

EMC Technologies Report Number: M050103_Cert_Eton_Cal2_BT

APPENDIX F1 – Cal2 WLAN Antenna Details



Antenna Assembly Specifications

1A Antenna Part Number	1B Manufacture	1C Antenna Type	1D Cable Assembly Part Number and Information	1E Peak Gain W/ Cable loss (dBi)	1F Peak Gain w/o Cable Loss (dBi)	1G V.S.W.R.	1H Cable Loss (dBi)
(P/N:CP115412-01 R side) Main antenna	NISSEI ELECTRIC CO..	Inverted-F	P/N: U.FL-2LP- 066N1 50 ohm Coaxial. length: 600mm diameter: 1.32mm Connector: U.FL	2400-2500MHz	2400-2500MHz	2400-2500MHz	2400-2500MHz
				-0.41 dBi (peak)	1.59 dBi (peak)	2.00 max	2.00 dB (peak)
				5150-5350MHz	5150-5350MHz	5150-5350MHz	5150-5350MHz
				-2.33 dBi (peak)	0.75 dBi (peak)	2.00 max	3.08 dB (peak)
				5470-5725MHz	5470-5725MHz	5470-5725MHz	5470-5725MHz
(P/N:CP115412-01 L side) Auxiliary antenna	NISSEI ELECTRIC CO..	Inverted-F	P/N: U.FL-2LP- 066N2 50 ohm Coaxial. length: 600mm diameter: 1.32mm Connector: U.FL	-1.18 dBi (peak)	2.02 dBi (peak)	2.00 max	3.20 dB (peak)
				5725-5850MHz	5725-5850MHz	5725-5850MHz	5725-5850MHz
				-1.18 dBi (peak)	2.17 dBi (peak)	2.00 max	3.35 dB (peak)
				2400-2500MHz	2400-2500MHz	2400-2500MHz	2400-2500MHz
				1.06 dBi (peak)	3.06 dBi (peak)	2.00 max	2.00 dB (peak)
				5150-5350MHz	5150-5350MHz	5150-5350MHz	5150-5350MHz
				-2.00 dBi (peak)	1.08 dBi (peak)	2.00 max	3.08 dB (peak)
				5470-5725MHz	5470-5725MHz	5470-5725MHz	5470-5725MHz
				-1.50 dBi (peak)	1.70 dBi (peak)	2.00 max	3.20 dB (peak)
				5725-5850MHz	5725-5850MHz	5725-5850MHz	5725-5850MHz
				-1.50 dBi (peak)	1.85 dBi (peak)	2.00 max	3.35 dB (peak)

Antenna Average & Peak Gain (XY plane)

Right(Main) Antenna

Frequency [MHz]	Polarization	Peak Gain [dBi]	Average Gain [dBi]
2400	Horizontal	-0.41	-6.07
	Vertical	-0.65	-6.04
2450	Horizontal	-0.94	-6.61
	Vertical	-0.66	-5.72
2500	Horizontal	-1.41	-7.93
	Vertical	-1.40	-6.21
5150	Horizontal	-3.00	-6.69
	Vertical	-3.35	-8.81
5250	Horizontal	-2.86	-6.53
	Vertical	-2.76	-8.14
5350	Horizontal	-2.57	-6.52
	Vertical	-2.33	-8.02
5470	Horizontal	-2.26	-6.74
	Vertical	-1.18	-7.62
5730	Horizontal	-1.83	-7.78
	Vertical	-3.69	-7.77
5875	Horizontal	-1.18	-8.52
	Vertical	-4.48	-8.54

* Antenna gain includes the connector and cable loss.

Left(AUX) Antenna

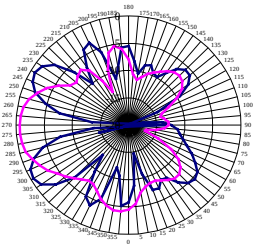
Frequency [MHz]	Polarization	Peak Gain [dBi]	Average Gain [dBi]
2400	Horizontal	-0.29	-7.14
	Vertical	-1.51	-6.55
2450	Horizontal	0.61	-6.10
	Vertical	-0.43	-0.71
2500	Horizontal	1.06	-5.33
	Vertical	-0.79	-5.71
5150	Horizontal	-3.61	-7.68
	Vertical	-3.83	-10.17
5250	Horizontal	-3.37	-6.83
	Vertical	-3.37	-9.43
5350	Horizontal	-2.97	-7.01
	Vertical	-2.00	-8.46
5470	Horizontal	-1.61	-6.81
	Vertical	-2.06	-8.21
5730	Horizontal	-1.50	-6.99
	Vertical	-4.07	-8.10
5875	Horizontal	-2.75	-8.32
	Vertical	-4.31	-8.63

* Antenna gain includes the connector and cable loss.

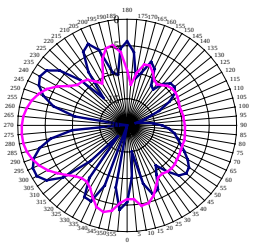
Radiation Pattern (XY plane)

f=2400MHz / 2450MHz / 2500MHz

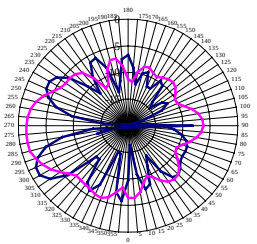
2400 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.07	-0.41	-6.04	-0.65



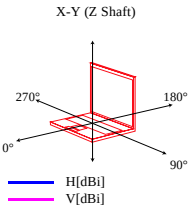
2450 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.61	-0.94	-5.72	-0.66



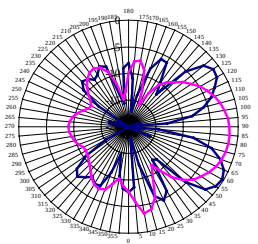
2500 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-7.93	-1.41	-6.21	-1.40



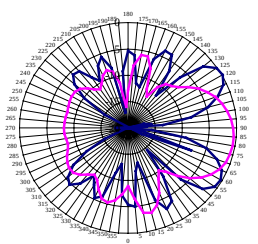
The Measurement Result
Antenna Radiation Pattern
X-Y



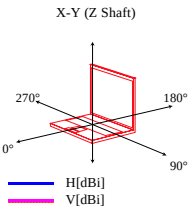
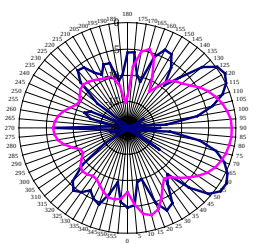
2400 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-7.14	-0.29	-6.55	-1.51



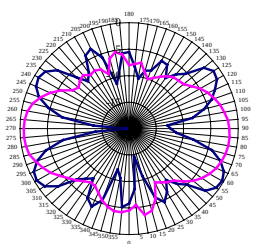
2450 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.10	0.16	-5.71	-0.43



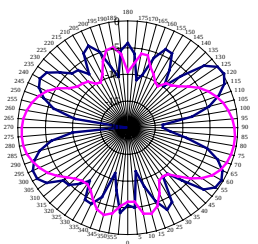
2500 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-5.33	1.06	-5.71	-0.79



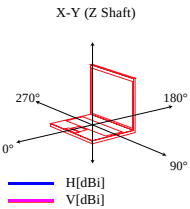
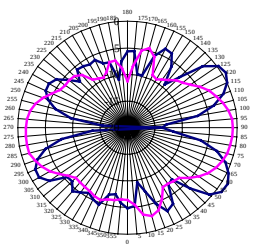
2400 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-4.68	-0.29	-4.33	-0.65



2450 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-4.45	0.16	-4.05	-0.43



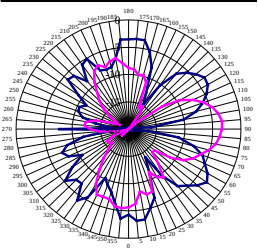
2500 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-4.29	1.06	-4.34	-0.79



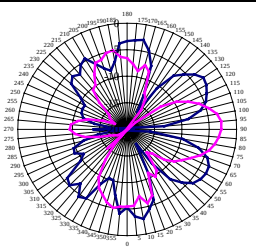
Radiation Pattern (XY plane)

f=5150MHz / 5250MHz / 5350MHz

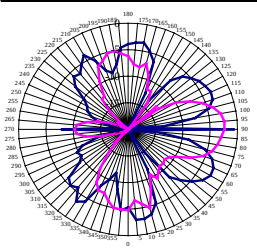
5150 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.69	-3.00	-8.81	-3.35



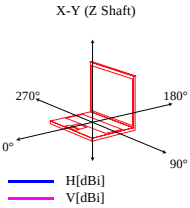
5250 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.53	-2.86	-8.14	-2.76



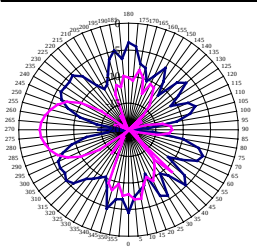
5350 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.52	-2.57	-8.02	-2.33



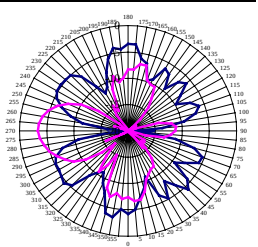
The Measurement Result
Antenna Radiation Pattern
X-Y



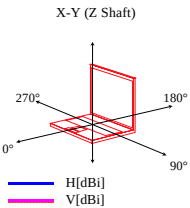
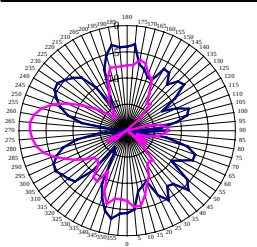
5150 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-7.68	-3.61	-10.17	-3.83



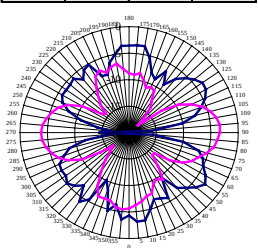
5250 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.83	-3.37	-9.43	-3.37



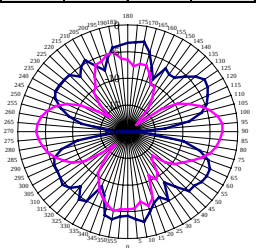
5350 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-7.01	-2.97	-8.46	-2.00



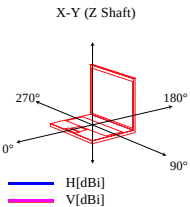
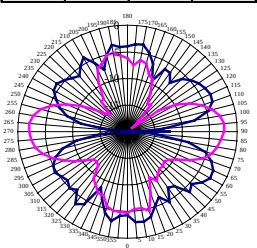
5150 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-6.09	-3.00	-7.45	-3.35



5250 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-5.52	-2.86	-6.90	-2.76



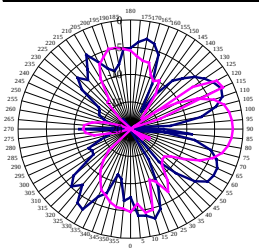
5350 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-5.33	-2.57	-6.43	-2.00



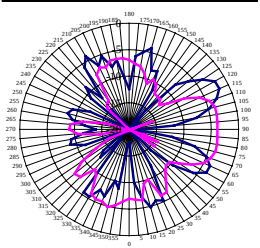
Radiation Pattern (XY plane)

f=5470MHz / 5730MHz / 5875MHz

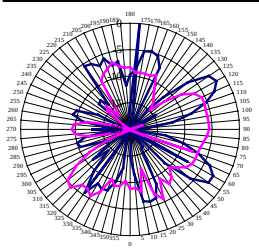
5470 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.74	-2.26	-7.62	-1.81



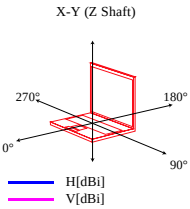
5730 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-7.78	-1.83	-7.77	-3.69



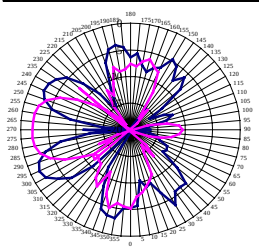
5875 MHz			
R Antenna			
H Ave.	H Peak	V Ave.	V Peak
-8.25	-1.81	-8.54	-4.48



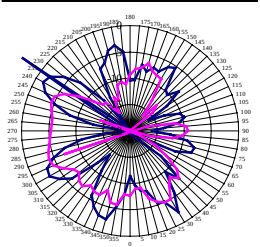
The Measurement Result
Antenna Radiation Pattern
X-Y



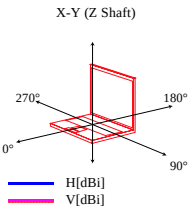
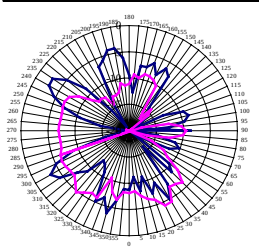
5470 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.81	-1.61	-8.21	-2.06



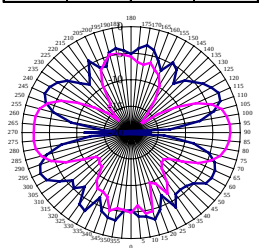
5730 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-6.99	-1.50	-8.10	-4.07



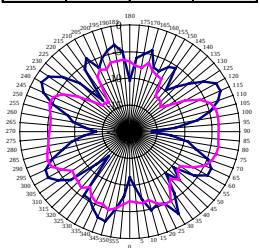
5875 MHz			
L Antenna			
H Ave.	H Peak	V Ave.	V Peak
-8.32	-2.75	-8.63	-4.31



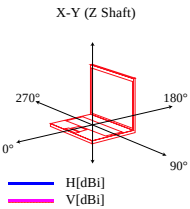
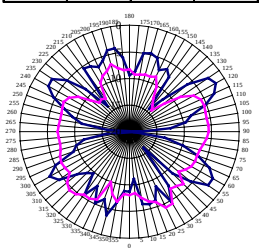
5470 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-4.78	-1.61	-5.95	-1.81



5730 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-5.56	-1.50	-6.27	-3.69



5875 MHz			
Diversity			
H Ave.	H Peak	V Ave.	V Peak
-6.43	-1.81	-7.19	-4.31



Antenna Pic

Right(Main) Antenna



Left(AUX) Antenna

