

**Description: 2.4-2.5/5.15-5.85GHz Dualband  
Ceramic 10x3.2x1.5mm**

**Series: Chip Antenna**

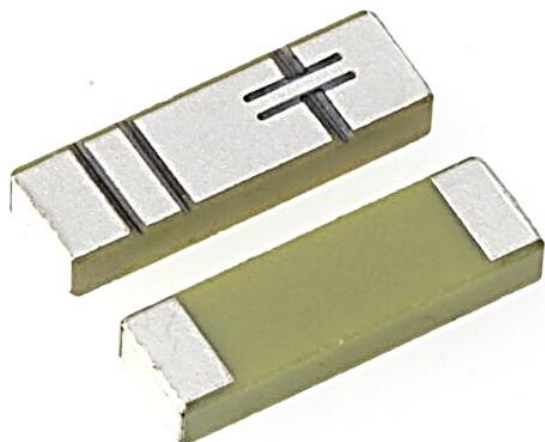
**PART NUMBER: W3006**

**Features:**

- 2.4-2.5 / 5.15-5.8 5GHz
- Gain 2.2 / 4.5 dBi
- Efficiency 60 / 70 %
- Compact size WxLxH (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: MSL3

**Applications:**

- IEEE 802.11a/b/g/n
- 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: 1819

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**Description: 2.4-2.5/5.15-5.85GHz Dualband  
Ceramic 10x3.2x1.5mm****Series: Chip Antenna****PART NUMBER: W3006****ELECTRICAL SPECIFICATIONS**

Frequency1	2.4-2.5GHz
Frequency2	5.15-5.85GHz
Nominal Impedance	50Ω
Return Loss Frequency1	-8 dB max
Return Loss Frequency2	-10 dB max
Efficiency Frequency1	60 %
Efficiency Frequency2	70 %
Peak Gain Frequency1	2.2dBi
Peak Gain Frequency2	4.5dBi
Polarization	Linear
Interface	SMD mount ceramic antenna

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Ceramic 10x3.2x1.5mm****Series: Chip Antenna****PART NUMBER: W3006****MECHANICAL SPECIFICATIONS**

Weight	0.24g
Size	10 x 3.2 x 1.5 mm

**ENVIRONMENTAL SPECIFICATIONS**

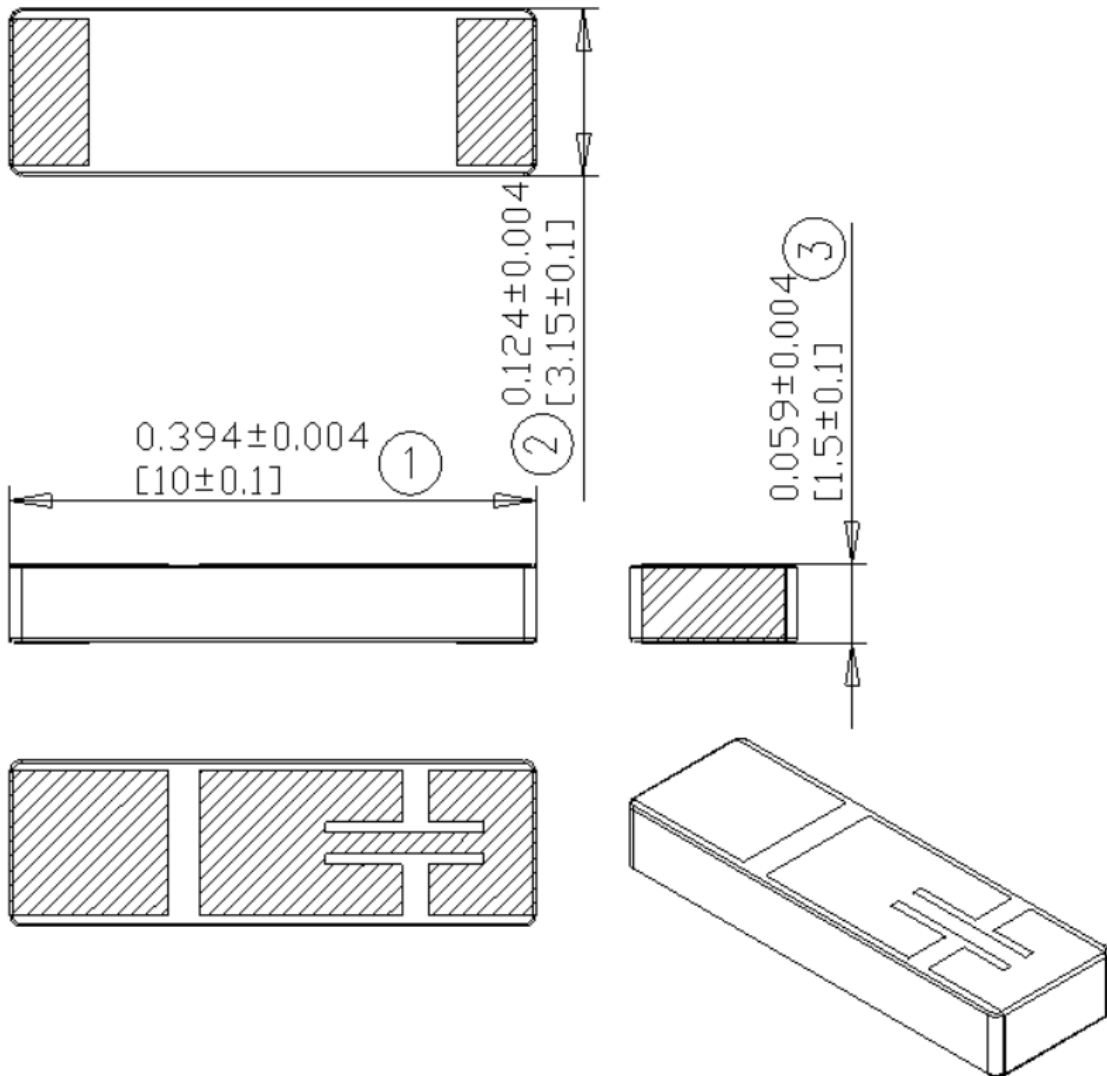
Operating temperature	-40~+85° C
Temperature	-40~+85° C
Humidity	Cyclic 6 +25° C/+55° C 95%
Vibration	
Sinusoidal 2-8Hz	7.5 mm
Sinusoidal 8-200Hz	20 m/s <sup>2</sup>
Shocks	0.5 m/s
Salt mist	96 hours

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MECHANICAL DRAWING AND TERMINAL CONFIGURATION



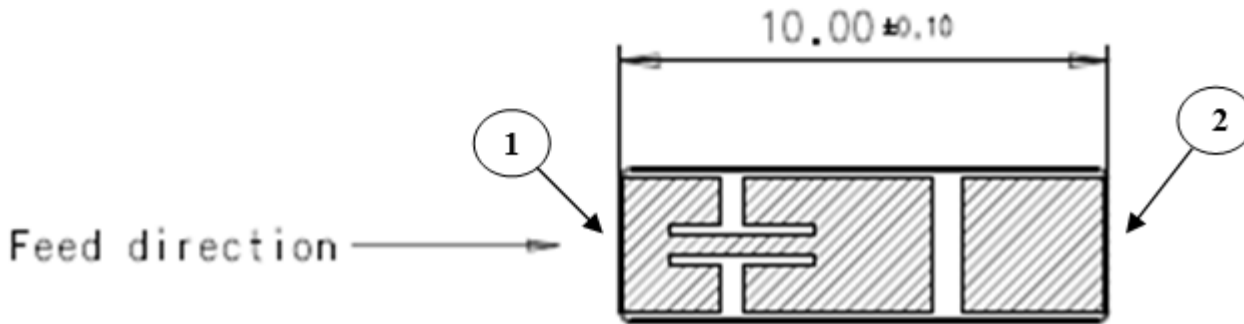
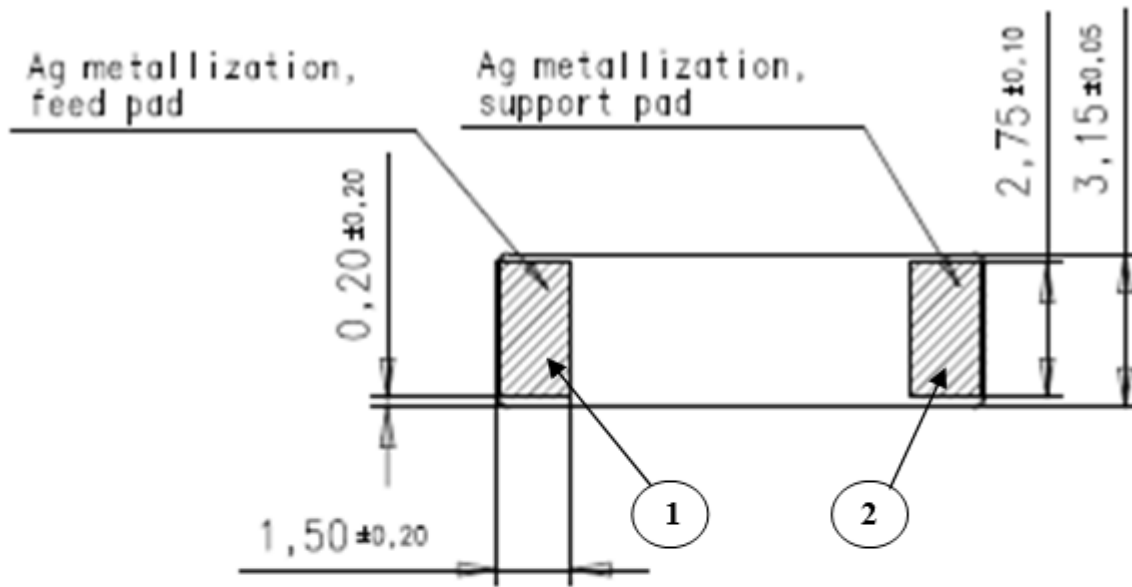
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MECHANICAL DRAWING AND TERMINAL CONFIGURATION



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

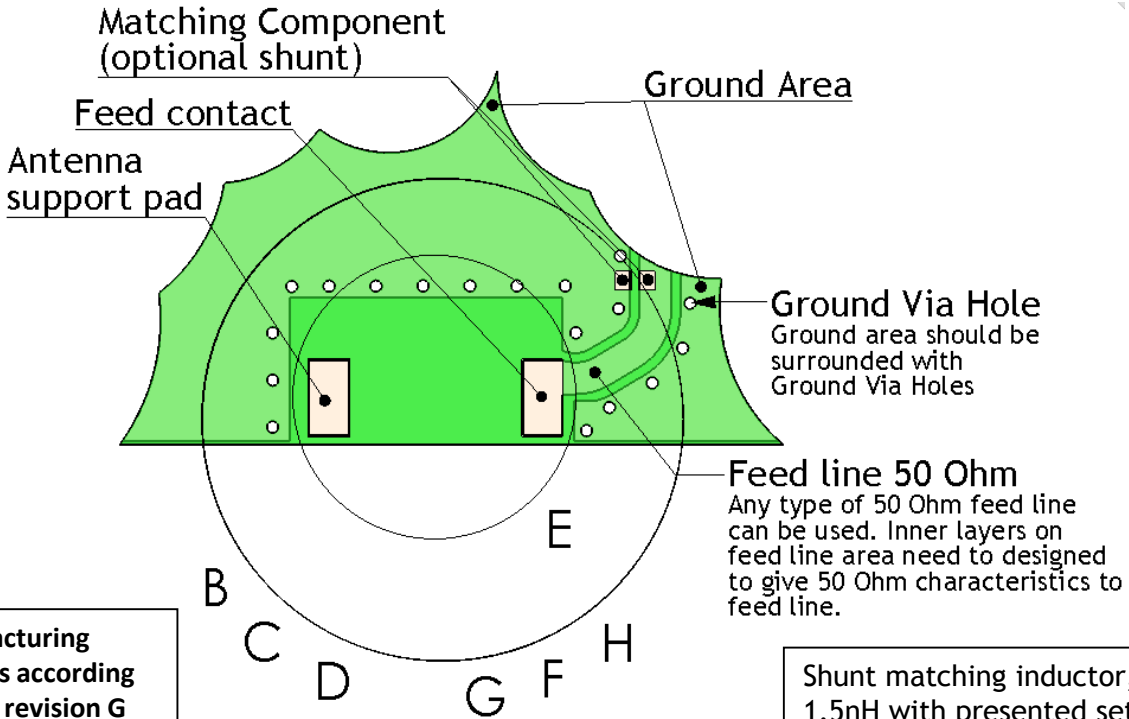
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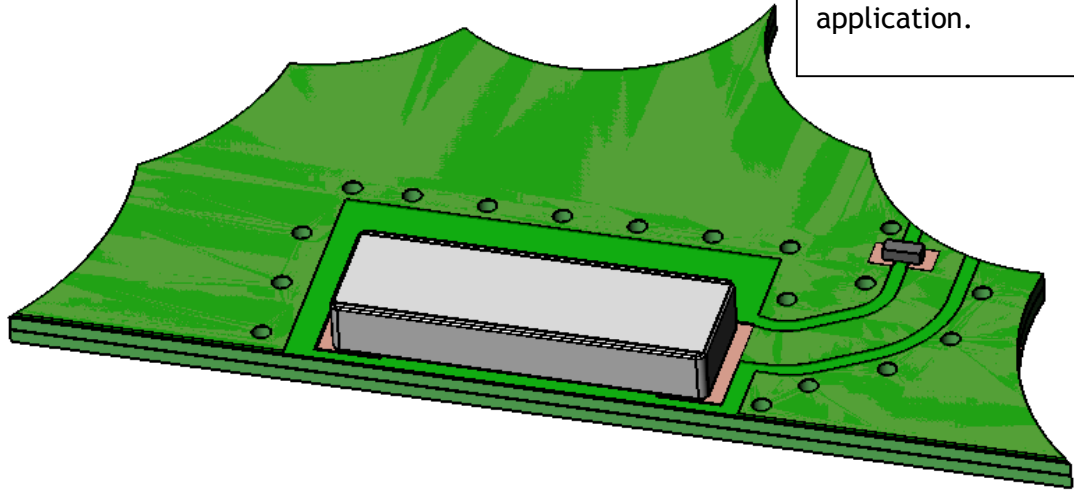
**MECHANICAL DRAWING AND TERMINAL CONFIGURATION**

**Ground cleared under antenna, clearance area 11.60 mm x 6.25 mm**



PWB manufacturing requirements according to IPC-A-600 revision G or similar

Shunt matching inductor, 1.5nH with presented setup.  
  
Exact inductor value depends on specific application.



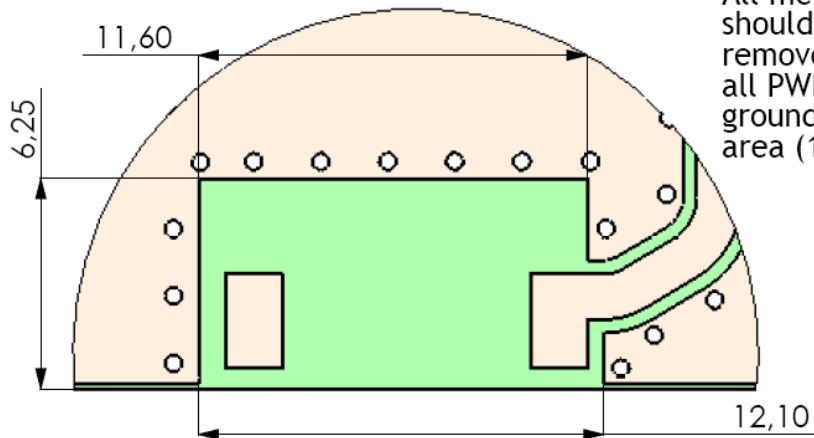
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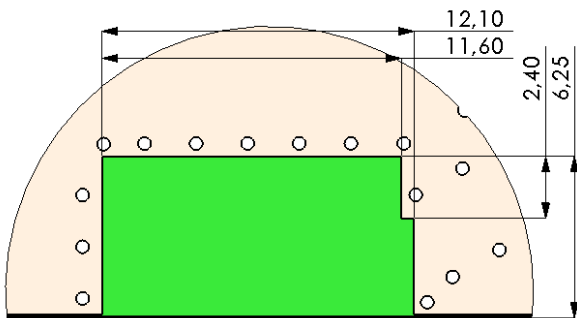
**MECHANICAL DRAWING AND TERMINAL CONFIGURATION**

Ground clearance area (11.60 x 6.25 mm)

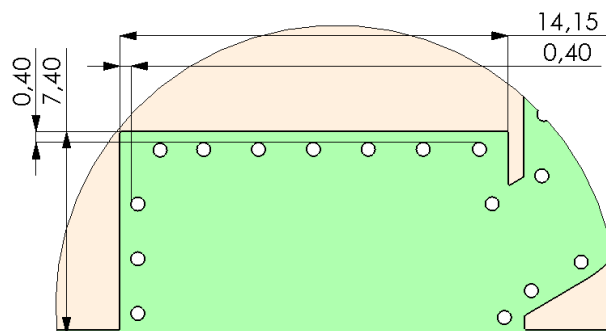


All metallization should be removed from all PWB layers on ground clearance area (11.60 x 6.25 mm)

Opening in bottom/inner ground layers



Opening in other layers (no ground/ RF)



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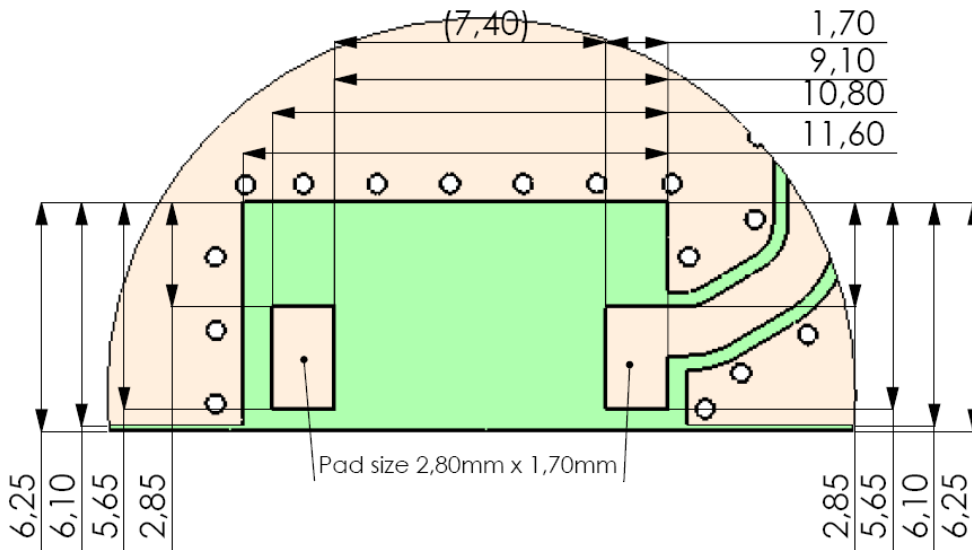
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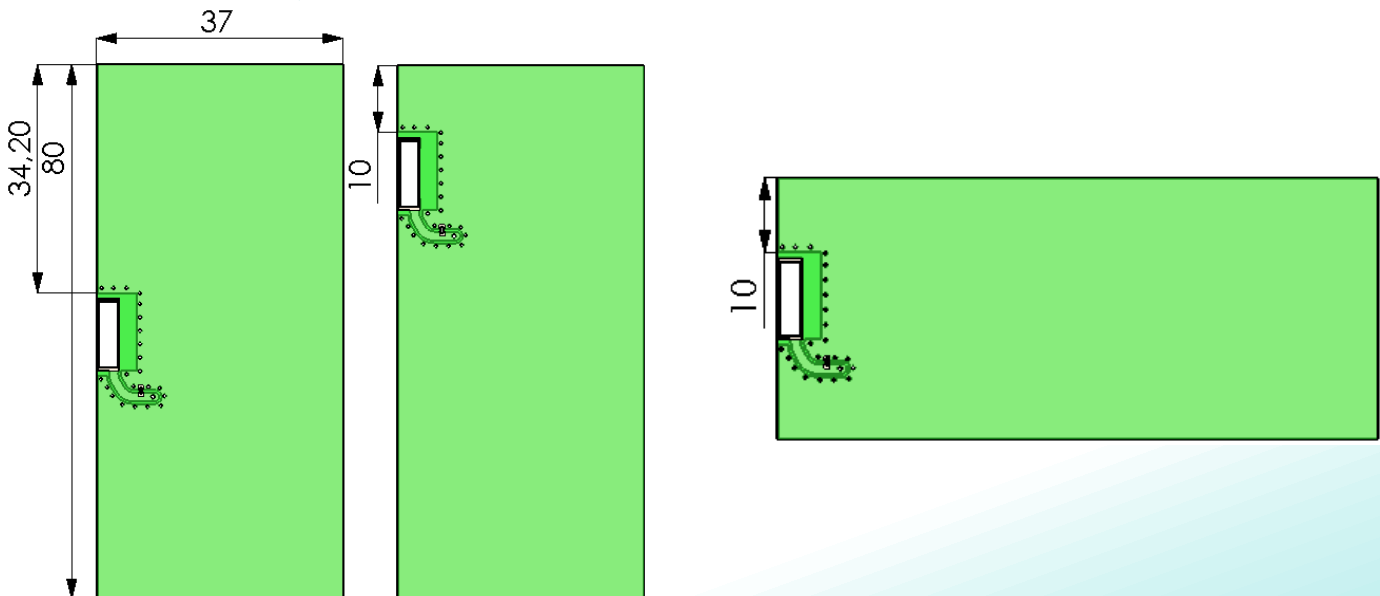
**MECHANICAL DRAWING AND TERMINAL CONFIGURATION**

*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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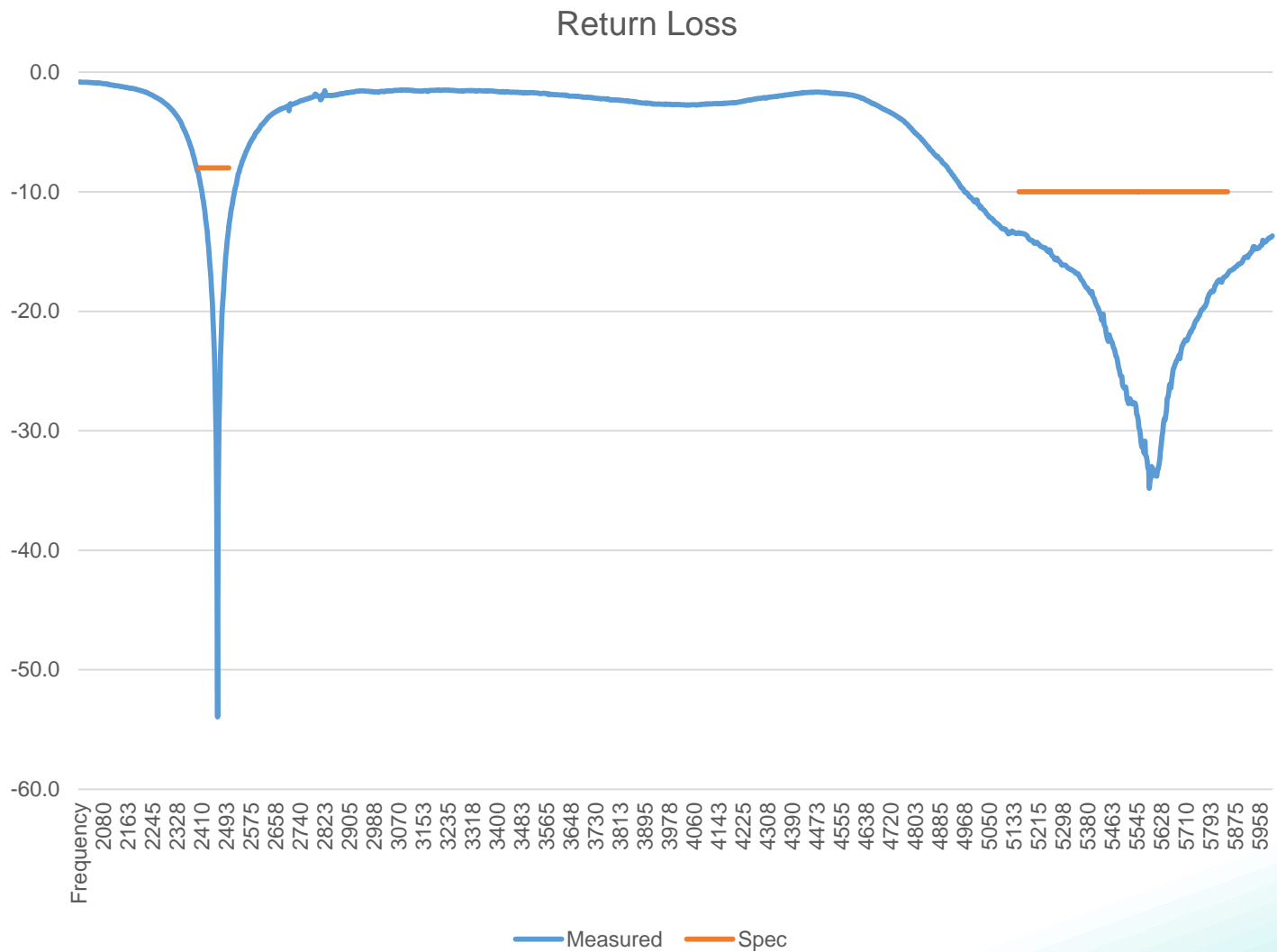
Series: Chip Antenna

PART NUMBER: W3006

## CHARTS

Measured on the 80x37mm test board with matching circuit, 1.5nH shunt inductor  
Ground cleared under antenna, clearance area 11.60 mm x 6.25 mm

### Return loss



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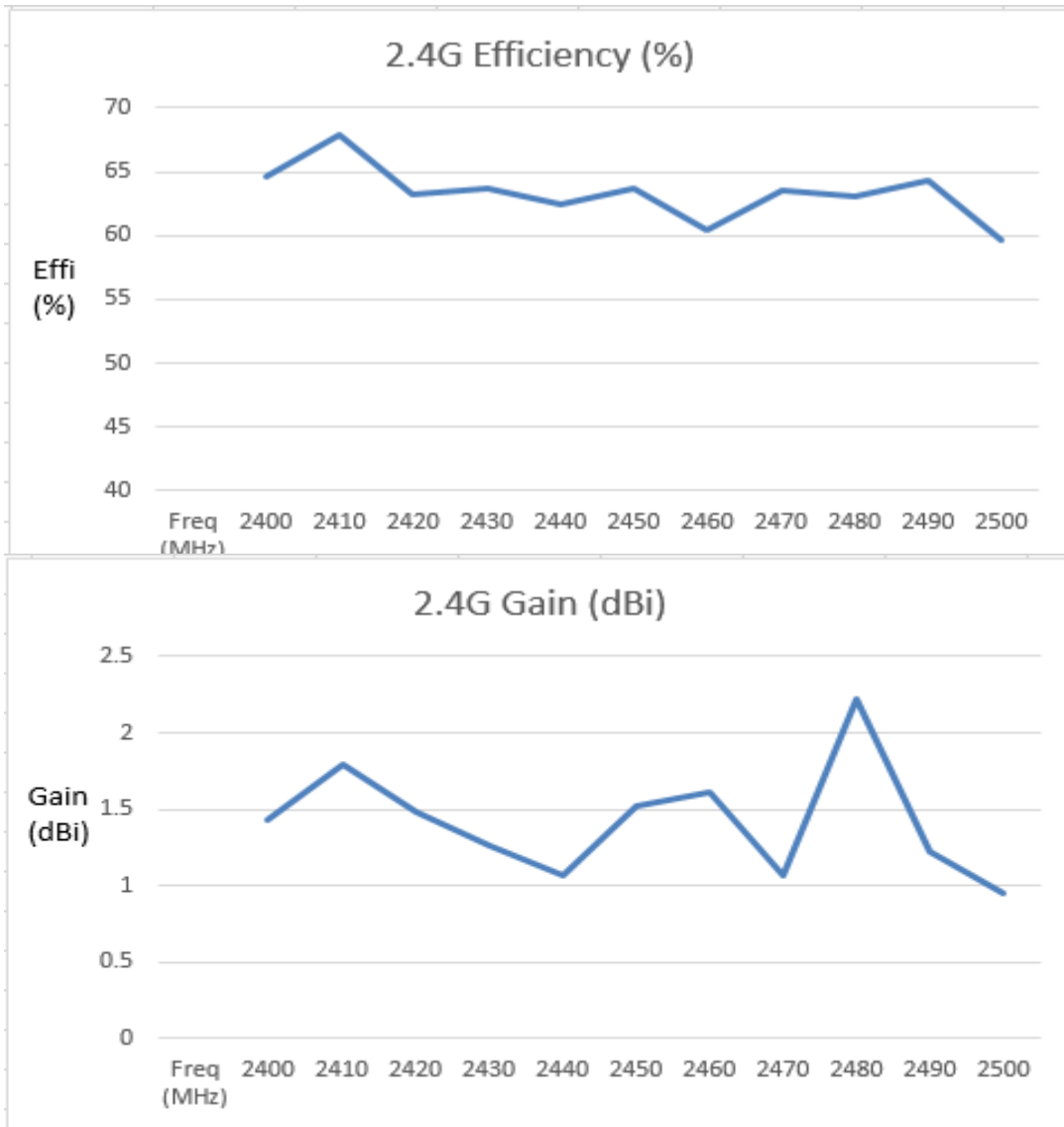
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CHARTS

Measured on the 80x37mm test board with matching circuit, 1.5nH shunt inductor  
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Free space efficiency and maximum gain for 2.4G



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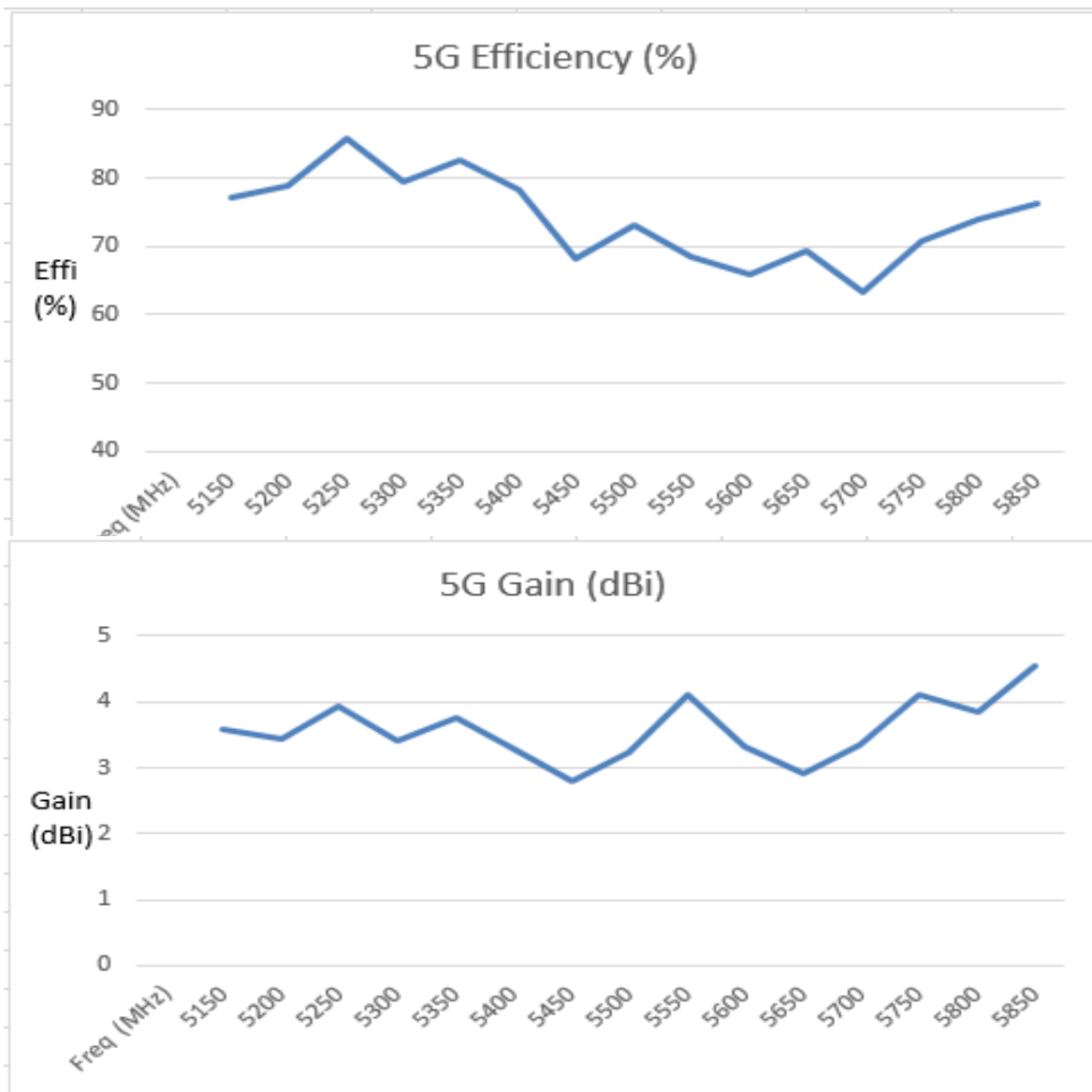
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CHARTS

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Ground cleared under antenna, clearance area 11.60 mm x 6.25 mm

Free space efficiency and maximum gain for 5G



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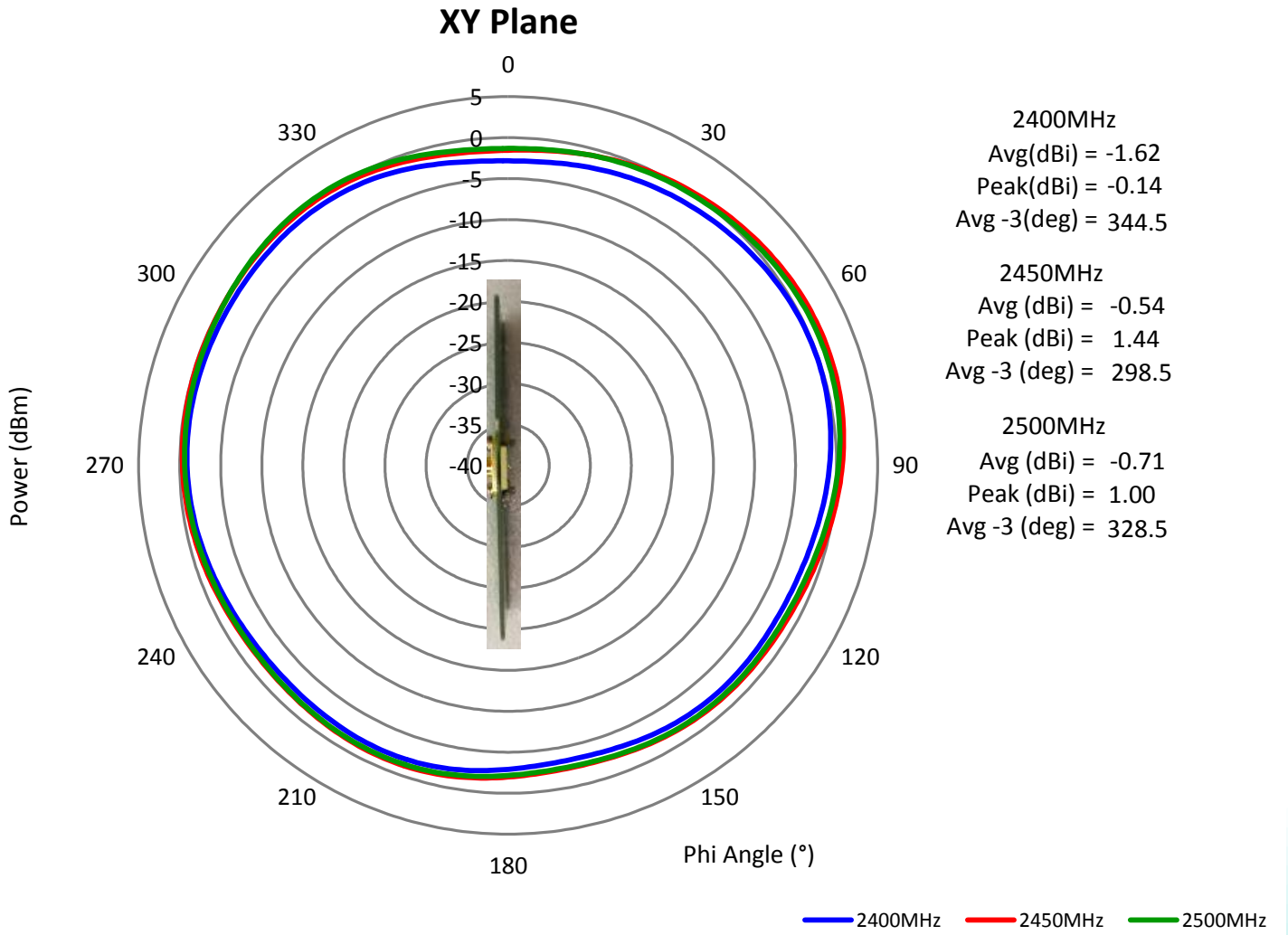
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2.4 GHz Typical Free Space Radiation Patterns



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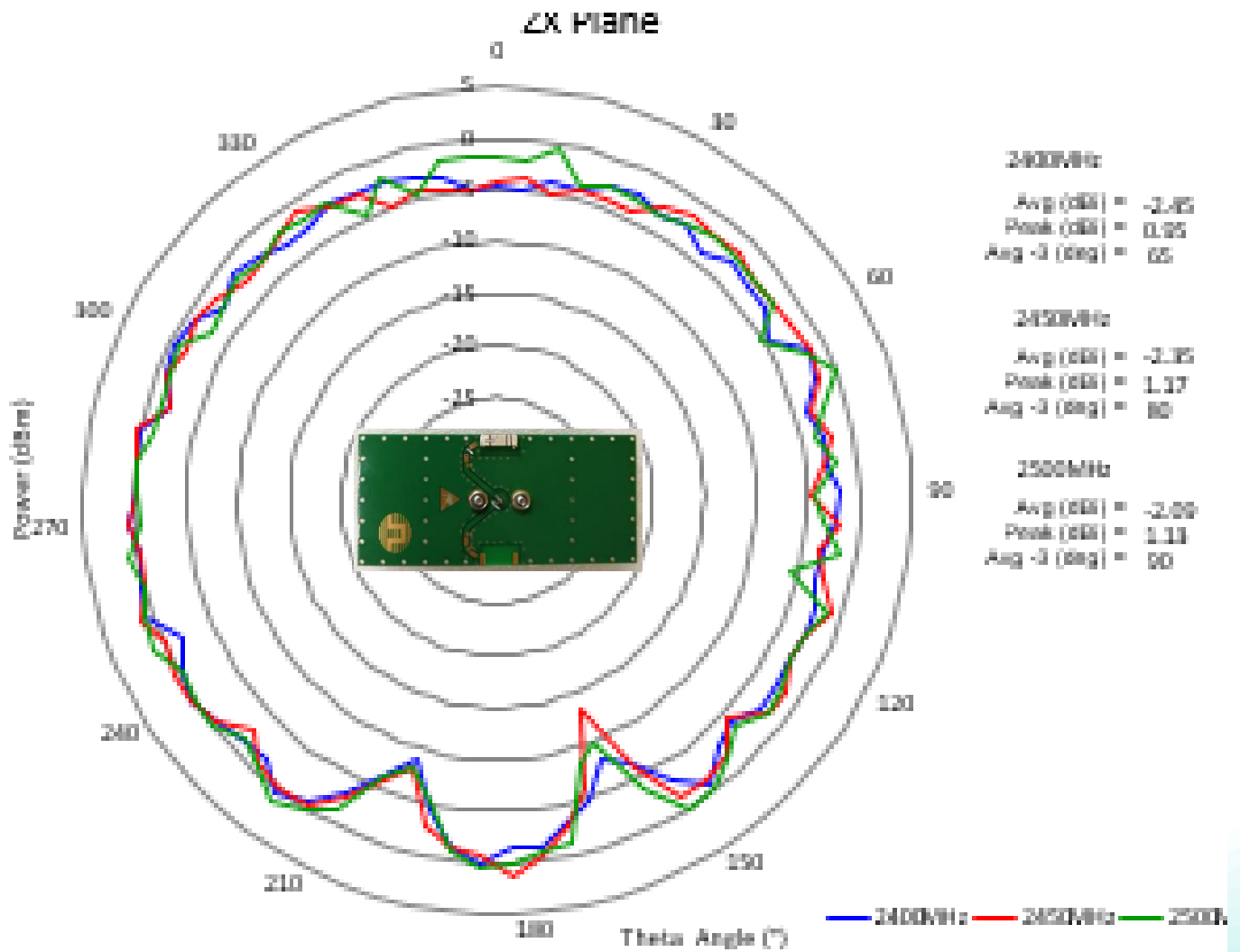
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2.4 GHz Typical Free Space Radiation Patterns



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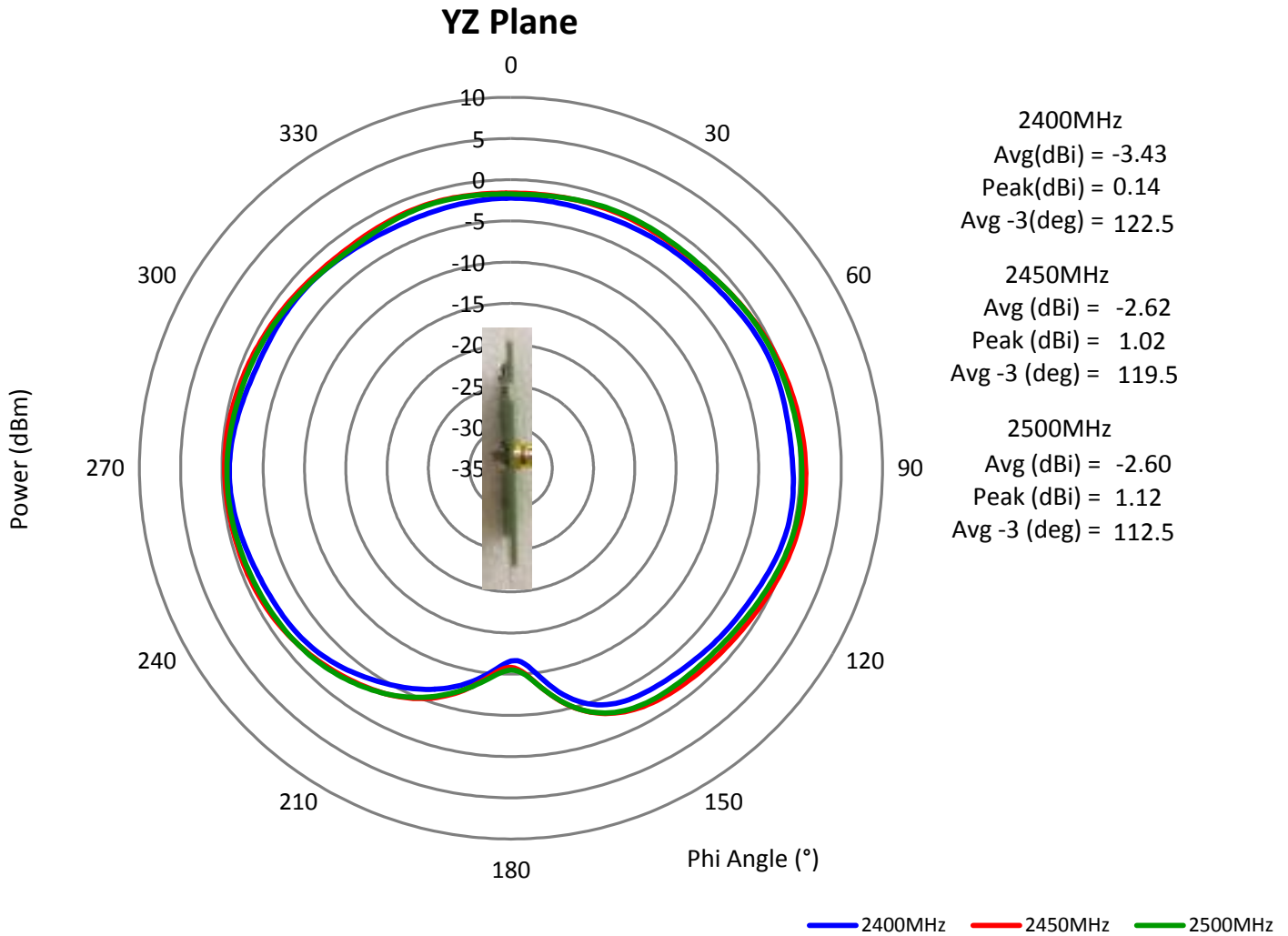
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2.4 GHz Typical Free Space Radiation Patterns



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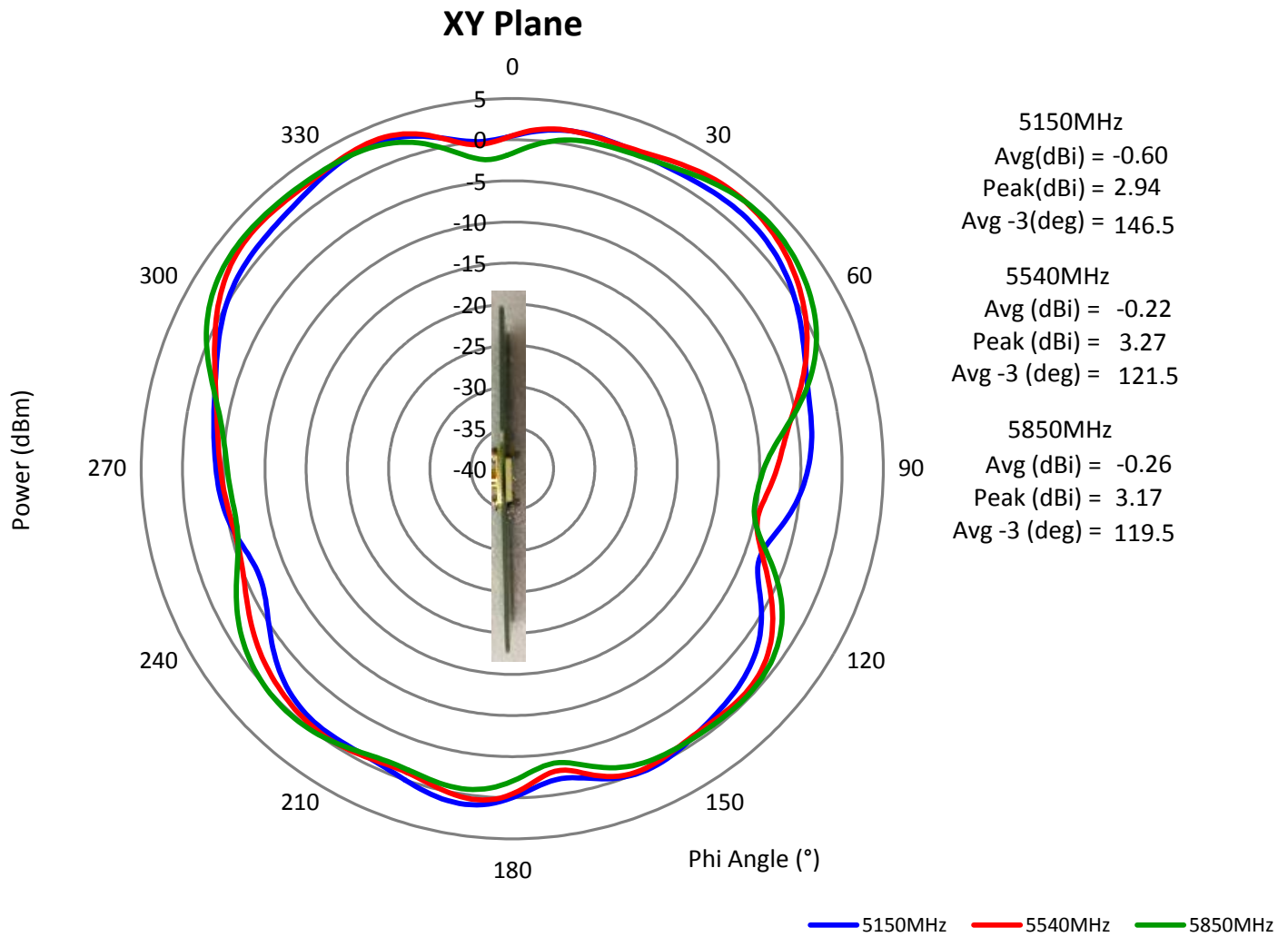
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5GHz Typical Free Space Radiation Patterns



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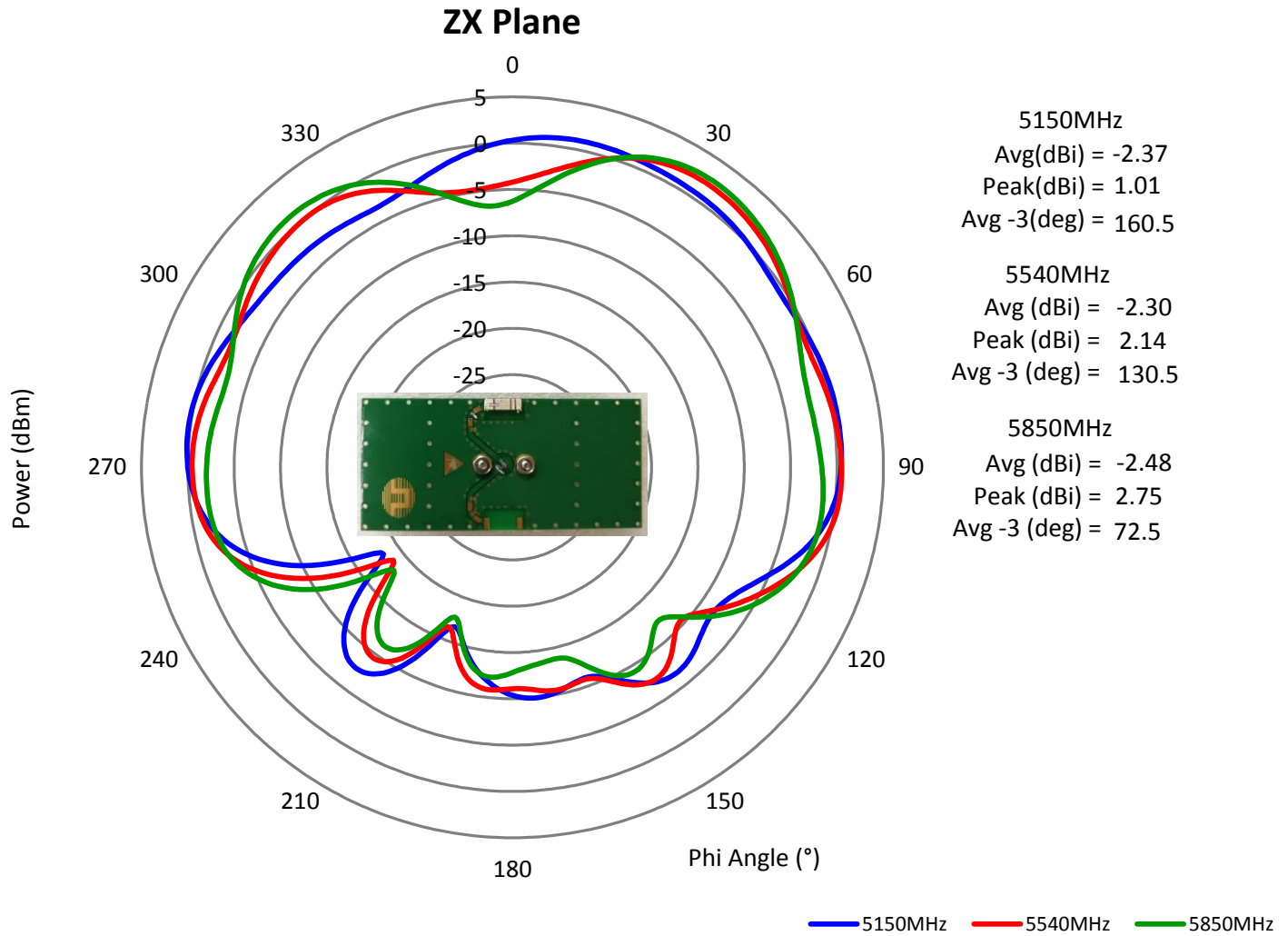
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5GHz Typical Free Space Radiation Patterns



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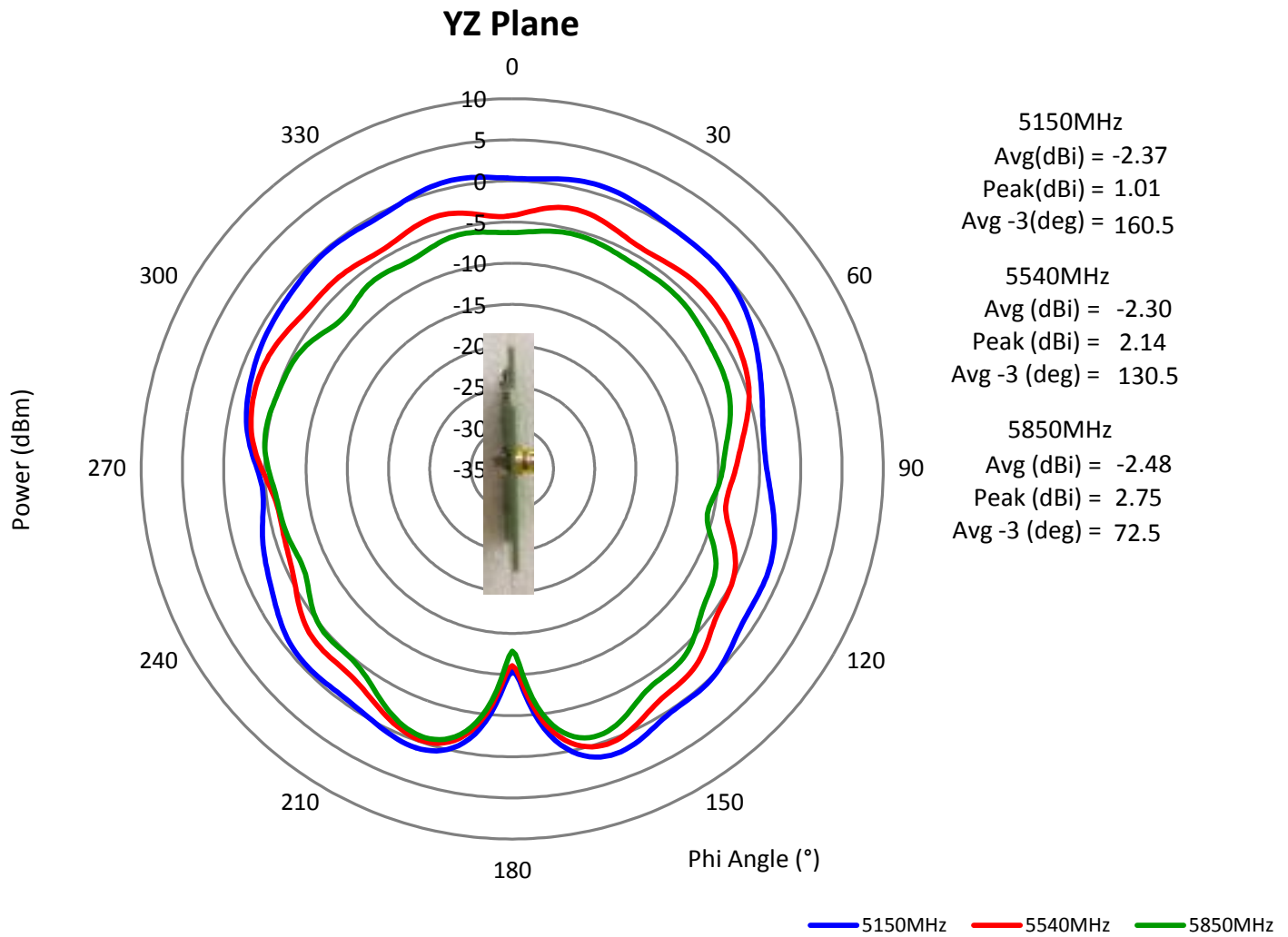
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5GHz Typical Free Space Radiation Patterns



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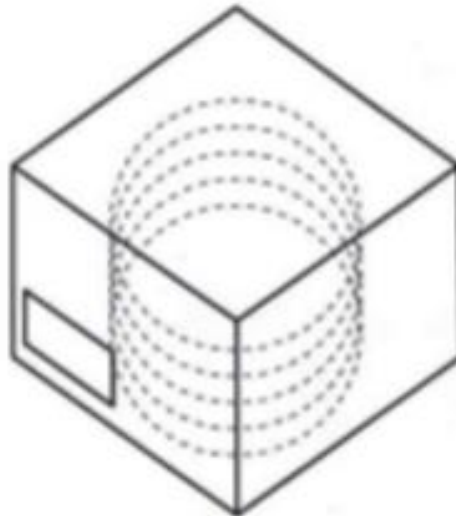
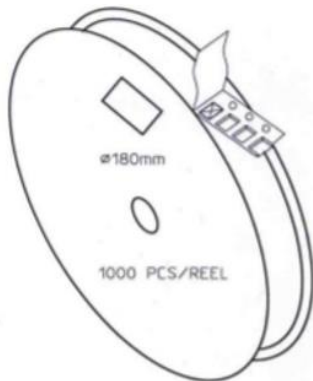
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## PACKAGING

- 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



According to MSL3 packing requirement, MBB-Moisture Barrel Bag, Desiccant, HIC-Humidity Indicator Card, MSID Label, Caution Label are required.

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