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TEST INSTRUMENTS & POWER SUPPLIES
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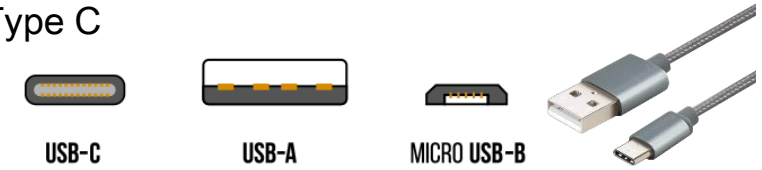
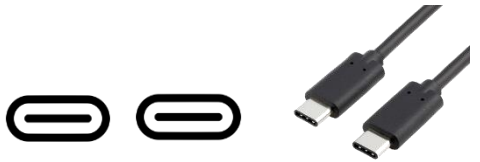
MICROTEST

8761NAC USB Type-C Test Solution

USB Type-C Test Solution

MICROTEST

8761NAC USB Type-C Tester	8761NAC USB Type-C Tester (Option FX-000C28)
Application：USB Type C 	Application：Type-C VS Type-C 

Test Items			
4-wire Measurement Conductance Test	V	4-wire Measurement Conductance Test	V
Conductance/Open/Short	V	Conductance/Open/Short	V
AC/DC Hipot Test & Leakage Current Test	V	AC/DC Hipot Test & Leakage Current Test	V
DC insulation Test	V	DC insulation Test	V
Component test (RA Resistance/equivalent capacitance/Diode)	V	Component test (RA Resistance/equivalent capacitance/Diode)	V
		Voltage Drop Test (5A)	V
		Reading E-Marker's VDO Data	V

USB Type-C Test Solution

____About USB Type-C

Universal Serial Bus a.k.a. USB is the interface connect computer and outer device

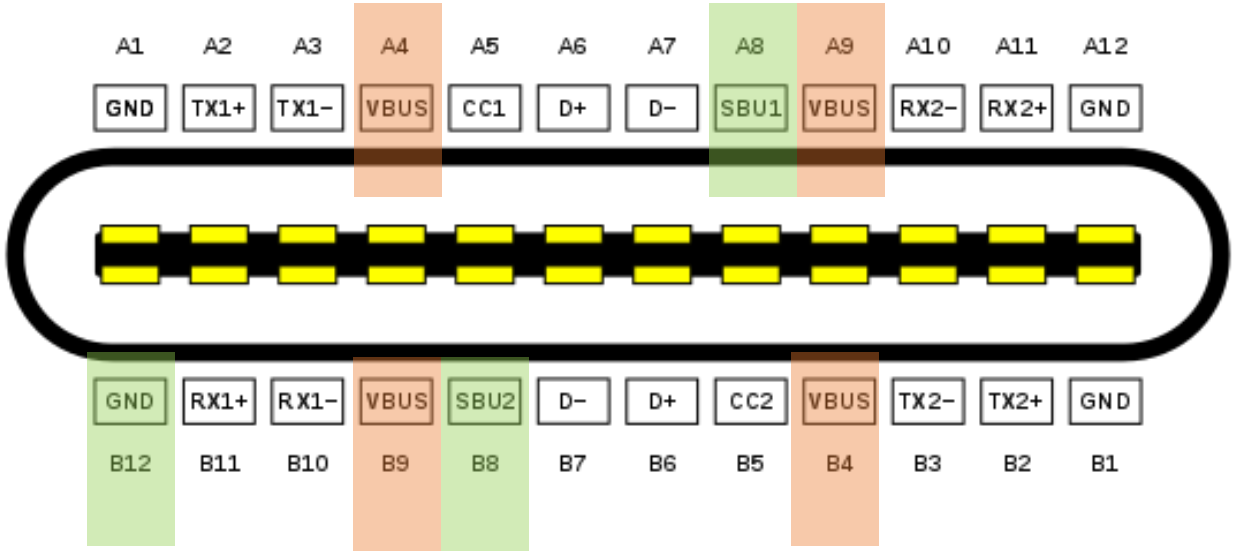
USB Type-C can be insert by both side, and better power supply. Replace the VGA/DVI/HDMI video transmitting. USB Type-C give the consumer better experience for transmitting data, media sharing charging mobile device by using on USB cable. Compatible with DisplayPort, MHL and Thunderbolt 3, etc. USB-C will replace more transmitting interface in the future.

USB Type-C Test Solution

____About USB Type-C

USB Type-C needs to insert an E-Mark IC to control the operation.
The inspection for protection chip around E-Mark IC is important.

E-Mark IC is the critical part of Type-C interface. Manufacturer takes the quality of protection component around E-Mark IC really seriously.



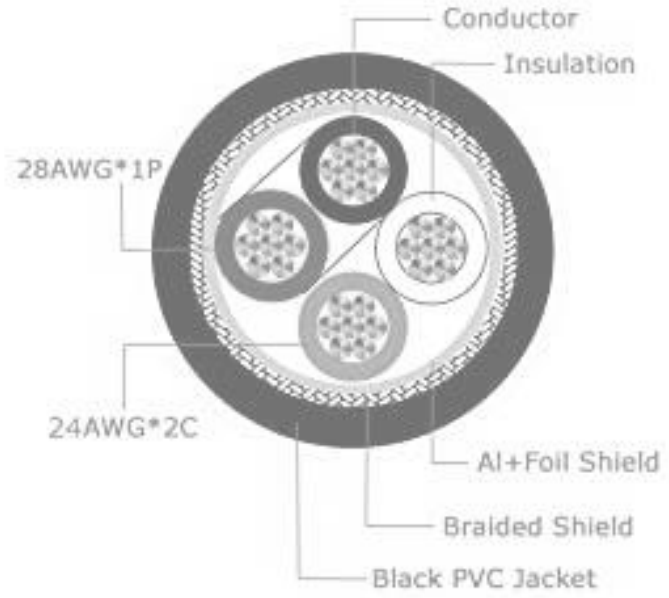
- Isolation Diode
- RA Resistance
- Signal line to ground line filter capacitor
- Signal line to ground line filter capacitor
- Application for fast charge-High current voltage gap

USB Type-C Test Solution

____About USB Type-C

Insulation defect will influence the transmitting efficiency.

- With the invisible damage, harness will not pass safety test. The high voltage will cause insulation defect.
- The deviation of contact and size of the cover of USB Type -C may cause short connection for male and female socket.
- The size of USB Type-C is 8.3x2.5mm. This usually cause short problem on soldering paddle card.

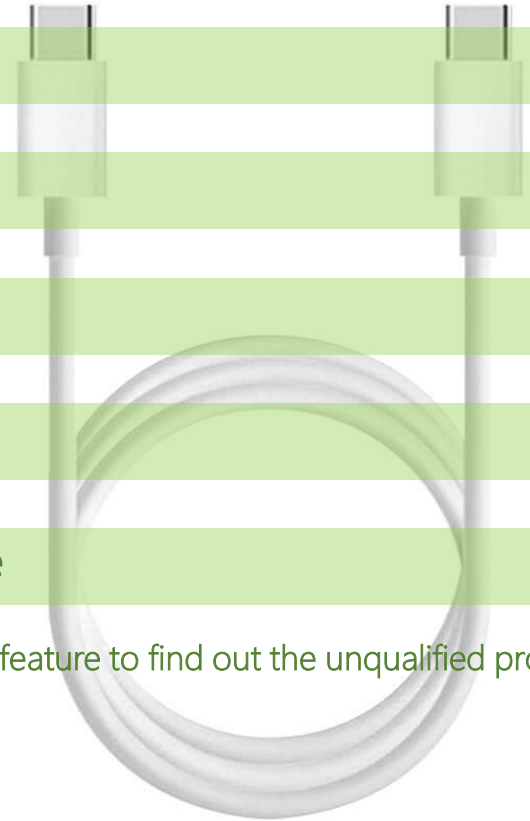


USB Type-C Test Solution

____MICROTEST 8761NAC Test Function

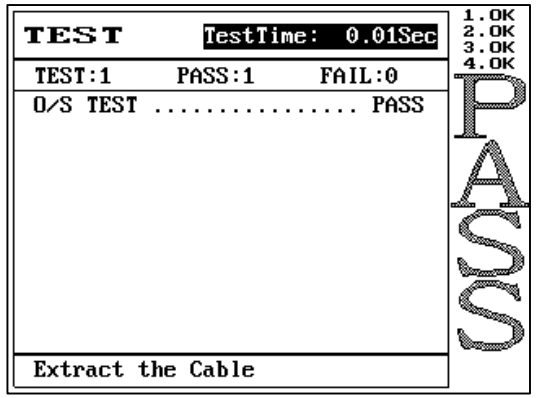
MICROTEST 8761NAC is a multifunctional portable tester. Not only detect the poor processing product, but also the O/S status between each contact and the protection component around E-Mark IC.

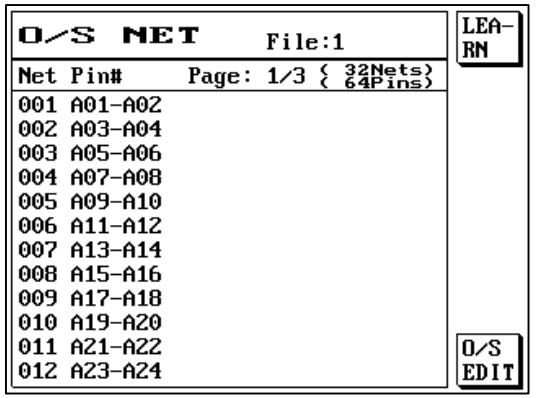
- Open Failure
- Short Failure
- Cold Soldering Failure
- Solder Empty
- Crimp Terminal Damage
- Harness Cause Insulation Failure



Detect Harness/ Connector's electronical feature to find out the unqualified product.

Automatically identify the normal or reverse plugin of wire or connectors





Open Test & Short Test	
O/S Test	1kΩ-100kΩ
Intermittence O/S	1kΩ-100kΩ
Quick Intermittence open circuit	1kΩ-100kΩ

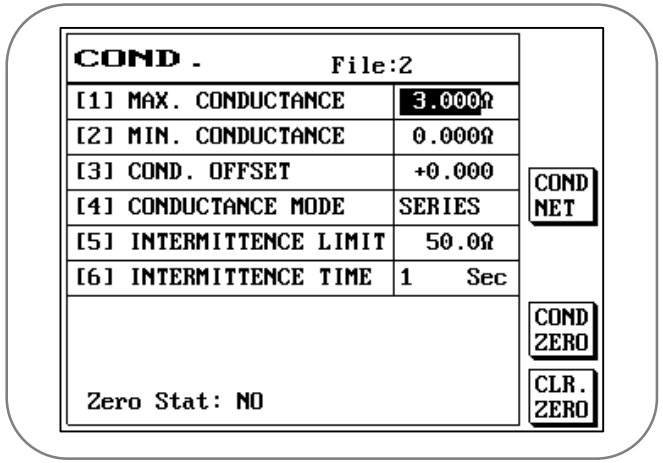
Open/Short Test

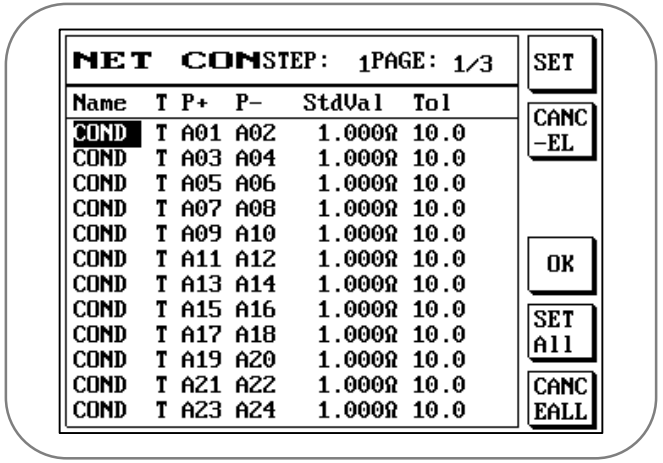
Make sure the contact of wire work properly.
Open: The wire should be contact, but it doesn't
Short: The wire shouldn't be contacted, but it does

Intermittence O/S

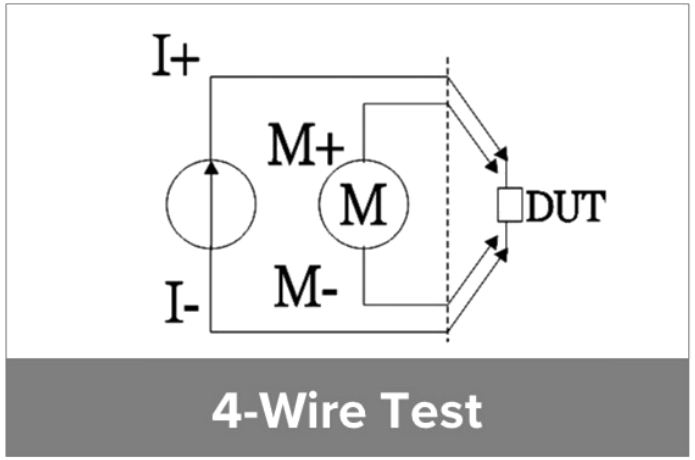
Make sure the cable has intermittent open/short defection
There is damage on part of cable, that cause instant contact or not.

4-Wire Conductance Test 1mΩ-52Ω



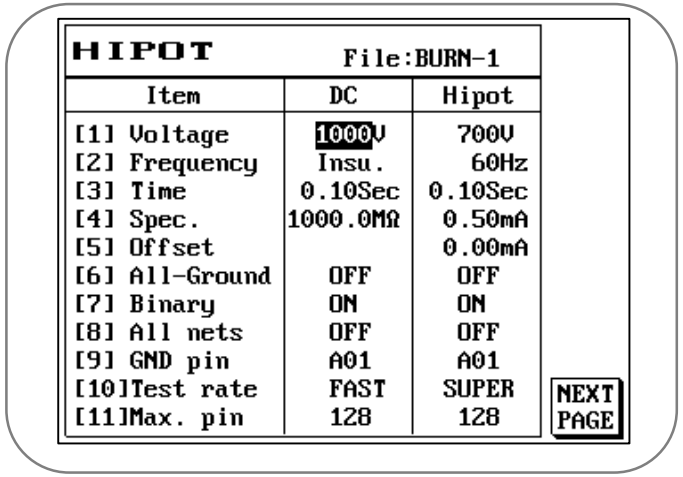


4-Wire Conductance Test	
Conductance	1mΩ-52Ω
Intermittence Conductance	1mΩ-52Ω



Connect to DUT directly to prevent any deviation.
For measuring low resistance DUT, we recommend to choose 4-wire tester.

AC Hi Pot & DC Hi Pot / DC Insulation Resistance



HI POT Test	
AC Hi pot Test	100V-700V
AC Leakage Current	0.01mA -5mA
AC Arcing Detection	0-9
DC Hi pot Test	50V-1000V
DC Leakage Current	0.1μA-1000μA
DC Arcing Detection	0-9
DC Insulation Resistance	1MΩ-1.2GΩ

Put a stabile high voltage on cable to make sure the quality of DUT

DC insulation

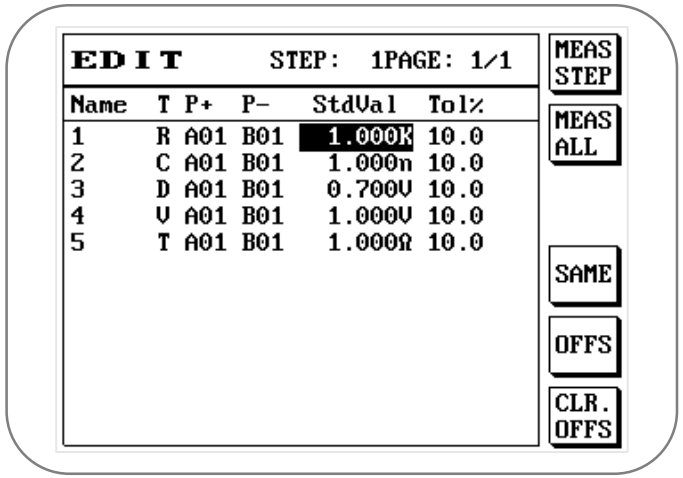
The result will judge by the rate of insulation resistance. Insulation resistance defect may cause DUT be penetrated or leakage current under high voltage.

Arc Test

Some high precision product for automobile and military can't accept any arc under high voltage.

- Inspect the loop contact in the connector fit the request of insulation and voltage.
- Insulation resistance between loop is lower than the standard.
- The voltage resistance is lower than the standard that cause leakage current.

RA Resistance / Filter Capacitor / Isolation Diode Test



4-Wire Conductance Test	
Resistance	50mΩ-20MΩ
Capacitance	10pF-12μF
Diode	0-6.8V

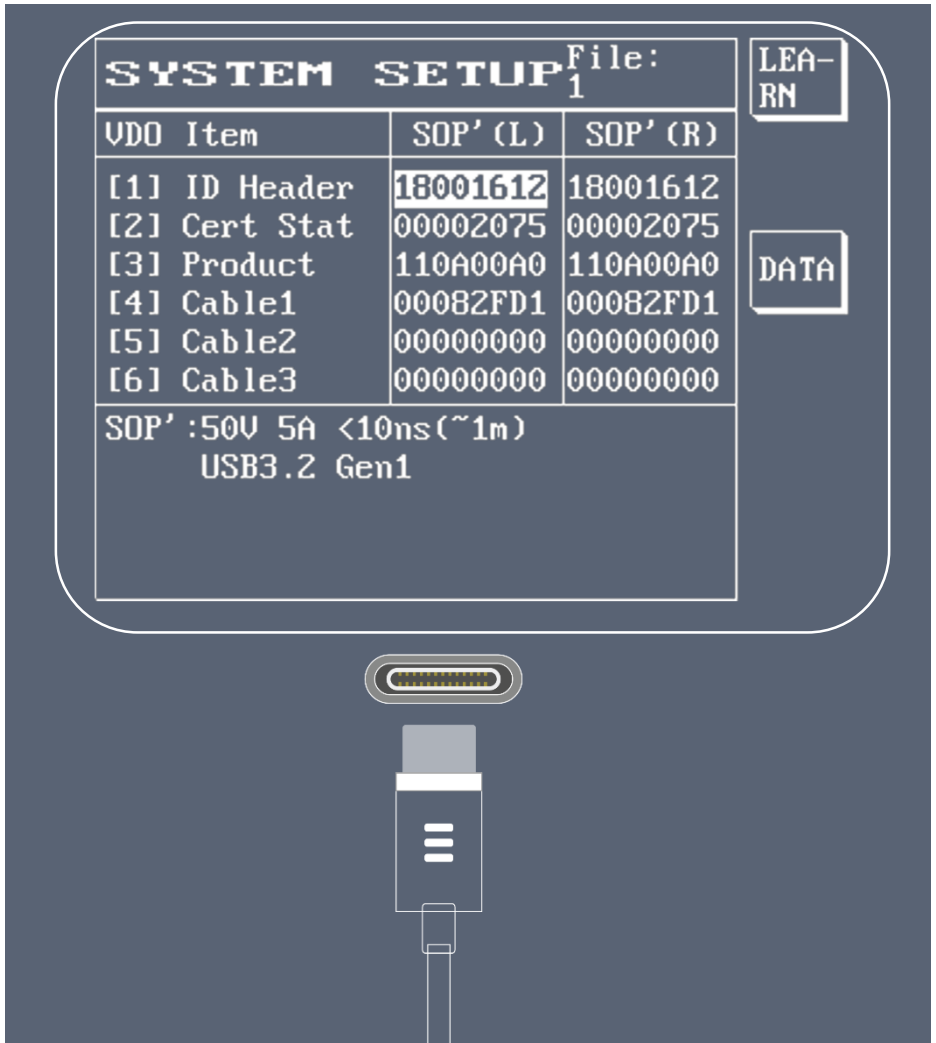
E-Mark IC is the critical part of Type-C interface.
Manufacturer takes the quality of protection component around E-Mark IC really seriously.

- ◆Isolation Diode Test
- ◆RA Resistance Test
- ◆Signal line to ground line filter capacitor Test
- ◆Signal line to ground line filter capacitor Test

Option The 2-in-1 Current Expand Box FX-000C28 (5A)

- Voltage Drop Test (5A)
- E-Marker's VDO Data

E-Marker’s VDO Data Test (Option FX-000C28)



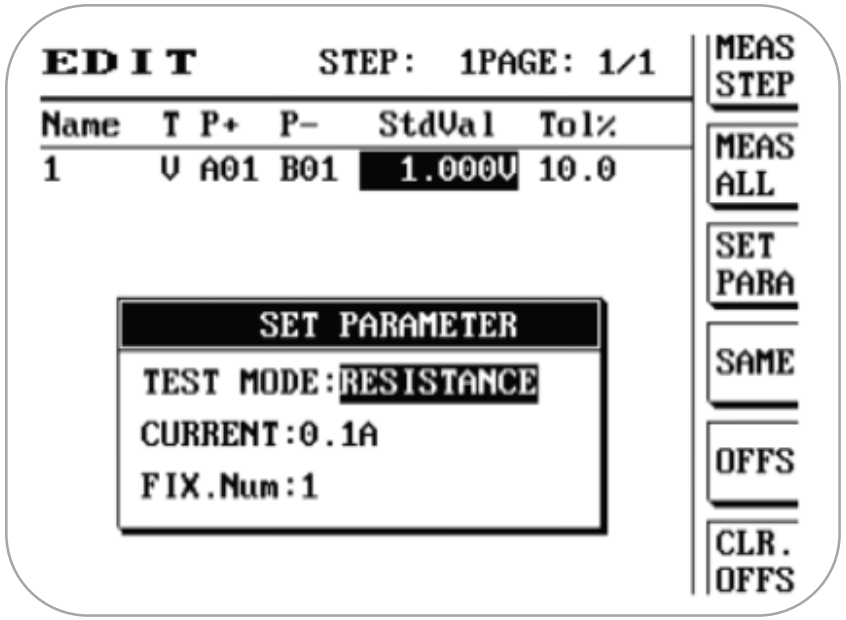
Function

Reading E-Marker's VDO Data using the FX-000C28

Application

USB Type C To USB Type-C

Voltage Drop Test (Option FX-000C28)



Voltage Drop Test (5A)

Measure voltage difference and inner resistance.

Voltage difference and Resistance is the important figures for the quality.

Qualcomm has combine QC 4.0 and latest PD spec.. High Current low voltage is the trend in the future.

Voltage difference, smaller is better

The resistance might cause voltage difference problem because of the high current transmitting. Charger might be damaged if the voltage difference is too high.

Inner Resistance, smaller is better

The material of cable will affect the efficiency of charging. The inner resistance will increase under high current. With our expansion box, you might able to detect voltage difference and inner resistance.

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