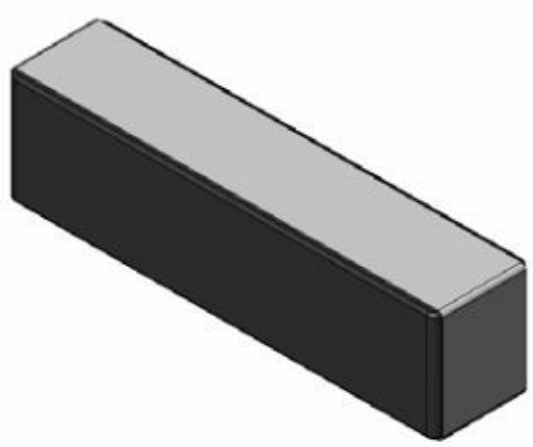
2.4 GHz WLAN Ceramic Chip Antenna

Pulse Part Number CW3000



Features

-Omni directional radiation
-Low profile
-Compact size W x L x H (7 x 1.6 x 1.6 mm)
-Low weight (86 mg)
-Lead free materials
-Fully SMD compatible
-Lead free soldering compatible
-Tape and reel packing
-RoHS Compliant Product

Applications

-Bluetooth, WLAN, WiFi
-IEEE 802.11b/g
-ZigBee IEEE 802.15.4
-2.4 GHz WLAN
-2.4 GHz ISM Band System

Electrical specifications @ +25 ° C

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size. Matching and tuning circuit component values are case depended.

Typical performance (testboard size 40x11 mm, PWB ground clearance area 11.0 x 6.0 mm)

Frequency Range [MHz]	Avarage Gain [dBi]	Max Gain [dBi]	Return loss min. [dB]	Efficiency [%]/[dB]	Impedance [Ω]	Operating Temperature [° C]
2400 – 2483.5	-4.1 (peak) -3.7(band edges)	2.5 (peak) 2.1 (band edges)	-18	65 / -0.3(peak) 55 / -0.6(band edges)	50	-40 to +85

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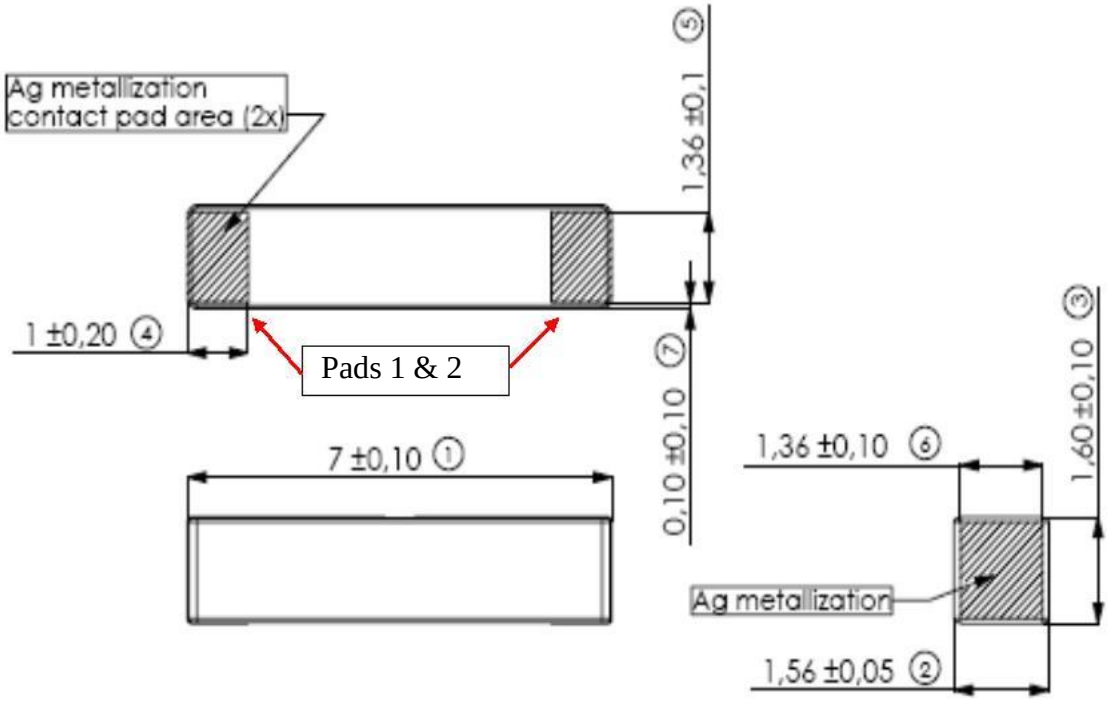
Terminal Configuration and antenna dimensions



No.	Terminal Name	Terminal Dimensions
1	Feed / GND	1.0 x 1.36 mm
2	Feed / GND	1.0 x 1.36 mm
Antenna is symmetrical. Either of terminals 1 or 2 can be Feed / GND		

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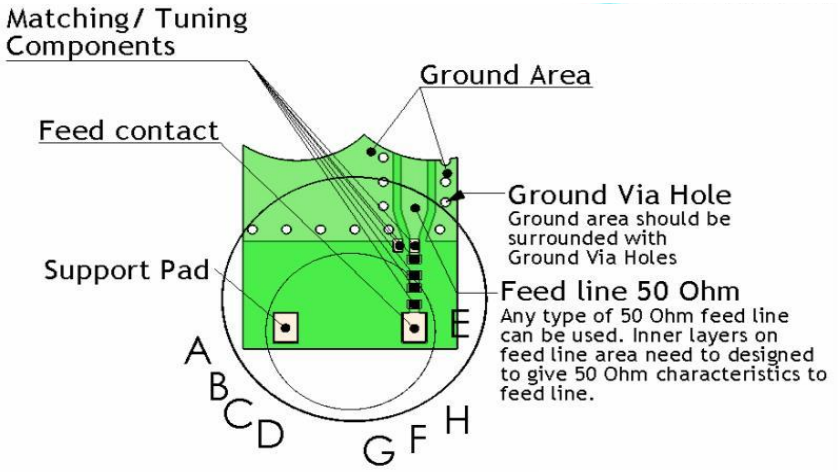
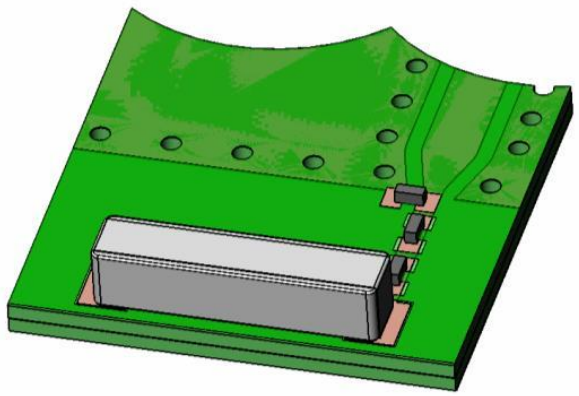
Antenna PWB Layout

Ground cleared under antenna, clearance area 11,00 x 6.00 mm

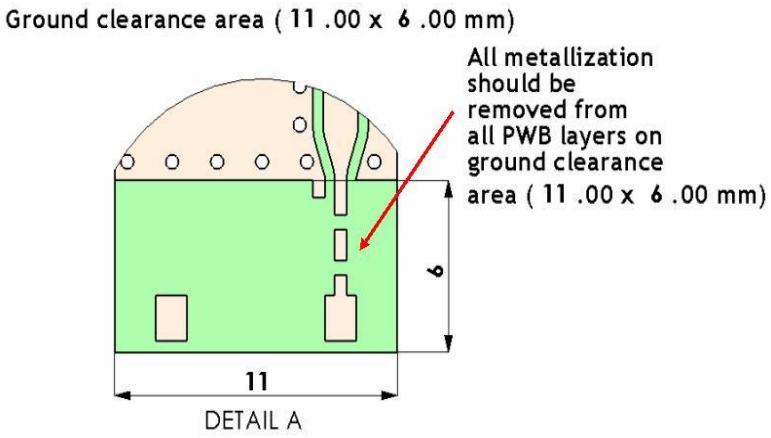
Matching and tuning component values depend on application and surrounding mechanics / materials.

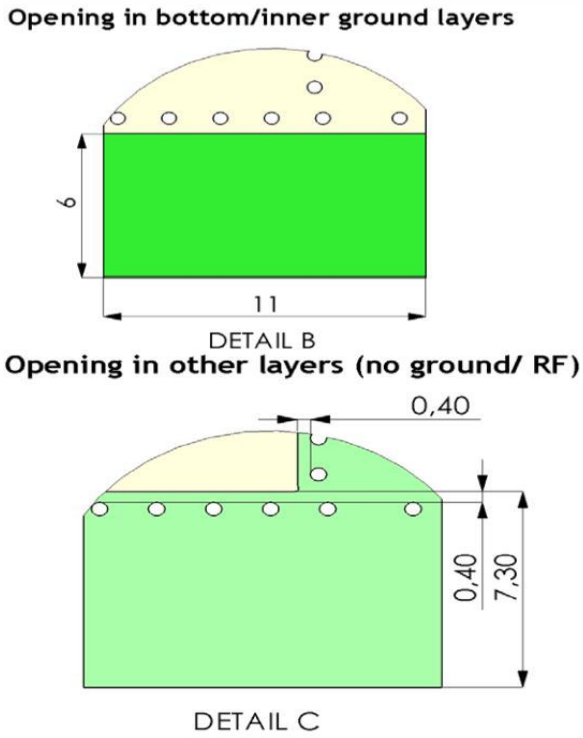
Feed line should be designed to match 50 Ω characteristic impedance, depending on PWB material and thickness.
Recommended test board layout for electrical characteristic measurement, test board outline size 40 x 11 mm.
Recommended PWB manufacturing tolerances according to standard:IPC-A-600, revision G.
Note: All dimensions are in metric system.





Ground clearance area





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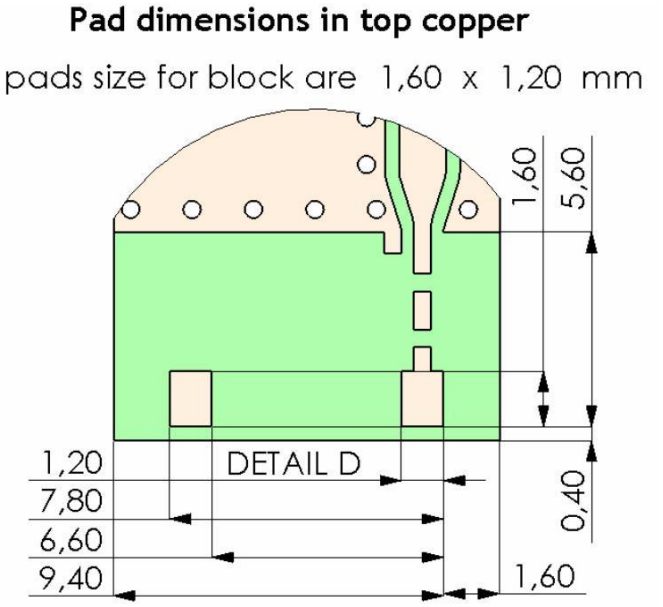
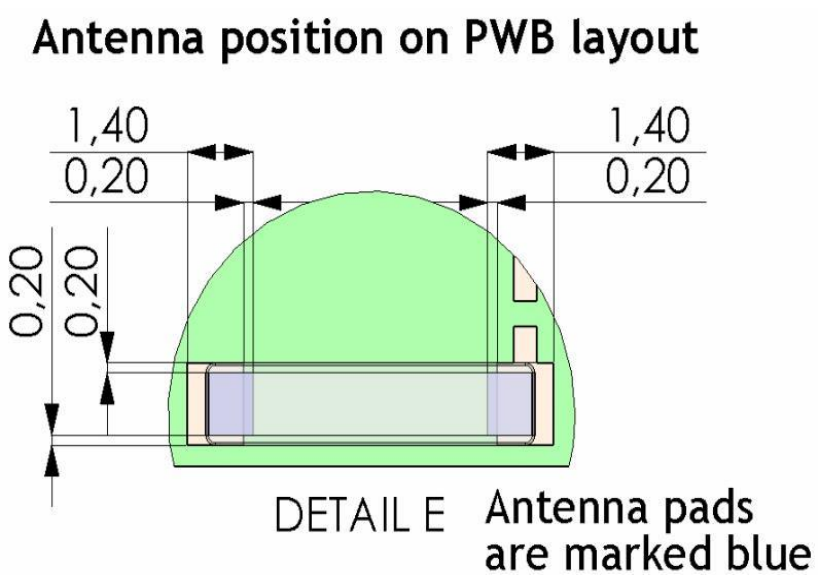
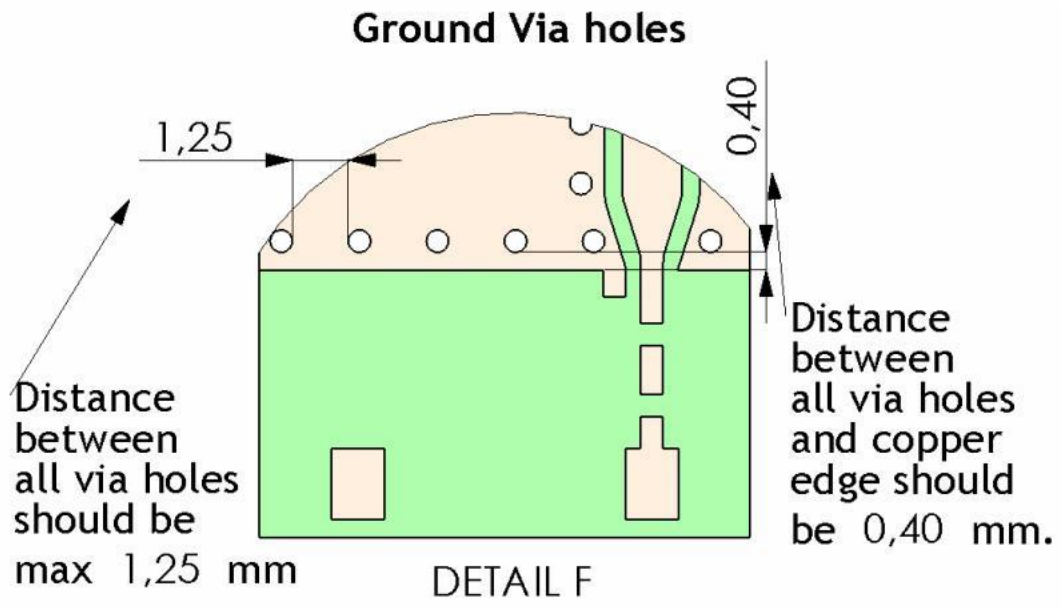
PWB pad dimensions and antenna position





Typical Ground via hole placement in PWB layout



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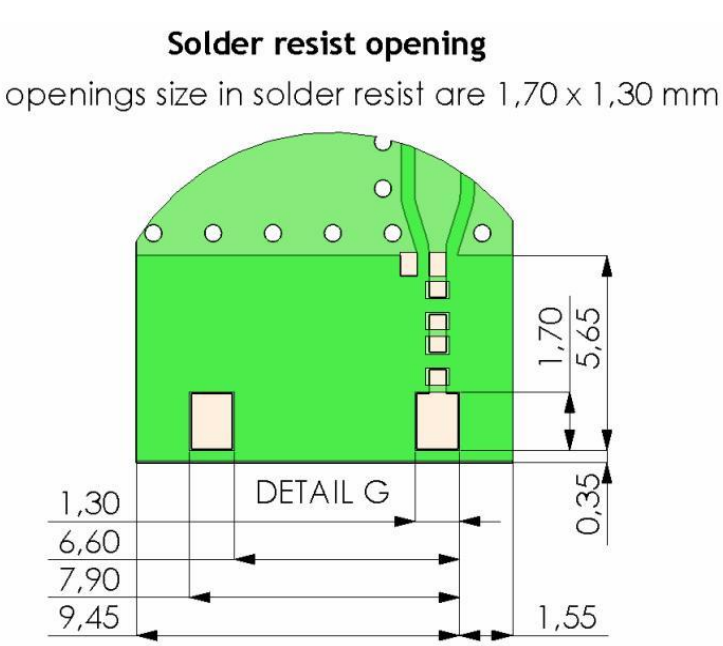
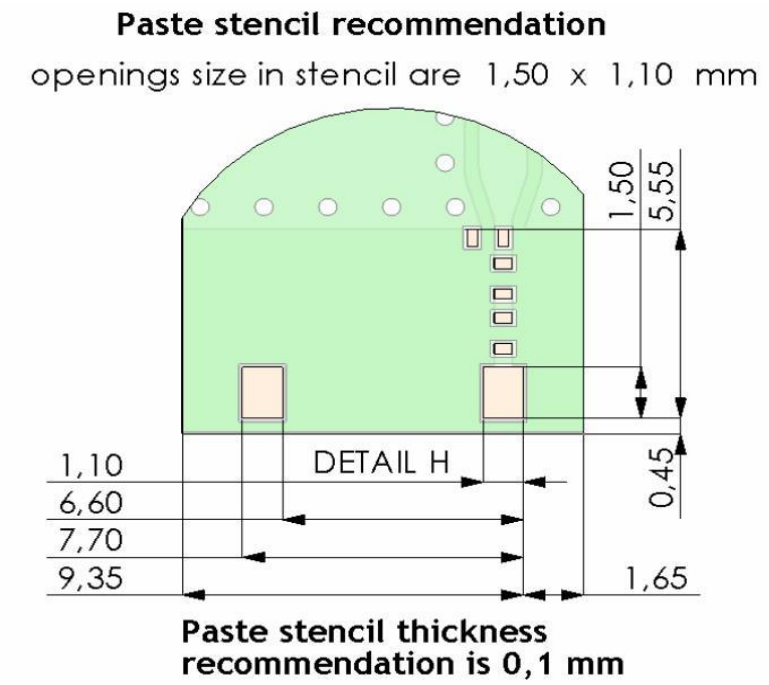
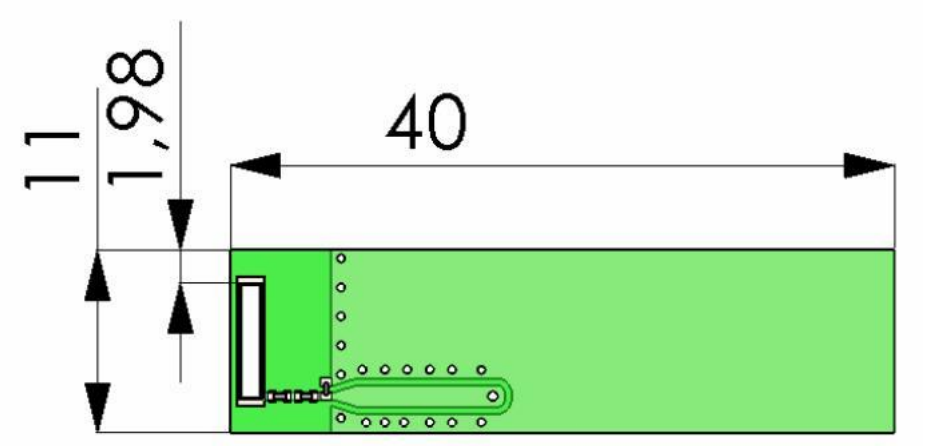
Solder resist opening and paste stencil recommendations





Recommended antenna position on PWB

Our test PWB size is 40 x 11 mm, other sized boards can be used depending on customer device size.



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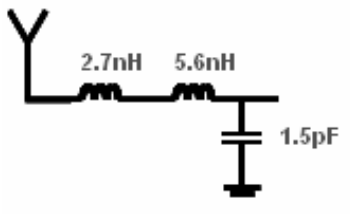
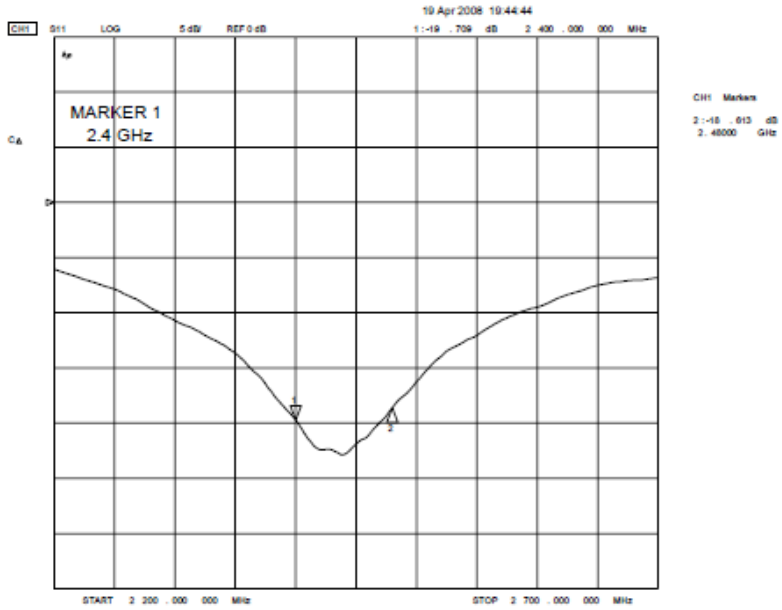
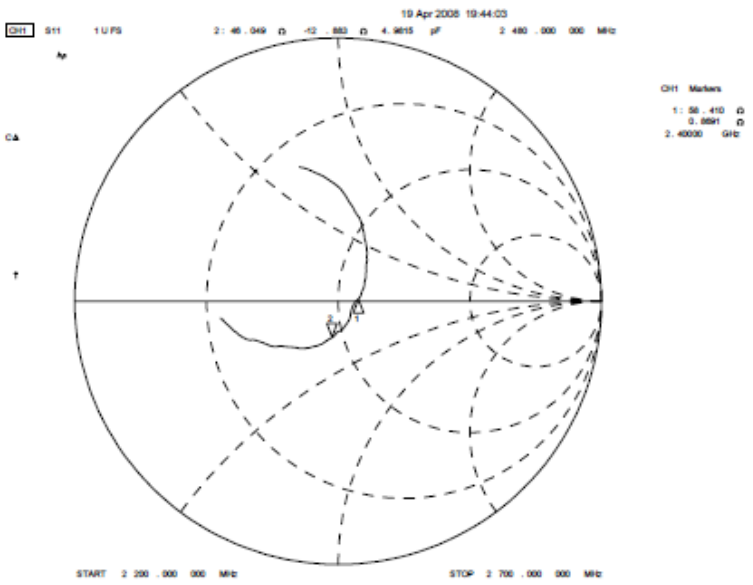
Typical Electrical Characteristics (T=25 °C)

Measured on the 40 x 11 mm test board with matching circuit.

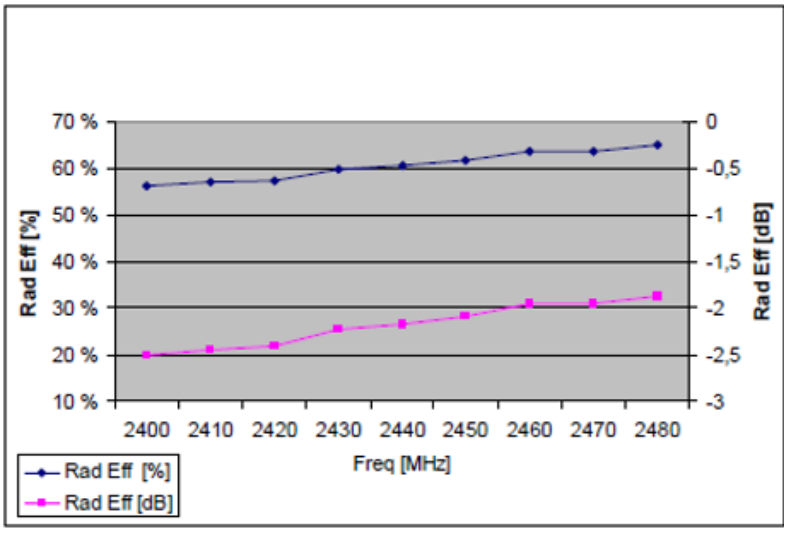


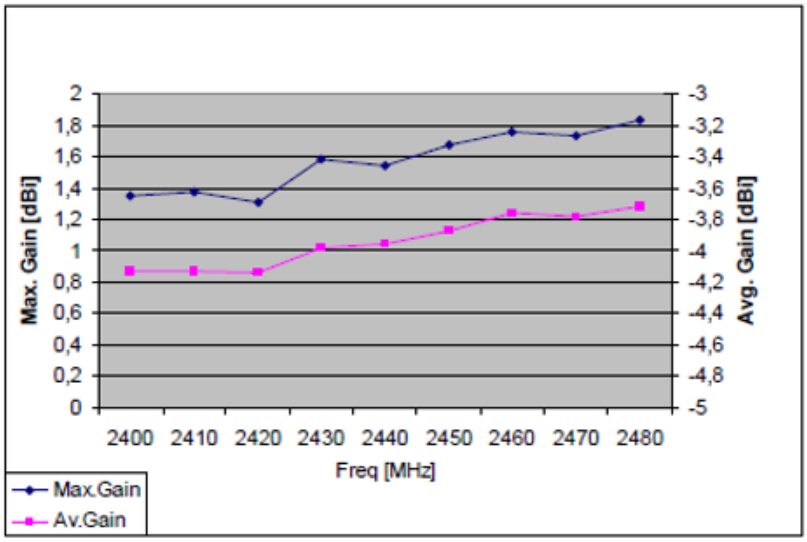
Typical Return Loss S11/ impedance





Typical free space efficiency and maximum gain





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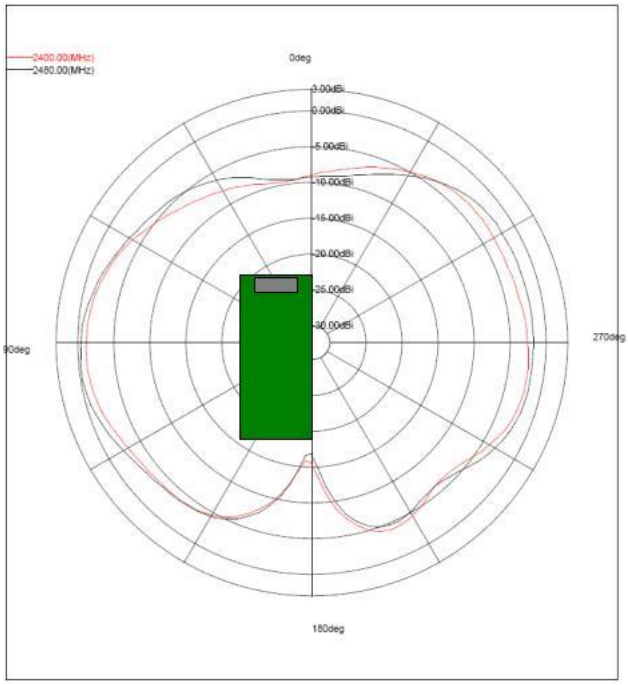
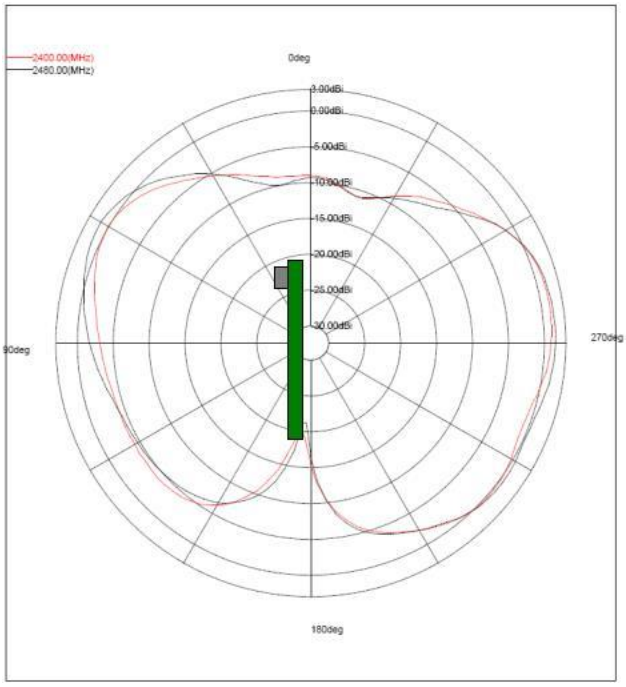
Typical Free Space Radiation Patterns

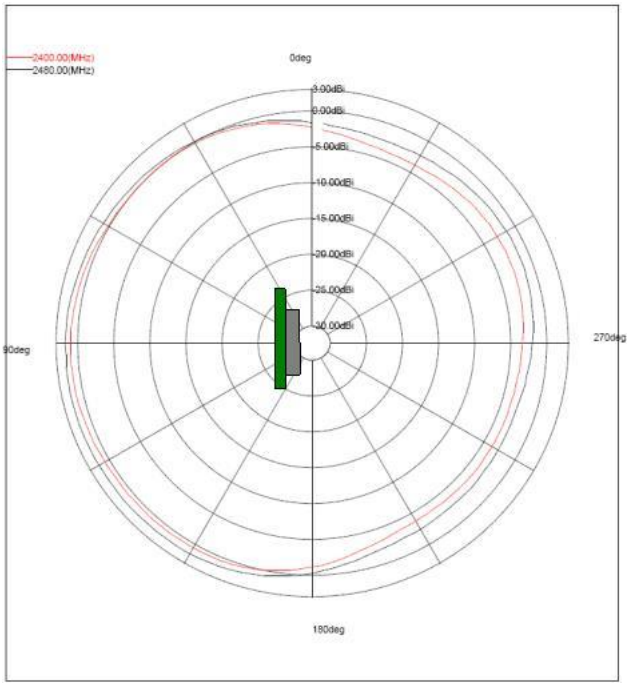
XZ-PLANE

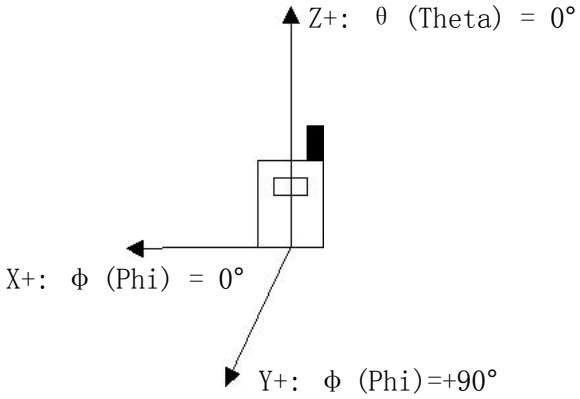


ZY-PLANE



XY-PLANE





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