

# GIGA-X

*LAN Speed /Link Verifier  
Cable Length & Cable Faults Test  
For 10/100/1000 BASE-T /TX*

*13.01.3345*

## INTRODUCTION

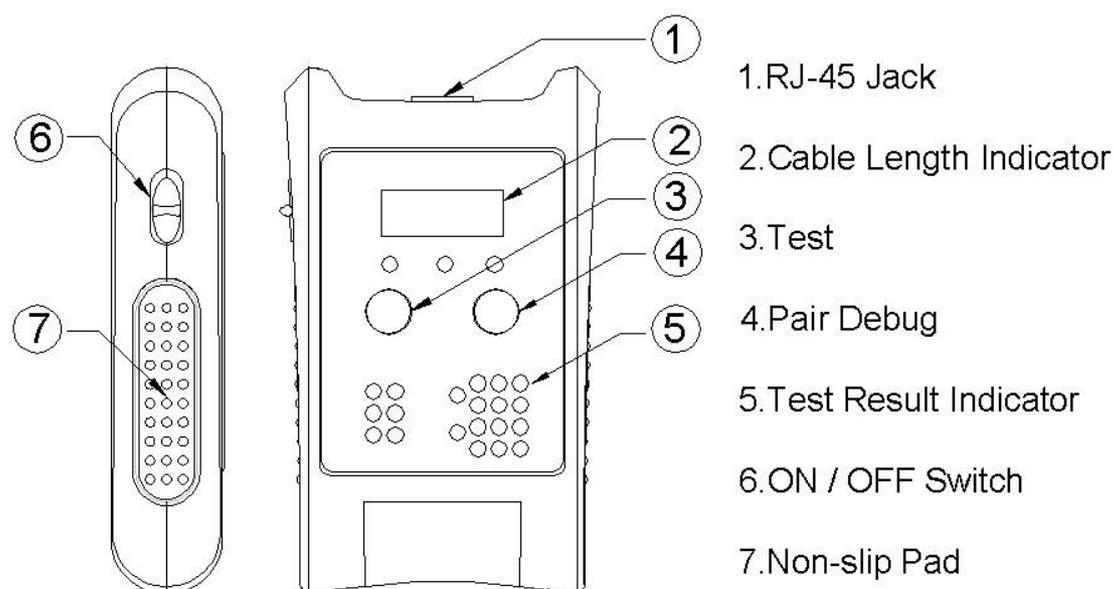
Hobbes manufacturer has successfully leveraged Digital Signal Process (DSP) and high-speed mixed signal expertise to develop the first low-cost Gigabit Cross-Over Cable tester. GIGA-X helps deliver trouble-free Gigabit Ethernet deployments. It maps comprehensive network layouts for 10/100/1000BASE-T Gigabit Ethernet physical layer, for use over Category-5 twisted pair copper cables.

GIGA-X is a single-port transceiver, which is able to identify ***cable length***, ***“On-Line/Off-line”***, ***cable pair faults***, ***network device speeds***, and ***connections status***. The results are then displayed on the LED.

An economical and versatile tool, the GIGA-X complies with existing CATEGORIES IEEE standards. With GIGA-X, upgrading and installing Giga-bits devices and cables in 10/100BASE-T environments will be easier, faster, and more effective. The GIGA-X is also beneficial for minor changes in a 10/100/1000BASE-T infrastructure upgrades.

## FEATURES

- On-line speed and connection status
- 10/100/1000BASE-T device speed auto-negotiation
- Measure length of cable by pair/s (in meters)
- Detect open or short status on cables or device ports
- Identify crossover cable and TX/RX auto swap ports
- Low Battery indicator
- Automatic LED self-test upon powering on the tester



## OPERATING INSTRUCTIONS

*Note: Please check battery conditions before performing a test. Low battery may cause inaccurate results.*

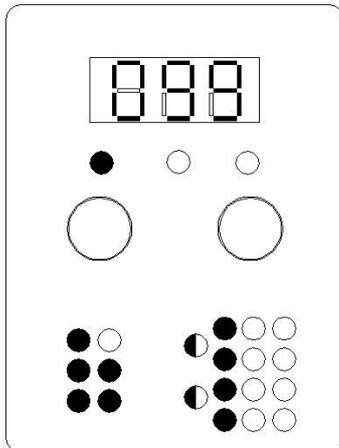
1. ON/OFF switch is located on the side.
  - *Every time the unit is turned on, ALL LED's will light up for a 3 second self-test.*
2. Plug one side of terminated RJ-45 cable into GIGA-X RJ-45 socket at the top, regardless of whether or not the cable is still connected to Hub/Switch/NIC.
3. Press "TEST" button once.
  - "Length" and "Fault Location" LED indicators will blink sequentially to auto-negotiate ( $\pm 5$  seconds) with any network devices connected to it, either Hub/Switch or NIC.
4. The diagnostic readout immediately detects results based on testing a cable in different scenarios:
  - **Cable connected to active or live network device (Hub/Switch or NIC).**
    - **Speed Status** LEDs (10/100/1000 and Full/Half duplex) will light up according to the speed of the device.
    - **Link Status** LEDs will light up according to the pair/s connected.  
(1-2 & 3-6 for 10/100 device, 1-2/3-6/4-5/7-8 for Giga device)
    - When testing 10/100 devices: if a short or open fault exists on the cable pin 1& 2, or pairs 4-5 /7-8, the "Shorted" LED will light up. This is caused by the device's internal coil. Pressing "Pair Debug" once will measure the length of the faults.
    - If there are no cable faults, the length will measure the total average of the cable. "Pair Debug" will not function.
    - If "Crossover" LED is blinking, this indicates that the device port is auto-swappable between TX and RX
  - **Cable is not connected to any network device / floating cable.**
    - "Speed Status" and "Link Status" LED's will not show results.
    - "Open" LED's on pair 1-2/3-6/4-5/7-8 will light up
    - If cable pin is shorted, the "Short Pair" LED will light up. Pressing "Pair Debug" once will measure the length of, and cable status (short/open), each pair indicated by the blinking LED.
  - **Cable connected to a network device using crossover cable.**
    - **Crossover** LED will light up solid on pair 1-2/3-6 (10/100 device), or 1-2/3-6 & 4-5/7-8 (Giga device)

- If the Alpha-Numeric LED shows “CON”, this means that the cable length is unable to be determined or that you are connected to a network device that runs in 10BASE-T and Half-duplex mode.

## SPECIFICATIONS

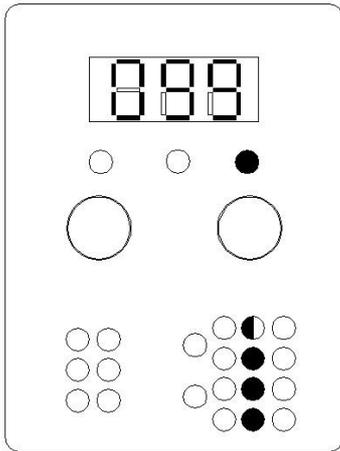
Dimension:	82 x 138 x 32mm (3.2 x 5.4 x 1.3 inches)
Weight:	125 g
Max test length	Off-Line 150 meters (492.13 feet) On-Line 110 meters (360.89 feet)
Power source	4 x AAA 1.5V Alkaline batteries
Working Temperature	0°C~50°C (32°F ~ 122°F)
Storage Temperature	-30°C ~50°C (-22°F ~ 122°F)
Humidity	10%~90%

## Sample display layouts



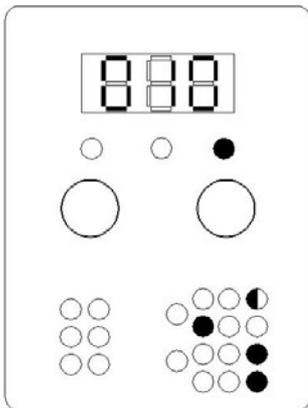
The preceding display indicates that the testing device has the following results:

1. Speed 1000/100/10 are supported
2. 10/100/1000 Full Duplex are supported
3. 10/100 Half Duplex are supported
4. All 4 pairs are linked and there are no faults.
5. Auto swap (Flash means your device has the ability to swap the TX and RX signals)
6. The cable length is 99 meters



The preceding display indicates that the testing device has the following results:

1. The far end of the cable is not connected to any device.
2. The length of Pair 1 is 99 meters.

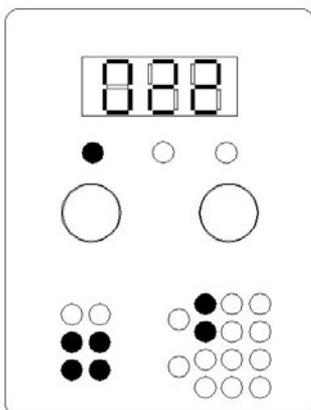


The preceding display indicates that the testing device has the following results:

1. 3-6 pairs are linked to an active device.
2. 4-5 and 7-8 pair are shorted.
3. The cable near-end of pin 1 and 2 is shorted at 10 meters

NOTE:

- Speed result will only read when no faults exist on Rx and Tx pairs.



The preceding display indicates that the testing device has the following results:

1. Speed 10/100 are supported
2. 10/100 Full/Half Duplex are supported
3. Pair 1-2 and 3-6, are linked to an active device
4. The average pair cable length is 22 meters

**If possible add some drawing for pins/pairs and TX/RX as seen below.**

```
9.1 Standard EIA/TIA T568A
(also called ISDN, previously called EIA)

Pin  Wire Color
===  =====
/--T3  1  White/Green
Pair3 \--R3  2  Green
/-----T2  3  White/Orange
/          /-R1  4  Blue
pair2 \   pair1 \-T1  5  White/Blue
\          \-----R2  6  Orange
/--T4  7  White/Brown
pair4 \--R4  8  Brown
```

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9.2 Standard EIA/TIA T568B
(also called AT&T specification, previously called 258A)

/--T2  1  White/Orange
pair2 \--R2  2  Orange
/-----T3  3  White/Green
/          /-R1  4  Blue
pair3 \   pair1 \-T1  5  White/Blue
\          \-----R3  6  Green
/--T4  7  White/Brown
pair4 \--R4  8  Brown
```

*Note: Due to the legacy 10BASE-T hardware constraints, in order to determine the length of cable you must unplug the other end of the cable from its source and retest it again as a floating cable.*

**Warning**

1. Always turn off the unit to save battery power. Disconnect battery connection if the GIGA-X is to be stored for an extended period.
2. GIGA-X is covered by a 2-year manufacturer's warranty from the date of purchase. Please contact the distributor/reseller where you originally purchased the product for warranty or service.
3. Misuse or unreasonable treatment of the product will void the warranty.
4. *LOW BAT*. LED will light up when the voltage is lower than 2.2V. Please replace with a new alkaline battery. Mixing old and new batteries is not recommended and may give **inaccurate** results.
5. During LEDs self test if one or more LED's are not lit up, please check or replace the battery source. If the problem still persists, contact your distributor/reseller for warranty or service.