Chip Antenna Series

Bluetooth \ WLAN Chip Antenna

ANT321612042G4A

Manufacturer's name:Me-tech (Shanghai) Microelectronics Co., Ltd

CUSTOMER：_____
CUSTOMER P/N：_____
OUR DWG No：_____
QUANTITY：_____DATE: _____

SPECIFICATION ACCEPTED BY:	
COMPONENT ENGINEER	
ELECTRICAL ENGINEER	
MECHANICAL ENGINEER	
APPROVED	
REJECTED	

Prepared	Checked	Approved

Applications

This antenna is designed for Bluetooth\WLAN application and it's suitable for cellular phones, PDA, notebook, navigator, and all devices which have Bluetooth\WLAN function.

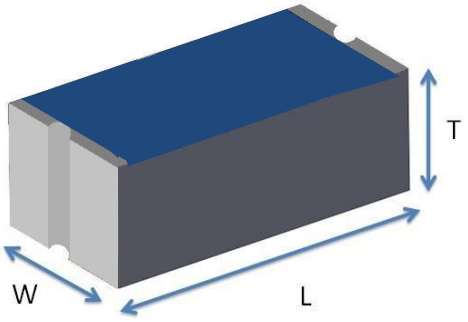
Features

- Omni-directional radiation
- Low profile and compact size (3.2 x 1.6x 1.2mm)
- Low cost
- Lead free soldering compatible
- RoHS compliant
- Tape and reel packing

Electrical Characteristics

Working Frequency Range	2400 ~2480 MHz
Bandwidth	100 MHz (Min.)
Peak Gain	-0.89 dBi (Typ.)
Impedance	50 Ohm
Return loss	-6.5 dB (Max)
Polarization	Linear
Azimuth Beamwidth	Omni-directional
Operation Temperature(℃)	-40 ~85℃
Resistance to Soldering Heats	10sec. (@ 260℃)
Termination	Cu/ Sn (Leadless)

Antenna Dimension

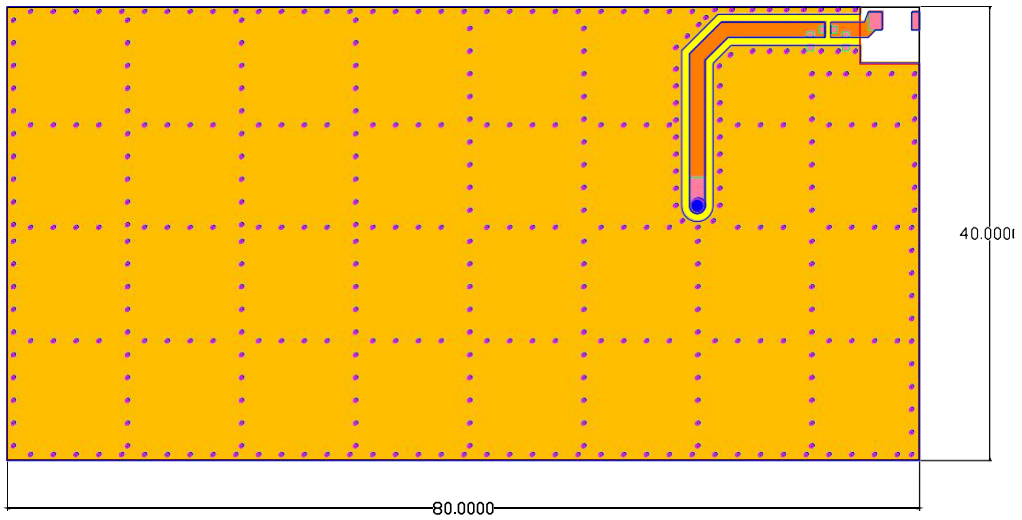


Dimension (mm)	
L	3.23 ± 0.20
W	1.66 ± 0.20
T	1.23 ± 0.20

Recommended PCB layout (unit:mm)

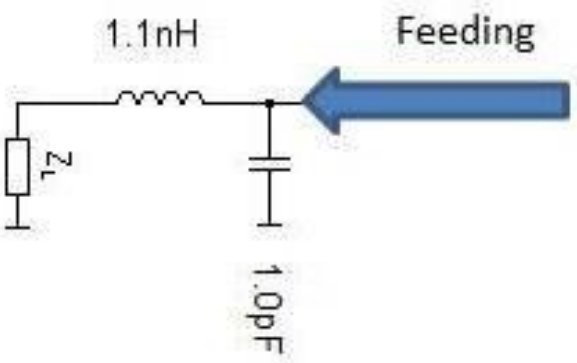
Evaluation Board Dimension

PCB Dimension

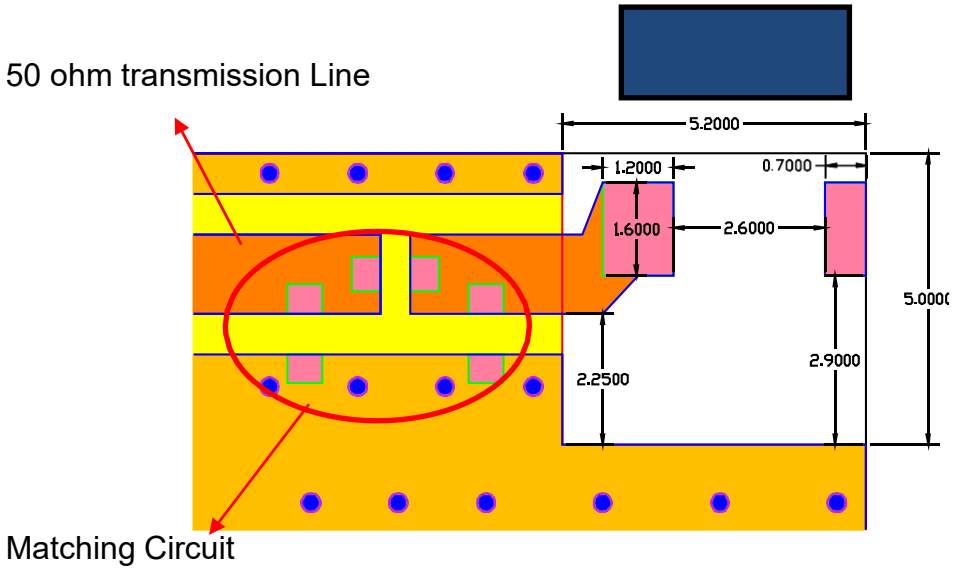


Unit : mm

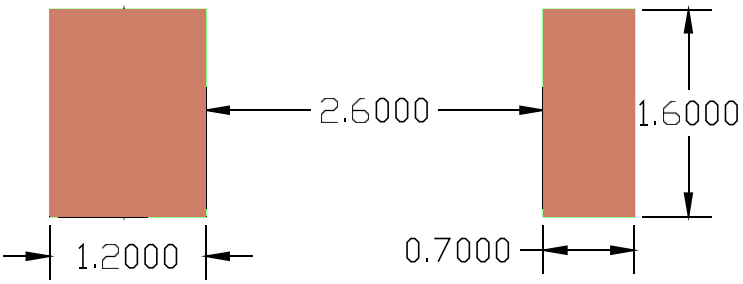
Suggested Matching Circuit



Layout Dimensions in Clearance area(Size=5.2*5.0mm)

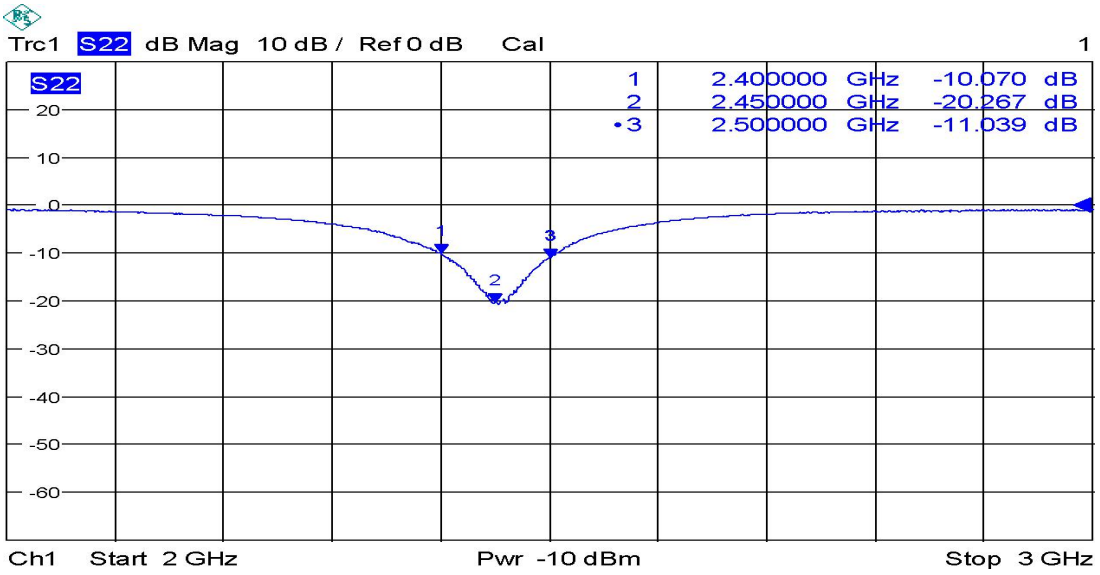


FootPrint (Unit : mm)

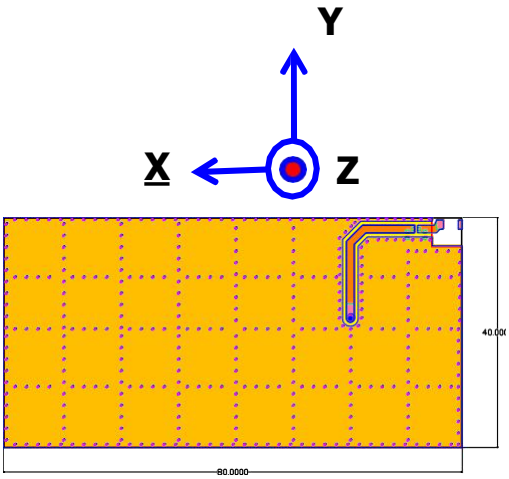


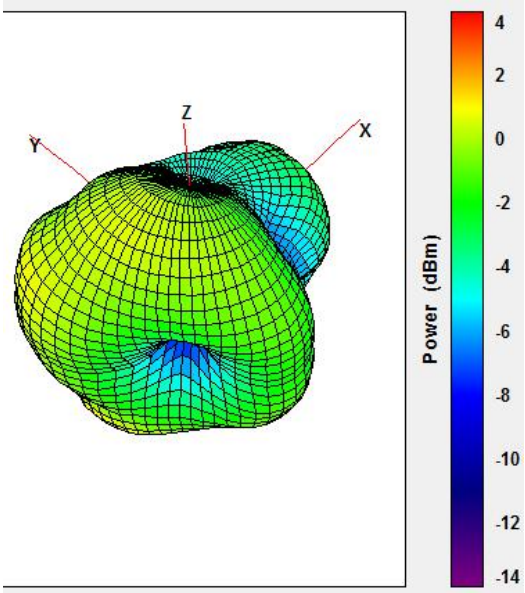
Electrical Characteristics

Return Loss



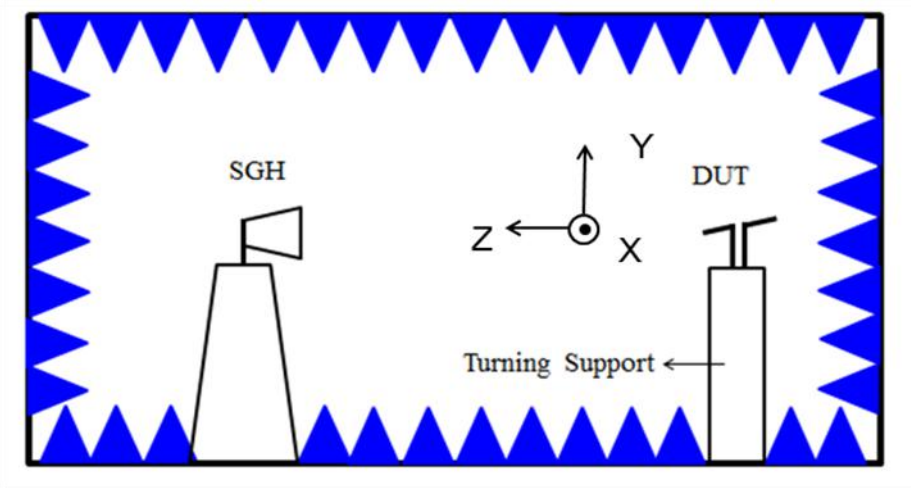
Radiation Pattern



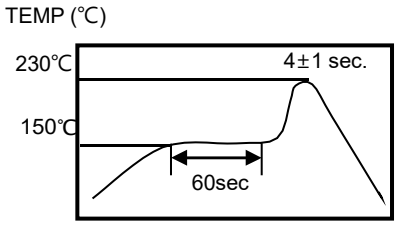
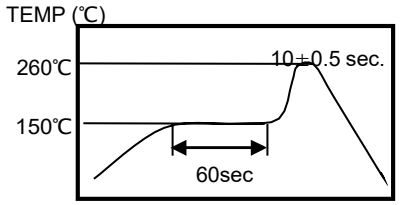


	Efficiency
2400MHz	55.21 %
2450MHz	66.45 %
2500MHz	57.53 %

Chamber Coordinate System

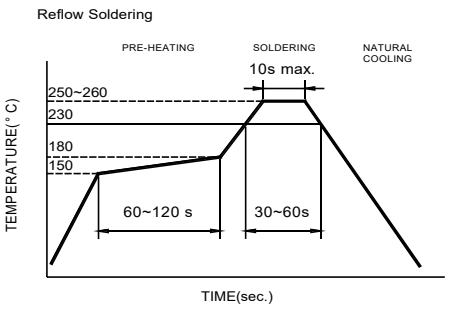


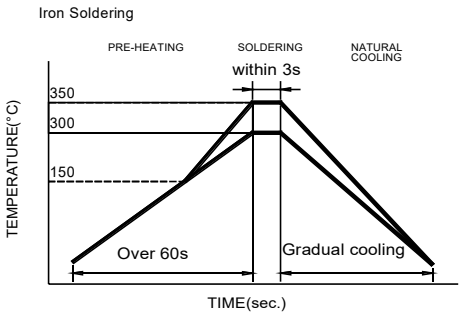
Reliability and Test Condictions

<table>
<tr><td></td><td></td><td></td></tr>
<tr><td>Solderability</td><td>1. Wetting shall exceed 90% coverage
2. No visible mechanical damage
 
</td><td>Pre-heating temperature:150℃/60sec.
Solder temperature:230±5℃
Duration:4±1sec.
Solder:Sn-Ag3.0-Cu0.5
Flux for lead free: rosin</td></tr>
<tr><td>Solder heat Resistance</td><td>1. No visible mechanical damage
2. Central Freq. change :within ± 6%
 
</td><td>Pre-heating temperature:150℃/60sec.
Solder temperature:260±5℃
Duration:10±0.5sec.
Solder:Sn-Ag3.0-Cu0.5
Flux for lead free: rosin</td></tr>
<tr><td>Component Adhesion (Push test)</td><td>1. No visible mechanical damage</td><td>The device should be reflow soldered(230±5℃ for 10sec.) to a tinned copper substrate A dynometer force gauge should be applied the side of the component. The device must with-ST-F 0.5 Kg without failure of the termination attached to component.</td></tr>
<tr><td>Component Adhesion (Pull test)</td><td>1. No visible mechanical damage</td><td>Insert 10cm wire into the remaining open eye bend ,the ends of even wire lengths upward and wind together.
Terminal shall not be remarkably damaged.</td></tr>
<tr><td>Thermal shock</td><td>1. No visible mechanical damage
2. Central Freq. change :within ±6%
<table><tr><td>Phase</td><td>Temperature(℃)</td><td>Time(min)</td></tr><tr><td>1</td><td>+85±5℃</td><td>30±3</td></tr><tr><td>2</td><td>Room Temperature</td><td>Within 3sec</td></tr><tr><td>3</td><td>-40±2℃</td><td>30±3</td></tr><tr><td>4</td><td>Room Temperature</td><td>Within 3sec</td></tr></table></td><td>+85℃=>30±3min
-40℃=>30±3min
Test cycle:10 cycles
The chip shall be stabilized at normal condition for 2~3 hours before measuring.</td></tr>
<tr><td>Resistance to High Temperature</td><td>1. No visible mechanical damage
2. Central Freq. change :within ±6%
3. No disconnection or short circuit.</td><td>Temperature: 85±5℃
Duration: 1000±12hrs
The chip shall be stabilized at normal condition for 2~3 hours before measuring.</td></tr>
<tr><td>Resistance to Low Temperature</td><td>1. No visible mechanical damage
2. Central Freq. change :within ±6%
3. No disconnection or short circuit.</td><td>Temperature:-40±5℃
Duration: 1000±12hrs
The chip shall be stabilized at normal condition for 2~3 hours before measuring.</td></tr>
<tr><td>Humidity</td><td>1. No visible mechanical damage
2. Central Freq. change :within ±6%
3. No disconnection or short circuit.</td><td>Temperature: 40±2℃
Humidity: 90% to 95% RH
Duration: 1000±12hrs
The chip shall be stabilized at normal condition for 2~3 hours before measuring.</td></tr>
</table>

Soldering and Mounting

Mildly activated rosin fluxes are preferred. The minimum amount of solder can lead to damage from the stresses caused by the difference in coefficients of expansion between solder, chip and substrate. The terminations are suitable for all wave and re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.





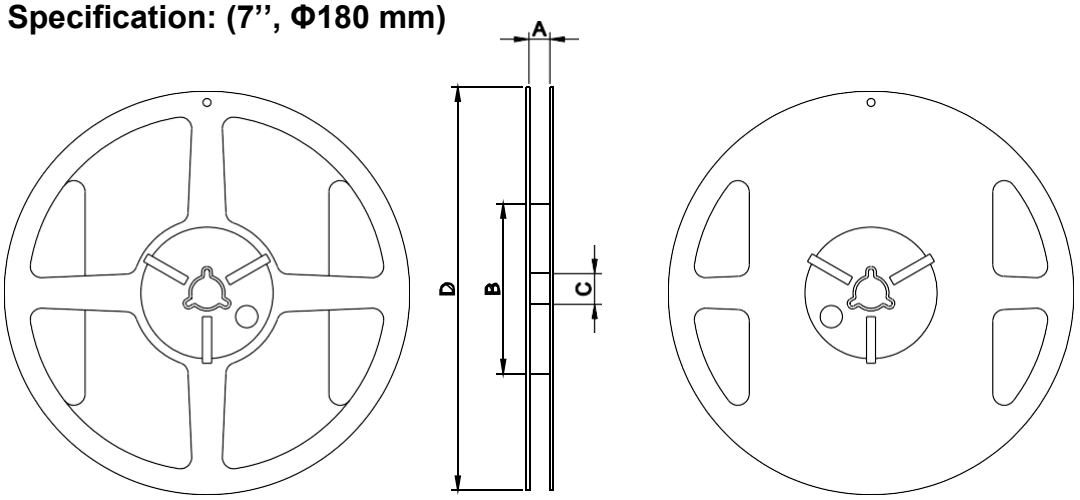
Recommended temperature profiles for re-flow soldering in Figure 1.

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be emp s are recommended.

- Preheat circuit and products to 150℃
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- 280℃ tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 3 sec.

Reel and Taping Specification

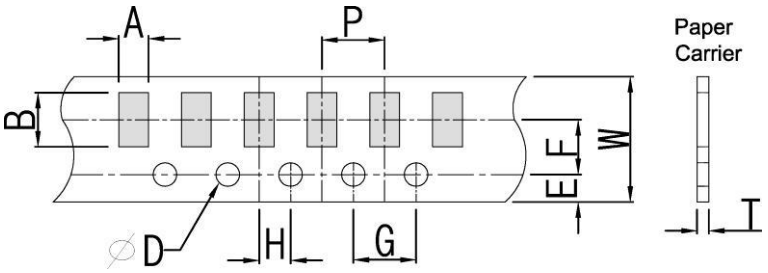
Reel Specification: (7'', Φ180 mm)



7" x 8 mm

Tape Width(mm)	A(mm)	B(mm)	C(mm)	D(mm)	Chip/Reel(pcs)
8	9.0±0.5	60±2	13.5±0.5	178±2	3000

Tapping Specification



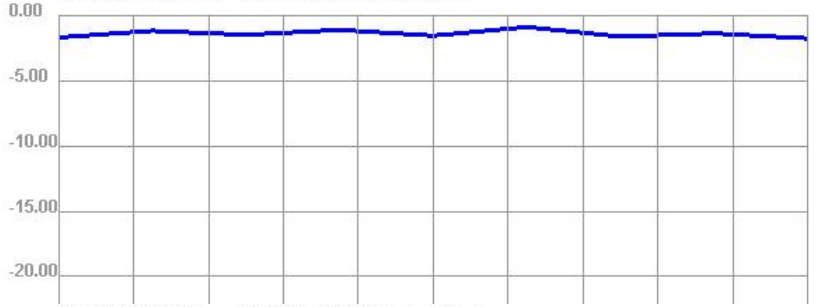
Packaging	Type	A	B	W	E	F	G	H	T	ψD	P
Paper Type	3216	1.90±0.20	3.50±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	1.50±0.10	4.0±0.1

Passive Test For BT												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	25.98	-6.02	-1.69	-3.84	12.979	12.002	-1.69	-18.52	4.34	60	46.52	46.42
2410	27.69	-5.58	-1.18	-3.33	14.264	13.429	-1.18	-17.77	4.4	60	46.11	46.03
2420	28.9	-6.04	-1.48	-3.63	12.783	12.115	-1.48	-17.76	4.55	60	46.45	46.36
2430	28.73	-5.73	-1.12	-3.27	13.911	12.823	-1.12	-16.91	4.61	60	46.15	46.03
2440	29.63	-6.09	-1.55	-3.7	13.06	11.567	-1.55	-16.56	4.53	60	46.75	46.57
2450	32.13	-5.36	-0.89	-3.04	15.666	13.467	-0.89	-15.14	4.47	60	46.74	46.58
2460	29.62	-6.09	-1.62	-3.77	13.266	11.352	-1.62	-15.15	4.47	60	46.92	46.75
2470	28	-5.85	-1.38	-3.53	13.986	12.015	-1.38	-14.22	4.47	60	46.63	46.48
2480	27.89	-6.22	-1.76	-3.91	12.925	10.963	-1.76	-14.48	4.46	90	46.92	46.8

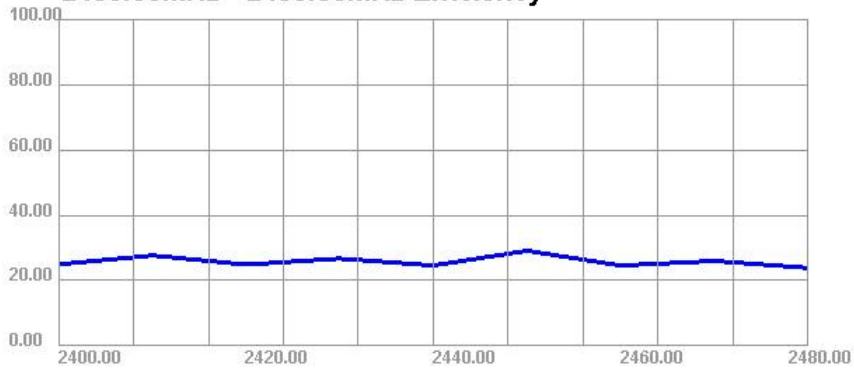
Application Information	
O4Version	4.95.303
TotalTime	3m 56s 943ms
AdditionalInfor	NULL

制造商名称: 美台高科（上海）微电子有限公司
地址: 深圳市宝安区新安街道71区引进大厦6F西侧

2400.00MHz - 2480.00MHz Gain

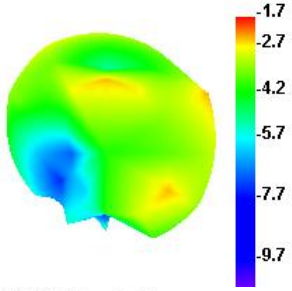


2400.00MHz - 2480.00MHz Efficiency

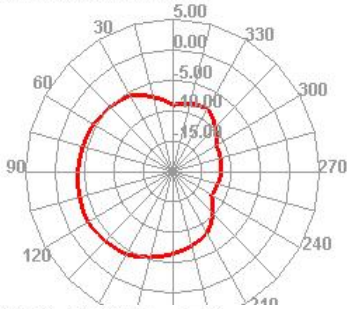


2400.00 2420.00 2440.00 2460.00 2480.00

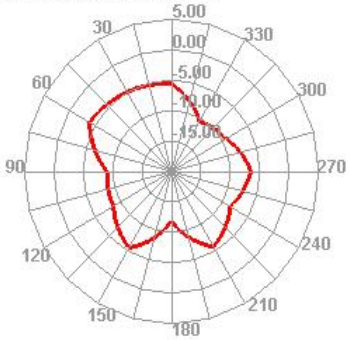
2400.000MHz



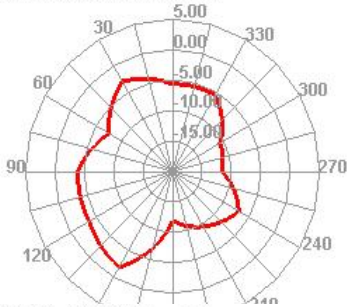
2400.000MHz H



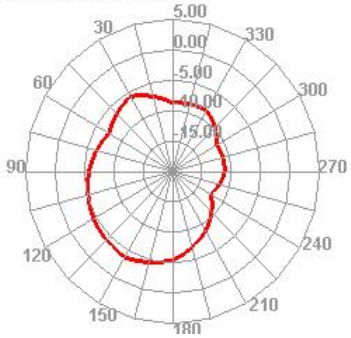
2400.000MHz E1



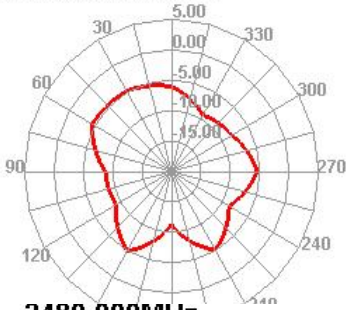
2400.000MHz E2



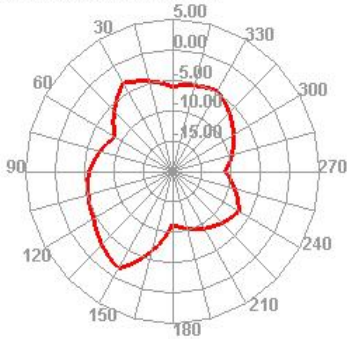
2440.000MHz H



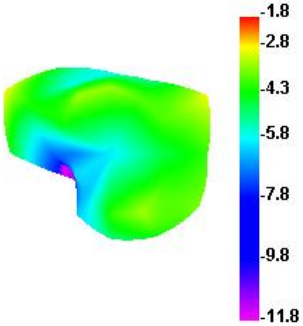
2440.000MHz E1

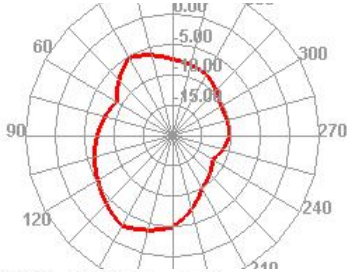
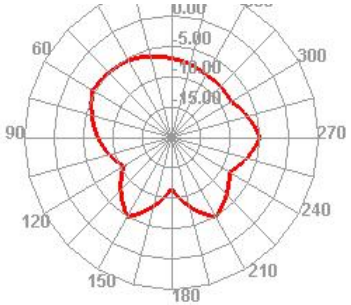
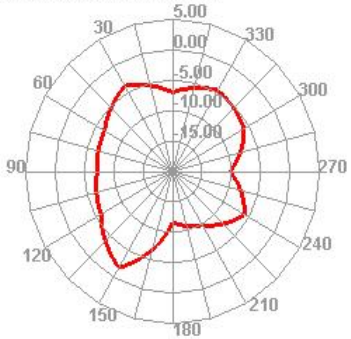


2440.000MHz E2



2480.000MHz





2480.000MHz E2