

DINTEK

## Copper & Optical Cable Tester DCT-020 User Guide



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**DINTEK**  
LAN CABLING SYSTEMS



**Read the precautions before operating.**

- **The device's transmitter and receiver operate on lithium polymer batteries.**
- **Avoid exposing the device to dust, humidity, or temperatures exceeding 50°C.**
- **Do not attempt to disassemble the device; seek professional assistance for repair and maintenance.**
- **If the device will not be used for an extended period, remove the battery to prevent leakage.**
- **Avoid performing any operations on the communication line during thunderstorms to prevent lightning strikes and ensure personal safety.**

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## Product Button And Interface Description

The DINTEK DCT-020 Copper and Optical Cable Tester is a versatile and essential tool for professionals in the networking and telecommunications industry. This comprehensive testing kit is designed to efficiently and accurately diagnose the integrity and performance of both copper and fiber optic cables. With its user-friendly interface and robust features, the DCT-020 provides a reliable solution for troubleshooting and maintaining network infrastructure. Whether you're working on Ethernet, coaxial, or fiber optic networks, the DCT-020 tester set is equipped to handle a wide range of testing needs, ensuring that your network operates at its optimal performance.



## Auto Power Off Icon



When this icon is displayed, the auto power-off function is enabled. When this icon is not displayed, the auto power-off function is disabled.

## Power Display Icon



The display indicates the current power and charging status. A green color indicates that the device is currently charging, while white indicates a non-charging status.



CONT



SCAN



Flash



Length



PoE



QC Test



OPM



VFL





Set

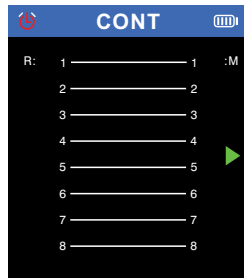
## Product Function Instructions

### 1 | Continuity Testing

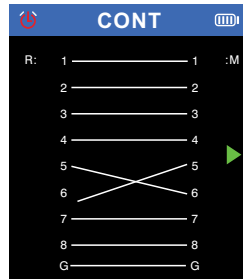
To use the tester for continuity testing, follow these steps:

- Connect one end of the cable to the "QC/TEST" port of the transmitter on the right side.
- Connect the other end of the cable to the "RJ45" port of the receiver on the bottom.
- Select  in the main menu and press **OK**. The screen will display the cable types.
- To retest, press **OK** again, and the screen will show the new test result.
- To return to the main menu press 

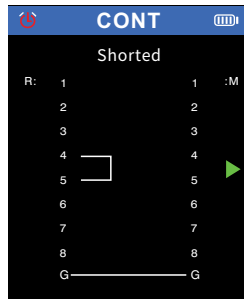
Note: The triangle  indicates the position where the cable should be plugged in.



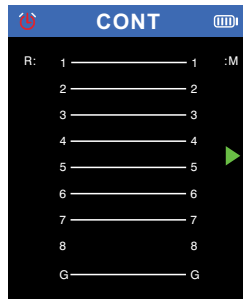
Correct Wiremap



Cross








Shorted



Broken

### 2 | Location SCAN

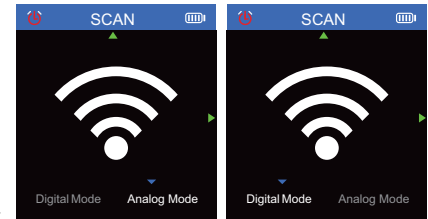
Connect the cable to be tested to the "SCAN" port  of the transmitter on the top. Access the main menu, and use the UP  or DOWN  buttons to select your preferred scan mode: digital or analog. Adjust the mode on the receiver to match your selection. Hold the receiver to locate the cable at the other end. The cable producing the loudest audible noise is the correct one.

The blue triangle  indicates the current function, and the green triangle  indicates the current position where the cable needs to be inserted. Press **OK** or  to return to the main menu.

Two scan modes are available: Digital mode and Analog mode, with a range of up to 300m.

**Analog Mode:** For low noise environments and cables without live signals, it is suggested to use this mode.

**Digital Mode:** This mode should be used if the cable environment is carrying Ethernet loads.




Note: If the transmitter is in digital scan mode, the receiver must be in digital mode as well.


For analog scan the on transmitter, use analog mode on the receiver. Incorrect mode matching will result in the receiver not a generating tone, even when it's on the correct cable.



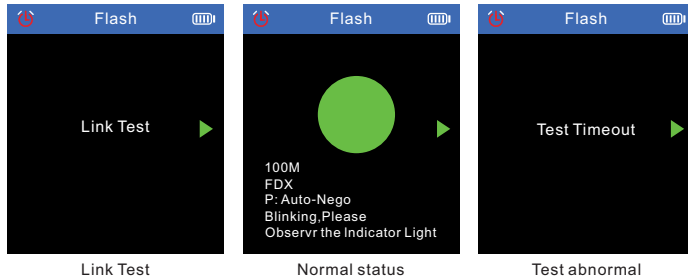
## Product Function Instructions

### 3 | Port Flash

Connect one end of the cable to the "Length/Flash/PoE" port of the transmitter on the right side. Select the  icon in the main menu and press **OK** to enter the port flash function.

The screen will display "Link test.." and the green triangle  indicates where to insert the cable. If the test is successful, the screen will display a green circle and the specifications of the current switch (FDX: full duplex / HDX: half duplex) Protocol (Auto-Neg / Non-Auto-Neg). The circle and the port on the router (or switch) will flash. If a port's flash frequency matches the circle on the transmitter (around 3 seconds), while the other ports flash more quickly, you can easily identify your target port. If the test fails, the screen will display "Test Timeout," which may indicate that the cable is not properly plugged in.

The two lights on the "Length/Flash/PoE" port will also flash at the same frequency. The circle on the screen will also flash with the port lights, and the solid and hollow circles will flash synchronously.





The blinking port light on a hub or switch can be used to locate network ports. This feature is available on switches and routers with speeds of 10M, 100M, or 1000M.

**Note:** When the cable length is less than 5 meters, the displayed test cable length value should be considered only as a reference.

### 4 | Length

To test the length of a cable using the "Length/Flash/PoE" port:

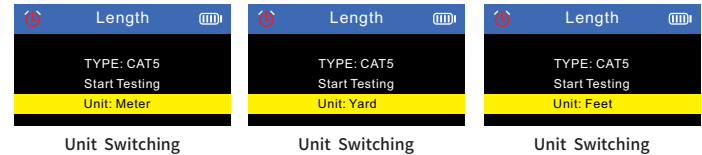
- Connect one end of the cable to the "Length/Flash/PoE" port.
- The green triangle  indicates the current insertion position for the cable.
- Disconnect the other end of the cable at the far end.
- Select the icon  in the main menu.
- Select the cable type and unit (meter/yard/feet) before testing.

Make sure to de-energize the LAN cable before testing. Disconnect the cable at the far end, ensuring no other devices are connected. The cable length range should be between 2.5 meters and 200 meters; otherwise, it will display 0 meters.

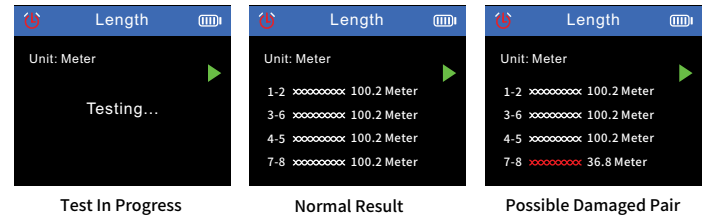
Various cable types are supported for testing as shown below.



Available units of length




Test images and results



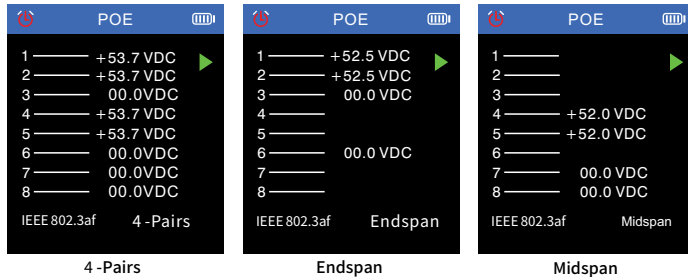
## 5 | PoE test

This feature allows you to test standard PoE devices, providing information such as PoE voltage, power supply polarity, power supply mode, and the type of PSE (af or at standard). For non-standard PoE devices, it can still test PoE voltage, power supply polarity, and power supply mode, but it cannot determine the type of PSE and will simply display "Non-standard."

1. On the main menu, press .
2. Connect the patch cable to the "Length/Flash/PoE" port on the transmitter.
3. Connect the other end to the PoE switch port.
4. Press **OK** to carry out the PoE testing.




The result will show the following.



1. Which pins are providing power.
2. The voltage detected
3. The Standard of the PoE switch (IEEE 802.3 at/af/bt)
4. The Class of the power (Class 1~8)
5. Power supply type (Mid span/ End Span/ AT-4 pairs)



**Note:** If all eight pins are providing power, the polarity will not be displayed. When connected to a PoE device, the result will be displayed after a few seconds. If no result is displayed after 30 seconds, the connected device may not be a PoE device.

## 6 | RJ45 Plug Crimping QC Test

Connect one of cable end to the QC/TESTport, then select  in the main menu, and press to start test. The triangular arrow  indicates the current position where the cable needs to be inserted, and press  to return to the main menu.


Plug and unplug the cable tested, the result will be updated automatically.  indicates that the channel is normal, and  indicates that the channel is abnormal.



## 7 | VFL


To use the Visual Fault Locator (VFL):

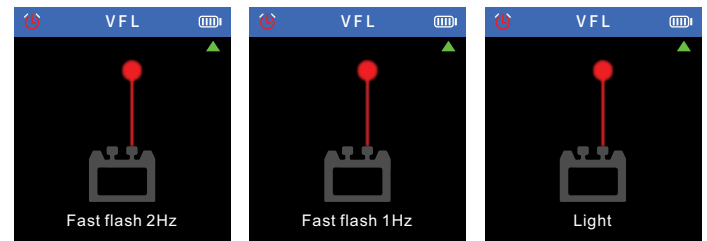
Insert one end of the fiber cable into the VFL port.

Select  in the main menu and press **OK** to start the test.

The green arrow  indicates where to ins

Press **OK** to switch between the three modes: Fast flash, Slow flash, and L


Press  to return to the main






## 8 | Optical Power Meter




The Optical Power Meter (OPM) is used to measure the optical power and attenuation value of light.




To use the OPM function:

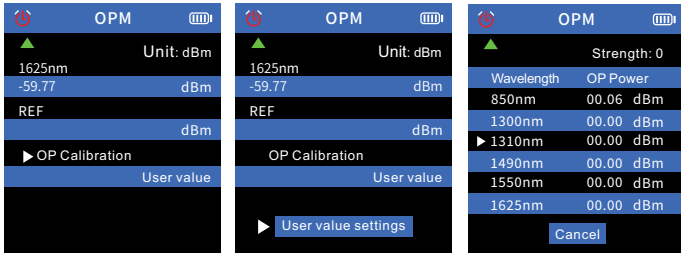
- Insert one end of the fiber cable into the OPM port.
- Select  in the main menu and press **OK**

The triangular arrow  indicates where to insert the cable, and data updates in real time. Press  to return to the main menu. The white arrow icon  indicates the current selection item, with the top meaning the unit can be switched and the bottom meaning the wavelength can be switched.

- Available Units: dBm, dB, or mw, uw, nw
- Available Wavelengths: 850nm, 1300nm, 1310nm, 1490nm, 1550nm, 1625nm.
- REF

REF is used to test the attenuation value of light. After testing the optical power, press  or  to select REF. When the white arrow icon  is in front of REF, long press the **OK** to automatically save the current optical power value as the second blue area. This means you have saved the test result of the measured optical power this time. When measuring again, you can compare the previous result with the current result to determine the attenuation value of the device being tested.



To navigate between settings features e.g. "Unit", "Wavelength" and "OP Calibration", press the  or  keys. When the white arrow icon  is in front of the feature, you can press **OK** to cycle through the options. (See the images below)





Select Optical Power Calibration. Press the "**OK**" key to switch between the factory-set value/ user-defined value.

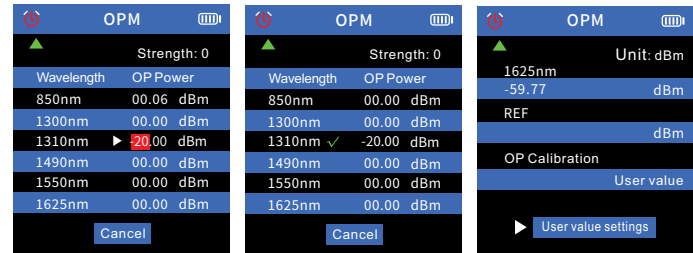
Select user-defined value setup. Press the "**OK**" key to enter the setup interface.



Press the " 


Under the "OP Calibration setting", press the  or  icons to cycle between "Factory Default" or "User Value". Press **OK** to select.

If choosing "User Value" this will open up the "User Value Settings".



Press  or  icons to increase or decrease optical power. (See the images below)




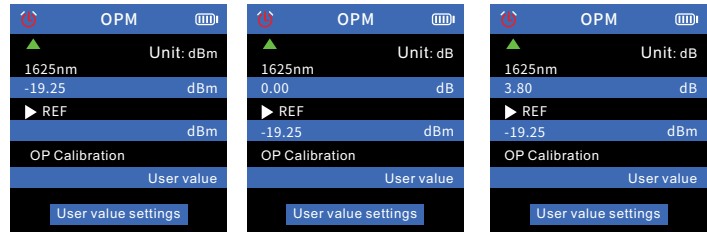
Press the "**OK**" key to switch between integer and percentage. Press the " 

The cursor is in front of 1310 again. Long press the "**OK**" key for 2 secs. When "

Press the "

Press the  or  keys to select the "REF" setting. When the white arrow icon  is in front of the "REF" long press the **OK** key to save the selected optical power and return to the previous main OPM screen. The unit is now set to the selected dB.

Press  to return to the main menu. (See the images below)



Select REF





Unattenuated optical power

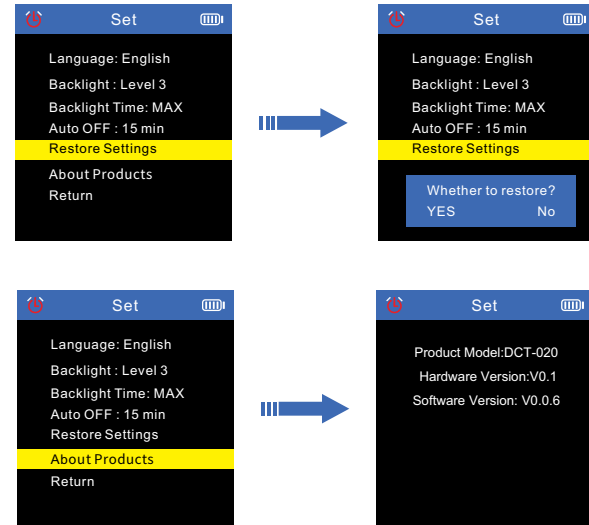
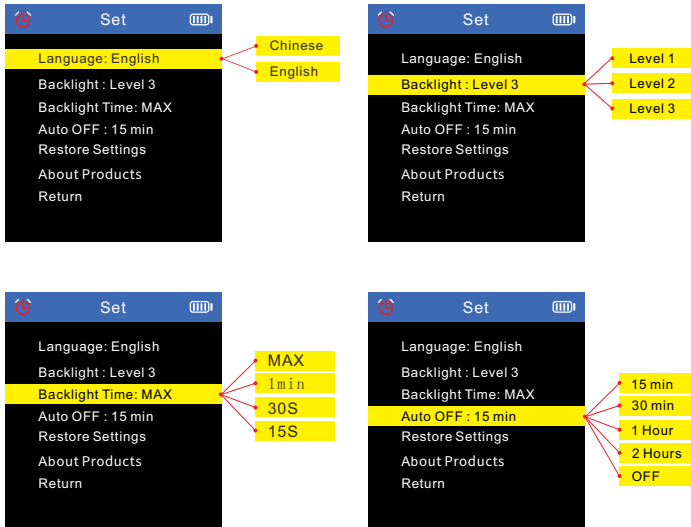
Real-time attenuation data





If the REF function is not activated, the blue display area on the second row of the user area will not show any value. However, the blue display area on the first row of the user area will continue to display the normal optical power data.

## 9 | Settings

Select  in the main menu, and press **OK** to enter the setting function, press  and  to switch options up and down. Press **OK** again to switch various modes of the current option, and press  to return to the main menu. Select





In the  menu, select "Return" and press the  icon, to return to the main menu.




## 10 | Using The Receiver


### 1 | Power

To turn on the receiver, press and hold the  button until you hear a beep. The power indicator will light up green, and the scan indicator will light up red, indicating the default digital mode. To turn off the receiver, press  and hold the power button until all lights turn off.


### 2 | Scan

After turning on the receiver, press  to switch between "digital mode" and "analog mode." A red scan indicator indicates digital mode, while a flashing red scan indicator indicates analog mode.

### 3 | NCV

Similar to the scan function, press  to switch between "digital mode" and "analog mode." A red scan indicator indicates digital mode, while a flashing red scan indicator indicates analog mode.

### 4 | Lamp

Press  to toggle the light on or off.

### 5 | SEN

During scanning, adjust the sensitivity of the receiver to track the cable. Rotate clockwise to increase sensitivity and counterclockwise to decrease sensitivity.

### 6 | Type-C Charging Port

When charging, the power indicator will light up red. When fully charged, the red light will turn off.

## Product Specifications

Model		DCT-020	
Cable type		CAT5e/CAT6	
Voltage protection		60V	
Battery		Type C charge	
Transmitter	CONT	Wiremap Port	RJ45
		MAX range	300m
		STP/NTP	√
		Digital mode and Analog mode	√
	Scan	Frequency	455KHz
	Port Flash	Full duplex / Half duplex	Automatic Identification
		Auto-Nego / Non-Auto- Nego 10m/100m/1000m	
	Length	≤20M +/-1.6M, 20M-100M +/-2.4M, ≥100M +/-3.2M	
	PoE	Standard/Non standard	Automatic Identification
		End connection /Middle jumper / Powered by 8 cores	
		PoE Power supply	Voltage detection
	NVL	10mW	
	Power meter	850/1300/1310/1490/1550/1625nm ( Wavelength )	
	Crimping	RJ45-8 Cores,Min length is ≥10cm	
Lowvoltage warning	< 3.5V ± 0.1V		
Power supply	3.7V 1500mAh Polymer lithium battery		
Transmitter size	148 X 70 X32 mm		
Receiver	Sensitivity adjustable	√	
	MAX range	300m	
	Digital mode and Analog mode	√	
	MAX working current	≤300mA	
	NCV	√	
	Lamp	√	
	Lower voltage warning	√	
	Power supply	3.7V 1500mAh Polymer lithium battery	
	Receiver size	198 x 50 x 28 mm	

## Product Application

1 | Telecommunication companies, internet cafes, telecommunication engineering companies, network engineering companies, power companies, and other departments involved in low voltage projects and other activities that metallic cables.

2 | Telecommunication network line engineering and general maintenance work; computer network line engineering; other metal conductor line engineering and maintenance work.



## Accessories

Transmitter	1pc	Alligator clip adaptor	1pc
Receiver	1pc	RJ45 Adaptor cable	1pc
USB Type-C cable	1pc	User manual	1pc
Earphones	1pc	Carry bag	1pc
RJ11 adapter line	1pc	Color box	1pc
Quality certificate	1pc		

Note: Please refer to the actual product received.

## Warranty & RMA Process

In the unlikely event that your DCT-020 testers should develop an issue, we encourage you to contact the local agent that you purchased your testers from, or alternatively fill out the online form by going to <https://rma.dintek.com.tw> or by scanning the QR Code below. Our dedicated team will guide you through the process of diagnosing the problem and determining the best course of action. If the issue is covered under our warranty, you will be provided with instructions on how to return the tester for repair or replacement at no additional cost to you.

For issues not covered by the warranty, either your local agent or DINTEK will work with you on finding a resolution to get you up and running again. Rest assured, our priority is to ensure that your DCT-020 testers are functioning optimally and that any disruptions to your operations are minimized.

### DINTEK Online Form QR Code

To fill in this form, please make sure you have the following.

- 1 | Tester serial number
- 2 | The name of the dealer you purchased from
- 3 | Date of purchase
- 4 | Contact details & email address

