



Multifunction Cable

Tracer and Tester

SML-QTS

Single-Ended Test · Cable Tracing · Wire Mapping



Document Information

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About This Manual

This manual describes the SML-QTS structure, specifications, single-ended testing, cable tracing, two-ended wire mapping, result interpretation, safety, maintenance, troubleshooting, and package contents.

Read and Retain

Read this manual before first use, especially the de-energizing requirements in Chapter 4 and the safety boundaries in Chapter 7. Retain it for future reference.

For support, call 0769-85011391 or visit shom.cn.

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Chapter 1

Product Overview

The SML-QTS consists of a transmitter and a receiver with a 0.96-inch LCD. It is designed for structured cabling, low-voltage maintenance, and line identification. The product provides three core functions:

- **Single-ended testing:** the receiver independently checks the inserted RJ45 termination and identifies specific faulted conductors.
- **Cable tracing:** the transmitter sends a signal; the receiver uses displayed strength, buzzer rate, and sensitivity to locate the cable.
- **Wire mapping:** the units connect to opposite ends of an RJ45 cable to check 2–8 conductor order and continuity.

1.1 Two Core Workflows

New or re-terminated cable:

De-energize → check each termination → connect both ends → run wire mapping.

Unknown installed cable:

De-energize → connect the known end to the transmitter → trace with the receiver → find the far end → connect it directly to the receiver for wire mapping.

There is no need to return to the transmitter or select a separate wire-map position or button on the receiver.

1.2 Functional Boundaries

Area	Boundary
Single-ended test	RJ45 only; checks the inserted end and does not replace two-ended testing of the complete cable.
RJ11 / BNC	Tracing only; no single-ended test or wire mapping.
RJ45 wire mapping	Supports 2–8 conductors; single-conductor testing is not supported.
Certification	Does not certify data rate, attenuation, crosstalk, shielding performance, or link category.
Tracing indication	Interference, distance, and sensitivity affect results; interpret the display and buzzer together.

DANGER Test only completely de-energized cable. PoE port-misconnection protection does not permit energized testing. Disconnect the cable from switches, PoE equipment, telephone equipment, and every other power source before connection.

Chapter 2

Structure and Components

2.1 Transmitter

Component / Port	Purpose
RJ45 network port	Connects the known end for network-cable tracing and two-ended wire mapping.
RJ11 two-conductor port	Connects telephone or two-conductor cable for tracing only.
BNC coaxial port	Connects coaxial cable for tracing only.
Three-position switch	Off / Network / Two-Conductor; BNC tracing uses Two-Conductor.
Status indicator	Green in Network; red in Two-Conductor.
USB Type-C and charging indicator	Charges the built-in battery; red while charging and green when full.

2.2 Receiver

Component / Port	Purpose
0.96-inch LCD	Shows single-ended status and faulted conductors, tracing strength, wire map, and battery level.
Bottom RJ45 test/wire-map port	Shared by single-ended testing and wire mapping; do not insert an RJ11 / 6P plug.
Three-position switch	Off / Network / Two-Conductor; select by cable type during tracing.
Buzzer control	Enables or mutes the buzzer during tracing; muting does not affect the display.
Sensitivity control and buzzer	Adjusts receive sensitivity and provides a proximity cue.
USB Type-C and charging indicator	Charges the built-in battery; red while charging and green when full.

NOTE Controls or connectors visible in photographs but not defined by the confirmed product information are not assigned a function in this manual. Use only the components listed here.

2.3 Transmitter Views and Ports



Figure 2-1 Transmitter RJ45 / RJ11 ports, mode and charging side, and BNC port

2.4 Receiver Views and Port



Figure 2-2 Receiver front, rear, sides, and bottom RJ45 test/wire-map port

Chapter 3

Specifications

3.1 General Specifications

Item	Specification
Product / Model	SML-QTS Multifunction Cable Tracer and Tester
Display	0.96-inch LCD on receiver
Housing	ABS
Transmitter / receiver battery	Built-in 3.7 V / 1200 mAh lithium battery in each unit
Charging port and input	USB Type-C; 5 V / 1000 mA
Nominal charging time	Approx. 1.5 hours
Charging indication	Red while charging; green when fully charged
Operating environment	-10 °C to +60 °C; 10% to 70% RH
Package dimensions	250 × 159 × 59 mm
Weight	435 g

3.2 Functional Specifications

Item	Specification
Network-cable tracing	500 m
Two-conductor tracing	300 m
BNC coaxial tracing	300 m, same as two-conductor tracing
Single-ended test	RJ45 only; automatic after insertion; identifies specific faulted conductors
Wire-map range	RJ45 with 2–8 conductors; single-conductor testing is not supported
Wire-map faults	Open, short, and crossover
Transmitter / receiver switch	Off / Network / Two-Conductor
PoE protection	Port-misconnection protection only; energized testing is not supported

CAUTION Tracing distances are nominal. Interference, cable condition, distance, and sensitivity settings can affect actual performance.

Chapter 4

Preparation

4.1 Completely De-Energize the Cable

DANGER Do not connect the product to mains power, an unknown-voltage circuit, or an energized PoE cable. If de-energized status is uncertain, use suitable equipment and qualified personnel before proceeding.

1. Disconnect the cable from switches, PoE equipment, telephone equipment, and all other devices.
2. Confirm that the cable is not connected to any power source or unknown circuit.
3. If status cannot be confirmed, do not connect, trace, test, or map the cable.

4.2 Inspect the Units and Ports

1. Confirm that the transmitter, receiver, and required accessories are present.
2. Inspect the housings, LCD, controls, switches, buttons, and ports for damage.
3. Remove cable jacket fragments, copper debris, or other foreign material from ports.
4. Do not operate in wet areas, standing water, or where conductive liquid may be present.

4.3 Charging

Both units charge through USB Type-C:

1. Use an undamaged cable and a 5 V / 1000 mA power source.
2. Nominal charging time is approximately 1.5 hours.
3. The indicator is red while charging and green when fully charged.

WARNING If a unit becomes unusually hot, emits odor or smoke, shows a black screen, or deforms, disconnect the charging cable and test cable immediately. Stop use and do not disassemble the unit.

4.4 Select the Port and Position

Use RJ45 and Network for network cable. Use RJ11 and Two-Conductor for telephone or two-conductor cable. Use the BNC port and Two-Conductor for coaxial tracing. The bottom receiver port accepts RJ45 network plugs only.

Task	Transmitter Port / Position	Receiver
RJ45 single-ended test	No test-cable connection	Bottom RJ45; automatic after insertion
RJ45 tracing	RJ45 / Network	Network
RJ11 / two-conductor tracing	RJ11 / Two-Conductor	Two-Conductor
BNC coaxial tracing	BNC / Two-Conductor	Two-Conductor
RJ45 wire mapping	RJ45 / Network	Bottom RJ45; automatic display

Chapter 5

Operation

5.1 RJ45 Single-Ended Test

The receiver performs this test independently and checks only the inserted termination.

NOTE A normal single-ended result means only that the inserted termination passed the basic check. Use two-ended wire mapping to check the complete cable.

- 1. Confirm that the network cable is completely disconnected from every device and power source.
- 2. Turn on the receiver and fully insert the terminated end into the bottom RJ45 test/wire-map port.
- 3. Testing starts automatically; no button is required.
- 4. Read the display. If abnormal, note the specific faulted conductors shown.



Figure 5-1 Normal RJ45 single-ended test screen. The on-screen label “单端” means “Single-Ended.”

- 5. Remove the cable, inspect conductor order, insertion depth, plug type, and crimp position, then retest.

5.2 RJ45 Network-Cable Tracing

1. Confirm that the cable is completely de-energized.
2. Set both units to Network and confirm that the transmitter indicator is green.
3. Connect the known end to the transmitter RJ45 port.
4. Move the receiver near cables, a patch panel, or candidate ports.
5. Compare display strength and buzzer rate. A larger value and faster rate usually indicate closer proximity.



Figure 5-2 Network-cable tracing screen. “网线探头” means “Network Probe,” and “信号强度” means “Signal Strength.”

6. Adjust sensitivity and repeat the comparison at adjacent locations when necessary.
7. To work silently, mute the buzzer and continue using the displayed strength.

5.3 RJ11 Telephone or Two-Conductor Tracing

1. Confirm that the line is completely de-energized.
2. Set both units to Two-Conductor and confirm that the transmitter indicator is red.
3. Connect the cable to the transmitter RJ11 port.
4. Move the receiver along the cable or candidate ports and compare display strength and buzzer rate.
5. Mute the buzzer or adjust sensitivity when necessary, then repeat the comparison.



Figure 5-3 Two-conductor tracing screen. “两芯线探头” means “Two-Conductor Probe.”

5.4 BNC Coaxial Tracing

1. Confirm that the coaxial cable is completely de-energized.
2. Set both units to Two-Conductor.
3. Connect the coaxial cable to the transmitter BNC tracing port.
4. Move the receiver along the cable and compare display strength and buzzer rate.

CAUTION The BNC port is for coaxial tracing only, with a nominal distance of 300 m. No other coaxial test is supported.

BNC coaxial tracing uses the same Two-Conductor screen shown in Figure 5-3.

5.5 Two-Ended RJ45 Wire Mapping

The transmitter must remain in Network. Results display automatically after both ends are connected; the receiver has no separate wire-map position or required button.

5.5.1 Continue Directly After Tracing

1. Keep the known end connected to the transmitter RJ45 port and keep the transmitter in Network.
2. Trace and identify the far end.
3. Insert the far end directly into the bottom receiver RJ45 test/wire-map port.
4. Read the automatically displayed local and remote order and continuity result.

5.5.2 Start Wire Mapping Directly

1. Completely de-energize the cable and turn on the receiver.
2. Set the transmitter to Network and confirm that the green indicator is on.
3. Connect opposite cable ends to the transmitter RJ45 port and receiver RJ45 test/wire-map port.
4. Read the automatically displayed order and continuity status.

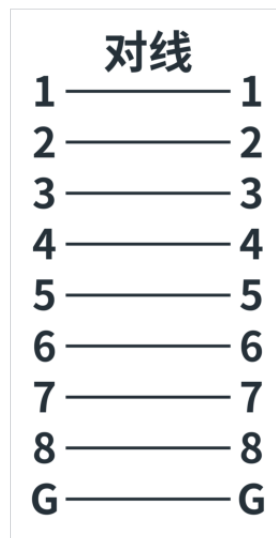


Figure 5-4 Normal RJ45 wire-map screen. The on-screen label “对线” means “Wire Map” ; local and remote 1–8 and G correspond.

5.6 Recommended Workflows

5.6.1 Newly Made Network Cable

1. Completely de-energize the cable and terminate the first RJ45 end.
2. Run a receiver single-ended check; correct the termination if abnormal.
3. Terminate the second end and run the same single-ended check.
4. Set the transmitter to Network and connect opposite ends to the transmitter and receiver RJ45 ports.
5. Read the complete cable order and continuity result; correct faults and retest.

5.6.2 Installed Network Cable

1. Disconnect the target cable from every device and power source.
2. Connect the known end to the transmitter RJ45 port and start Network tracing.
3. Use the receiver to locate the cable, route, or far-end port.
4. Insert the identified far end directly into the receiver RJ45 test/wire-map port.
5. Read the automatic order and continuity result; correct faults and retest.

5.6.3 Telephone or Coaxial Cable

Completely de-energize the cable, connect it to the transmitter RJ11 or BNC port as appropriate, and set both units to Two-Conductor. Locate the cable with the display and buzzer. This workflow ends after tracing; do not continue to single-ended testing or wire mapping.

Chapter 6

Result Interpretation

6.1 Single-Ended Results

Display	Meaning	Action
Normal	The inserted termination passed the basic check.	Continue to two-ended mapping to check the complete cable.
Abnormal with conductor indication	The inserted termination has a fault.	Inspect order, insertion depth, plug type, and crimp position as indicated.

6.2 Wire-Map Results

Result	Display Behavior	Interpretation / Action
Normal	Local and remote 1–8 order matches conductor by conductor.	Order and continuity are normal.
Open	The corresponding remote number or connection line is absent.	Inspect the conductor and both terminations.
Short	The short-circuit area identifies the affected conductors.	Inspect and re-terminate the shorted conductors.
Crossover	Corresponding local and remote numbers do not match.	Re-terminate to the intended order.

The unit can display continuity and conductor order when any two conductors are connected. Single-conductor testing is not supported.

6.3 Meaning of Tracing Indications

Display strength and buzzer rate are relative comparison cues, not distance measurements. A larger value and faster buzzer usually indicate closer proximity. Repeat comparisons at adjacent positions and consider cable routing, distance, interference, and sensitivity.

CAUTION No result certifies data rate, attenuation, crosstalk, shielding performance, or link category.

6.3.1 Practical Comparison Sequence

1. Begin with moderate sensitivity and move the receiver along the expected route.
2. Compare several adjacent cables or ports instead of relying on one reading.
3. Reduce sensitivity when multiple nearby candidates all produce strong indications.
4. Repeat from a different angle or position when interference makes readings unstable.
5. Confirm the selected RJ45 far end with two-ended wire mapping whenever applicable.

Chapter 7

Safety and Maintenance

7.1 Safety Precautions

- Before connection, tracing, single-ended testing, or wire mapping, disconnect the cable from all devices and power sources.
- Do not connect to mains power, unknown voltage, or an energized PoE cable.
- Do not operate in wet areas, standing water, or where conductive liquid may be present.
- Stop use if a housing, port, LCD, switch, or control is damaged.
- Do not disassemble a unit when a port, battery, or internal-circuit fault is suspected.

7.2 Cleaning and Inspection

1. After use, clean ports with a dry soft brush or lint-free cloth.
2. Do not use corrosive liquid or spray cleaner into a port.
3. Do not probe contacts with a metal object.
4. Periodically inspect contacts, USB Type-C ports, LCD, controls, switches, and buttons.

7.3 Storage

Turn off both units and disconnect test and charging cables. Clean the units and place them in the carrying pouch. Store in a dry, ventilated location away from heat, strong sunlight, heavy loads, and children. During long storage, check battery condition periodically.

Chapter 8

Troubleshooting

Disconnect test and charging cables before troubleshooting. If multiple known-good samples show the same fault, stop use and contact support.

Symptom	Possible Cause	Recommended Action
Abnormal single-ended result	Conductor not fully inserted, wrong order, unsuitable plug, or incorrect crimp position	Follow the displayed conductor indication and re-terminate.
Unstable tracing strength	Unsuitable sensitivity or strong local interference	Adjust sensitivity and compare adjacent positions.
Target cannot be found	Wrong position or port, or distance / environment exceeds capability	Check position and port, then retest closer to the cable.
No wire-map result	Far end not connected, plug not seated, or cable open	Check both ports and use missing numbers to locate the conductor.
Short or crossover shown	Shorted conductors, wrong crimp, or wrong order	Inspect the indicated conductors, correct, and retest.
Black screen, unusual heat, or odor	Battery, port, or internal-circuit fault	Disconnect cables immediately, stop use, and do not disassemble.

8.1 Recommended Order After a Termination Fault

1. Confirm again that the cable is disconnected from all devices and power sources.
2. Confirm that the receiver port and plug are fully seated.
3. Check plug type, conductor order, insertion depth, and jacket retention.
4. Replace the plug and re-terminate if necessary.
5. Repeat the single-ended check, then perform complete two-ended wire mapping.

Chapter 9

Package and Version Information

9.1 Package Contents

Item	Quantity
Transmitter	1
Receiver	1
Carrying pouch	1
Color box	1
USB Type-C charging cable	1
RJ11 alligator-clip lead	1
Certificate / warranty card	1 set

Check the actual package after opening. If anything is missing or damaged, retain the packaging and contact the purchase channel or support.

9.2 Warranty and Support

Item	Details
Warranty	One year of free repair; lifetime after-sales support
Service method	Return to factory
Support phone	0769-85011391
Website	shom.cn

Version Information

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