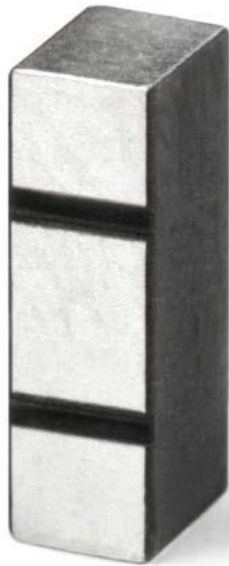


## 2.4 GHz WIFI Ceramic Antenna

Pulse Part Number CW3001



### Features

- Omni directional radiation (Azimuthal plane)
- Low profile
- Compact size W x L x H (10 x 3.2 x 4 mm)
- Low weight (600 mg)
- Lead free materials
- Fully SMD compatible
- Lead free soldering compatible
- Tape and reel packing
- RoHS Compliant Product

### Applications

- Bluetooth
- 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.*

*Typical performance (testboard size 80x37 mm, PWB ground clearance area 10.8 x 6.25 mm)*

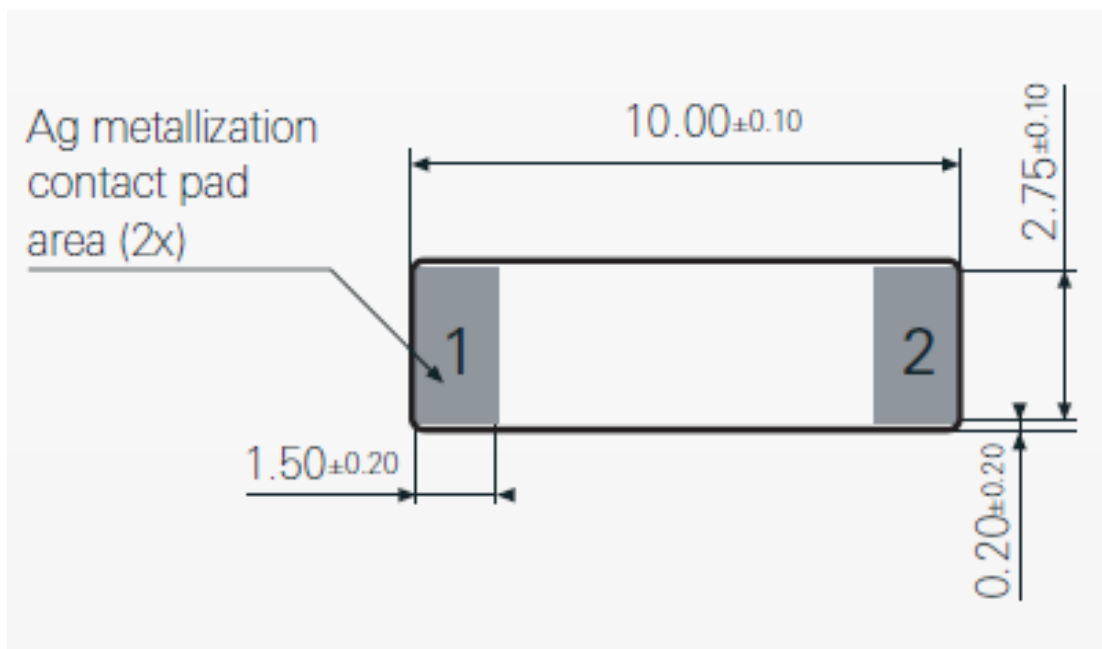
Frequency Range [MHz]	Max Gain [dBi]	Return loss min. [dB]	Efficiency [%]/[dB]	Impedance [ $\Omega$ ]	Operating Temperature [ $^{\circ}$ C]
2400 – 2483.5	2.0 (peak) 0.5 (band edges)	-6	75 / -1.25(peak) 60 / -2.25(band edges)	50	-40 to +85

## 2.4 GHz WIFI Ceramic Antenna

Pulse Part Number CW3001

### Terminal Configuration and antenna dimensions

*On Ground type, Top surface ground removal area 10.80 x 6.25 mm*



No.	Terminal Name	Terminal Dimensions
1	Feed / GND	1.5 x 2.75 mm
2	Feed / GND	1.5 x 2.75 mm

Antenna is symmetrical. Either of terminals 1 or 2 can be Feed / GND

# 2.4 GHz WIFI Ceramic Antenna

Pulse Part Number CW3001

## Antenna PWB Layout

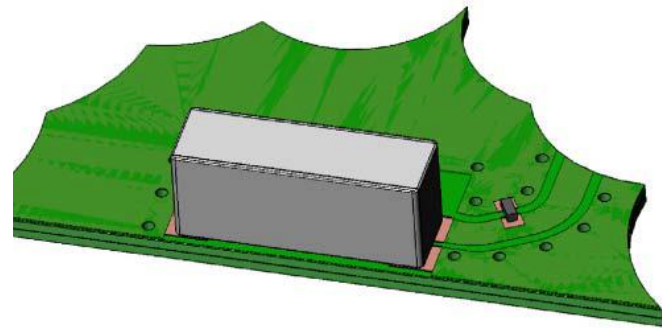
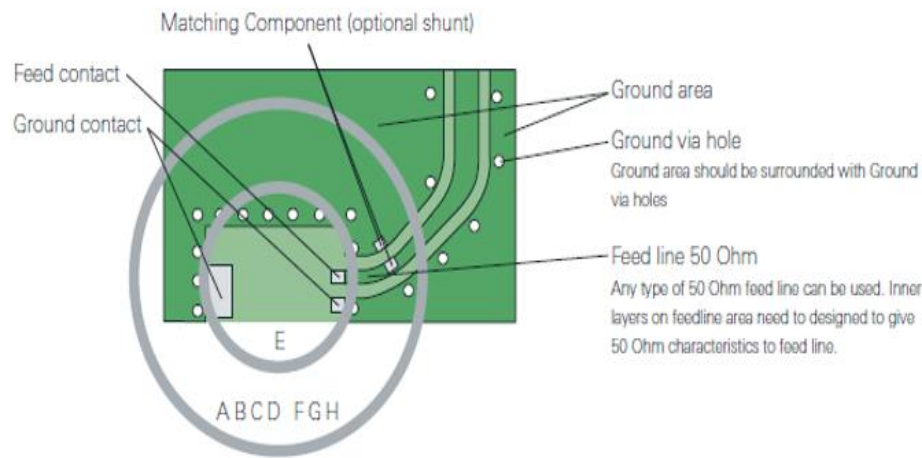
On Ground type, Top surface ground removal area 10.80 x 6.25 mm

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.

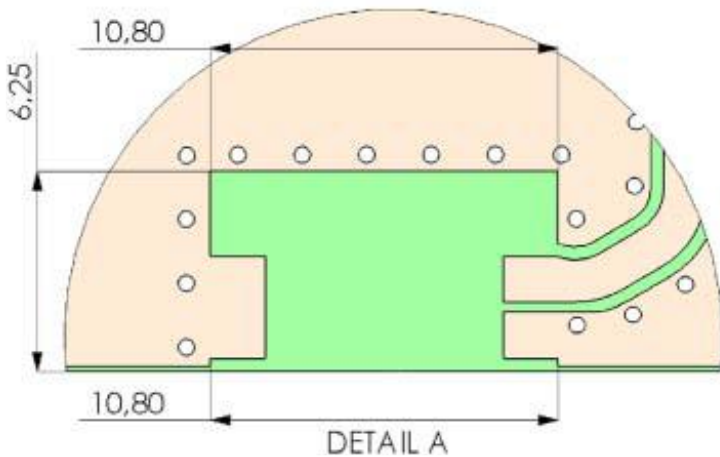
Recommended test board layout for electrical characteristic measurement, test board outline size 80 x 37 mm.

Note: All dimensions are in metric system.

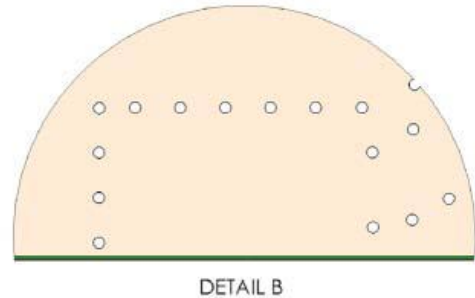


## Ground clearance area

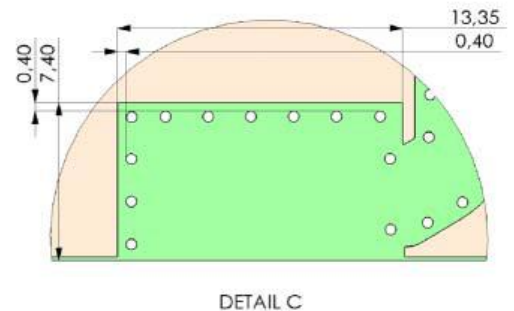
### Ground clearance area (10.80 x 6.25 mm)



### No opening in bottom/inner ground layers



### Opening in other layers (no ground/ RF)



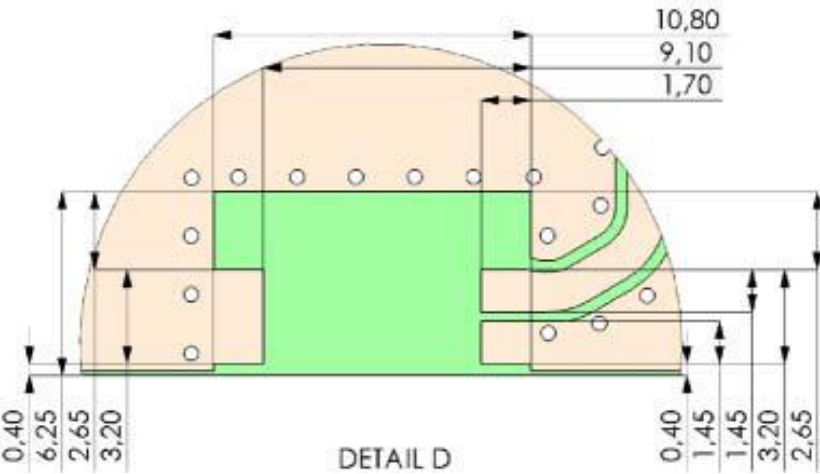
Contact: [mobiledeviceantenna.sales@pulseelectronics.com](mailto:mobiledeviceantenna.sales@pulseelectronics.com)

# 2.4 GHz WIFI Ceramic Antenna

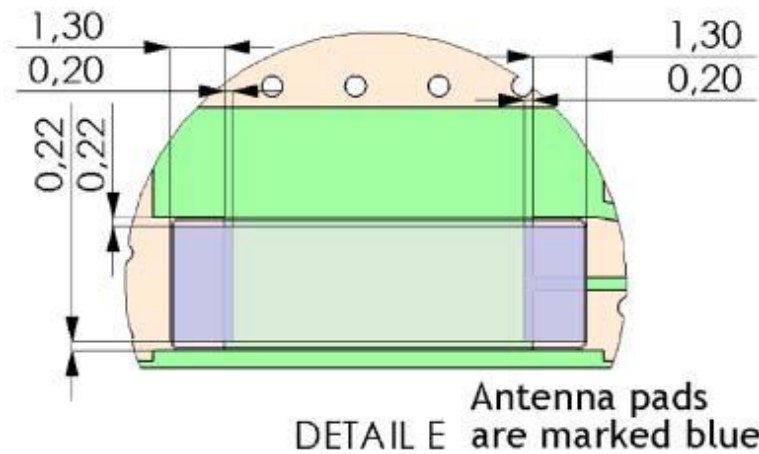
Pulse Part Number CW3001

## PWB pad dimensions and antenna position

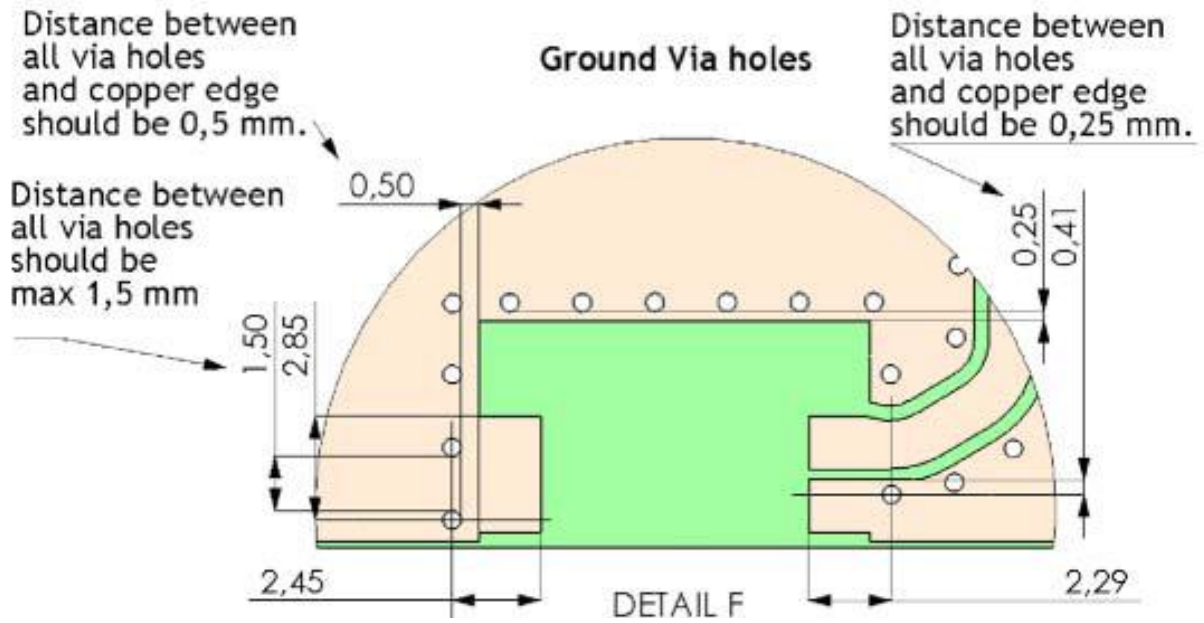
Pad dimensions in top copper



Antenna position on PWB layout



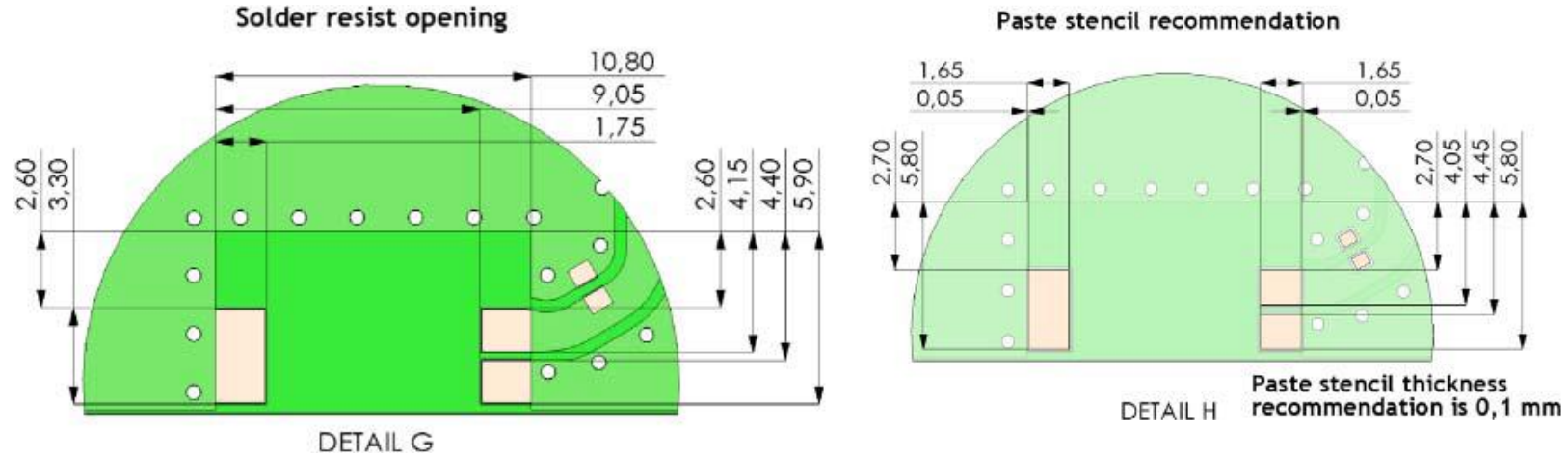
## Typical Ground via hole placement in PWB layout



# 2.4 GHz WIFI Ceramic Antenna

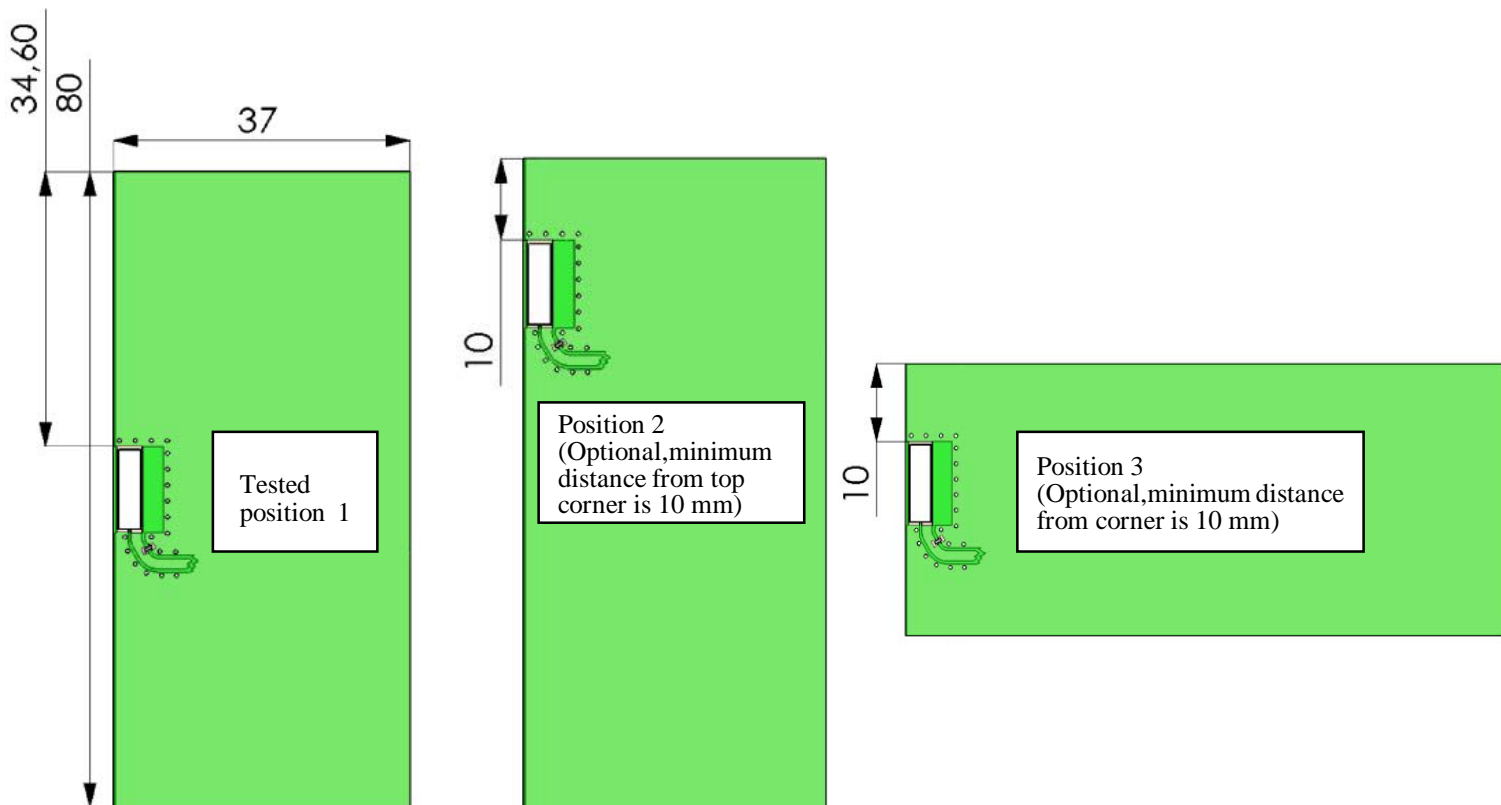
Pulse Part Number CW3001

## Solder resist opening and paste stencil recommendations



## Recommended antenna position on PWB

Our test PWB size is 37 x 80 mm, other sized boards can be used depending on customer device size (minimum 35 x 35 mm)



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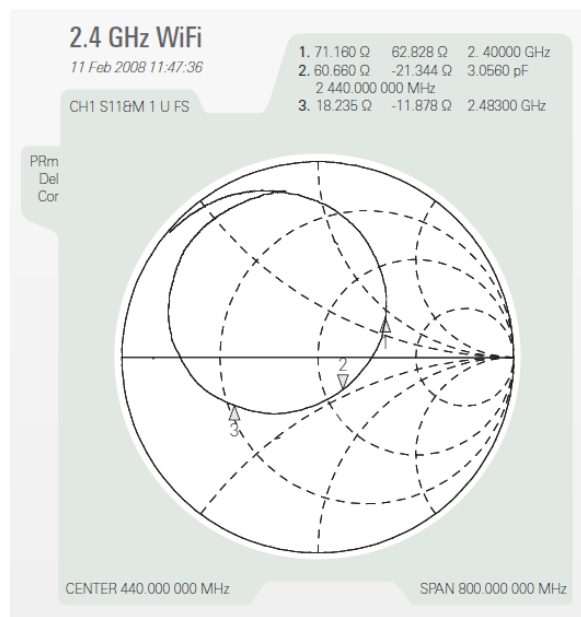
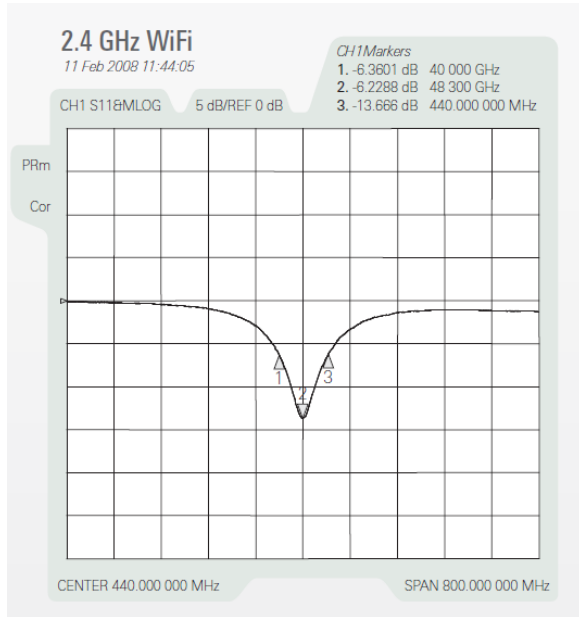
# 2.4 GHz WIFI Ceramic Antenna

Pulse Part Number CW3001

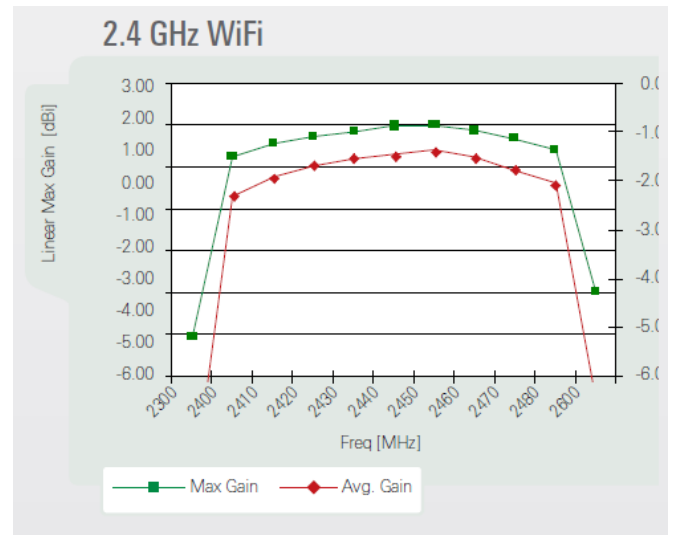
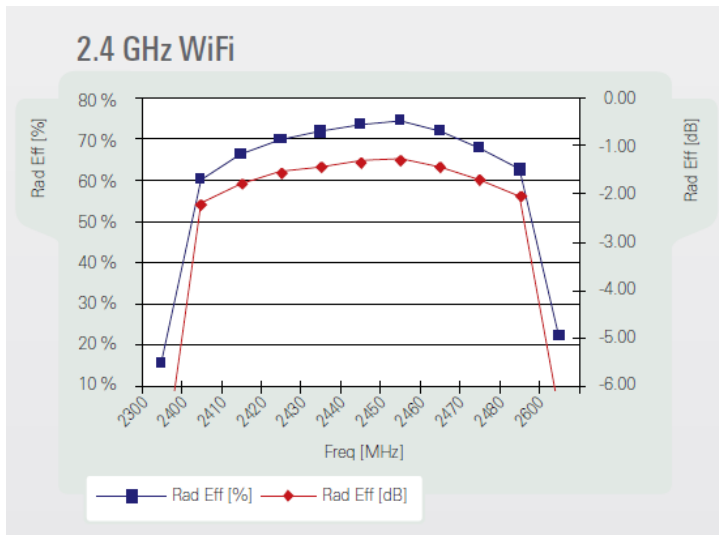
## Typical Electrical Characteristics (T=25 °C)

Measured on the 80 x 37 mm test board with matching circuit (1.2 pF shunt matching capacitor on feed).

### Typical Return Loss S11/ impedance



### Typical free space efficiency and maximum gain



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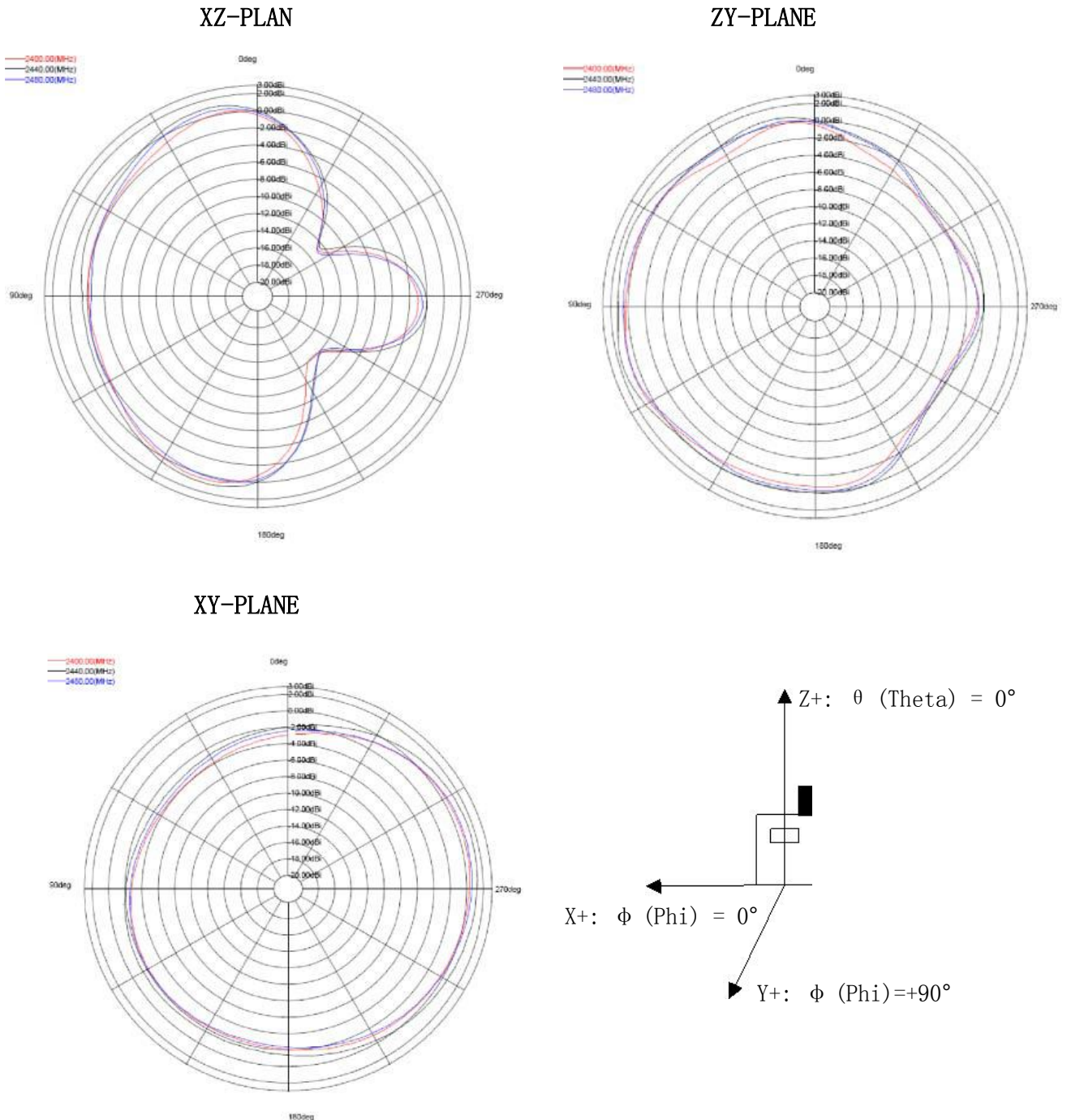




# 2.4 GHz WIFI Ceramic Antenna

Pulse Part Number CW3001

## Typical Free Space Radiation Patterns



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