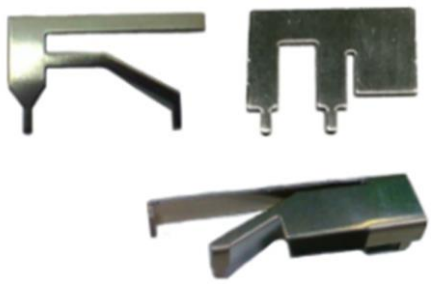
BTMA Series



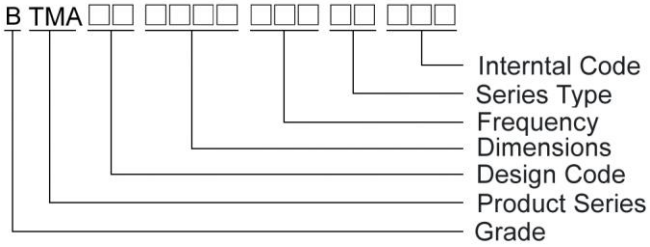
Features

- Small size low-profile, low cost and lightweight type
- Wide bandwidth and Omni-directional
- Supported with Dip-type, SMD, and Co-axial cable connecting
- Customized

Applications

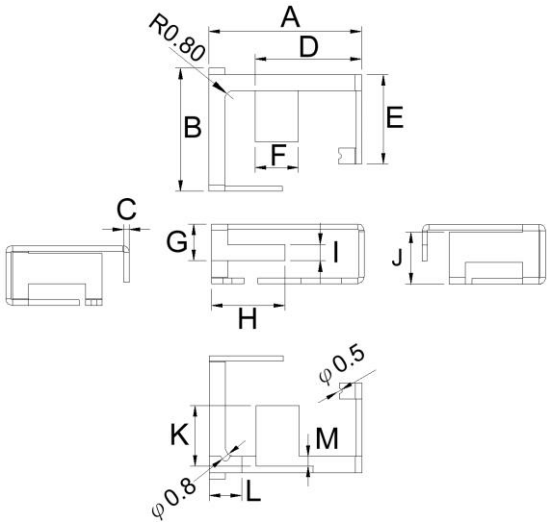
- Bluetooth, Wireless Router, Set Top Box and Home digital
- ISM band, Lora, Sigfox, LTE, NB-IOT, GPS, WiFi and Car use.

Product Identification

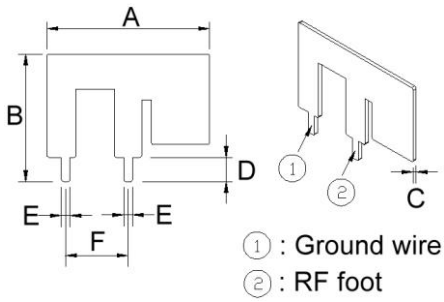


Shapes and Dimensions

BTMA0014082G4D1A01



BTMA0014115G0D1A01

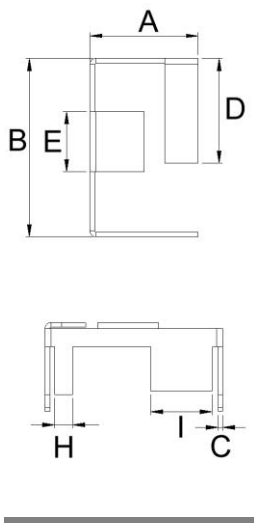


Dimensions in mm

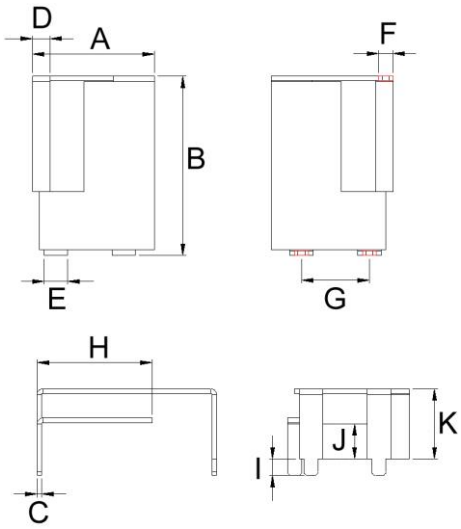
TYPE	A	B	C	D	E	F	G	H	I	J	K	L	M
BTMA0014082G4D1A01	14.10	11.4	0.5	9.8	8.3	4.0	3.4	6.8	1.5	4.8	5.6	3	0.9
BTMA0014115G0D1A01	14.85	11.6	0.4	2.2	0.8	5.7	-	-	-	-	-	-	-

Shapes and Dimensions

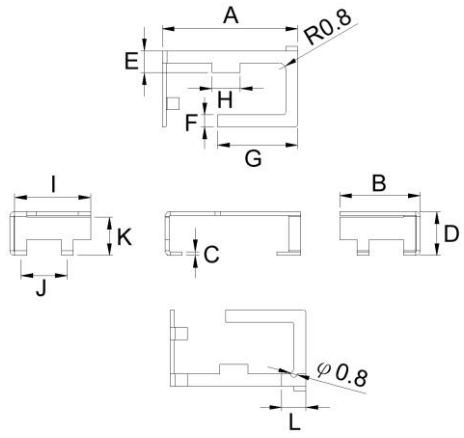
BTMA00150925GD1A01



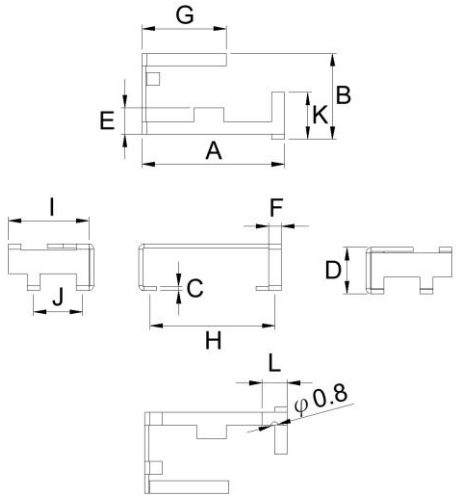
BTMA00151025GD1A02



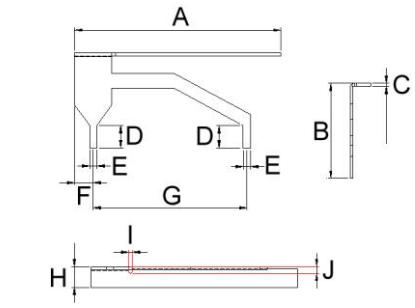
BTMA0017102G4D1A01



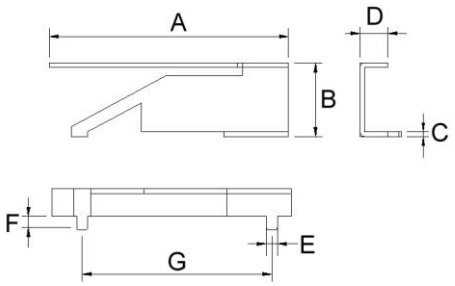
BTMA0017102G4D1A02



BTMA0027152G4C1A04



BTMA00290825GD1A02



Dimensions in mm

TYPE	A	B	C	D	E	F	G	H	I	J	K	L
BTMA00150925GD1A01	9.0	14.8	0.4	8.7	5	3-1.2	5.8	1.5	5.1	6.0	1.4	2.0
BTMA00151025GD1A02	10.4	15.35	0.4	1.5	2.0	3-1.2	5.8	9.85	1.4	3.0	6.0	-
BTMA0017102G4D1A01	16.9	10.05	0.5	5.5	2.7	1.5	10.0	3..5	9.45	5.8	4.8	3.0
BTMA0017102G4D1A02	16.9	10.15	0.5	5.5	3.1	1.5	10.0	14.8	9.55	5.8	5.55	3.0
BTMA0027152G4C1A04	27.7	12.76	0.4	3.0	1.0	2.5	20.61	2.76	0.5	0.85	-	-
BTMA00290825GD1A02	26.0	8.0	0.5	3.0	1.2	1.5	20.6	-	-	-	-	-

Electrical Characteristics

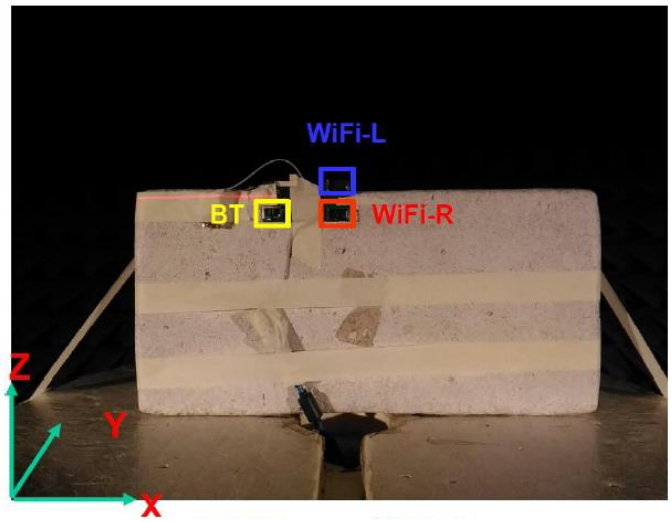
Part Number	Frequency Range (GHz)	Impedance (Ω)	Return Loss dB(Max)	Radiation	Peak Gain (dBi)	Polarization
BTMA0014082G4D1A01	2.4~2.5	50	-7	Omni-directional	0.29	Linear Vertical
BTMA0014115G0D1A01	5.15~5.85	50	-10	Omni-directional	2.90	Linear Vertical
BTMA00150925GD1A01	2.4~2.5 5.15~5.85	50	-7	Omni-directional	2.64 4.75	Linear Vertical
BTMA00151025GD1A02	2.4~2.5 5.15~5.85	50	-6	Omni-directional	2.64 4.23	Linear Vertical
BTMA0017102G4D1A01	2.4~2.5 5.15~5.85	50	-5	Omni-directional	2.88 3.17	Linear Vertical
BTMA0017102G4D1A02	2.4~2.5 5.15~5.85	50	-4	Omni-directional	4.14 3.43	Linear Vertical
BTMA0027152G4C1A04	2.4~2.5	50	-10	Directional	3.19	Linear Vertical
BTMA00290825GD1A02	2.4~2.5 5.15~5.85	50	-10	Omni-directional	2.71 3.02	Linear Vertical

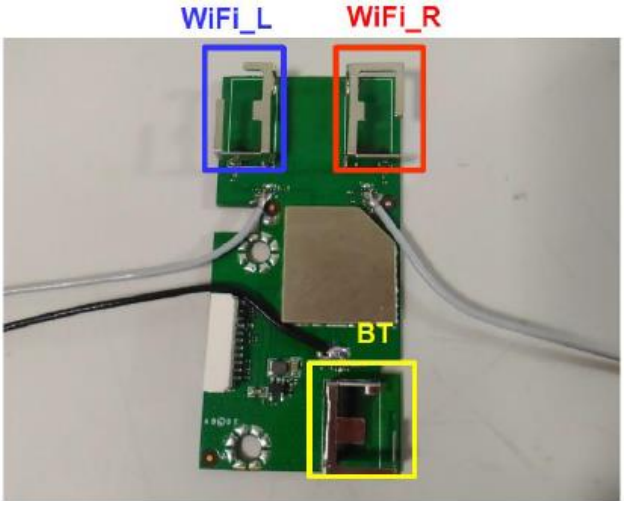
Physical Properties

Part Number	Antenna Material	Operating temperature range	Storage temperature range
BTMA0014082G4D1A01	SUS430 (First nickel plating)	- 20℃ ~ +65℃	- 30℃ ~ +75℃
BTMA0014115G0D1A01	SUS430 (First nickel plating)	- 20℃ ~ +65℃	- 30℃ ~ +75℃
BTMA00150925GD1A01	SUS430 (Nickel plating-Sn)	- 20℃ ~ +65℃	- 30℃ ~ +75℃
BTMA00151025GD1A02	SUS430 (Nickel plating-Sn)	- 20℃ ~ +65℃	- 30℃ ~ +75℃
BTMA0017102G4D1A01	SUS430 (First nickel plating)	- 20℃ ~ +65℃	- 30℃ ~ +75℃
BTMA0017102G4D1A02	SUS430 (First nickel plating)	- 20℃ ~ +65℃	- 30℃ ~ +75℃
BTMA0027152G4C1A04	SUS430 (First nickel plating)	- 20℃ ~ +65℃	- 30℃ ~ +75℃
BTMA00290825GD1A02	SUS430 (First nickel plating)	- 20℃ ~ +65℃	- 30℃ ~ +75℃

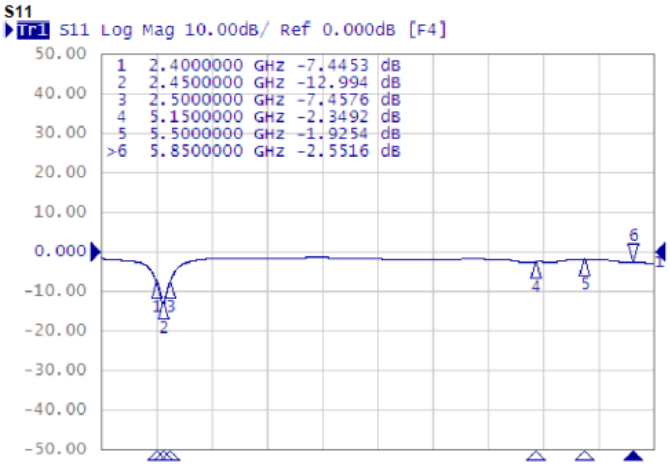
BTMA0014082G4D1A01

Experimental Setup



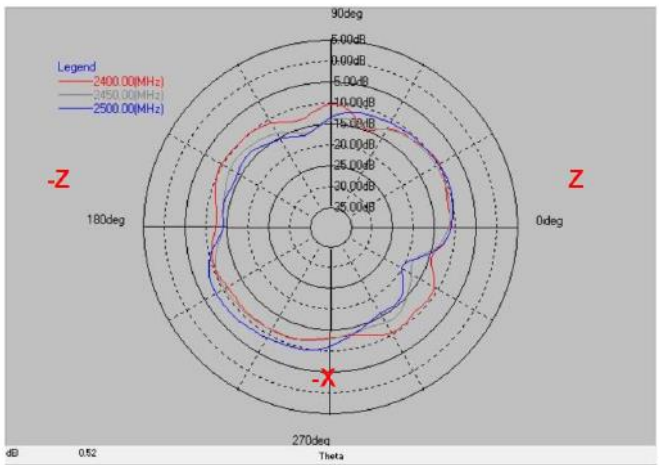


Return Loss S11



Frequency(MHz) : 2400~2500. Pattern Field : Z-X plane

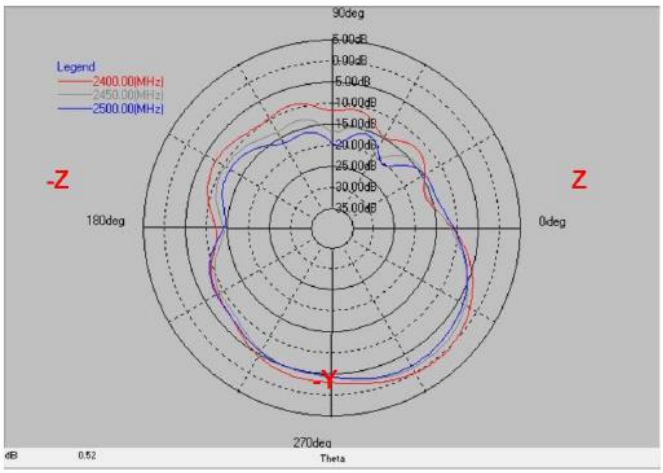
X



Layer	Max value	Min value	Average
2400(MHz)	-9.68 dB	-15.14 dB	-11.46 dB
2450(MHz)	-10.37 dB	-18.50 dB	-12.67 dB
2500(MHz)	-8.17 dB	-20.24 dB	-11.79 dB

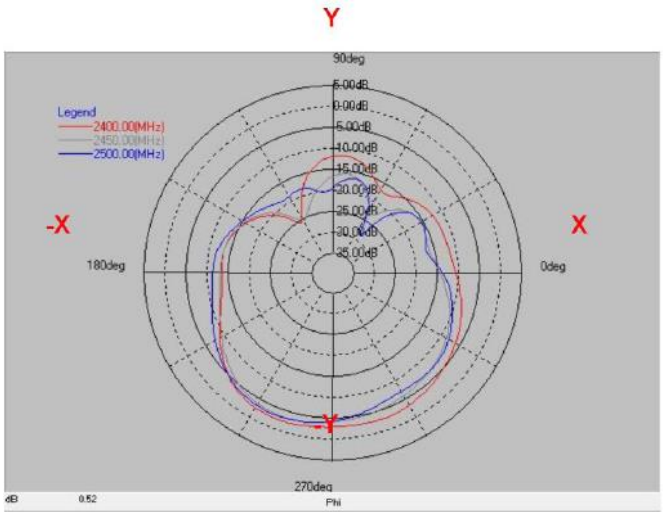
Frequency(MHz) : 2400~2500. Pattern Field : Z-Y plane

Y



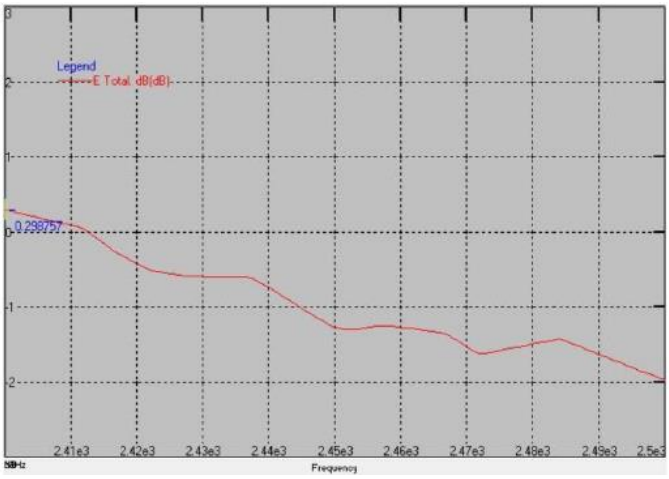
Layer	Max value	Min value	Average
2400(MHz)	0.30 dB	-16.47 dB	-5.83 dB
2450(MHz)	-1.28 dB	-20.09 dB	-7.28 dB
2500(MHz)	-1.98 dB	-20.67 dB	-7.65 dB

Frequency(MHz)：2400~2500. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
2400(MHz)	-2.52 dB	-25.81 dB	-7.49 dB
2450(MHz)	-3.56 dB	-25.65 dB	-9.21 dB
2500(MHz)	-3.27 dB	-28.86 dB	-8.96 dB

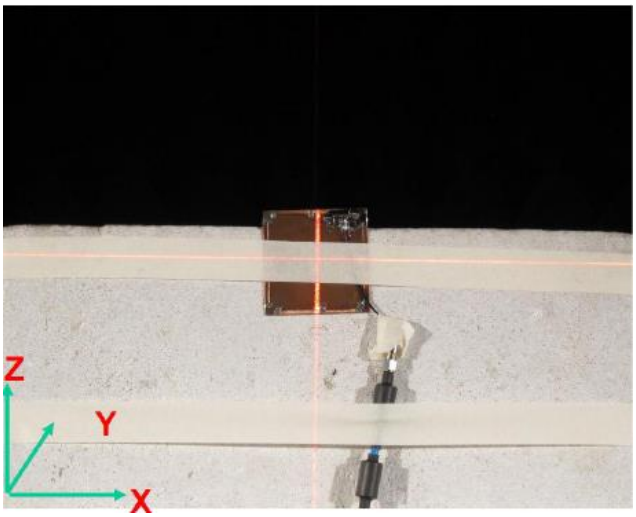
Peak Gain



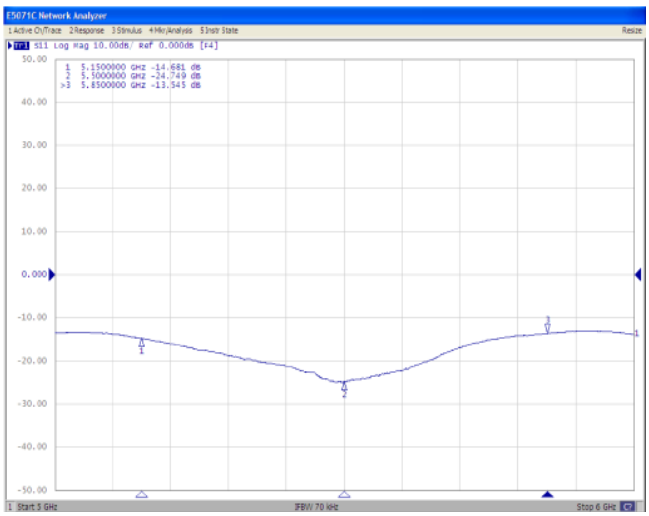
Peak Gain：Max 0.29 dBi

BTMA0014115G0D1A01

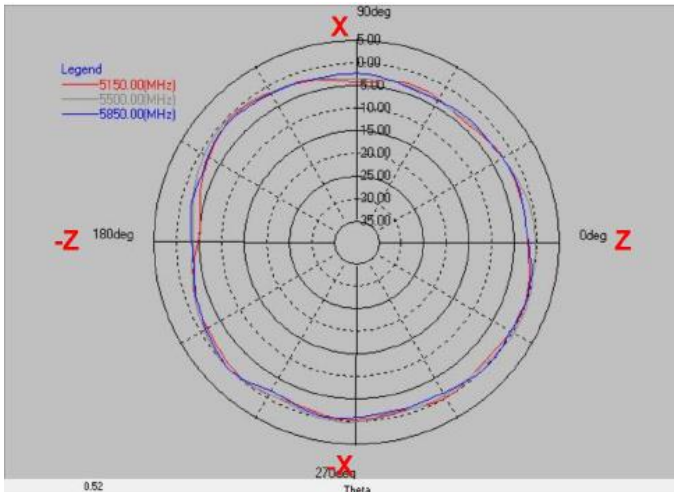
Experimental Setup



Return Loss S11

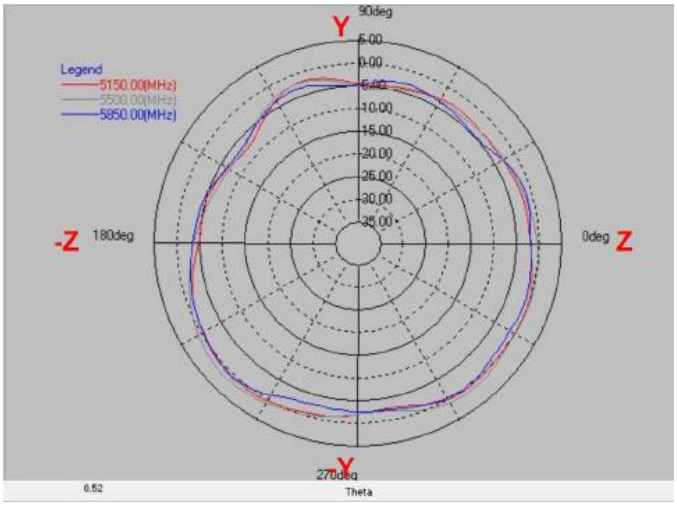


Frequency(MHz) : 5150~5850. Pattern Field : Z-X plane



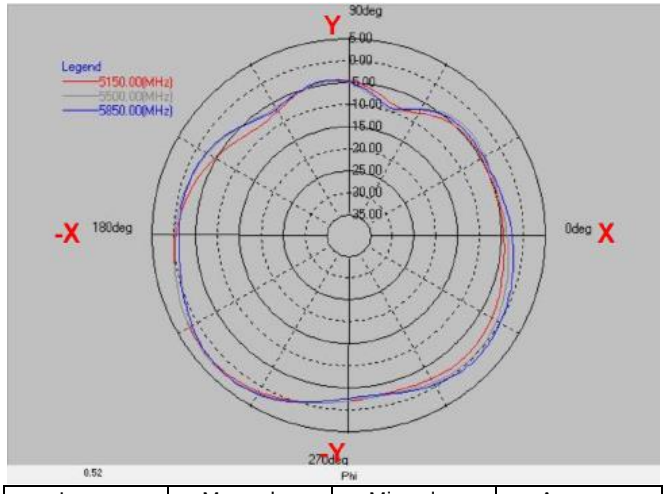
Layer	Max value	Min value	Average
5150(MHz)	-0.05 dB	-5.06 dB	-1.86 dB
5500(MHz)	0.51 dB	-3.81 dB	-1.34 dB
5850(MHz)	0.03 dB	-3.84 dB	-1.72 dB

Frequency(MHz) : 5150~5850. Pattern Field : Z-Y plane



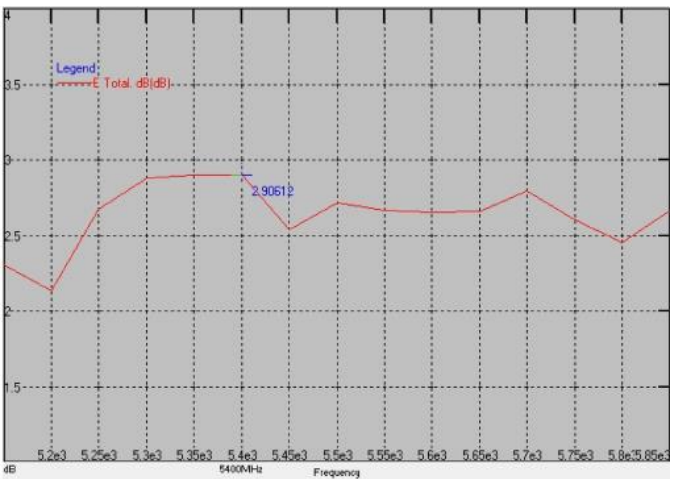
Layer	Max value	Min value	Average
5150(MHz)	0.61 dB	-7.89 dB	2.06 dB
5500(MHz)	1.60 dB	-7.46 dB	-1.51 dB
5850(MHz)	0.55 dB	-6.93 dB	-2.39 dB

Frequency(MHz) : 5150~5850. Pattern Field : X-Y plane



Layer	Max value	Min value	Average
5150(MHz)	2.31 dB	-8.83 dB	-2.14 dB
5500(MHz)	2.66 dB	-10.15 dB	-1.58 dB
5850(MHz)	2.51 dB	-9.38 dB	-1.60 dB

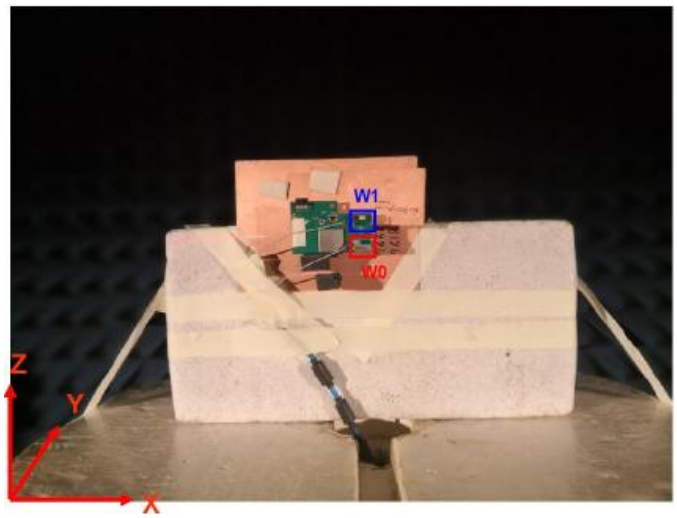
Peak Gain

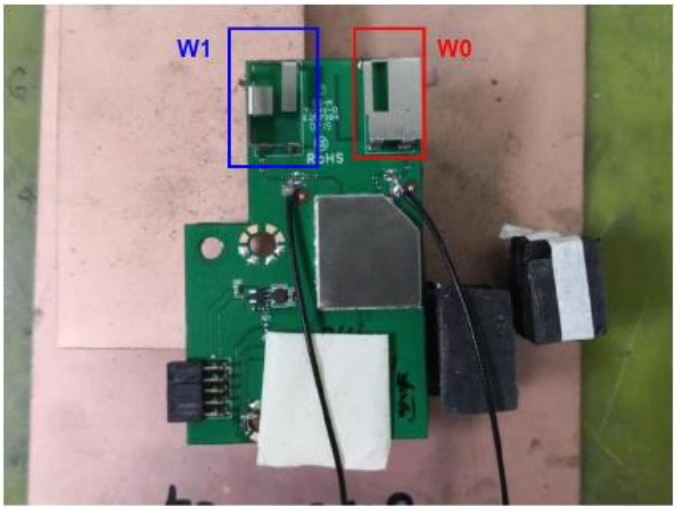


Peak Gain : Max 2.90 dBi

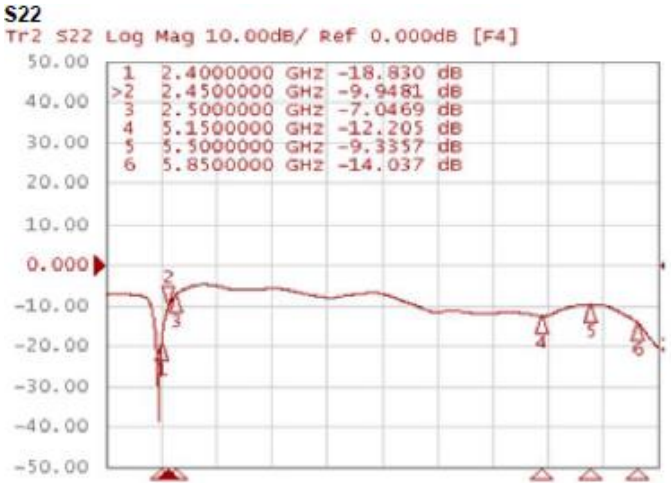
BTMA00150925GD1A01

Experimental Setup

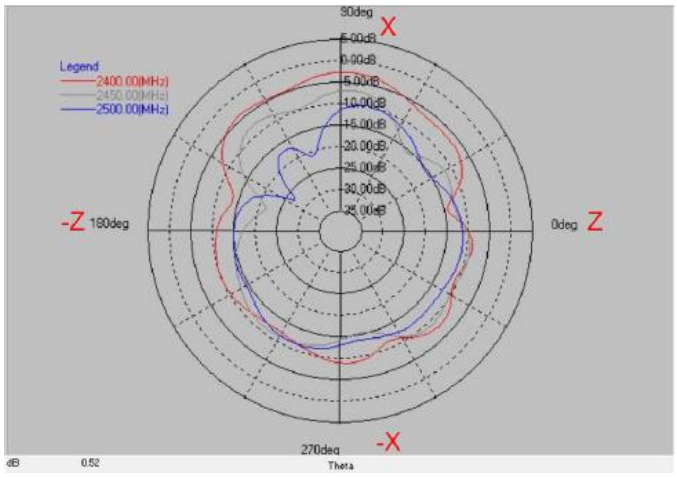




Return Loss S22

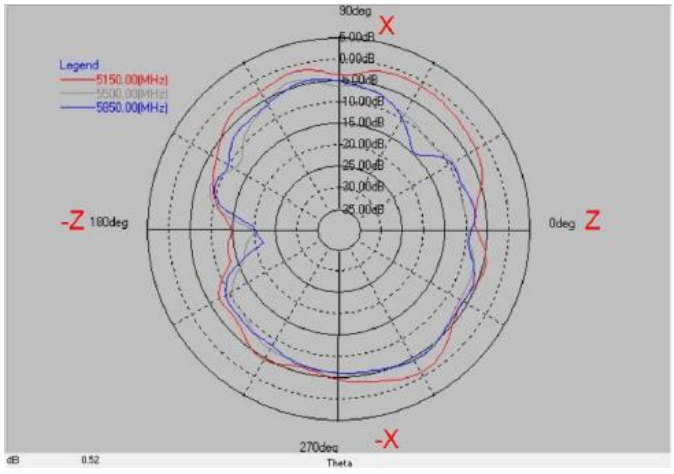


Frequency(MHz) : 2400~2500. Pattern Field : Z-X plane



Layer	Max value	Min value	Average
2400(MHz)	-2.86 dB	-14.14 dB	-7.63 dB
2450(MHz)	-7.05 dB	-21.75 dB	-11.17 dB
2400(MHz)	-10.20 dB	-27.18 dB	-13.38 dB

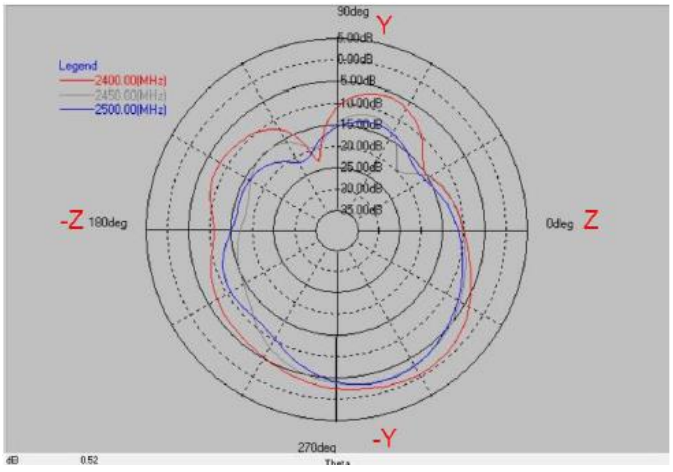
Frequency(MHz) : 5150~5850. Pattern Field : Z-X plane



Layer	Max value	Min value	Average
5150(MHz)	-1.19 dB	-14.72 dB	-4.27 dB
5500(MHz)	-3.75 dB	-20.07 dB	-7.69 dB
5850(MHz)	-4.43 dB	-21.96 dB	-7.58 dB

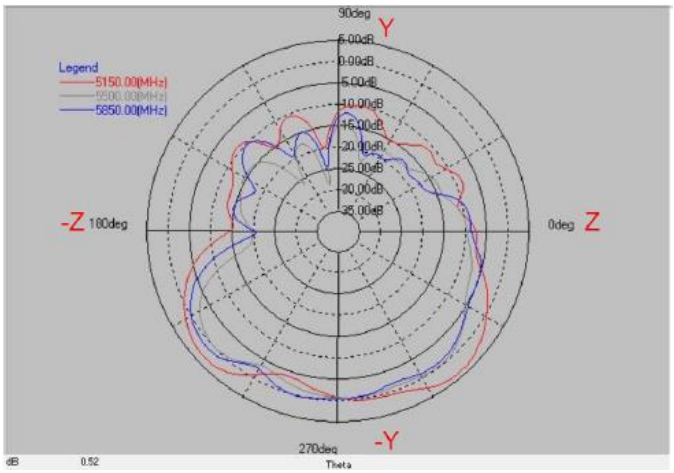
Metal Stamping Antenna BTMA Series

Frequency(MHz)：2400~2500. Pattern Field：Z-Y plane



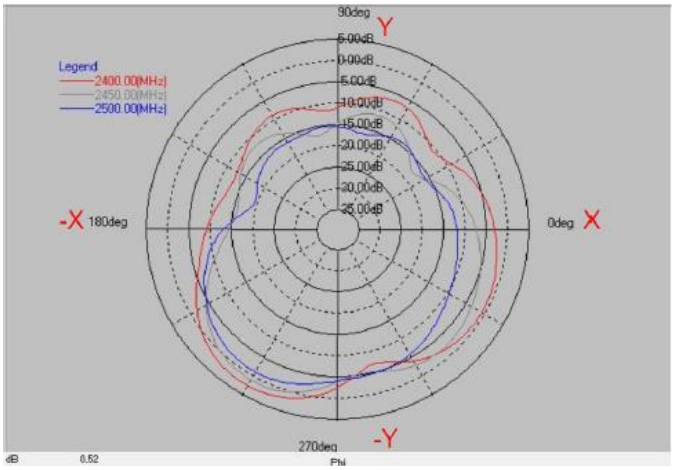
Layer	Max value	Min value	Average
2400(MHz)	-0.79 dB	-23.38 dB	-6.13 dB
2450(MHz)	-2.97 dB	-19.97 dB	-8.86 dB
2400(MHz)	-2.79 dB	-22.09 dB	-9.15 dB

Frequency(MHz)：5150~5850. Pattern Field：Z-Y plane



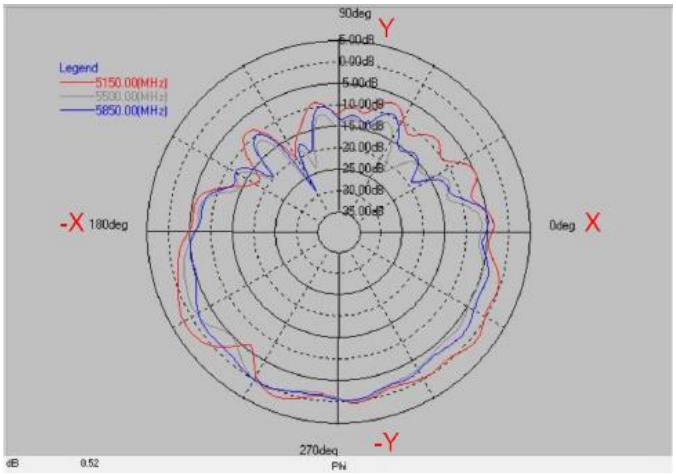
Layer	Max value	Min value	Average
5150(MHz)	3.91 dB	-20.30 dB	-2.51 dB
5500(MHz)	-0.15 dB	-28.99 dB	-5.54 dB
5850(MHz)	1.26 dB	-25.01 dB	-4.77 dB

Frequency(MHz)：2400~2500. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
2400(MHz)	2.60 dB	-13.00 dB	-3.43dB
2450(MHz)	0.96 dB	-17.80 dB	-5.47 dB
2500(MHz)	-1.16 dB	-19.46 dB	-7.55 dB

Frequency(MHz)：5150~5850. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
5150(MHz)	2.05 dB	-19.74 dB	-2.89 dB
5500(MHz)	0.31 dB	-26.05 dB	-5.10 dB
5850(MHz)	-0.01 dB	-29.00 dB	-4.68 dB

Peak Gain

2G

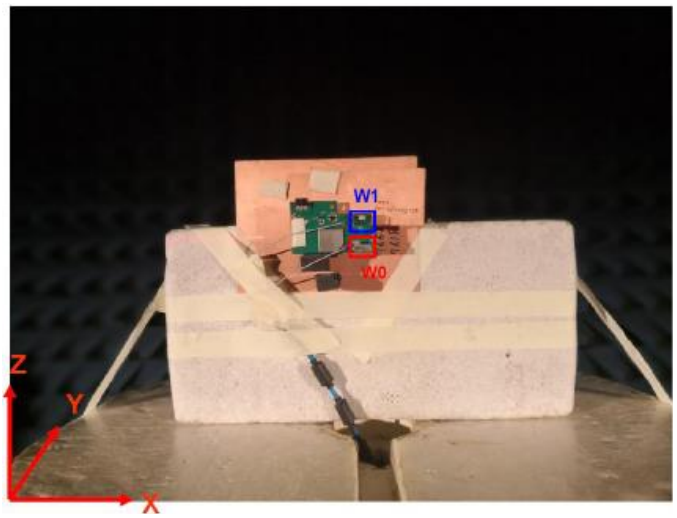
Frequency (MHz)	Peak Gain (dBi)
2400	2.64
2410	2.22
2420	1.84
2430	1.85
2440	1.39
2450	1.15
2460	0.60
2470	0.07
2480	-0.18
2490	-0.67
2500	-0.56

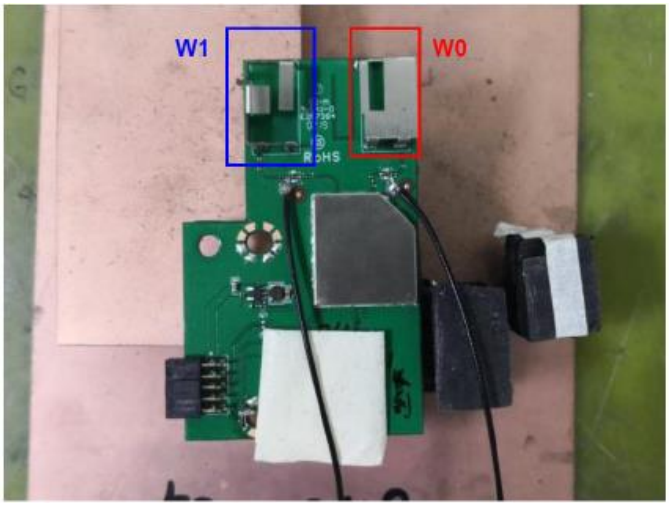
5G

Frequency (MHz)	Peak Gain (dBi)	Frequency (MHz)	Peak Gain (dBi)
5150	4.75	5700	1.02
5200	4.65	5750	1.21
5250	3.95	5800	1.76
5300	4.44	5850	1.47
5350	3.79		
5400	3.08		
5450	1.86		
5500	1.42		
5550	1.02		
5600	0.81		
5650	1.15		

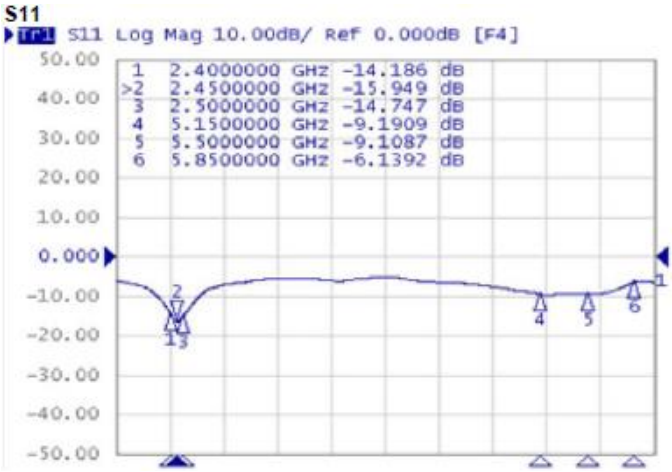
BTMA00151025GD1A02

Experimental Setup

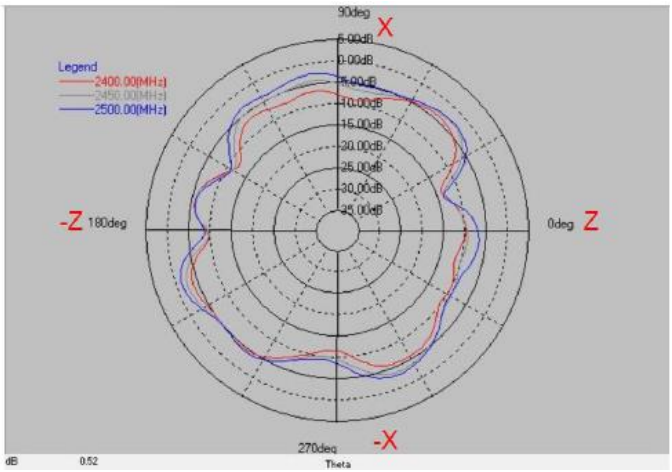




Return Loss S11

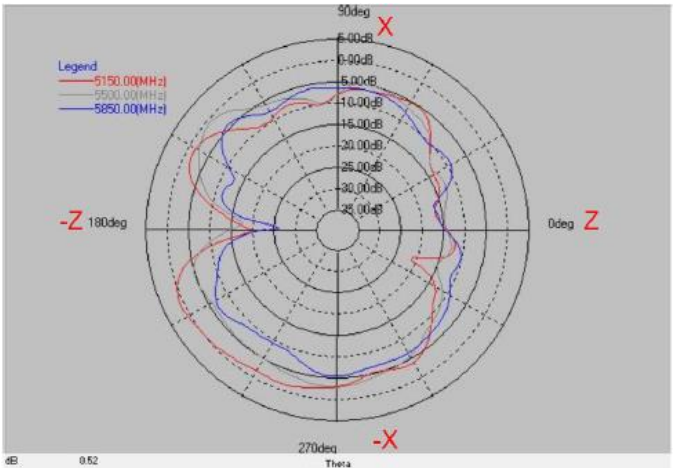


Frequency(MHz) : 2400~2500. Pattern Field : Z-X plane



Layer	Max value	Min value	Average
2400(MHz)	-3.84 dB	-13.97 dB	-7.26 dB
2450(MHz)	-2.47 dB	-13.35 dB	-6.04 dB
2400(MHz)	-1.35 dB	-13.67 dB	-5.24 dB

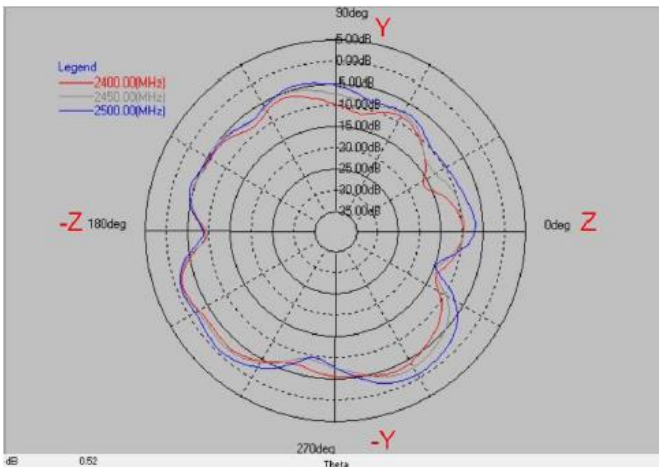
Frequency(MHz) : 5150~5850. Pattern Field : Z-X plane



Layer	Max value	Min value	Average
5150(MHz)	0.83 dB	-21.25 dB	-5.01 dB
5500(MHz)	-0.91 dB	-17.69 dB	-6.29 dB
5850(MHz)	-4.37 dB	-26.43 dB	-8.33 dB

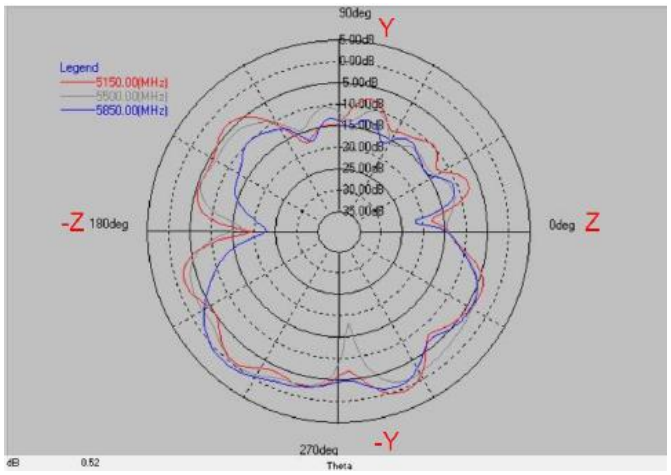
Metal Stamping Antenna BTMA Series

Frequency(MHz)：2400~2500. Pattern Field：Z-Y plane



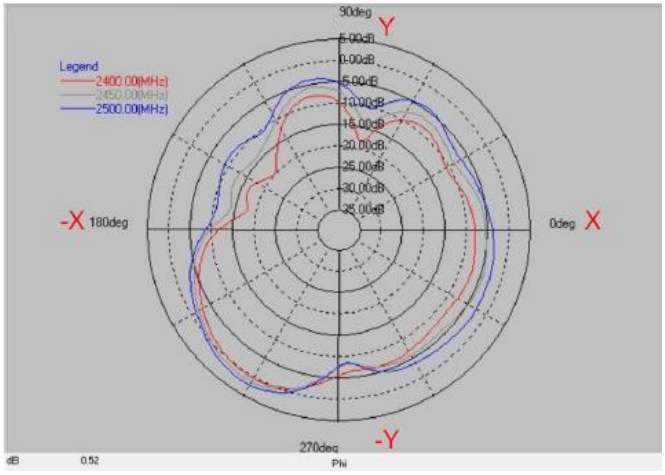
Layer	Max value	Min value	Average
2400(MHz)	-1.67 dB	-16.44 dB	-6.59 dB
2450(MHz)	-1.29 dB	-14.55 dB	-5.98 dB
2400(MHz)	-0.83 dB	-14.85 dB	-4.86 dB

Frequency(MHz)：5150~5850. Pattern Field：Z-Y plane



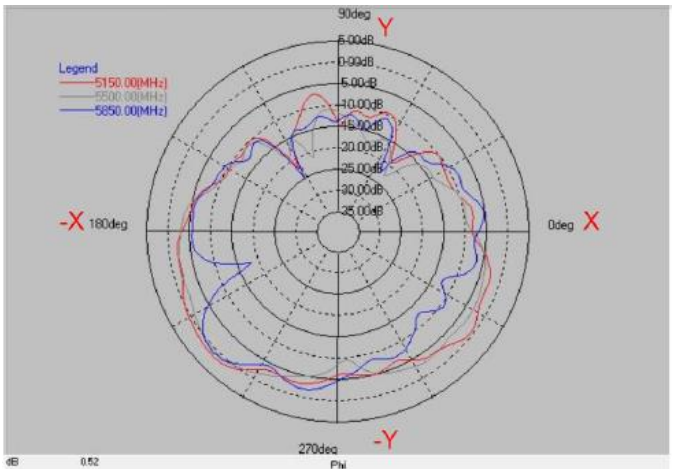
Layer	Max value	Min value	Average
5150(MHz)	0.52 dB	-19.78 dB	-5.44 dB
5500(MHz)	-0.30 dB	-18.34 dB	-5.76 dB
5850(MHz)	0.73 dB	-23.02 dB	-6.04 dB

Frequency(MHz)：2400~2500. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
2400(MHz)	0.29 dB	-20.04 dB	-6.33 dB
2450(MHz)	1.22 dB	-14.26 dB	-5.10 dB
2500(MHz)	2.17 dB	-10.99 dB	-3.75 dB

Frequency(MHz)：5150~5850. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
5150(MHz)	1.56 dB	-22.61 dB	-4.49 dB
5500(MHz)	0.53 dB	-22.96 dB	-5.27 dB
5850(MHz)	0.92 dB	-25.04 dB	-6.77 dB

Peak Gain

2G

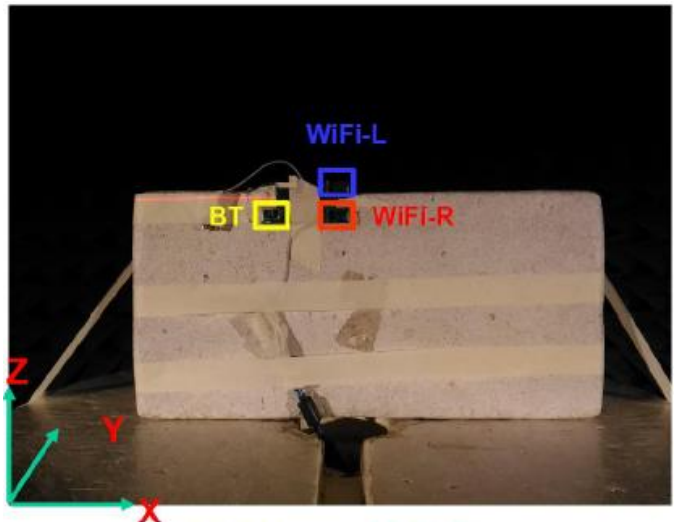
Frequency (MHz)	Peak Gain (dBi)
2400	1.55
2410	1.60
2420	1.58
2430	2.01
2440	2.04
2450	2.05
2460	2.42
2470	2.61
2480	2.61
2490	2.63
2500	2.64

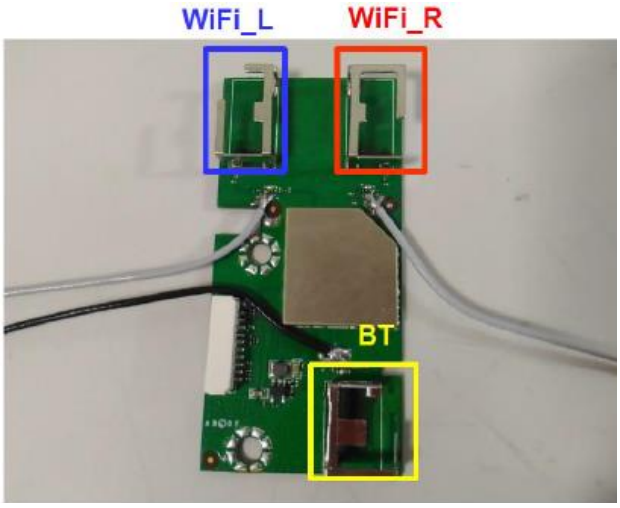
5G

Frequency (MHz)	Peak Gain (dBi)	Frequency (MHz)	Peak Gain (dBi)
5150	4.23	5700	2.13
5200	3.90	5750	1.89
5250	3.88	5800	1.52
5300	3.97	5850	1.44
5350	3.74		
5400	1.87		
5450	1.70		
5500	1.83		
5550	2.40		
5600	2.57		
5650	2.83		

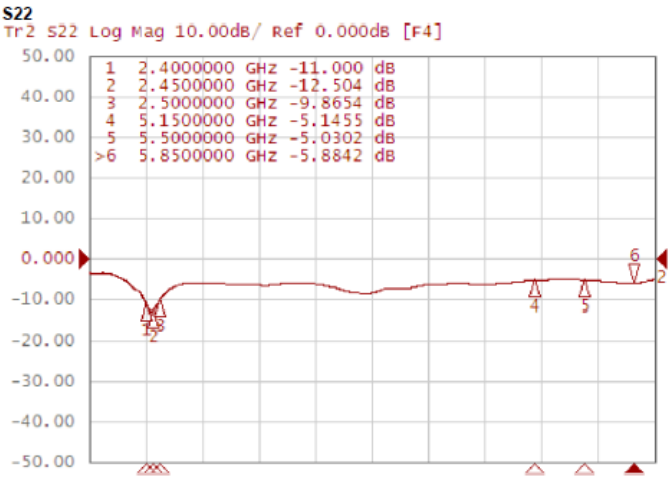
BTMA0017102G4D1A01

Experimental Setup

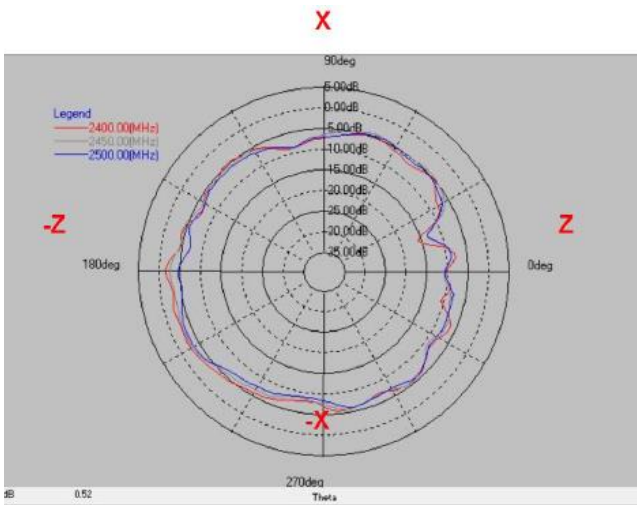




Return Loss S22

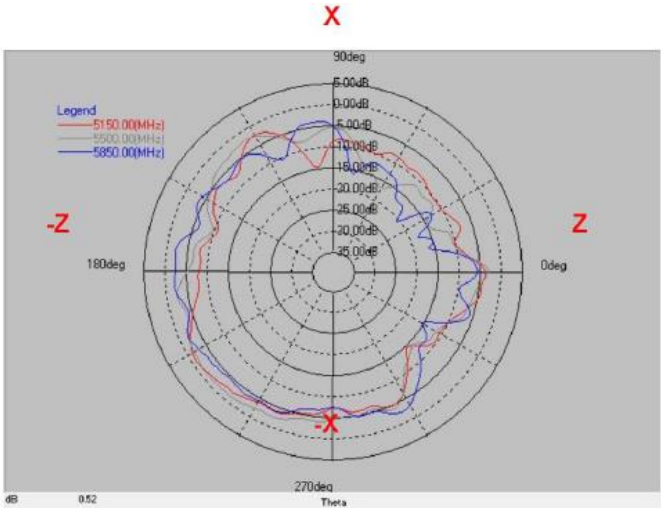


Frequency(MHz) : 2400~2500. Pattern Field : Z-X plane



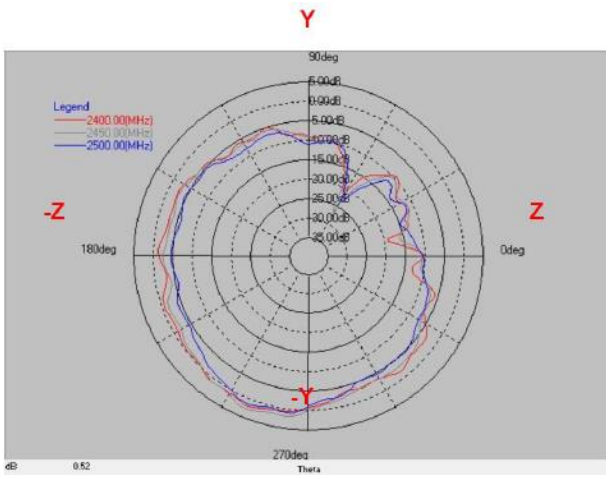
Layer	Max value	Min value	Average
2400(MHz)	-1.36 dB	-15.89 dB	-5.81 dB
2450(MHz)	-2.52 dB	-13.39 dB	-5.91 dB
2400(MHz)	-3.50 dB	-13.23 dB	-6.54 dB

Frequency(MHz) : 5150~5850. Pattern Field : Z-X plane



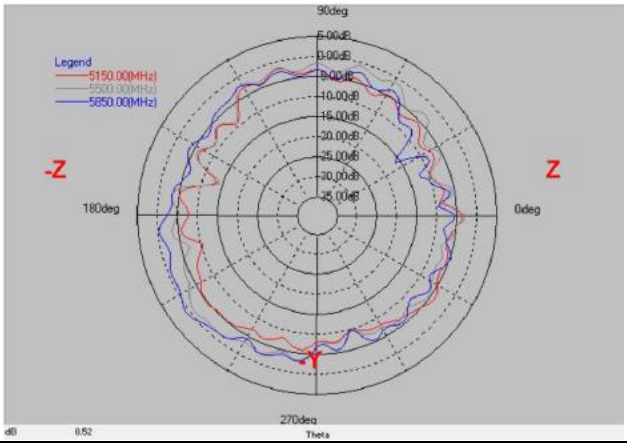
Layer	Max value	Min value	Average
5150(MHz)	-1.08 dB	-14.89 dB	-6.26 dB
5500(MHz)	-1.40 dB	-16.84 dB	-5.41 dB
5850(MHz)	-2.02 dB	-20.60 dB	-6.03 dB

Frequency(MHz)：2400~2500. Pattern Field：Z-Y plane



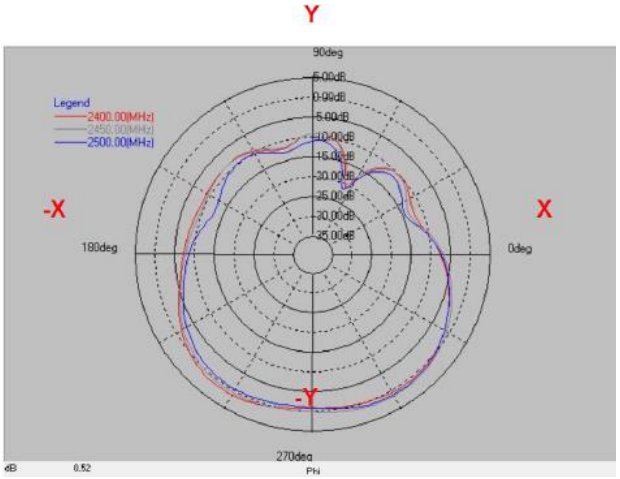
Layer	Max value	Min value	Average
2400(MHz)	1.74 dB	-20.97 dB	-3.49 dB
2450(MHz)	2.68 dB	-27.16 dB	-3.51 dB
2400(MHz)	1.21 dB	-23.67 dB	-4.97 dB

Frequency(MHz)：5150~5850. Pattern Field：Z-Y plane



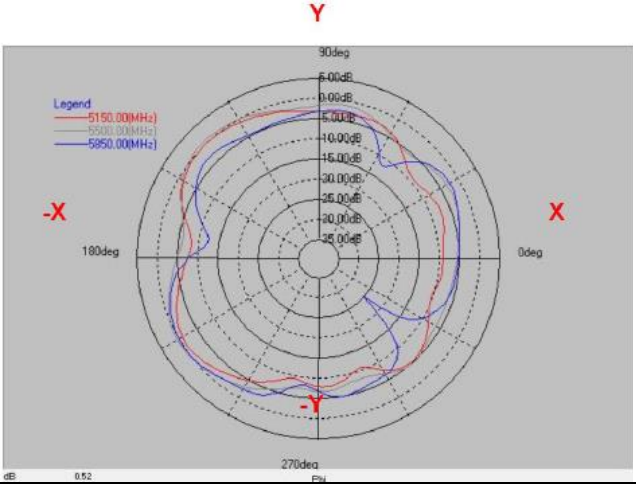
Layer	Max value	Min value	Average
5150(MHz)	-2.12 dB	-13.58 dB	-6.20 dB
5500(MHz)	-1.04 dB	-14.34 dB	-4.49 dB
5850(MHz)	0.77 dB	-16.24 dB	-4.18 dB

Frequency(MHz)：2400~2500. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
2400(MHz)	1.19 dB	-21.06 dB	-3.46 dB
2450(MHz)	1.42 dB	-20.22 dB	-3.21 dB
2500(MHz)	1.14 dB	-21.85 dB	-4.01 dB

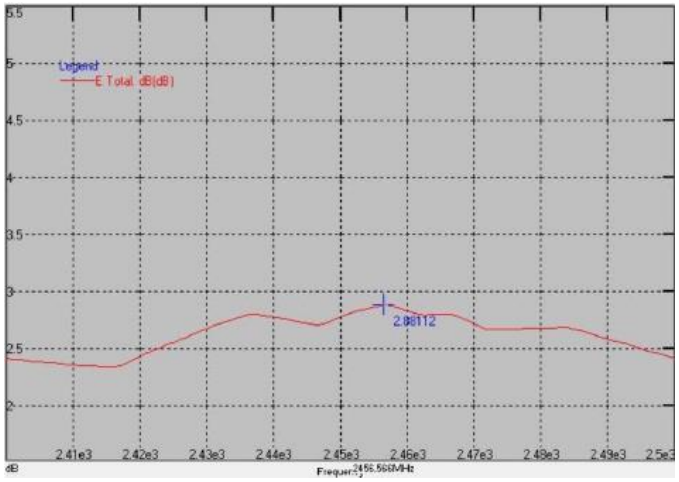
Frequency(MHz)：5150~5850. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
5150(MHz)	-0.15 dB	-10.92 dB	-4.44 dB
5500(MHz)	0.60 dB	-8.28 dB	-2.98 dB
5850(MHz)	0.05 dB	-25.42 dB	-4.39 dB

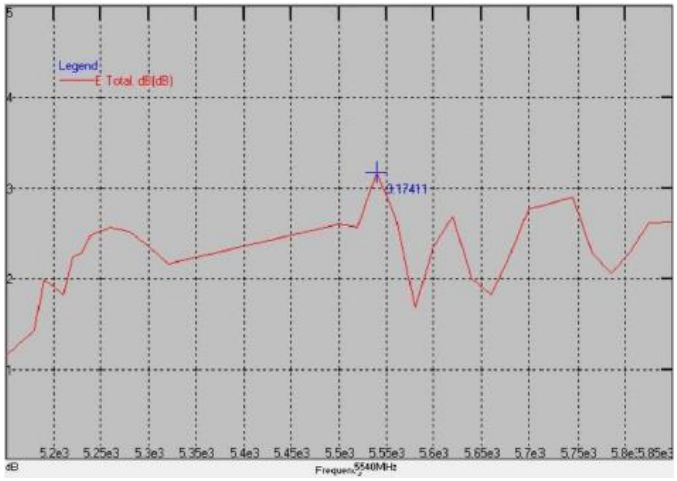
Peak Gain

2G



Peak Gain：Max 2.88 dBi

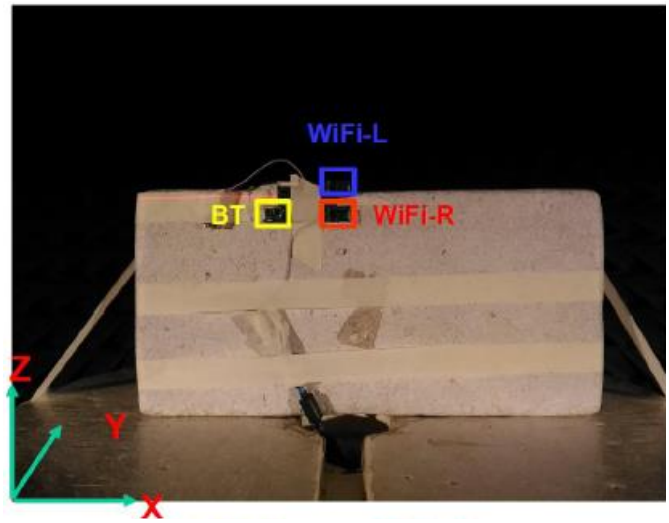
5G

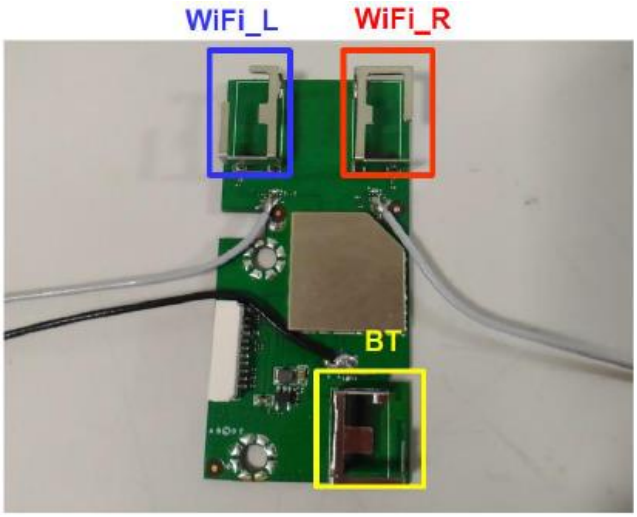


Peak Gain：Max 3.17 dBi

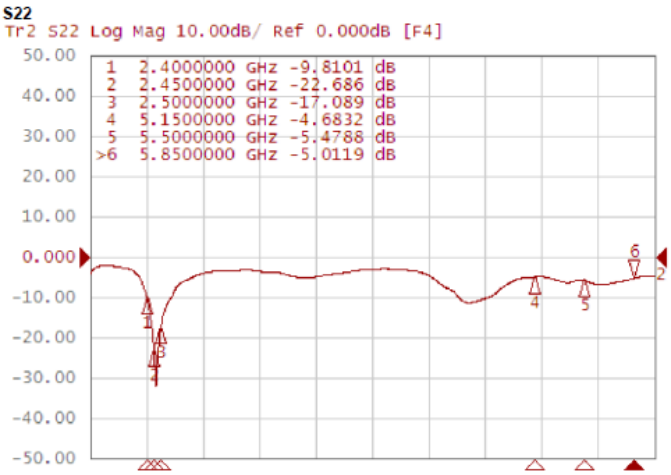
BTMA0017102G4D1A02

Experimental Setup

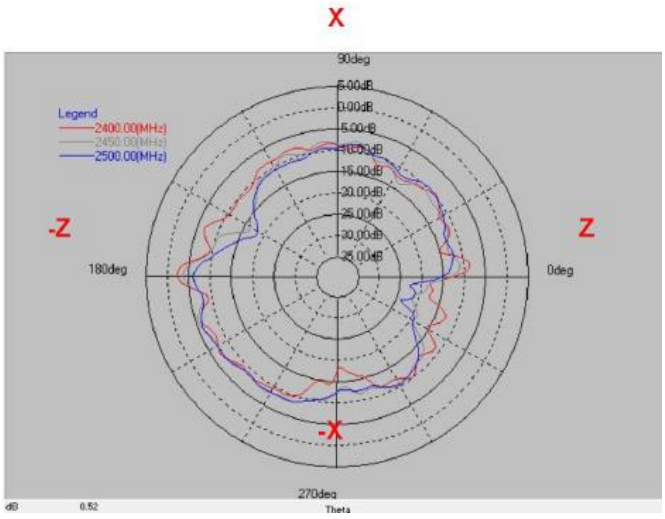




Return Loss S22

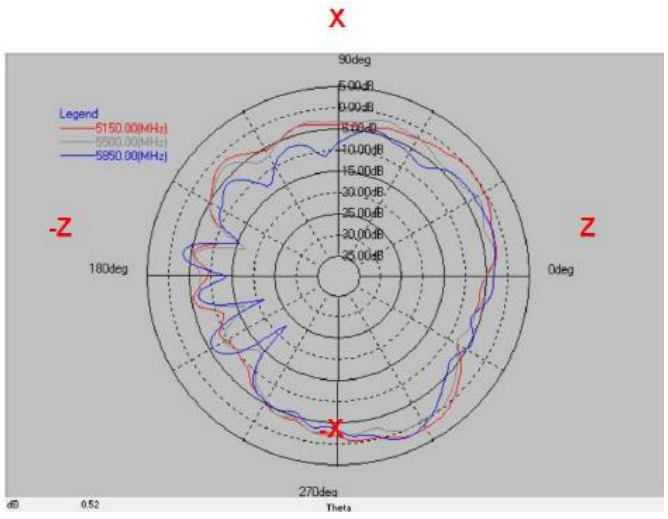


Frequency(MHz) : 2400~2500. Pattern Field : Z-X plane



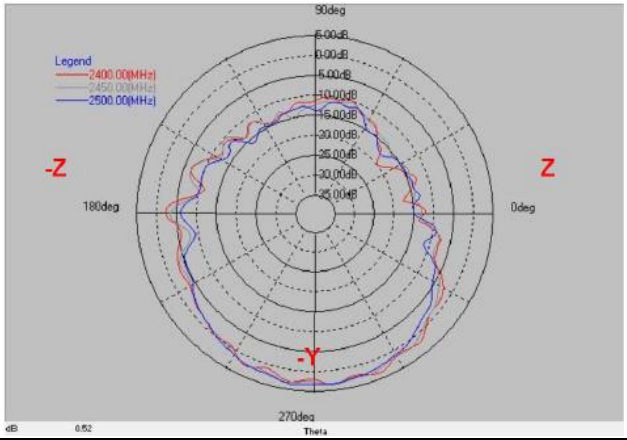
Layer	Max value	Min value	Average
2400(MHz)	-2.23 dB	-18.66 dB	-9.68 dB
2450(MHz)	-3.51 dB	-21.67 dB	-9.99 dB
2400(MHz)	-6.01 dB	-24.11 dB	-10.54 dB

Frequency(MHz) : 5150~5850. Pattern Field : Z-X plane



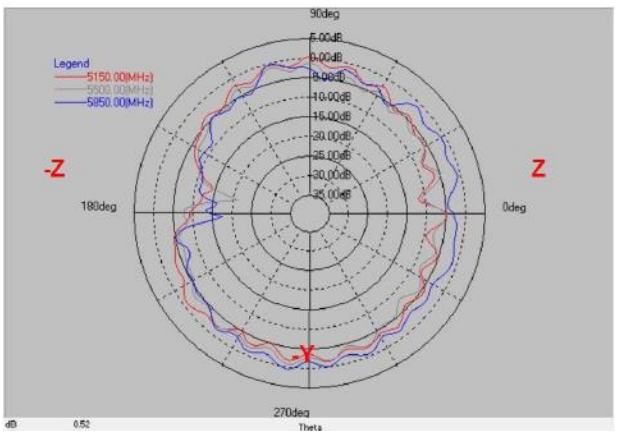
Layer	Max value	Min value	Average
5150(MHz)	1.61 dB	-15.19 dB	-3.16 dB
5500(MHz)	-0.19 dB	-17.15 dB	-4.14 dB
5850(MHz)	1.72 dB	-22.93 dB	-4.75 dB

Frequency(MHz)：2400~2500. Pattern Field：Z-Y plane



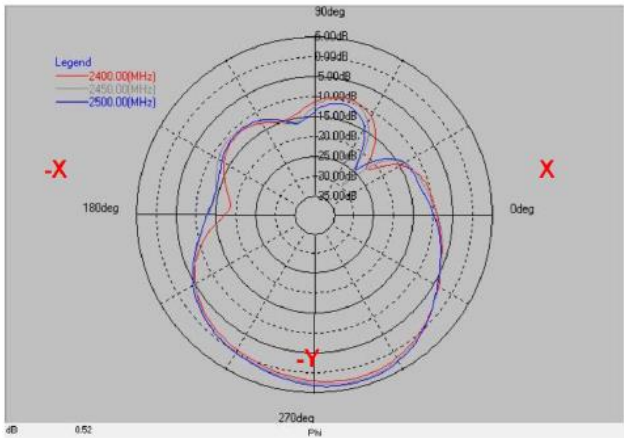
Layer	Max value	Min value	Average
2400(MHz)	3.36 dB	-20.21 dB	-2.86 dB
2450(MHz)	3.14 dB	-15.73 dB	-2.94 dB
2400(MHz)	3.39 dB	-17.57 dB	-3.19 dB

Frequency(MHz)：5150~5850. Pattern Field：Z-Y plane



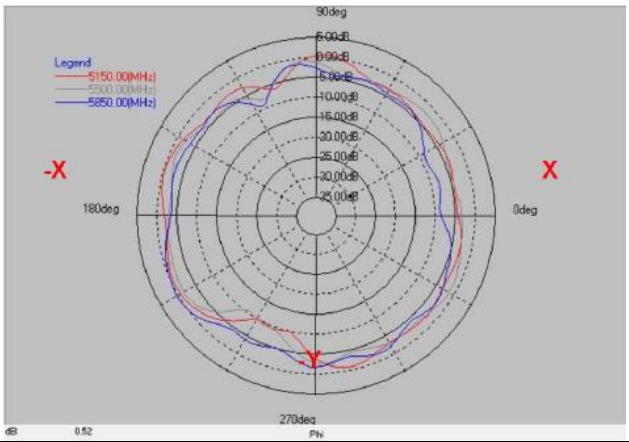
Layer	Max value	Min value	Average
5150(MHz)	0.09 dB	-14.59 dB	-4.02 dB
5500(MHz)	-0.76 dB	-21.21 dB	-4.87 dB
5850(MHz)	0.44 dB	-17.49 dB	-3.22 dB

Frequency(MHz)：2400~2500. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
2400(MHz)	2.46 dB	-22.31 dB	-3.81 dB
2450(MHz)	3.20 dB	-29.93 dB	-3.30 dB
2500(MHz)	3.64 dB	-24.60 dB	-3.05 dB

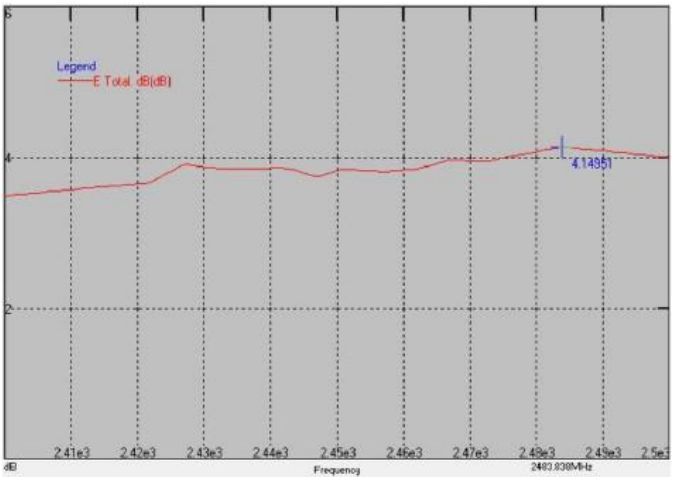
Frequency(MHz)：5150~5850. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
5150(MHz)	0.31 dB	-10.17 dB	-2.80 dB
5500(MHz)	-0.96 dB	-10.79 dB	-3.36 dB
5850(MHz)	0.33 dB	-9.41 dB	-3.55 dB

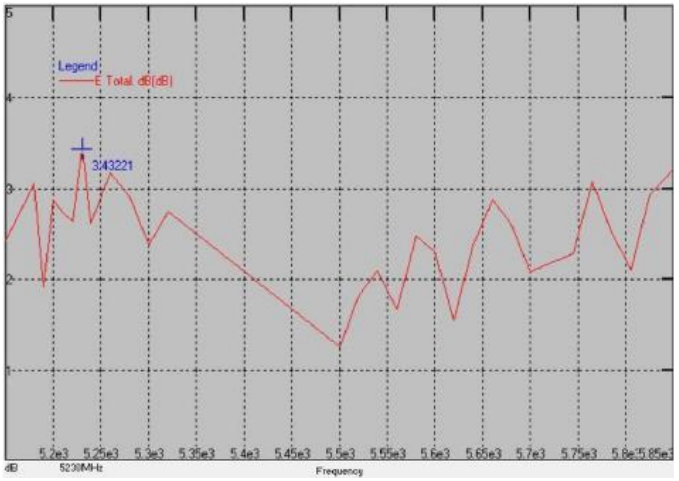
Peak Gain

2G



Peak Gain：Max 4.14 dBi

5G

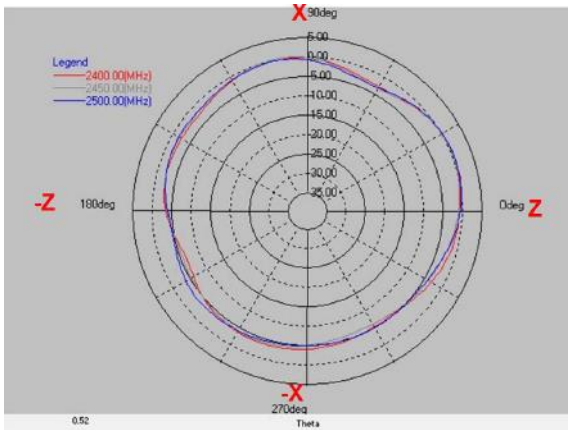


Peak Gain：Max 3.43 dBi

BTMA0027152G4C1A04

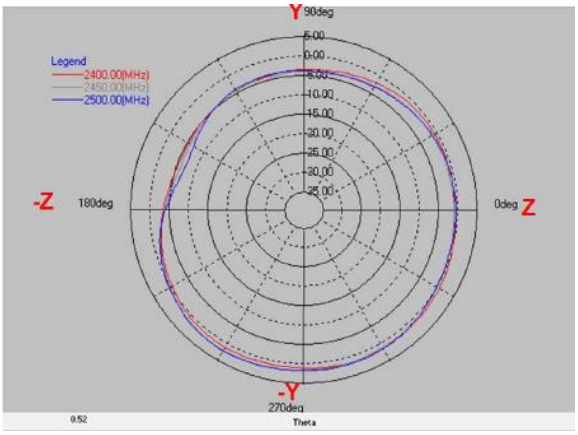
Return Loss S11：2G Ant 1 → 25G Ant 2

Frequency(MHz)：2400~2500. Z-X Plane



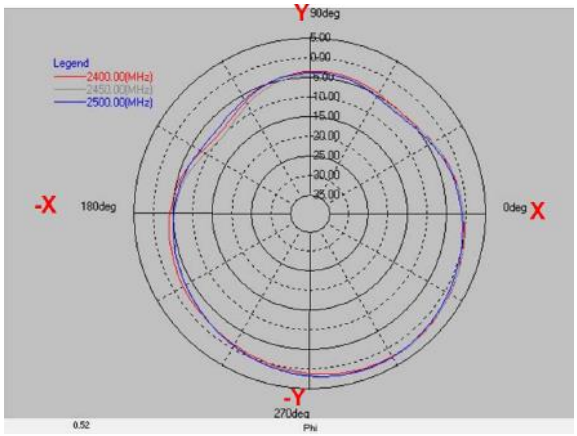
Layer	Max value	Min value	Average
2400(MHz)	0.31 dB	-6.50 dB	-2.43 dB
2450(MHz)	0.22 dB	-6.28 dB	-2.59 dB
2500(MHz)	0.48 dB	-5.27 dB	-2.44 dB

Frequency(MHz)：2400~2500. Z-Y Plane



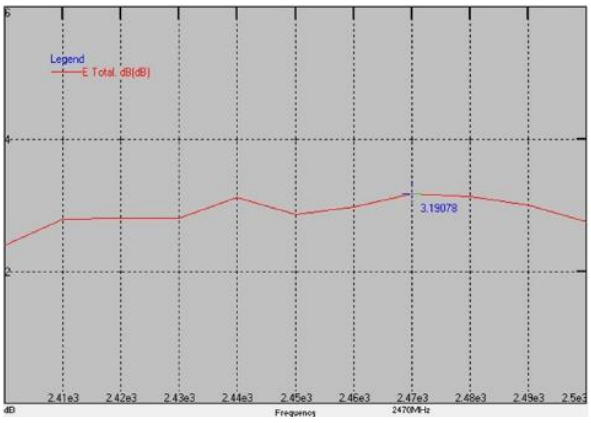
Layer	Max value	Min value	Average
2400(MHz)	1.34 dB	-5.51 dB	-0.89 dB
2450(MHz)	1.91 dB	-6.13 dB	-0.92 dB
2500(MHz)	2.07 dB	-7.38 dB	-0.80 dB

Frequency(MHz)：2400~2500. X-Y Plane



Layer	Max value	Min value	Average
2400(MHz)	2.27 dB	-9.20 dB	-1.54 dB
2450(MHz)	2.60 dB	-10.29 dB	-1.50 dB
2500(MHz)	2.40 dB	-8.04 dB	-1.62 dB

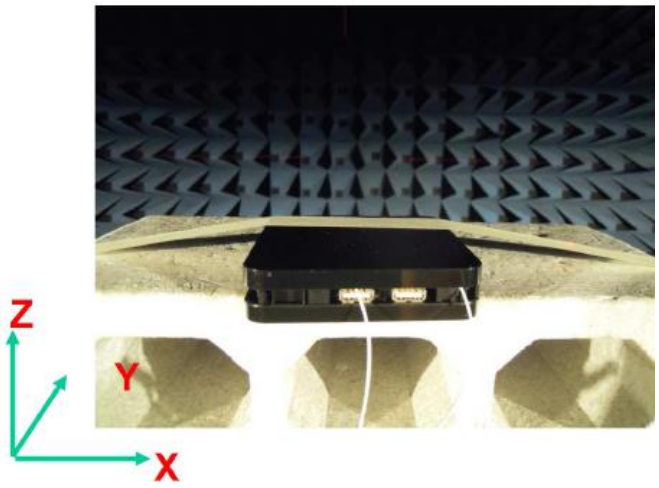
Peak Gain

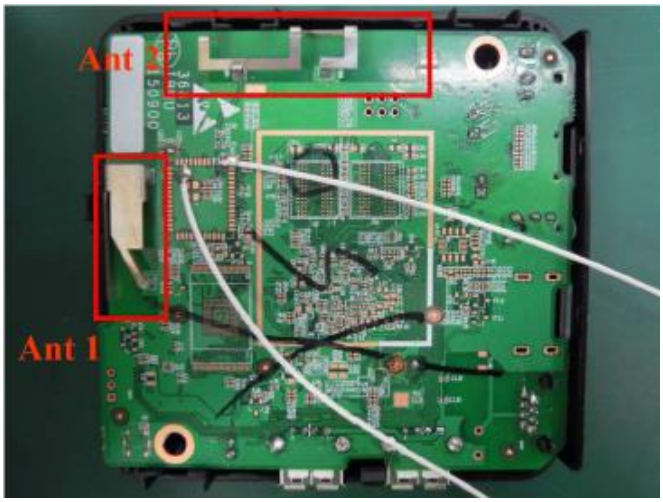


Peak Gain：Max 3.1993.19 dBi

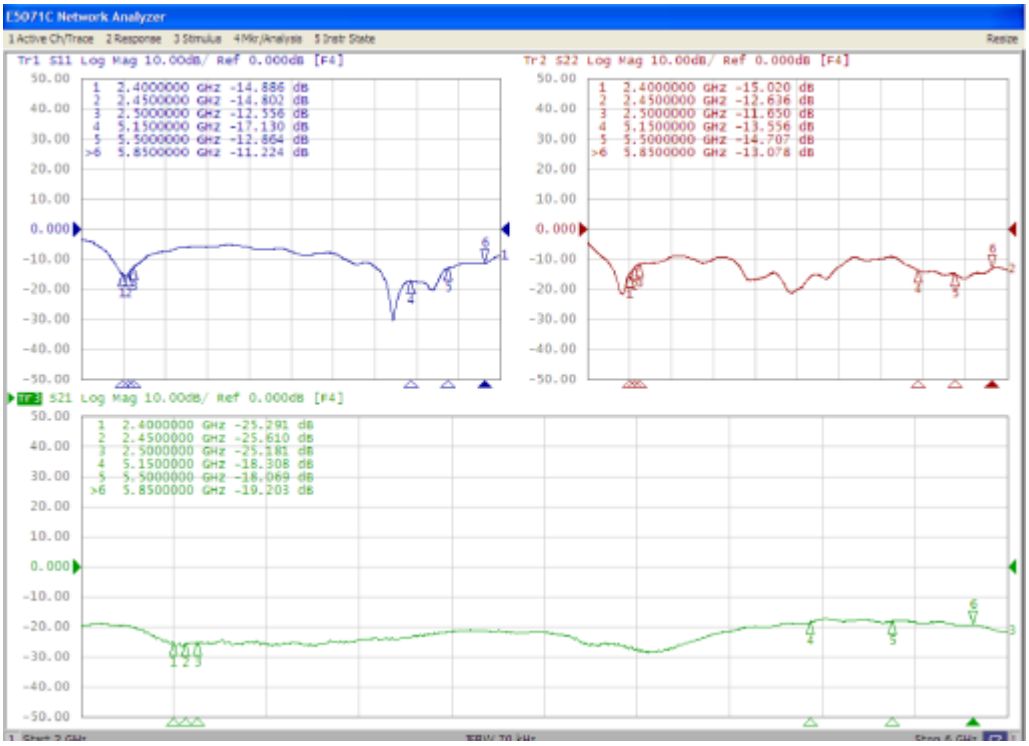
BTMA00290825GD1A02

Experimental Setup



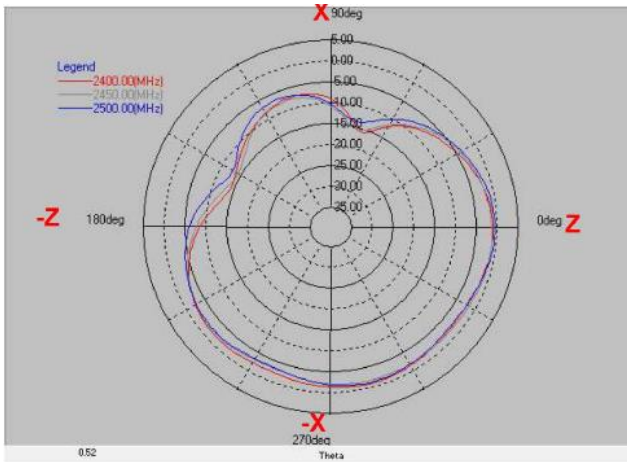


Return Loss Ant 1 → Ant 2



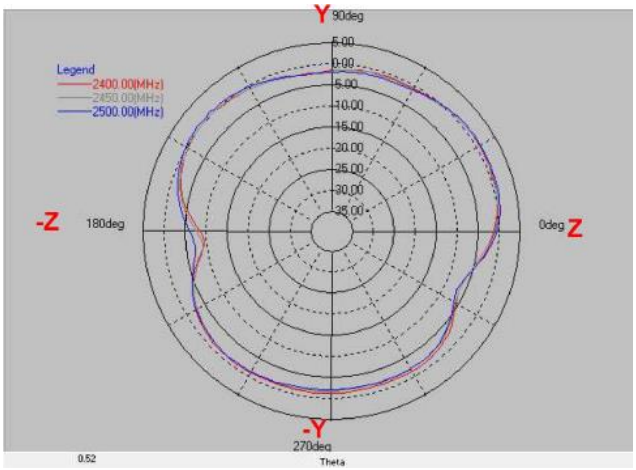
Metal Stamping Antenna BTMA Series

Frequency(MHz)：2400~2500. Pattern Field：X-Z plane



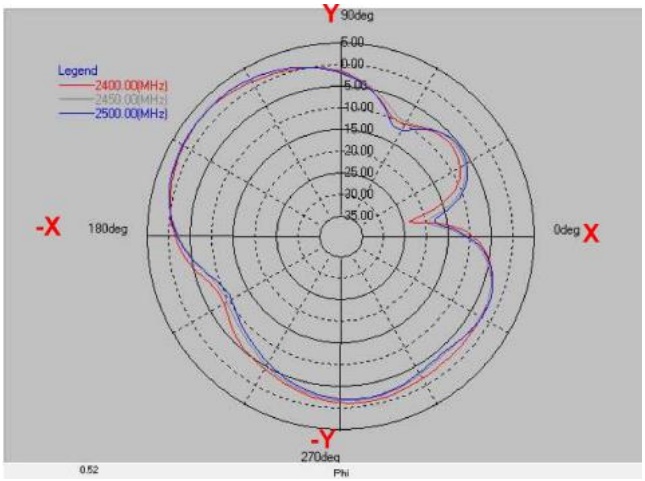
Layer	Max value	Min value	Average
2400(MHz)	-0.89 dB	-16.13 dB	-3.98 dB
2450(MHz)	-1.06 dB	-15.91 dB	-4.19 dB
2500(MHz)	-0.51 dB	-11.13 dB	-3.95 dB

Frequency(MHz)：2400~2500. Pattern Field：Y-Z plane



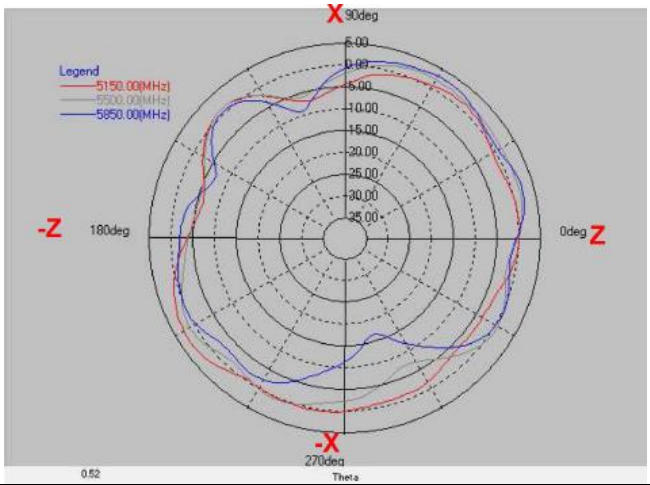
Layer	Max value	Min value	Average
2400(MHz)	0.76 dB	-9.47 dB	-1.56 dB
2450(MHz)	0.94 dB	-9.03 dB	-1.73 dB
2500(MHz)	1.04 dB	-7.20 dB	-1.56 dB

Frequency(MHz)：2400~2500. Pattern Field：X-Y plane



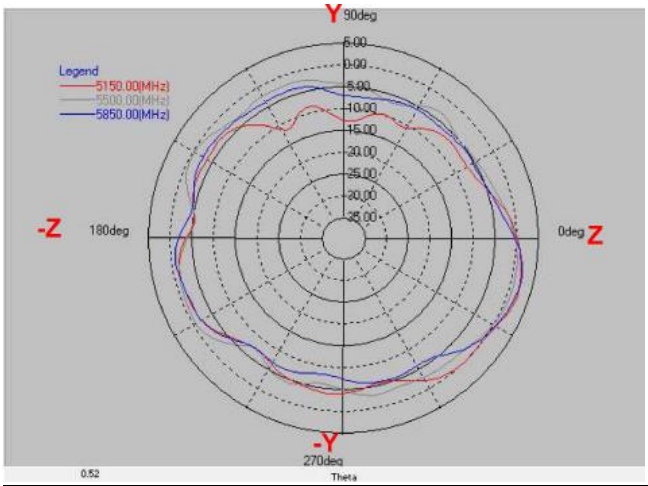
Layer	Max value	Min value	Average
2400(MHz)	2.47 dB	-23.81 dB	-2.21 dB
2450(MHz)	2.71 dB	-19.78 dB	-2.28 dB
2500(MHz)	2.55 dB	-17.95 dB	-2.40 dB

Frequency(MHz)：5150~5850. Pattern Field：Z-X plane



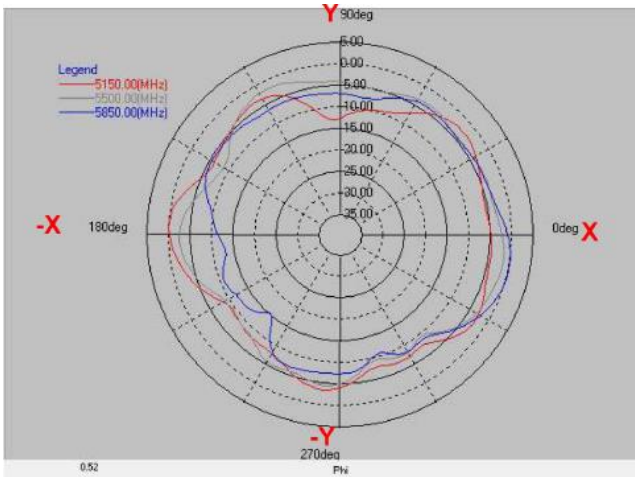
Layer	Max value	Min value	Average
5150(MHz)	2.83 dB	-7.47 dB	-0.79 dB
5500(MHz)	2.08 dB	-7.55 dB	-0.73 dB
5850(MHz)	3.02 dB	-16.98 dB	-1.22 dB

Frequency(MHz)：5150~5850. Pattern Field：Z-Y plane



Layer	Max value	Min value	Average
5150(MHz)	2.33 dB	-13.06 dB	-3.37 dB
5500(MHz)	0.82 dB	-7.57 dB	-2.62 dB
5850(MHz)	2.27 dB	-8.44 dB	-3.28 dB

Frequency(MHz)：5150~5850. Pattern Field：X-Y plane



Layer	Max value	Min value	Average
5150(MHz)	-0.04 dB	-13.16 dB	-4.88 dB
5500(MHz)	-1.42 dB	-9.61 dB	-4.62 dB
5850(MHz)	0.25 dB	-15.48 dB	-5.55 dB

Pulse a YAGEO company

CHILISIN ELECTRONICS CORP.