phone01	2323	23	Pass
2	01Net02	01Phone02	2323	23	Pass
3	01Net03	01Phone03	2323	23	Pass
4	01Net04	01Phone04	2323	23	Pass
5	01Net05	01Phone05	2323	23	Pass
6	01Net06	01Phone06	2323	23	Pass
7	01Net07	01Phone07	2323	23	Pass
8	01Net08	01Phone08	2323	23	Pass
9	01Net09	01Phone09	2323	23	Pass
10	01Net10	01Phone10	2323	23	Pass
11	01Net11	01Phone11	2323	23	Pass
12	01Net12	01Phone12	2323	23	Pass
13	01Net13	01Phone13	2323	23	Pass
14	01Net14	01Phone14	2323	23	Pass
15	01Net15	01Phone15	2323	23	Pass
16	01Net16	01Phone16	2323	23	Pass
17	01Net17	01Phone17	2323	23	Pass
18	01Net18	01Phone18	2323	23	Pass
19	01Net19	01Phone19	2323	23	Pass
20	01Net20	01Phone20	2323	23	Pass
21	01Net21	01Phone21	2323	23	Pass
22	01Net22	01Phone22	2323	23	Pass
23	01Net23	01Phone23	2323	23	Pass
24	01Net24	01Phone24	2323	23	Pass
25	01Net25	01Phone25	2323	23	Pass
26	01Net26	01Phone26	2323	23	Pass
27	01Net27	01Phone27	2323	23	Pass
28	01Net28	01Phone28	2323	23	Pass
29	01Net29	01Phone29	2323	23	Pass
30	01Net30	01Phone30	2323	23	Pass

Cable list screen



## 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

Cable List  
Untitled1.job 100% 2007 Jul 20 10:53:01

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

SORT RESULTS DEL CBL ADD CBL

Wiremaps individual runs to locate and identify cable routes

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

Test Results  
Untitled1.job 100% 2007 Jul 20 10:53:01

Cable001  
Test Time: 10/11/2004 10:53 A.M.

Expected	Results
1	1
2	2
3	3
6	6
4	4
5	5
7	7
8	8

PG UP PG DOWN

Testing underway

Test Results  
Untitled1.job 100% 2007 Jul 20 10:53:01

Length	Skew	SNR
Max: 300ft	Max: 35ns	Min: 20db
A: 182ft	0.0	25.5
B: 188ft	6.0	25.6
C: 183ft	2.0	25.8
D: 188ft	2.0	26.0
BERT Results: 0 errors		

PG UP PG DOWN

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

Shows the actual error rate in the BER test

Test Results  
Untitled1.job 100% 2007 Jul 20 10:53:01

Cable001 ✓ Pass

Test Results

1  
2  
3  
6  
4  
5  
7  
8

PG UP PG DOWN

Displays test results

**VALIDATOR™** JDSU

**Cable Test Schedule** Date: 10/10/04 Time: 1:30 pm

Site Information		Contractor Information	
Job ID: 04112	Residential	Test-Gen Inc.	
John Homewood	3000 773 4888	Frank Xiong	
jrh@verizon.net	4700 Genetic Street	rxiong@test-gen.com	
Springfield	MS	Cambridge	CA
06103	USA	90012	USA

Certified by: (INSTALLER SIGNATURE) (INSTALLER COMPANY)

**Cable Schedule**

CABLE ID	TO	FROM	TYPE	CBL_CAT	USE	LENGTH	RESULT
Cable001	01Panel04	01Panel01	CAT3	Phone	Phone	330 ft	✓ PASS
Cable002	01Panel02	01Panel04	CAT3	Phone	Phone	330 ft	✓ PASS
Cable003	01Panel05	01Panel01	RG-6	20wire		4 ft	✓ PASS
Cable004	01TV01	01Panel06	RG-6	20wire	TV	2 ft	✓ PASS
Cable005	01Comm01	01Spk04	Audio	20wire	Speaker	2 ft	✓ PASS
Cable006	01Comm01	01Spk02	Audio	20wire	Speaker	10 ft	✗ FAIL
Cable007	01Comm01	01Spk01	Audio	20wire	Speaker	12 ft	✓ PASS
Cable008	01Comm01	01Spk03	Audio	20wire	Speaker	13 ft	✗ FAIL
Cable009	01Panel01	01Panel01	Fire	20wire	Fire	6 ft	✓ PASS
Cable010	01Panel03	01Panel01	Fire	20wire	Fire	1 ft	✓ PASS
Cable011	01Panel01	01Panel01	CAT3	Phone	Phone	340 ft	✓ PASS
Cable012	01Panel01	01Panel01	CAT3	Phone	Phone	340 ft	✓ PASS
Cable013	01Panel01	01Panel01	CAT6	Data		31 ft	✓ 1000MB
Cable014	01Net01	01Panel01	CAT6	Data	Network	31 ft	✓ 1000MB
Cable015	01Panel02	01Panel01	CAT3E	Data		15 ft	✓ 1000MB
Cable016	01Panel02	01Panel01	RG-6	20wire		4 ft	✓ PASS
Cable017	01Panel02	01Panel01	CAT3	Phone		335 ft	✓ PASS
Cable018	01Panel03	01Panel01	CAT3	Phone		336 ft	✓ PASS
Cable019	01Panel03	01Panel01	RG-6	20wire		4 ft	✓ PASS
Cable020	01Panel02	01Panel01	Fire	20wire	Fire	6 ft	✗ FAIL
Cable021	01Net01	01Panel01	RG-59	20wire	Satellite	4 ft	✓ PASS

## 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
- Has the option to store data on a PC or the included removable flash memory card



## 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 50°C (32 to 122°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-NT Ethernet Speed Certifier and Active Network Tester Kit

Performs all Validator functions, includes set of 8 cable test remotes, and adds the following active network test features: discovers advertised speed and capabilities of active network devices to 1 Gb/s and pings network devices to verify connectivity to active equipment.

(Choose the model with the appropriate AC adapter cables)

North America	NT955
Australia	NT955-AUS
Europe	NT955-EURO
Italy	NT955-ITAL
United Kingdom	NT955-UK
Without AC adapter cables	NT955-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
Smart remote for Validator-NT	NT928
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-NT and smart remote



Validator and smart remote



Validator Ethernet Speed Certifier Kit (NT950)

## Test & Measurement Regional Sales

<b>NORTH AMERICA</b> TEL: 1 866 228 3762 FAX: +1 301 353 9216	<b>LATIN AMERICA</b> TEL: +55 11 5503 3800 FAX: +55 11 5505 1598	<b>ASIA PACIFIC</b> TEL: +852 2892 0990 FAX: +852 2892 0770	<b>EMEA</b> TEL: +49 7121 86 2222 FAX: +49 7121 86 1222	<a href="http://www.jdsu.com/know">www.jdsu.com/know</a>
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