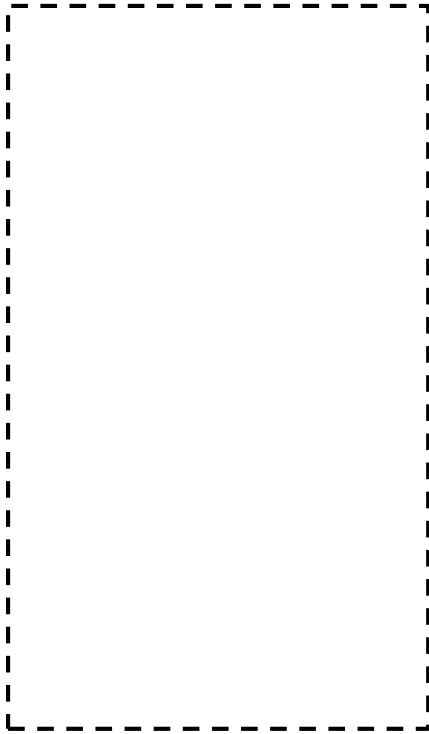


BLE Antenna Specifications

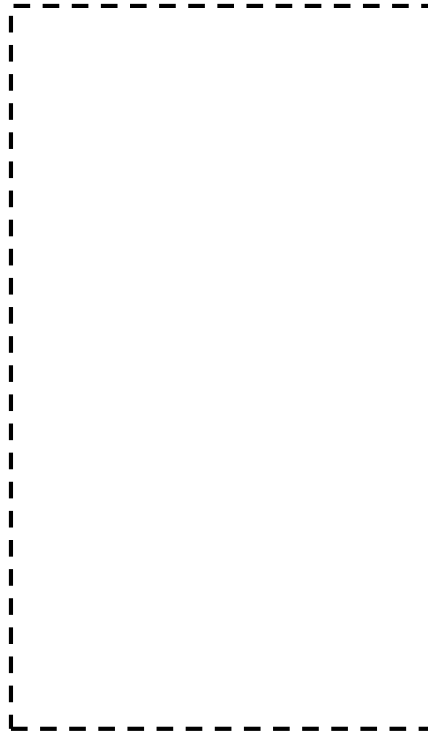
Antenna Specifications	P.2
DUT Photos	P.3
DUT Setting	P.4
Test Setup Photos	P.5
Antenna Gain and Radiation Pattern	P.6~P.8
Measurement System and Instrument List	P.9
Test Day and Test Person	P.10
Test Software	P.11

Frequency	[MHz]	2402	2442	2478
Antenna Gain	[dBi]	2.5	2.6	1.8

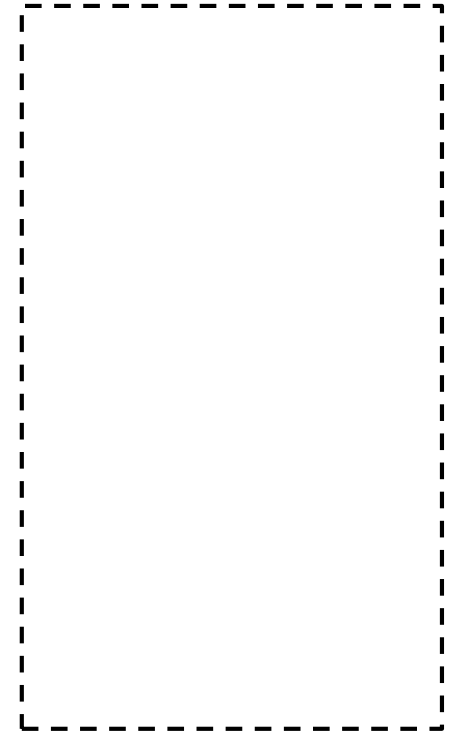
Manufacturer	NNP Electronics Corporation
Address	1400 Sagisakanaka, Iwata-shi, Shizuoka 438-0004, Japan



Picture.1



Picture.2

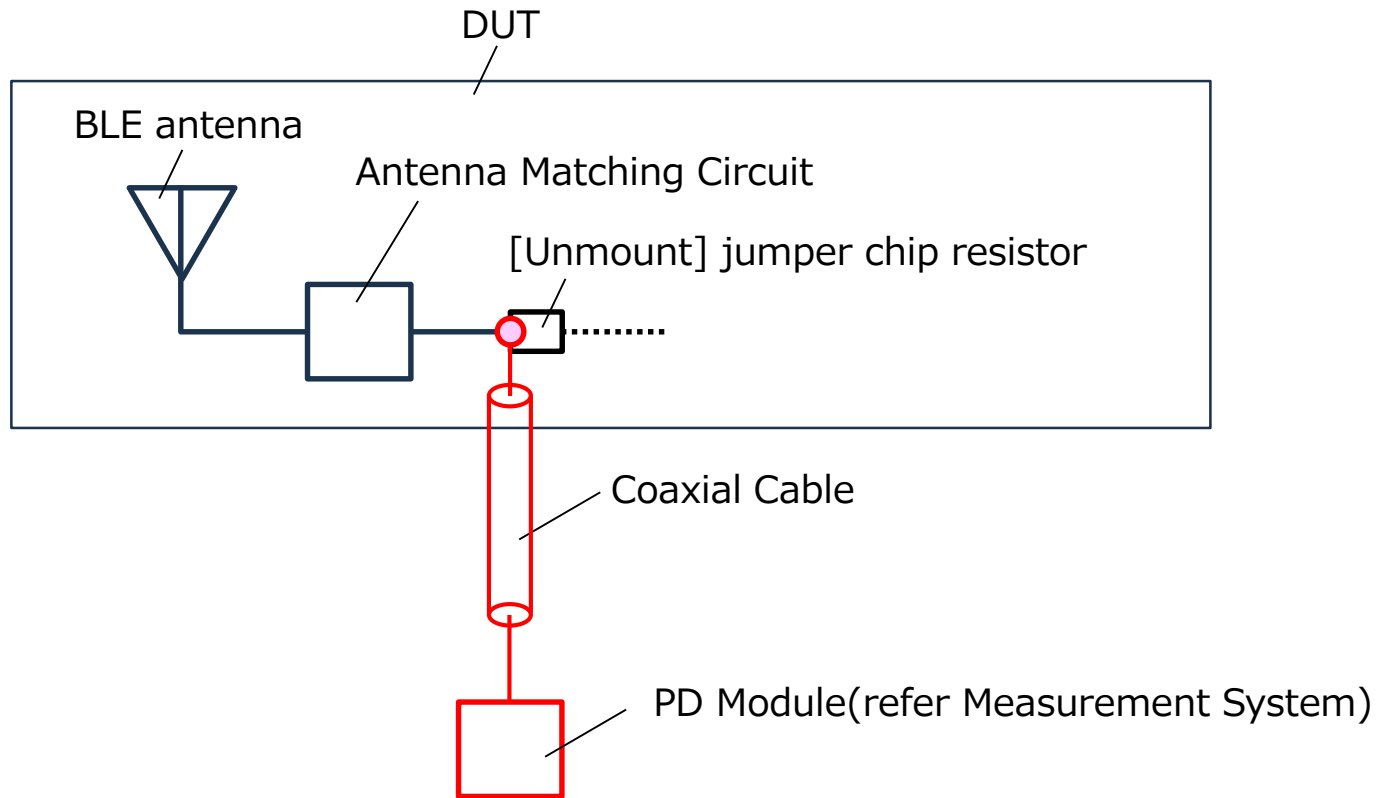


Picture.3



Picture.4

※ See Appendix “BLEant_photo” for Pictures.



Measurement Coordinate



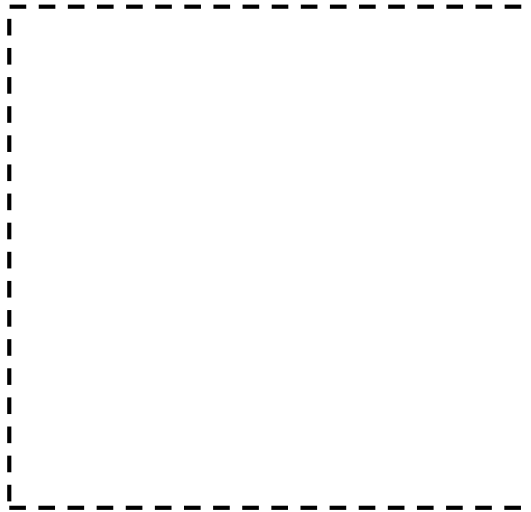
Picture.5

XY-Plane Measurement



Picture.6

XZ-Plane Measurement



Picture.7

YZ-Plane Measurement



Picture.8

Coordinate

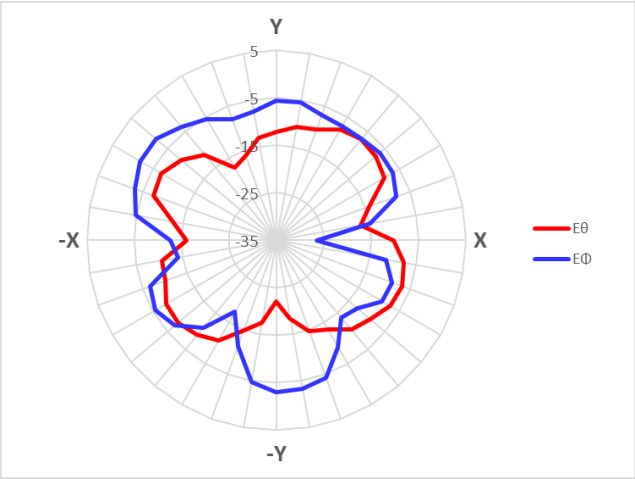


Picture.9

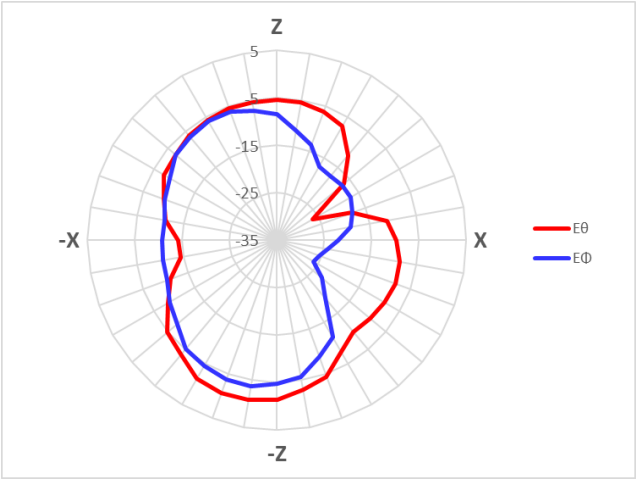
Antenna Gain		f=2402MHz	
XY-Plane	Eθ	[dBi]	-6.8
	EΦ	[dBi]	-1.8
XZ-Plane	Eθ	[dBi]	-0.8
	EΦ	[dBi]	-3.7
YZ-Plane	Eθ	[dBi]	-3.0
	EΦ	[dBi]	+2.5

Radiation pattern

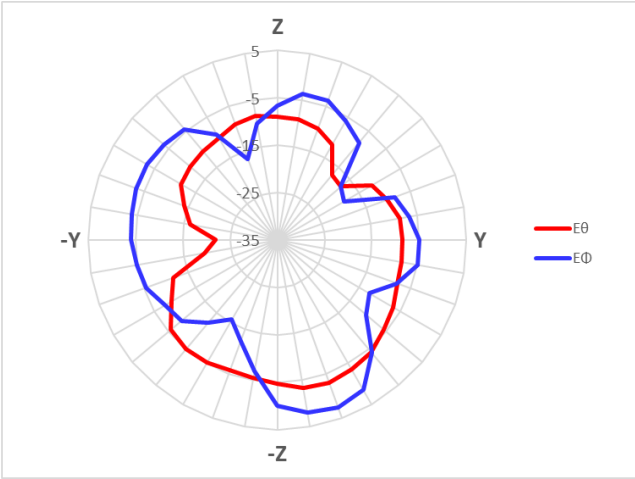
XY-Plane



XZ-Plane



YZ-Plane



Antenna Gain and Radiation Pattern 2442MHz

Coordinate

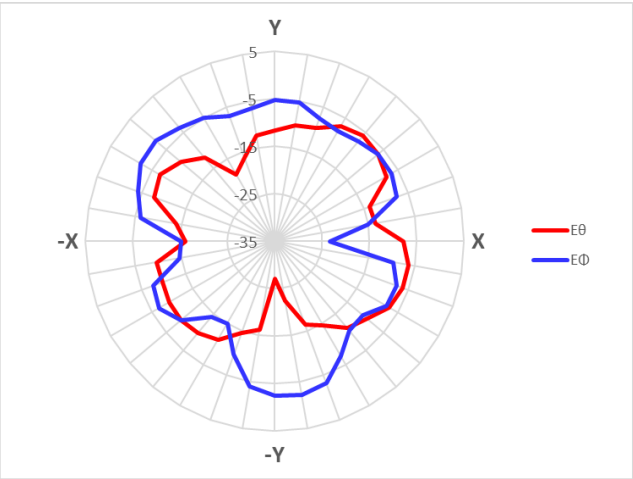


Picture.10

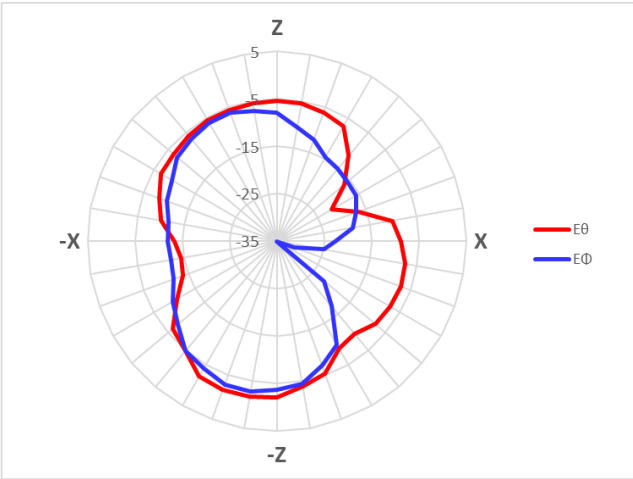
Antenna Gain		f=2442MHz	
XY-Plane	Eθ	[dBi]	-6.0
	EΦ	[dBi]	-2.1
XZ-Plane	Eθ	[dBi]	-1.6
	EΦ	[dBi]	-2.8
YZ-Plane	Eθ	[dBi]	-2.0
	EΦ	[dBi]	+2.6

Radiation pattern

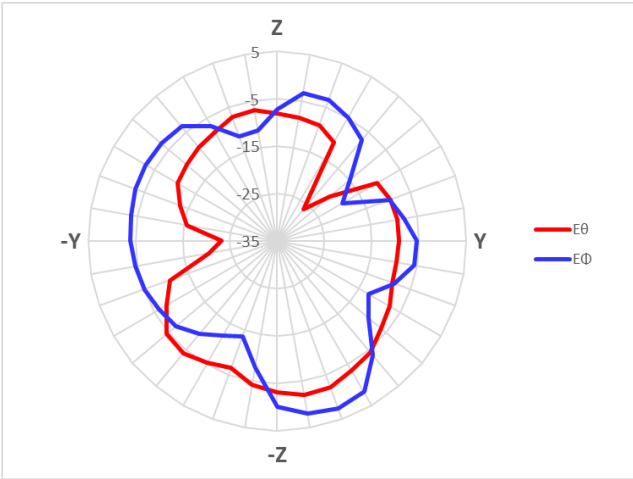
XY-Plane



XZ-Plane



YZ-Plane



※ See Appendix “BLEant_photo” for Pictures.

Coordinate

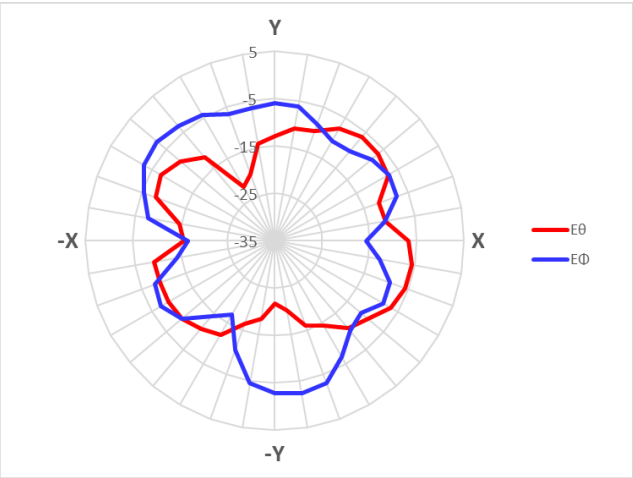


Picture.11

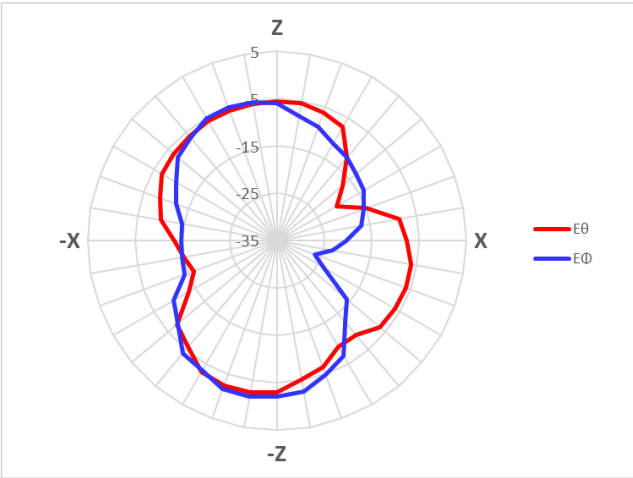
Antenna Gain		f=2478MHz	
XY-Plane	Eθ	[dBi]	-5.7
	EΦ	[dBi]	-2.3
XZ-Plane	Eθ	[dBi]	-2.4
	EΦ	[dBi]	-1.5
YZ-Plane	Eθ	[dBi]	-1.8
	EΦ	[dBi]	+1.8

Radiation pattern

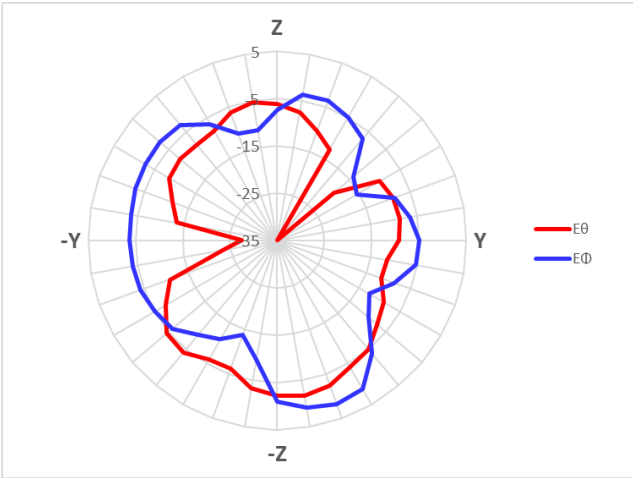
XY-Plane



XZ-Plane

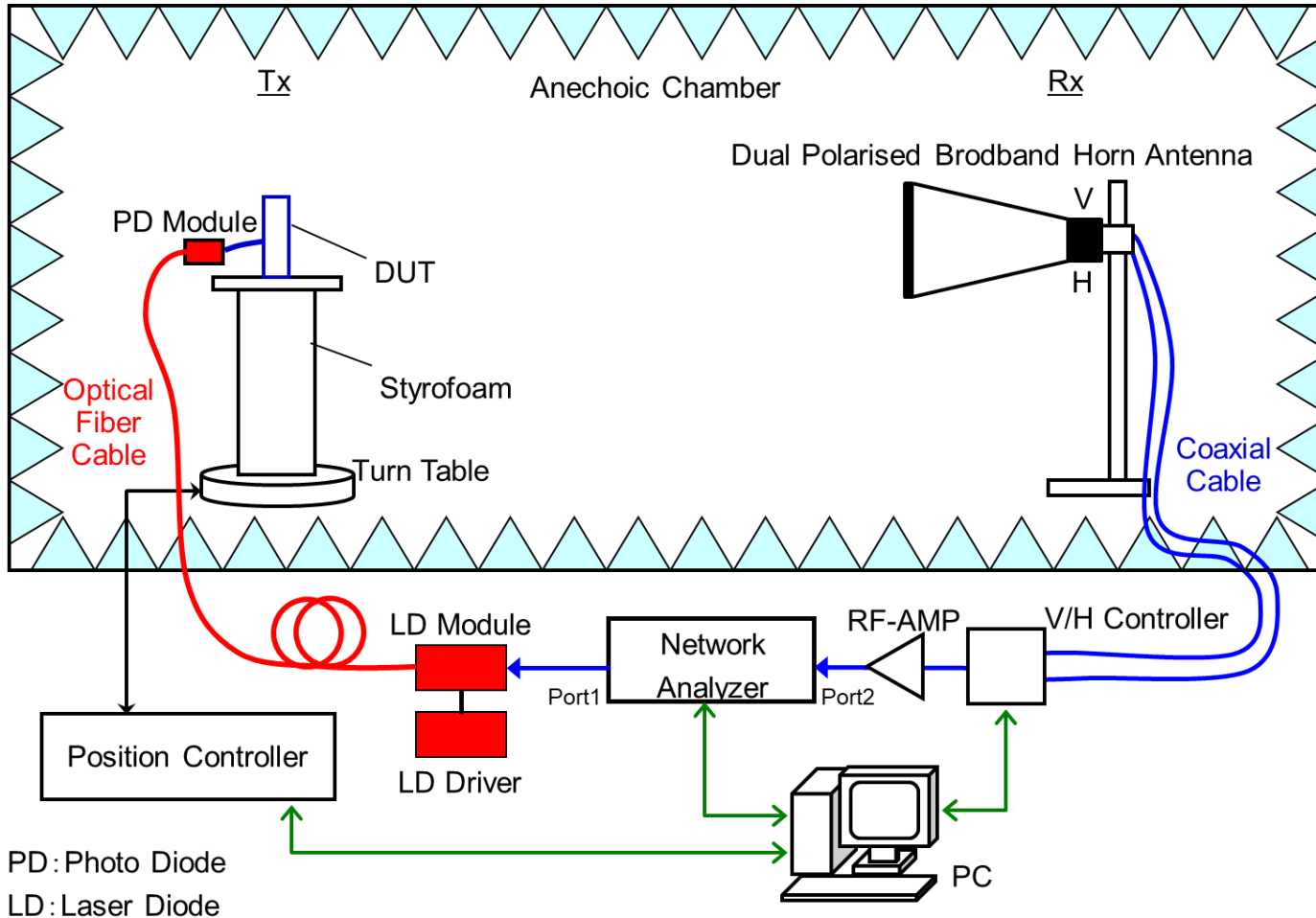


YZ-Plane



※ See Appendix “BLEant_photo” for Pictures.

Measurement System



Instrument List

Network Analyzer	Agilent Technologies	E5071C	Calibration Date (2024/2/2)
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Test Day and Test Person

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Test Day	2024/3/28
Test Person	Hiroaki KOBAYASHI Panasonic System Networks R&D Lab. Co., Ltd.

Test Software	Unused
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