

**Description: 40404+50508 GNSS & L2L5
Stack Patch Antenna**

PART NUMBER: ANT4050BS0WTGN25S

Features:

- Size : Stack 40x40x4+50x50x8mm
- High radiation efficiency
- Combining GNSS and L5L2 bands
- Pin-solder process
- RoHS compliant



Applications:

- GPS system
- Navigation device
- Telematics box
- Fleet management

All dimensions are in mm / inches

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

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TECHNICAL DATA SHEET

Description: 40404+50508 GNSS & L2L5
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ELECTRICAL SPECIFICATIONS

Working Frequency

L5 : 1176 MHz
L2 : 1227 MHz
GNSS-Beidou : 1561 MHz
GNSS-GPS : 1575 MHz
GNSS-Glonass : 1602 MHz

Gain(Peak)

L5 : 1.4 dBic
L2 : 1.1 dBic
GNSS-Beidou : 4.7 dBic
GNSS-GPS : 5.4 dBic
GNSS-Glonass : 4.5 dBic

Gain(Average)

L5 : -2.55 dB
L2 : -3.45 dB
GNSS-Beidou : -0.80 dB
GNSS-GPS : -0.52 dB
GNSS-Glonass : -1.53 dB

Polarization

RHCP

Axis Ratio

L5 \leq 4 dB
L2 \leq 4 dB
GNSS \leq 3 dB

Impedance

50 Ω

Operating Temperature

-40°C ~ 85°C

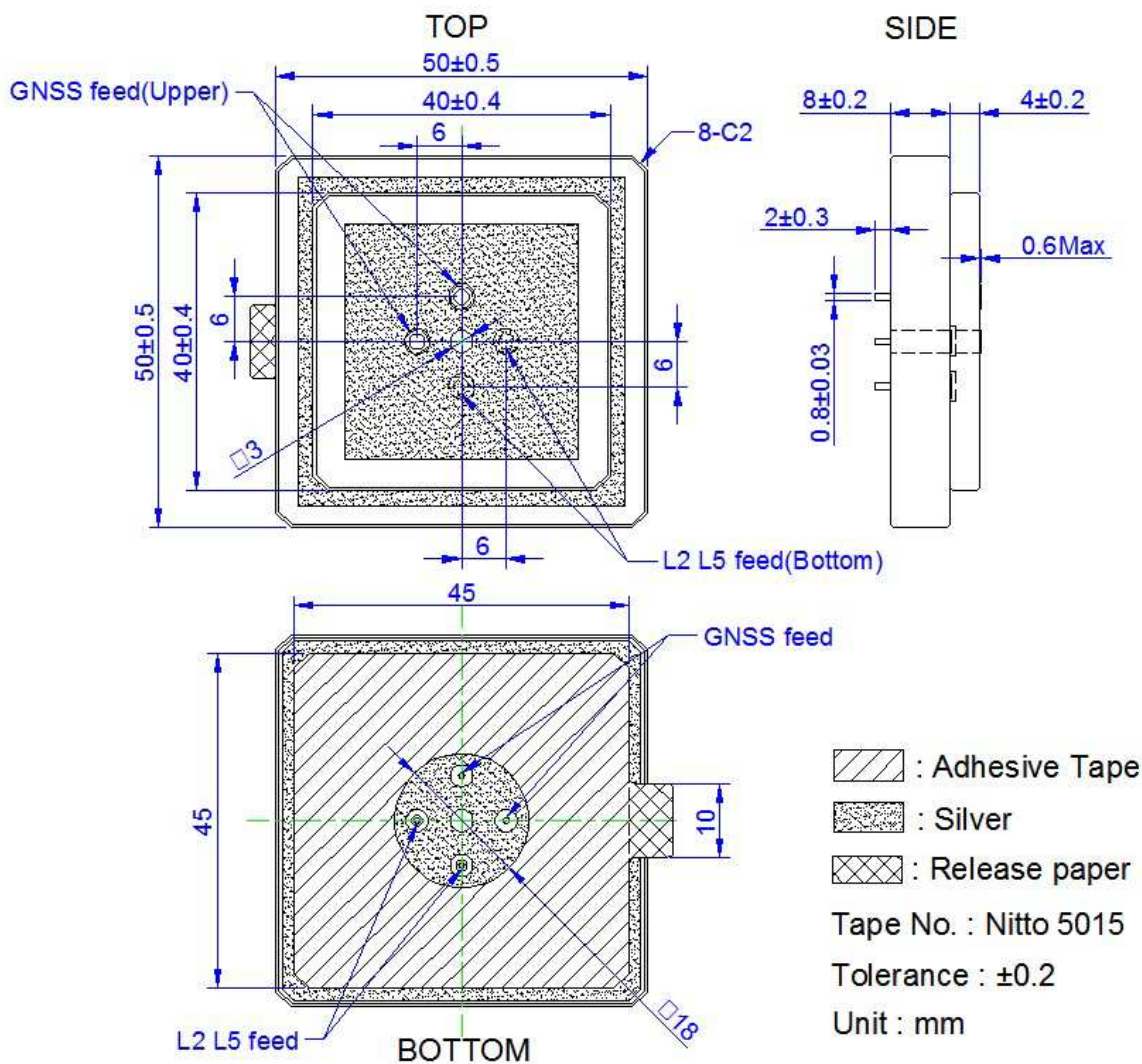
NOTE

1. Based on 70×70 mm² square ground plane and with 3dB Hybrid Coupler.
2. Centre frequency will be offset to working frequency while changes of customer's housing and ground plane.

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MECHANICAL DRAWING



Position	Dimension	Working Band	Feed
Upper	40x40x4 mm	GNSS (1561 + 1575 + 1602MHz)	Dual Feed
Bottom	50x50x8 mm	L5 & L2 (1176 + 1227MHz)	Dual Feed

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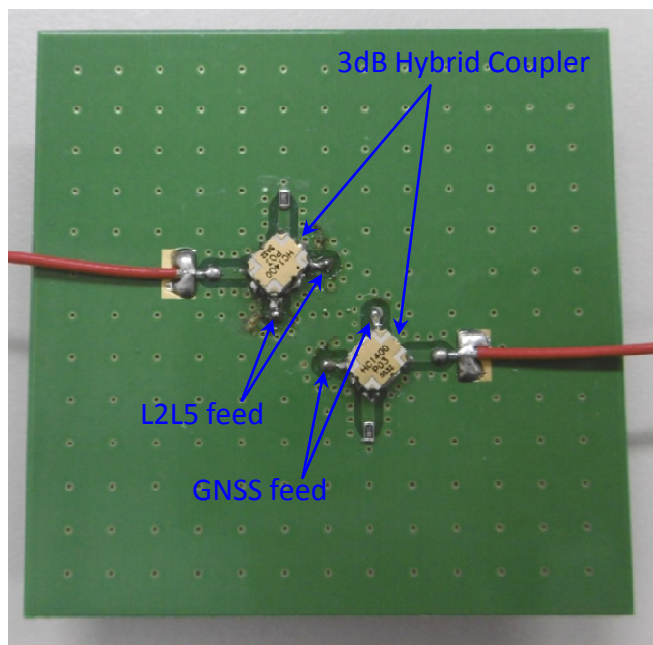
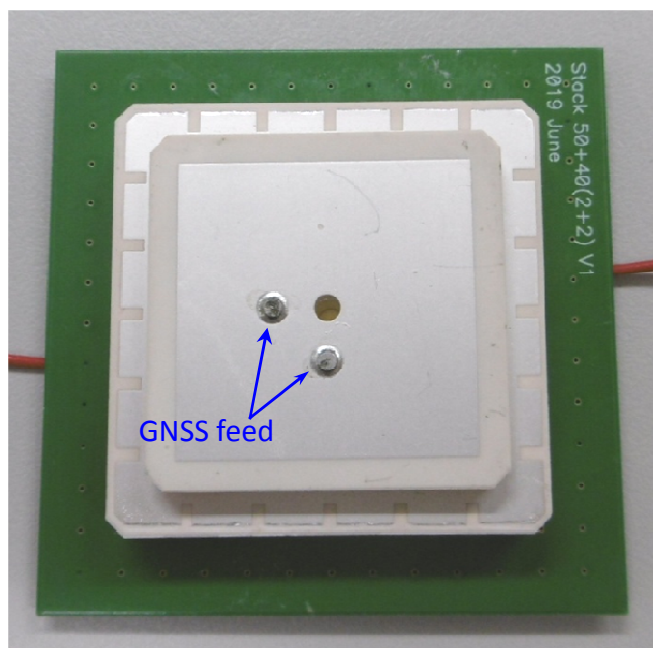
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REFERENCE DESIGN OF EVALUATION BOARD



Ground Plane Size: 70x70 mm²

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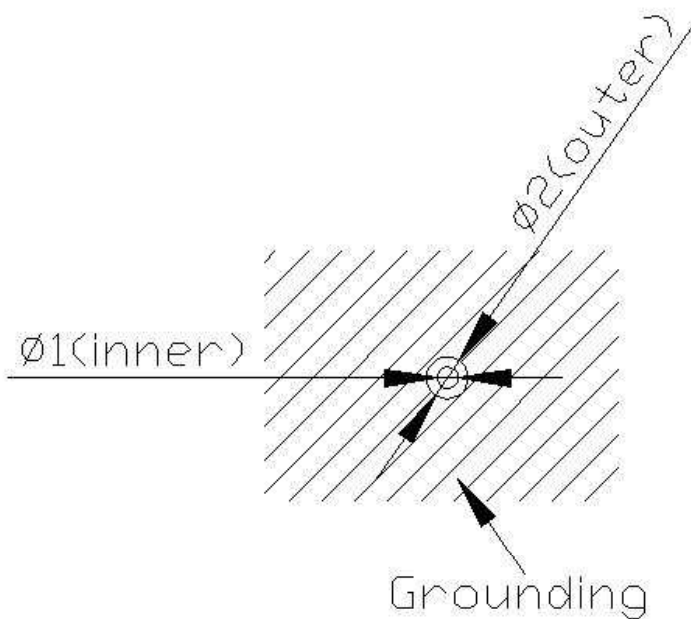
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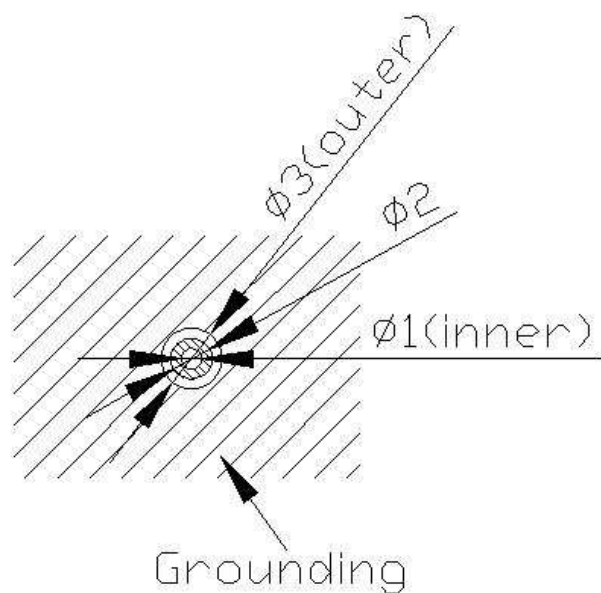
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FOOTPRINT

Top Layer



Bottom Layer



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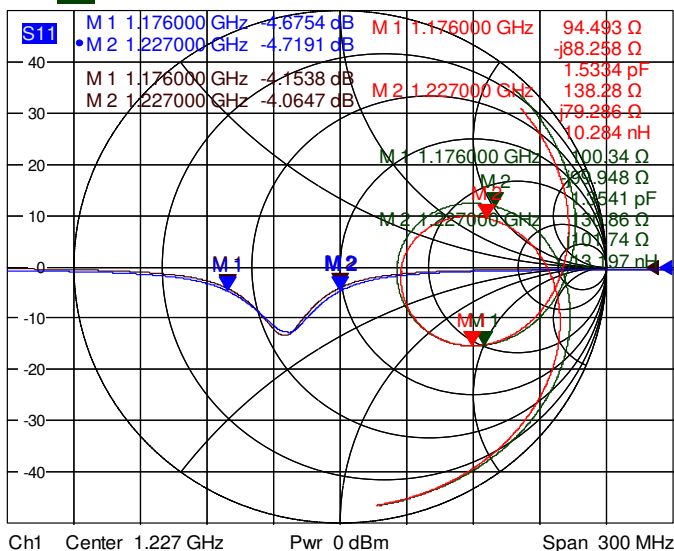
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RETURN LOSS

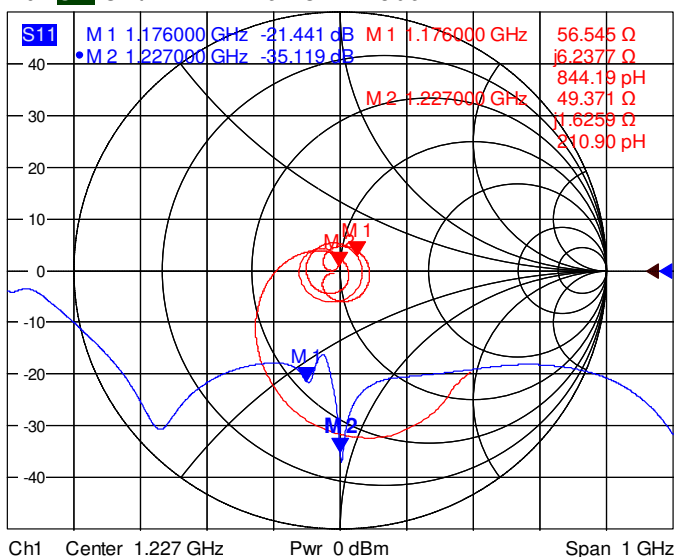
L5 L2

Trc1 **S11** dB Mag 10 dB / Ref 0 dB Cal int 1 of 1 (Max)
 Trc2 **S11** Smith Ref 1 U Cal int
 Trc3 **S22** dB Mag 10 dB / Ref 0 dB Cal int
 Trc4 **S22** Smith Ref 1 U Cal int



L5 L2 (with 3dB Hybrid Coupler)

Trc1 **S11** dB Mag 10 dB / Ref 0 dB Cal int 1 of 1 (Max)
 Trc2 **S11** Smith Ref 1 U Cal int
 Trc3 **S22** dB Mag 10 dB / Ref 0 dB Invisible
 Trc4 **S22** Smith Ref 1 U Invisible



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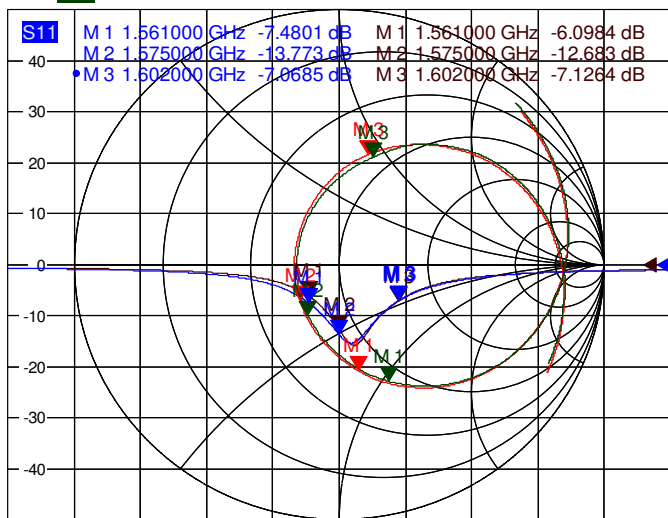
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RETURN LOSS

GNSS

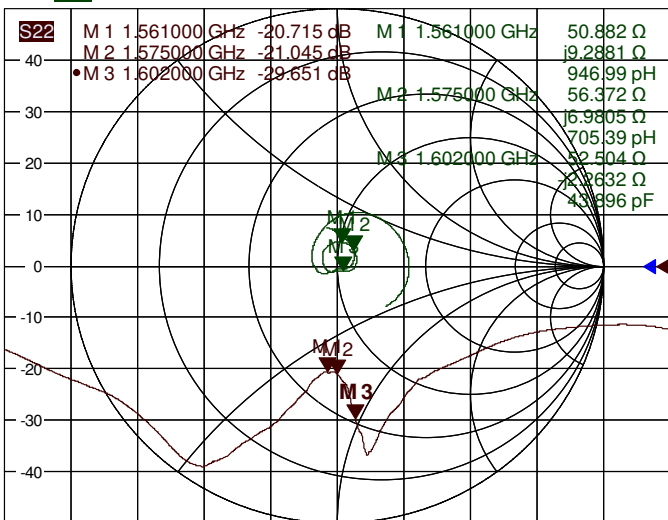
Trc1 **S11** dB Mag 10 dB / Ref 0 dB Cal int 1
 Trc2 **S11** Smith Ref 1 U Cal int
 Trc3 **S22** dB Mag 10 dB / Ref 0 dB Cal int
 Trc4 **S22** Smith Ref 1 U Cal int



Ch1 Center 1.575 GHz Pwr 0 dBm Span 300 MHz

GNSS (with 3dB Hybrid Coupler)

Trc1 **S11** dB Mag 10 dB / Ref 0 dB Invisible 1 of 1 (Max)
 Trc2 **S11** Smith Ref 1 U Invisible
 Trc3 **S22** dB Mag 10 dB / Ref 0 dB Cal int
 Trc4 **S22** Smith Ref 1 U Cal int



Ch1 Center 1.575 GHz Pwr 0 dBm Span 1 GHz

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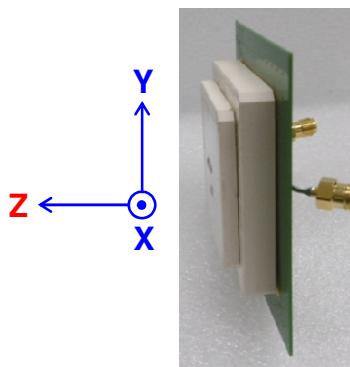
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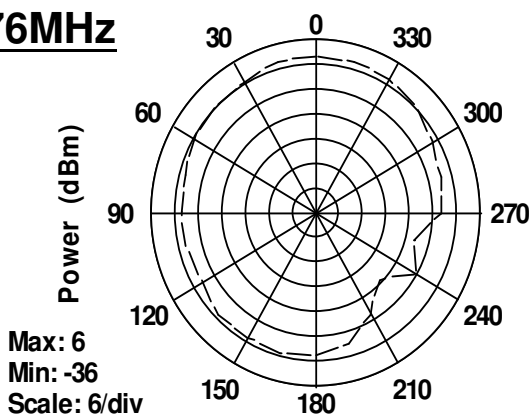
PART NUMBER: ANT4050BS0WTGN25S

RADIATION PATTERN

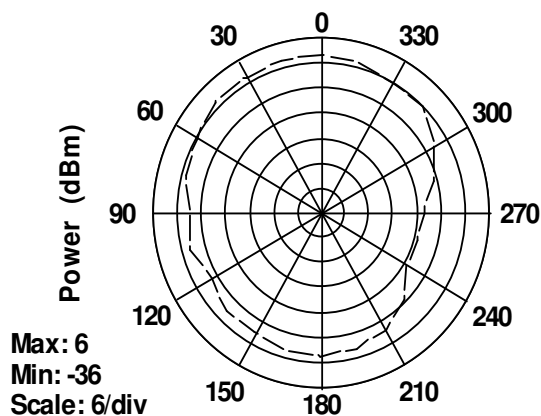


Evaluation board and XYZ direction

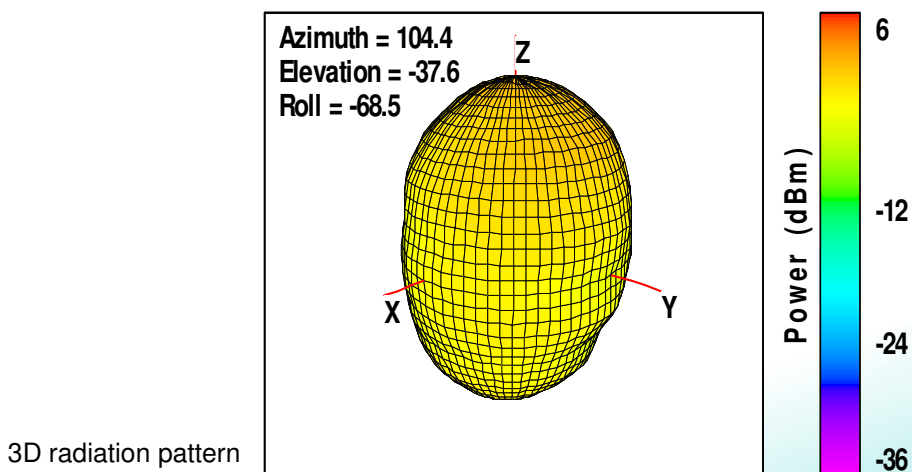
L5 – 1176MHz



2D x-z plane pattern



2D y-z plane pattern



3D radiation pattern

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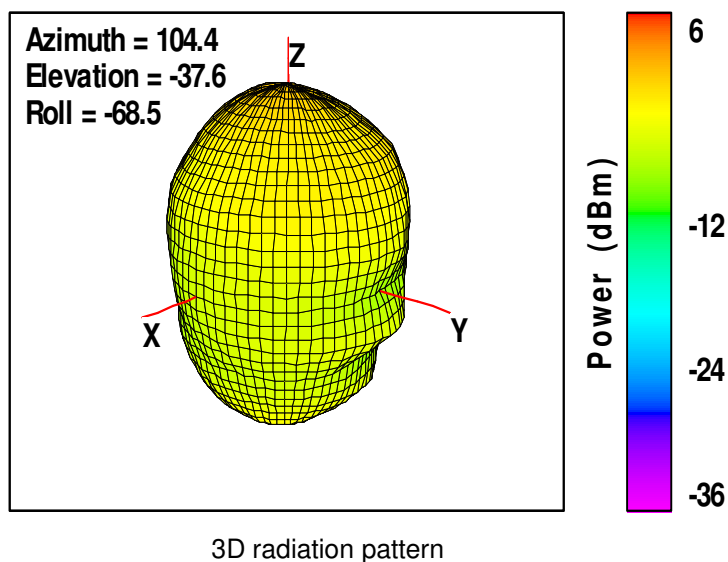
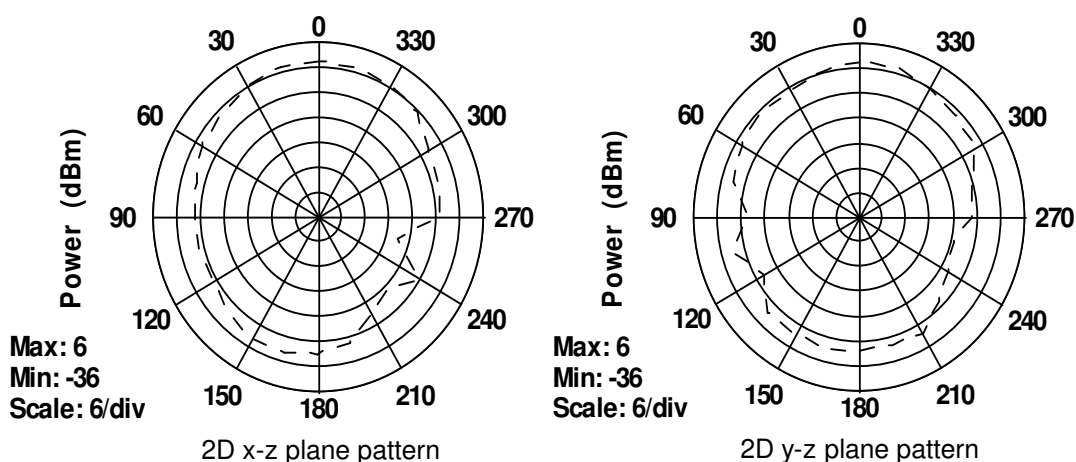
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RADIATION PATTERN

L2 – 1227MHz



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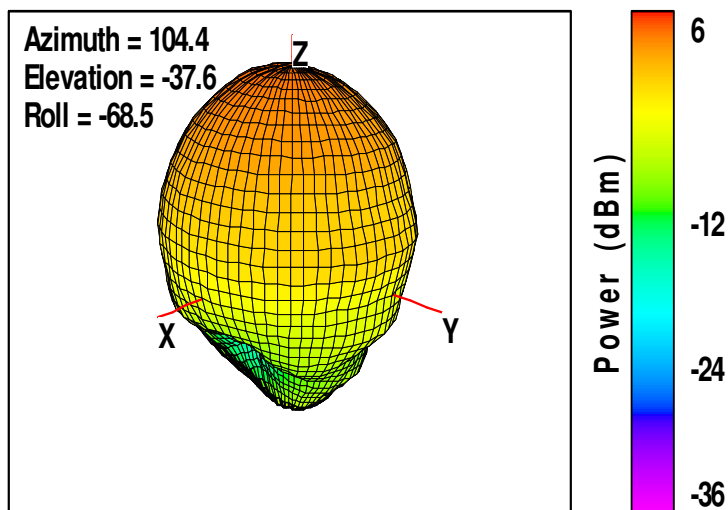
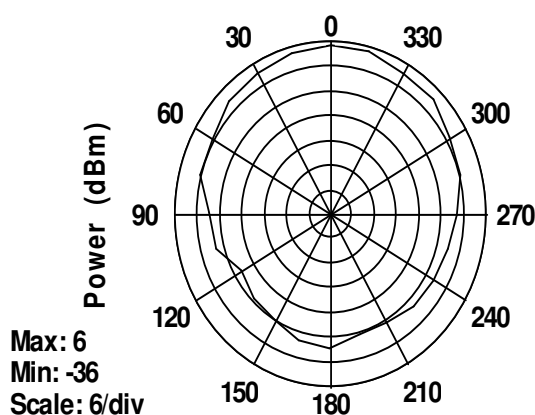
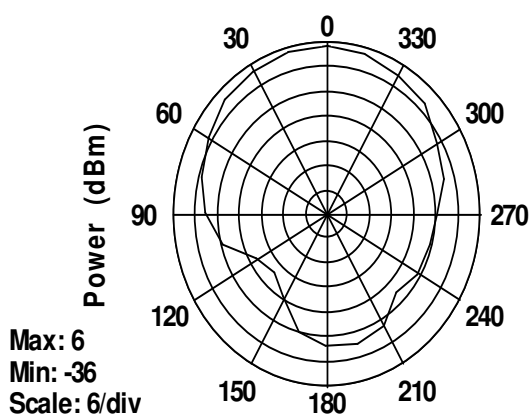
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RADIATION PATTERN

GNSS – 1561MHz



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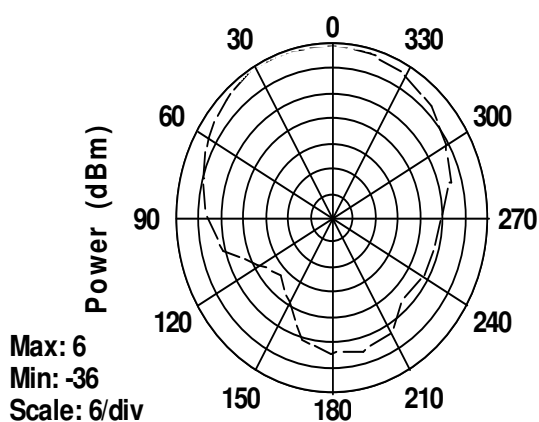
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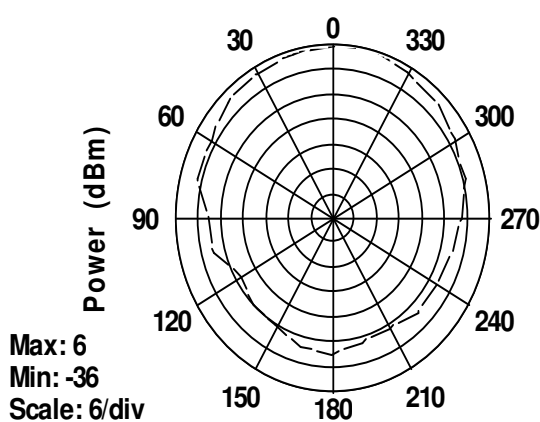
PART NUMBER: ANT4050BS0WTGN25S

RADIATION PATTERN

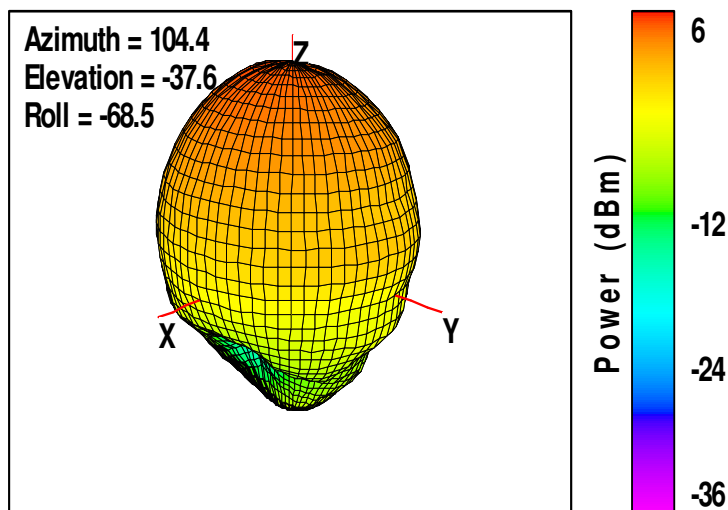
GNSS – 1575MHz



2D x-z plane pattern



2D y-z plane pattern



3D radiation pattern

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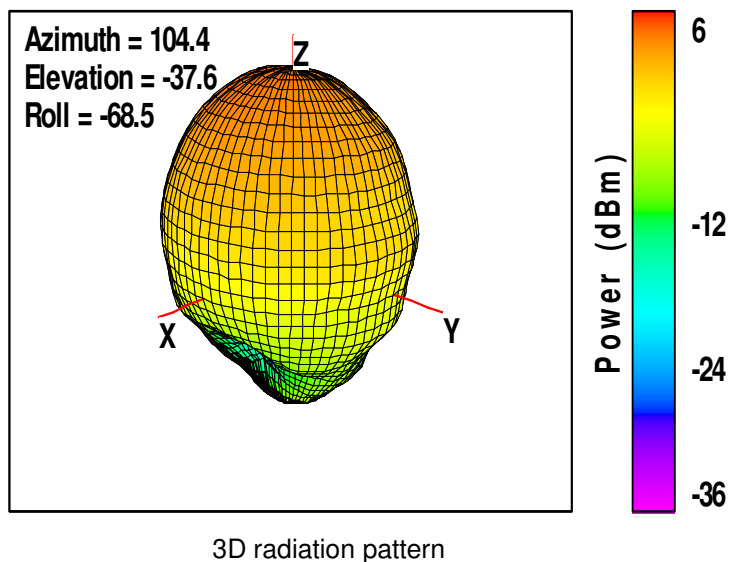
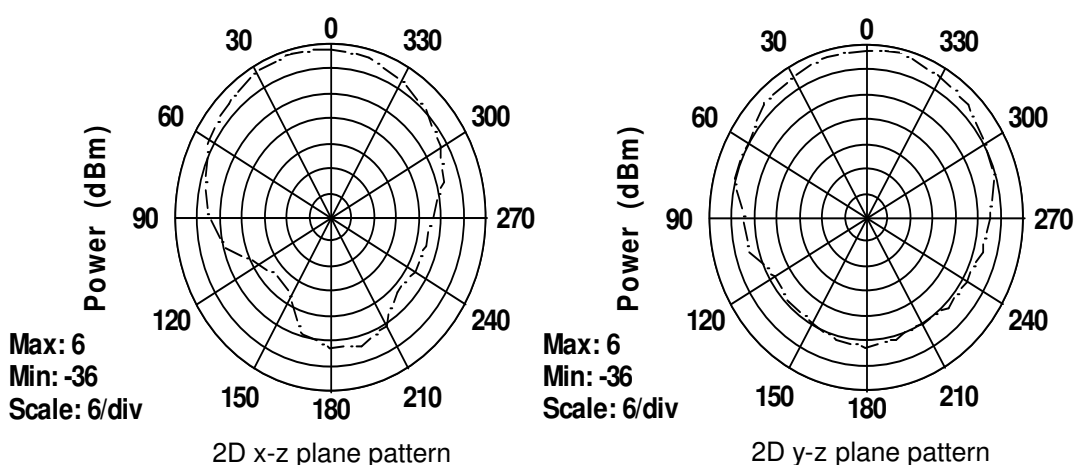
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RADIATION PATTERN

GNSS – 1602MHz



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TECHNICAL DATA SHEET

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REVISION HISTORY

Revision	Date	Description
Version 1	Nov. 16, 2020	- New issue

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