



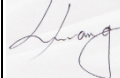
Data sheet

Main Internal Antenna

Part No. : AMMAL001

	Designed	Checked		Approved
Date	/	/	/	/

Revision no	Content	Page	Date	Name
0	First, documented	-	2015.06.12	I.J. Jeong
1	3.1 Soldering land pattern update	6	2016.02.19	I.J Jeong
2	5.Packing specifications update	14	2016.06.15	I.J Jeong

	AMOTECH CO., LTD 5B-1L, 617, NAMCHON-DONG, NAMDONG-GU, INCHOEN-CITY, KOREA TEL : 82-32-821-0363 FAX : 82-32-811-0283	Designed	Checked		Approved
					
		6/15			6/15

Notes

The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

1. SPECIFICATIONS

1.1. Electrical Specifications

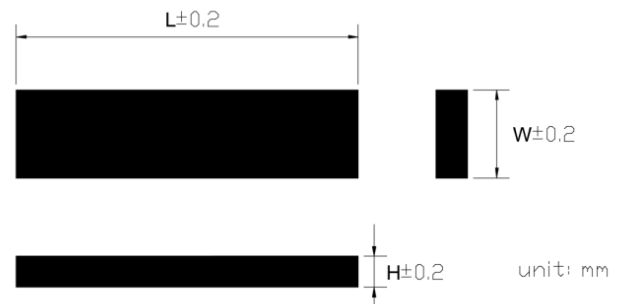
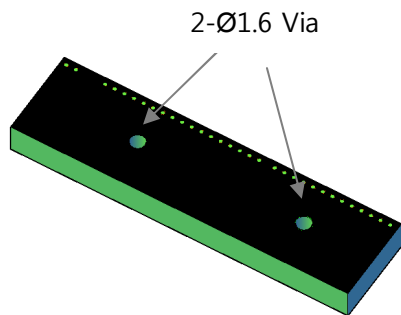
ITEM	LTE17	GSM850/ LTE5/ WCDMA5	LTE2/ WCDMA2	WCDMA4	Remark
Frequency [MHz]	704~716 734~746	824~894	1850~1990	1710~1755 2110~2155	Notes :1)
Peak Gain [dBi]	0.59	0.29	2.82	1.96 (1710~1755) 2.78 (2110~2155)	Notes :1)
Eff.[%] @Avg.	60.3 %	52.26 %	68.02 %	53.32% (1710~1755) 77.42% (2110~2155)	Notes :1)
VSWR	3.62 : 1				Notes :1)
	TBD				Notes :2)
Polarization	Linear				Notes :1)
Azimuth Beam Pattern	Omni-directional				Notes :1)
Impedance	50 Ω				Notes :1)

※Notes:1) Measured on the AMOTECH test board (120x50x1.6T)

Notes:2) Measured on the matched AMOTECH manual jig.

1.2. Mechanical Specifications

Electrode	Copper	-
Dimensions (L x W x H)	35.0(L) x 9.0(W) x 3.2(H)	mm
Operating Temperature	-35 ~ +85	°C



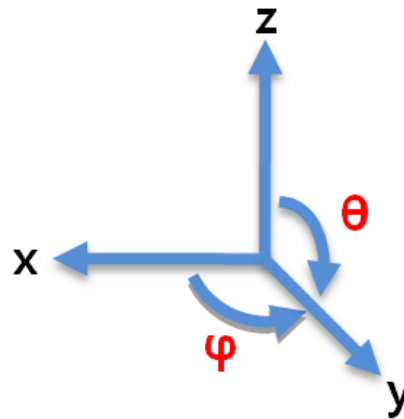
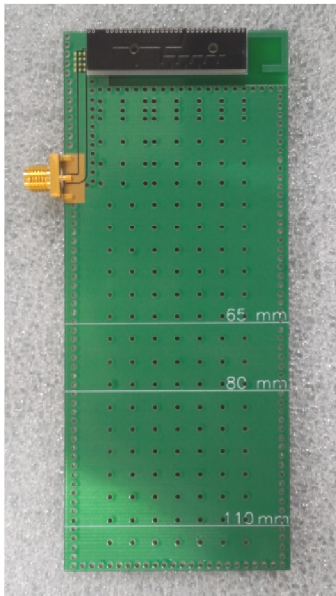
1.3 Marking



- : Direction marking
- L001 : Model No.
- YY : Year (ex: 2015 → 15)
- WW : Week (ex: 1st week→01, 7th week→07)

2. MEASUREMENT

2.1. SET for Measurement

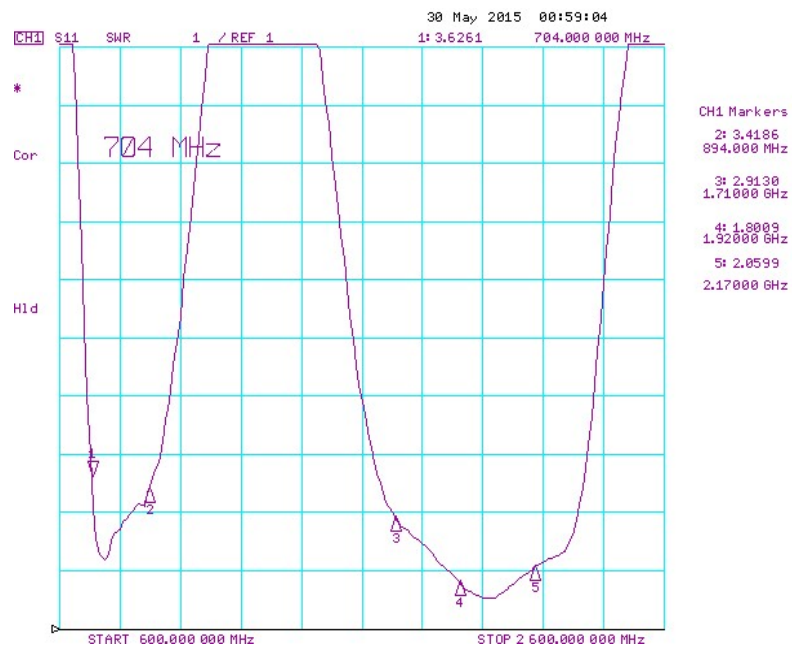


Board size mm: 120x50x1.6T

Antenna Radiation coordinate system

2.2. Electrical Characteristic

◆ S_{11} (VSWR)



- VSWR @ EV Board -

2.3. Radiation Characteristic

- Measurement Setup

- 6mx3mx3m Anechoic Chamber
- Matching on the standard test board (110 x 50 mm)
- Temp. : 25℃ / Humidity : 50~55%

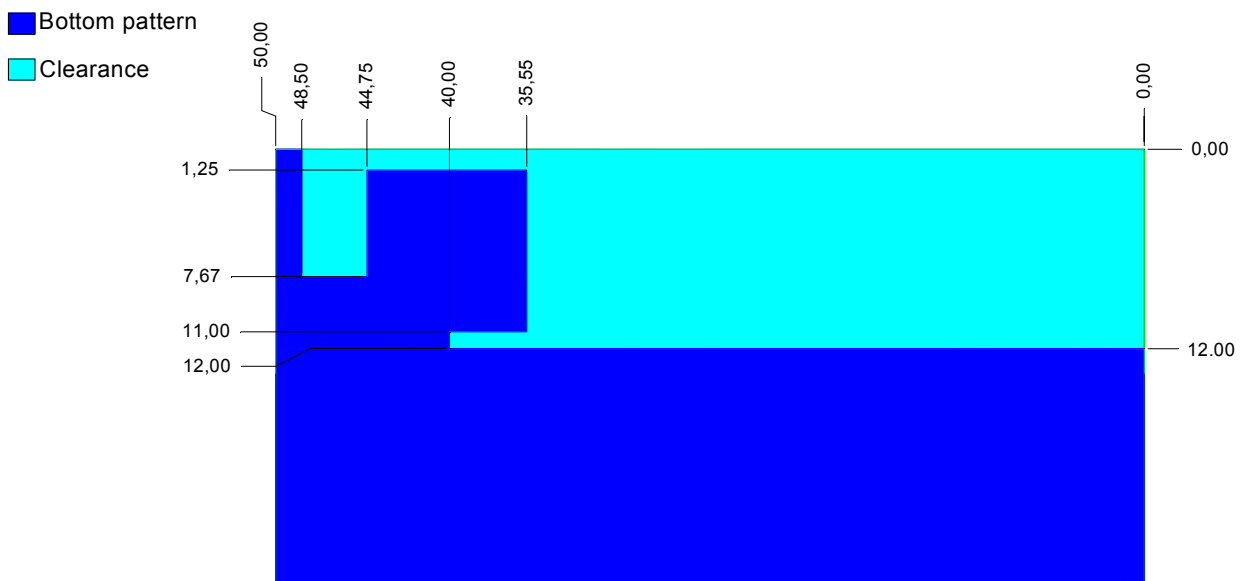
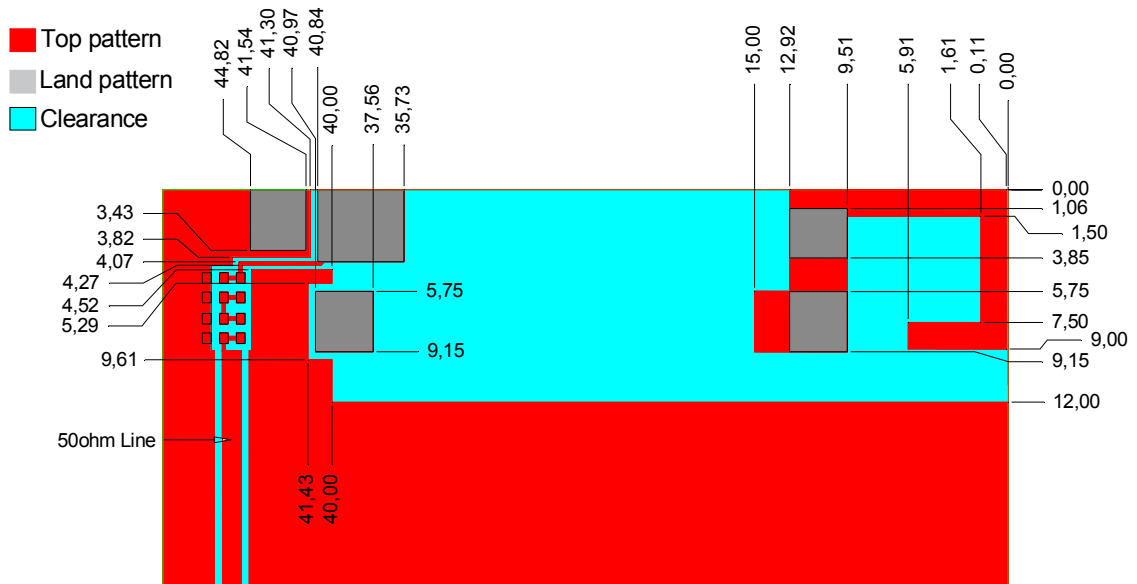
- Measurement Result

Band	Frequency MHz]	EFF.[%]	Avg. (dB)	Peak (dB)
LTC17	704	51.83	-2.85	-0.64
	716	53.53	-2.71	-0.57
	734	63.72	-1.96	0.09
	746	72.12	-1.42	0.59
GSM850 LTE5 WCDMA5	824	60.45	-2.19	0.29
	849	55.84	-2.53	0.23
	869	49.44	-3.06	-0.11
	894	46.58	-3.32	-0.12
LTE2 WCDMA2	1850	68.12	-1.67	2.25
	1910	71.43	-1.46	2.8
	1930	64.33	-1.92	2.48
	1990	70.05	-1.55	2.38
WCDMA4	1710	51.67	-2.87	1.67
	1755	54.97	-2.6	1.96
	2110	78.7	-1.04	2.16
	2155	76.15	-1.18	2.62

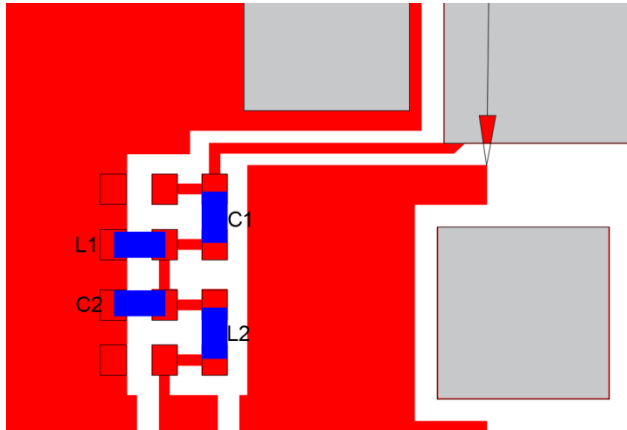
3. SOLDERING RECOMMENDATIONS

3.1. Soldering Land Pattern

* PCB Thickness (mm): FR4 1.6T



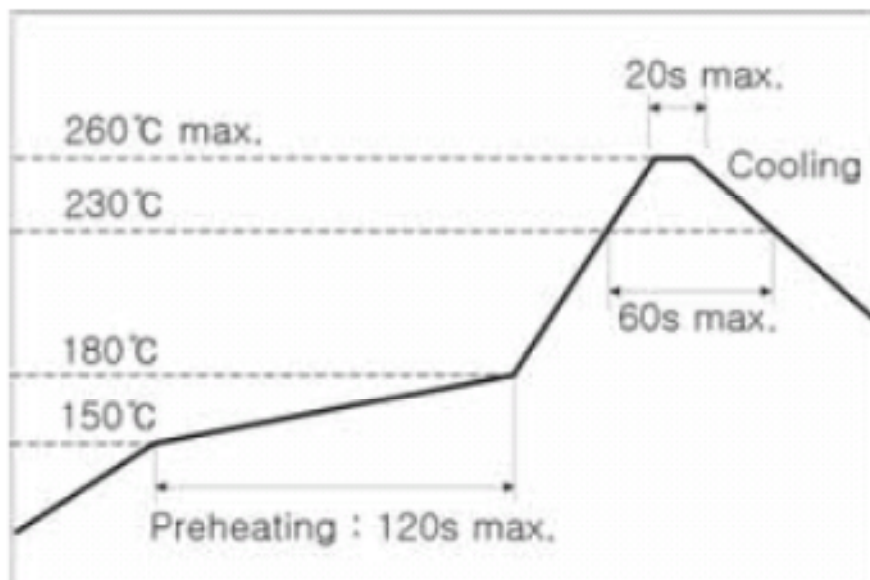
3.2. Matching circuit



C1 (Series)	2.7 pF
C2 (Shunt)	1.0 pF
L1 (Shunt)	15.0 nH
L2 (Series)	1.5 nH

3.3. Soldering Profile

Solder paste : Sn/Ag/Cu:96.5/3.0/0.5

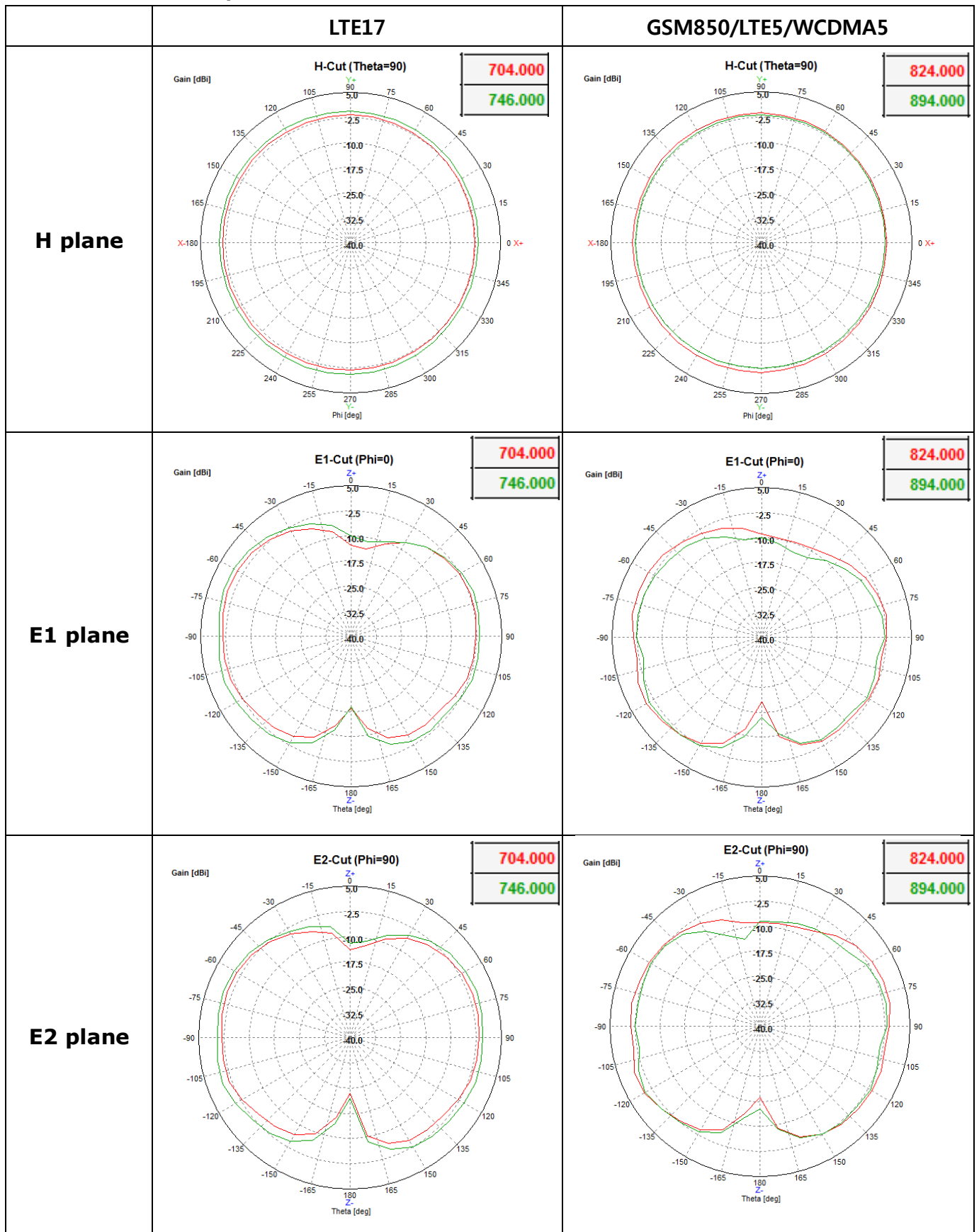


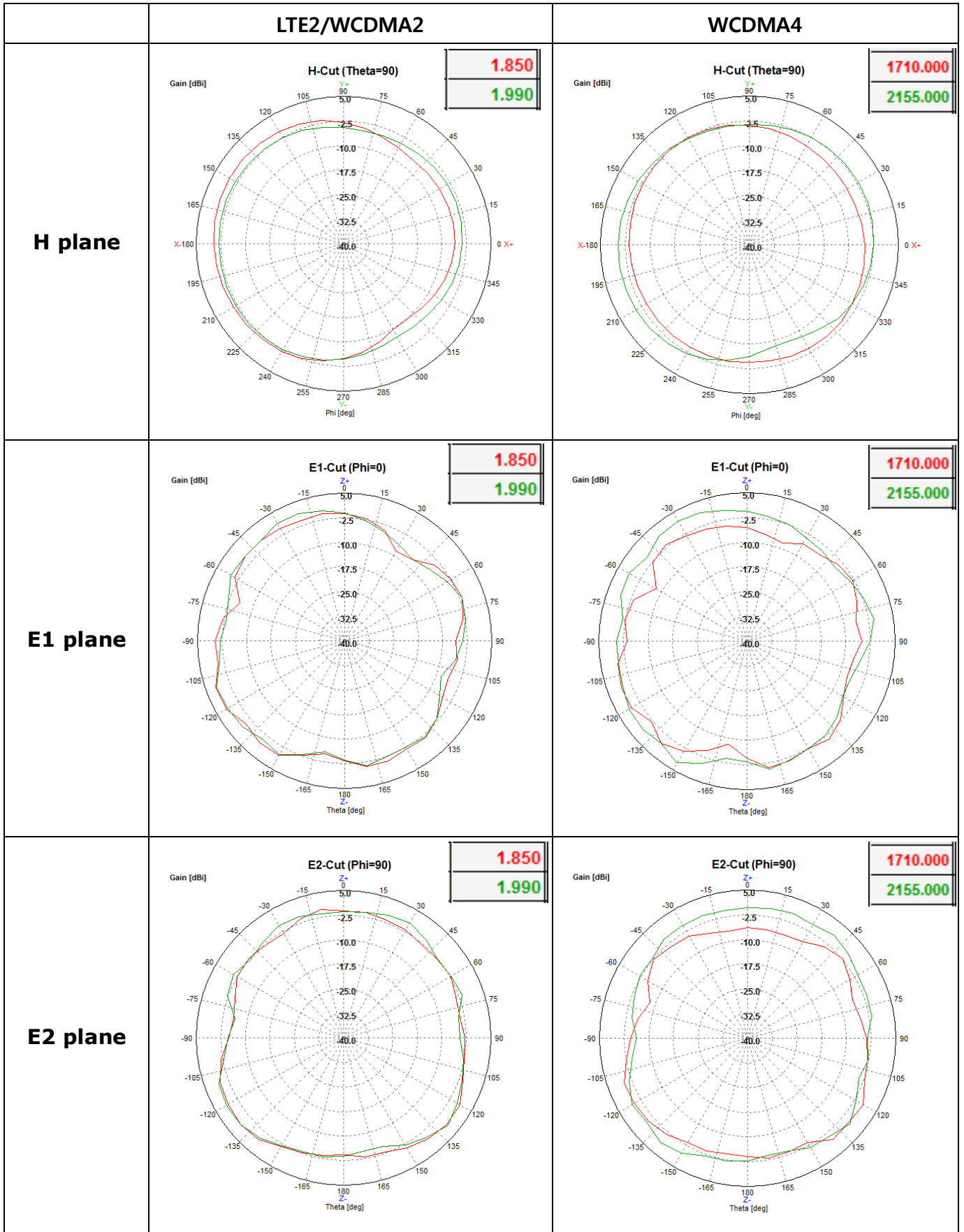
This product is designed for reflow soldering only. Do not use flow (wave) soldering.

- ① Use non-activated flux (Cl content 0.2% max.)
- ② Follow the recommended soldering conditions to avoid damage.
- ③ Reflow-cycle is max. 3times.

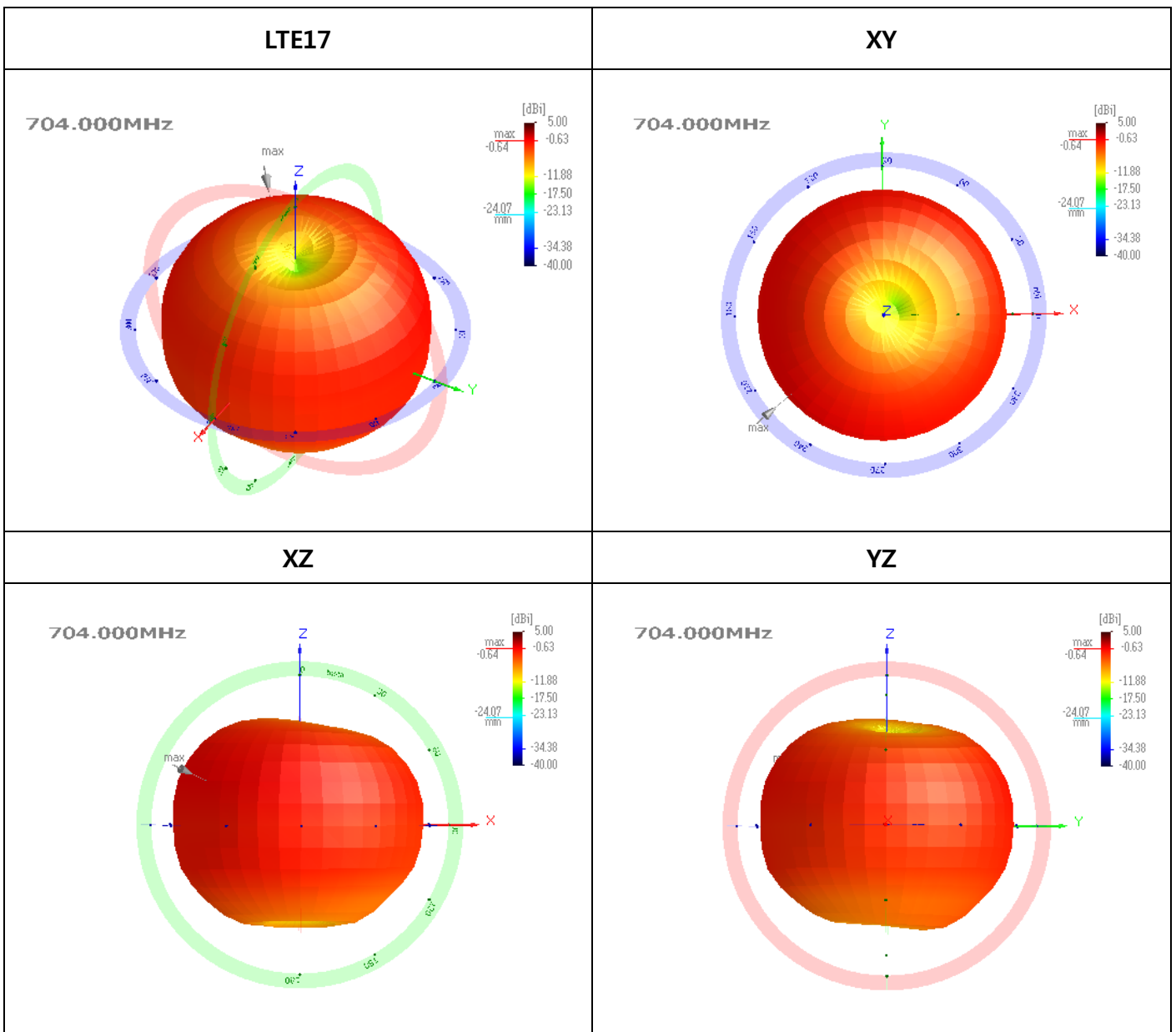
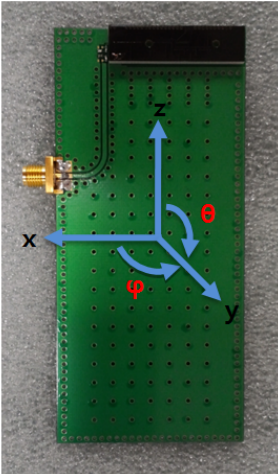
4. Radiation patterns

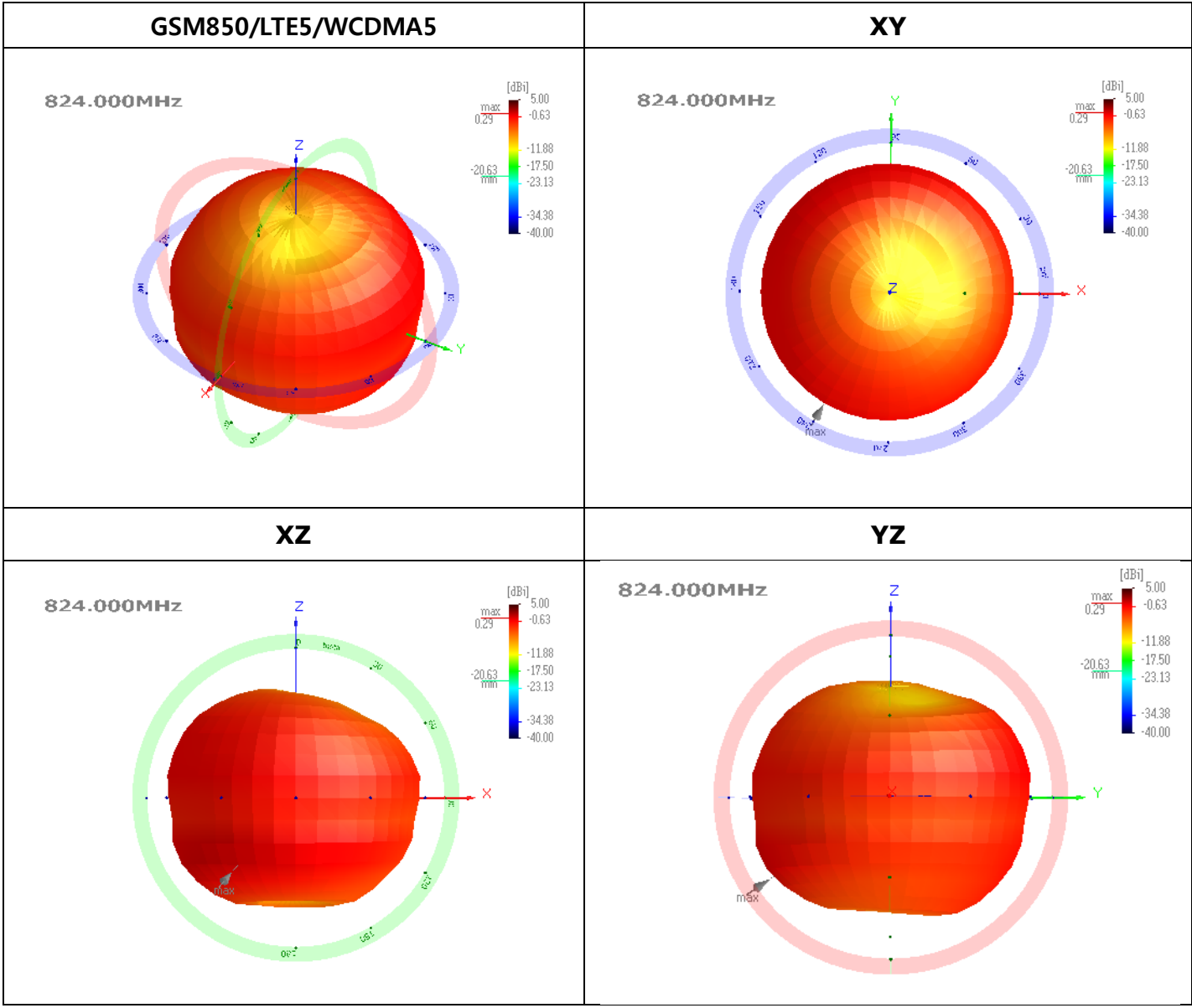
4.1. 2D Radiation patterns

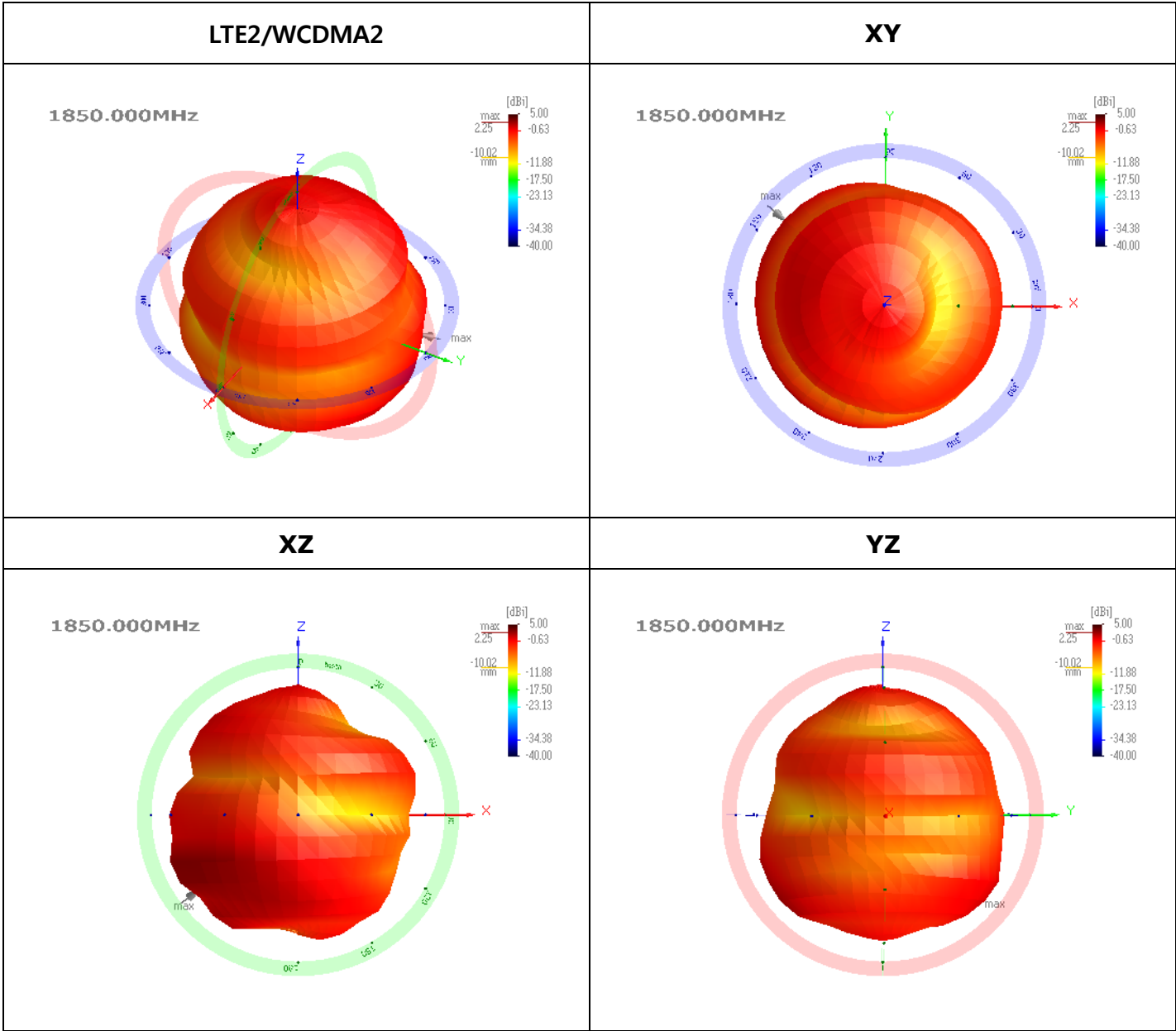


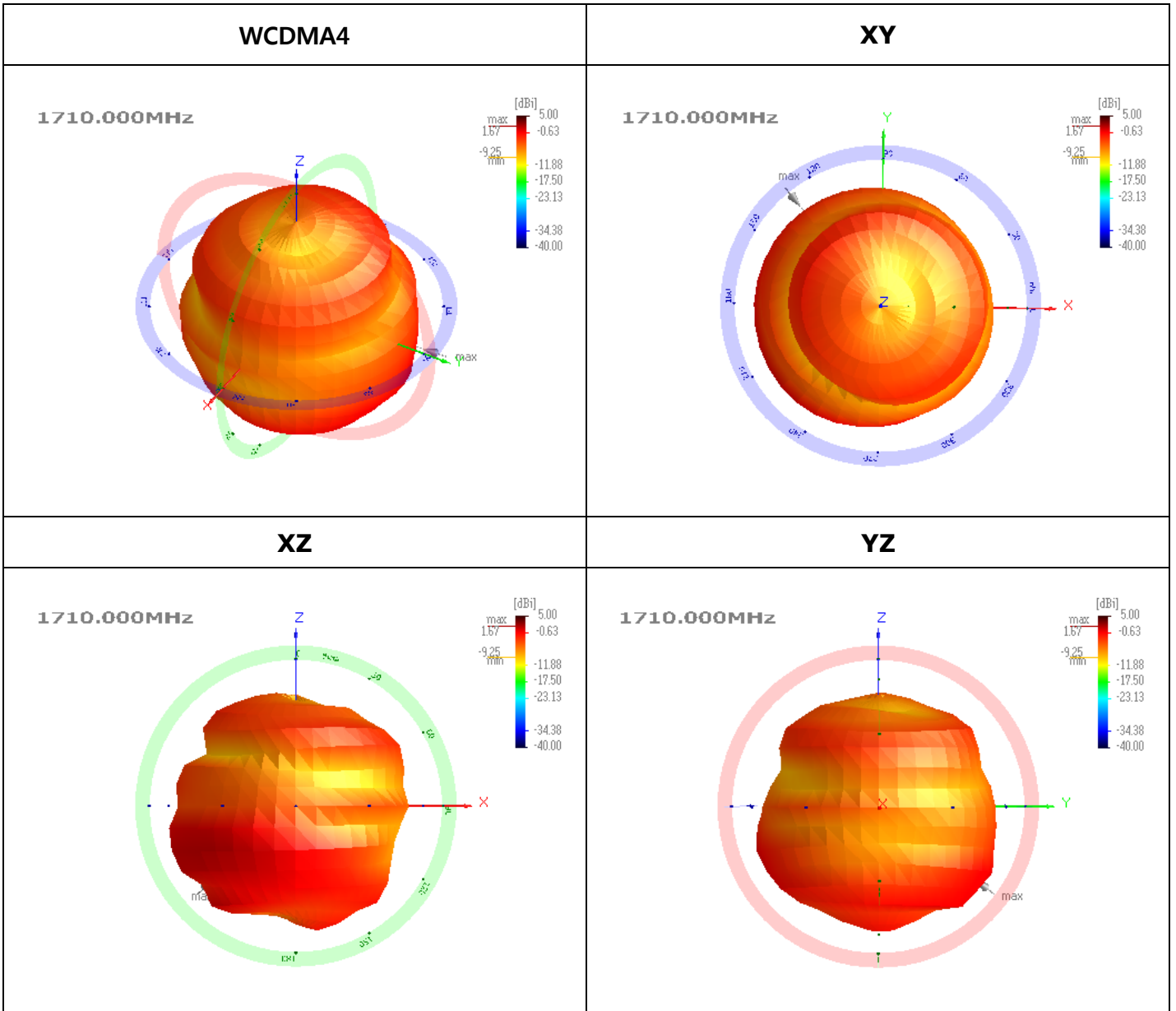


4.2. 3D Radiation patterns





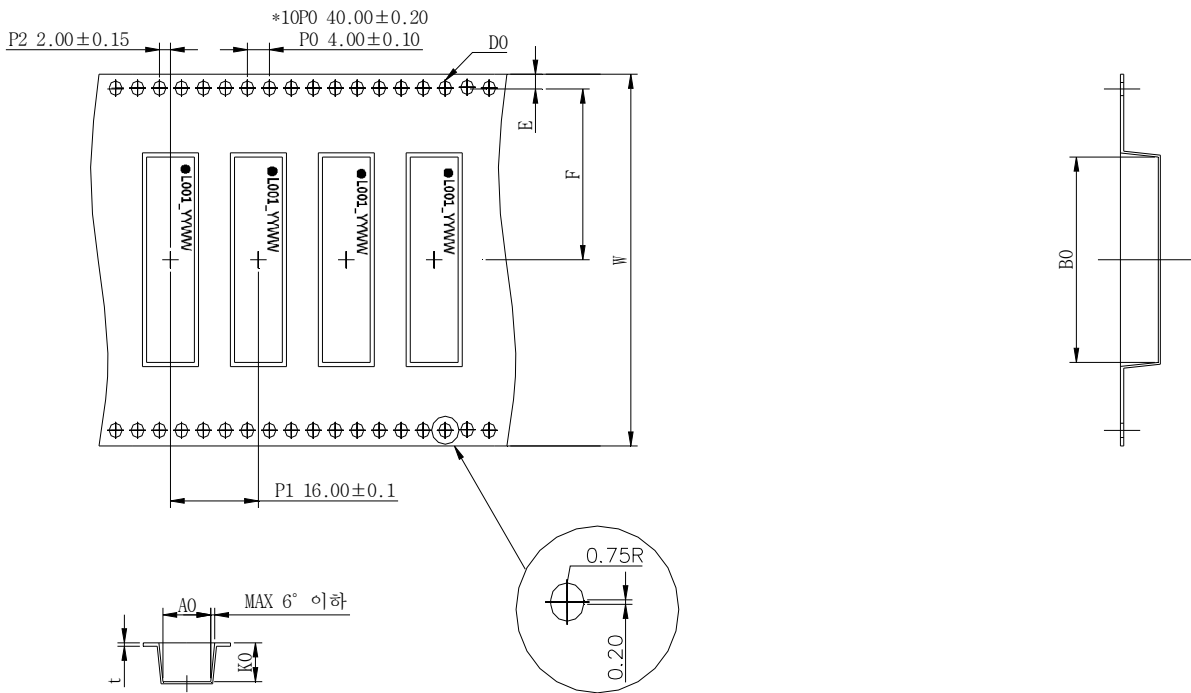




5. PACKING

5.1 Tape Dimension (unit : mm)

5.1.1 Size



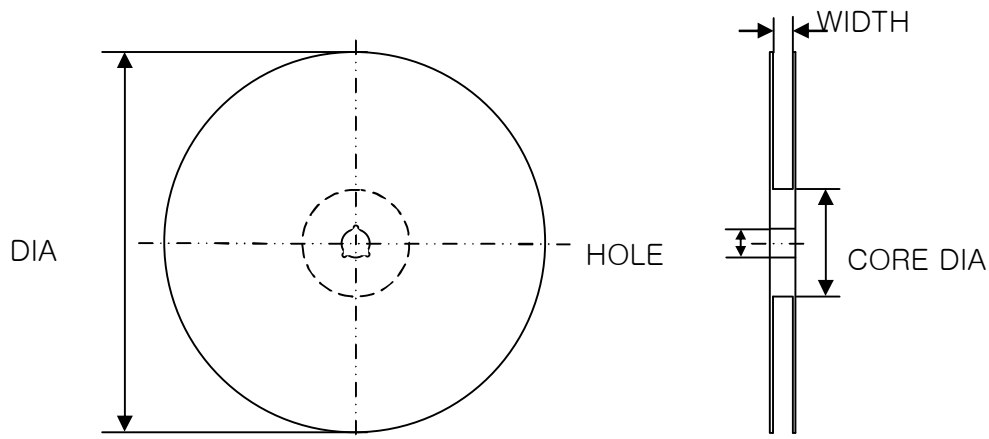
A0	9.40±0.10	E	1.75±0.10
B0	35.50±0.10	F	26.20±0.10
K0	3.70±0.10	W	56.00±0.30
D0	1.50+0.1 -0.0	t	0.40±0.05

5.1.2 Surface resistance

- 1) Carrier tape : Max $10^{11}\Omega$
- 2) Cover tape : Max $10^{11}\Omega$
- 3) Reel : Max $10^{11}\Omega$

5.2 Description of Reel

5.2.1 Size



ITEM	DIA	WIDTH	CORE DIA	HOLE
Size(mm)	330.0 ±2	57.5 ± 1.0	80.0 ± 1.0	13.0 ± 0.3

5.2.2 Material

- 1) Plastic reel : GPPS (General Purpose Poly Styrene) resin

5.3 Description of Packing Box

5.3.1 Reel

Size: 56 (W), Dia. Φ 330 (mm)

Quantity: 1,000ea/reel

5.3.2 Inner Box

Size: 368 (W) x 346 (D) x 65 (T) (mm)

Quantity: 1 reel (1,000 ea/reel × 1 reel = 1,000 ea)



5.3.3 Outer Box

Size: 405 (W) x 360 (D) x 300 (T) (mm)

Quantity: 4 Inner Box (1,000 ea/Inner Box × 4 Inner Box=4,000 ea)

