

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

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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/s ²
Shocks	0.5 m/s
Salt mist	96 hours

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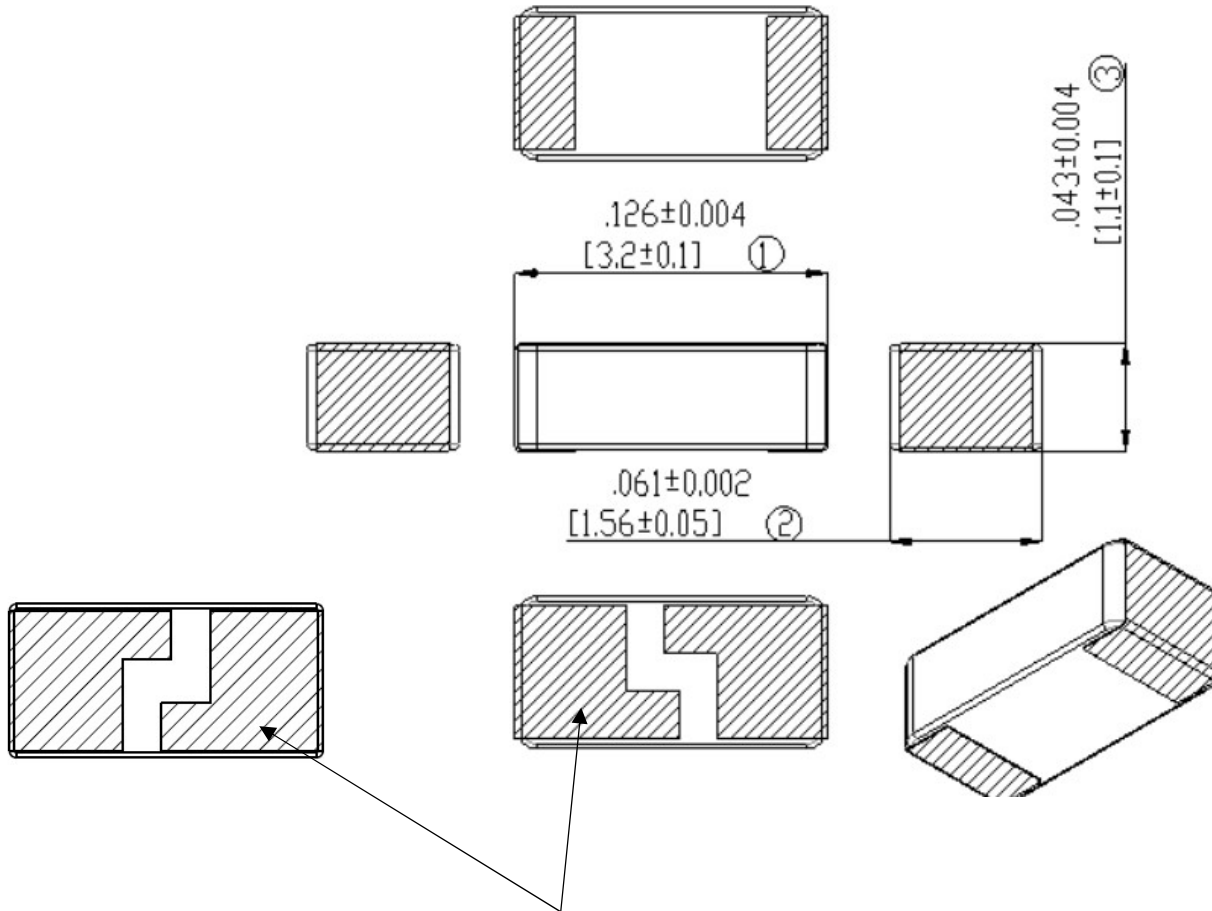
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MECHANICAL DRAWING AND TERMINAL CONFIGURATION



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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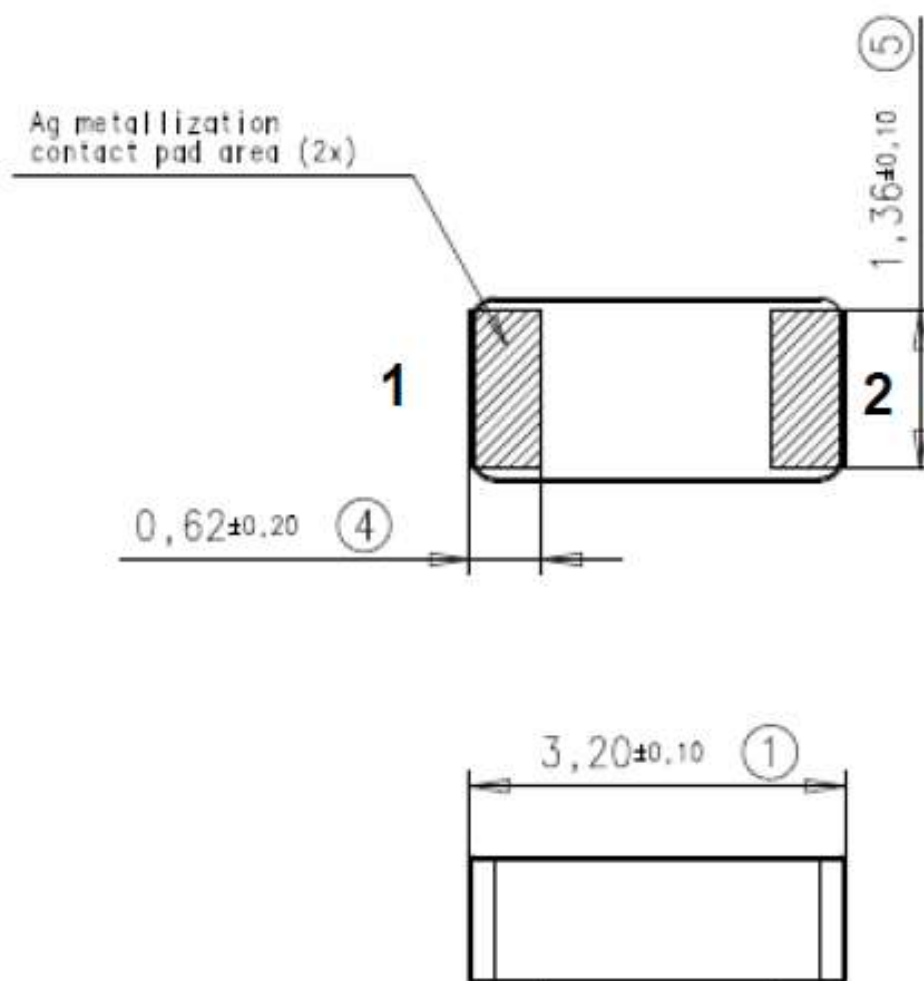
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MECHANICAL DRAWING AND TERMINAL CONFIGURATION



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		

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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**

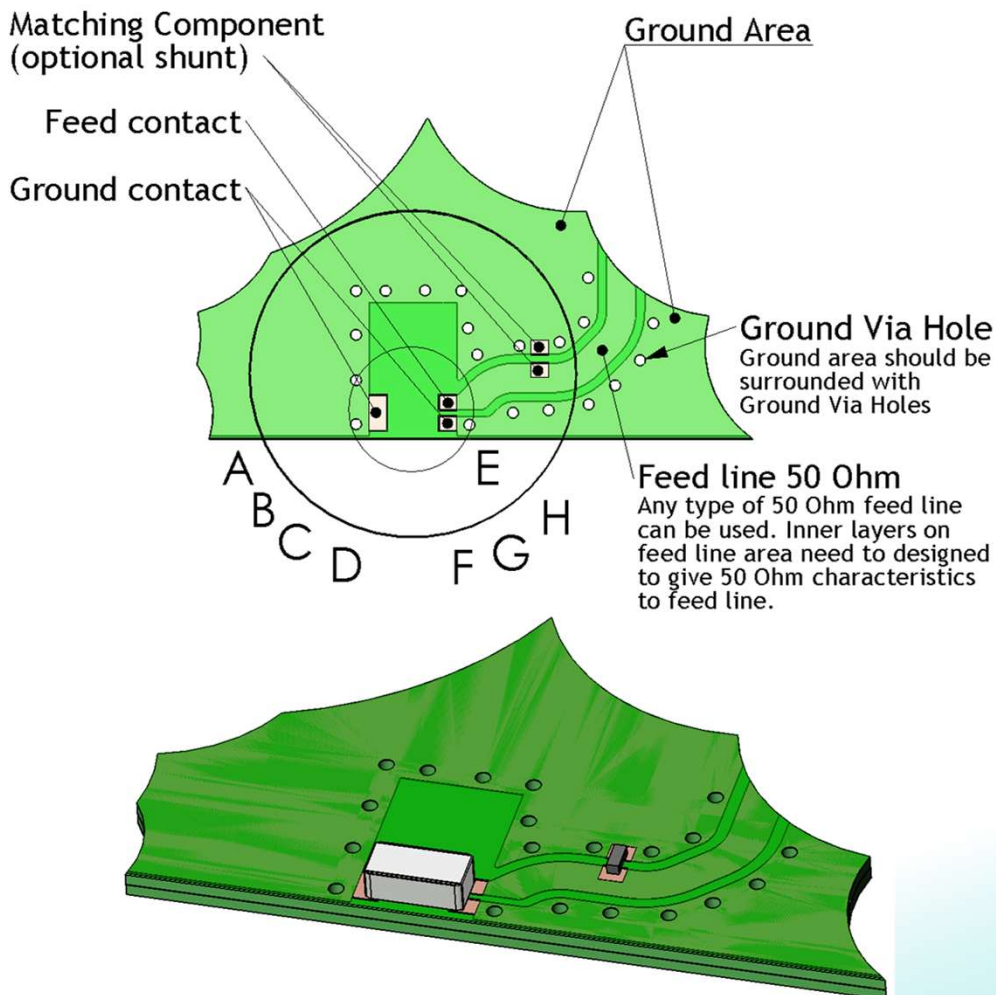
Matching and tuning component value and placement depend on application and surrounding mechanics / materials.

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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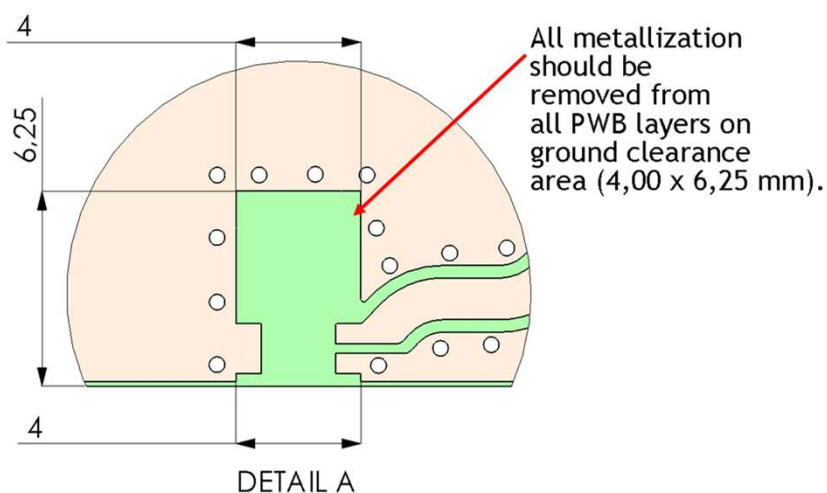
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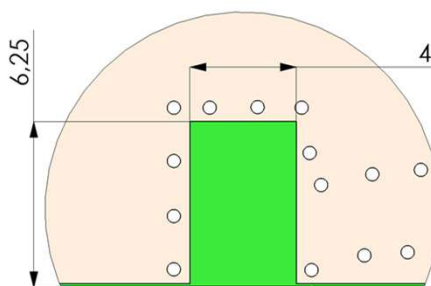
OTHER SPECIFICATIONS

Ground clearance area for W3020 US-WiMax Antenna

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

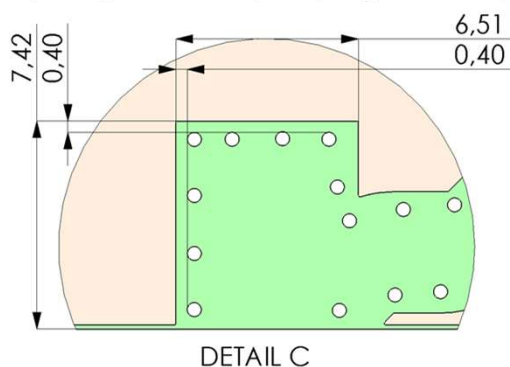


Opening in bottom/inner ground layers



Opening in other layers (no ground/ RF)

DETAIL B



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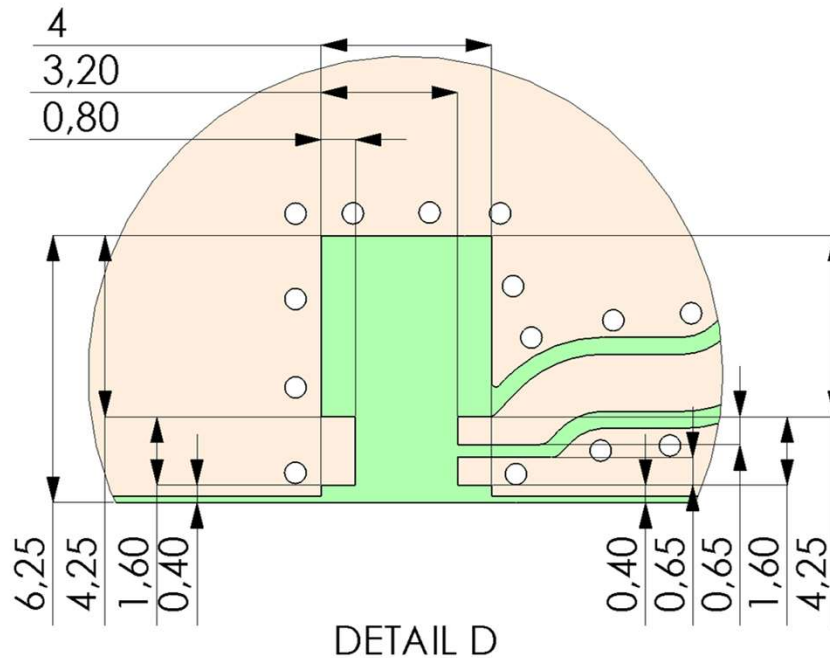
Series: Ceramic Chip

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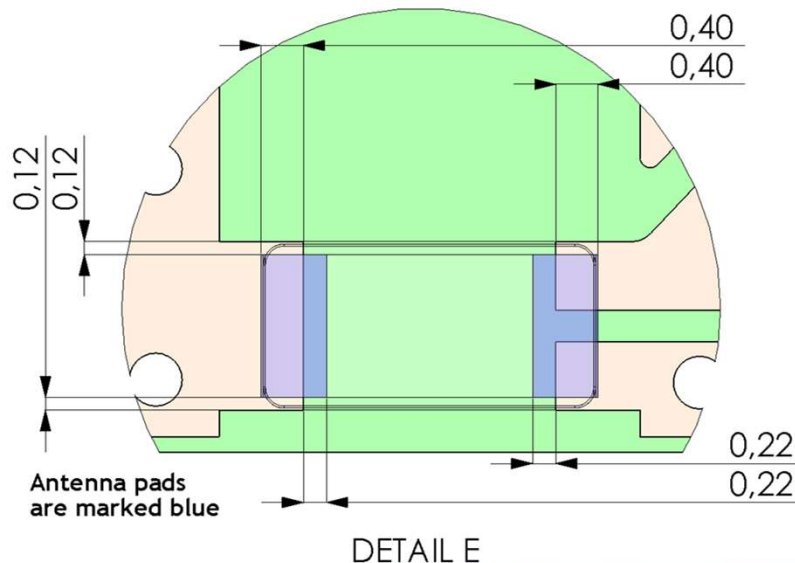
OTHER SPECIFICATIONS

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

Pad dimensions in top copper



Antenna position on PWB layout



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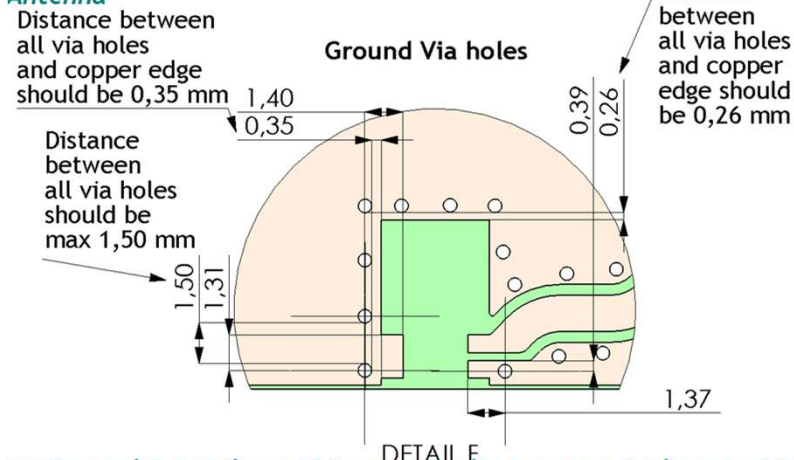
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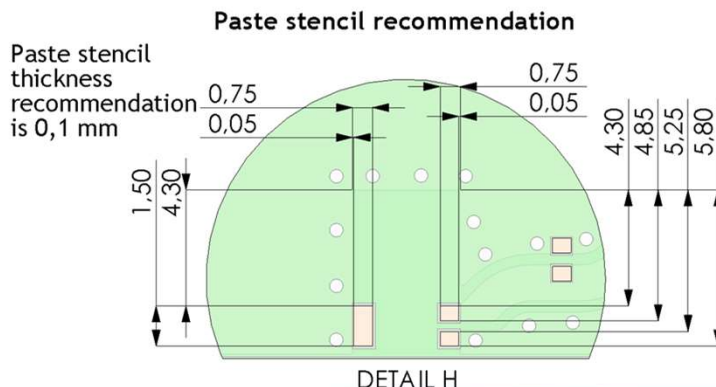
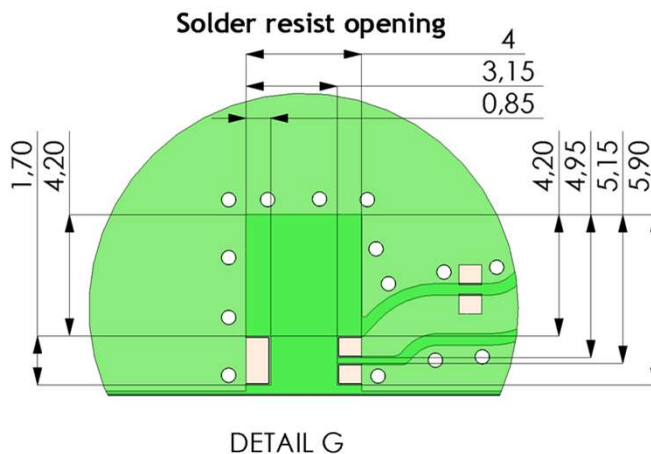
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OTHER SPECIFICATIONS

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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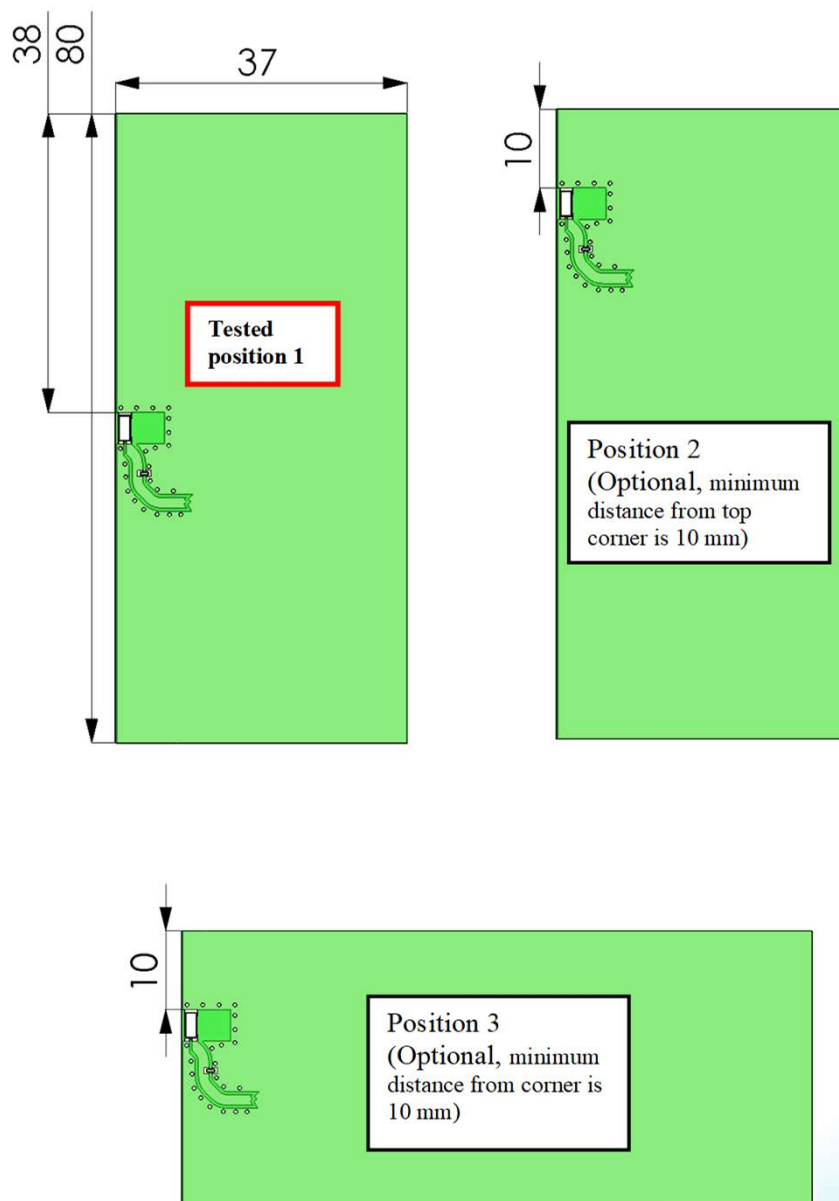
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OTHER SPECIFICATIONS

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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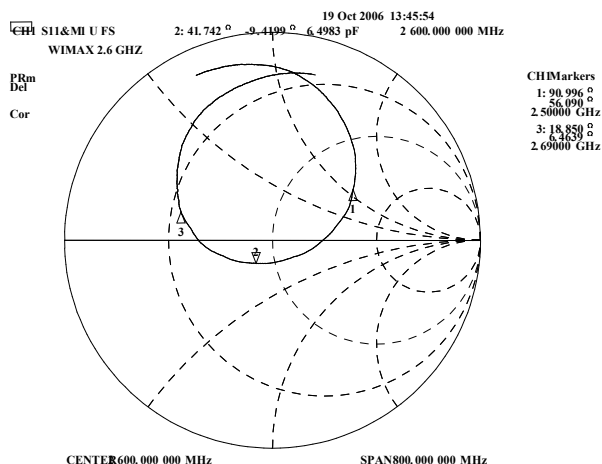
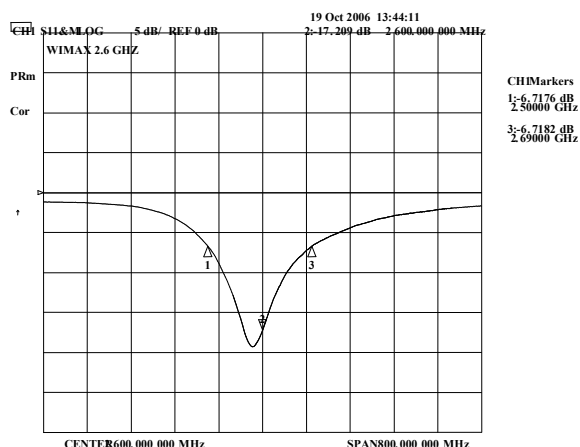
CHARTS

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

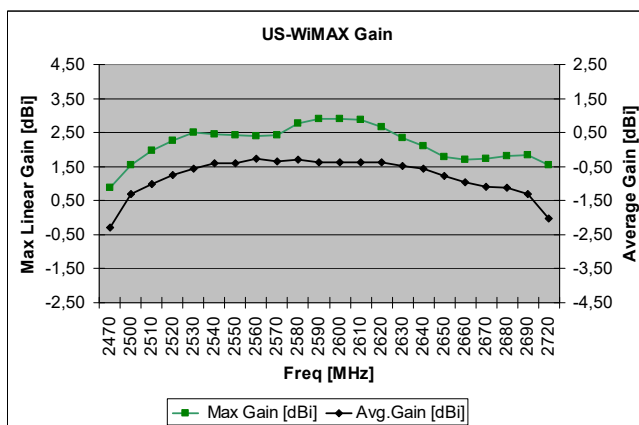
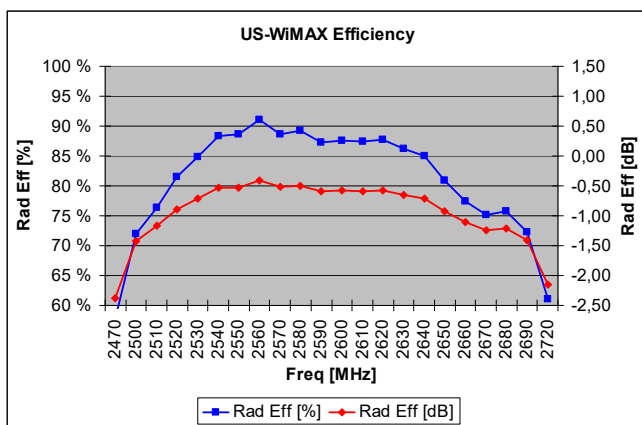
Ground cleared under antenna, clearance area 4.00 x 6.25 mm

Typical Electrical Characteristics (T=25 °C)

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



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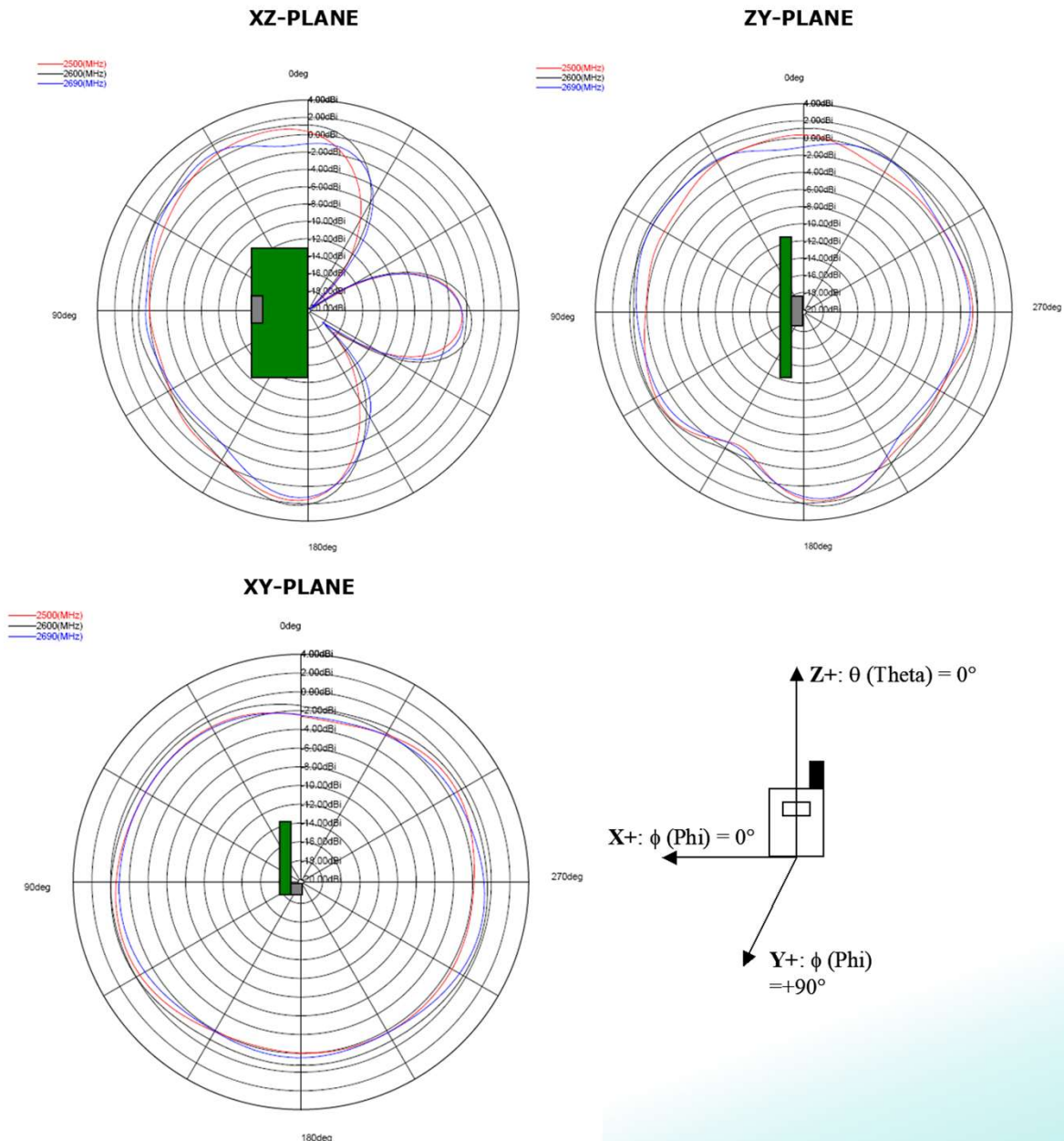
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CHARTS

Typical Free Space Radiation Patterns



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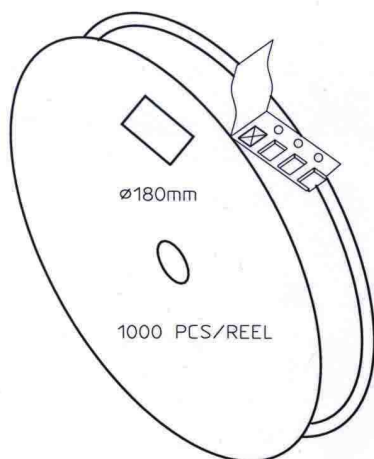
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PACKAGING

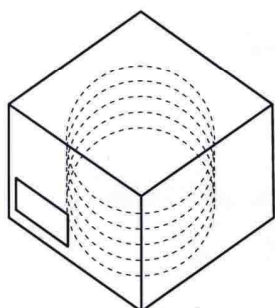


CARRIER TAPE H85-00168
width=24,00 depth=2.20
COVER TAPE H85-00159
width=21.20

LENGTH OF TAPE:

- Leader section: min 350 mm before component section
- Trailer section: min 40 mm after component section.

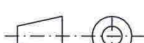
Empty part cavities at leader and trailer section of the tape must be sealed with top cover tape.



BOX H85-00128 1 pcs
(182x182x125)
- LABEL 1 pcs/BOX
REEL H85-00160 4 pcs
(D180, W28)
- REEL LABEL 1 pcs/REEL

MATERIAL

HANDLINGS

		RATIO	DRWN	160107 PeHa	H	
			DGNER		G	
			CHKD		F	
			APPRD		E	
			APPRD BY		D	
PRODUCT						
H90-OY113-F01P01						
DENOMINATION						
PACKING FORM						
			VERSION		MOD/DATE/NAME	

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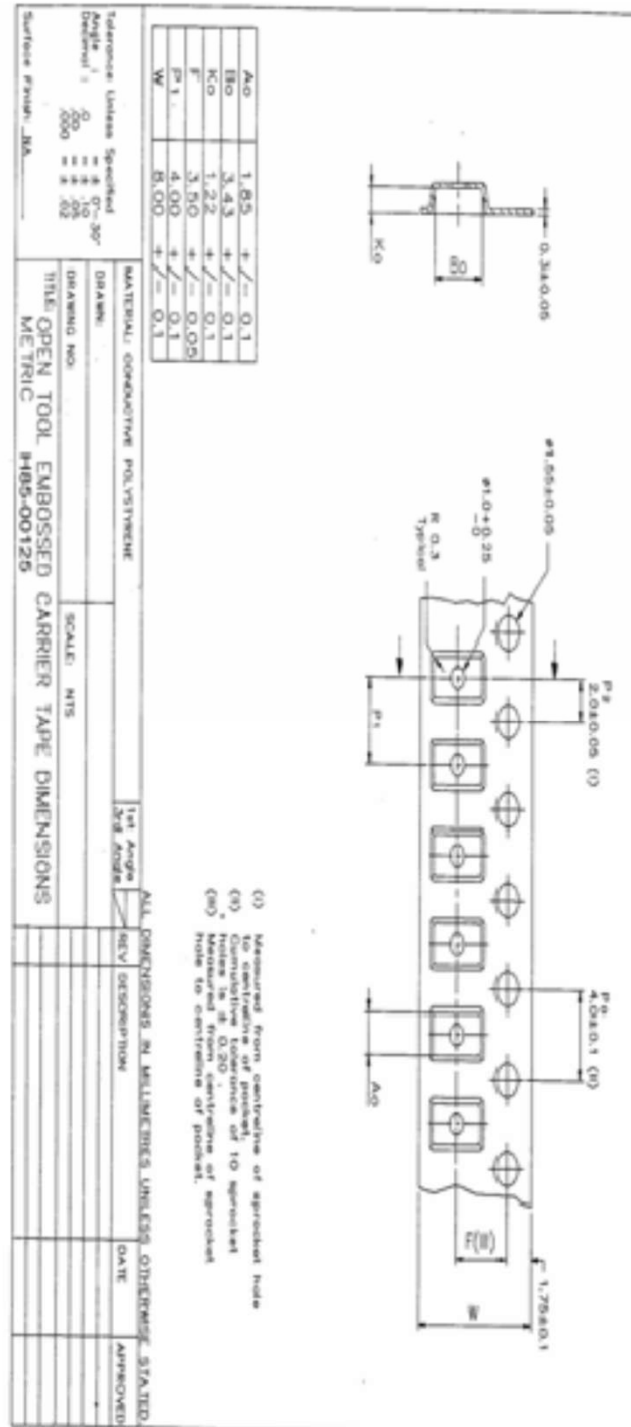
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