HIOKI

New

LAN CABLE HiTESTER 3665-20

Optical/Telecom Measurement

Network Construction with One Single Instrument

PASS | ID 0 | SH
Straight Cable 20.0m

3665-20 LAN CABLE HiTESTER

CAT 6 Compatible

Shield Check

Wiremap
Detect Split Pairs with Wiring Check

Cable Length
Get NVP-Enhanced Measurement Accuracy

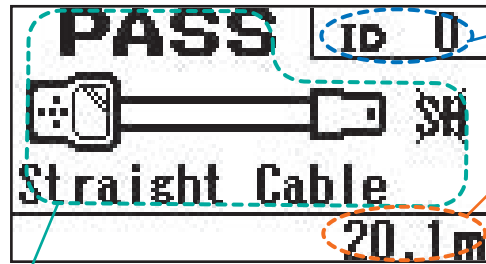## *Direction*
Identify Up to 21 Cable Destinations

C E

ISO 9001
JMI-0216

ISO14001
JQA-E-90091

Extremely Intuitive	Just connect a cable, and press the TEST button	▶▶▶	**Wide LCD Screen**	Check all parameters such as wiremap, direction and cable length at a glance.

PASS **ID 0**

Straight Cable
20.1m

2 Direction (ID No.)
Identify the terminator ID here.

3 Cable Length
Obtain a record of the entire length of the cable, or up to the point where the cable is damaged.
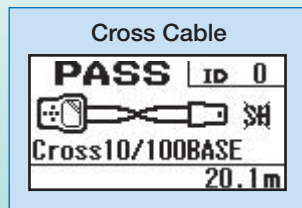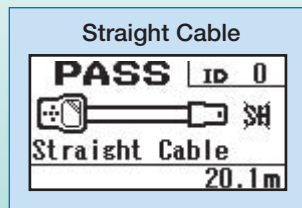
1 Wiremap (Wiring Status)
Large PASS/FAIL display, cable type, reason for cable failure and shield condition.

1 Wiremap

For wiring confirmation and locating broken wires after installation. Quick PASS/FAIL reading helps you complete your work faster.
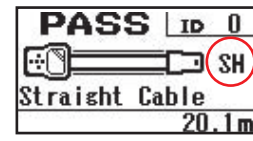
PASS Display Examples

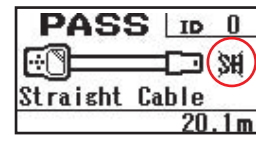Both straight-through and crossover cables (10/100BASE, 1000BASE-T and 1000BASE-TX) can be checked.

Straight Cable
PASS ID 0
Straight Cable
20.1m

Cross Cable
PASS ID 0
Cross10/100BASE
20.1m

Fully Compatible to CAT6 LAN Cables

Detect the existence of shields or check for shield integrity.

Super-sensitive Detection

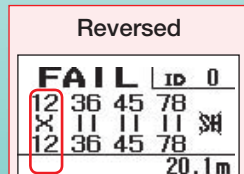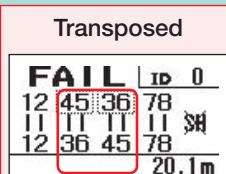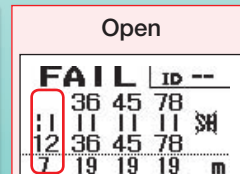PASS ID 0
Straight Cable
20.1m
Shielded

PASS ID 0
Straight Cable
20.1m
Unshielded

FAIL Display Examples

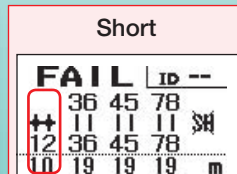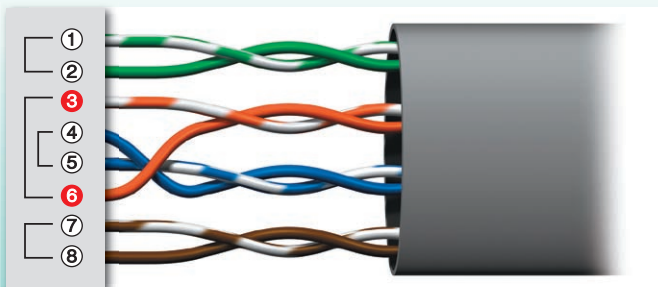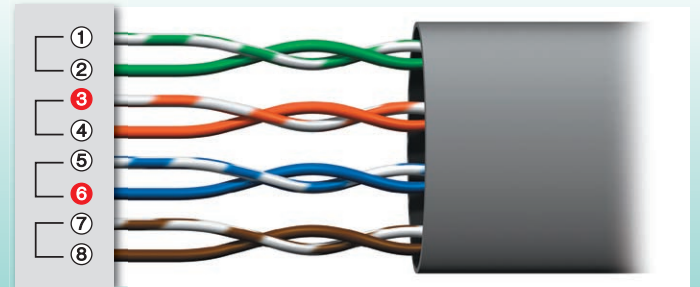| Reversed	Transposed	Open	Short	Split Pair
FAIL ID 0 12 36 45 78 ✕ ∥ ∥ ∥ SH 12 36 45 78 20.1m	FAIL ID 0 12 45 36 78 ∥ ∥ ∥ ∥ SH 12 36 45 78 20.1m	FAIL ID -- 36 45 78 ∥ ∥ ∥ SH 12 36 45 78 7 19 19 19 m	FAIL ID -- 36 45 78 ∥ ∥ ∥ SH 12 36 45 78 10 19 19 19 m	FAIL ID 0 12 78 ∥ ✕ ✕ ∥ SH 12 36 45 78 19 19 19 19 m
Pins 1 and 2 are reversed.	Pins 3 and 6 have been incorrectly paired with Pins 4 and 5.	Pin 1 is open at a distance 7 meters from the LAN cable tester.	Pins 1 and 2 are shorted at a distance 10 meters from the LAN cable tester.	A very common mistake - twist pairs Pins 3+6, and Pins 4+5, have been incorrectly connected.

Caution!

Can you find **split pairs?**

PASS **Proper Wiring**
LAN cable wires should be connected as shown in the diagram above, such that Pins 3 and 6 are twisted.

FAIL **Split Pair**
A "Split Pair" is detected when Pins 3 and 6 are not twisted and paired together as shown above.

2 Direction

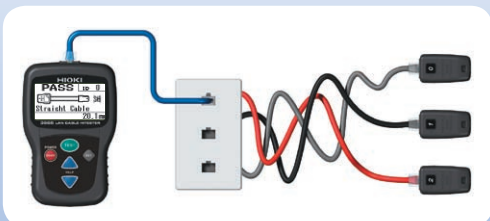**Locate up to 21 unique cable destinations.**

Have you ever had trouble installing additional cables?

Take advantage of the conveniences offered by the tester's capabilities to check wiring while confirming multiple cable destinations.

Increased Efficiency! You will never need to go back and forth again just to change the terminators.

Up to 21 terminators can be connected (additional terminators sold separately.) Convenient for confirming the connection destinations of multiple cables.

3 Cable Length

Measure for cable length and detect the location of broken or short-circuited wires.

The NVP* setting is a cable-length compensation function that enhances the accuracy of cable length measurements.
Accuracy with NVP activated:

■ **± 4% rdg. ± 1m**
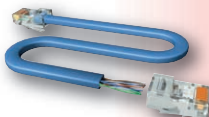(vs. previous HIOKI model: 15% rdg. ±1m)

Increased Precision!

* NVP (Nominal Velocity of Propagation) is the ratio of the speed of a signal in the cable relative to the speed of light in a vacuum.
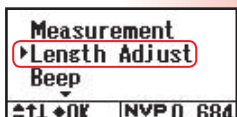NVP differs according to the type of cable and the manner in which the wire pairs are twisted, so measurement accuracy can be enhanced by setting the NVP value for the particular type of cable to be measured.

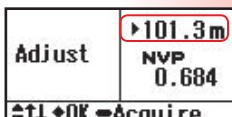## ■ Activating the NVP function is as simple as 1-2-3

Preparation
Prepare a reference cable using a known length of the same type as that to be measured (at least 100-meter length recommended).
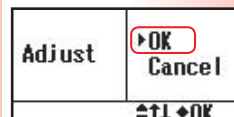
❶ On the Settings screen, select "Length Adjust".

❷ Press the TEST button to measure the (already known) length of the reference cable.

❸ Calibrate the display to the measured reference cable.

Setting Finished

≡ *How Can Split Pairs Affect the Network?* ≡

◆ **Communication speed can be suppressed** - 100BASE signals may reach only 10BASE speeds.
◆ **Excessive communication errors** - data transfer may be intermittent or completely inhibited.
◆ **Cables miswired in this way are more susceptible to electrical noise.**

Split pairs appear to be properly connected to the untrained eye, and cannot be detected with continuity testing.

To properly check LAN cable wiring, a tester capable of detecting split pairs is indispensable.

OK! The HIOKI 3665-20 can do the job for you properly and accurately by also detecting split pairs.

■ Specifications (@ 23 ±5 °C, 80% RH or less, non-condensating, with battery indicator unlit)

Measurable cables	Twisted-pair cable 100 Ω characteristic impedance, shielded and unshielded, CAT 3, 4, 5, 5e and 6
Compatible connectors	RJ-45 plugs
Measurement Items	
[Wiremap]	Wiring condition and shielding can be confirmed using the HIOKI TERMINATOR 9690 Detectable errors: open, short, reversed, transposed, split pairs and other miswiring
[Cable Length]	Measurable lengths: 2 to 300 m, 6.6 to 984 ft Measurement accuracy: ±4% rdg. ±1 m, ±4% rdg. ±3.3 ft Display resolution: 0.1 m
[Destination]	Up to 21 cables can be identified using the supplied TERMINATOR 9690 and optional Models 9690-01 to 9690-04 to test multiple cables simultaneously
Display	128 × 64 dot matrix LCD (with backlight)
Functions	Auto Backlight: pressing a button turns the backlight on (it turns off automatically after about 20 seconds) Beeper: sounds when pressing buttons and when measurement results are displayed Energy-Saving Mode: enter into energy-saving mode after measurement (and resume when the TEST button is pressed) Auto Power Save: the 3665-20 turns off automatically about 10 minutes after the last button press Battery Check: Battery indicator blinks when voltage falls below 2.4 V Unit Switch: Select between meters or feet
Compliance Standards	Safety Standard: EN61010-1:2001 Pollution Level 2 EMC Standard: EN61326:1997 + A1:1998 + A2:2001 + A3:2003
Allowable Input	3.3 V peak (between RJ-45 pins)
Operating Temperature & Humidity	0 to 40 °C, 80% RH or less, non-condensating
Storage Temperature & Humidity	–10 to 50 °C, 80% RH or less, non-condensating
Power Source	Two AA-size (LR6) alkaline batteries
Maximum Power Consumption	1.4 VA
Operating Time	Approx. 50 hours (measuring once per minute)
Size & Weight	Approx. 85 W × 130 H × 33 D mm, approx. 160 g

LAN CABLE HiTESTER 3665-20
(Includes TERMINATOR 9690, CARRYING CASE)

■ Supplied Accessories
TERMINATOR 9690
CARRYING CASE
(Stores the HiTESTER 3665 and TERMINATORs 9690)

TERMINATOR 9690   CARRYING CASE

■ Options
TERMINATOR 9690-01 (IDs 1 to 5)
TERMINATOR 9690-02 (IDs 6 to 10)
TERMINATOR 9690-03 (IDs 11 to 15)
TERMINATOR 9690-04 (IDs 16 to 20)
CARRYING CASE 9249 (stores the 3665-20, 9690 and 9628 together)
LAN CABLE 9628 (1 m long, with RJ-45 plugs)

TERMINATOR 9690-01   CARRYING CASE 9249
(for storing everything together)   LAN CABLE 9628

HIOKI
HIOKI E. E. CORPORATION