OPTICAL PROBE for malfunction noise

Overview

It is an “OPTICAL PROBE” that accurately measures the noise electric field and voltage which causes malfunction such as ESD by optical technology without using metal coaxial wire.

Since “OPTICAL PROBE” is electrically isolated from the object to be measured, there is no fear that an expensive measuring instrument such as an oscilloscope will be destroyed and safe measurement is possible.

OPTICAL PROBE for noise detection
(V sensor)

Configuration and usage

3 types of measurement are possible by connecting E sensor or V sensor to the controller.

1) E-field measurement causing malfunction(Frequency, Phase, Strength) : E sensor
2) Non-contact measurement of the noise voltage signal of cable/ circuit pattern: E sensor
3) Contact measurement of the noise voltage signal of pin terminal of IC/LSI : V sensor

Specification

1) controller

Item	Spec.	Remarks
Model number	C5-D1-A	
Frequency range	100kHz - 10GHz	Cut below 100kHz
Max output	10dBm	
Guaranteed temp.	0 ～ 40 ℃	
Storage temp.	-10 ～ 50 ℃	No condensation
Output connector type	N type	RF output
Power supply	AC 100 ～ 265 V	Single-phase

2） E sensor

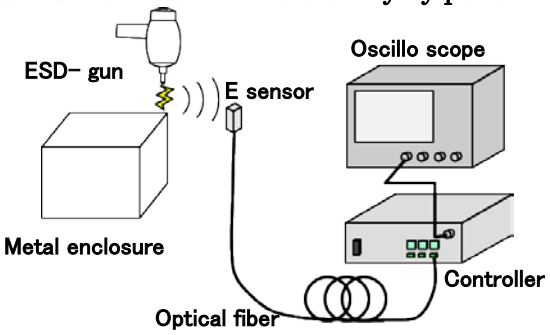
Model number	frequency	E-field strength	
ES-100	100kHz～10GHz	0.5～25,000V/m	Using spectrum analyzer
ES-130	100kHz～10GHz	0.01～500V/m	

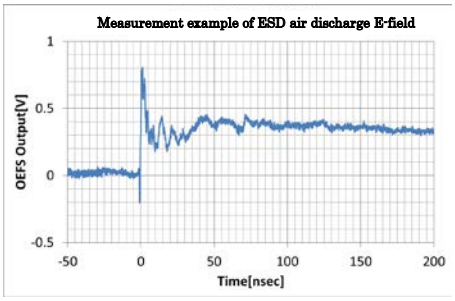
3） V sensor

Model number	frequency	Measurement voltage range	
ES-2005	100kHz～2GHz	＜５Vpp	@1MHz
ES-2015	100kHz～3GHz	＜15Vpp	@1MHz
ES-2030	100kHz～3GHz	＜30Vpp	@1MHz
ES-2100	100kHz～3GHz	＜100Vpp	@1MHz

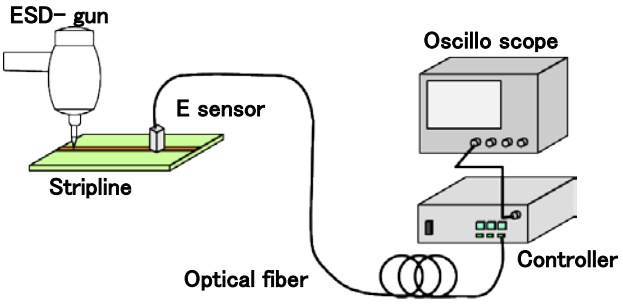
Measurement example

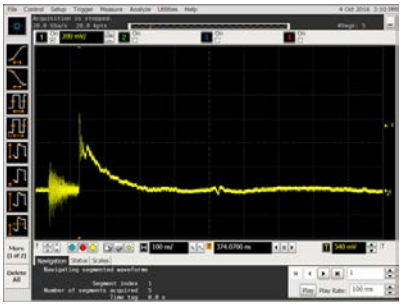
1) Measure the E-field in the vicinity by performing ESD air discharge to the metal enclosure



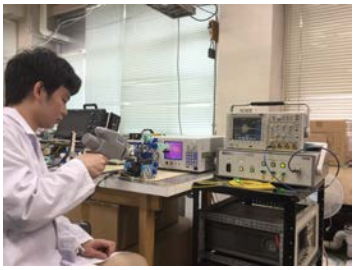


2) Indirect measurement of ESD voltage on stripline with E sensor.

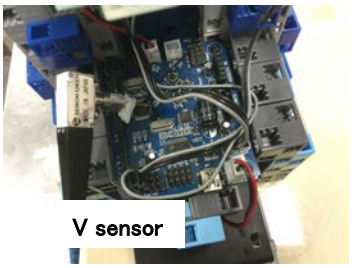




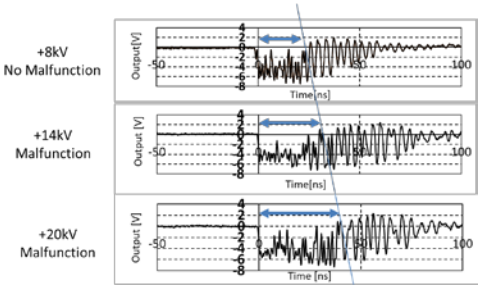
3) Measure the ESD noise voltage directly to the pin terminal of the control IC with V sensor.



ESD test



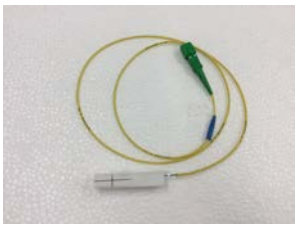
Sensor fixing part



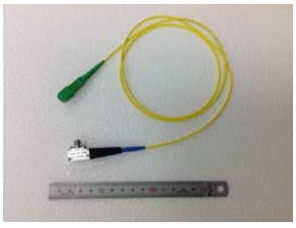
Noise voltage signal

Configuration

Controller : D5-D1-A

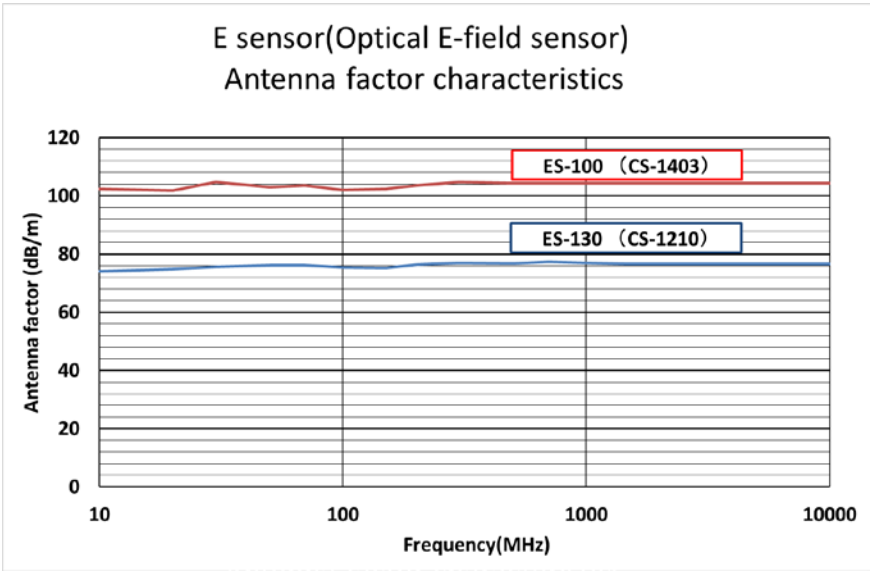


E sensor

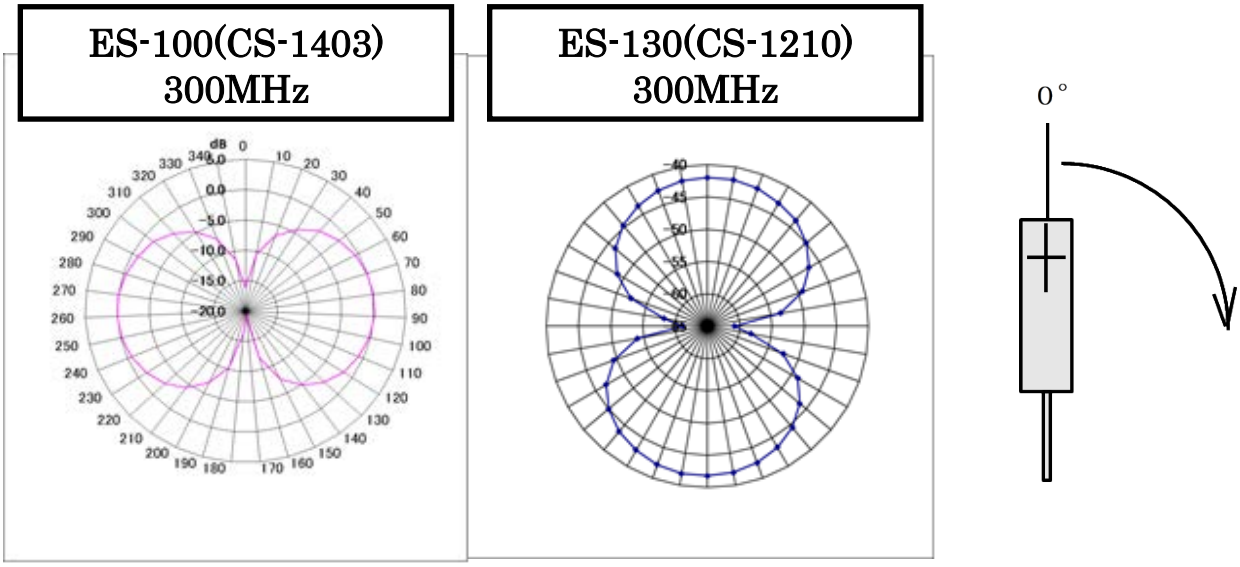


V sensor

E sensor　Frequency characteristics



E sensor　Directivity



V sensor　Input / Output characteristics