

Series: CHIP ANTENNA

Description: 3.2x1.6x1.1mm Chip Antenna

PART NUMBER: W3021



Features:

- Frequency 3200-3600MHz
- Size 3.2x1.6x1.1mm
- Keep out area 4.0x6.25mm
- Efficiency 80%
- Gain 2.5dBi
- SMT compatible / MSL3
- RoHS compliant

Applications:

- 3200-3600MHz Radios
- LTE B22, B42
- Miniature SMT chip antenna

All dimensions are in mm

Issue: 1817

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ELECTRICAL SPECIFICATIONS

Antenna Type	Ceramic Antenna
Frequency	3200-3600 MHz
Nominal Impedance	50 Ω
Return Loss	-6 dB
Radiation Pattern	Omni
Peak Gain	2.5 dBi
Efficiency	80 %
Polarization	Vertical
Power Withstanding	2 W

All measurement data is tested on Pulse 80x37mm evaluation board, position 1.

MECHANICAL SPECIFICATIONS

Overall Length	3.2x1.6x1.1mm
Weight	33mg

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40~+85° C
Storage Temperature	-40~+85° C
RoHS Compliant	Yes

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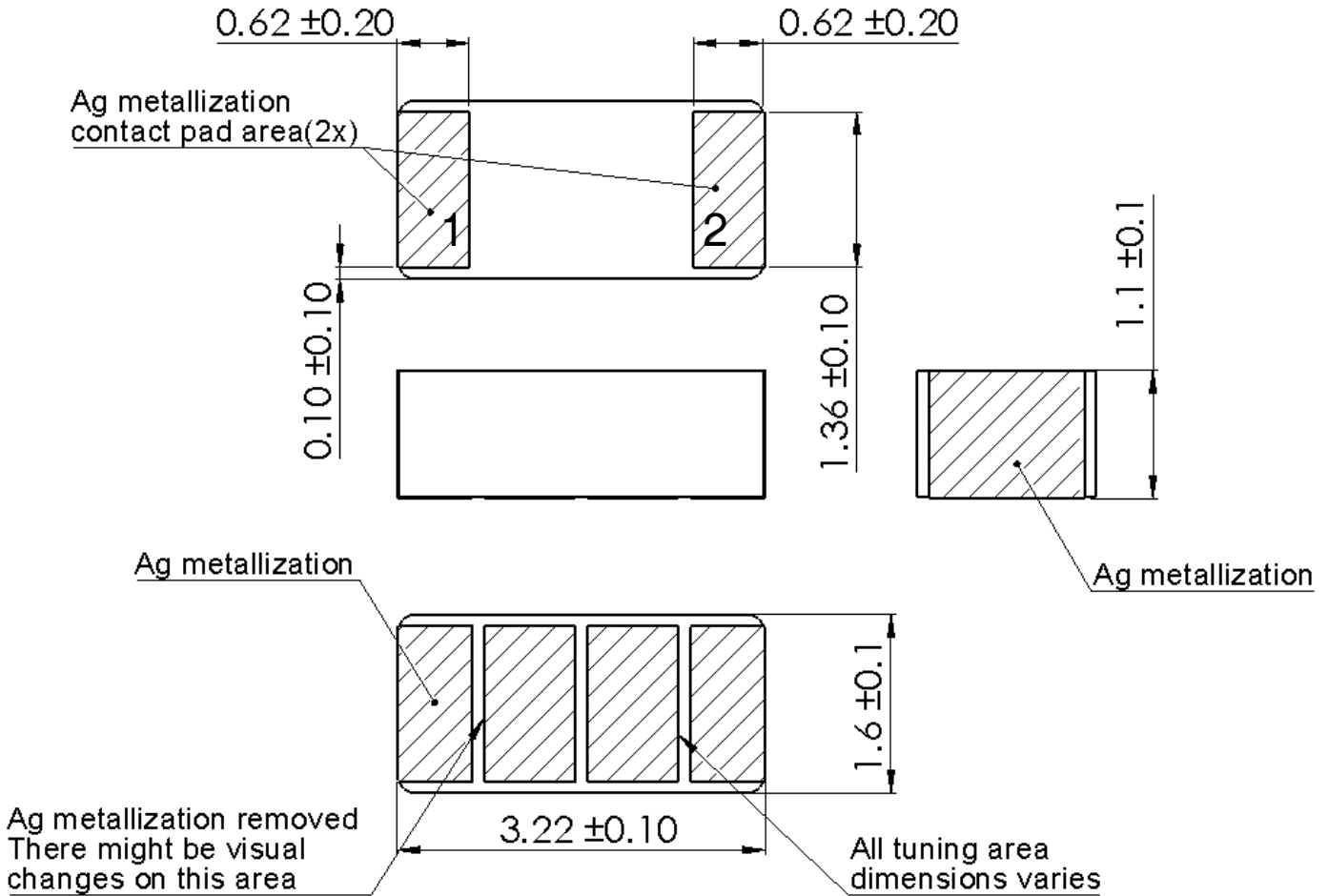
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MECHANICAL DRAWING AND TERMINAL CONFIGURATION



No.	Terminal Name	Terminal Dimensions
1	Feed / GND	0.62 x 1.36 mm
2	Feed / GND	0.62 x 1.36 mm
Antenna is symmetrical. Either of terminals 1 or 2 can be Feed / GND		

Unit :mm

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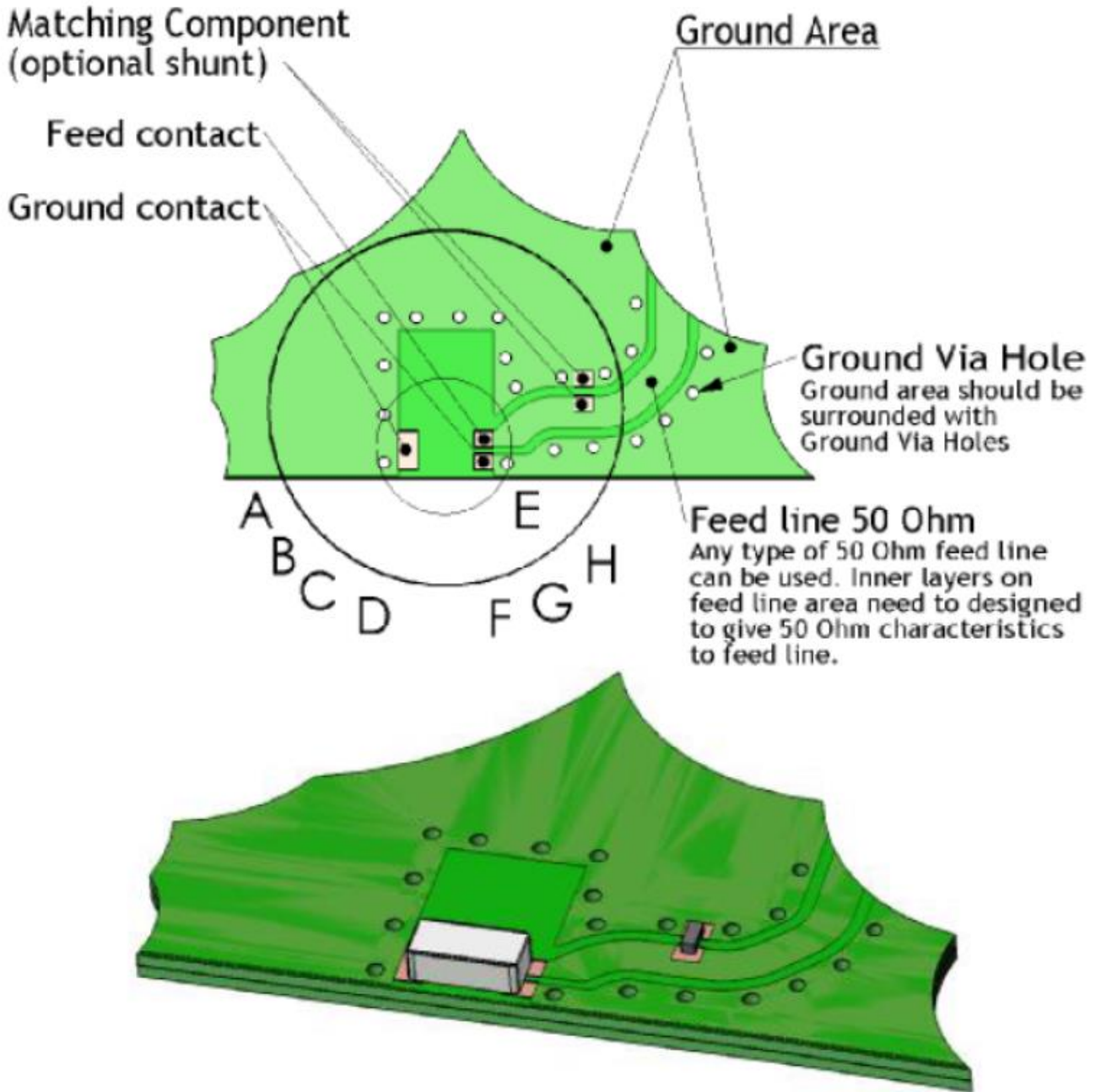
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PCB Layout Description



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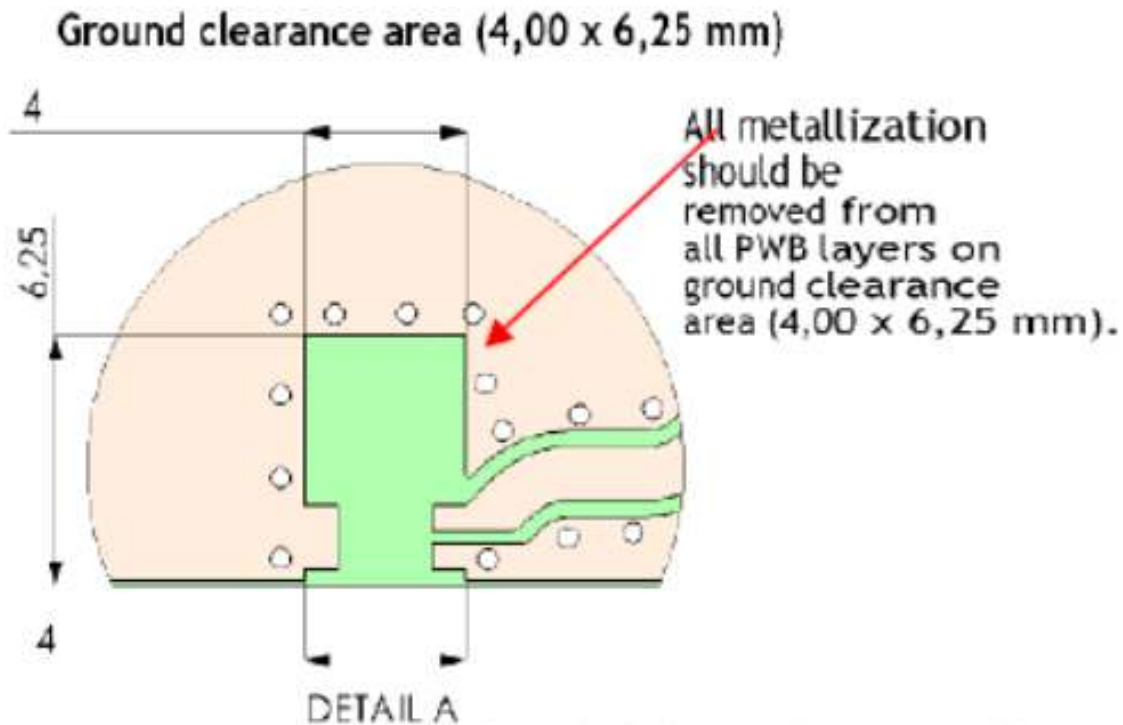
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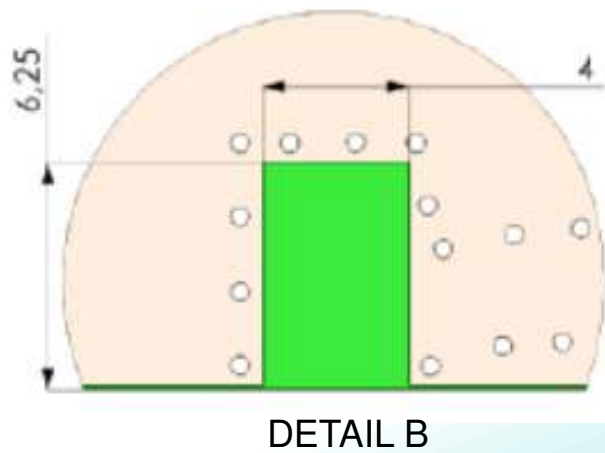
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Ground Clearance Area



Opening in bottom/inner ground layers



Unit :mm

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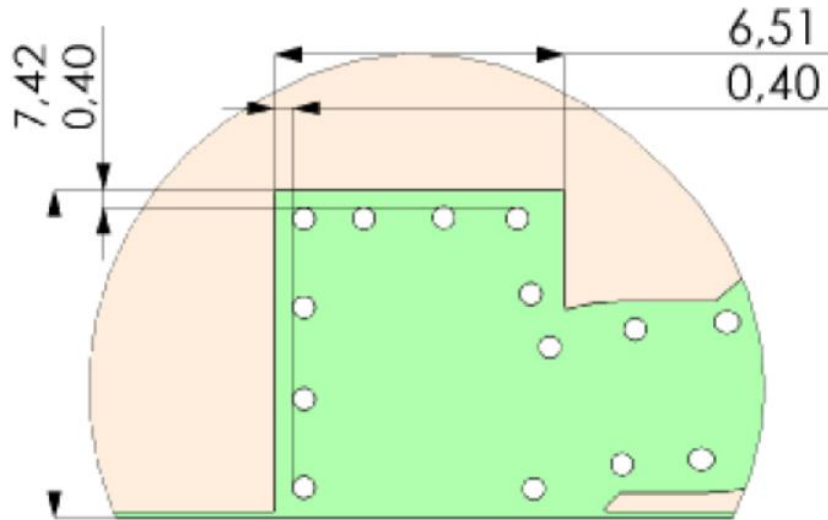
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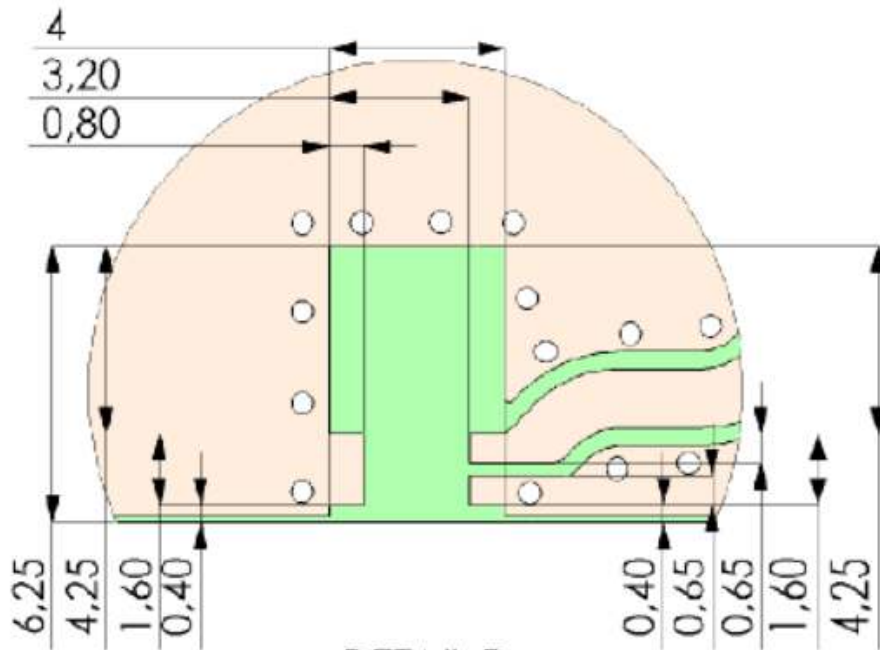
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Ground Clearance inner (Detail C) and top (Detail D) layers

Opening in other layers (no ground/ RF)



DETAIL C



DETAIL D

Unit :mm

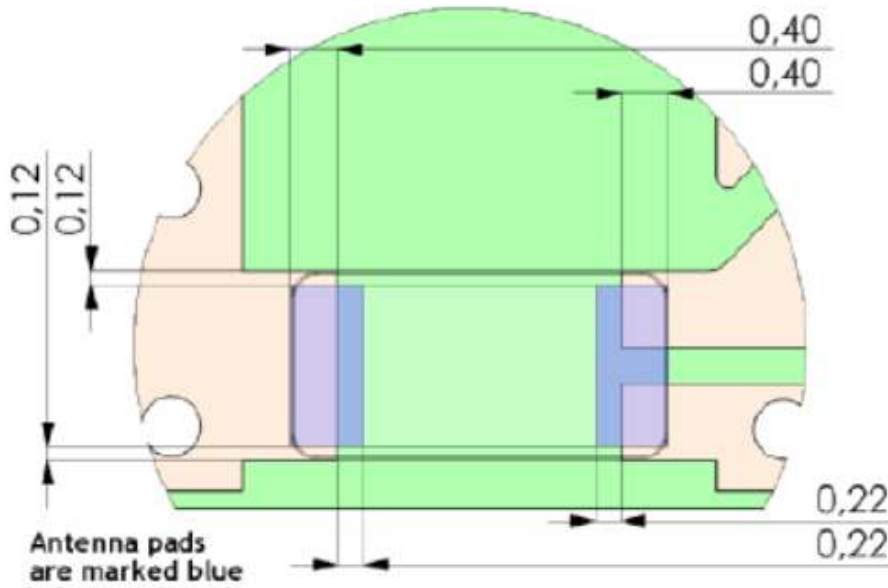
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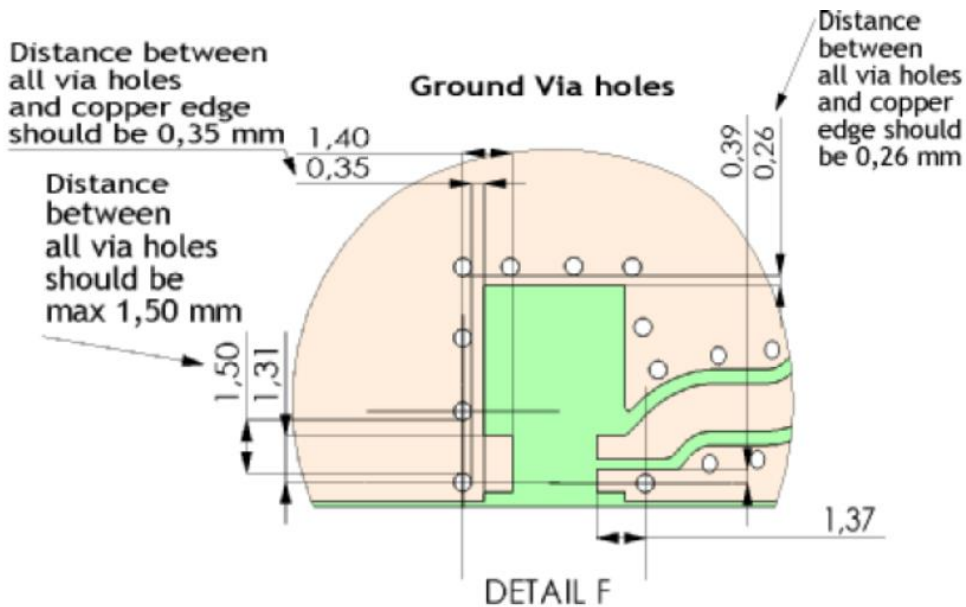
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Antenna placement (Detail E) and GND via holes (Detail F)

Antenna position on PWB layout



DETAIL E



DETAIL F

Unit :mm

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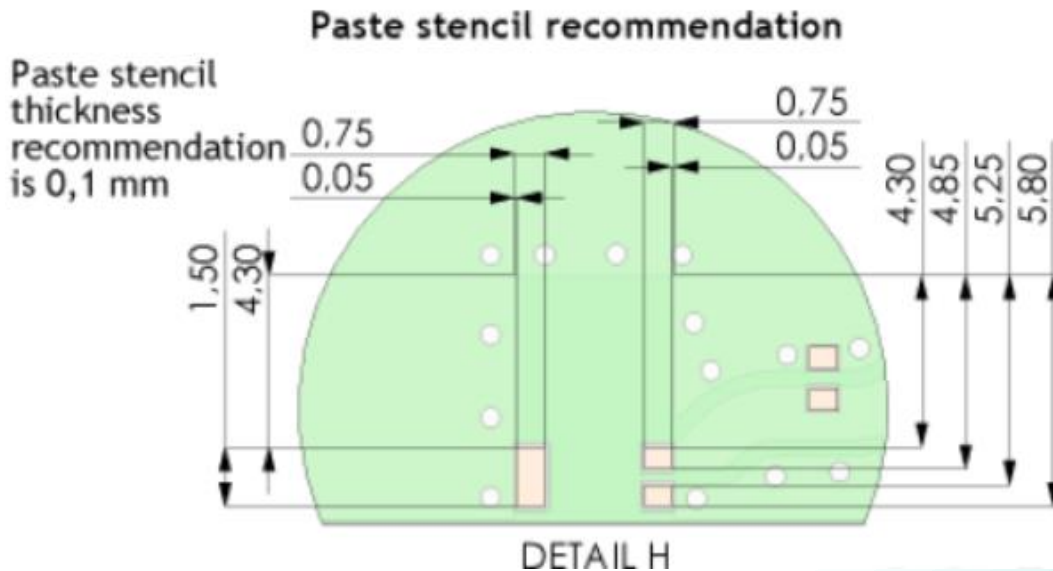
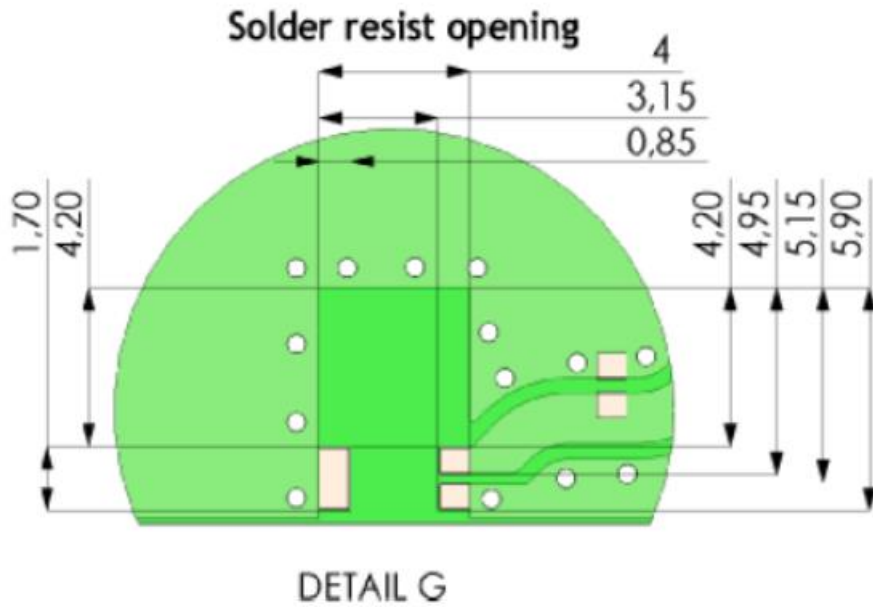
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Solder resist (Detail G) and Solder paste stencil (Detail H)



Unit :mm

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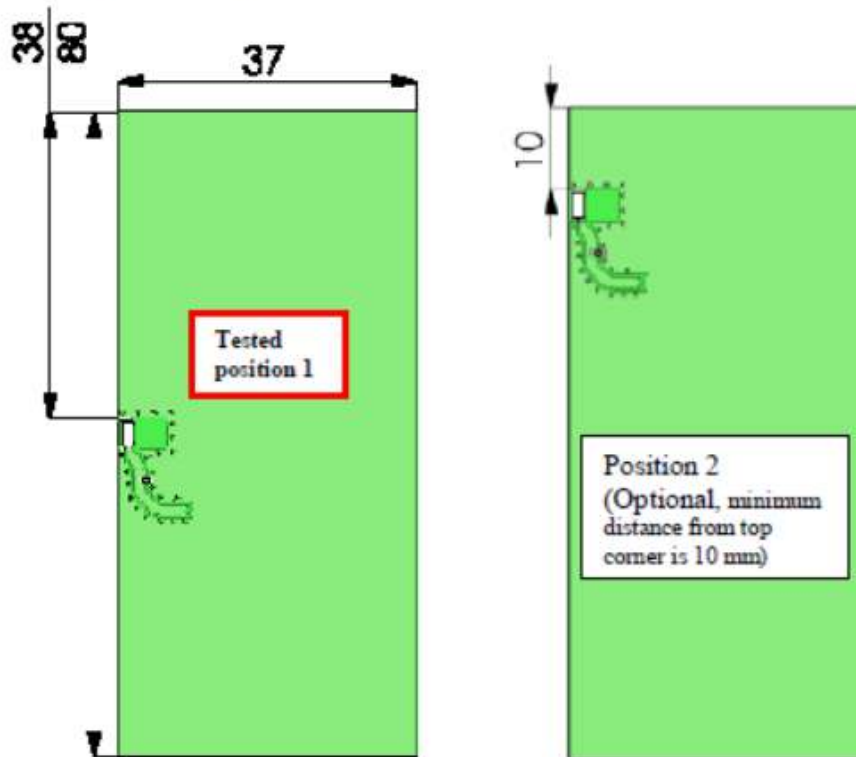
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Standard evaluation board dimensions

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)



Unit :mm

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SMT Soldering Profile

Recommendations For Soldering

Recommendation for reflow soldering process

Printing stencil thickness 0,15 - 0,25 mm is recommended for the solder paste. The maximum soldering temperature should not exceed 260°C. The temperature profile recommendations for reflow soldering process is presented in the Figures 1 and 2. The reflow profile

presented in figure 1 describes minimum reflow temperatures. The reflow profile presented in figure 2 describes maximum reflow temperatures. located at the center of the coverage area.

	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 30 sec
5	Peak temperature in reflow	230 °C for 10 seconds
6	Temperature gradient in cooling	Max -5 °C/s

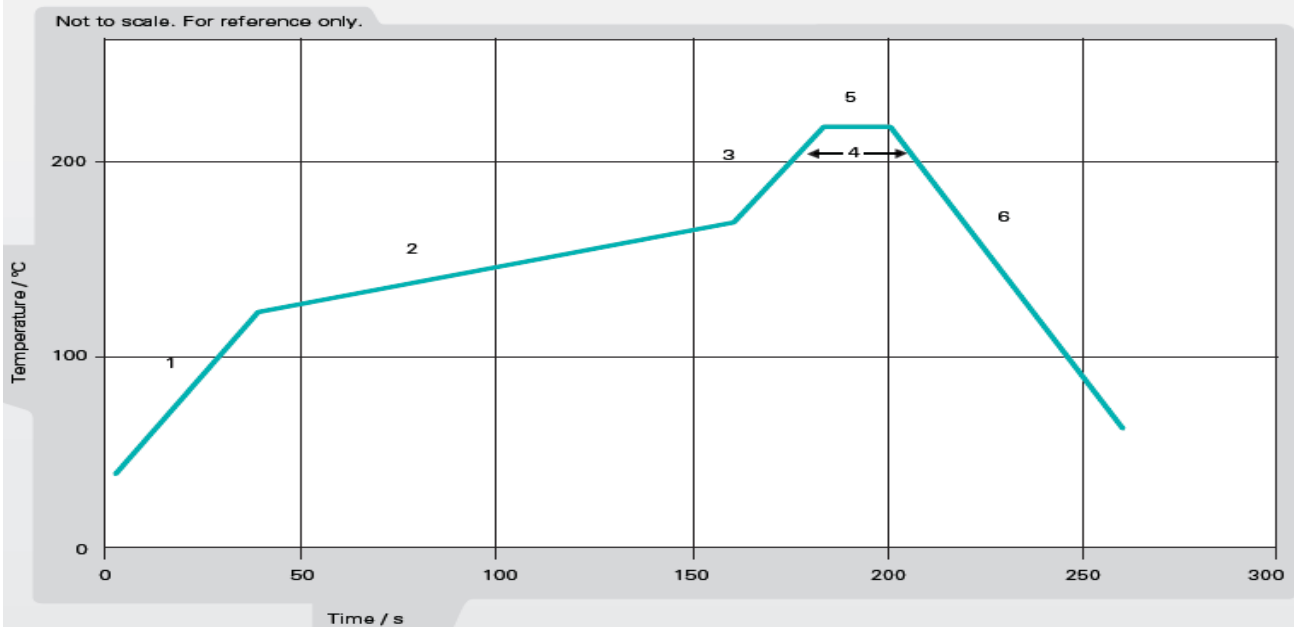


Figure 1. Minimum temperature profile recommendation for reflow soldering process

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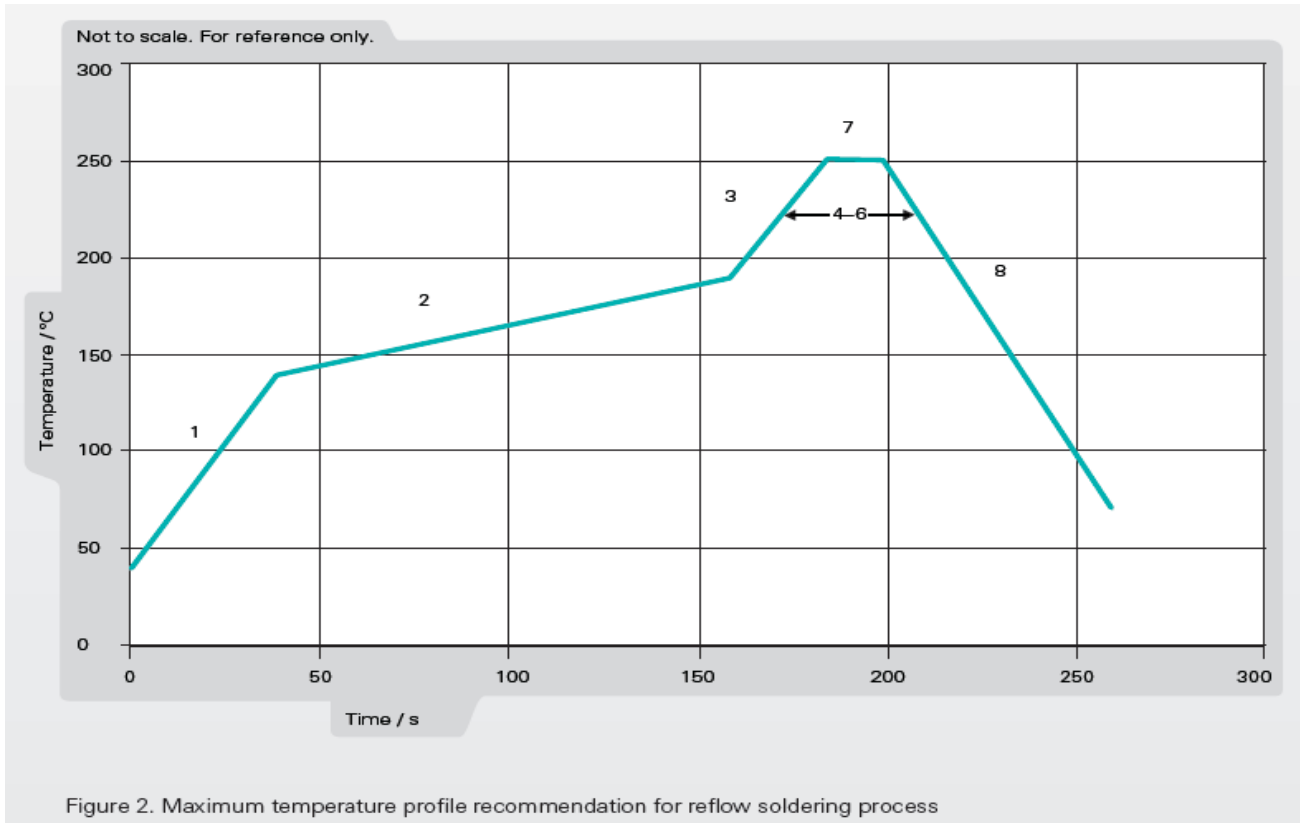
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SMT Soldering Profile

	Method of heat transfer	Controlled hot air convection
1	Average temperature gradient in preheating	2.5 °C/s
2	Soak time	2-3 minutes
3	Max temperature gradient in reflow	3 °C/s
4	Time above 217 °C	Max 60 sec
5	Time above 230 °C	Max 50 sec
6	Time above 250 °C	Max 10 sec
7	Peak temperature in reflow	260 °C for 5 seconds
8	Temperature gradient in cooling	Max -5 °C/s



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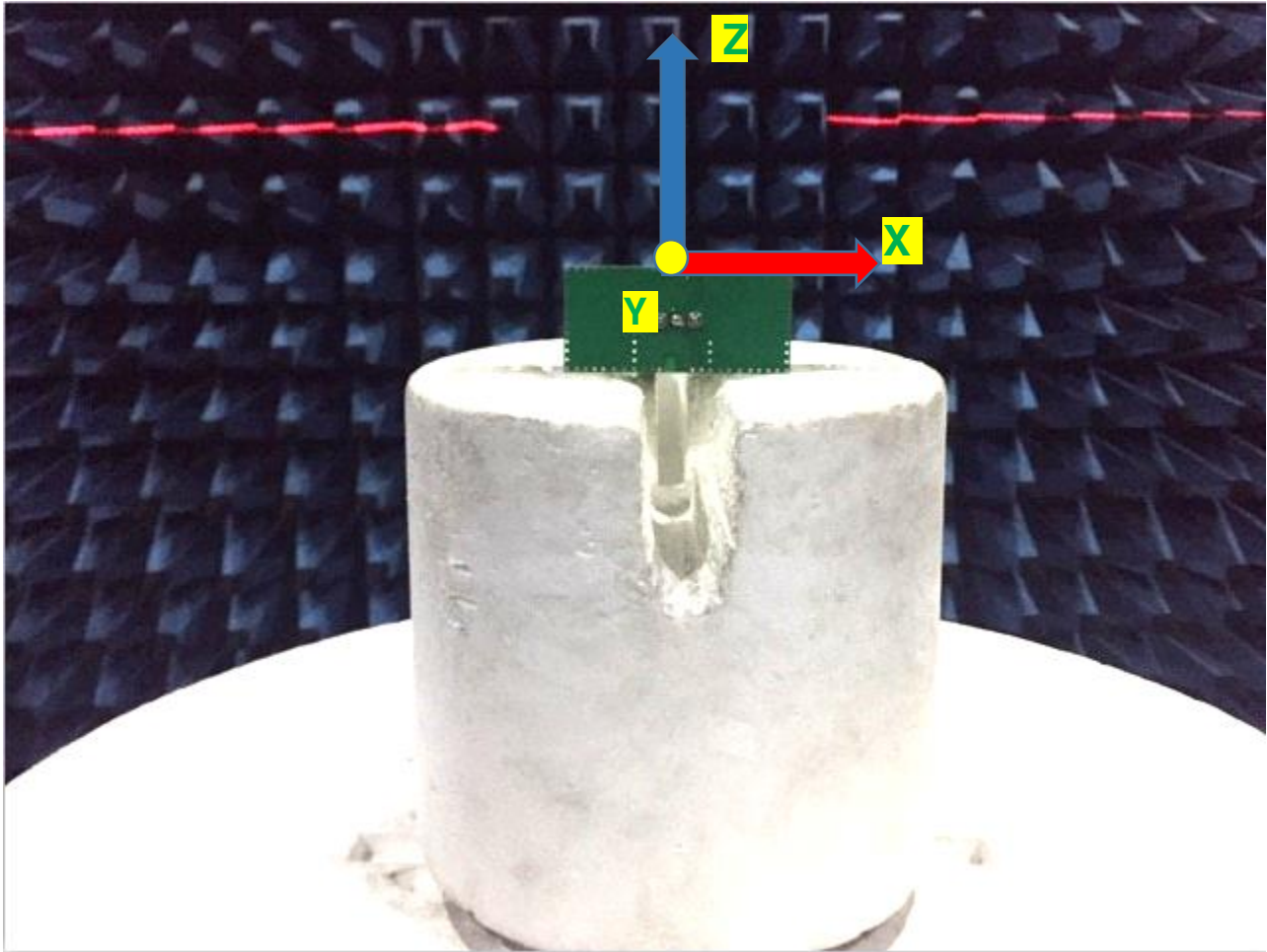
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TEST SETUP



All measurement data is tested on Pulse standard 80x37mm evaluation board, position 1.

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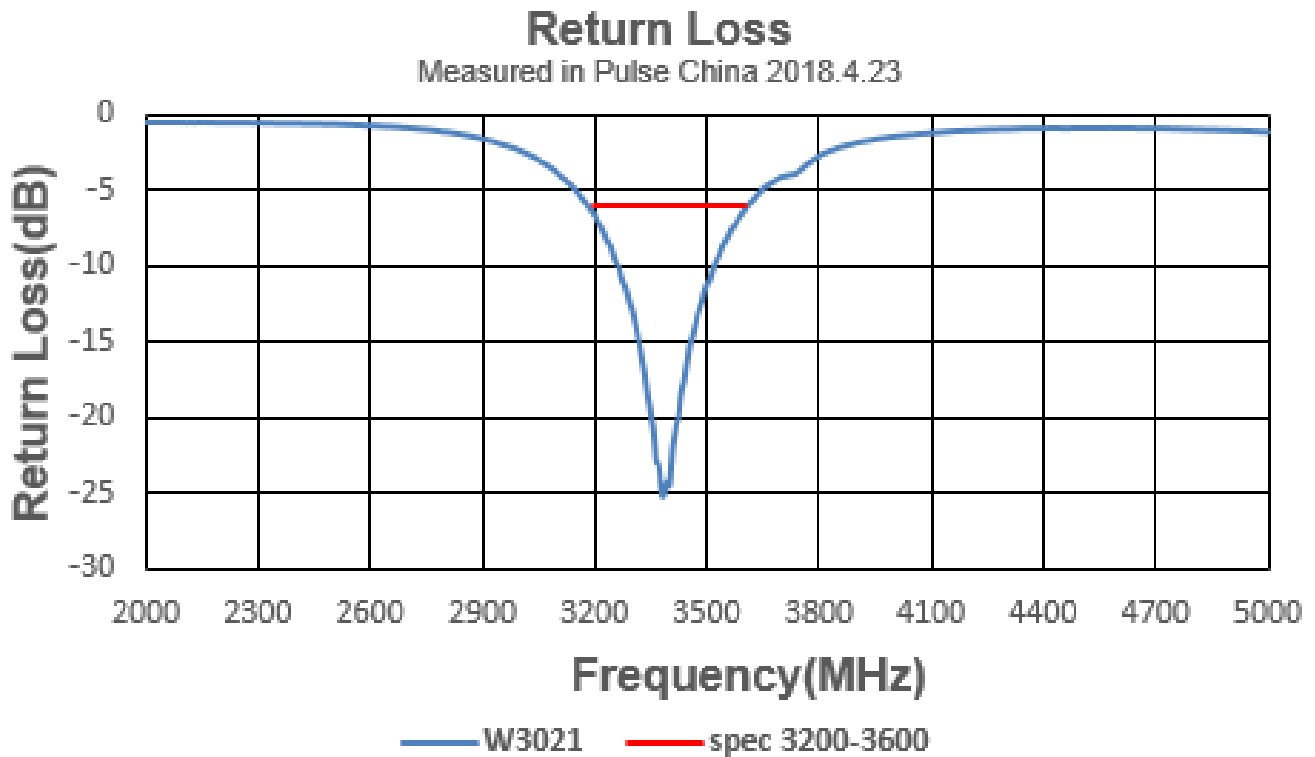
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Return Loss

Measured on 80*37mm test board with matching circuit (shunt 0.7pF), and antenna in position1 on PWB layout, see Page9.



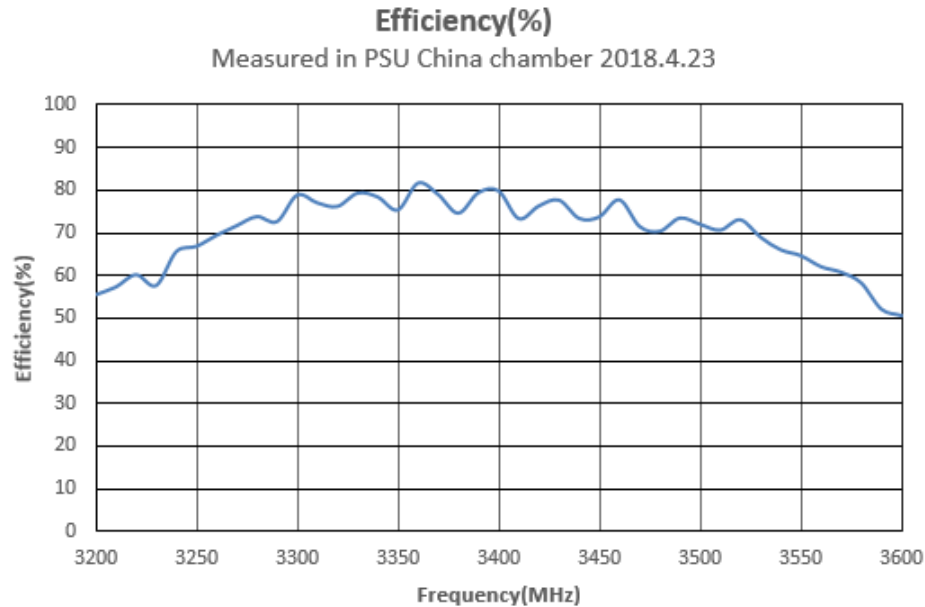
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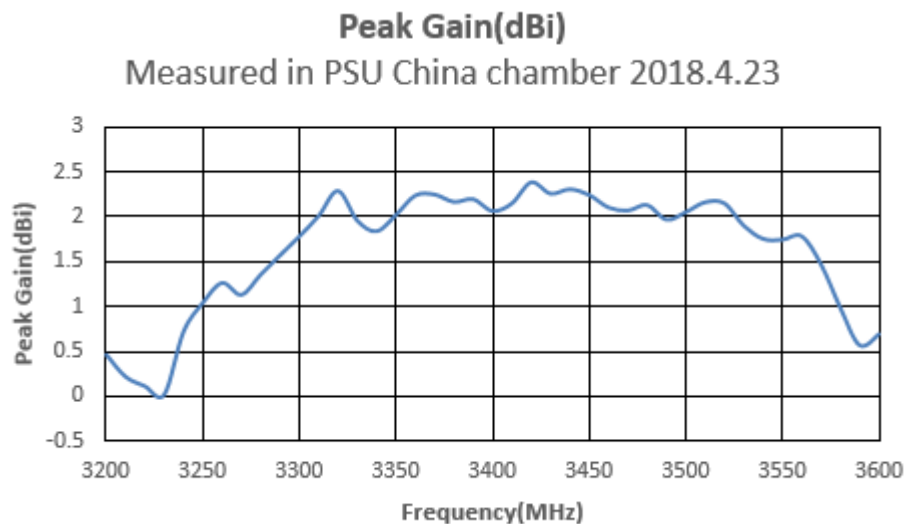
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Efficiency(%)

Measured on 80*37mm test board with matching circuit(shunt 0.7pF), and antenna in position1 on PWB layout, see Page9.



Peak Gain (dBi)



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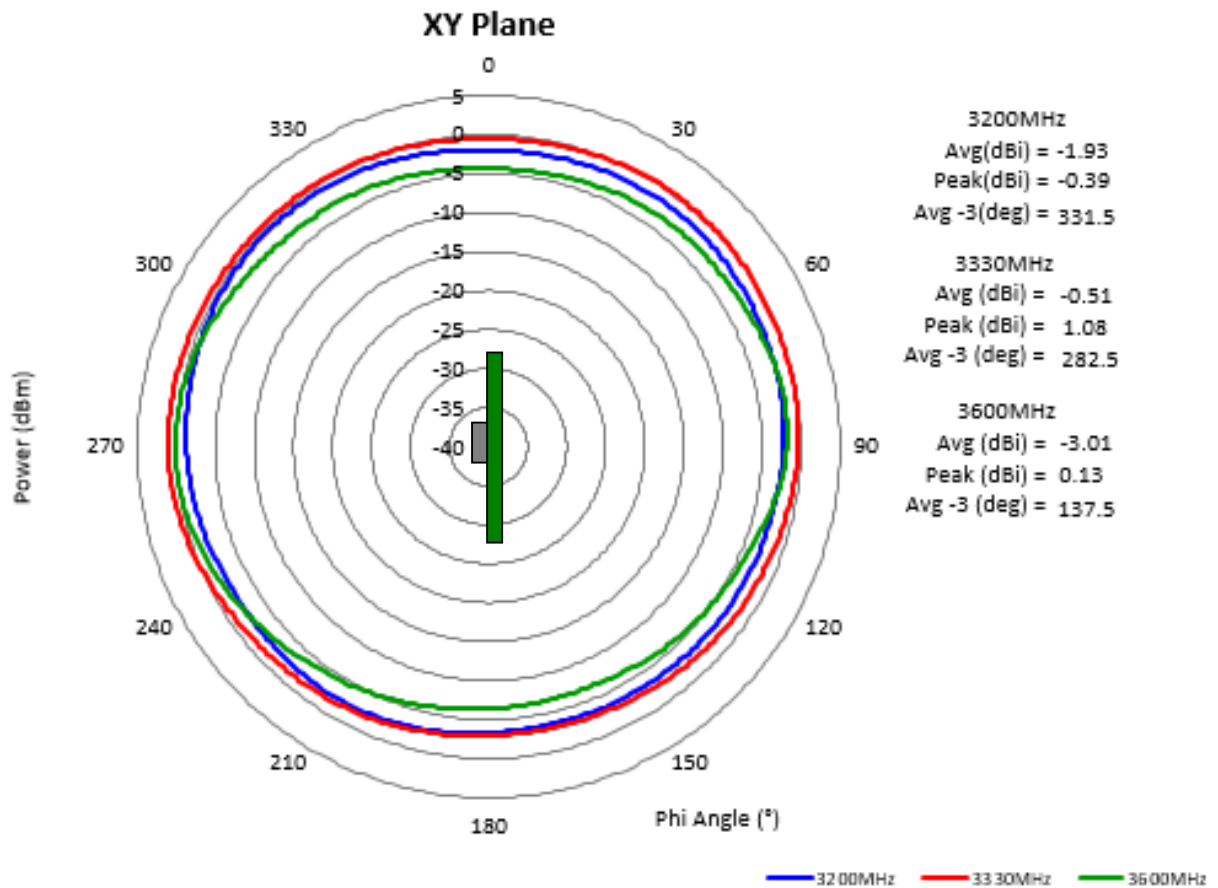
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Free space radiation pattern



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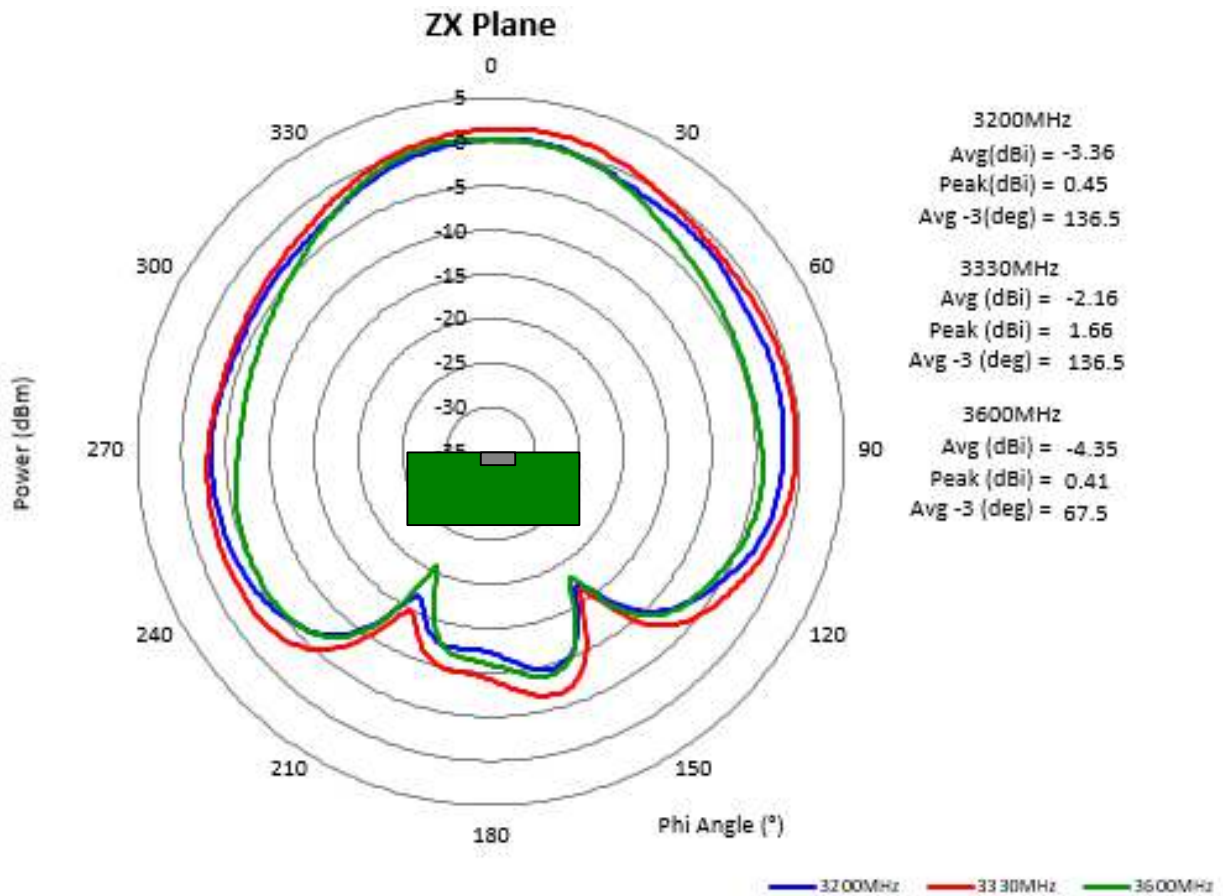
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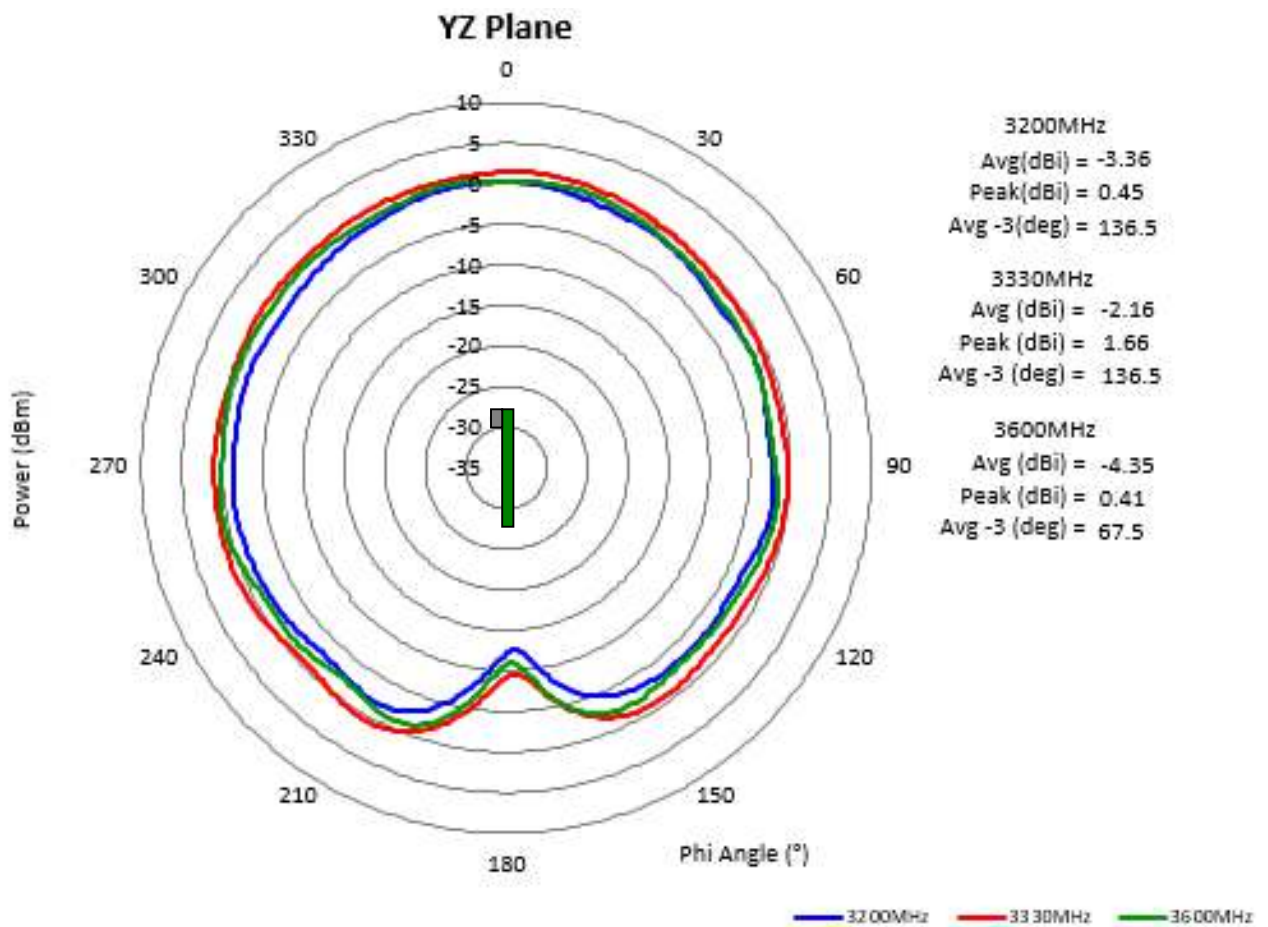
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PACKAGING

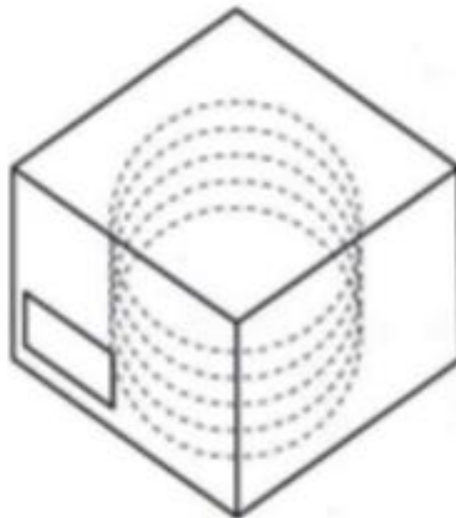
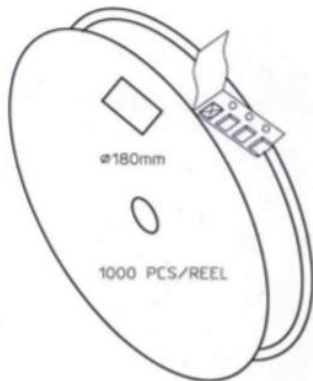
3000pcs antennas per 7" reel

5pcs 7" reel per inner package box

2pcs inner box per out box

Total 30000pcs 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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