Quick Guide

SigOFIT Gen 3 Battery Version Optical-fiber Isolated Probe OIP B Series

1. Overview

Based on exclusive SigOFIT technology, the SigOFIT Gen 3 battery version optical-fiber isolated probe has extremely high CMRR and isolation voltage, helping to unveil the whole truth of the signal within bandwidth.



WARNING

* DO NOT block the heat dissipation port on the back of Optical-Electrical converter, otherwise the probe may be overheated and damaged.
* DO NOT excessively bend the fiber cable. Avoid tight radius (< 8cm) bends, crushing, crimping, twisting, pulling or otherwise stressing the cable.
* When disassembling and moving the probe, please hold the converter body by hand, do not lift or drag the cable.

2. Characteristics

Model	OIP500B	OIP350B	OIP200B
Bandwidth	500MHz	350MHz	200MHz
Rise Time	≤ 800ps	≤ 1ns	≤ 1.5ns
CMRR	DC: 180dB 500MHz: 114dB	DC: 180dB 350MHz: 118dB	DC: 180dB 200MHz: 122dB
Differential Voltage Range	Standard: OP50(MMCX), ±25V OP5000(MCX), ±2500V Other test ranges customizable.	Standard: OP50(MMCX), ±25V OP5000(MCX), ±2500V Other test ranges customizable.	Standard: OP50(MMCX), ±25V Other test ranges customizable.
Noise	<0.3mVrms		
DC Gain Accuracy	1%		
Common Mode Voltage Range	85kVpk		
Power supply	DC 12V		
Interface	Universal BNC		

* Fiber length and test voltage range are customizable.

3. Jack and Coaxial Lead

Accessory name	Voltage range	Non-destructive voltage (Max.)
MCX jack	±2500V	≤ 2500Vpk
MMCX jack	±50V	≤ 1000Vpk
MCX coaxial lead	±2500V	≤ 2500Vpk
MMCX coaxial lead	±50V	≤ 1000Vpk
MCX IC clip	±2500V	≤ 2500Vpk
MMCX IC clip	±50V	≤ 1000Vpk
LCX coaxial lead	±5000V	≤ 8000Vpk

4. Button Descriptions

Cali. button:

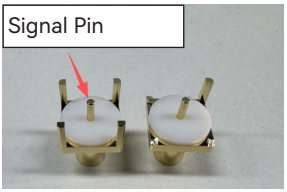
Press to calibrate in 1 second, no need to disconnect circuit, one sound means success, three sounds mean failure.

Gain button:

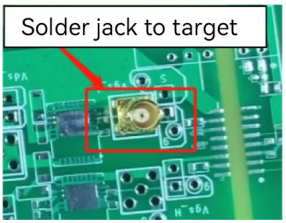
Press to switch between 0dB and 20dB. Select the appropriate gear according to the test range, which can effectively improve the signal-to-noise ratio. Please refer to the SigOFIT Battery Version probe User Manual for the specific test range.

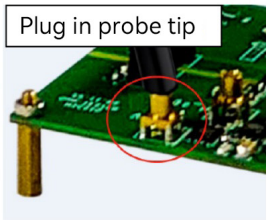
5. Main Steps

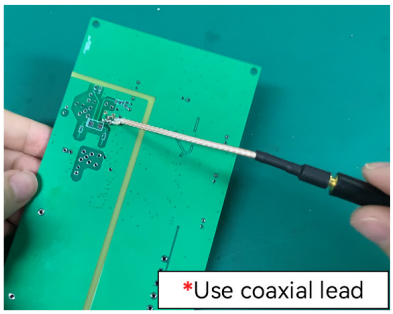
1. Solder the MMCX/MCX jack or coaxial lead to the test board
1) When testing Vgs signal, the signal pin (in the middle) of the MMCX/MCX jack must be connected to the G-end of the MOSFET.
2) Solder the MMCX/MCX jack directly to the test point, try NOT to use extension lead, it may bring unsatisfactory test results.
3) For easy soldering, suggest to cut three of the four ground pins around the base, just keep one.
4) Under the condition permitting, try to use the MMCX/MCX jack as much as possible. The coaxial cable may affect the test result.







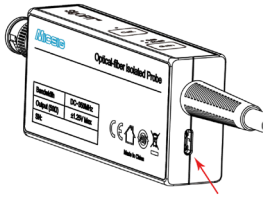




***Attention:**
Use the MMCX/MCX jack for connection to the fullest extent possible. The coaxial cable may affect the test result.

2. Connect the Optical-fiber Isolated Probe to oscilloscope.
3. Set the oscilloscope input impedance to 50Ω, and set corresponding attenuation ratio and delay time on the oscilloscope.
4. Connect attenuating tip to the Electrical–Optical (E-O) converter.




Power probe with standard Type-C charger

5. Power the SigOFIT probe by connecting USB-C cable to O-E Converter using standard charger.
6. Plug in the attenuating tip to MMCX/MCX jack, when hearing a "click", it means that the connection is successful.
7. Power ON the test board.
8. Adjust the oscilloscope settings and proceed normal test.

*In addition to the above instructions, Micsig also provides a rich variety of attenuator connection interfaces with the object under test, offering you multiple convenient and efficient measurement methods. Welcome to contact our sales or agents for consultation.

6. Precaution

If a large deviation between the measurement result and the expectation is found:
a. Please pay attention to check whether the input impedance of the oscilloscope is set to 50Ω.
b. Try to press the Cali. key for calibration (no need to disconnect the test connection).
c. When measuring, the MCX or MMCX jack should be used to solder directly to the test point as much as possible, and no leads should be used; otherwise, it will have a great impact on the test result.

Calibration Success:
Press the Cali key briefly to start automatic calibration. Calibration is typically completed in less than 1 second. When the buzzer emits two short beeps, calibration has been completed successfully.

Calibration Failure:
If the Cali LED flashes repeatedly and the buzzer sounds twice with three beeps each time, calibration has failed. Repeat the calibration procedure.

Over-voltage Warning:
If the LED corresponding to the selected Gain range flashes continuously and the buzzer beeps once per second, the input voltage exceeds the selected range.
Replace the attenuator with a suitable range before continuing the measurement.

Over-heating Warning:

If the buzzer beeps once every 3 seconds, the flashing pattern of the Gain LED indicates the overheating source:

2 flashes every 2 seconds: Electro-optical converter overtemperature
3 flashes every 2 seconds: Optical-electrical restorer overtemperature
4 flashes every 2 seconds: Both units overtemperature
Improve heat dissipation before continuing use.

If the buzzer emits a continuous rapid alarm and the Gain LED flashes 5 times every 2 seconds, severe overtemperature has occurred in one or both modules.
Immediately reduce the ambient temperature or suspend operation. Prolonged use under severe overheating may significantly shorten probe lifespan.

Abnormal Fan Speed Alert:

If the selected Gain LED flashes rapidly and the buzzer emits four short beeps every second, abnormal fan speed is detected.
If no overtemperature alert is present, the probe may continue to be used. After use, power off the probe, allow it to rest for a period, then power it on again.
If overheating affects operation, power off immediately, allow cooling, and restart later.

Communication Established:

After power-on, two short beeps indicate that communication has been successfully established.

Communication Status Alert:

If the Cali LED and all three Gain LEDs flash simultaneously, and the buzzer sounds twice with three beeps each time, a communication fault is detected. Power off the probe and verify that the test setup complies with the probe operating requirements. Refer to the User Manual for details.

7. Warranty

Optical-fiber Isolated Probe main body warranty for 1 year (extendable with extra charge).

The SigOFIT probe contains high-quality components and should be treated with care. Damage to the fiber optic cable is NOT covered by the warranty.

Standard accessories are NOT covered in main body warranty.

Micsig provides one-on-one exclusive technical support service.

During the warranty period, Micsig will be responsible for providing free maintenance for any malfunctions caused by quality issues within the normal use of the product that have not been disassembled or repaired.

The warranty will be invalid in the following cases, but repair services can be provided, free of labor costs, and only parts fees will be charged:
a. Any damage to accessories caused by improper use, maintenance, or storage by consumers.
b. Damage caused by force majeure factors, such as natural disasters.

Micsig will refuse to provide repair services or provide paid repair services in the following situations:
a. Unauthorized dismantling, such as changing wires, dismantling internal components, etc.
b. No sales voucher or the content of the sales voucher does not match the product.

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