

NOISE PROBE MSDB-NPROBE Instruction Manual

Thank you very much for purchasing this product.
Read and understand this instruction manual
to ensure safe and correct use.

Cautions on using this product

This product was developed as an optional probe for DEBUGSCOPE. When using this product with measuring instruments such as other oscilloscopes and spectrum analyzers, please note that the performance is not warrantable. This product was developed aiming mainly at the troubleshooting, the daily checkup to prevent the trouble caused by noise, and the simple noise check at the product development stage. Since this product cannot be calibrated, do not use it for product inspection.

This product is not designed for equipment which requires safety precautions and high reliability (medical devices, nuclear facilities and devices, aerospace equipment, various safety devices, etc.), that could endanger a life or cause injury directly due to malfunction of this product.

Disclaimer

We would like you to understand in advance that we are not responsible for the damage which is caused by use or failure of this product to customers or the third party. We also have no legal responsibilities for damages which are caused by negligent use, use without paying attention to descriptions in caution or warning or act of providence. Even though we are informed of such usage in advance, we are not responsible for the damage.

Safety precautions

Always observe the following precautions to avoid injury and accidents. Safety precautions are classified by level into "warnings" and "cautions" in this instruction manual.

Warning Indicates a potentially hazardous situation which, if this product is not handled properly, could cause death, severe injury, or damage to the product.

- ◇ Do not disassemble or modify this product. Doing so may cause fire, electric shock, malfunction, or injury. If repair is required, request us. The user must pay the repair cost if this product is disassembled or modified by the user, even within the warranty period.
- ◇ Do not handle this product with wet hands. This may cause an electric shock.
- ◇ The voltage must not be applied to the output terminal of this product. Doing so may cause fire or malfunction.

Caution Indicates a potentially hazardous situation which, if this product is not handled properly, may result in personal damage or property damage.

- ◇ Do not bend the cable excessively, pull it forcibly, or pinch it. Doing so may cause malfunction.
- ◇ Do not use or store this product in the following places. Doing so may cause malfunction.
 - A place subject to water or liquid splashes
 - A place subject to high humidity and prone to condensation

Neglecting the above precautions could have a serious result (such as death or severe injury) according to the usage conditions. The precautions describe serious matters and must always be followed.

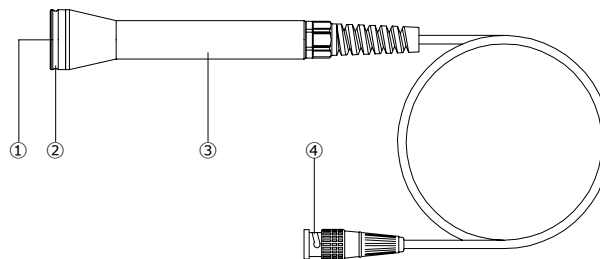
Package Contents

- Noise probe (Main body) 1 pce
- Extension cable (With connector for connection) 1 pce
- Instruction manual (This manual) 1 pce
- Warranty 1 pce

Outline

The MSDB-NPROBE is a hand-held probe aiming at observing indirectly the wave form and the frequency spectrum of the electrical noise which a signal line may receive, or searching for a noise origin or a noise propagation path. This product detects the neighborhood magnetic field which is discharged from electronic equipment and cable and wiring by factor of current noise, and outputs a voltage waveform. Since this product can easily observe the noise by connecting it with DEBUGSCOPE, it is applicable to the troubleshooting, the daily checkup to prevent the trouble caused by noise, and the simple noise check at the product development stage.

Names and functions of each part



① Detection part	The detector coil is located 2.6 mm inward from the end surface of the probe and has a sensitivity to a magnetic field component perpendicular to the apical surface. Bring this detector coil close to the place where you want to check the noise.
② Wire groove	When observing the noise emitted from a cable or wiring, roll the cable around this groove once or along the groove and use it.
③ Hand grip	Hold this part and use it.
④ BNC connector	Connect the analog input (CH1 or CH2) of DEBUGSCOPE. When the length of cable is insufficient, the cable for MSDB-NPROBE can be extended to use the accessory extension cable.

How to use

Connect this product to DEBUGSCOPE (in oscilloscope mode), and first, observe noise waveform and frequency spectrum (FFT viewer is used) by the following setting.

Time range	5 μ s/div
Voltage range	10mV/div
Probe ratio	1:1
Input coupling	Optional (DC or AC)
Trigger mode	AUTO
Trigger channel	Input channel to which this probe is connected
Trigger edge	Optional (depending on noise waveform)
Trigger position	Center
Trigger level	0V
FFT Viewer Vertical axis range	Upper limit: 0dB, Lower limit: -110dB

If noise waveform is observed, adjust time range, voltage range, and trigger level, etc. according to the waveform.

Refer to the instruction manual of DEBUGSCOPE for details of the setting.

Specifications

Frequency band	9kHz to 30MHz (-3dB)
Detection part	Φ 18 mm Coil with a static shield
Cable	Φ 4 mm Coaxial cable
Connector	BNC
Maximum voltage to earth for measuring object	500V (Peak value)
Operating temperature	0°C to +50°C
Operating humidity	5 to 85% RH (non-condensing)
Weight	Main body: 93g (including cable) Accessory extension cable: 80g
Dimensions	Main body: Φ 28 mm \times 173 mm (Overall length including cable: Approx. 1.5 m) Accessory extension cable: Approx. 1.5 m

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