ENGLISH

User manual

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1. PRECAUTIONS AND SAFETY MEASURES

The instrument has been designed in compliance with the safety directives relevant to electronic measuring instruments. For your safety and in order to prevent damaging the instrument, please carefully follow the procedures described in this manual and read all notes preceded by symbol ⚠ with the utmost attention. Before and after carrying out measurements, carefully observe the following instructions:

- Do not carry out any measurement in humid environments.
- Do not carry out any measurements in case gas, explosive materials or flammables are present, or in dusty environments.
- Avoid any contact with the circuit being measured if no measurements are being carried out.
- Avoid any contact with exposed metal parts, with unused measuring probes, circuits, etc.
- Do not carry out any measurement in case you find anomalies in the instrument such as deformation, breaks, substance leaks, absence of display on the screen, etc.

1.1. PRELIMINARY INSTRUCTIONS

- Before using the instrument, please carefully read this user manual.
- Each instruction preceded by symbol ⚠ must be carefully complied with in order to prevent accidents or damage.
- Make sure the batteries are installed correctly.
- This instrument must be used only by skilled personnel capable of taking the appropriate safety precautions.
- Do not carry out any measurement under conditions outside the ranges specified in this manual.

CAUTION

Only connect the instrument to disconnected (non-live) cables. Connection to active telephone lines and/or data nets may damage the instrument.

1.2. DURING USE

Carefully read the following recommendations and precautions for use:

CAUTION

Should the instrument display symbol "🔋" it is necessary to stop measuring and replace the batteries. Never replace batteries while the instrument is installed on the conductor.

- Do not use the instrument, if damaged.
- Do not use the instrument outdoors.
- Do not perform any test under environmental conditions exceeding the limits indicated in § 7.3.1.
- Do not expose the instrument to water.

1.3. AFTER USE

- Always switch off the instrument after use.
- In case the instrument is not to be used for a long time, remove the batteries.

2. GENERAL DESCRIPTION

Model **QUICKLAN6050N** allows carrying out tests on LAN network cable wirings, telephone cables and coaxial cables. The instrument has the following features:

- Test of wiring errors on LAN network cables with RJ45 connector in CAT5 and CAT6.
- Test of wiring errors on telephone network cables with RJ11 connector.
- Test of wiring errors on COAX cables with F connector.
- Detection of wiring errors on **UTP** (unshielded) and **STP** (shielded) cables.
- Detection of up to 4 RJ45 remote units for multiple tests.
- Measurement of cable length
- Display with backlight
- Auto power off

3. PREPARATION FOR USE

3.1. INITIAL CHECKS

Before shipping, the instrument has been checked from an electric as well as mechanical point of view. All possible precautions have been taken so that the instrument is delivered undamaged.

However, we recommend generally checking the instrument in order to detect possible damage suffered during transport. In case anomalies are found, immediately contact the forwarding agent.

We also recommend checking that the packaging contains all components indicated in § 7.4.1. In case of discrepancy, please contact the Dealer.

In case the instrument should be returned, please follow the instructions given in § 8.

3.2. INSTRUMENT POWER SUPPLY

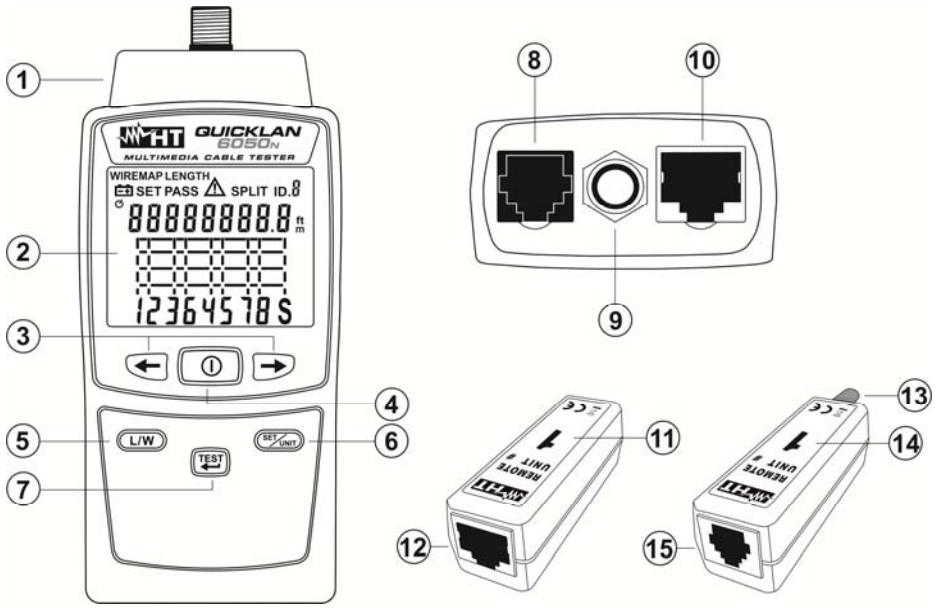
The instrument is supplied with 6x1.5V alkaline batteries type AAA IEC LR03, included in the package. Should the instrument display the flat battery symbol "  ", stop measuring and replace the batteries (see § 6.2). Never replace batteries while the instrument is connected to the system.

3.3. STORAGE

In order to guarantee precise measurement, after a long storage time under extreme environmental conditions, wait for the instrument to come back to normal operating conditions (see § 7.3).

4. NOMENCLATURE

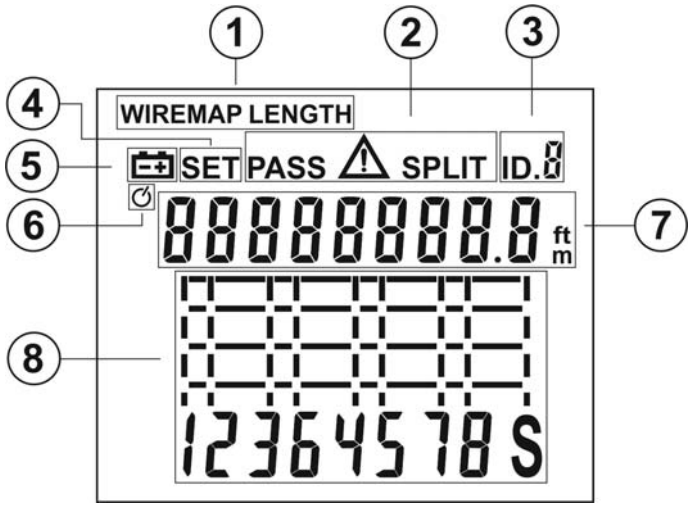
4.1. DESCRIPTION OF THE INSTRUMENT



CAPTION:
1. Section of input connectors
2. LCD display
3. Arrow keys
4. **ON/OFF** key
5. **L/W** key
6. **SET/UNIT** key
7. **TEST/⟵** key
8. RJ11 connector
9. F connector
10. RJ45 connector
11. Remote unit #1 for RJ45 cables
12. RJ45 connector for remote unit
13. F connector for remote unit
14. Remote unit #1 for RJ11 and COAX cables
15. RJ11 connector for remote unit

Fig. 1: Description of the instrument

4.2. DESCRIPTION OF THE SYMBOLS SHOWN ON THE DISPLAY



CAPTION:
1. Test symbols Mapping/Length
2. Test symbols Passed, Error, Split
3. Identifier ID remote unit
4. SET symbol
5. Low battery symbol
6. Auto Power Off (APO) symbol
7. Display with indication of measured Length and status of cable pairs
8. Graphic LCD to display error conditions

Fig. 2: Description of the symbols shown on the display

4.3. DESCRIPTION OF FUNCTION KEYS

4.3.1. ON/OFF key

Press the ⏻ key to switch on or off the instrument. The LCD display shows all of its segments for a moment. The ⏻ key is also used to set the instrument's parameters (see § 5.1).

4.3.2. Arrow keys

The arrow keys ←, → are used to set the instrument's parameters (see § 5.1) and to select the cable pairs for measuring length (see § 5.5).

4.3.3. L/W key

Use the **L/W** key to:

- Go to the Mapping test screen (WIREMAP) and to the Length measuring screen (LENGTH).
- Set the length measuring unit (see § 5.1.4).
- Define calibration operations of cable length (see § 5.5.1).

4.3.4. SET/UNIT key

Press the **SET/UNIT** key to select the current remote unit in case the test is performed with more remote units present (see § 5.2.3). Press and hold the **SET/UNIT** key for 3s in order to enter/exit the section for setting the internal parameters of the instrument and navigate inside it (see § 5.1).

4.3.5. TEST/↵

Press the **TEST/↵** key to activate a measuring test and to confirm the values of parameters when programming the instrument (see § 5.1).

5. OPERATING INSTRUCTIONS

5.1. INSTRUMENT SETTINGS

5.1.1. Auto Power OFF function

1. Switch on the instrument by pressing the key. ⏻
2. Press and hold the **SET/UNIT** key for 3s. The screen in Fig. 3 – left side appears on the display.

Fig. 3: Auto Power Off setting (APO)

3. Press the **SET/UNIT** key to activate the Auto Power Off function of the instrument. The message "oFF" appears on the display.
4. Press the arrow keys ← or → to activate the function. The message "On" flashes and symbol "↻" appears on the display (see Fig. 3 – right side).
5. Press the **TEST/**↵ key to save setting and go back to main screen.

5.1.2. Display backlight

1. Switch on the instrument by pressing the key. ⏻
2. Press and hold the **SET/UNIT** key for 3s. The screen in Fig. 3 – left side appears on the display.
3. Press the arrow keys ← or → to go to the display's backlight setting. The screen in Fig. 4 – left side appears on the display.

Fig. 4: Setting display backlight

4. Press the **SET/UNIT** key. The message "oFF" appears on the display.
5. Press the arrow keys ← or → to activate the function. Message "On" flashes.
6. Press the **TEST/**↵ key to save setting and go back to main screen.

5.1.3. Setting the cable type

1. Switch on the instrument by pressing the key. ⏻
2. Press and hold the **SET/UNIT** key for 3s. The screen in Fig. 3 – left side appears on the display.
3. Press the arrow keys ← or → until you display the screen in Fig. 5 - left side

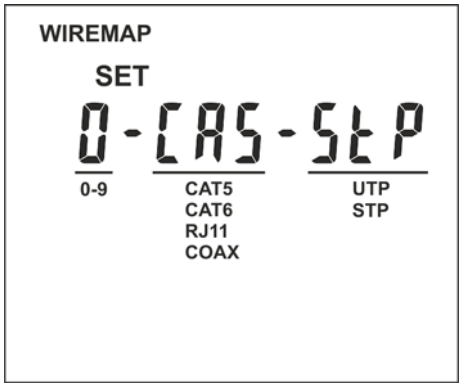


Fig. 5: Setting the cable type

4. Press the **SET/UNIT** key. Parameter "0" flashes on the display. This parameter allows selecting one of the 10 numeric configurations saved by the user according to the type and possible calibration of cable length (see § 5.5.1).
5. Press the arrow key ← or → to select the value among the options **0 ÷ 9**.
6. Press the **SET/UNIT** key to go to the selection of cable type. Parameter "CA5" flashes on the display.
7. Press the arrow key ← or → to select the cable type among the options: **CA5 (CAT5), CA6 (CAT6), AJII (RJ11), COA (COAX)**
8. Press the **SET/UNIT** key to go to the selection of cable type with RJ45 connector. Parameter "StP" flashes on the display.
9. Press the arrow keys ← or → to select the possible options. **StP** (shielded STP cable) or **UtP** (unshielded UTP cable)
10. Press the **TEST/**↵ key to save all settings and go back to main screen.

5.1.4. Setting cable length measuring unit

1. Press and hold the **L/W** key and switch on the instrument by pressing the ⏻ key. The instrument shows the screen in Fig. 6 – left side.

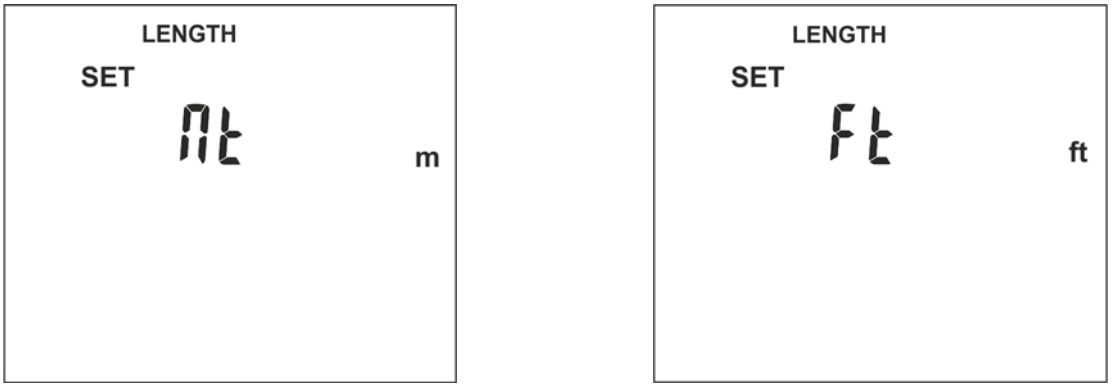


Fig. 6: Setting length measuring unit

2. Press the arrow keys ← or → to select measuring unit "Mt" (meter) or "Ft" (foot) flashing on the display.
3. Press the **TEST/**↵ key to save setting and go back to main screen.

5.2. TEST OF CABLE MAPPING WITH RJ45 CONNECTOR

The test allows checking the cable mapping of LAN networks, in CAT5 or CAT6, of type UTP or STP with RJ45 connector, detecting possible wiring errors. Proceed as follows:

1. Switch on the instrument by pressing the key. ⏻
2. Select the category (CAT5 or CAT6) of the cable to be tested (see § 5.1.3).
3. Select the type (UTP, STP) of the cable to be tested (see § 5.1.3).
4. Connect the ends of the cable to be tested to the instrument's input RJ45 connector (see Fig. 1 – part 10) and to the remote unit #1 or, if necessary, use the patch cables provided as shown in Fig. 7.

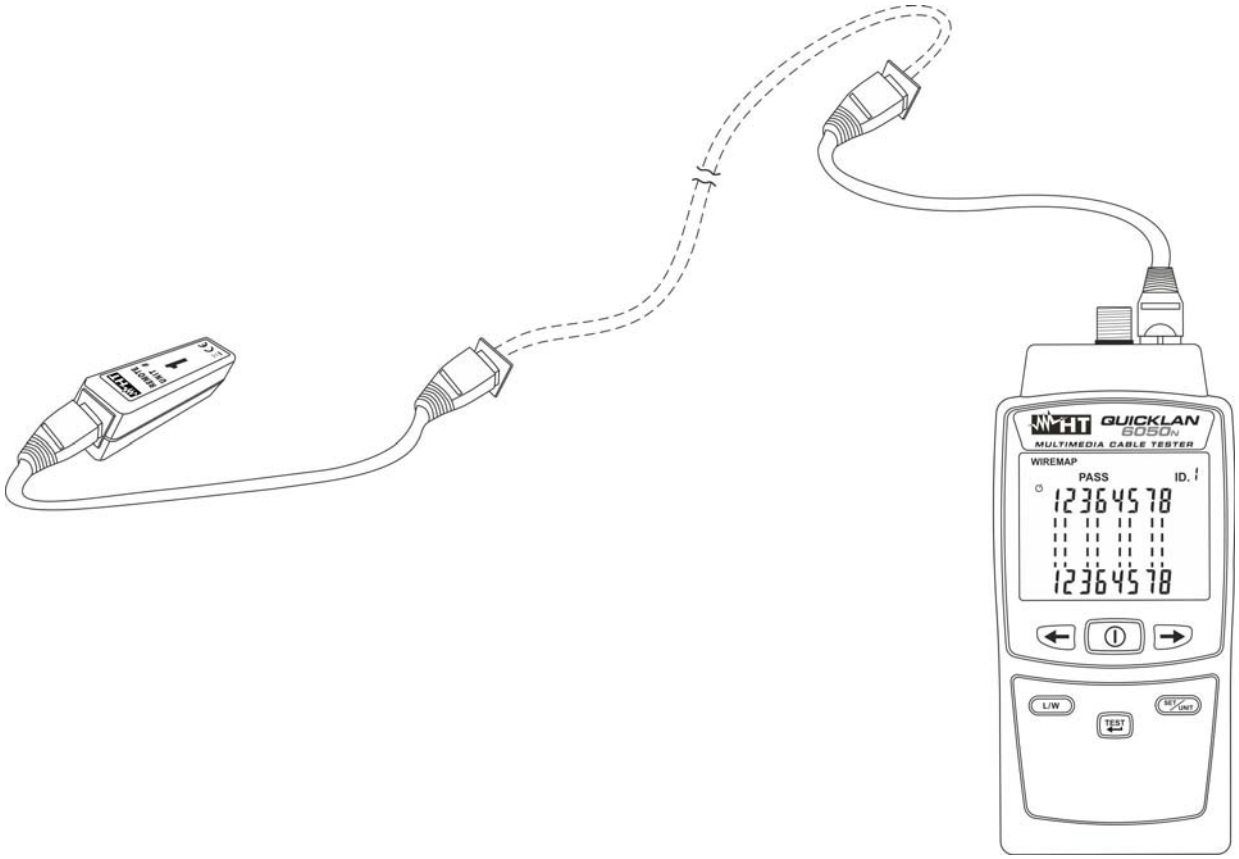


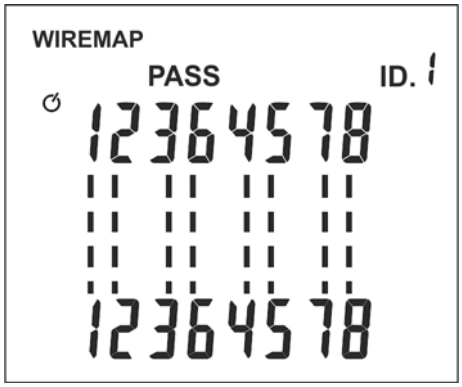
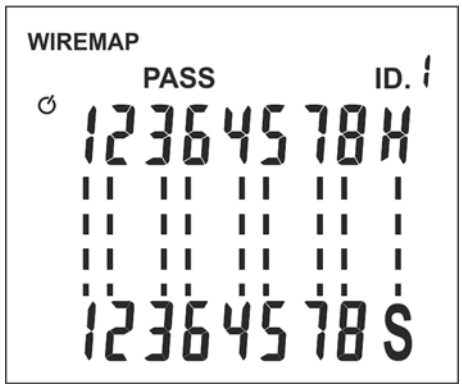
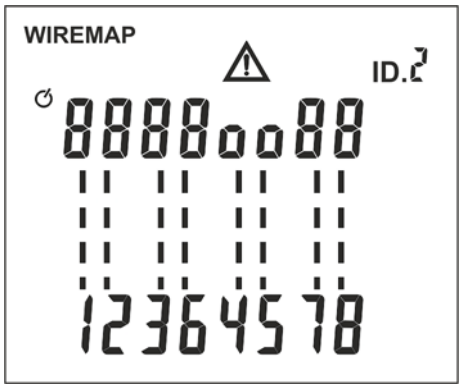
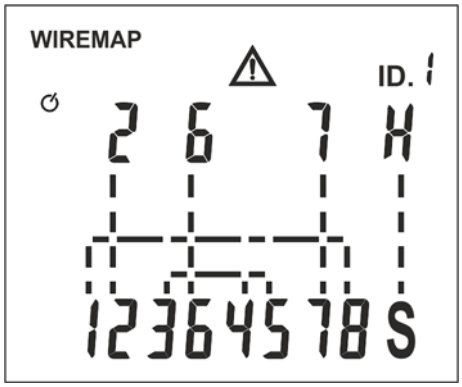
Fig. 7: Instrument connection through patch cables

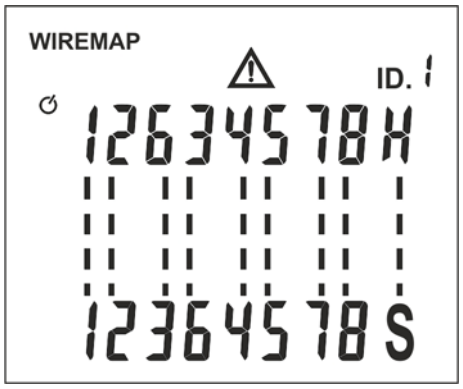
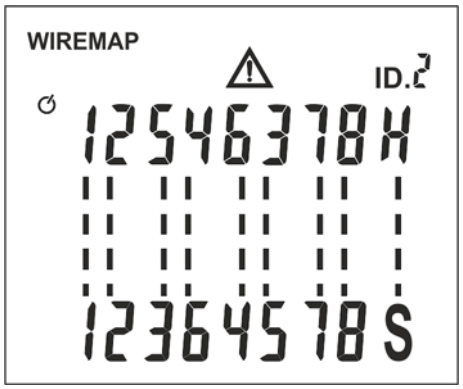
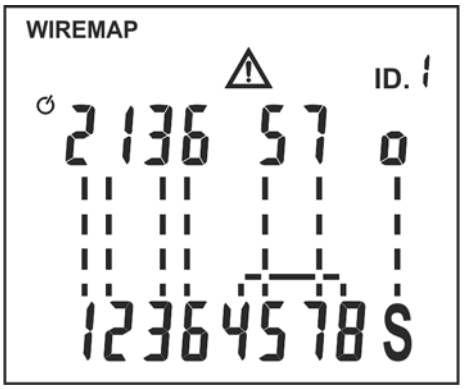
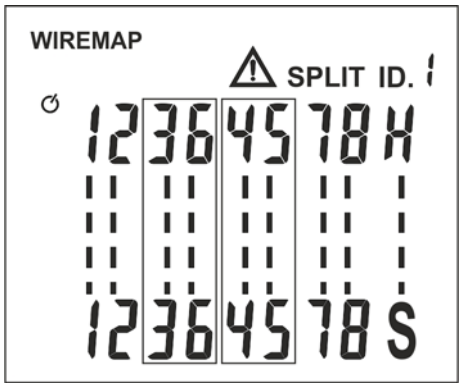
5. Press the **TEST/⏎** key. The instrument carries out the test according to the type of cable set, displaying the message "**PASS**" for a correct test or symbol "⚠" together with flashing pairs in case of wiring error (see § 5.2.1).
6. Press the **L/W** key to display cable length (see § 5.5).

CAUTION

- **Connection of the remote unit is necessary in order to correctly perform the test.**
- **Only connect the instrument to disconnected (non-live) cables. Connection to active telephone lines or data nets may damage the instrument.**

5.2.1. Mapping test results

Situation	Description	Display
Message "PASS" on the display	Correctly performed test on UTP cable connected to remote unit #1	
Message "PASS" on the display	Correctly performed test on STP cable connected to remote unit #1	
Symbol ⚠ on the display OPEN PAIR	Cables of the pair 4-5 interrupted	
Symbol ⚠ on the display SHORT-CIRCUITED CABLES	➢ Cable 1 of the pair 1-2 short-circuited with cable 8 of pair 7-8 ➢ Cable 3 of the pair 3-6 short-circuited with cables 4 and 5 of pair 4-5 ➢ Cables of the pair 4-5 short-circuited	

Symbol ⚠ on the display INVERTED PAIR	Cables of pair 3-6 inverted	
Symbol ⚠ on the display CROSSED PAIRS	Cables of pair 3-6 crossed with cables of pair 4-5	
Symbol ⚠ on the display GENERIC ERROR (MISWIRE)	➢ Cables of pair 1-2 inverted ➢ Cable 4 of the pair 4-5 short-circuited with cable 8 of pair 7-8 ➢ Screen S open	
Symbol ⚠ on the display SPLIT PAIRS	Correspondence pin to pin is maintained, but the cables of pairs 3-6 and 4-5 are physically crossed	

CAUTION

- The instrument identifies the SPLIT error, making the concerned pairs flash and showing symbol "SPLIT" on the display.
- The error condition SPLIT is detected by the instrument **only in case no other error condition is present** and with a cable length of at least 5m (15ft).

5.2.2. Description of errors of split pairs

Inside the network cables, the eight conductors are twisted two by two, thus forming four pairs: 1-2, 3-6, 4-5, 7-8 and this guarantees the performance declared by the manufacturer. The error condition SPLIT PAIRS is given by the exchange of two conductors belonging to different pairs, found in both positions of the cable to be tested (see Fig. 8). Correspondence pin to pin is maintained, but the cables of the two pairs are physically crossed. The two pairs thus crossed influence each other, thus making data exchange at high frequency/speed difficult, if not impossible.

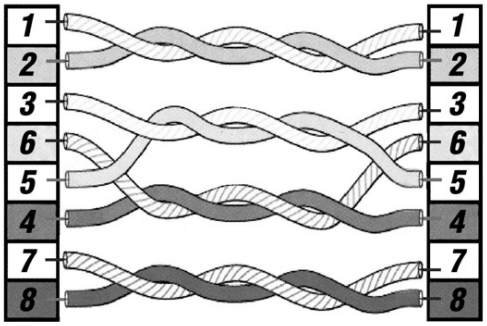


Fig. 8: Description of error condition "Split Pairs"

5.2.3. Test with more remote units

The instrument allows carrying out mapping tests also on multiple cables by using other optional remote units and is capable of recognizing up to 4 remote units.

1. Switch on the instrument by pressing the key. ⏻
2. Select the category (CAT5, CAT6) of the cables to be tested (see § 5.1.3).
3. Select the type (UTP, STP) of the cables with RJ45 connector to be tested (see § 5.1.3).
4. Connect the end of one of the cables to be tested (e.g.: #3) to the instrument's input connector RJ45 and to the corresponding remote unit (e.g.: #3) using the patch cables as shown in Fig. 9.

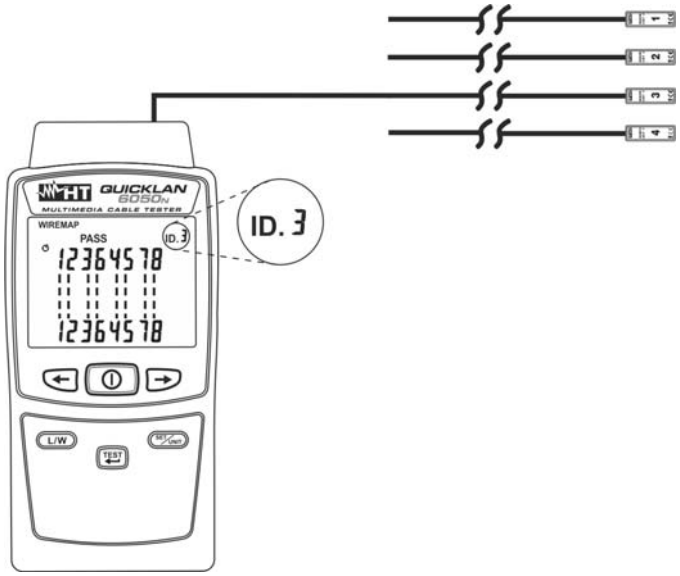


Fig. 9: Connection of the instrument to more remote units

5. Press the **SET/UNIT** key to select the current remote unit (e.g.: #3)
6. Press the **TEST/⟵** key to perform the test on the relevant cable.
7. Disconnect the instrument, connect it to another cable and repeat the operations starting from point 5.

5.3. TEST OF CABLE MAPPING WITH RJ11 CONNECTOR

1. Switch on the instrument by pressing the key. ⏻
2. Select the type of cable **AJII (RJ11)** to be tested (see § 5.1.3).
3. Connect the ends of the cable to be tested to the instrument's input RJ11 connector (see Fig. 1 – part 8) and to the remote unit #1 (see Fig. 10). if necessary, use the patch cables provided as shown in Fig. 7.

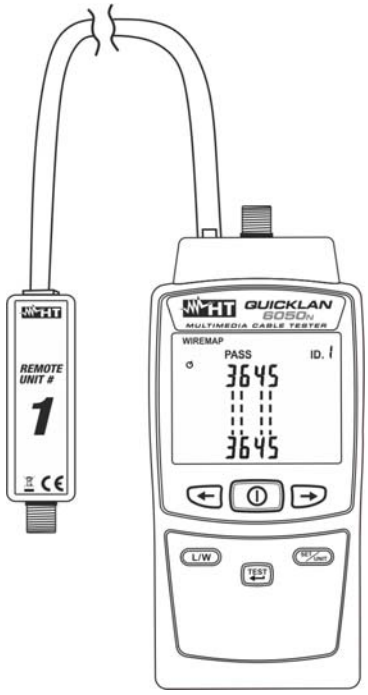


Fig. 10: Connection of the instrument to cable with RJ11 connector

4. Press the **TEST/⟵** key. The instrument carries out the test and displays the message "**PASS**" for a correct test (see Fig. 11) or symbol "⚠" together with flashing pairs in case of wiring error (see § 5.2.1).

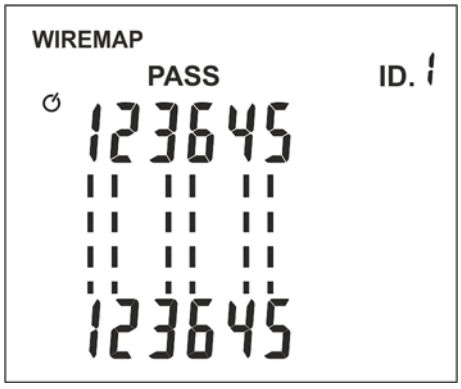


Fig. 11: Display of correct test on cable with RJ11 connector

5. Press the **L/W** key to display cable length (see § 5.5).

CAUTION

- **Connection of the remote unit is necessary in order to correctly perform the test.**
- **Only connect the instrument to disconnected (non-live) cables. Connection to active telephone lines or data nets may damage the instrument.**

5.4. TEST OF COAX CABLE MAPPING WITH F CONNECTOR

1. Switch on the instrument by pressing the key. ⏻
2. Select the type of cable **COA (COAX)** to be tested (see § 5.1.3).
3. Connect the ends of the cable to be tested to the instrument's input COAX connector (see Fig. 1 – part 9) and to the remote unit #1 (see Fig. 12)

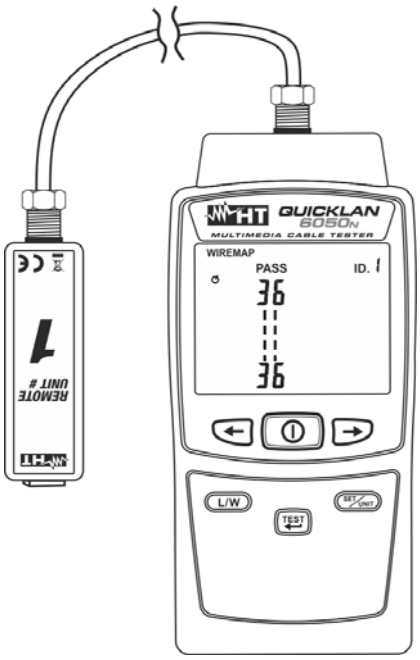


Fig. 12: Connection of the instrument to COAX cable with F connector

4. Press the **TEST/⟵** key. The instrument carries out the test and displays the message "**PASS**" for a correct test (see Fig. 13 – left side) or symbol "⚠" together with flashing pairs in case of interrupted cable (see § Fig. 13 – right side).

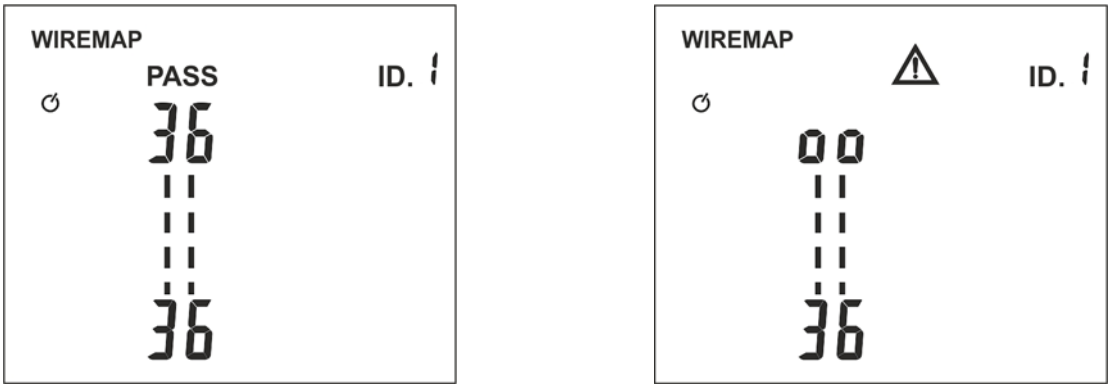


Fig. 13: Displaying the test on COAX cable with F connector

5. Press the **L/W** key to display cable length (see § 5.5).

CAUTION

- **Connection of the remote unit is necessary in order to correctly perform the test.**
- **Only connect the instrument to disconnected (non-live) cables. Connection to active telephone lines or data nets may damage the instrument.**

5.5. MEASUREMENT OF CABLE LENGTH

The instrument measures the length of cables with RJ45 connectors of type UTP/STP, on RJ11 cables and on coaxial cables (COAX) with F connector. Proceed as follows:

1. Switch on the instrument by pressing the key. ⏻
2. Enter the programming menu (see § 5.1.3) and select the numeric marker (values between 0 and 9) to which the type and possible calibration of cable length are associated (see § 5.5.1).
3. Connect the end of the cable to be tested to input connector RJ45, RJ11 or COAX
4. Connect the other end of the cable to be tested to connector RJ45, RJ11 or COAX of remote unit #1
5. Press the **L/W** key to select the cable length measuring function
6. Press the **TEST/↵** key to measure length with reference to pair "1-2" for RJ45 and RJ11 cables (see Fig. 14 – left side) or for COAX cables (see Fig. 14 – right side).

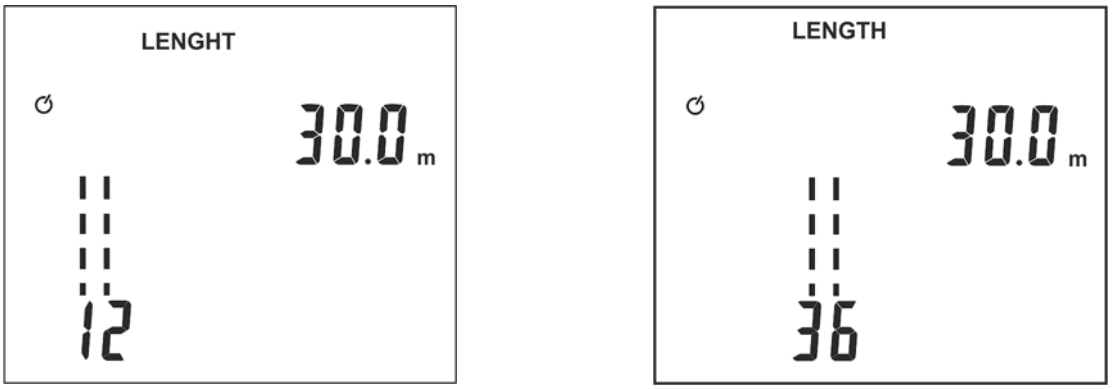


Fig. 14: Cable length measuring results

7. Press the arrow keys ◀ or ▶ to display the length of the remaining pairs "3-6", "4-5" and "7-8" of the RJ45 cable being tested (pairs "3-6" and "4-5" for RJ11 cables).

5.5.1. Calibration of cable length

In order to obtain accurate measurements, it is possible to calibrate the instrument on the specific cable being used. In order to perform calibration, connect the reference cable (with an already known length) directly to the instrument without patch cables and follow this procedure:

1. Switch on the instrument by pressing the key. ⏻
2. Press and hold the **L/W** key for 3s. The screen in Fig. 15 appears on the display.

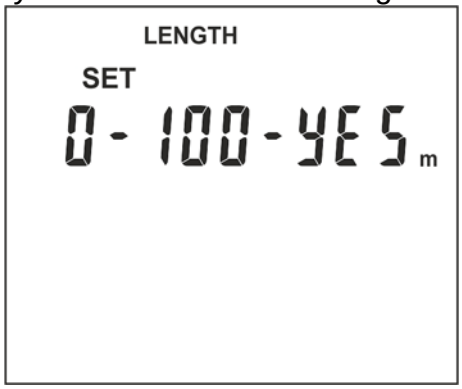


Fig. 15: Calibration settings of cable length

3. The numeric marker "0" (default) flashes on the display. Press the arrow key ← or → to select the value among the options **0 ÷ 9**. This numeric marker is associated to the one considered when setting the type of cable (see § 5.1.3).
4. Press the **SET/UNIT** key to set the length of the reference cable between: **10 ÷ 250** (unit **m**) or **30 ÷ 750** (unit **ft**). The value flashes on the display. Use the arrow keys ← or → in order to respectively decrease or increase the value (press and hold the keys for a quick selection).
5. Press the **SET/UNIT** key to select the activation/deactivation of cable calibration. Use the arrow keys ← or → to select the options: **yes** (SI) or **no** (NO)
6. Press the **TEST/←** key to save all settings and go back to main screen.
7. Perform measurement as indicated in § 5.5. Values will be considered by the instrument as a reference for that specific length measurement.

CAUTION

In case it is not necessary to calibrate the length of the cable, always select option "**no**" in order to prevent possible incorrect measurements.

6. MAINTENANCE

6.1. GENERAL INFORMATION

1. While using and storing the instrument, carefully observe the recommendations listed in this manual in order to prevent possible damage or danger during use.
2. Do not use the instrument in environments with high humidity levels or high temperatures. Do not expose to direct sunlight.
3. Always switch off the instrument after use. In case the instrument is not to be used for a long time, remove the battery to avoid liquid leaks that could damage the instrument's internal circuits.

6.2. BATTERY REPLACEMENT

When the LCD display shows symbol "  ", batteries must be replaced.

CAUTION

Only expert and trained technicians should perform this operation. Before carrying out this operation, make sure you have disconnected all cables from the input terminals.

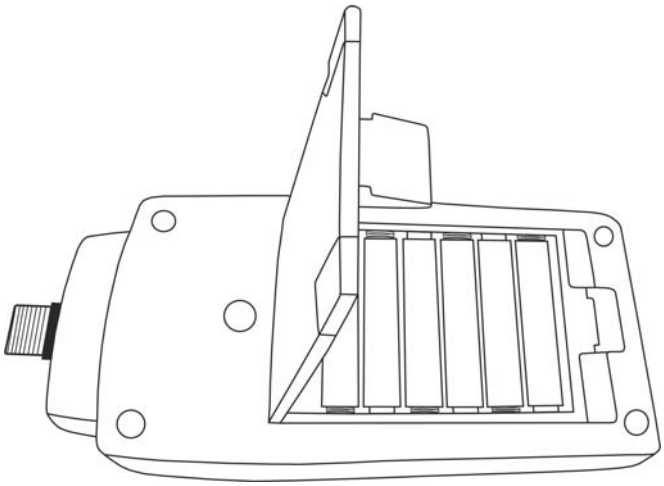


Fig. 16: Replacing internal batteries

1. Switch off the instrument and remove the cable from the input terminal.
2. Lift the stand, press the tag of the battery compartment cover to open it (see Fig. 16).
3. Remove the batteries and replace them with new batteries of the same type (see § 7.2), respecting the indicated polarity.
4. Restore the battery compartment cover to its position.
5. Do not scatter old batteries into the environment. Use the relevant containers for disposal.

6.3. CLEANING THE INSTRUMENT

Use a soft and dry cloth to clean the instrument. Never use wet cloths, solvents, water, etc.

6.4. END OF LIFE

WARNING: the symbol on the instrument indicates that the appliance and its accessories must be collected separately and correctly disposed of.

7. TECHNICAL SPECIFICATIONS

7.1. TECHNICAL CHARACTERISTICS

Input connectors	RJ45, RJ11, COAX (F)
Cable type RJ45:	UTP, STP
Category:	CAT5, CAT6
Considered standard:	TIA/EIA 568B
Detected wiring errors:	open pairs, short-circuited pairs, inverted pairs, crossed pairs slit pairs, generic errors
Max operating altitude:	2000m (6562ft)
Length range (1):	10m ÷ 250m (30ft ÷ 750ft)
Resolution:	0.1m (ft)
Accuracy:	±(10%rdg + 1.0m) ; ±(10%rdg + 3.0ft)

(1) For Split pair test, a cable length of at least 5m (15ft) is necessary

7.2. GENERAL CHARACTERISTICS

Mechanical characteristics

Size (L x W x H):	156 x 73 x 35mm (6 x 3 x 1in)
Weight (battery included):	170g (6ounces)
Remote unit size (L x W x H):	72 x 20 x 23mm (3 x 1 x 1in)
Remote unit weight:	25g (1ounce)

Power supply

Battery type:	6x1.5V batteries type AAA LR03
Battery life:	200 continuous tests
Auto Power OFF:	after 15 minutes' idling

7.3. ENVIRONMENT

7.3.1. Environmental conditions for use

Reference temperature:	5°C ÷ 40 °C (41°F ÷ 104 °F)
Allowable relative humidity:	<80%RH
Storage temperature:	-10°C ÷ 60°C (14°F ÷ 140 °F)
Storage humidity:	<70%RH
Pollution level:	2

This instrument complies with European Directive EMC 2014/30/EU
This instrument satisfies the requirements of European Directive 2011/65/EU (RoHS) and 2012/19/EU (WEEE).

7.4. ACCESSORIES

7.4.1. Accessories provided

- Remote unit RJ45 #1 Code. RT-01
- Remote unit RJ11/COAX #1 Code. RJX-01
- Patch cable RJ45/RJ45, CAT5, STP, 20cm, 2pcs
- Patch cable RJ11, 20cm
- Patch cable COAX (F), 25cm
- Batteries (not inserted)
- Carrying bag
- User manual

7.4.2. Optional accessories

- Set of 3 RJ45 remote units #2,#3,#4 + 3 patch cables Code RT-0204

8. SERVICE

8.1. WARRANTY CONDITIONS

This instrument is warranted for 1 year against any material or manufacturing defect, in compliance with the general sales conditions. During the warranty period, defective parts may be replaced. However, the manufacturer reserves the right to repair or replace the product. Should the instrument be returned to the After-sales Service or to a Dealer, transport will be at the Customer's charge. However, shipment will be agreed in advance.
Only use original packaging for shipment; any damage due to the use of non-original packaging material will be charged to the Customer. The manufacturer declines any responsibility for injury to people or damage to property. The warranty shall not apply in the following cases:

- Repairs that may become necessary as a consequence of an incorrect use of the instrument or due to its use together with non-compatible appliances.
- Repairs that may become necessary as a consequence of improper packaging.
- Repairs which may become necessary as a consequence of interventions performed by unauthorized personnel.
- Modifications to the instrument performed without the manufacturer's explicit authorization.
- Use not provided for in the instrument's specifications or in the instruction manual.

The content of this manual cannot be reproduced in any form without the manufacturer's authorization.

Our products are patented and our trademarks are registered. The manufacturer reserves the right to make changes in the specifications and prices if this is due to improvements in technology.

8.2. AFTER-SALES SERVICE

If the instrument does not operate properly, before contacting the After-sales Service, please check the conditions of battery and cables and replace them, if necessary. Should the instrument still operate improperly, check that the product is operated according to the instructions given in this manual. Should the instrument be returned to the After-sales Service or to a Dealer, transport will be at the Customer's charge. However, shipment will be agreed in advance. A report will always be enclosed to a shipment, stating the reasons for the product's return. Only use original packaging for shipment; any damage due to the use of non-original packaging material will be charged to the Customer.