Technical Data Sheet
Of Chip Dielectric Antenna
for BT/WLAN

Antenna : ANCG12G44SAA145
PWB size : 37x80mm

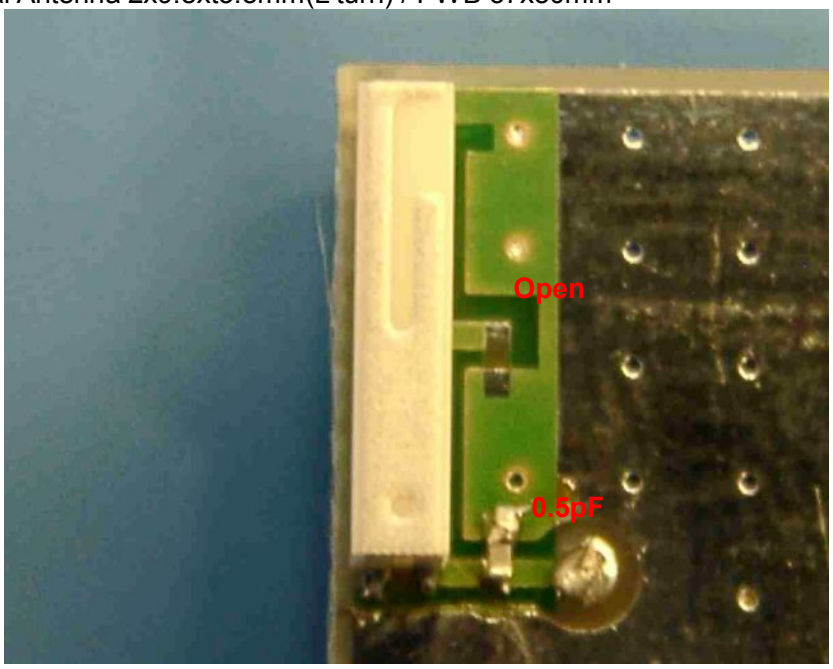
Note
Please confirm the latest specification for antenna shape and dimensions.
Capacitors and Inductors used in this report are as follows unless otherwise specified.
The values of each components are mentioned in the report.
In case using different series or manufactures' components, another value may be required to get the proper result.

Capacitors: GRM15 series (Murata)
Inductors: LQG15HS series (Murata)

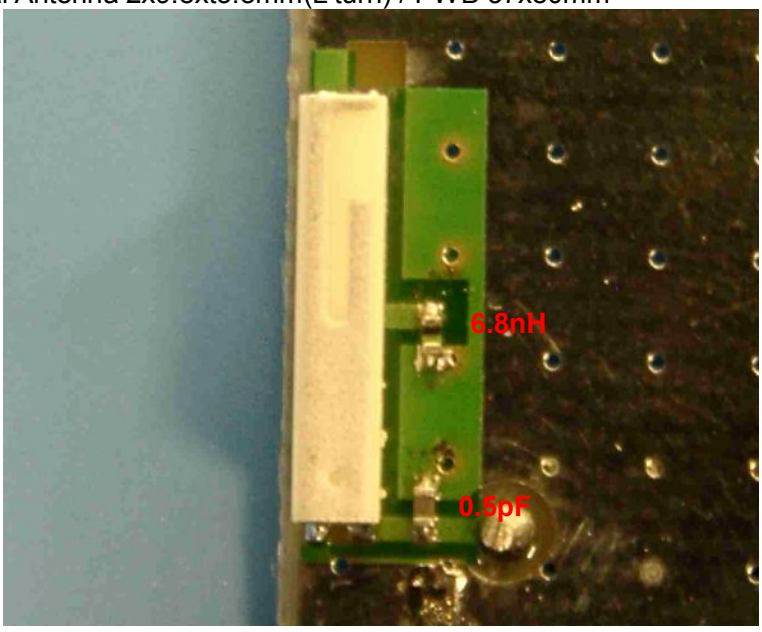
Kanazawa Murata Mfg.Co.,Ltd
Antenna Products Department

Measurement condition

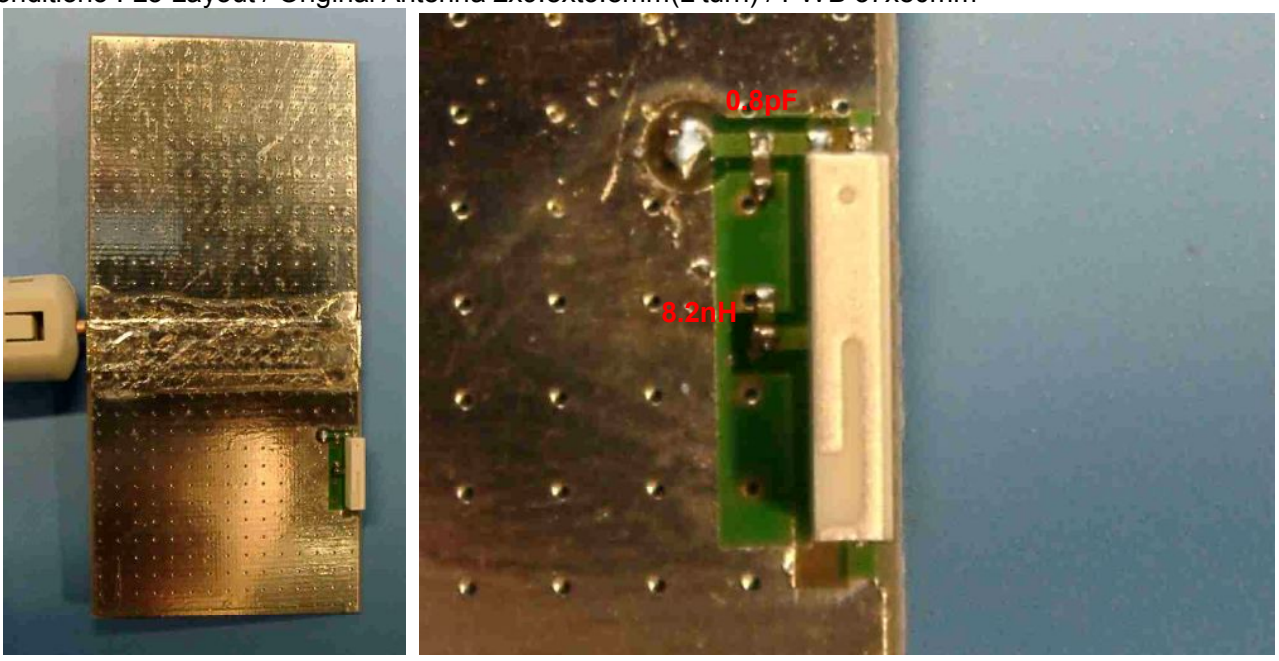
Condition1 : L1 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



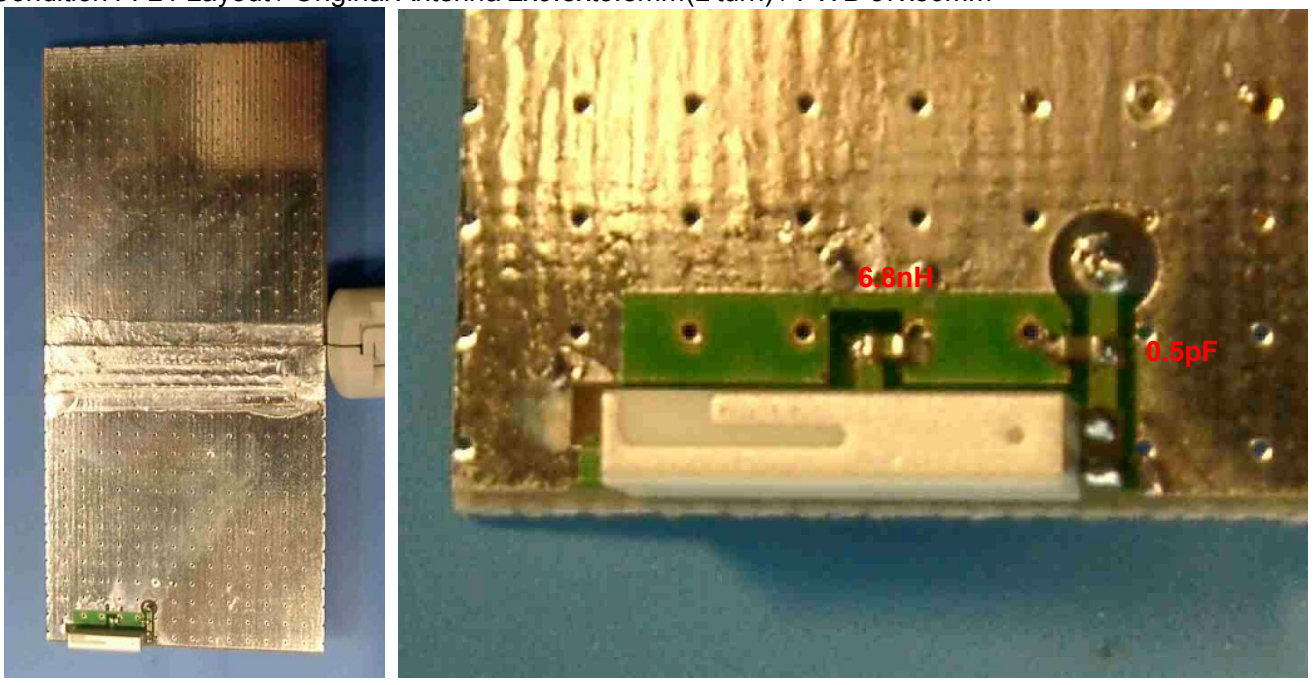
Condition2 : L2 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



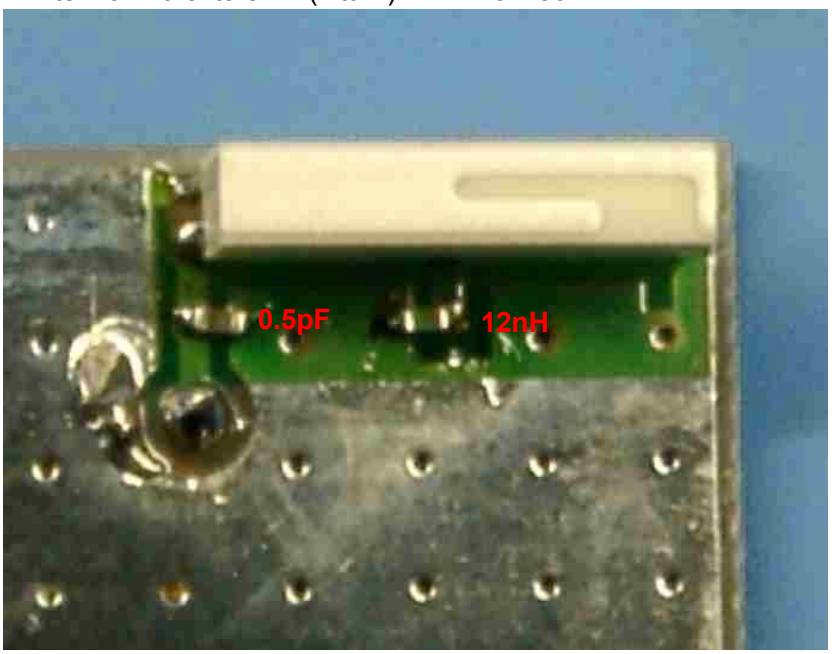
Condition3 : L3 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



Condition4 : L4 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

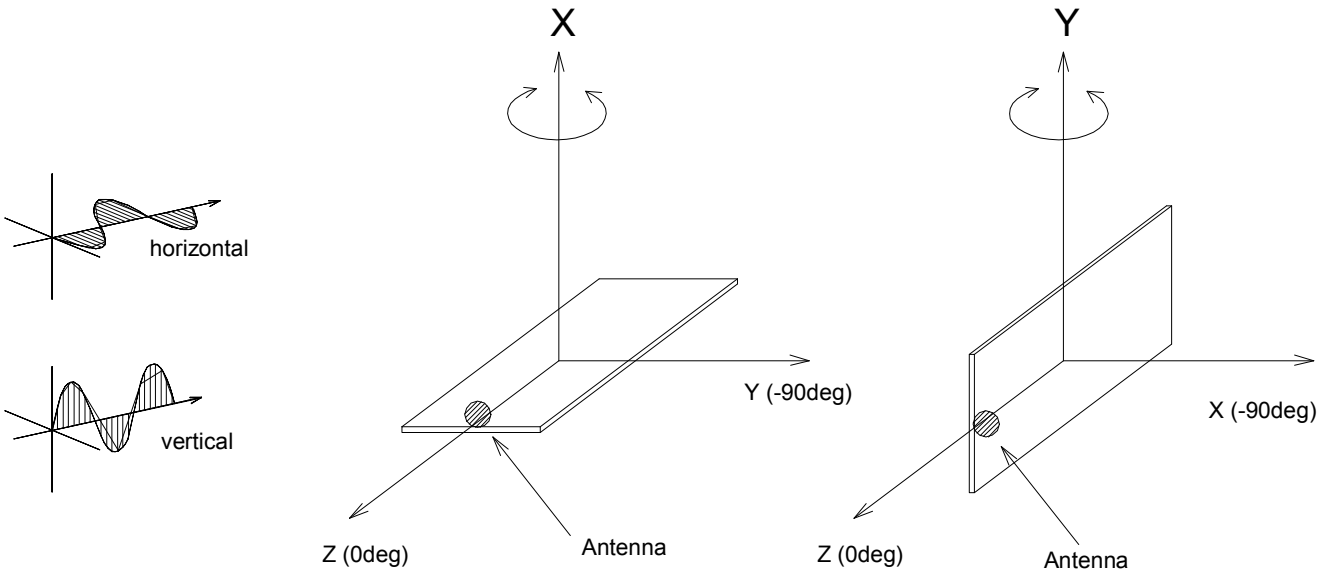


Condition5 : L5 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



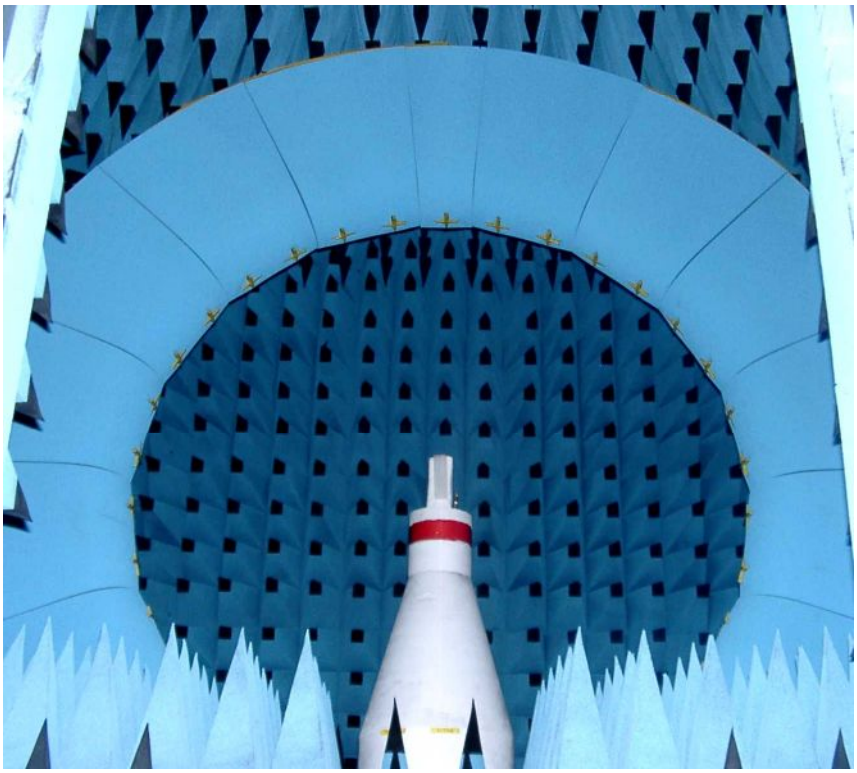
Condition6 : L6 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

Measurement direction



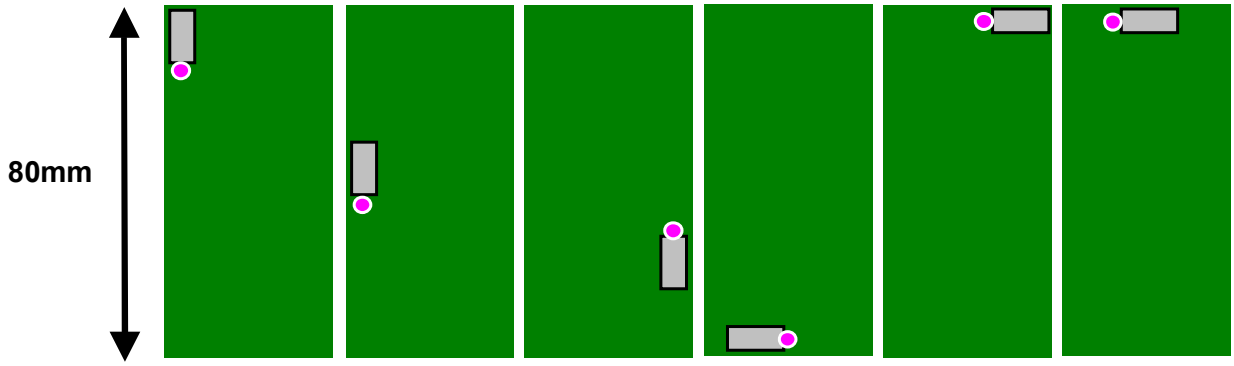
YZ plane

ZX plane



3D Measurement
Stargate32 (Satimo)

Measurement Conclusion



	Condition1	Condition2	Condition3	Condition4	Condition5	Condition6
Antenna	ANCG1series	ANCG1series	ANCG1series	ANCG1series	ANCG1series	ANCG1series
PWB Size [mm]	37x80	37x80	37x80	37x80	37x80	37x80
Shunt [pF]	0.5	0.5	0.8	0.5	0.5	0.5
Fine tune	-	6.8nH	8.2nH	6.8nH	12nH	8.2nH

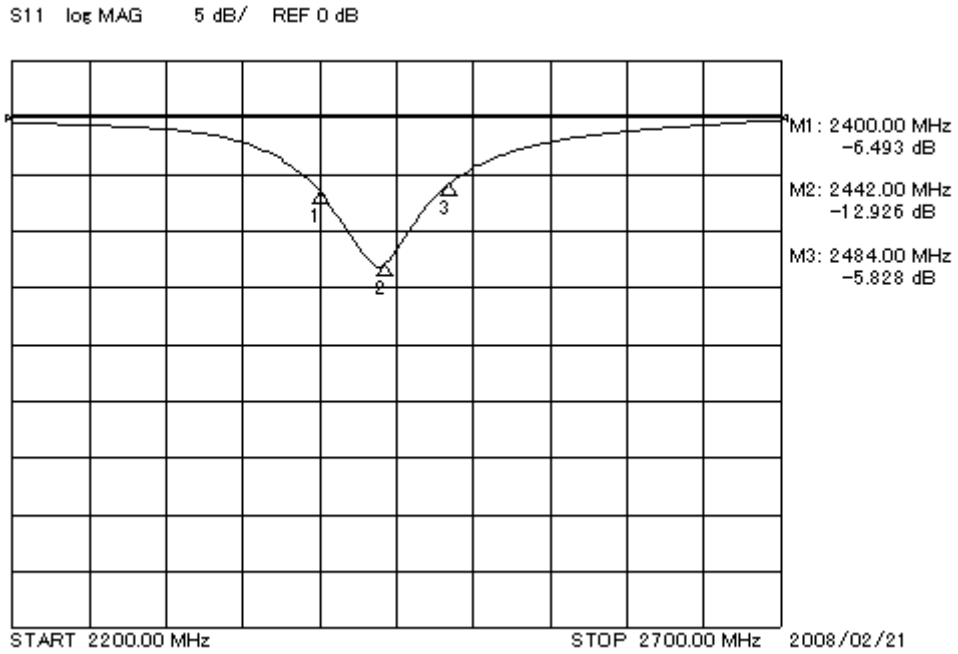
Efficiency [dB]

at 2400MHz	-2.3	-2.8	-2.5	-3.0	-2.1	-3.0
at 2442MHz	-1.7	-1.7	-1.8	-2.3	-1.6	-2.0
at 2484MHz	-2.5	-2.6	-2.7	-2.9	-2.2	-2.9
ave. at 3 Freq.	-2.2	-2.4	-2.3	-2.7	-2.0	-2.7
Band Width	94MHz	93MHz	86MHz	103MHz	112MHz	80MHz

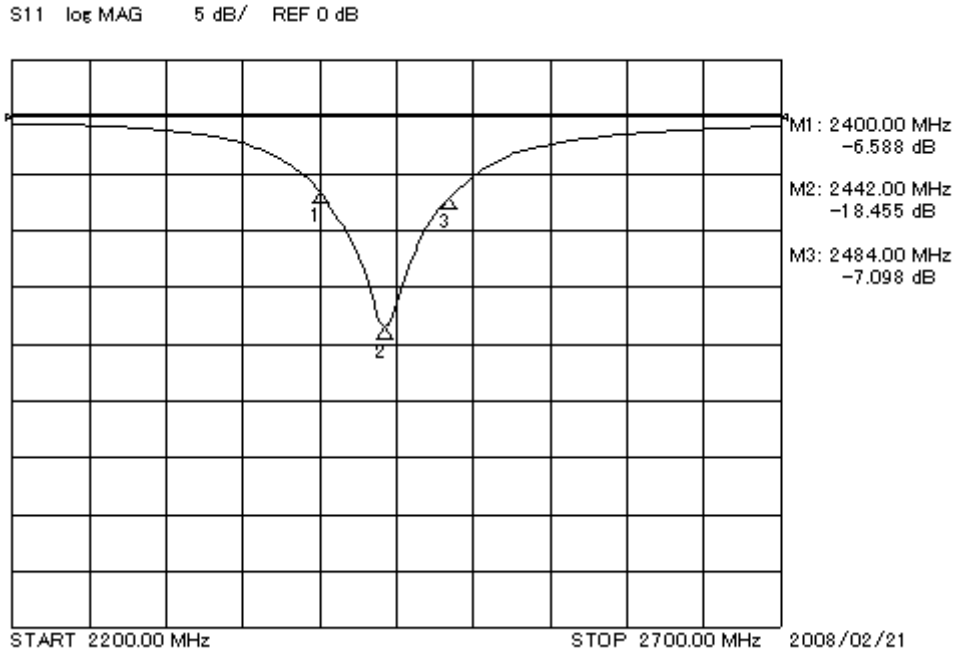
Measurement result

Return loss

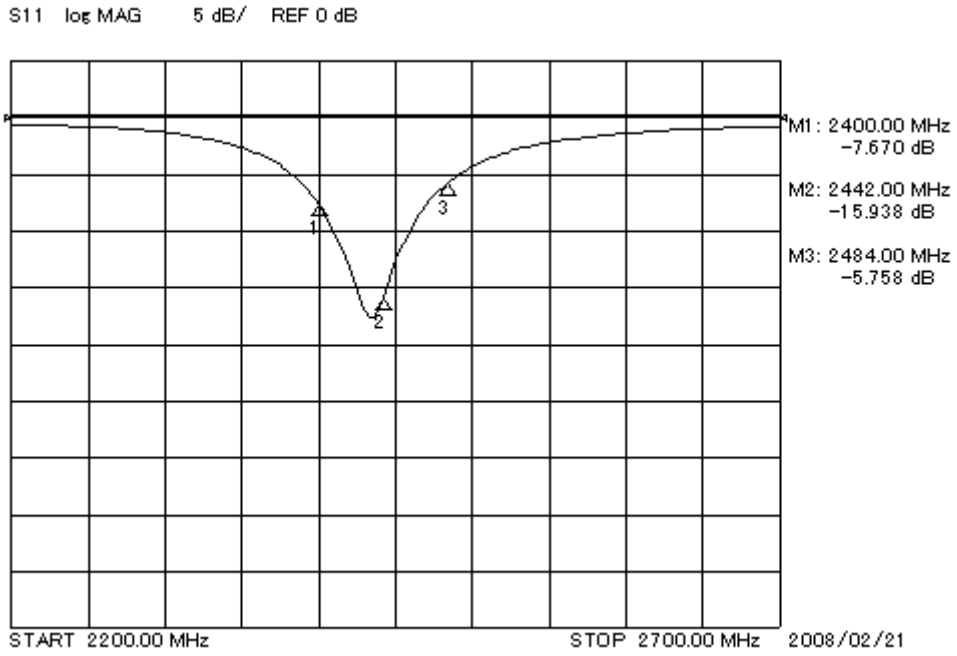
Condition1 : L1 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



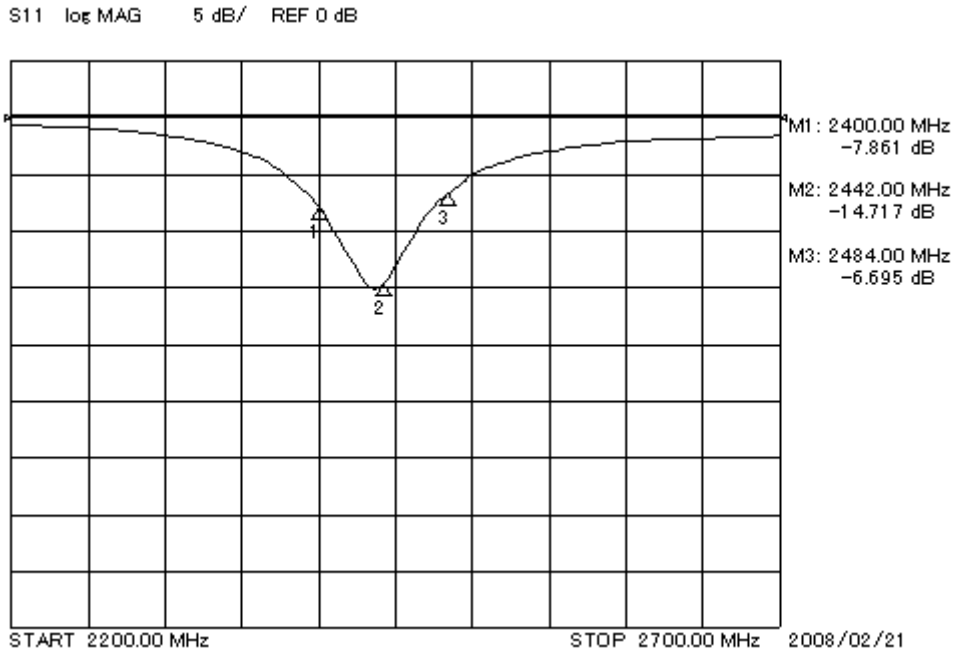
Condition2 : L2 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



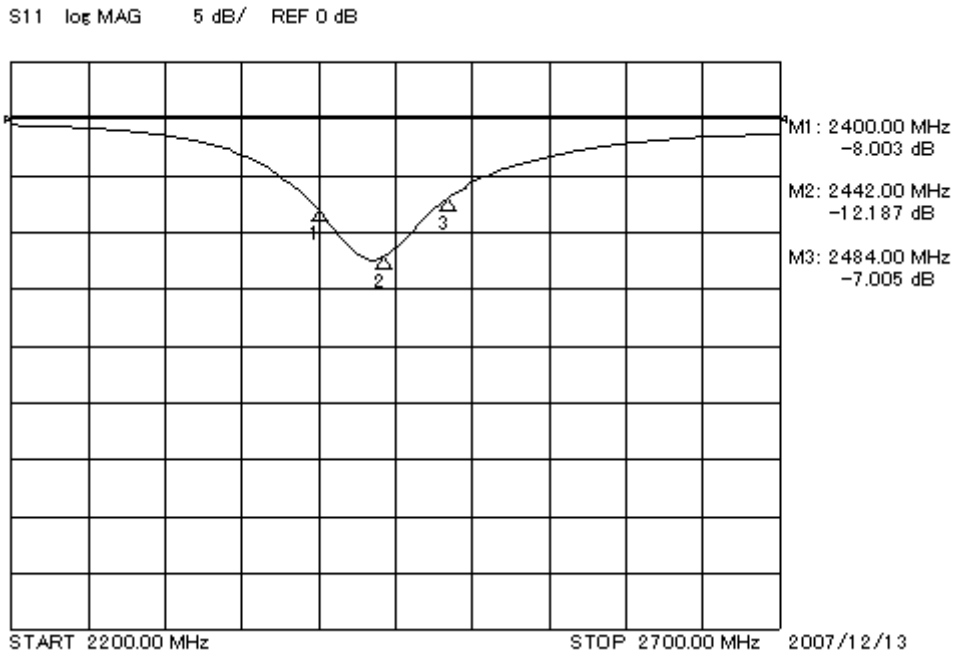
Condition3 : L3 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



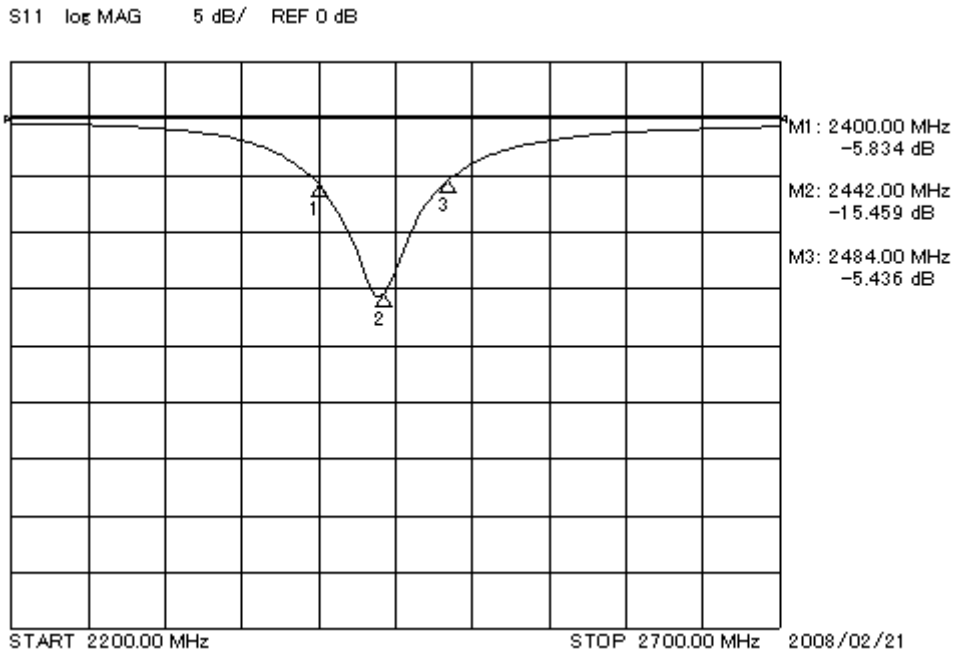
Condition4 : L4 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



Condition5 : L5 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



Condition6 : L6 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



Antenna gain
3D measurement

Condition1 : L1 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

[dBi] [dB]

LINEAR POLARIZATION		YZ-plane		ZX-plane		Efficiency
		hor.	ver.	hor.	ver.	
2400 MHz	MAX	2.5	-7.1	1.8	-1.0	
	AVE	-4.5	-10.6	-4.9	-4.5	-2.3
2442 MHz	**MAX**	**2.9**	**-6.5**	**2.5**	**-0.4**	
	AVE	**-3.9**	**-10.1**	**-4.5**	**-3.9**	**-1.7**
2484 MHz	MAX	2.2	-7.5	1.7	-0.7	
	AVE	-4.6	-10.9	-5.4	-4.5	-2.5

Condition2 : L2 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

[dBi] [dB]

LINEAR POLARIZATION		YZ-plane		ZX-plane		Efficiency
		hor.	ver.	hor.	ver.	
2400 MHz	MAX	-0.5	-8.0	0.5	-3.0	
	AVE	-5.2	-13.0	-5.3	-5.8	-2.8
2442 MHz	**MAX**	**0.6**	**-6.5**	**1.5**	**-1.7**	
	AVE	**-4.1**	**-11.6**	**-4.1**	**-4.4**	**-1.7**
2484 MHz	MAX	-0.5	-7.8	0.5	-2.6	
	AVE	-5.1	-12.4	-5.2	-5.3	-2.6

Condition3 : L3 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

[dBi] [dB]

LINEAR POLARIZATION		YZ-plane		ZX-plane		Efficiency
		hor.	ver.	hor.	ver.	
2400 MHz	MAX	0.6	-8.6	1.2	-1.7	
	AVE	-4.4	-12.5	-5.0	-4.4	-2.5
2442 MHz	**MAX**	**1.0**	**-7.1**	**1.5**	**-0.9**	
	AVE	**-4.0**	**-11.7**	**-4.7**	**-3.7**	**-1.8**
2484 MHz	MAX	-0.4	-8.0	0.0	-1.9	
	AVE	-5.3	-12.7	-6.2	-4.8	-2.7

Condition4 : L4 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

[dBi] [dB]

LINEAR POLARIZATION		YZ-plane		ZX-plane		Efficiency
		hor.	ver.	hor.	ver.	
2400 MHz	MAX	-0.9	-10.6	-3.3	-1.8	
	AVE	-4.0	-13.5	-9.5	-4.1	-3.0
2442 MHz	**MAX**	**-0.7**	**-10.5**	**-2.3**	**-1.1**	
	AVE	**-3.2**	**-13.1**	**-8.6**	**-3.3**	**-2.3**
2484 MHz	MAX	-0.9	-11.2	-2.4	-1.4	
	AVE	-3.8	-13.8	-9.1	-3.9	-2.9

Condition5 : L5 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

[dBi] [dB]

LINEAR POLARIZATION		YZ-plane		ZX-plane		Efficiency
		hor.	ver.	hor.	ver.	
2400 MHz	MAX	0.4	-7.5	-1.6	-0.4	
	AVE	-3.4	-10.1	-8.0	-3.2	-2.1
2442 MHz	**MAX**	**0.7**	**-6.6**	**-1.3**	**0.2**	
	AVE	**-3.0**	**-9.6**	**-7.3**	**-2.6**	**-1.6**
2484 MHz	MAX	-0.5	-7.4	-2.0	-0.5	
	AVE	-3.6	-10.4	-7.9	-3.2	-2.2

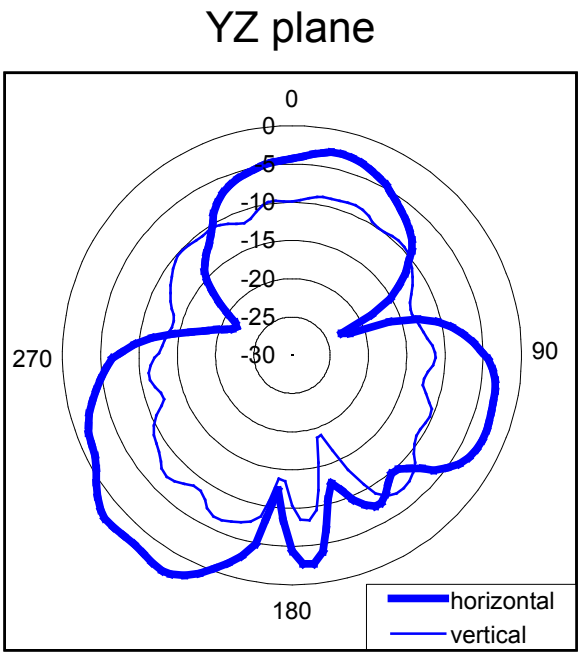
Condition6 : L6 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

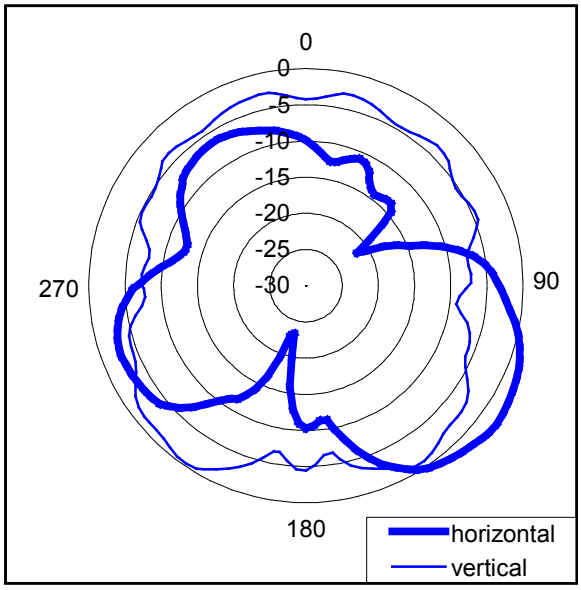
[dBi] [dB]

LINEAR POLARIZATION		YZ-plane		ZX-plane		Efficiency
		hor.	ver.	hor.	ver.	
2400 MHz	MAX	-0.9	-7.6	-2.6	-1.7	
	AVE	-4.9	-10.8	-8.7	-4.5	-3.0
2442 MHz	**MAX**	**0.0**	**-6.2**	**-1.1**	**-0.3**	
	AVE	**-3.7**	**-9.7**	**-7.5**	**-3.3**	**-2.0**
2484 MHz	MAX	-1.1	-7.9	-2.0	-1.0	
	AVE	-4.7	-10.8	-8.5	-4.3	-2.9

Radiation Pattern

Condition1 : L1 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

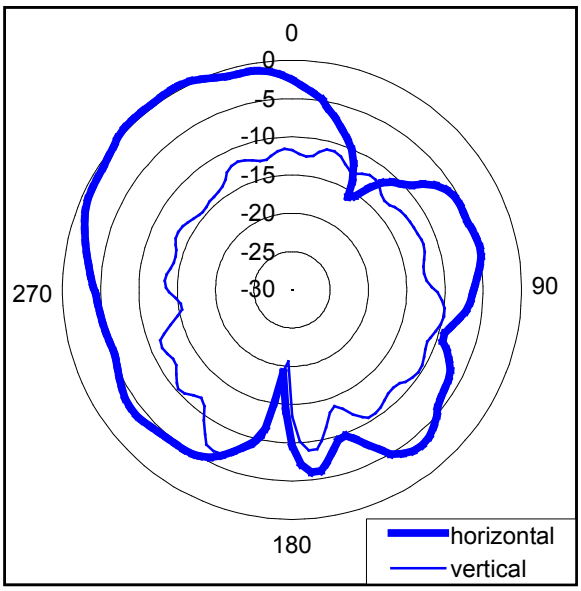


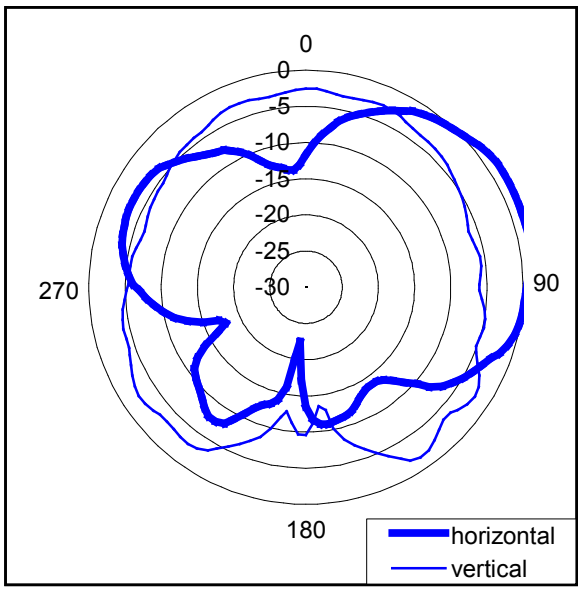


	HOR.	VER.
MAX	2.9	-6.5
AVE	-3.9	-10.1

	HOR.	VER.
MAX	2.5	-0.4
AVE	-4.5	-3.9

Condition2 : L2 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm



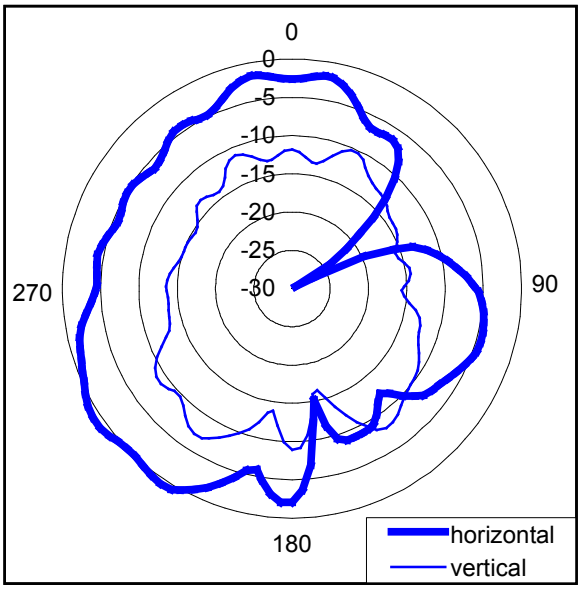


	HOR.	VER.
MAX	0.6	-6.5
AVE	-4.1	-11.6

	HOR.	VER.
MAX	1.5	-1.7
AVE	-4.1	-4.4

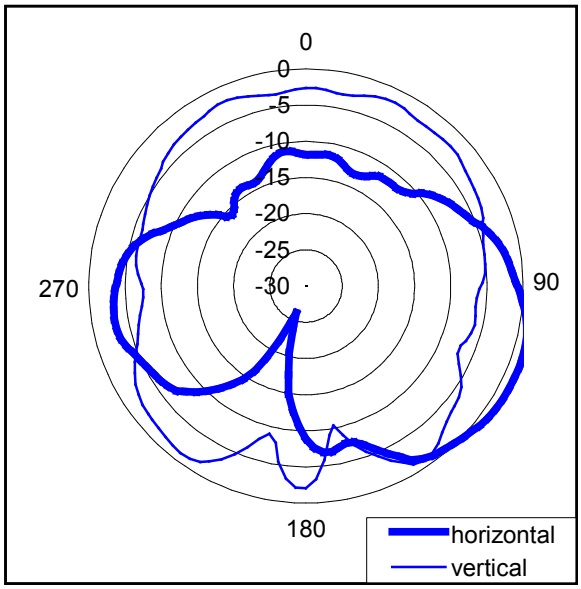
Condition3 : L3 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

YZ plane



	HOR.	VER.
MAX	1.0	-7.1
AVE	-4.0	-11.7

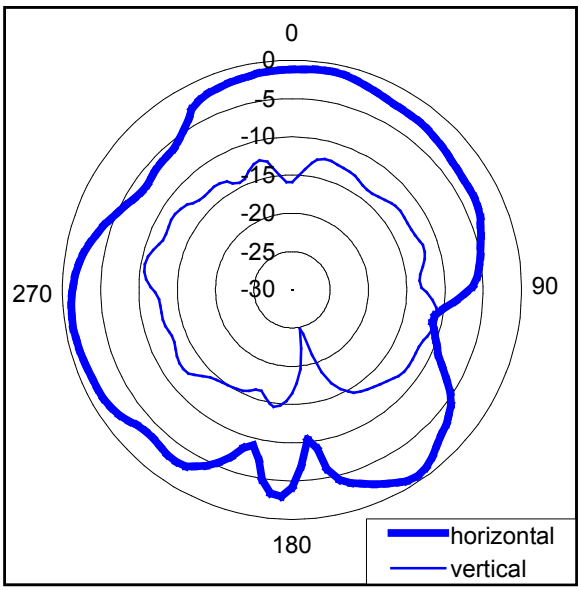
ZX plane



	HOR.	VER.
MAX	1.5	-0.9
AVE	-4.7	-3.7

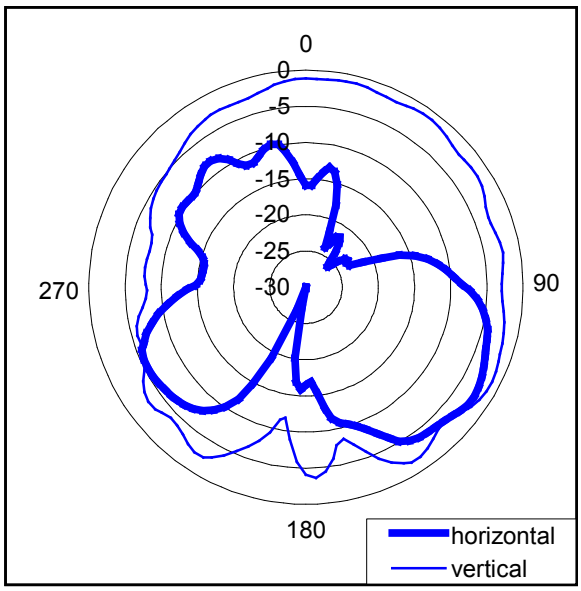
Condition4 : L4 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

YZ plane



	HOR.	VER.
MAX	-0.7	-10.5
AVE	-3.2	-13.1

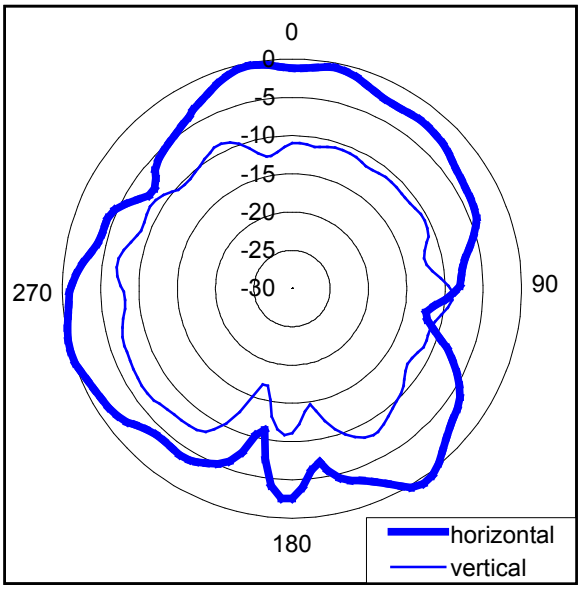
ZX plane



	HOR.	VER.
MAX	-2.3	-1.1
AVE	-8.6	-3.3

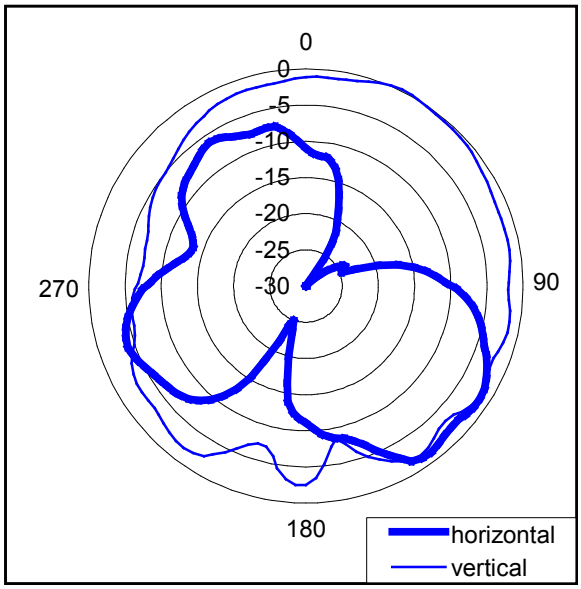
Condition5 : L5 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

YZ plane



	HOR.	VER.
MAX	0.7	-6.6
AVE	-3.0	-9.6

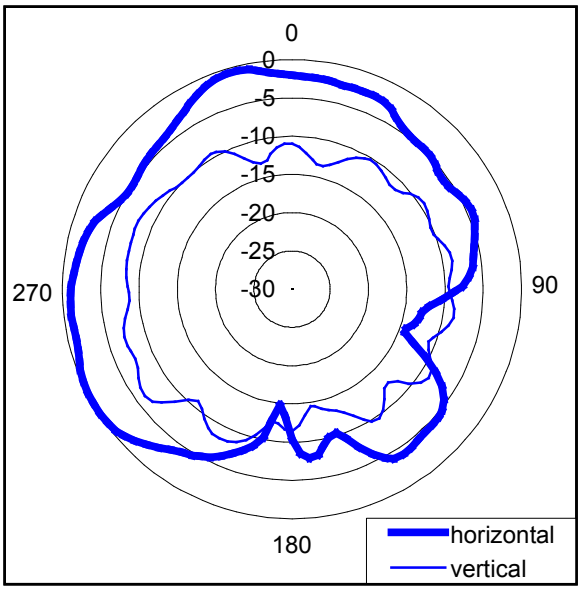
ZX plane



	HOR.	VER.
MAX	-1.3	0.2
AVE	-7.3	-2.6

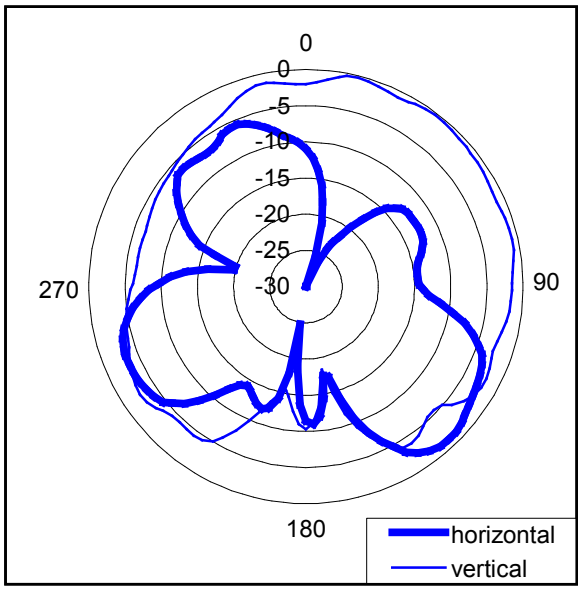
Condition6 : L6 Layout / Original Antenna 2x9.8xt3.8mm(L turn) / PWB 37x80mm

YZ plane



	HOR.	VER.
MAX	0.0	-6.2
AVE	-3.7	-9.7

ZX plane



	HOR.	VER.
MAX	-1.1	-0.3
AVE	-7.5	-3.3