

Customer	Model	Customer Code	Date	Document Revision
Boo-Ree Multimedia Inc.	MC4		26' 03. 10	Rev 1.1

APPROVAL SHEET

MC4 Bluetooth Chip ANTENNA

CUSTOMER	Boo-Ree Multimedia Inc.
MODEL	MC4 Bluetooth Chip Antenna
ANTENNA TYPE	Ceramic Chip ANTENNA
ANTENNA MAKER	KDT
DOCUMENT REVISION	Rev 1.1
CUSTOMER CODE	
PART NAME	Bluetooth ANT/ MC4,BT_Ceramic Chip,REV1,KDT

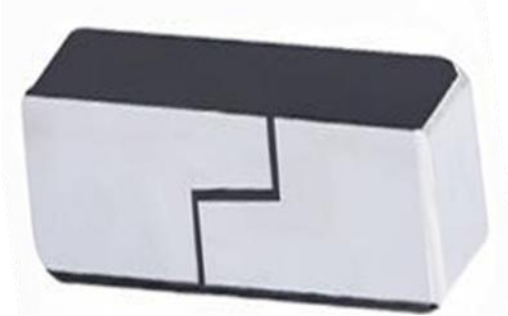
	Name	Date	Sign
RF Engineer	H.W Jung	26' 03. 10	
ME Engineer	H.S Cho	26' 03. 10	

Development Team Manager	QA Team Manager	Operation Manager	Customer
			
26' 03. 10			

Hwaseong R&D Center

413ho, 121, Dongtan-daero 23-gil, Hwaseong-si, Gyeonggi-do Republic of Korea 18468

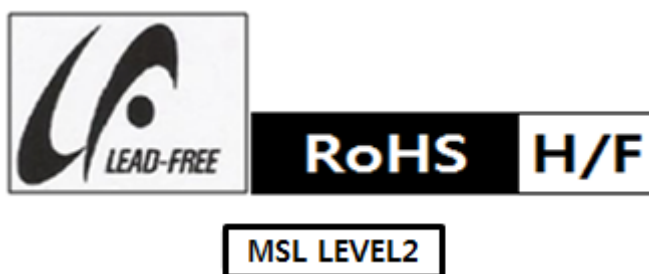
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	TOP	BOTTOM
PRODUCT PHOTO		

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PRODUCT SPECIFICATION

MC4 Bluetooth Chip ANTENNA



- Written by

	Name	Date	Sign
RF Engineer	H.W Jung	26' 03. 10	
ME Engineer	H.S Cho	26' 03. 10	

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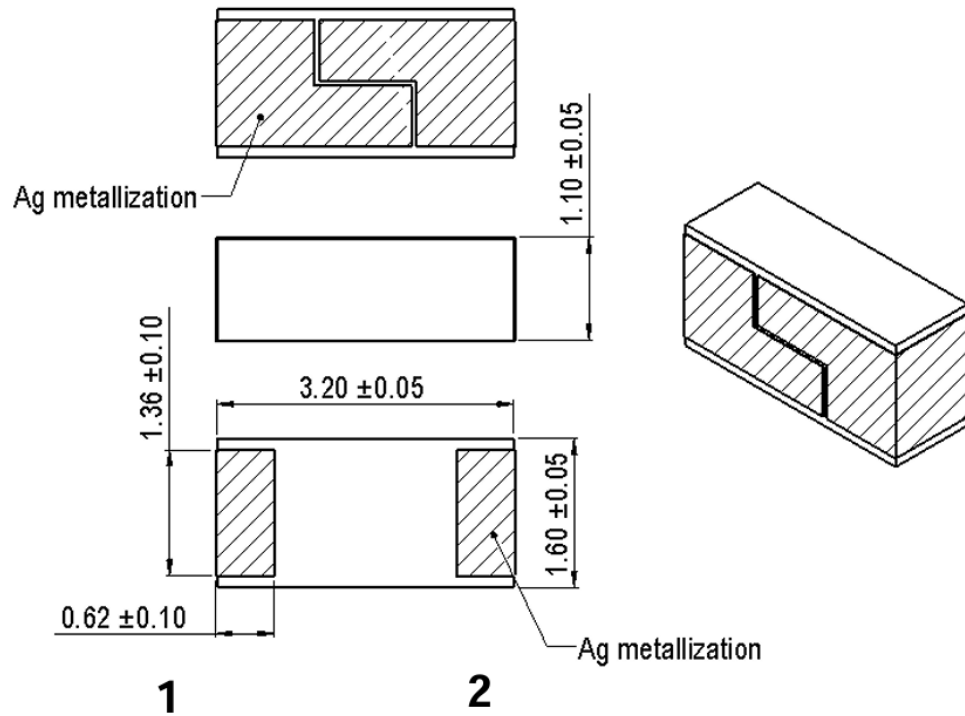
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1. Description

Revision History		
Revision	Date	Description
Rev 1.0	26' 01. 13	Rev 1.0 Approval sheet written.
Rev 1.1	26' 03. 10	Rev 1.1 Added radiation pattern

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2. Product Drawing



No.	Terminal Name	Terminal Dimensions
1	Feed /GND	0.62 x 1.36 mm
2	Feed /GND	0.62 x 1.36 mm
Antenna is symmetrical, either one of pads 1 or 2 can be used as feed terminal		

3. PART – LIST

- N/A

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4. Technical characteristics

4-1. Electrical characteristic(Frequency Band & Passive Spec.)

Mode	Set – Antenna		
Frequency	2400.00MHz	2450.00MHz	2500.00MHz
VSWR Spec.	Max. 7.8:1	Max. 2.7:1	Max. 7.7:1
3D Gain Spec	Min. Peak -3.00	Min. Peak 1.80	Min. -Peak 3.60

- Marker (Setting frequency) is applied based on the VSWR value of the Master Sample because there are variations depending on the equipment, environment, and Jig.

4-2. Mechanical characteristic

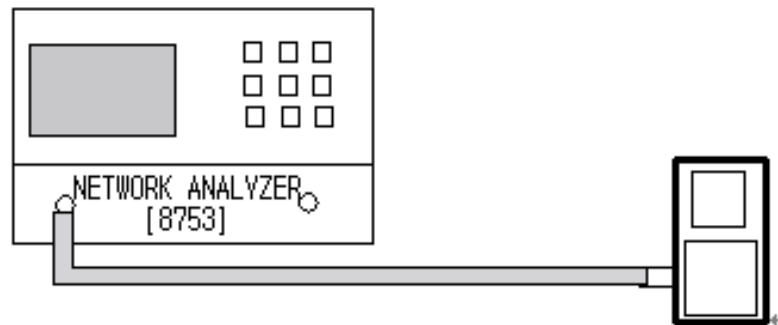
DIMENSION	3.2mm X 1.6mm X 1.1(H) mm
ANTENNA – BASE	Ceramic
ANTENNA – PATTERN	Ag
WEIGHT	0.03g
OPERATING TEMP	20 ± 5 °C
OPERATING HUMIDITY	55 ± 15 %

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5. Electrical test environment (condition/method)

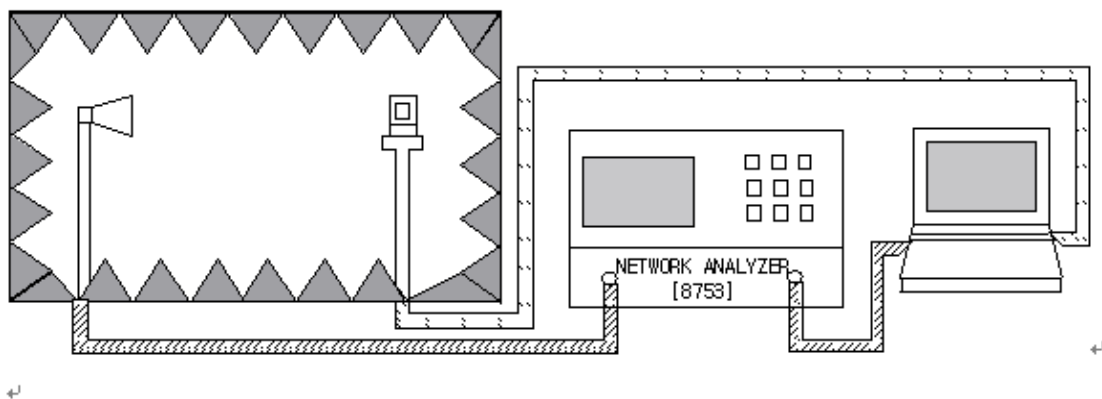
5-1. VSWR

- Step 1. Connect sample with measurement cable to network analyzer
- Step 2. Set the Network analyzer to match the target frequency
- Step 3. Measure VSWR



5-2. Radiation pattern & GAIN

- Step 1. Calibrate the chamber system using the reference antenna
Set the frequency band to measure the software to control the chamber system
- Step 2. Mounting the antenna to be measure
- Step 3. Measure gain, efficiency and radiation pattern.

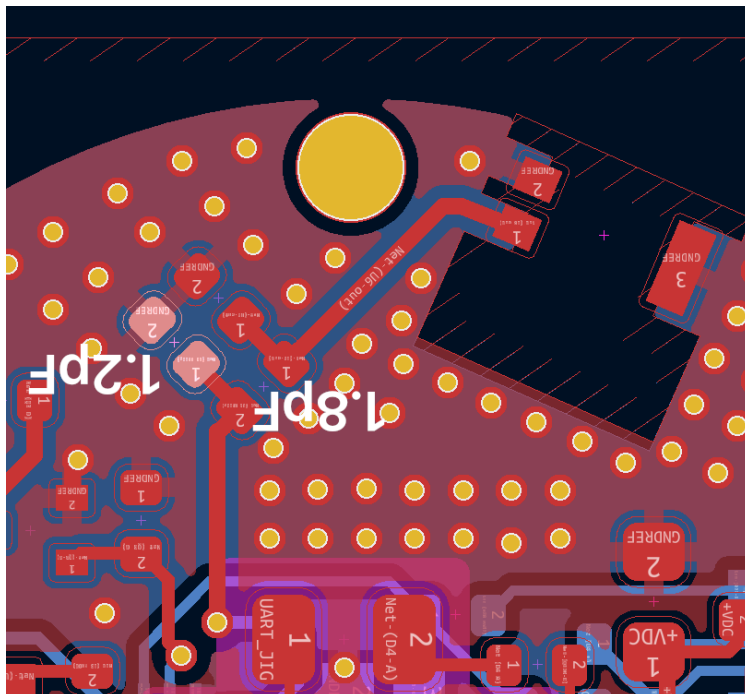


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5-3. Normal Spec.

INPEDANCE	50 ohm
RADIATION PATTERN	Omni – Directional
POLARIZATION	Linear
POWER HANDLING	2W
MATCHING CIRCUIT	Circuit reference

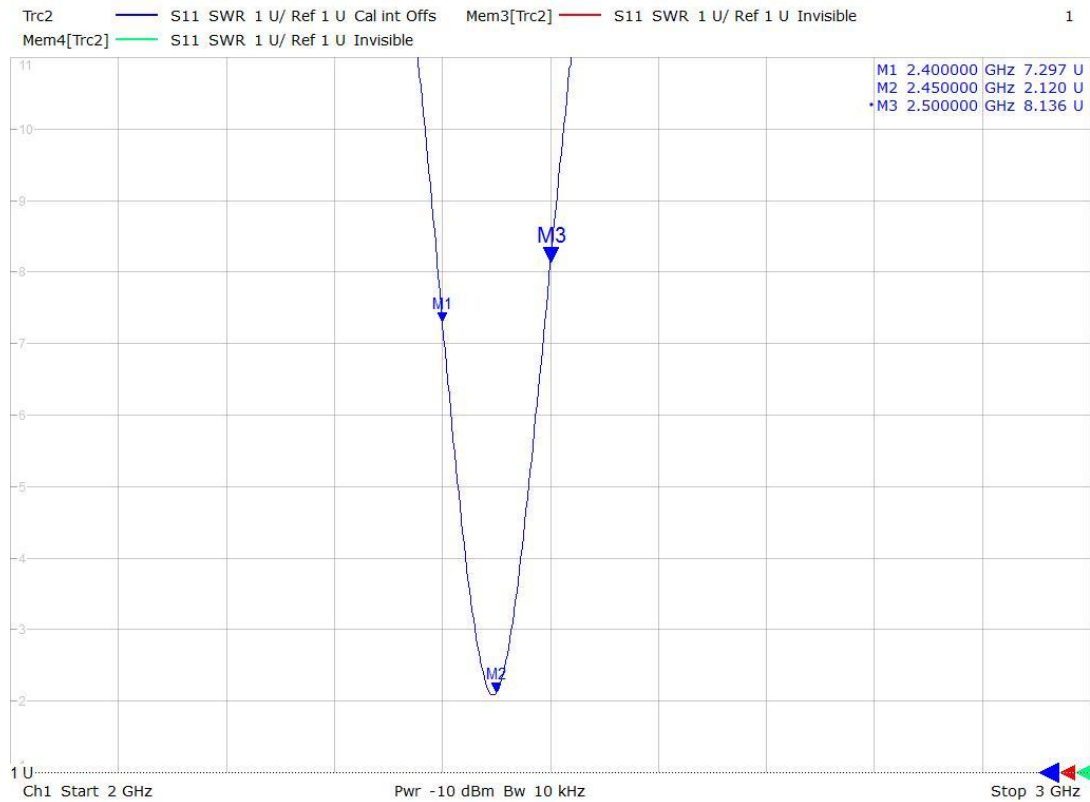
5-4. Matching Circuit



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6. Electrical specification

6-1. VSWR – Set



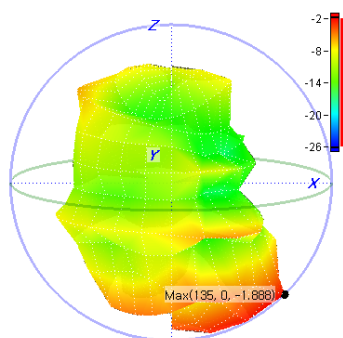
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7. 3D GAIN DATA

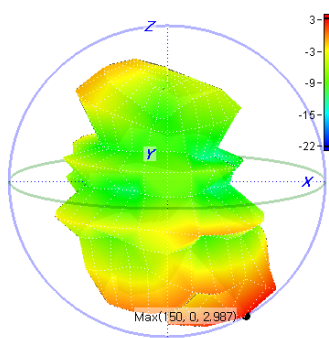
7-1 Efficiency

No	Frequency	Peak Value		Minimum Value		Avg. Gain	Efficiency
	[MHz]	Value[dBi]	Degree	Value[dBi]	Degree	[dBi]	[%]
1	2400	-1.89	135 / 0	-26.41	90 / 0	-9.37	11.55
2	2410	0.35	135 / 0	-22.52	90 / 0	-7.88	16.28
3	2420	1.51	150 / 0	-21.59	165 / 180	-6.82	20.80
4	2430	2.66	150 / 0	-21.70	165 / 180	-5.65	27.20
5	2440	3.08	150 / 0	-21.07	165 / 180	-4.81	33.06
6	2450	2.99	150 / 0	-21.58	165 / 180	-4.69	33.94
7	2460	1.75	150 / 0	-22.76	165 / 180	-5.42	28.71
8	2470	0.11	150 / 0	-24.62	165 / 180	-6.65	21.62
9	2480	-1.01	150 / 240	-27.25	165 / 180	-7.94	16.07
10	2490	-1.91	150 / 240	-28.06	165 / 180	-9.03	12.50
11	2500	-2.45	150 / 0	-28.54	165 / 180	-9.21	12.00

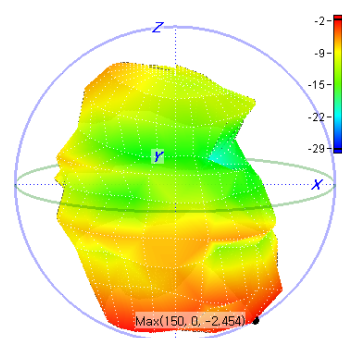
7-2 Radiation Pattern



<2.4GHz>



<2.45GHz>



<2.5GHz>