

# 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

Cable ID	Start Point	End Point	Length	Status
01Net01	Office1	01Net01	100	OK
01Net02	Office2	01Net02	120	OK
01Net03	Office3	01Net03	110	OK
01Net04	Office1	01Net04	130	OK
01Net05	Office2	01Net05	140	OK
01Net06	Office3	01Net06	150	OK
01Net07	Office1	01Net07	160	OK
01Net08	Office2	01Net08	170	OK
01Net09	Office3	01Net09	180	OK
01Net10	Office1	01Net10	190	OK
01Net11	Office2	01Net11	200	OK
01Net12	Office3	01Net12	210	OK
01Net13	Office1	01Net13	220	OK
01Net14	Office2	01Net14	230	OK
01Net15	Office3	01Net15	240	OK
01Net16	Office1	01Net16	250	OK
01Net17	Office2	01Net17	260	OK
01Net18	Office3	01Net18	270	OK
01Net19	Office1	01Net19	280	OK
01Net20	Office2	01Net20	290	OK
01Net21	Office3	01Net21	300	OK
01Net22	Office1	01Net22	310	OK
01Net23	Office2	01Net23	320	OK
01Net24	Office3	01Net24	330	OK
01Net25	Office1	01Net25	340	OK
01Net26	Office2	01Net26	350	OK
01Net27	Office3	01Net27	360	OK
01Net28	Office1	01Net28	370	OK
01Net29	Office2	01Net29	380	OK
01Net30	Office3	01Net30	390	OK
01Net31	Office1	01Net31	400	OK
01Net32	Office2	01Net32	410	OK
01Net33	Office3	01Net33	420	OK
01Net34	Office1	01Net34	430	OK
01Net35	Office2	01Net35	440	OK
01Net36	Office3	01Net36	450	OK
01Net37	Office1	01Net37	460	OK
01Net38	Office2	01Net38	470	OK
01Net39	Office3	01Net39	480	OK
01Net40	Office1	01Net40	490	OK
01Net41	Office2	01Net41	500	OK
01Net42	Office3	01Net42	510	OK
01Net43	Office1	01Net43	520	OK
01Net44	Office2	01Net44	530	OK
01Net45	Office3	01Net45	540	OK
01Net46	Office1	01Net46	550	OK
01Net47	Office2	01Net47	560	OK
01Net48	Office3	01Net48	570	OK
01Net49	Office1	01Net49	580	OK
01Net50	Office2	01Net50	590	OK
01Net51	Office3	01Net51	600	OK
01Net52	Office1	01Net52	610	OK
01Net53	Office2	01Net53	620	OK
01Net54	Office3	01Net54	630	OK
01Net55	Office1	01Net55	640	OK
01Net56	Office2	01Net56	650	OK
01Net57	Office3	01Net57	660	OK
01Net58	Office1	01Net58	670	OK
01Net59	Office2	01Net59	680	OK
01Net60	Office3	01Net60	690	OK
01Net61	Office1	01Net61	700	OK
01Net62	Office2	01Net62	710	OK
01Net63	Office3	01Net63	720	OK
01Net64	Office1	01Net64	730	OK
01Net65	Office2	01Net65	740	OK
01Net66	Office3	01Net66	750	OK
01Net67	Office1	01Net67	760	OK
01Net68	Office2	01Net68	770	OK
01Net69	Office3	01Net69	780	OK
01Net70	Office1	01Net70	790	OK
01Net71	Office2	01Net71	800	OK
01Net72	Office3	01Net72	810	OK
01Net73	Office1	01Net73	820	OK
01Net74	Office2	01Net74	830	OK
01Net75	Office3	01Net75	840	OK
01Net76	Office1	01Net76	850	OK
01Net77	Office2	01Net77	860	OK
01Net78	Office3	01Net78	870	OK
01Net79	Office1	01Net79	880	OK
01Net80	Office2	01Net80	890	OK
01Net81	Office3	01Net81	900	OK
01Net82	Office1	01Net82	910	OK
01Net83	Office2	01Net83	920	OK
01Net84	Office3	01Net84	930	OK
01Net85	Office1	01Net85	940	OK
01Net86	Office2	01Net86	950	OK
01Net87	Office3	01Net87	960	OK
01Net88	Office1	01Net88	970	OK
01Net89	Office2	01Net89	980	OK
01Net90	Office3	01Net90	990	OK
01Net91	Office1	01Net91	1000	OK
01Net92	Office2	01Net92	1010	OK
01Net93	Office3	01Net93	1020	OK
01Net94	Office1	01Net94	1030	OK
01Net95	Office2	01Net95	1040	OK
01Net96	Office3	01Net96	1050	OK
01Net97	Office1	01Net97	1060	OK
01Net98	Office2	01Net98	1070	OK
01Net99	Office3	01Net99	1080	OK
01Net100	Office1	01Net100	1090	OK
01Net101	Office2	01Net101	1100	OK
01Net102	Office3	01Net102	1110	OK
01Net103	Office1	01Net103	1120	OK
01Net104	Office2	01Net104	1130	OK
01Net105	Office3	01Net105	1140	OK
01Net106	Office1	01Net106	1150	OK
01Net107	Office2	01Net107	1160	OK
01Net108	Office3	01Net108	1170	OK
01Net109	Office1	01Net109	1180	OK
01Net110	Office2	01Net110	1190	OK
01Net111	Office3	01Net111	1200	OK
01Net112	Office1	01Net112	1210	OK
01Net113	Office2	01Net113	1220	OK
01Net114	Office3	01Net114	1230	OK
01Net115	Office1	01Net115	1240	OK
01Net116	Office2	01Net116	1250	OK
01Net117	Office3	01Net117	1260	OK
01Net118	Office1	01Net118	1270	OK
01Net119	Office2	01Net119	1280	OK
01Net120	Office3	01Net120	1290	OK
01Net121	Office1	01Net121	1300	OK
01Net122	Office2	01Net122	1310	OK
01Net123	Office3	01Net123	1320	OK
01Net124	Office1	01Net124	1330	OK
01Net125	Office2	01Net125	1340	OK
01Net126	Office3	01Net126	1350	OK
01Net127	Office1	01Net127	1360	OK
01Net128	Office2	01Net128	1370	OK
01Net129	Office3	01Net129	1380	OK
01Net130	Office1	01Net130	1390	OK
01Net131	Office2	01Net131	1400	OK
01Net132	Office3	01Net132	1410	OK
01Net133	Office1	01Net133	1420	OK
01Net134	Office2	01Net134	1430	OK
01Net135	Office3	01Net135	1440	OK
01Net136	Office1	01Net136	1450	OK
01Net137	Office2	01Net137	1460	OK
01Net138	Office3	01Net138	1470	OK
01Net139	Office1	01Net139	1480	OK
01Net140	Office2	01Net140	1490	OK
01Net141	Office3	01Net141	1500	OK
01Net142	Office1	01Net142	1510	OK
01Net143	Office2	01Net143	1520	OK
01Net144	Office3	01Net144	1530	OK
01Net145	Office1	01Net145	1540	OK
01Net146	Office2	01Net146	1550	OK
01Net147	Office3	01Net147	1560	OK
01Net148	Office1	01Net148	1570	OK
01Net149	Office2	01Net149	1580	OK
01Net150	Office3	01Net150	1590	OK
01Net151	Office1	01Net151	1600	OK
01Net152	Office2	01Net152	1610	OK
01Net153	Office3	01Net153	1620	OK
01Net154	Office1	01Net154	1630	OK
01Net155	Office2	01Net155	1640	OK
01Net156	Office3	01Net156	1650	OK
01Net157	Office1	01Net157	1660	OK
01Net158	Office2	01Net158	1670	OK
01Net159	Office3	01Net159	1680	OK
01Net160	Office1	01Net160	1690	OK
01Net161	Office2	01Net161	1700	OK
01Net162	Office3	01Net162	1710	OK
01Net163	Office1	01Net163	1720	OK
01Net164	Office2	01Net164	1730	OK
01Net165	Office3	01Net165	1740	OK
01Net166	Office1	01Net166	1750	OK
01Net167	Office2	01Net167	1760	OK
01Net168	Office3	01Net168	1770	OK
01Net169	Office1	01Net169	1780	OK
01Net170	Office2	01Net170	1790	OK
01Net171	Office3	01Net171	1800	OK
01Net172	Office1	01Net172	1810	OK
01Net173	Office2	01Net173	1820	OK
01Net174	Office3	01Net174	1830	OK
01Net175	Office1	01Net175	1840	OK
01Net176	Office2	01Net176	1850	OK
01Net177	Office3	01Net177	1860	OK
01Net178	Office1	01Net178	1870	OK
01Net179	Office2	01Net179	1880	OK
01Net180	Office3	01Net180	1890	OK
01Net181	Office1	01Net181	1900	OK
01Net182	Office2	01Net182	1910	OK
01Net183	Office3	01Net183	1920	OK
01Net184	Office1	01Net184	1930	OK
01Net185	Office2	01Net185	1940	OK
01Net186	Office3	01Net186	1950	OK
01Net187	Office1	01Net187	1960	OK
01Net188	Office2	01Net188	1970	OK
01Net189	Office3	01Net189	1980	OK
01Net190	Office1	01Net190	1990	OK
01Net191	Office2	01Net191	2000	OK
01Net192	Office3	01Net192	2010	OK
01Net193	Office1	01Net193	2020	OK
01Net194	Office2	01Net194	2030	OK
01Net195	Office3	01Net195	2040	OK
01Net196	Office1	01Net196	2050	OK
01Net197	Office2	01Net197	2060	OK
01Net198	Office3	01Net198	2070	OK
01Net199	Office1	01Net199	2080	OK
01Net200	Office2	01Net200	2090	OK
01Net201	Office3	01Net201	2100	OK
01Net202	Office1	01Net202	2110	OK
01Net203	Office2	01Net203	2120	OK
01Net204	Office3	01Net204	2130	OK
01Net205	Office1	01Net205	2140	OK
01Net206	Office2	01Net206	2150	OK
01Net207	Office3	01Net207	2160	OK
01Net208	Office1	01Net208	2170	OK
01Net209	Office2	01Net209	2180	OK
01Net210	Office3	01Net210	2190	OK
01Net211	Office1	01Net211	2200	OK
01Net212	Office2	01Net212	2210	OK
01Net213	Office3	01Net213	2220	OK
01Net214	Office1	01Net214	2230	OK
01Net215	Office2	01Net215	2240	OK
01Net216	Office3	01Net216	2250	OK
01Net217	Office1	01Net217	2260	OK
01Net218	Office2	01Net218	2270	OK
01Net219	Office3	01Net219	2280	OK
01Net220	Office1	01Net220	2290	OK
01Net221	Office2	01Net221	2300	OK
01Net222	Office3	01Net222	2310	OK
01Net223	Office1	01Net223	2320	OK
01Net224	Office2	01Net224	2330	OK
01Net225	Office3	01Net225	2340	OK
01Net226	Office1	01Net226	2350	OK
01Net227	Office2	01Net227	2360	OK
01Net228	Office3	01Net228	2370	OK
01Net229	Office1	01Net229	2380	OK
01Net230	Office2	01Net230	2390	OK
01Net231	Office3	01Net231	2400	OK
01Net232	Office1	01Net232	2410	OK
01Net233	Office2	01Net233	2420	OK
01Net234	Office3	01Net234	2430	OK
01Net235	Office1	01Net235	2440	OK
01Net236	Office2	01Net236	2450	OK
01Net237	Office3	01Net237	2460	OK
01Net238	Office1	01Net238	2470	OK
01Net239	Office2	01Net239	2480	OK
01Net240	Office3	01Net240	2490	OK
01Net241	Office1	01Net241	2500	OK
01Net242	Office2	01Net242	2510	OK

## 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

Buttons: 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	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8

Buttons: 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: 182ft	2.0	25.8
D: 188ft	2.0	26.0
BERT Results: 0 errors		

Buttons: PG-UP PG-DOWN

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

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

Cable001 ✓ Pass

Test Results

PASS

Buttons: PG-UP PG-DOWN

Shows the actual error rate in the BER test

Displays test results

**VALIDATOR™** JDSU

Cable Test Schedule Date: 10/11/04 Time: 7:30 pm

Site Information  
Job ID: 04110  
Technician: JOHN HICKMAN  
TDD: 777-6888  
Email: jhickman@jdsu.com  
4100 Campus Drive  
Springfield  
MA  
01104  
USA

Contractor Information  
Technician: JOHN HICKMAN  
TDD: 777-6888  
Email: jhickman@jdsu.com  
4100 Campus Drive  
Springfield  
MA  
01104  
USA

Cable Schedule

CABLE ID	TO	FROM	TYPE	OR_CAT	USE	LENGTH	RESULT
Cable001	01Net01	01Panel01	CAT3	Phone	Phone	182.0	PASS
Cable002	01Net02	01Panel01	CAT5	Phone	Phone	188.0	PASS
Cable003	01Net03	01Panel01	RG-6	TV	TV	182.0	PASS
Cable004	01TV01	01Panel01	RG-6	TV	TV	182.0	PASS
Cable005	01Net04	01Panel01	CAT5E	Phone	Phone	188.0	PASS
Cable006	01Net05	01Panel01	CAT5E	Phone	Phone	182.0	FAIL
Cable007	01Net06	01Panel01	CAT6	Phone	Phone	188.0	PASS
Cable008	01Net01	01Panel01	CAT3	Phone	Phone	182.0	PASS
Cable009	01Net02	01Panel01	CAT5	Phone	Phone	188.0	PASS
Cable010	01Net03	01Panel01	RG-6	TV	TV	182.0	PASS
Cable011	01TV01	01Panel01	RG-6	TV	TV	182.0	PASS
Cable012	01Net04	01Panel01	CAT5E	Phone	Phone	188.0	PASS
Cable013	01Net05	01Panel01	CAT5E	Phone	Phone	182.0	PASS
Cable014	01Net06	01Panel01	CAT6	Phone	Phone	188.0	PASS
Cable015	01Net01	01Panel01	CAT3	Phone	Phone	182.0	PASS
Cable016	01Net02	01Panel01	CAT5	Phone	Phone	188.0	PASS
Cable017	01Net03	01Panel01	RG-6	TV	TV	182.0	PASS
Cable018	01TV01	01Panel01	RG-6	TV	TV	182.0	PASS
Cable019	01Net04	01Panel01	CAT5E	Phone	Phone	188.0	PASS
Cable020	01Net05	01Panel01	CAT5E	Phone	Phone	182.0	PASS
Cable021	01Net06	01Panel01	CAT6	Phone	Phone	188.0	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)