PulseLARSEN Antennas

TECHNICAL DATA SHEET

Description: 2.5-2.69GHz US-WiMAX

Series: Ceramic Chip

PART NUMBER: W3020

Features:

- Omnidirectional radiation
- Low profile
- Compact size
  WxLxH (3.2 x1.6 x 1.1mm)
- Low weight (33mg)
- Fully SMD compatible
- Lead free soldering compatible
- Tape and reel packing
- RoHS compliant

Applications:

- 2.5-2.69 GHz
- LTE B38, B41
- Devices using WiMAX

All dimensions are in mm / inches

Issue: 1742

RoHS COMPLIANT

For more information:

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Tel: 86 512 6807 9998

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ELECTRICAL SPECIFICATIONS

Frequency	2.5-2.69 GHz
Nominal Impedance	50 Ω
Return Loss(Typical)*	<-5.5dB
Max Gain*	2.9dBi (Peak)
	1.5dBi (Band Edges)
Radiation Efficiency*	89%/-0.52dB (Peak)
	72%/-1.43dB(Band Edges)

Note: Electrical characteristics depend on test board (GP) size and antenna positioning on GP and Ground Clearance area size.

**Tested on PULSE testboard position 1 (refer to page 10) . The testboard size 80x35 mm, PWB ground clearance area 4.0 x 6.25 mm. 1.0pF shunt matcing capacitor used.*

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MECHANICAL SPECIFICATIONS

Weight	0.033 g
Size	3.2 x1.6 x 1.1mm

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/s²
Shocks	0.5 m/s
Salt mist	96 hours

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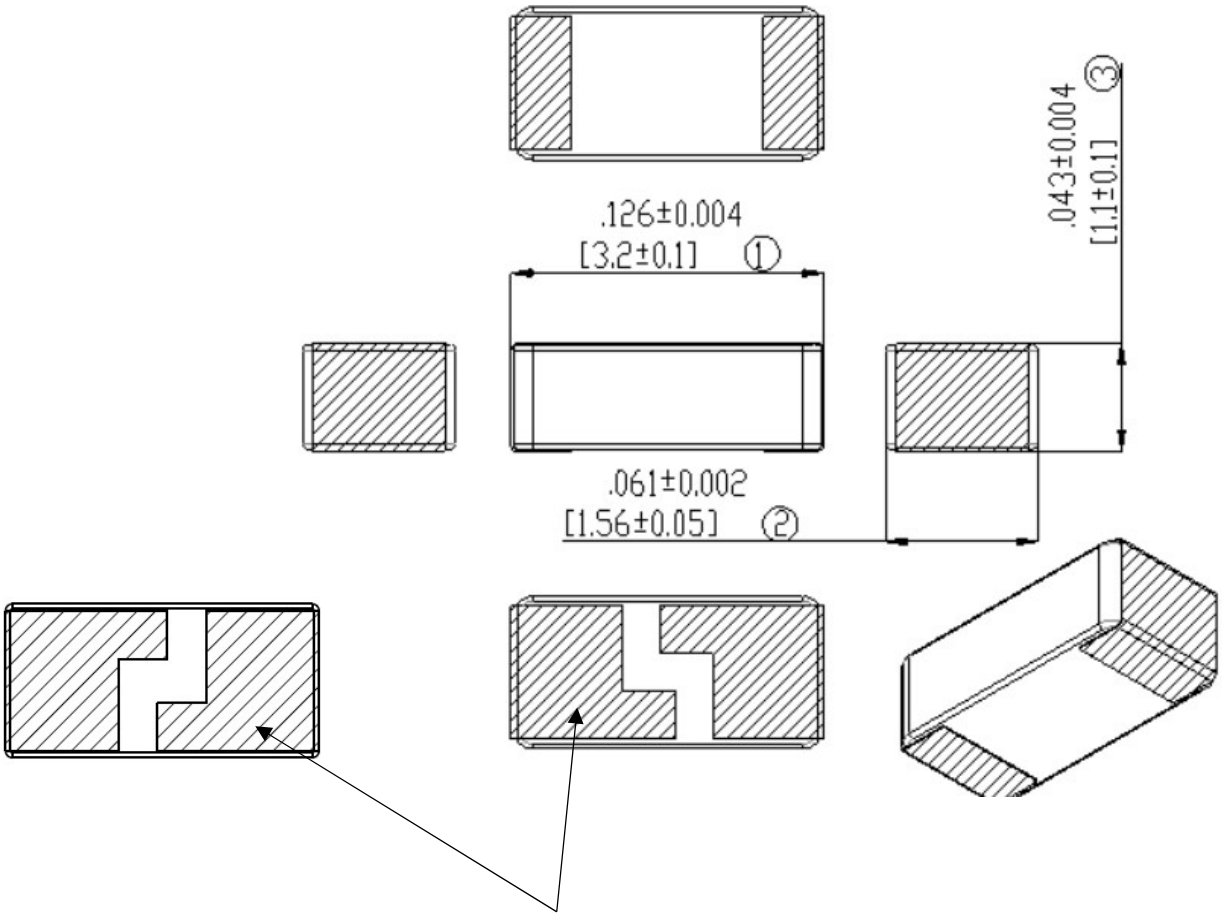
MECHANICAL DRAWING AND TERMINAL CONFIGURATION



1. Antenna is symmetrical, both of antenna pattern have same RF performance.
2. The size of slot is only for reference.

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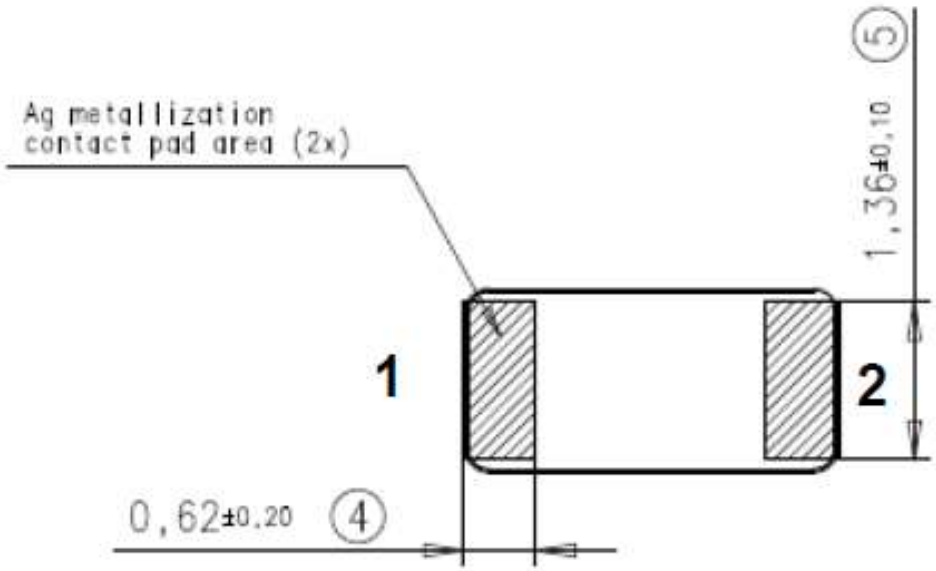

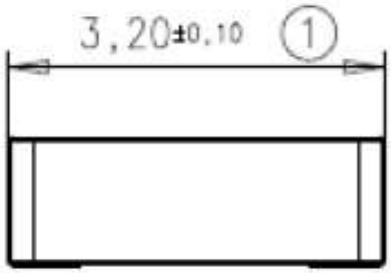

No.	Terminal Name	Terminal Dimensions
1	Feed / GND	0.62 x 1.36 mm
2	Feed / GND	0.62 x 1.36 mm
Antenna is symmetrical. Either of terminals 1 or 2 can be Feed / GND		

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OTHER SPECIFICATIONS

W3020 US-WiMax Antenna PWB Layout Specifications

Ground cleared under antenna, clearance area 4.00 x 6.25 mm

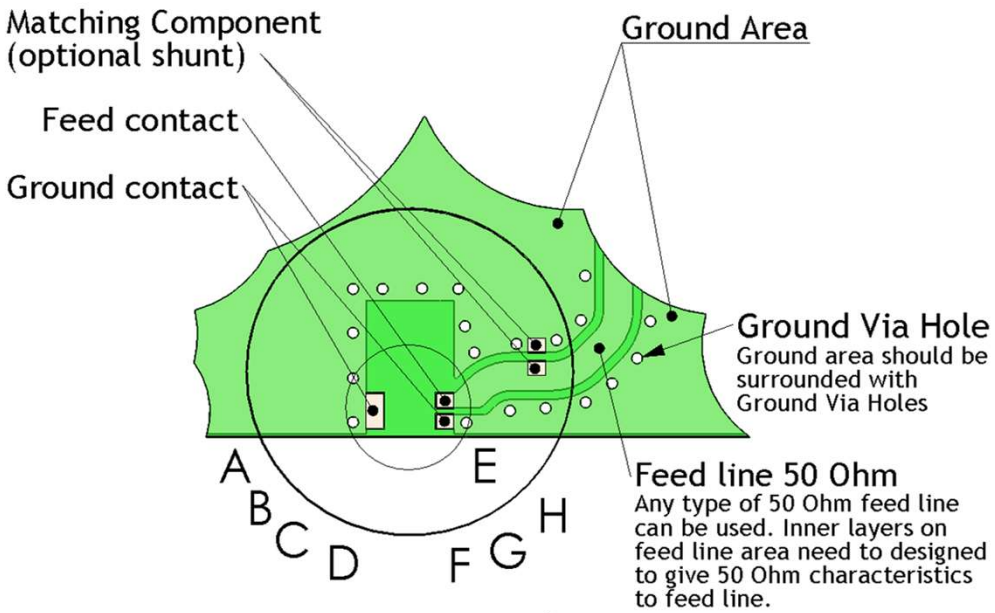
Matching and tuning component value and placement depend on application and surrounding mechanics / materials.

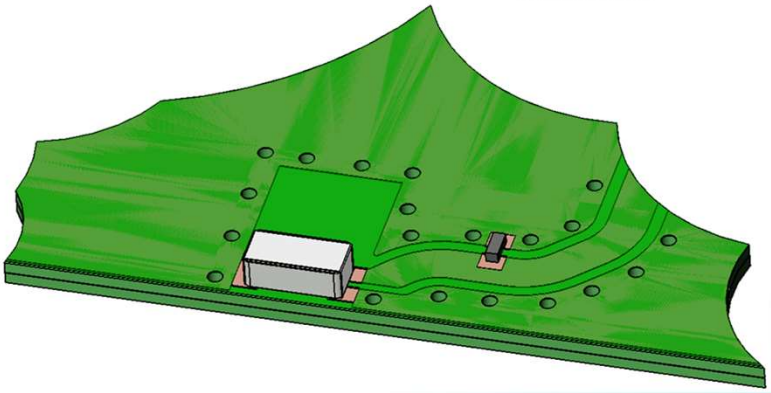
Feed line should be designed to match 50 Ω characteristic impedance, depending on PWB material and thickness.

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

PWB layout for W3020 2.5-2.69GHz US-WiMax Antenna

Note: All dimensions are in metric system.





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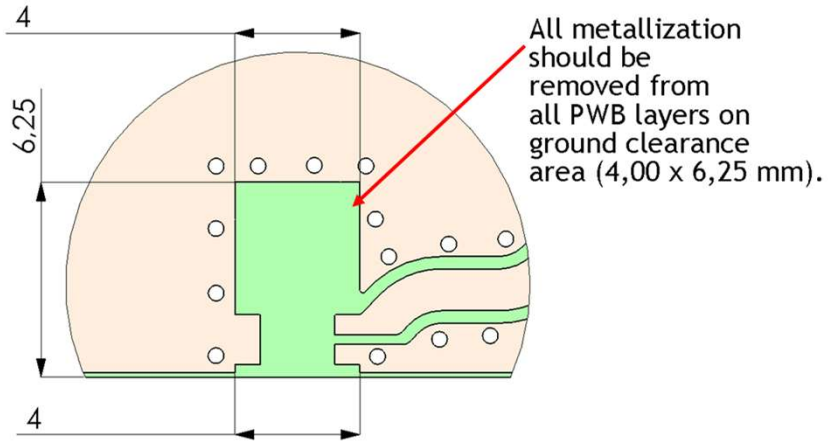
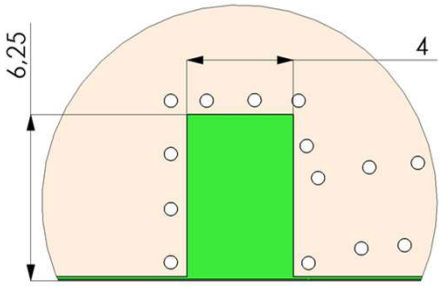
Ground clearance area for W3020 US-WiMax Antenna

Ground clearance area (4,00 x 6,25 mm)



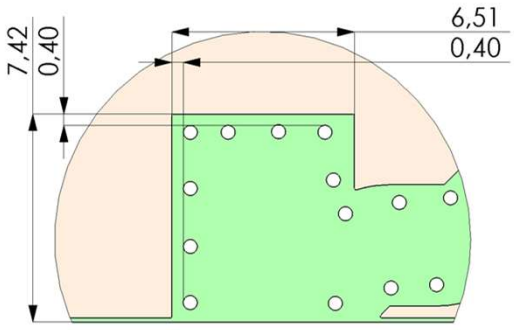
DETAIL A

Opening in bottom/inner ground layers



DETAIL B

Opening in other layers (no ground/ RF)



DETAIL C

Description: 2.5-2.69GHz US-WiMAX

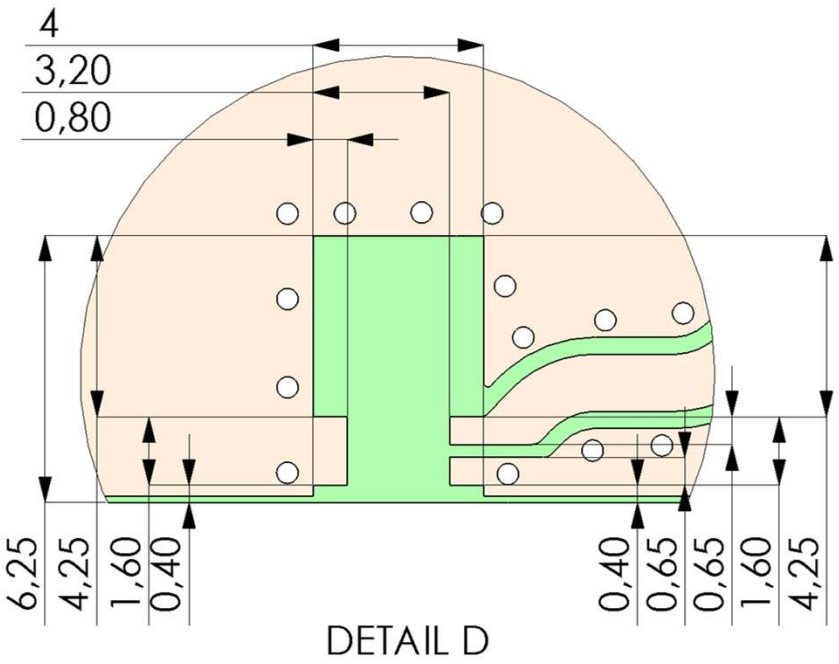
Series: Ceramic Chip

PART NUMBER: W3020

OTHER SPECIFICATIONS

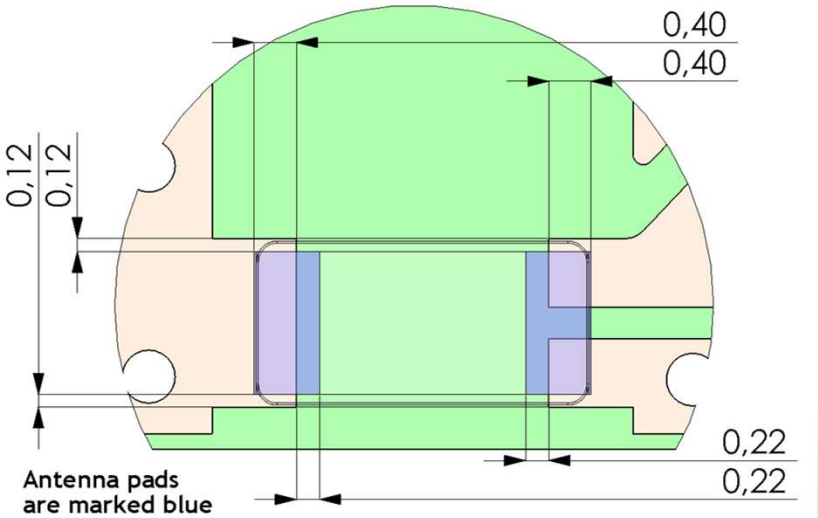
PWB pad dimensions and antenna position for W3020 US-WiMax Antenna

Pad dimensions in top copper



DETAIL D

Antenna position on PWB layout



DETAIL E

Description: 2.5-2.69GHz US-WiMAX

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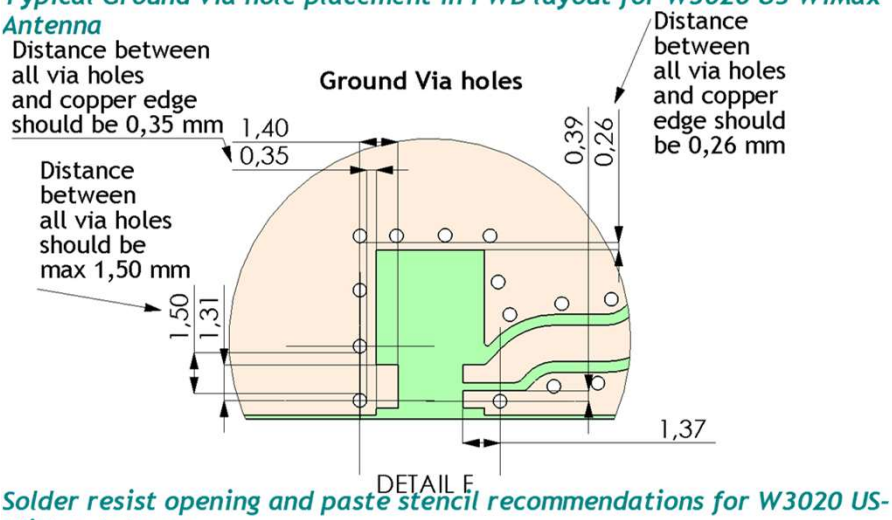
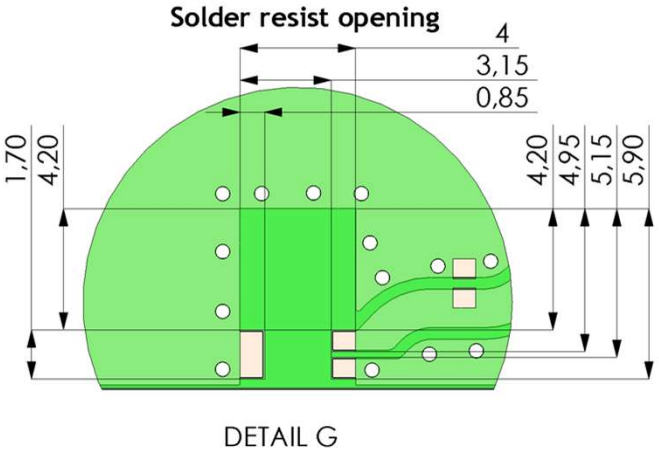
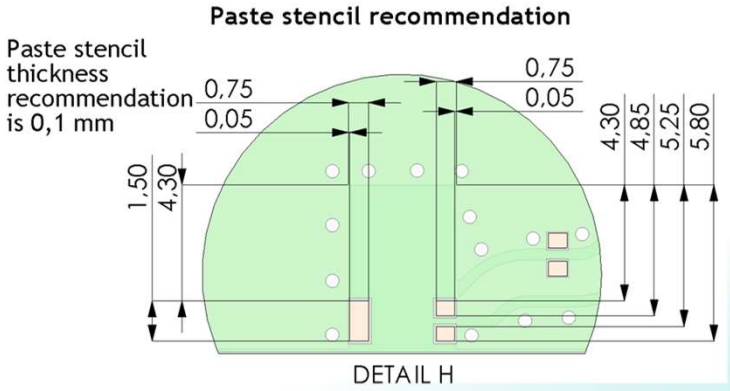
OTHER SPECIFICATIONS

Typical Ground via hole placement in PWB layout for W3020 US-WiMax Antenna



Solder resist opening and paste stencil recommendations for W3020 US-WiMax Antenna





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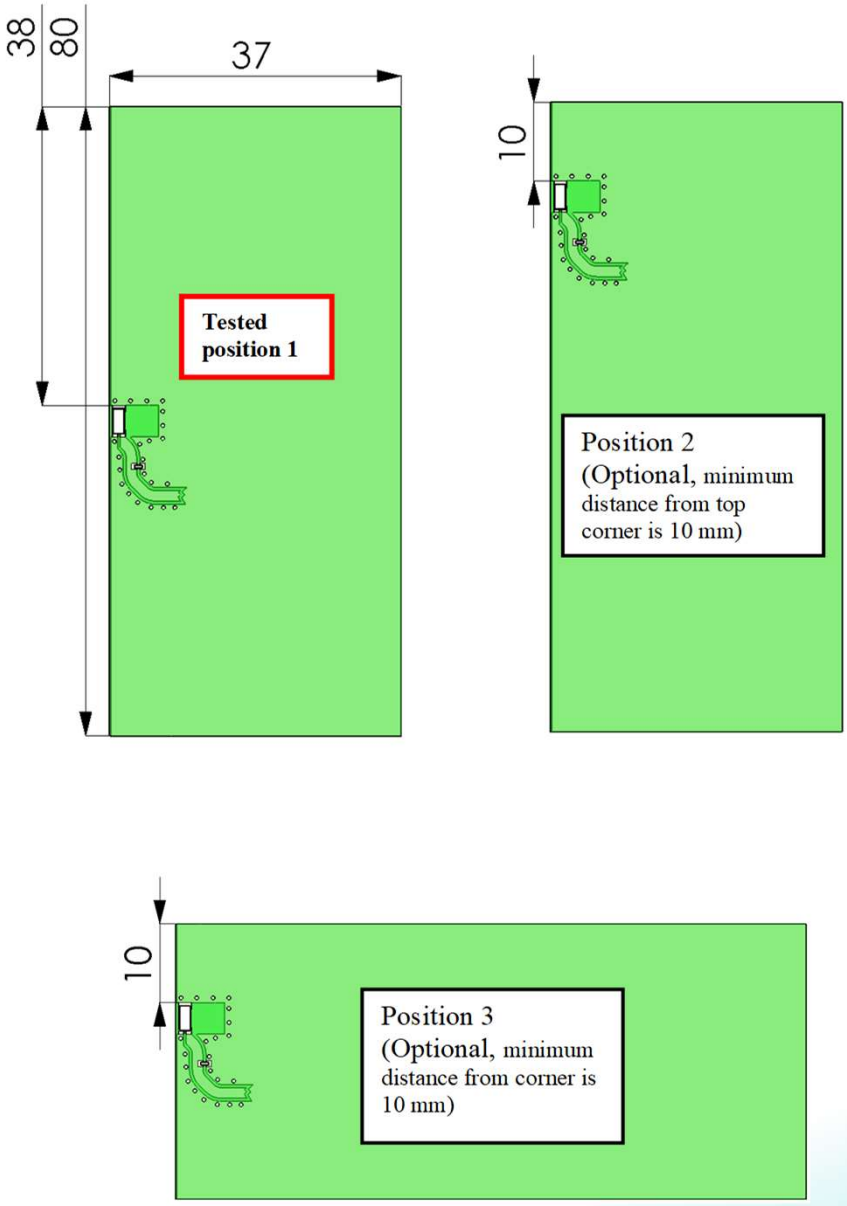
OTHER SPECIFICATIONS

Recommended antenna position on PWB for W3020 US-WiMax Antenna

Pulse 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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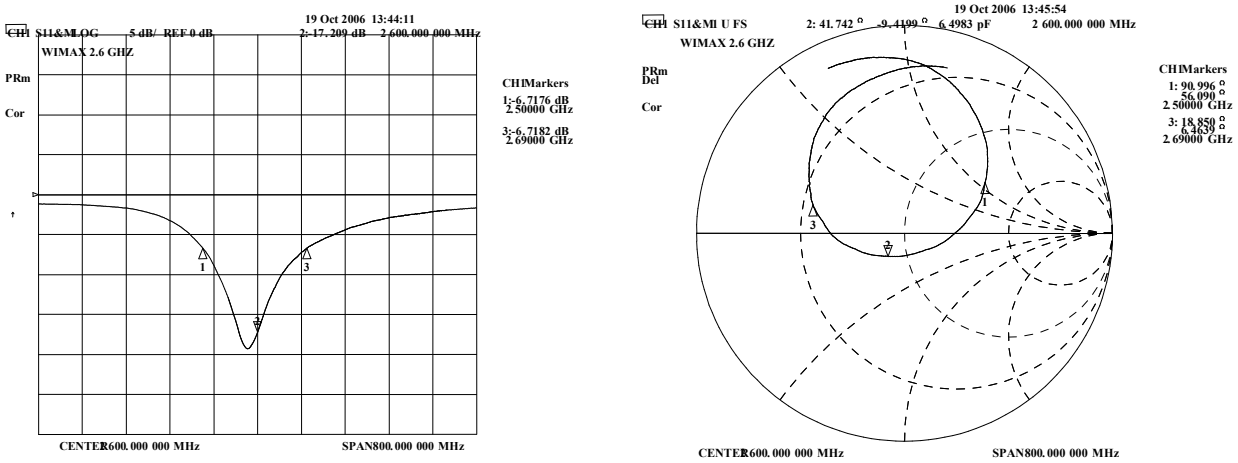
CHARTS

W3020 US-WiMax 2.5-2.69GHz Test Set Up and Measured Performance

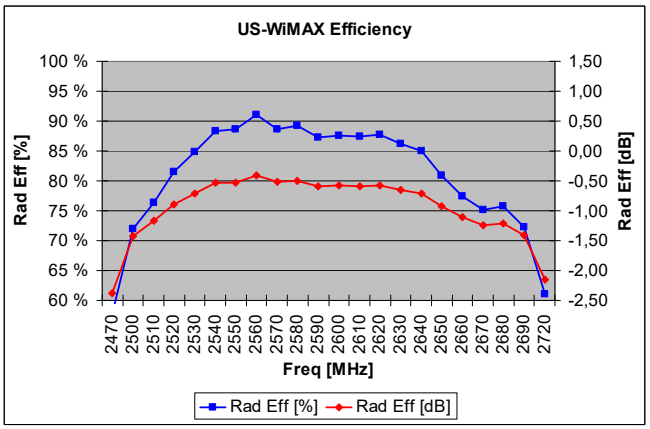
Ground cleared under antenna, clearance area 4.00 x 6.25 mm

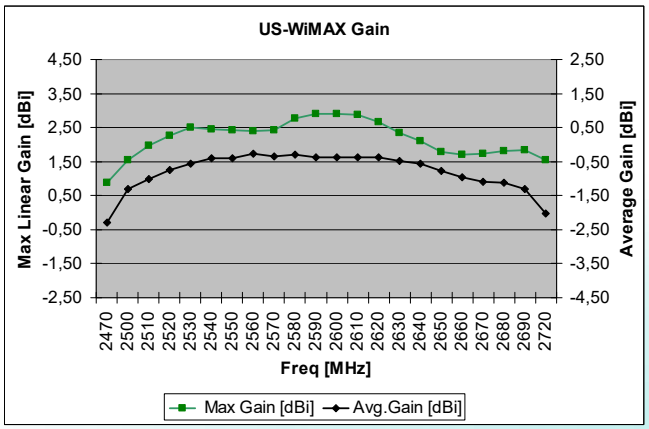
Typical Electrical Characteristics (T=25 ℃)

Measured on the 80 x 37mm test board with matching circuit (shunt 1.0 pF) and in antenna position 1 on PWB layout, see page 9.



Typical Return Loss S11/ impedance, free space efficiency and gain





In the effort to improve our products, we reserve the right to make changes judged to be necessary.

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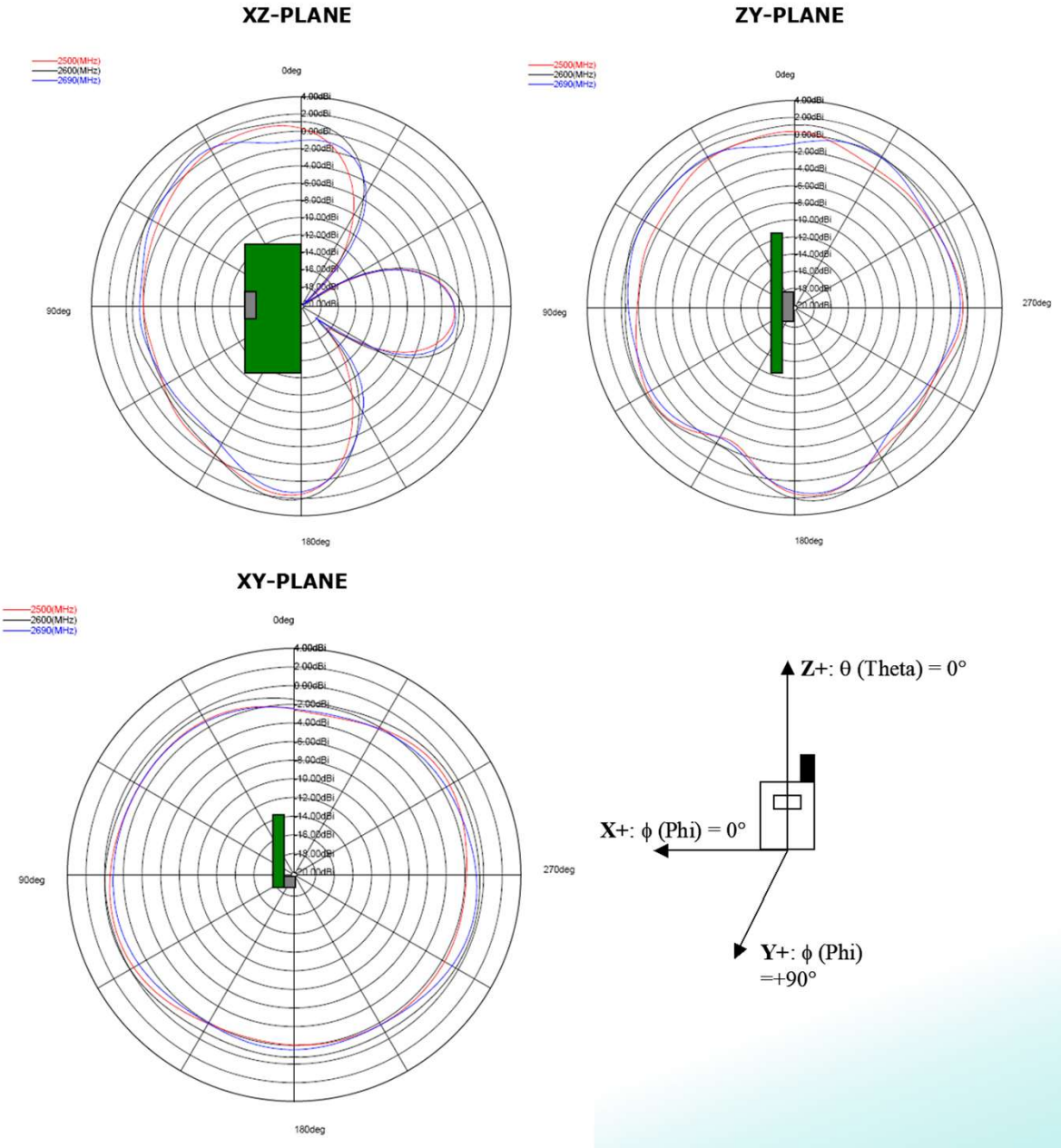
CHARTS

Typical Free Space Radiation Patterns



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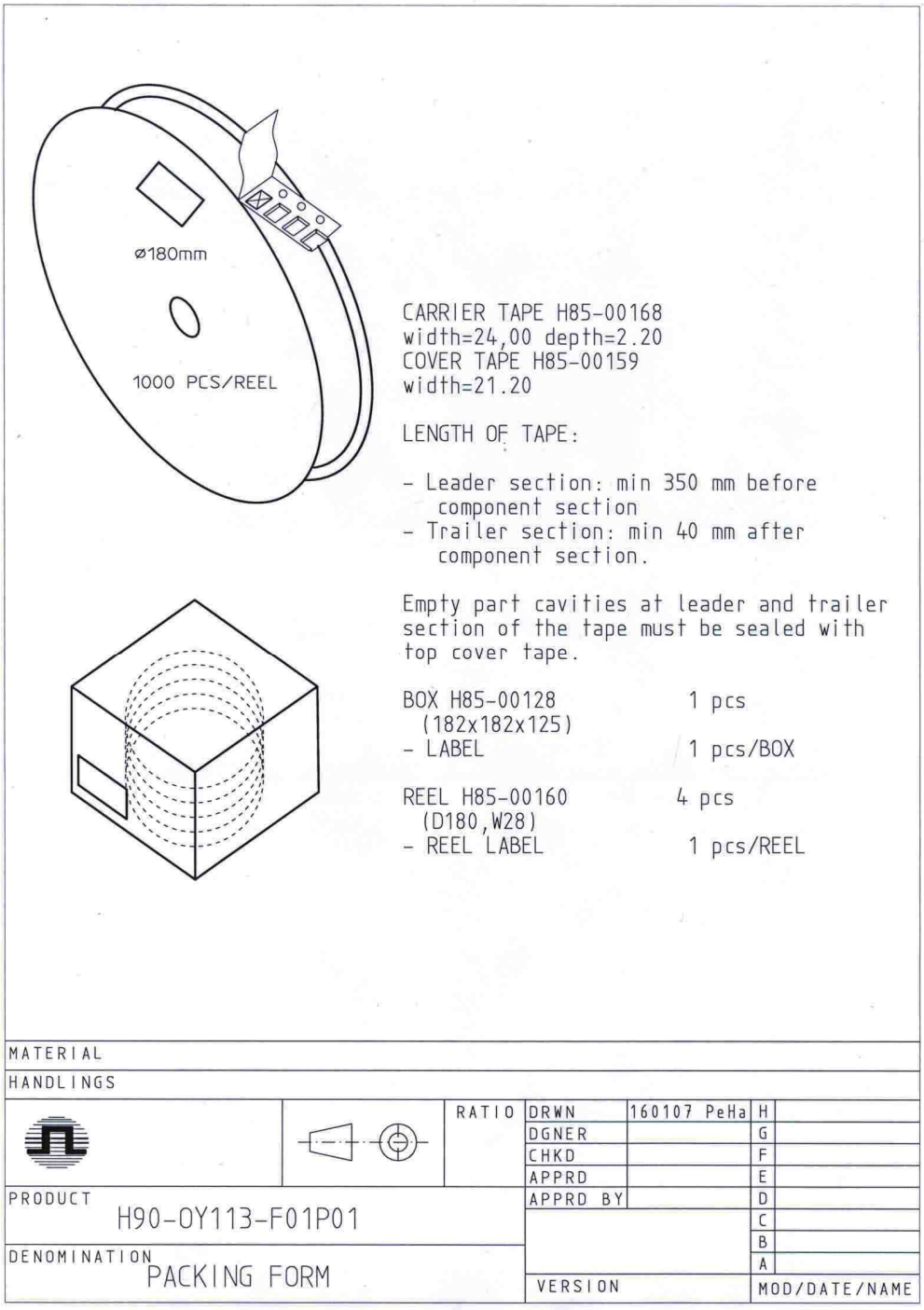
PACKAGING



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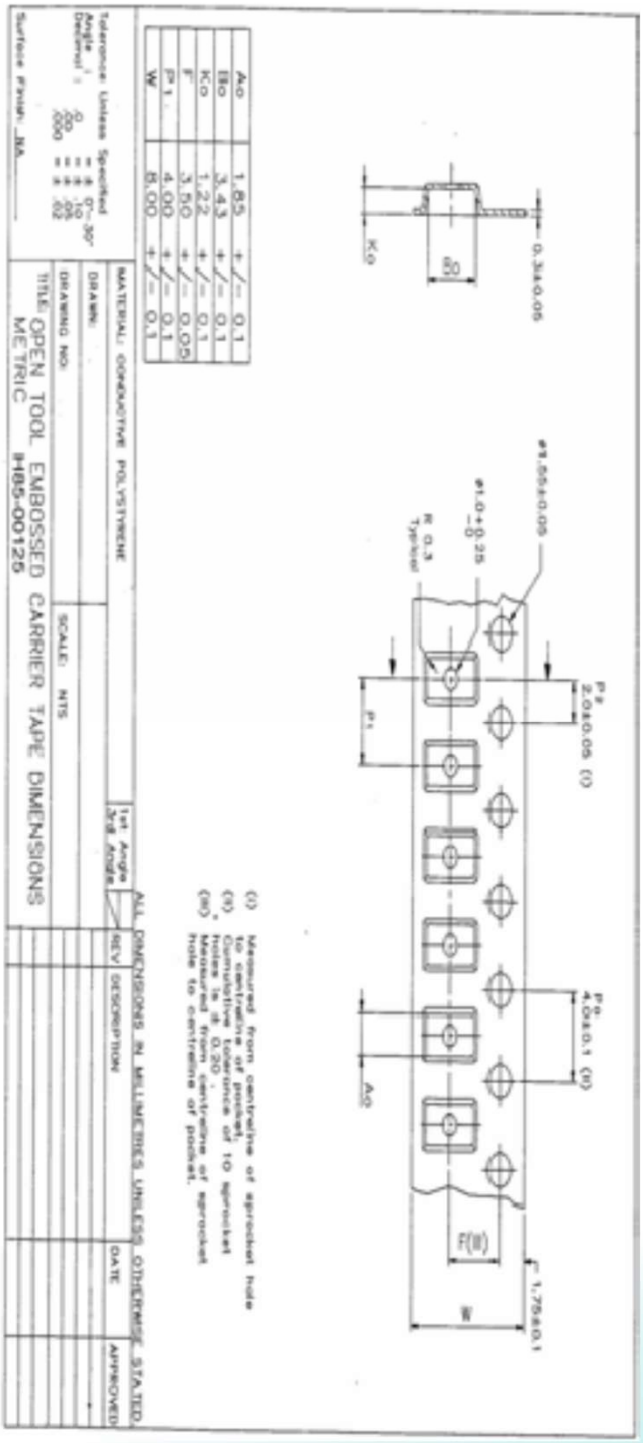

Issue: 1742

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