

**Description: 2.4-2.5/5.15-7.125GHz Dual band  
Ceramic 10x3.2x1.5mm**

**Series: Chip Antenna**

**PART NUMBER: W3006**



### Features:

- 2.4-2.5 / 5.15-7.125GHz WiFi-6E
- Peak gain 2.2 / 5.2 dBi
- Efficiency 60 / 70 %
- Compact size W x L x H (10 x 3.2 x 1.5 mm)
- Low weight: 240 mg
- Fully SMD compatible
- Tape and reel packing
- RoHS Compliant Product
- Moisture Sensitivity Level: MSL1

### Applications:

- Layout 1 for 2.4-2.5 / 5.15-5.85GHz
- Layout 2 for 2.4-2.5 / 5.15-7.125GHz
- IEEE 802.11a/b/g/n/x
- WiFi-6E
- 5 GHz WLAN
- 2.4 GHz WLAN
- 2.4 GHz ISM Band Systems
- 5GHz ISM Band Systems
- ZigBee IEEE 802.15.4

All dimensions are in inches/mm

Issue: 2137

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For more information:

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Vancouver, WA 98683  
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Tel: 1-360-944-7551

Europe Headquarters  
Pulse GmbH & Co, KG  
Zeppelinstrasse 15  
Herrenberg, Germany  
Tel: 49 7032 7806 0

Pulse (Suzhou) Wireless Products Co, Inc.  
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Suzhou New District  
Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998



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## ELECTRICAL SPECIFICATIONS

### *Layout and Matching for 2.4-2.5/5.15-5.85GHz*

Frequency	2.4-2.5 / 5.15-5.85 GHz
Return Loss	-8 /-9 dB max
Efficiency (typical)	60 / 80 %
Peak Gain (typical)	1.8 / 4.5dBi

### *Layout and Matching for 2.4-2.5/5.15-7.125GHz WiFi-6E*

Frequency	2.4-2.5 / 5.15-7.125 GHz
Return Loss	-5 /-5 dB max
Efficiency (typical)	65 / 75 %
Peak Gain (typical)	1.6 / 4.2dBi

Nominal Impedance	50Ω
Polarization	Linear
Interface	SMD mount ceramic antenna

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### MECHANICAL SPECIFICATIONS

Weight	0.24g
Size	10 x 3.2 x 1.5 mm

### ENVIRONMENTAL SPECIFICATIONS

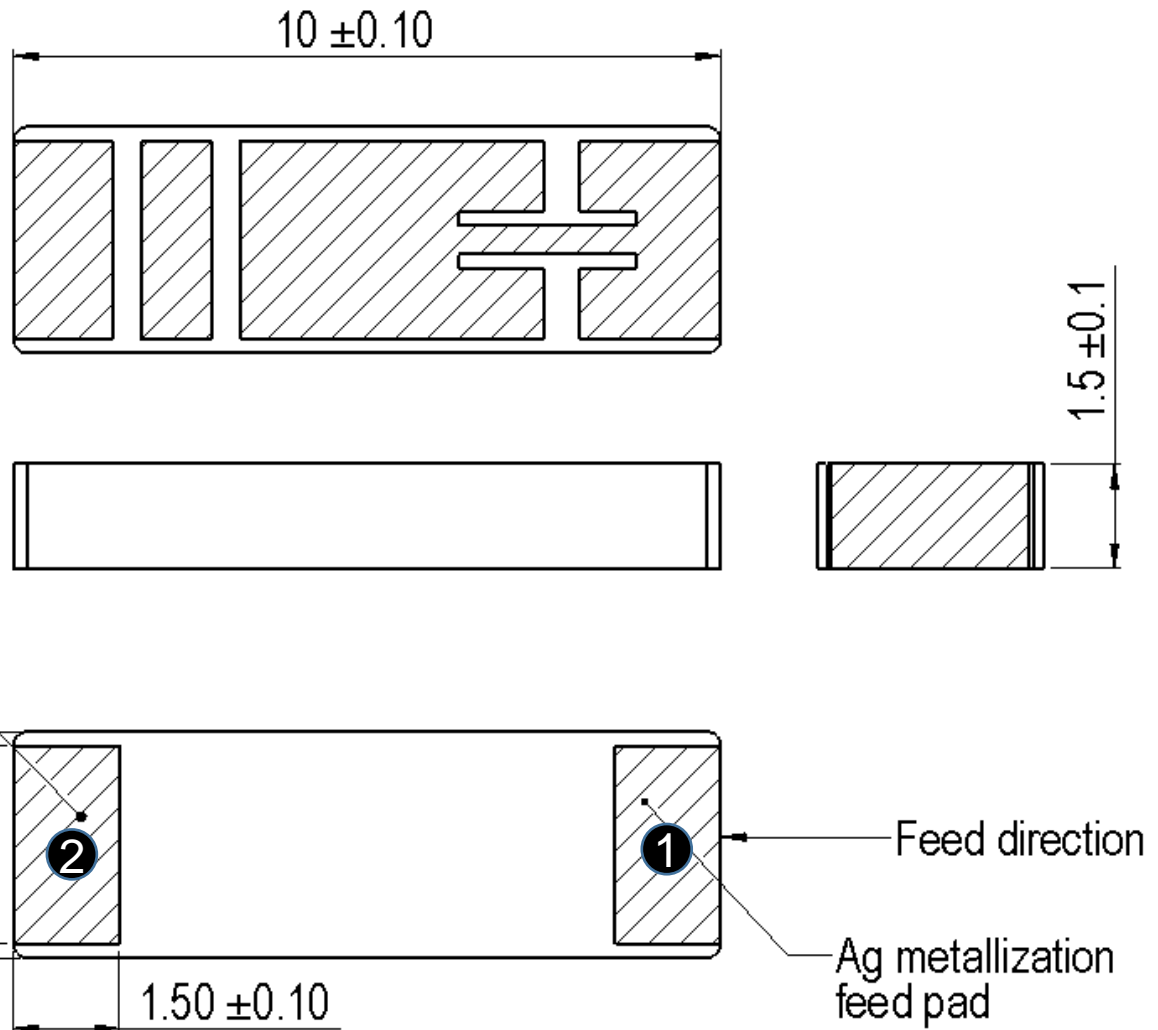
Operating temperature	-40~+85° C
Temperature	-40~+85° C
Humidity	Cyclic 6 +25° C/+55° C 95%
Vibration	
Sinusoidal 2-8Hz	7.5 mm
Sinusoidal 8-200Hz	20 m/s <sup>2</sup>
Shocks	0.5 ms
Salt mist	96 hours

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## MECHANICAL DRAWING AND TERMINAL CONFIGURATION



No.	Terminal Name	Terminal Dimensions
1	Feed	1.5 x 2.75 mm
2	Support pad	1.5 x 2.75 mm
Antenna feed pad can be identified by looking top surface metallization pattern		

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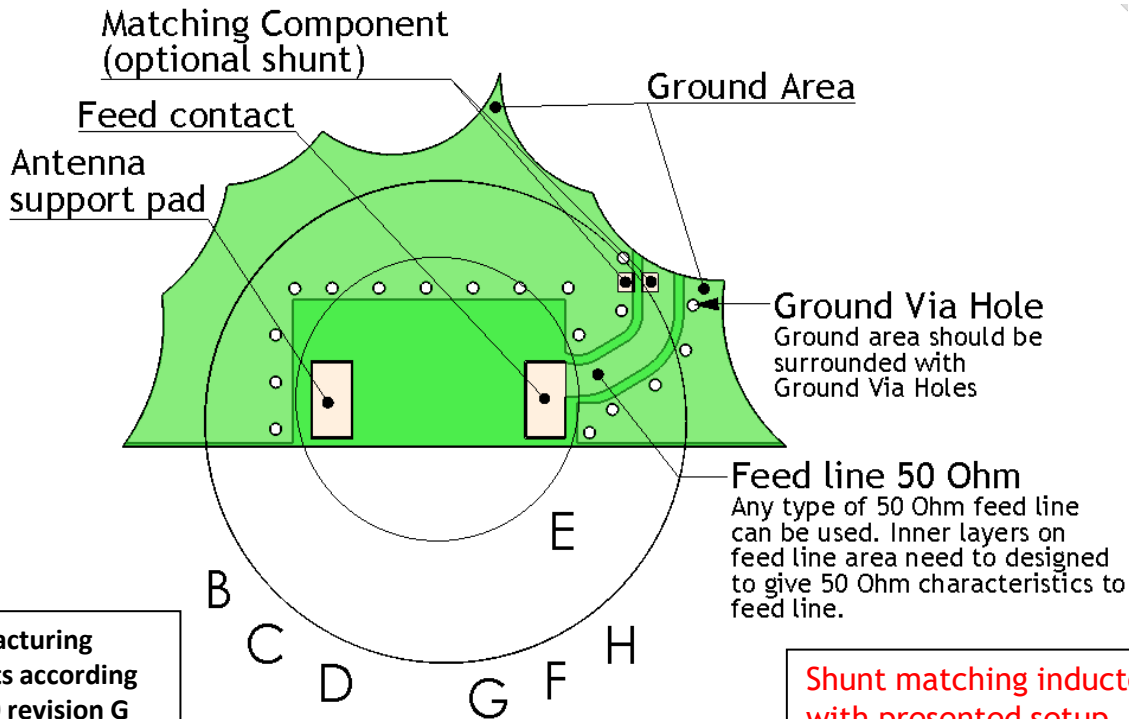
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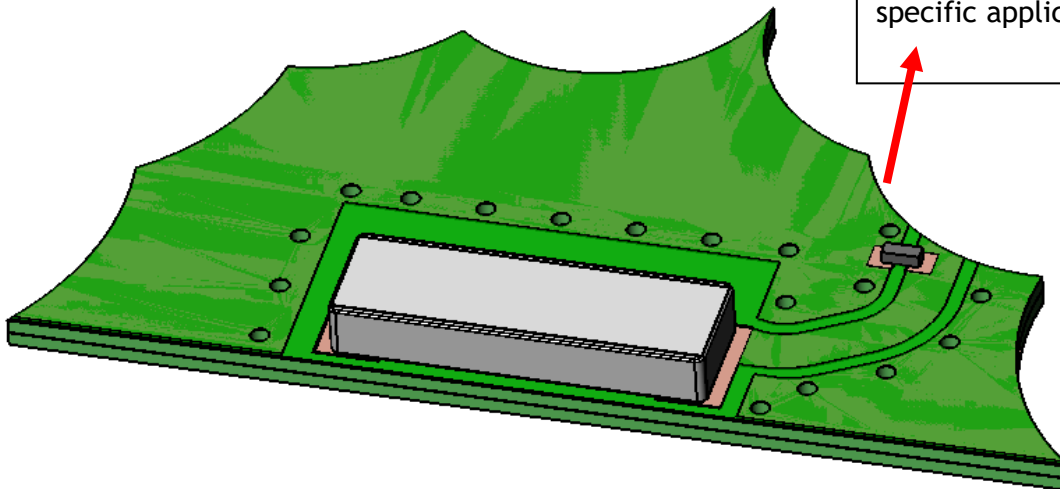
## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

### Ground cleared under antenna



**Shunt matching inductor, 1.5nH with presented setup. Same value for layout 1 and 2 reference boards.**

Exact inductor value depends on specific application.



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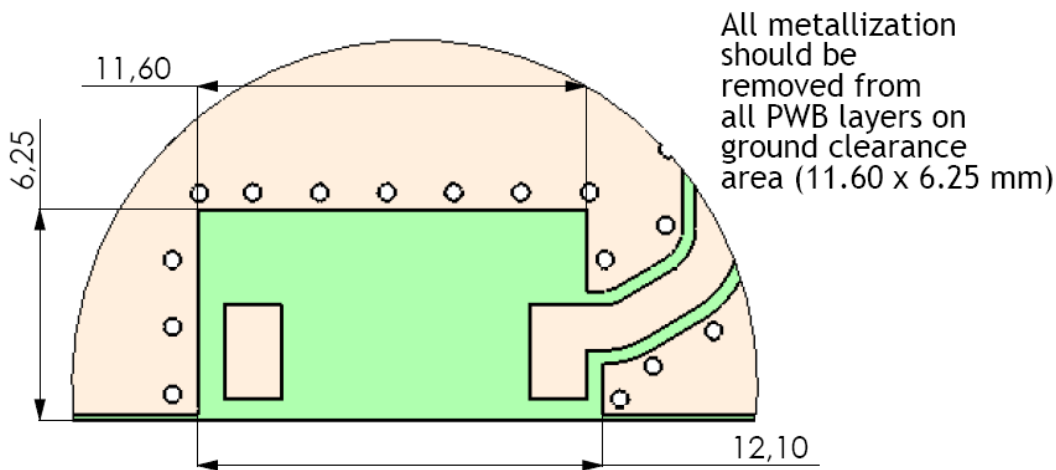
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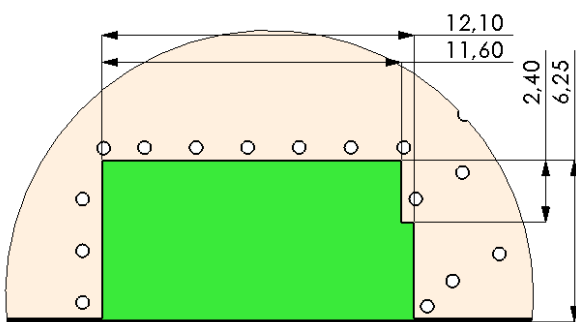
## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

### 1. Layout and Matching for 2.4-2.5/5.15-5.85GHz

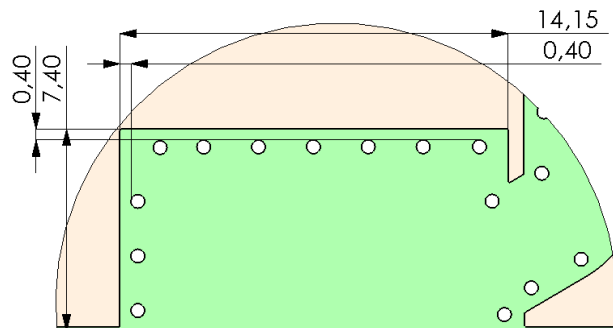
Ground clearance area (11.60 x 6.25 mm)



Opening in bottom/inner ground layers



Opening in other layers (no ground/ RF)



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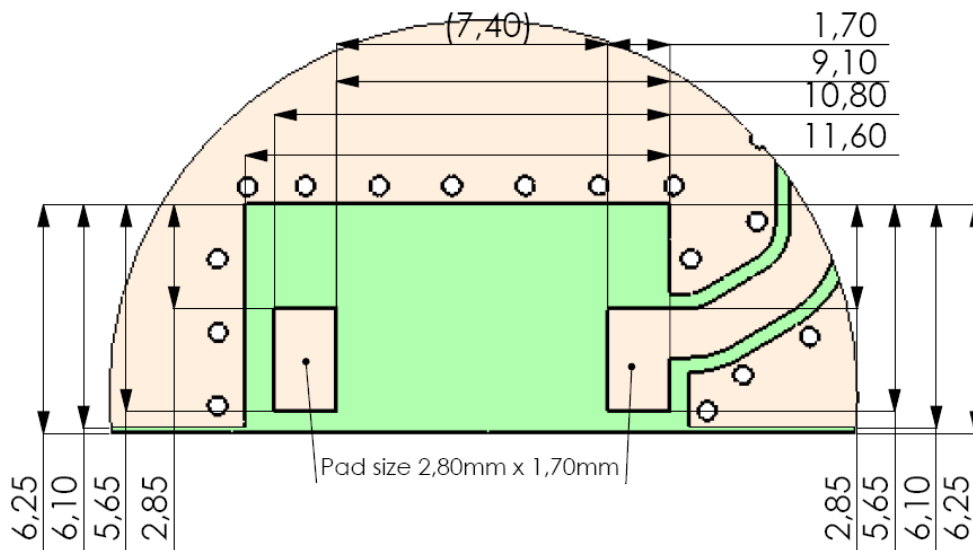
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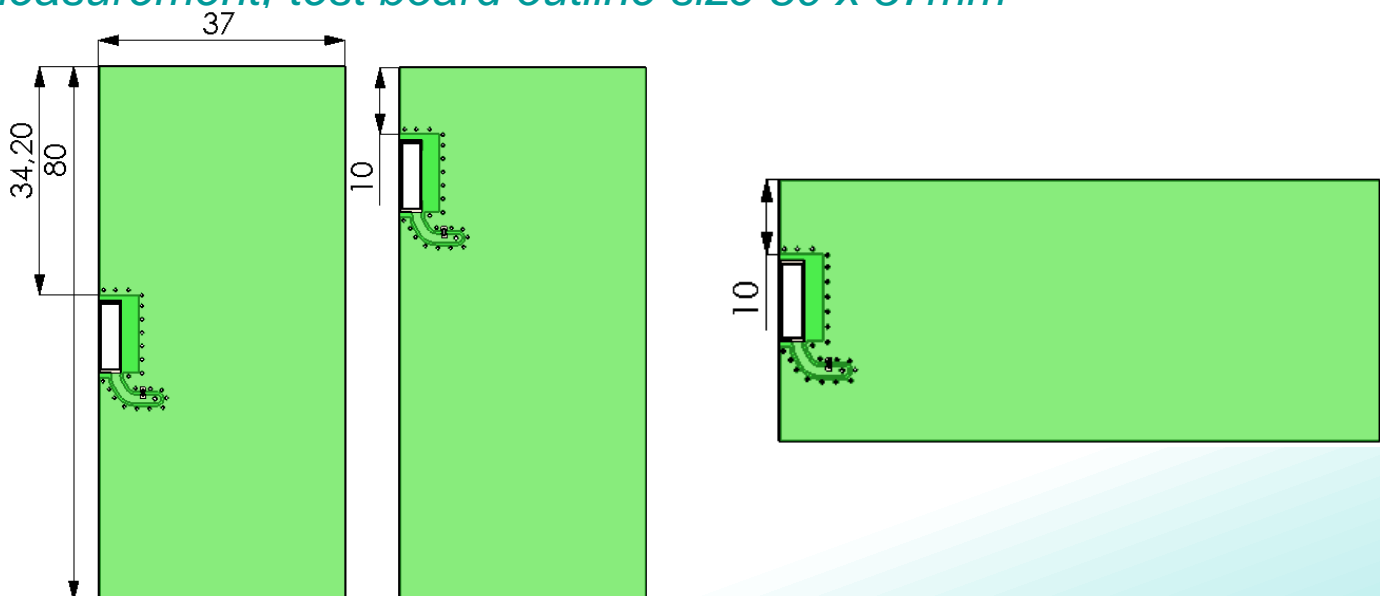
## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

*Recommended Antenna Pad Dimensions on PWB Layout (top surface)*

Pad dimensions in top copper



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



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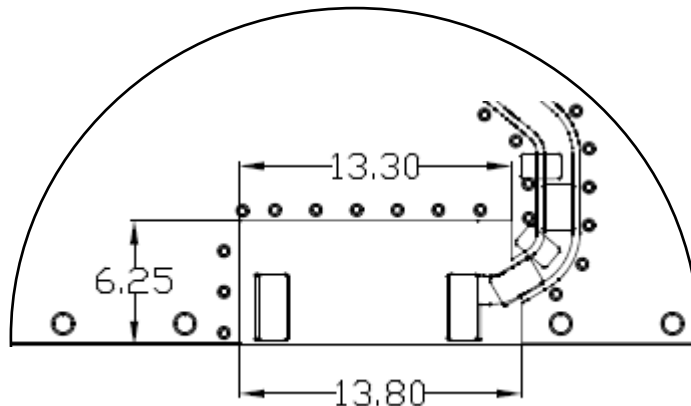
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## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

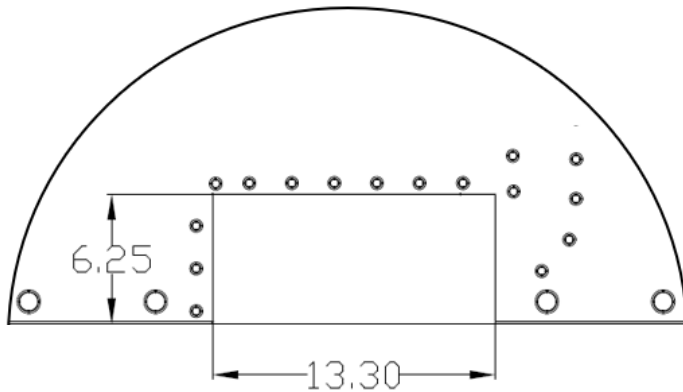
### 2. Layout and Matching for 2.4-2.5/5.15-7.125GHz

Ground clearance area (13.3 x 6.25 mm)

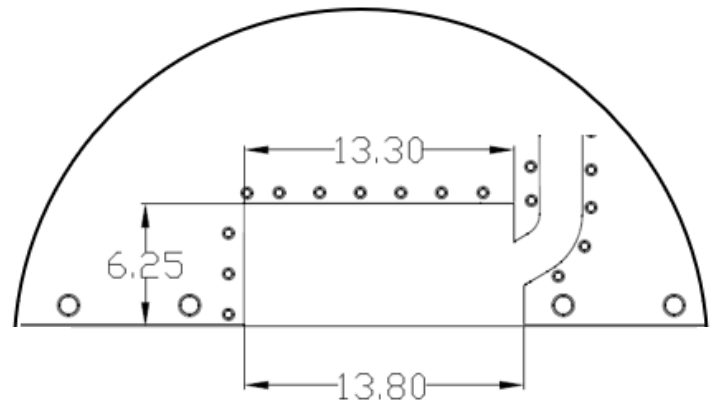


All metallization should be removed from all PWB layers on ground clearance area (13.3 x 6.25mm)

Opening in bottom/inner ground layers



Opening in other layers (no ground/RF)



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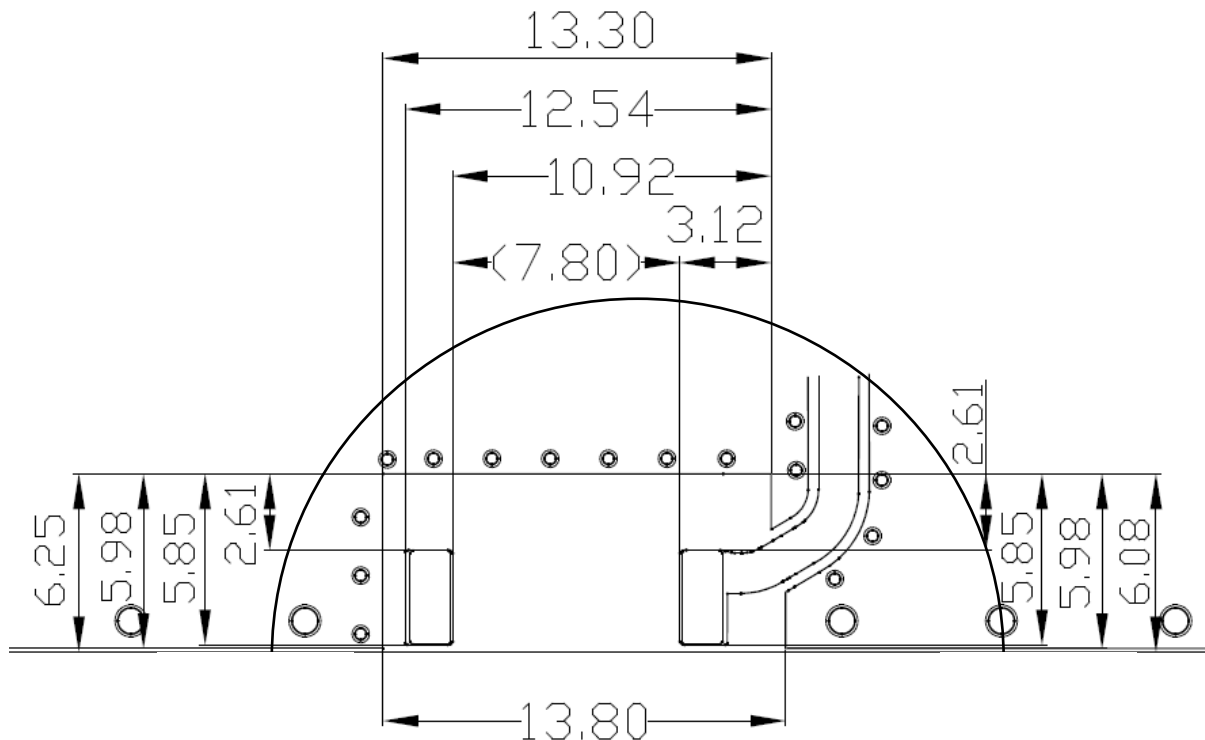
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## MECHANICAL DRAWING AND TERMINAL CONFIGURATION

### *Recommended Antenna Pad Dimensions on PWB Layout (top surface)*

Pad dimensions in top copper



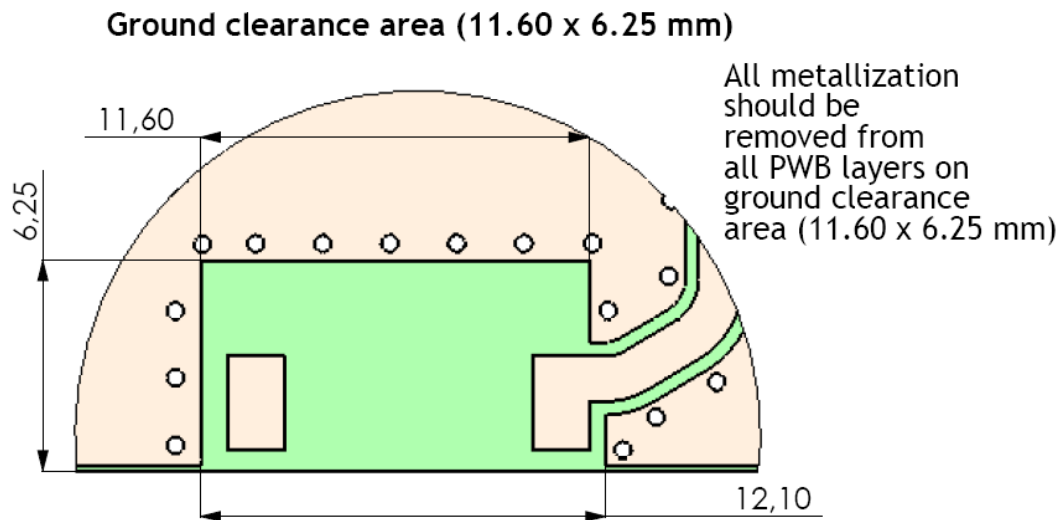
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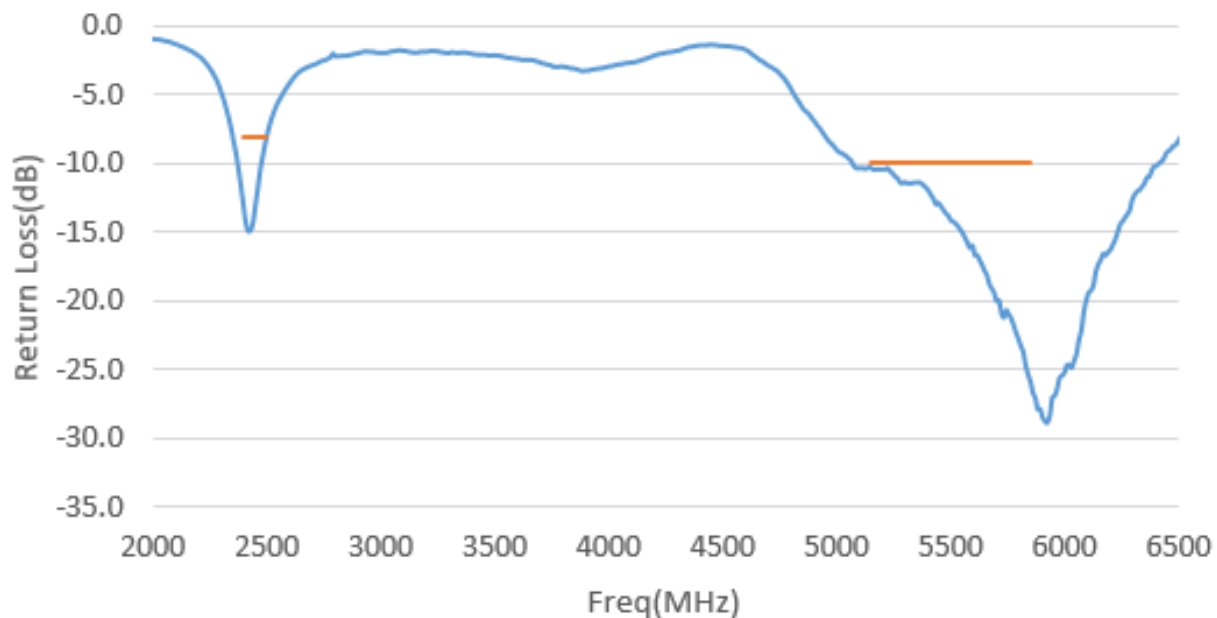
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## Test setup

### 1. Layout and Matching for 2.4-2.5/5.15-5.85GHz



### Return Loss



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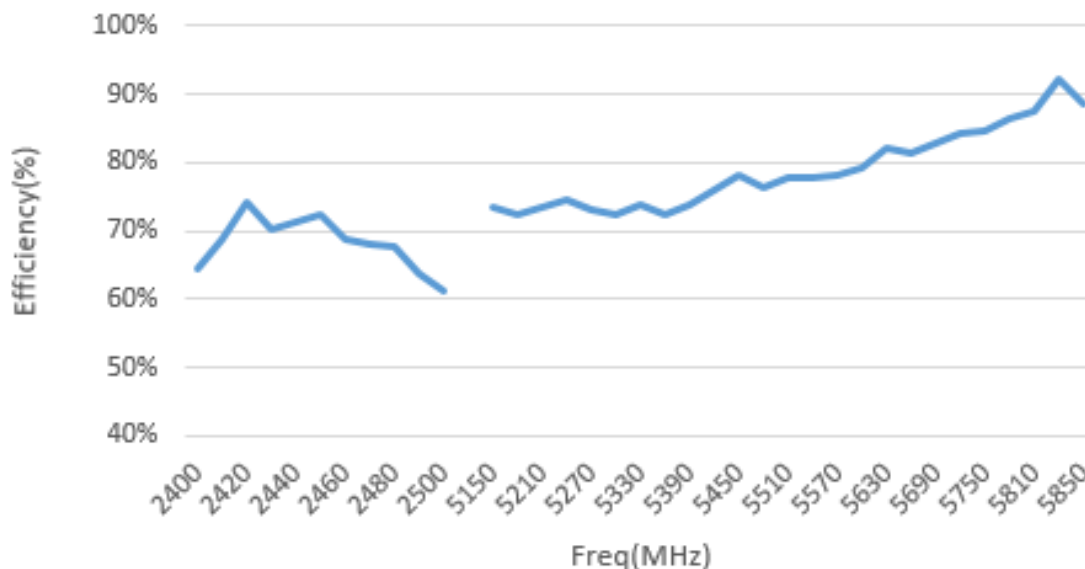
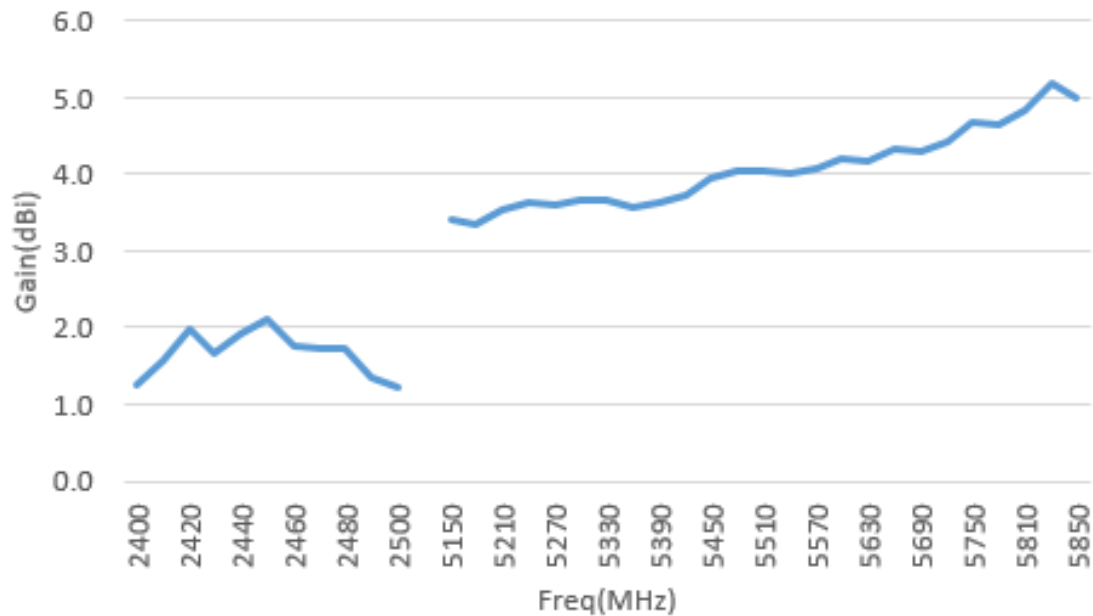
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## CHARTS

### 1. Layout and Matching for 2.4-2.5/5.15-5.85GHz



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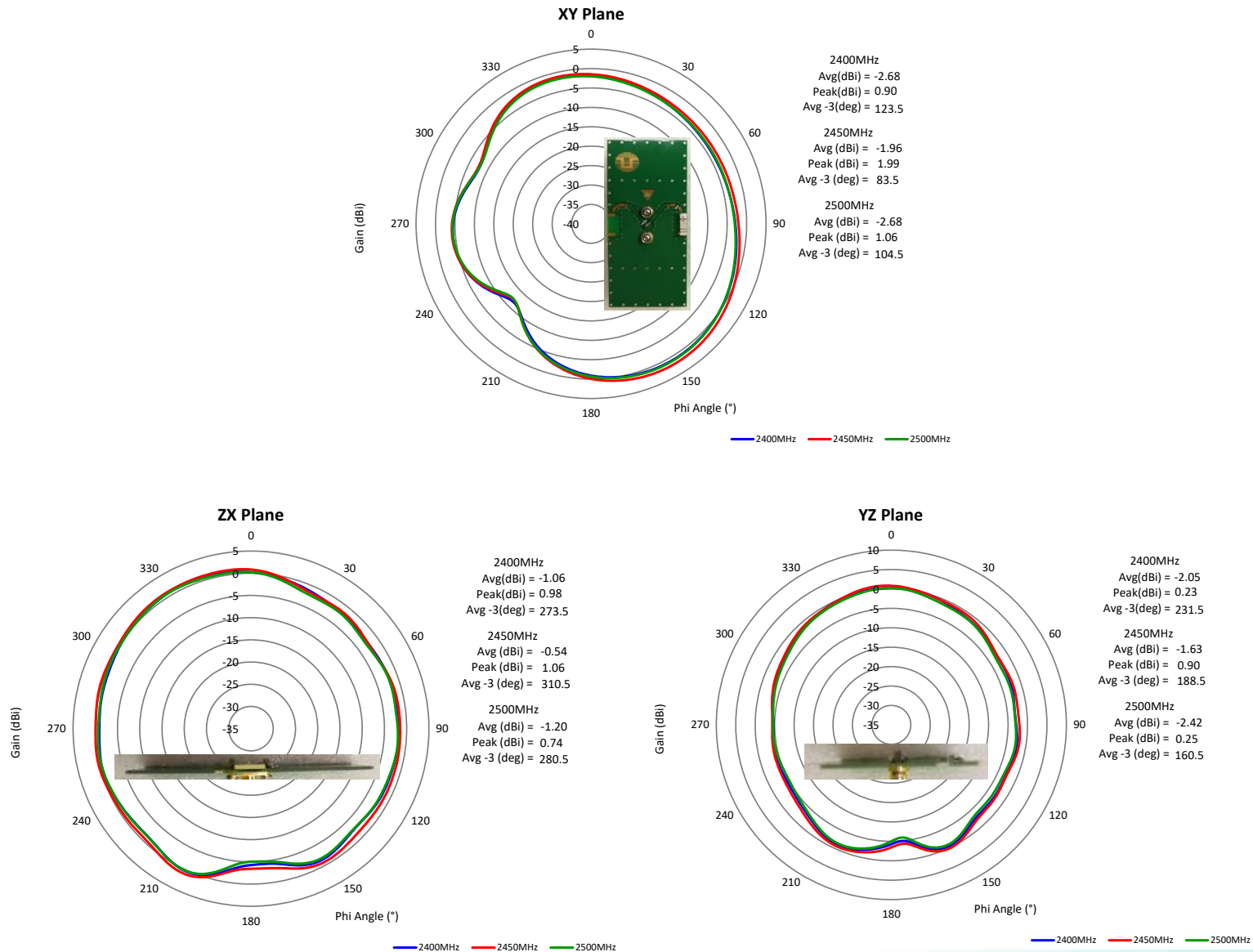
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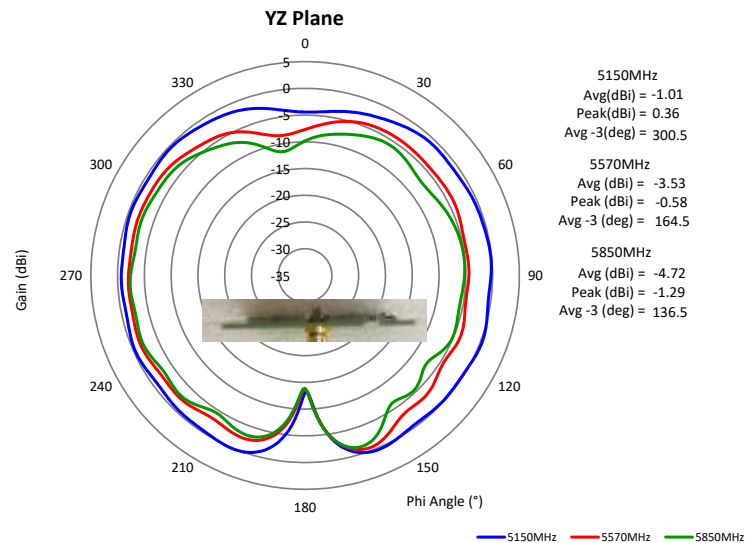
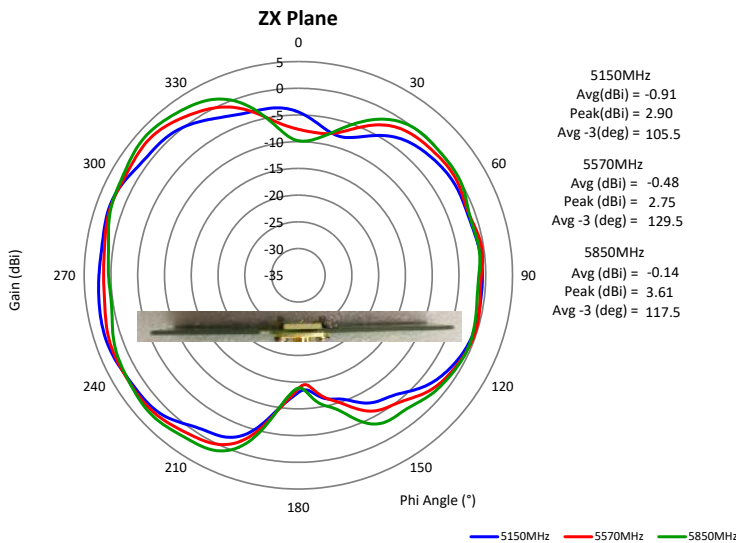
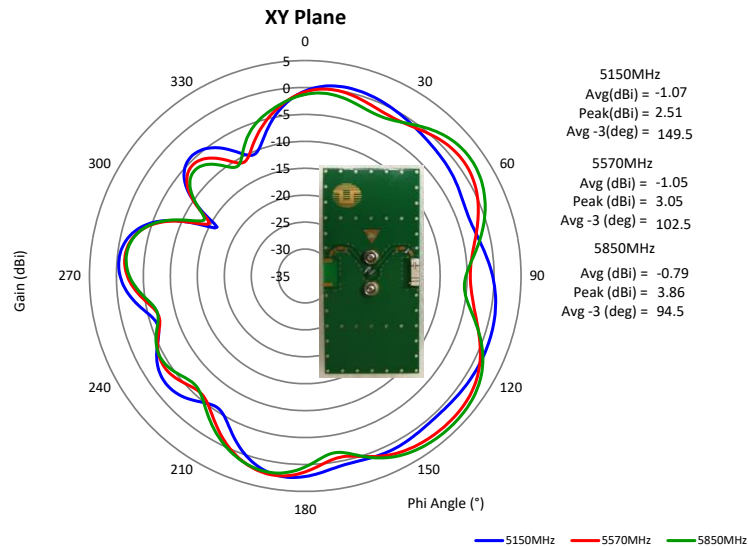
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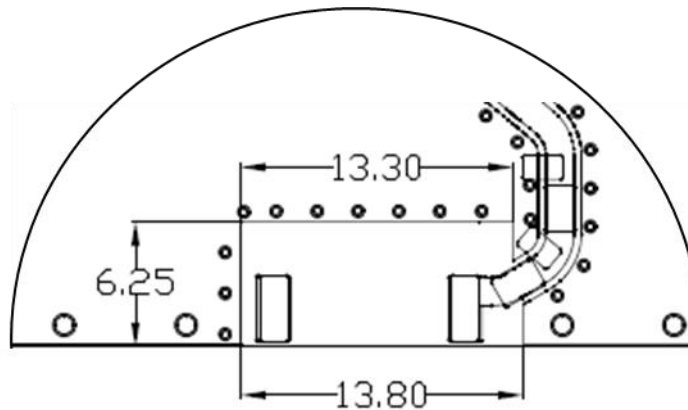
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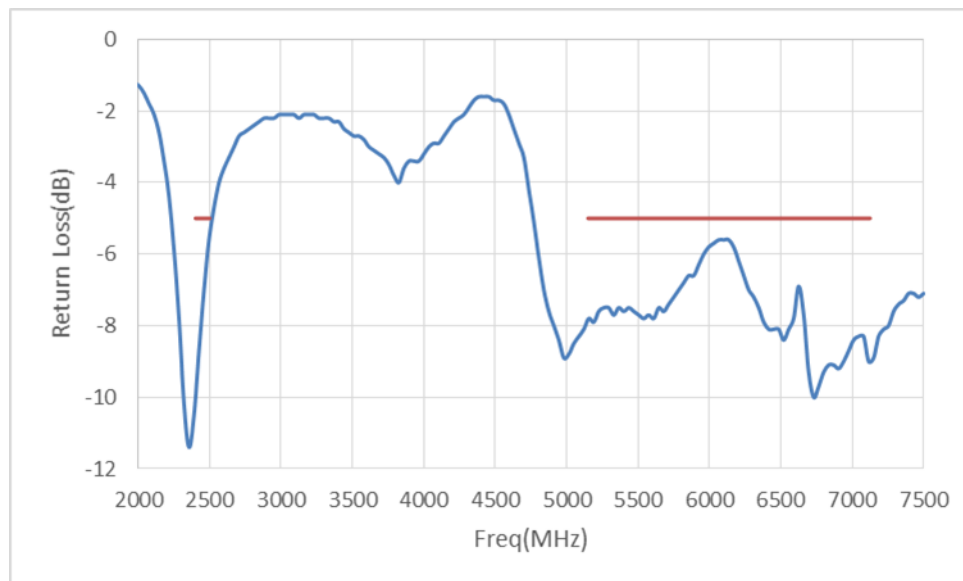
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## Test setup

### 2. Layout and Matching for 2.4-2.5/5.15-7.125GHz



## Return Loss



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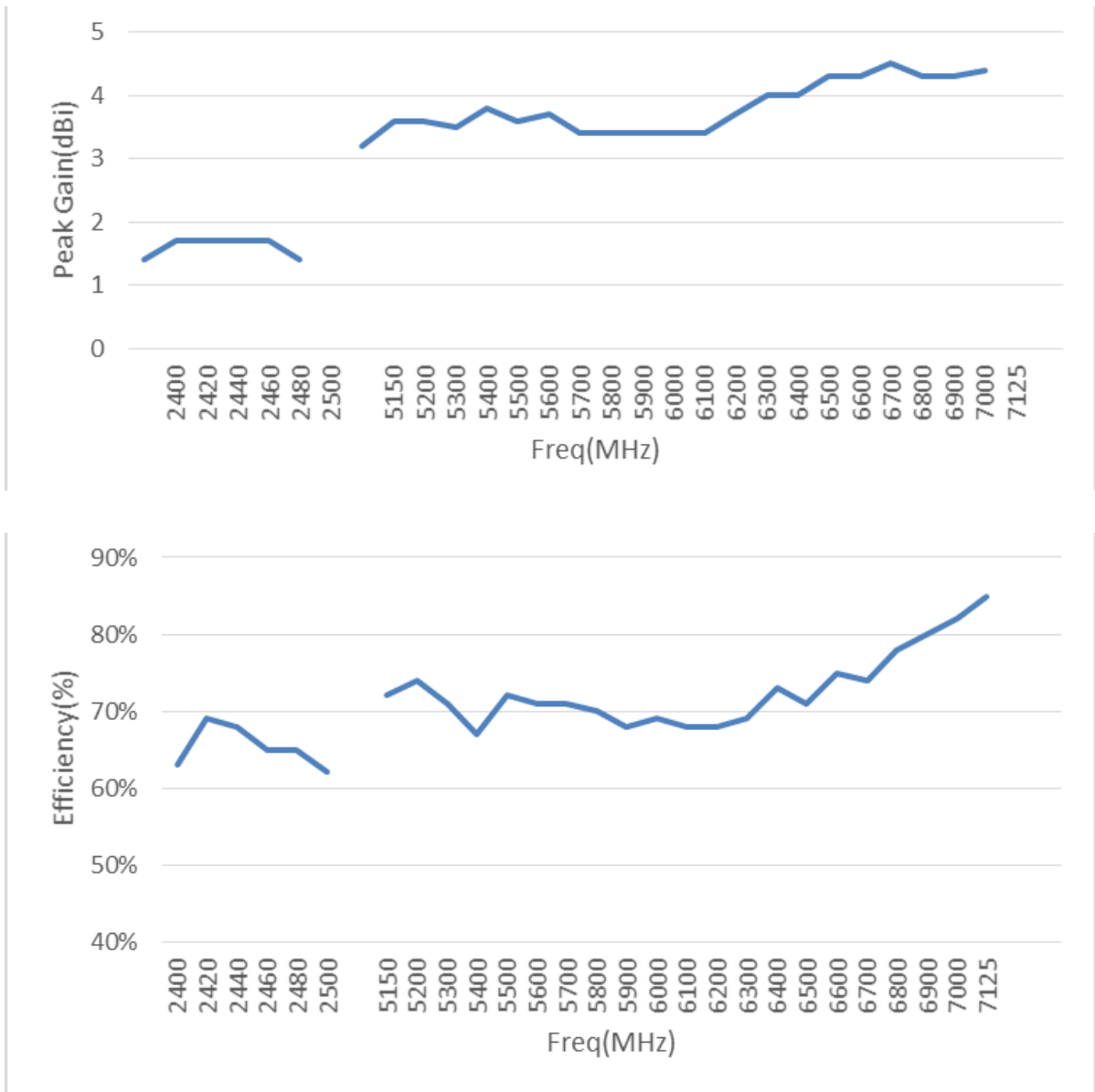
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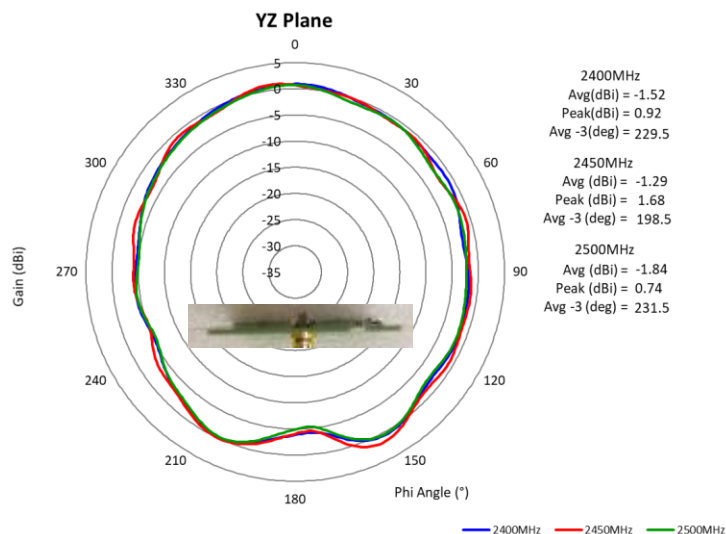
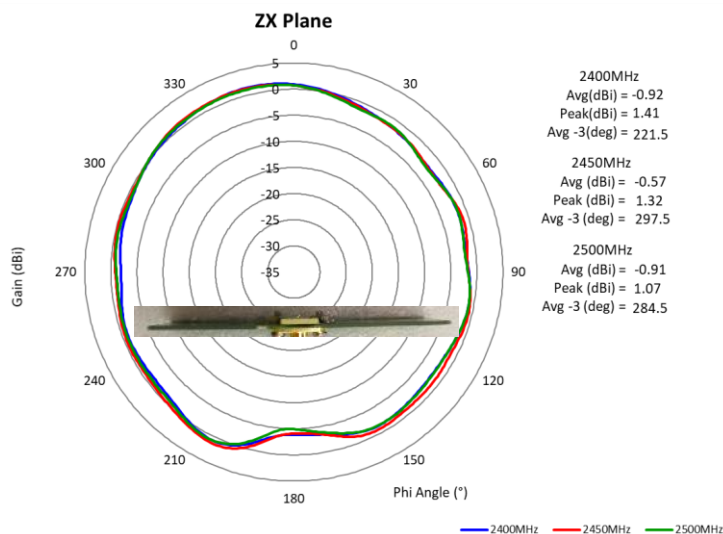
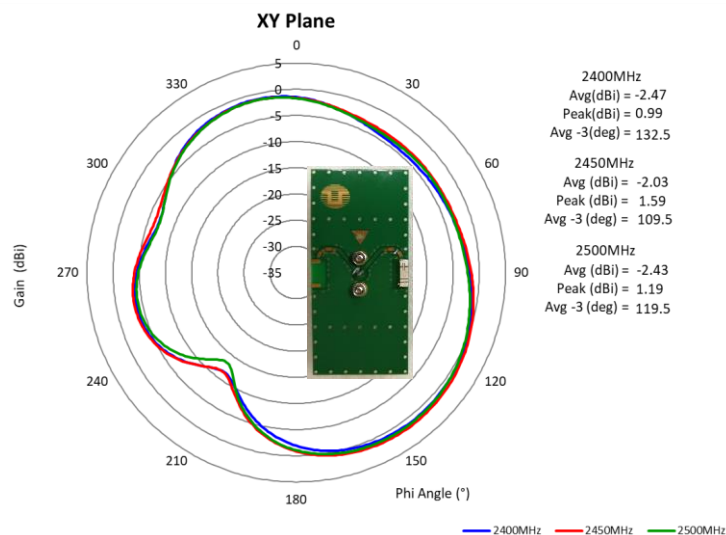
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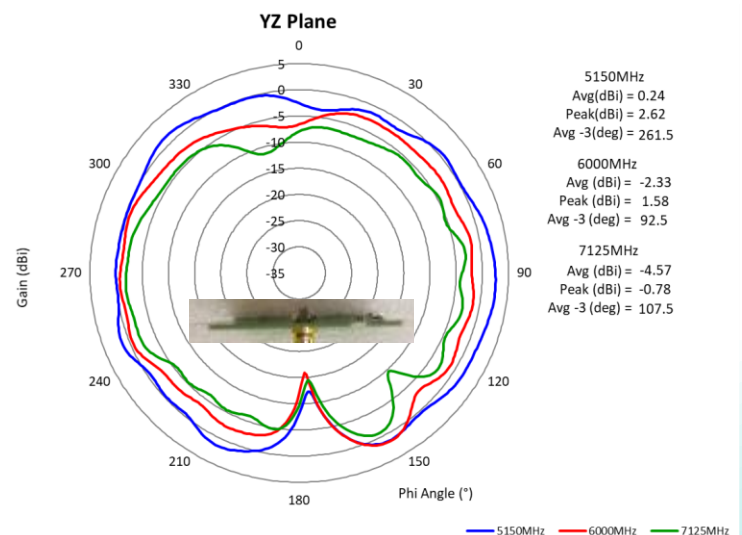
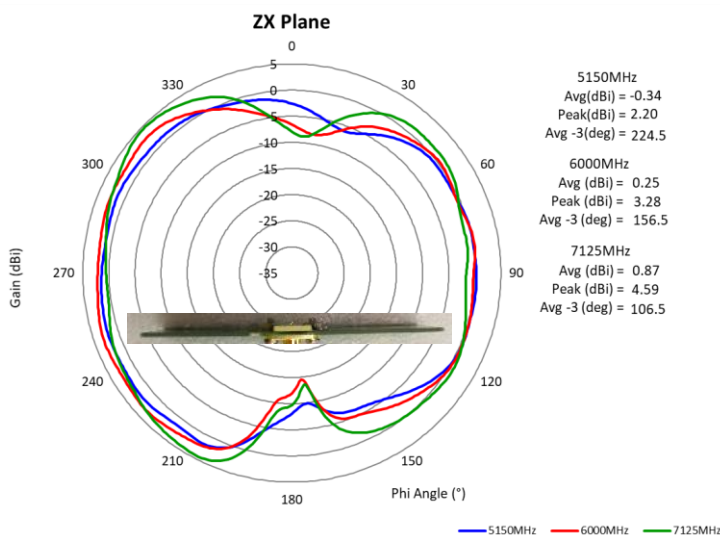
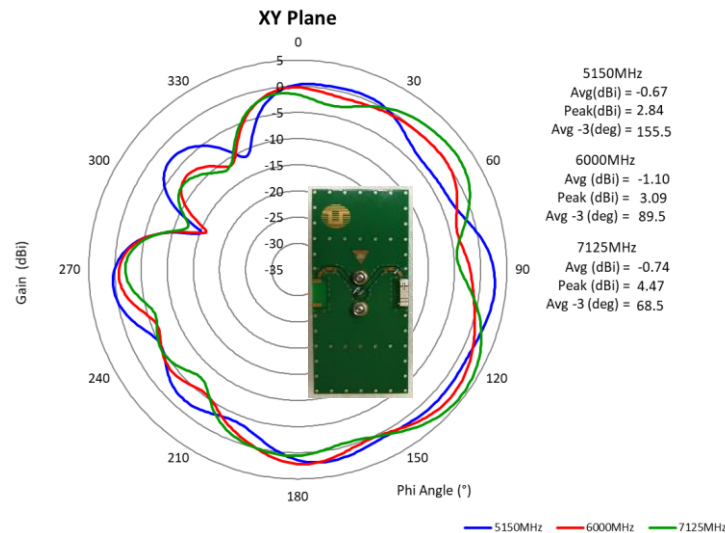
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## PACKAGING

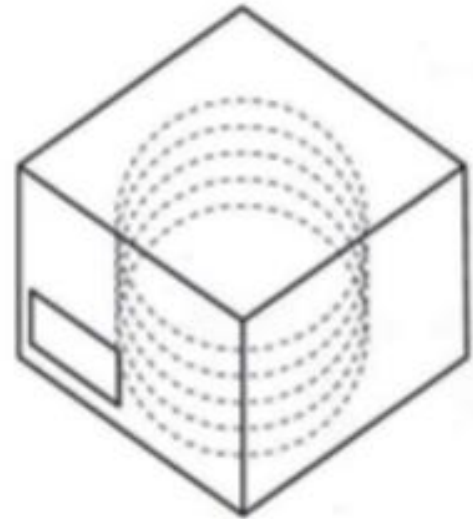
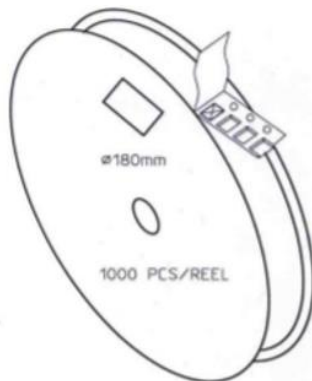
1000pcs antennas per 7" reel

3pcs 7" reel per inner package box

2pcs inner box per out box

Total 6000pcs antenna per out box

Out box size: 390mmx215mmx165mm



LEVEL

NOT MOISTURE SENSITIVE

1

These Devices do not require special storage conditions provided:

1. They are maintained at conditions equal to or less than 30°C and 85% RH.
2. They are solder reflowed at a peak body temperature which does not exceed 260°C.

Note: Level and body temperature defined by IPC/JEDEC J-STD-020

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