

# For more reliable connections choose MICROTEST Cable Tester



Continuity Test



O/S Test



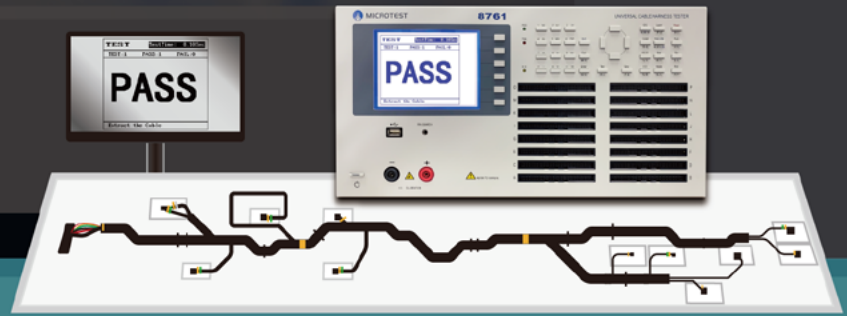
Safety Test



Component Test



USB Type-C Test



## Application



## Low-Voltage Electrical Measurement Items



### Continuity Test

Verifies whether the cable can conduct current normally by measuring resistance to ensure electrical connectivity within the circuit.

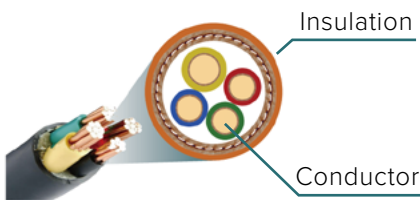
### Short/Open Circuit Test

Ensures circuit functionality and safety by detecting potential open or short circuit conditions within the cabling.

### Component Test

Validates that the cable assembly can operate within specific electrical environments by measuring integrated components such as resistance, capacitance, and diodes.

## High-Voltage Measurement Items



### Hipot Test

Verifies insulation integrity by applying high AC/DC voltage and monitoring leakage current between test points.

### IR Test

Measures resistance at specific high voltages to ensure insulation reliability under extreme operating conditions.

## USB Type-C Testing Items



### Orientation Auto-ID

Supports reversible insertion with automatic circuitry learning.

### Component Test

Auto-identifies and tests Ra resistors, capacitors, and diodes within the cable.

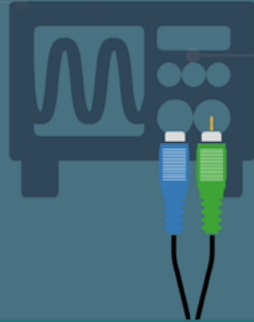
### E-Marker IC

Reads VDO Codes to analyze protocol versions and specifications.

### 5A Voltage Drop Test

Measures Vbus/ GND voltage differential or internal resistance (DCR).

# APPLICATION



## Comprehensive Electrical and Safety Compliance Testing in a Single Unit





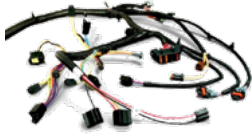

## One-stop Measurement of Continuity, Short/Open, Hipot, and Insulation Quality



ITEM SEL - File:123		PROG
ITEM	TEST	
[1] OPEN/SHORT	<input checked="" type="checkbox"/>	
[2] CONDUCTANCE	<input checked="" type="checkbox"/>	
[3] COMPONENT	<input type="checkbox"/>	
[4] AC HIPOT	<input type="checkbox"/>	
[5] DC INSUL./HIPOT	<input checked="" type="checkbox"/>	
[6] Q.CONDUCTANCE	<input type="checkbox"/>	
[7] INTERMITTENCE O/S	<input type="checkbox"/>	
[8] Q.INTERMITT. OPEN	<input type="checkbox"/>	

TEST		TestTime: 0.88Sec
TEST:5	PASS:5	FAIL:0
O/S TEST	.....	PASS
COND A08*B01	0.087Ω	
COND A07*B02	0.080Ω	
COND A06*B03	0.080Ω	
COND A05*B04	0.084Ω	
COND A04*B05	0.087Ω	
COND A03*B06	0.093Ω	
COND A02*B07	0.085Ω	
COND A01*B08	0.074Ω	
INSUL (MUX) TEST	.....	PASS
Extract the Cable		

PASS

			
<b>General Wire Harness</b>	<b>Direct Attach Cable, DAC</b>	<b>Automotive Low-Voltage Harness</b>	<b>USB Type-C Cable</b>
8740	8761	8761NAK/8740NAK	8761NAC
<ul style="list-style-type: none"> <li>Continuity Test 100mΩ~52Ω</li> <li>AC/DC Hipot Test</li> <li>Insulation Resistance Test</li> </ul>	<ul style="list-style-type: none"> <li>Low Resistance Continuity Test 1mΩ~52Ω</li> <li>AC/DC Hipot Test</li> <li>Insulation Resistance Test</li> </ul>	<ul style="list-style-type: none"> <li>Supports up to 1024 test points</li> <li>AC/DC Hipot Test</li> <li>Insulation Resistance Test</li> </ul>	<ul style="list-style-type: none"> <li>USB-C Orientation Circuit Test</li> <li>Ra Resistor/ Filter Capacitor Test</li> <li>5A Voltage Drop-Internal Resistance Test</li> </ul>
Refer to P.103	Refer to P.95	Refer to P.97/ P.105	Refer to P.109

# MICROTEST Provides Customized Solutions: Tailored Test Fixtures for Harness Assemblies

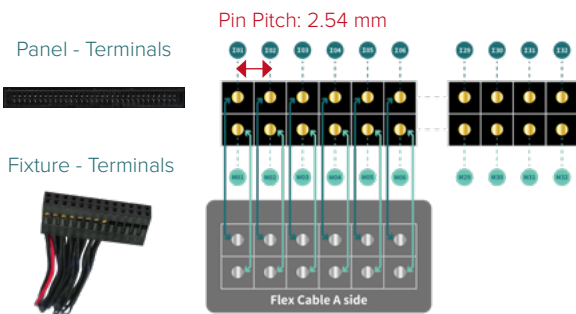


Test Item	Customized Test Fixtures	Device Under Test
<ul style="list-style-type: none"> <li>O/S</li> <li>Continuity Test</li> <li>Insulation Resistance</li> </ul>		<p>8-circuit configuration</p>

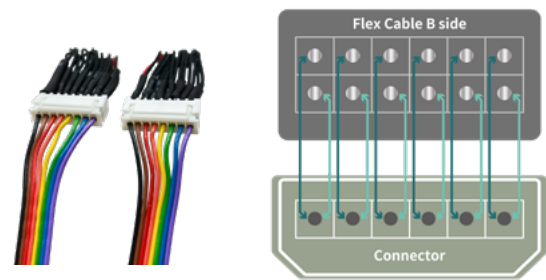
Cable Tester

## Wiring Methods From Instrument to Device Under Test

### Panel to Test Fixture



### Test Fixture to Harness



## Three High-Voltage/Insulation Measurement Modes to Maximize Throughput

### All-Ground

Tests Hipot and insulation between each conductor and the ground (shield) to ensure grounding safety.

### Binary

**Rapidly determines whether the overall batch is Pass or Fail**

Groups conductors in parallel to significantly accelerate Hipot and IR detection efficiency.

### All Nets

**Displays individual Hipot and insulation values for each conductor core**

Progressively tests each conductor against all remaining conductors to evaluate insulation performance.

Optimization Based on Production Capacity

On the production line, Binary and All Nets Modes can be enabled simultaneously

- If the result is PASS: The test cycle completes immediately, ensuring maximum efficiency.
- If the result is FAIL: The instrument automatically triggers a sequential, conductor-by-conductor scan to pinpoint the specific defective core.

Mode	Step	1	2	3	4	5	6	7	8
Binary Mode	STEP 1	+	+	+	+	-	-	-	-
	STEP 2	+	+	-	+	+	-	-	-
	STEP 3	+	-	+	-	+	+	-	-
All Nets Mode	STEP 1	+	-	-	-	-	-	-	-
	STEP 2	-	+	-	-	-	-	-	-
	STEP 3	-	-	+	-	-	-	-	-
	STEP 4	-	-	-	+	-	-	-	-
	STEP 5	-	-	-	-	+	-	-	-
	STEP 6	-	-	-	-	-	+	-	-
	STEP 7	-	-	-	-	-	-	+	-
	STEP 8	-	-	-	-	-	-	-	+

Item	DC	Hipot
111 Voltage	50V	200V
121 Frequency	Insul.	50Hz
131 Test rate	NOFF	NOFF
141 Spec.	0.1MP	0.50mA
151 HFFsel	0.0MP	0.00mA
161 All-Ground	OFF	OFF
171 Binary	ON	ON
181 Time	0.01Sec	0.01Sec
191 All nets	OFF	OFF
1101Time	0.01Sec	0.01Sec
1111MD pin	NO1	NO1

TEST #	Test Time: 0.77Sec
TEST-1	PASS-1 FAIL-0
O/S TEST	..... PASS
INSUL (NO3)	1200.00HR
INSUL (NO6)	1200.00HR
INSUL (NO7)	1200.00HR
INSUL (NO4)	1200.00HR
INSUL (NO5)	1200.00HR
INSUL (NO2)	1200.00HR
INSUL (NO1)	1200.00HR

Extract the Cable

# USB Type-C Tester

## 8761NAC

Test Pin

4-Wire (64/128 PIN) | 8761NAC

Cable Tester



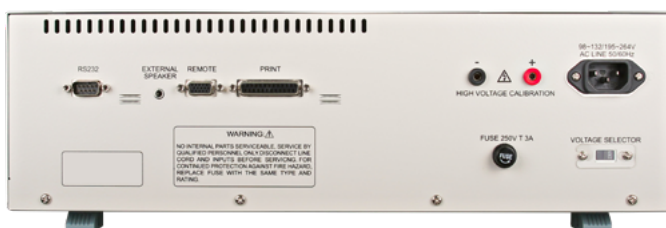
For USB Type-C cable/connector testing, the dedicated option MICROTEST 8761NAC is available. It utilizes a 4-wire measurement technology and supports automatic detection of USB Type-C loop orientation for connectors. It offers a maximum AC withstand voltage of 700V and a maximum DC withstand voltage of 1000V. It is equipped with the FX-000C28 2-in-1 current source expansion box, which provides the capability to perform Continuity Test, open/short circuit, safety withstand voltage insulation, RA resistance, and filtering capacitor tests on USB Type-C cables/connectors. By selecting the FX-000C28 2-in-1 current source expansion box, it is possible to conduct 5A voltage drop internal resistance testing and VDO code reading for E-Marker IC on USB Type-C cables.

## Application

USB Type-C Cable, USB Type-C Connector

## Feature

- 4-wire measurement Continuity Test  $1m\Omega\sim 52\Omega$
- Test pin 64/ 128/ 256
- Automatically identify the normal or reverse plugin of wire or connectors
- Voltage Drop Test for Fast-Charge Products (Optional: FX-000C28C)
- Support bar code scan and print function
- Safety Test(AC Hipot Test/ DC Hipot Test/ DC insulation/ Leakage Current)
- USB Host stores setting files and can update firmware
- Continuity Test, Intermittence Continuity Test, O/S, Intermittence O/S, Quick Intermittence open circuit
- Component test (RA resistance/ Filtering capacitor)



## Standard Interfaces

RS-232

USB Host

Remote

Print

## Specification

Model	8761NAC	
Measuring Mode	4-wire	
Test Pin	64/128/256	
Safety Hipot Test		
AC Hipot Test	100~700V	
DC Hipot Test	50~1000V	
AC Hipot Leakage Current	0.01mA~5mA	
AC Arcing Detection	1~48	
DC Hipot Leakage Current	0.1uA~1200uA	
DC Arcing Detection	1~48	
DC Hipot Insulation Resistance	1MΩ~1.2GΩ	
Hipot Output Accuracy	±5%	
Hipot Measurement Accuracy	±5%	
Rated Output	5Vdc	
Hipot Measurement Time	0.01sec~60sec	
Wire Specifications	Maximum allowable capacitance 5μF	
Low Voltage Electrical Test		
Continuity Test	Measurement Range	1mΩ~52Ω
	Current Signal	10mA
Intermittence Continuity Test	100mΩ~52Ω	
O/S, Intermittence O/S, Quick Intermittence Open Circuit	1kΩ~100kΩ	
OS Positive and Negative Judgment Method	Learning netlist by four groups	
OS Voltage	Adjustment range 0.1V-4V	
OS Netlist Test Mode	Pattern/point-by-point scanning	
O/S Terminal Judge	●	
Single-Side Test	●	
Component Test		
Resistance	Measurement Range	50mΩ~20MΩ
	Level Signal	0.1~3V
Capacitance	Measurement Range	10pF~12μF
	Frequency Signal	AUTO Gear
Diode	Level Signal	0.1V~1.2V
	Measurement Range	0.1~6.8V
Advanced Functions	Programmable continuous test/ Auto Pin search/ Auto-diagnosis	
Test Scan Mode	Auto, Manual, External Trigger	
Measurement Signal	Low Voltage Measurement Signal	
Built-in Storage	Number of test file up to 500 sets	
Panel	System/ Rapid/ Edit/ Function	
Indicator	Pass/ Fail HV LED red-green indicator lights/ Screen Display/ Sound	

## General

Power Supply	Fixed Voltage : 115/ 230 Vac ±10%, Frequency : 60/50Hz
Power Consumption	64 PIN : 70VA, 128 PIN : 70VA
Interface	RS-232, USB Host, Print, Remote
PC Link Software	●
Operation	Manual, Auto, Remote Control
Display	320*240 dot-matrix
Environment	Temperature : 15°C~35°C, Humidity : RH≤70%
Dimension (W*H*D)	64 PIN : 435x145x406mm, 128 PIN : 435x145x406mm
Weight	64 PIN : 8.44kg, 128 PIN : 9.3kg

# Combined Intermittent Contact & 5A Voltage Drop Testing: Ensuring USB Type-C Operational Stability

Eliminate Intermittent Open Circuits and Poor Contact

Ensure Stable Connectivity in Dynamic Environments

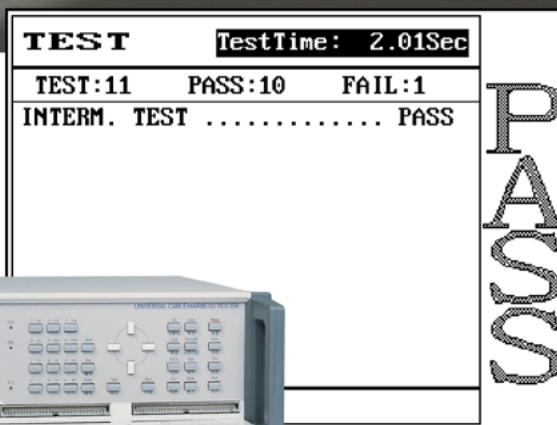
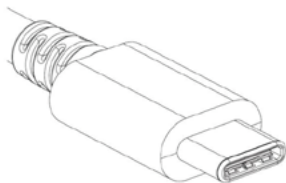
Support USB Type-C Reversible Orientation Identification

Simulate Dynamic Performance Under Real-World Operating Conditions

Measure Voltage Differential and DCR to Guarantee Fast-Charge Quality

Integrate E-Marker IC VDO Code Analysis into Production Testing

## USB Type-C Tester 8761NAC



The objective of Intermittence Continuity Testing is to detect transient open circuits or poor contact caused by dynamic movement or external stress. This ensures that USB Type-C cable assemblies maintain stable connectivity under real-world conditions—such as movement, vibration, or bending stress. By identifying these hidden flaws, the test minimizes risks associated with intermittent failures and significantly enhances overall product quality and reliability.

Item	Continuity Test	Intermittence Continuity Test
Test Objective	Verifies electrical connectivity under static conditions.	Detects intermittent connection issues under dynamic or external stress.
Test Conditions	Cable remains in a stationary/static state.	Cable is subjected to external force, vibration, or bending.
Detection Scope	Cannot detect brief, transient contact failures.	Capable of detecting micro-second open circuits or poor contact.
Applications	General-purpose wire harness connectivity testing.	Critical harnesses for Automotive, Medical, or Automation industries.

USB Type-C Critical Testing Items
<ul style="list-style-type: none"> <li>• 5A Voltage Drop &amp; Internal Resistance</li> <li>• E-Marker IC Parsing (VDO Code, power delivery specifications)</li> <li>• Protection Component Measurement (Ra resistors, Filter capacitors, Diode)</li> </ul>

# Functions

## 8761NAC Supports Standard Electrical Testing for Wire Harnesses

### Support for Open/Short Circuit Testing

When the open/short circuit test function is enabled, the instrument automatically learns the loop of the harness. It detects points at both ends of the cable circuit or between circuits that should not be connected together, identifying faults caused by unintended short circuits.

Model	Open/Short Test
8761NAC	1kΩ~100kΩ

### Support for Continuity Testing

With the continuity test function enabled, the instrument checks all connected pins of the cable for proper continuity, judging by the resistance values.

Model	Continuity Test	Intermittence Continuity Test
8761NAC	1mΩ~52Ω	100mΩ~52Ω

### Support for AC/DC Hipot and insulation testing

MICROTEST Cable Tester supports AC/DC Hipot and insulation testing. It applies a stable high voltage to test the dielectric strength and insulation performance of cables. The tester can also enable arc detection to assess whether cable connectors arc under high voltage conditions, ensuring compliance with safety standards for cable quality.

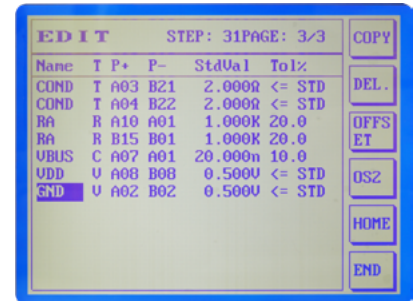
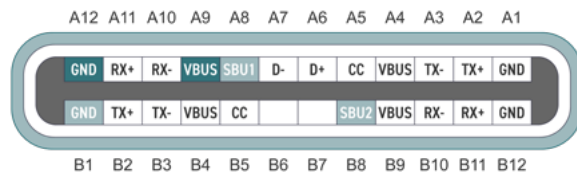
Model	8761NAC
AC Voltage/ Leakage Current	100V~700V/ 5mA
DC Voltage/ Leakage Current	50V~1000V/ 1200μA
Insulation Voltage/ Range	50V~1000V/ 1.2GΩ

## Testing of RA Resistors, Filter Capacitors, and Diodes

USB Type-C cable circuit protection design typically includes RA resistors (Resistor Assembly) and filter capacitors to ensure signal integrity and EMI resistance. Additionally, diodes are installed between the plug and socket pins and ground.

The 8761NAC automatically identifies the positions of RA resistors, filter capacitors, and protection diodes in USB Type-C cables, learns the circuit layout, and conducts tests.

- Isolation Diode
- RA Resistor
- Signal Line vs. Ground - Filter Capacitor
- Signal Line vs. Ground - Equivalent Capacitance



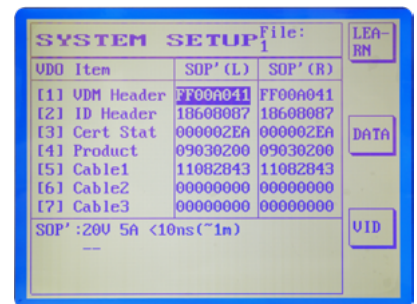
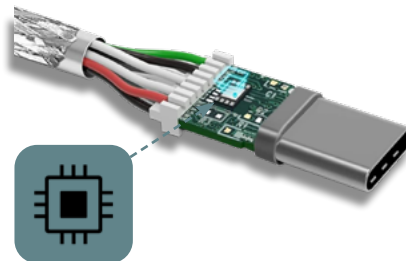
## Support for interpreting the VDO Code burned into E-Marker ICs

USB Type-C 3.1 and above versions incorporate E-Marker ICs, enhancing connector intelligence and safety. The 8761NAC reads the Vendor Data Object (VDO) from each E-Marker IC, performs learning and comparison tests, and displays the VDO data for each USB Type-C cable, along with the supported power specifications of the cable assembly.

\*Option FX-000C28/ FX-000C28C



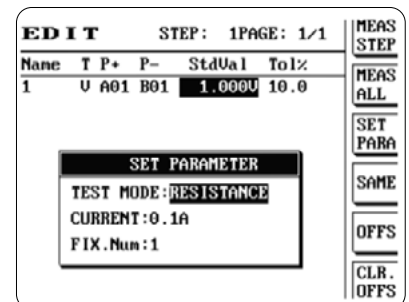
FX-000C28  
(2-in-1 current source expansion box)



## 5A Voltage drop test (Voltage difference/Internal resistance)

As fast charging moves towards higher power levels, charging cables need to support up to 5A of high current. Key factors in cable quality include voltage drop and internal resistance. Voltage drop affects charging efficiency and speed, while lower internal resistance contributes to more efficient energy transfer.

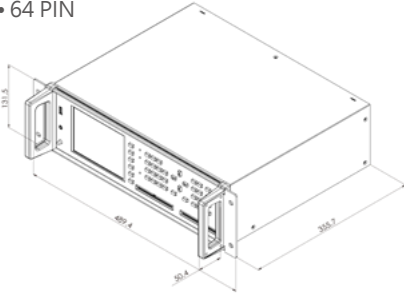
MICROTEST Voltage Drop Solutions: Supporting Up to 5A for USB Type-C and Fast-Charge Cable Testing



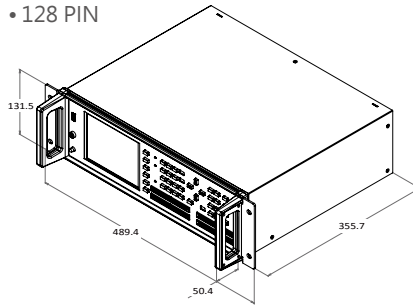
2-in-1 Current Source Expansion Box (5A)		
Model	FX-000C28	FX-000C28C
Spec	<ul style="list-style-type: none"> <li>• 5A Voltage Drop Test</li> <li>• E-Marker IC Parsing</li> </ul>	<ul style="list-style-type: none"> <li>• 5A Voltage Drop Test</li> <li>• E-Marker IC Parsing</li> <li>• External Lead-Wire Testing Support</li> </ul>

## Automatic Chassis Dimension -8761NAC

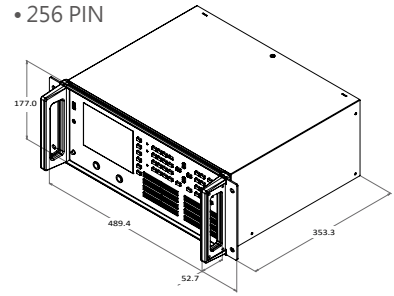
- Dimension (mm)
- 64 PIN



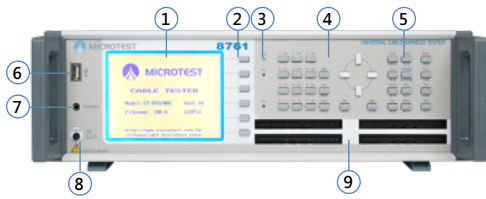
- 128 PIN



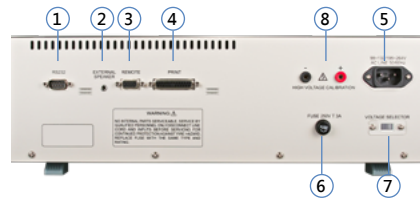
- 256 PIN



## Appearance



- 1. LCD Screen
- 2. Function Key
- 3. PASS & FAIL & HIPOT
- 4. Direction & Number Key
- 5. System Key
- 6. USB
- 7. Pin Search
- 8. Power Switch
- 9. 64Pin: 2 Slots, 128Pin: 4 Slots, 256Pin: 8 Slots



- 1. RS232
- 2. Audio Output Socket
- 3. Remote
- 4. Printer
- 5. AC INPUT
- 6. Fuse Block
- 7. 115/230V Switch
- 8. High Voltage Correction Output Connector

## Ordering Information

USB Type-C Tester	Standard	Optional
<ul style="list-style-type: none"> <li>• 8761NAC (64Pin/AC 700V/DC 1000V)</li> <li>• 8761NAC (128Pin/AC 700V/DC 1000V)</li> <li>• 8761NAC (256Pin/AC 700V/DC 1000V)</li> </ul>	<ul style="list-style-type: none"> <li>• FX-000C16 Adapter Board</li> <li>• FX-000C21 USB Type-A Test Fixture</li> <li>• FX-000C22 USB Type-C Test Fixture</li> <li>• AK-8600F2 Cable-64pin TO 64pin (40cm)</li> <li>• TL-CB0006 Search Pin-Probe (150cm)</li> <li>• Power Cord</li> </ul>	<ul style="list-style-type: none"> <li>• AK-8600F2 Cable-64pin TO 64pin (40cm)</li> <li>• FX-000C21 USB Type-A Test Fixture</li> <li>• FX-000C22 USB Type-C Test Fixture</li> <li>• FX-CB0001 Wi-Fi Fixture</li> <li>• TL-CB0001 Cable-64pin TO 64pin (100cm)</li> <li>• TL-CB0002 Cable-64pin TO 64pin (200cm)</li> <li>• TL-CB0004 Cable-26pin TO 26pin (40cm)   Supports USB Type-C Test Fixture 8740-F2</li> <li>• TL-CB0005 Cable-64pin TO 64pin (40cm)</li> <li>• F874001 Multiple DUT Testing Expand Box (Expand up to 14 DUTs)</li> <li>• F874002 Multiple DUT Testing Expand Box (Expand up to 14 DUTs/Signal Light Display)</li> <li>• F874004 Networking Fixture</li> <li>• F874005 Remote Signal Light Box</li> <li>• FX-000C15 Adapter Board (4-wire 64pin TO 2-wire 64pin)</li> <li>• FX-000C17 Adapter Board (4-wire 32pin TO 2-wire 32pin)</li> <li>• FX-000C18 Intermience O/S Fixture</li> <li>• FX-000C25 Remote Expansion Box (Multiple DUT Test/ Remote Signal Light Display)</li> <li>• FX-000C27 Current Expand Box- 5A Voltage Drop Test</li> <li>• FX-000C28C 2-in-1 Current Expansion Box- 5A Voltage Drop Test, E-Marker IC Test   Top pin header for external test leads</li> <li>• FB-8600M1 Universal Fixture Board</li> <li>• F760001 D-Sub Foot Switch (15 PIN)</li> <li>• TL-000011 USB TO RS-232 Cable</li> <li>• TL-000012 D-Sub Cable</li> <li>• TL-000003 RS-232 Cable (180cm)</li> <li>• KB-8750K1 Calibration Kits-4-Wire   Model.8761</li> <li>• TM-U220PB-T EPSON Printer- TM-U220PB (Traditional Chinese/English)</li> <li>• TM-U220PB-S EPSON Printer- TM-U220PB (Simplified Chinese/English)</li> <li>• PC Link Software</li> </ul>

# Fixture & Accessories

**TL-CB0006**  
Probe



**TL-CB0003**  
Probe



**AK-8600F2**  
Cable

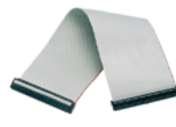


Applicable Models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8730	8740/ 8761/ 8761NAC
Accessory Description	150cm	105cm	40cm   64pin TO 64pin

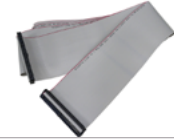
**TL-CB0005**  
Cable



**AK-8600F1**  
Flexible Flat Cable

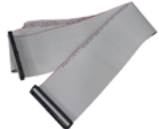


**TL-CB0001**  
Cable



Applicable Models	8761NAK/ 8740NAK	8740/ 8761/ 8761NAC/ 8740NAK	8740/ 8761/ 8761NAC/ 8740NAK
Accessory Description	40cm   64pin TO 64pin	30cm   64pin TO 64pin	100cm   64pin TO 64pin

**TL-CB0002**  
Cable



**FX-000C15**  
Adapter Board



**FX-000C16**  
Adapter Board



Applicable Models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8761/ 8761NAC/ 8761NAK	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK
Accessory Description	200cm   64pin TO 64pin	4-wire 128pin TO 2-wire 64pin	2-wire 64pin TO 2-wire 64pin

**FX-000C17**  
Adapter Board



**FX-000C21**  
USB Type-A Test Fixture



**FX-000C22**  
USB Type-C Test Fixture



Applicable Models	8761/ 8761NAC/ 8761NAK	8761NAC	8761NAC
Accessory Description	4-wire 64pin TO 2-wire 32pin	USB Type-A test fixture	USB Type-C test fixture

**8740-F2**  
USB Type-C Test Fixture



**TL-CB0004**  
Cable-26pin to 26pin



**FX-000C27**  
Current Expand Box



Applicable Models	8761NAC	8761NAC	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK
Accessory Description	USB Type-C test fixture	Supports USB Type-C Test Fixture 8740-F2   40cm	5A Voltage Drop Test   Applicable to Wire Harness

**FX-000C18**  
Intermience O/S Fixture



**FX-000C25**  
Remote Expand Box



Applicable Models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK
Accessory Description	Electronic Short/ Open Circuit Simulator (µs-ms range), with BNC output for oscilloscope connection; electronic switch withstand voltage up to 5V	Multiple DUT Test, Remote Signal Light Display

**F874001**  
Multiple DUT Testing Expand Box



**F874002**  
Multiple DUT Testing Expand Box



**F874005**  
Remote Signal Light Box



Applicable Models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK
Accessory Description	Expand up to 14 DUTs	Expand up to 14 DUTs/ Signal Light Display	Remote Signal Light Display

**FB-8600M1**  
Universal Fixture Board



**F760001**  
D-Sub Foot Switch (15 PIN)



**TL-000012**  
D-Sub Cable



Applicable models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8740/ 8761NAC/ 8740NAK
Accessory Description	Terminal test	Using in production line	150cm   15M TO 15M

**TL-000011**  
USB to RS-232 Cable



**TL-000003**  
RS-232 Cable (180cm)



**KB-8750K1**  
Calibration Kits-4 Wire



Applicable Models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8761
Accessory Description	Using in production line	Using in production line	9 pcs

**KB-8730K1**  
Calibration Kits-2 Wire



**TM-U220PB-T**  
EPSON Printer (Traditional Chinese/ English)



**TM-U220PB-S**  
EPSON Printer (Simplified Chinese/ English)



Applicable Models	8730/8740	8730/ 8740/ 8761/ 8761NAC/ 8740NAK	8730/ 8740/ 8761/ 8761NAC/ 8740NAK
Accessory Description	6 pcs	Connect print port, for print testing data	Connect print port, for print testing data

**F874004**  
Networking Fixture



**8730-J2**  
Adapter Board



Applicable Models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8740
Accessory Description	Turn RS232 connector to ethernet 10/ 100 Mbps	64pin

**FX-CB0001**  
Wi-Fi Fixture

**FX-000C28C**  
2-in-1 Current Expand Box

Applicable Models	8740/ 8761/ 8761NAC/ 8761NAK/ 8740NAK	8761NAC
Accessory Description	Wi-Fi Fixture	5A Voltage Drop Test, E-Marker IC test   Top pin header for external test leads