

SPECIFICATION

Part No.	: MA231.LBC.003
Product Name	: MA231 3 in1Stream 3M: GPS-GLONASS-GALILEO RG174 RP-SMA(M), 2G/3G/4G CFD-200 RP-SMA(M), Wi-Fi CFD-200 RP-SMA(M)
Feature	: IP67 Antenna GPS-GLONASS-GALILEO: 3M RG-174 SMA(M) ST 1.8~5.5V/30dB Cellular 4G/3G/2G: 3M Low Loss CFD-200 SMA(M) ST Wi-Fi: 3M Low Loss CFD-200 RP-SMA(M) ST Dimensions: 200.5*66.5*9mm RoHS Compliant



1. Introduction

The Stream 3in1 MA231 GPS-GLONASS-GALILEO, LTE Cellular 4G/3G/2G and Wi-Fi 2.4/5.8GHz antenna is a low profile, heavy-duty, fully IP67 waterproof external M2M antenna for use by RF professionals in telematics, transportation and remote monitoring applications. The Stream 3in1 is unique in the market as it combines the highest possible efficiency and peak gain for GPS-GLONASS-GALILEO, Wi-Fi dual-band 2.4/5.8GHz and all cellular bands in 4G/3G/2G in a low profile compact format for mounting via high quality first tier automotive approved 3M adhesive foam.

The patent pending design incorporates a custom Taoglas 35mm GPS-GLONASS-GALILEO patch antenna on an extended integral ground-plane. A front-end SAW filter dramatically reduces radiated spurious emissions.

The extended ground-plane used with an innovative internal 4G/3G/2G Cellular PIFA also enables the unique wide-band 4G/3G/2G response to deliver the highest performance possible, at 3 meters cable length. High antenna efficiencies are absolutely critical in today's 4G and 2G systems to achieving targeted data-speeds and coverage.

A powerful Wi-Fi dual-band 2.4/5.8GHz antenna gives maximum gain and coverage for common applications.

The Stream works best when attached to plastic or glass, but can also be used on metal if a minimum of 40mm foam spacing is added.

2. Specification Table

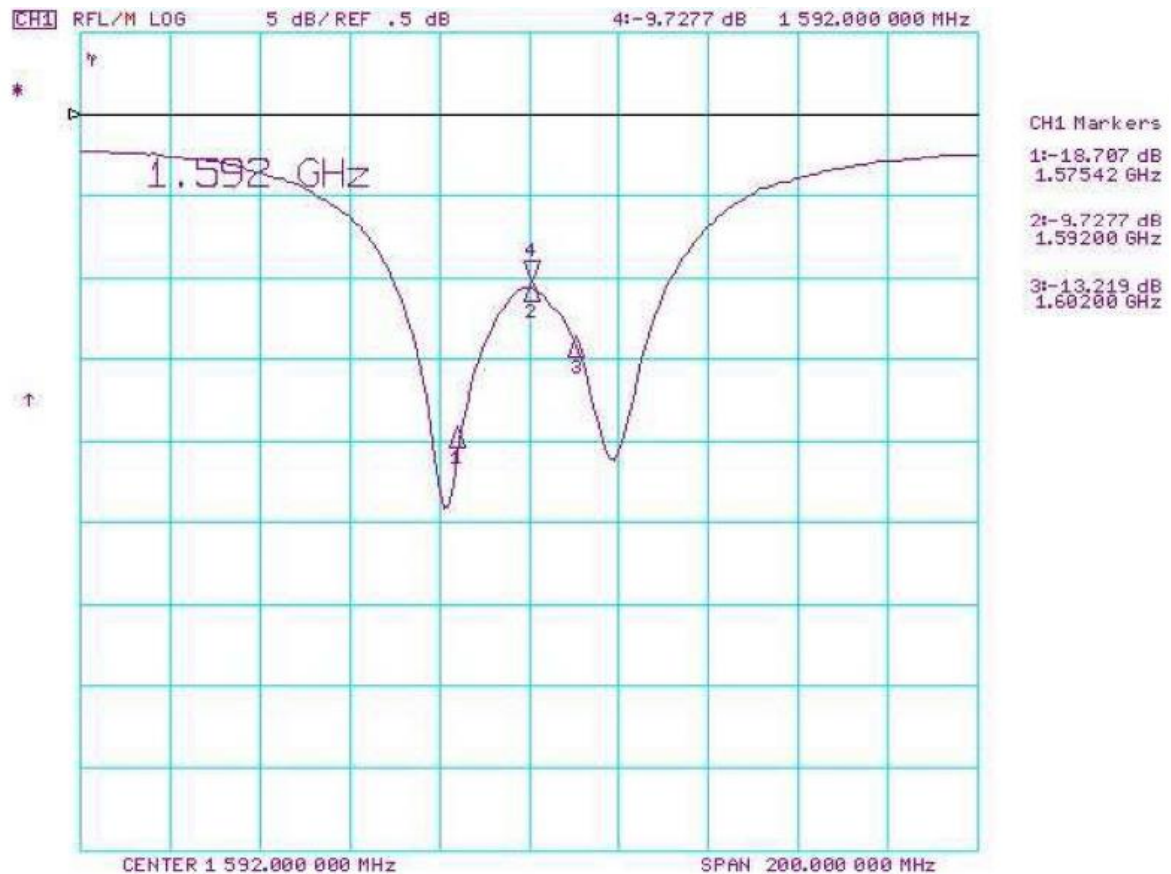
Performance Specifications			
Parameter	GPS-GLONASS-GALILEO Antenna	Cellular Antenna	Wi-Fi Antenna
Frequency Range	1,575.42±10MHz 1,602±8MHz	700-960MHz 1710-2170MHz 2500-2690MHz	2400-2484MHz 5150-5850MHz
Gain	1575.42MHz:1.3dBi typ. @ Zenith 1602MHz:2.9dBi typ. @ Zenith	Listed below	Listed below
VSWR	2.0 Max	3.0 Max	2.0 Max
Impedance	50Ω	50Ω	50Ω
Efficiency	-	≥ 70% @ 700MHz ≥ 60% @ 750MHz ≥ 50% @ 824MHz ≥ 50% @ 880MHz ≥ 40% @ 890MHz ≥ 25% @ 960MHz ≥ 50% @ 1710MHz ≥ 50% @ 1880MHz ≥ 50% @ 1990MHz ≥ 45% @ 2110MHz ≥ 45% @ 2170MHz ≥ 30% @ 2500MHz ≥ 15% @ 2690MHz	≥ 35% @ 2450MHz ≥ 35% @ 5250MHz ≥ 35% @ 5650MHz

MECHANICAL			
Cable / Connector	3M RG-174 with SMA(M) Fully customizable	3M CFD-200 with SMA(M) Fully customizable	3M CFD-200 with RP-SMA(M) Fully customizable
Housing	ABS		
Adhesive Mount	3M 1600TB(196.57*62.57*1.25mm)		
Protection Class	IP-67		
Weight	180g		

ENVIRONMENTAL	
Operation Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Relative Humidity	20% to 95%

3. GPS-GLONASS-GALILEO Antenna

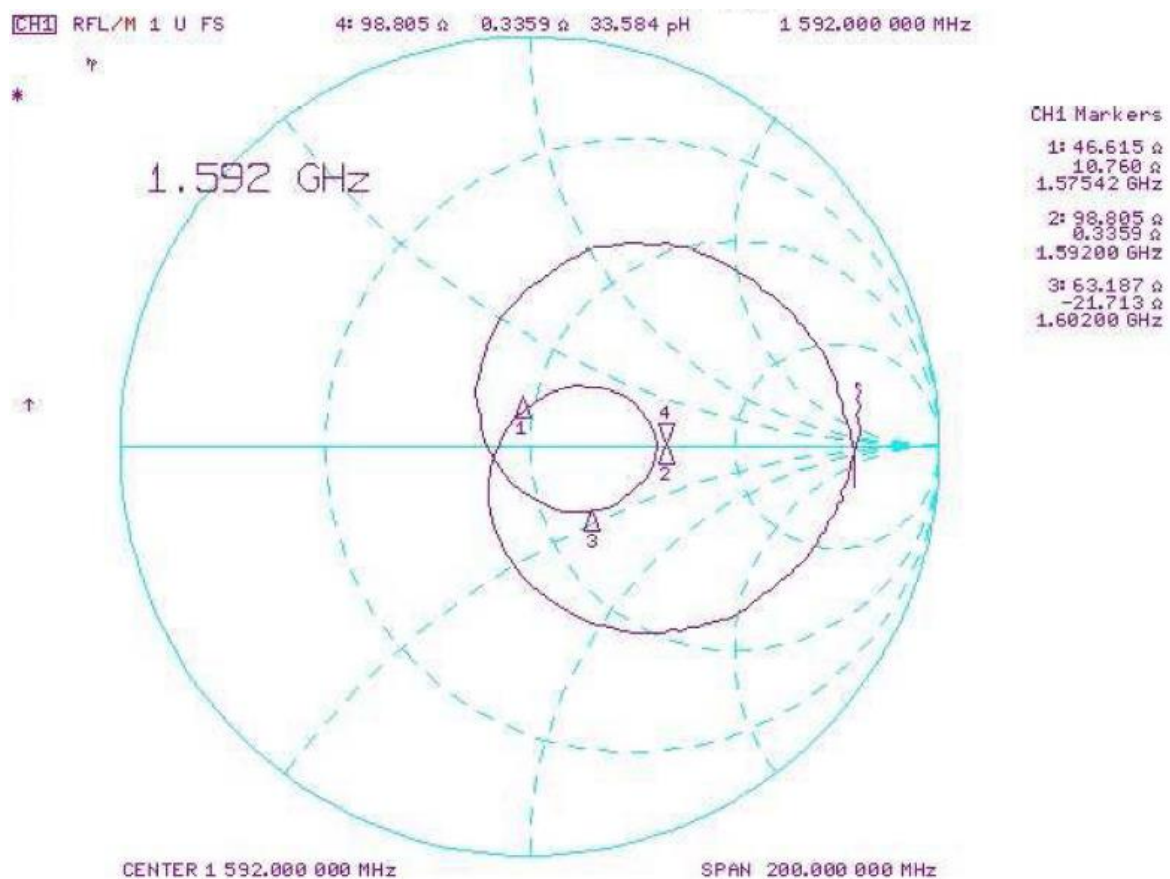
3.1. Return Loss



Return Loss: -18.70 dB@1575.42MHz

Return Loss: -13.21 dB@1602MHz

3.2. Smith Chart

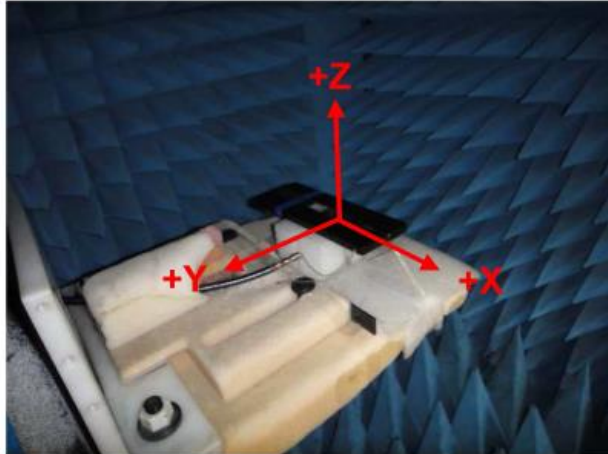


Impedance: 46.61+j10.76 Ohm@1575.42MHz

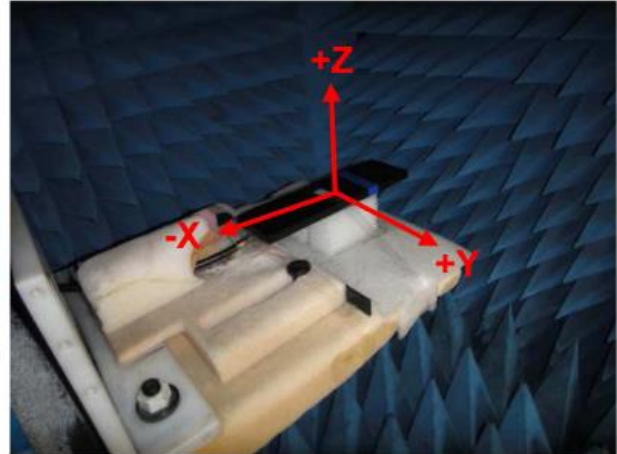
Impedance: 63.18-j21.73 Ohm@1602MHz

3.3. Radiation Patterns

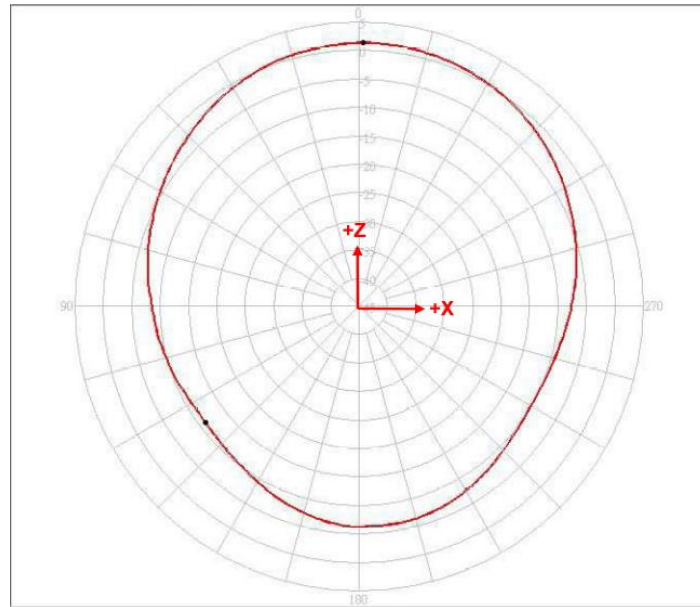
XZ-Plane



YZ-Plane

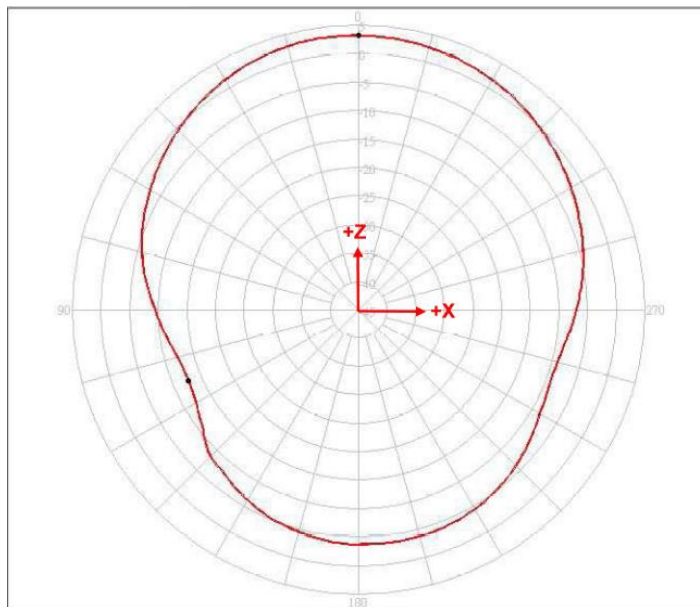


3.3.1. XZ Plane 1575.42MHz



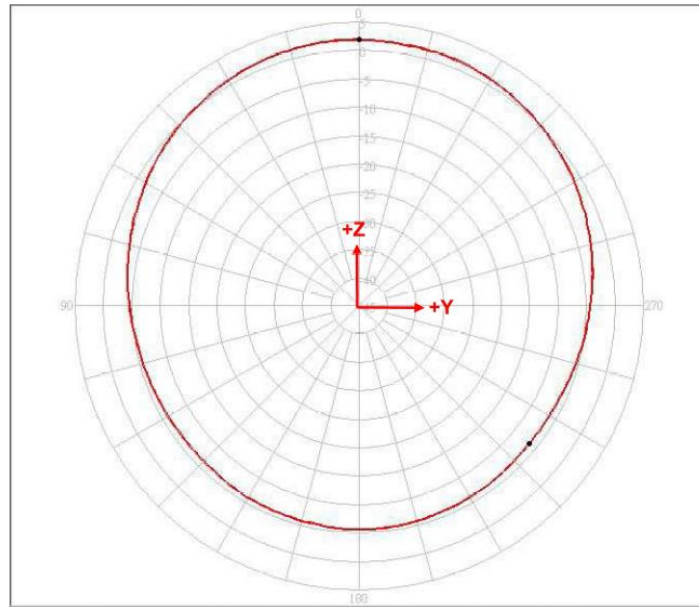
1575.42MHZ	Peak Gain	Zenith Gain
V+H	1.39 dBi	1.35 dBi

3.3.2. XZ Plane 1602MHz



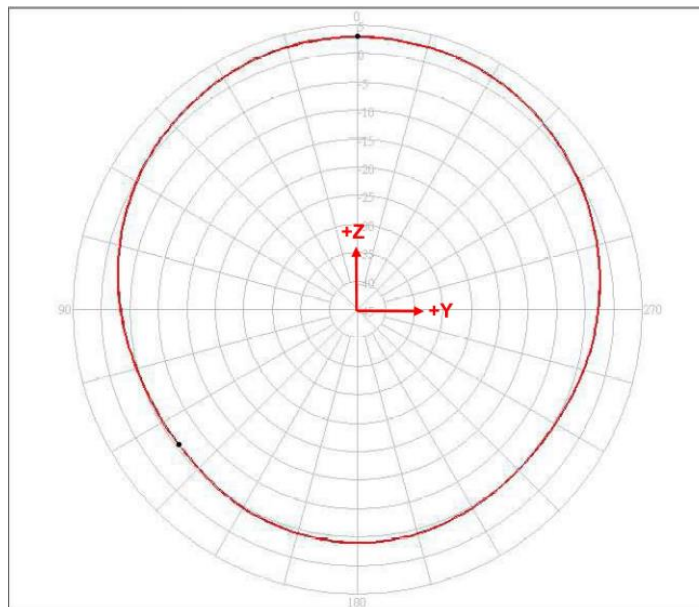
1602MHZ	Peak Gain	Zenith Gain
V+H	3.19 dBi	3.19 dBi

3.3.3. YZ Plane 1575.42MHz



1575.42MHZ	Peak Gain	Zenith Gain
V+H	1.92 dBi	1.92 dBi

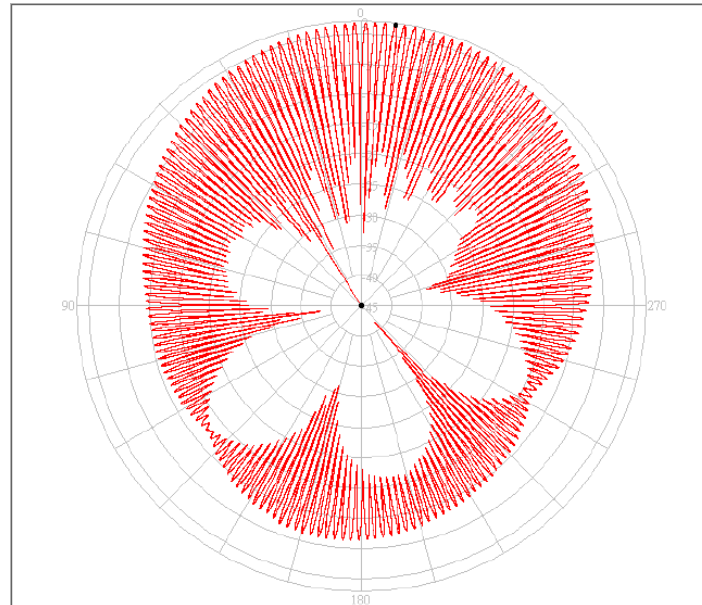
3.3.4. YZ Plane 1602MHz



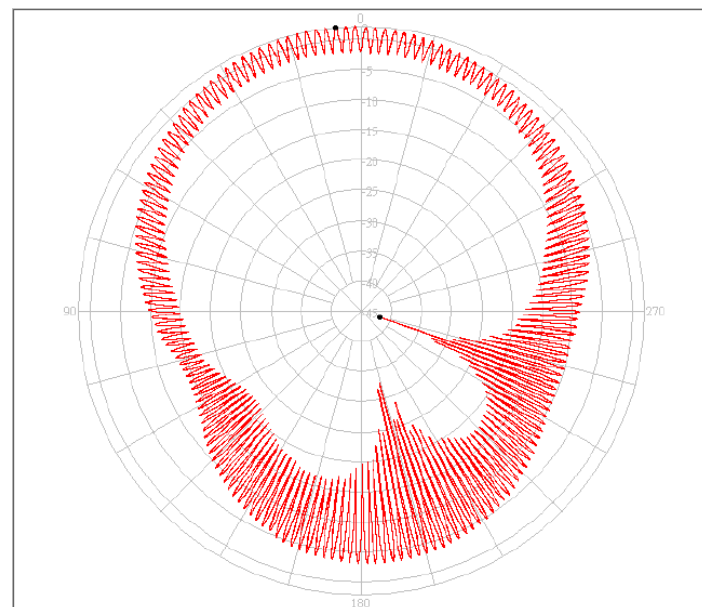
1602MHZ	Peak Gain	Zenith Gain
V+H	2.92 dBi	2.92 dBi

3.4. Axial Ratio Pattern

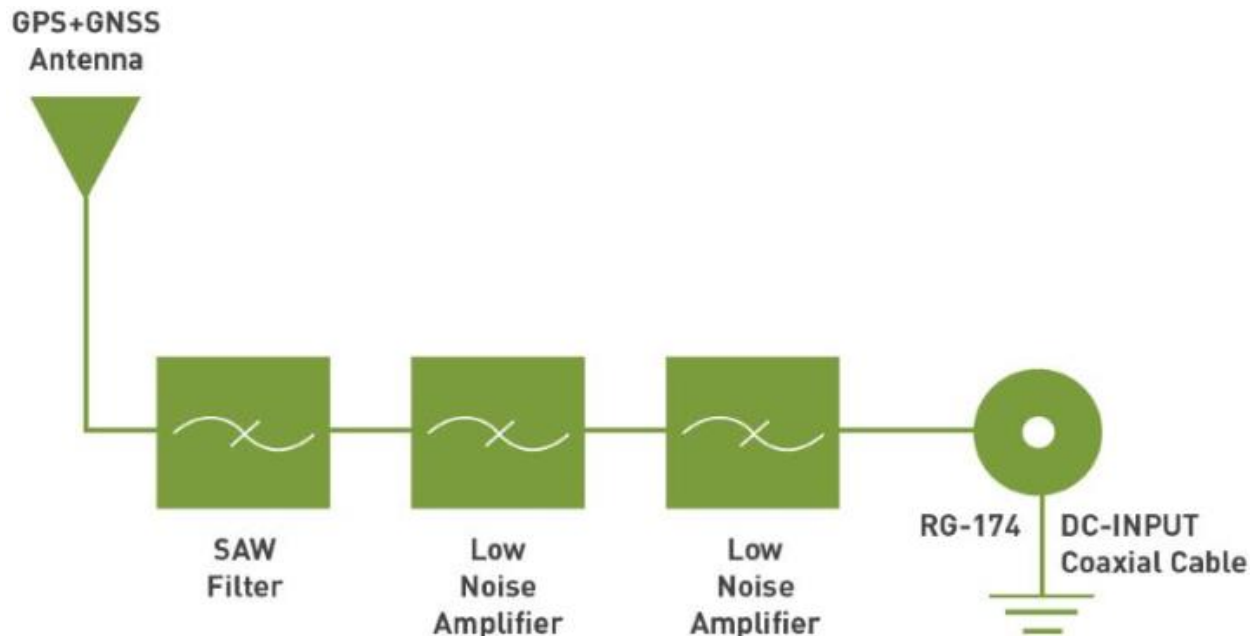
3.4.1. 1575.42MHz



3.4.2. 1602MHz

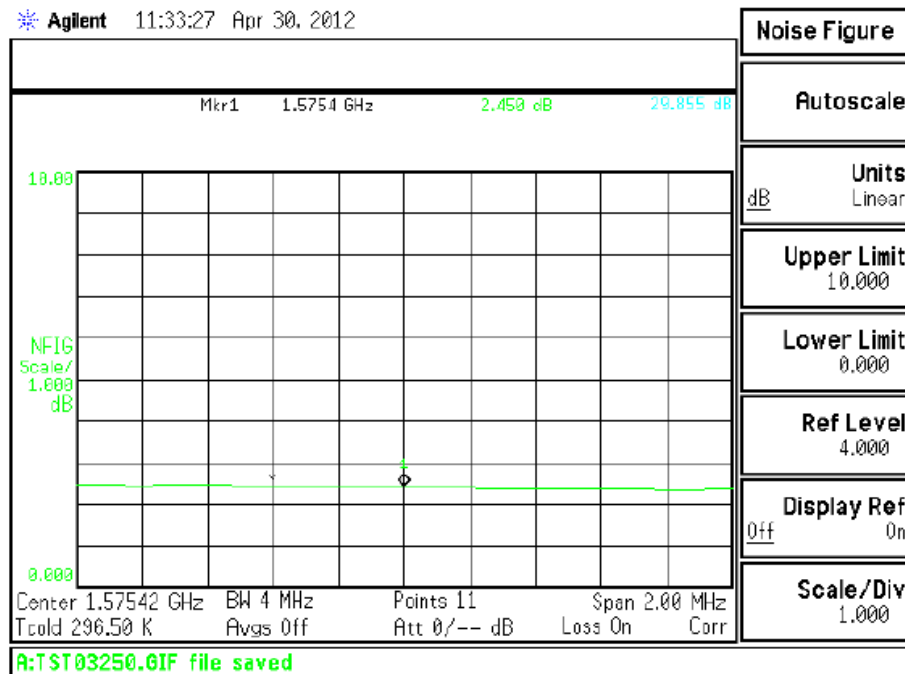


3.5. LNA characteristics

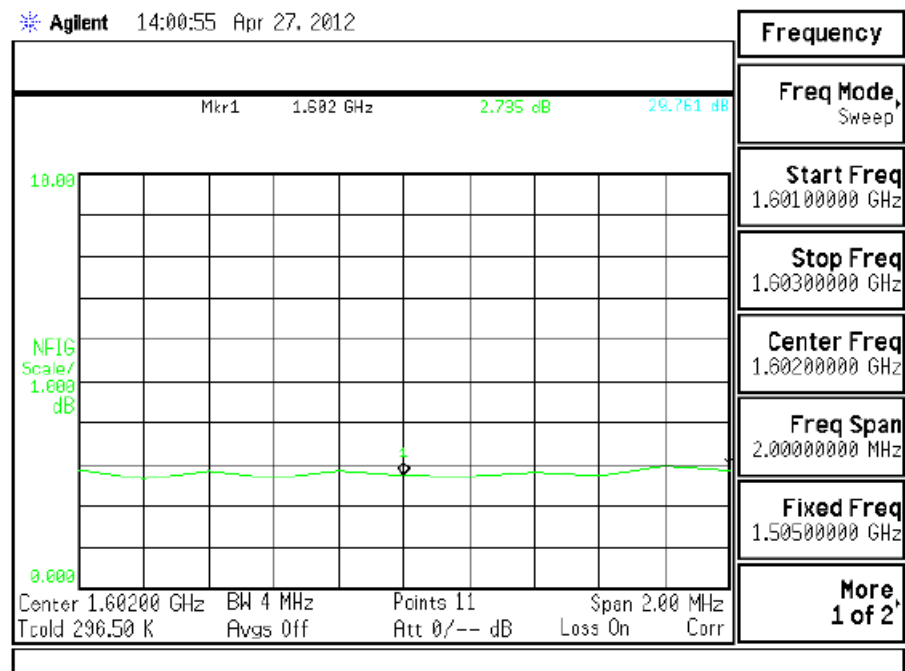


Parameter	
Frequency Range	1,575.42±10MHz For GPS/GALILEO 1,602±8MHz For GLONASS
Output Impedance	50 Ohm
Output VSWR	2.0 max

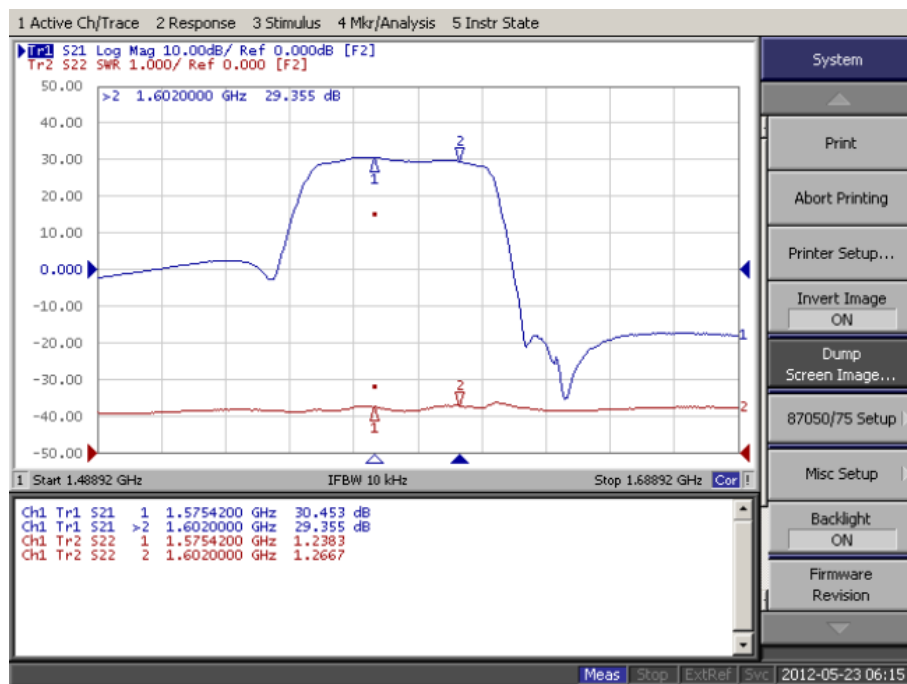
Supply Voltage	Gain(Typ)	Noise Figure(Typ)	Power Consumption(Typ)
1.8V	24dB	-	5.5mA
3.0V	30dB	2.4dB For GPS/GALILEO 2.7dB For GLONASS	13.2mA
5.5V	32dB	-	16.2mA



LNA Noise Figure@3.0V for 1575.42MHz



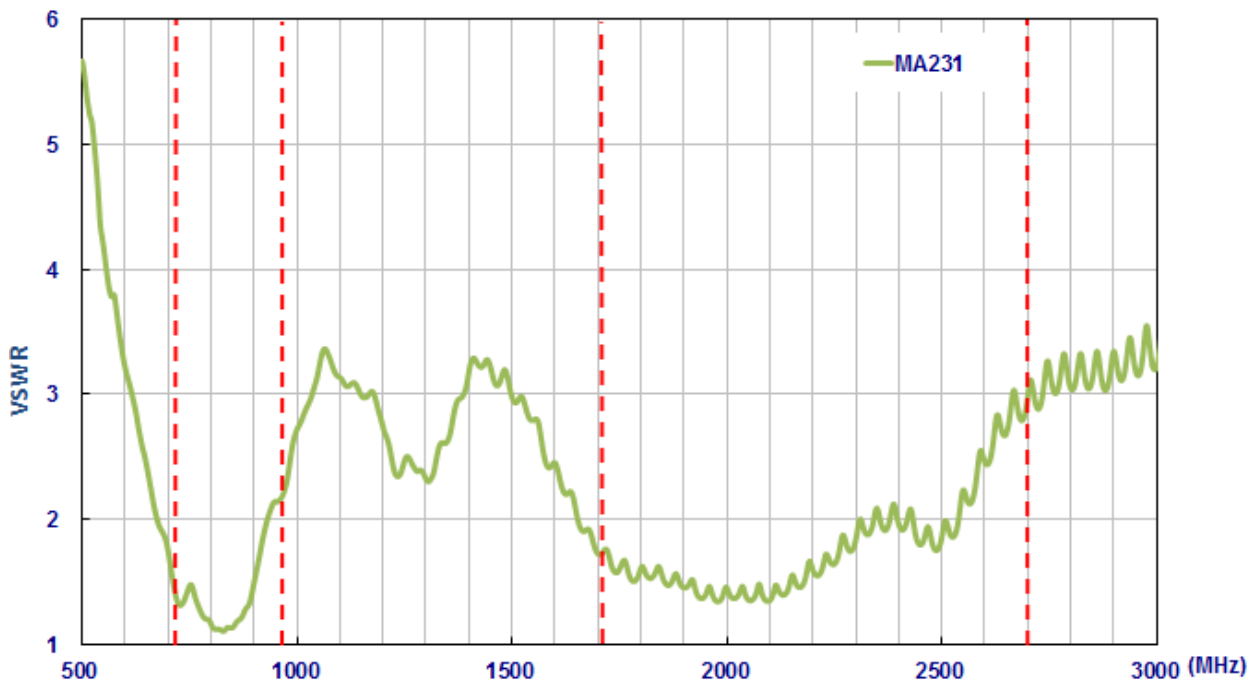
LNA Noise Figure@3.0V for 1602MHz



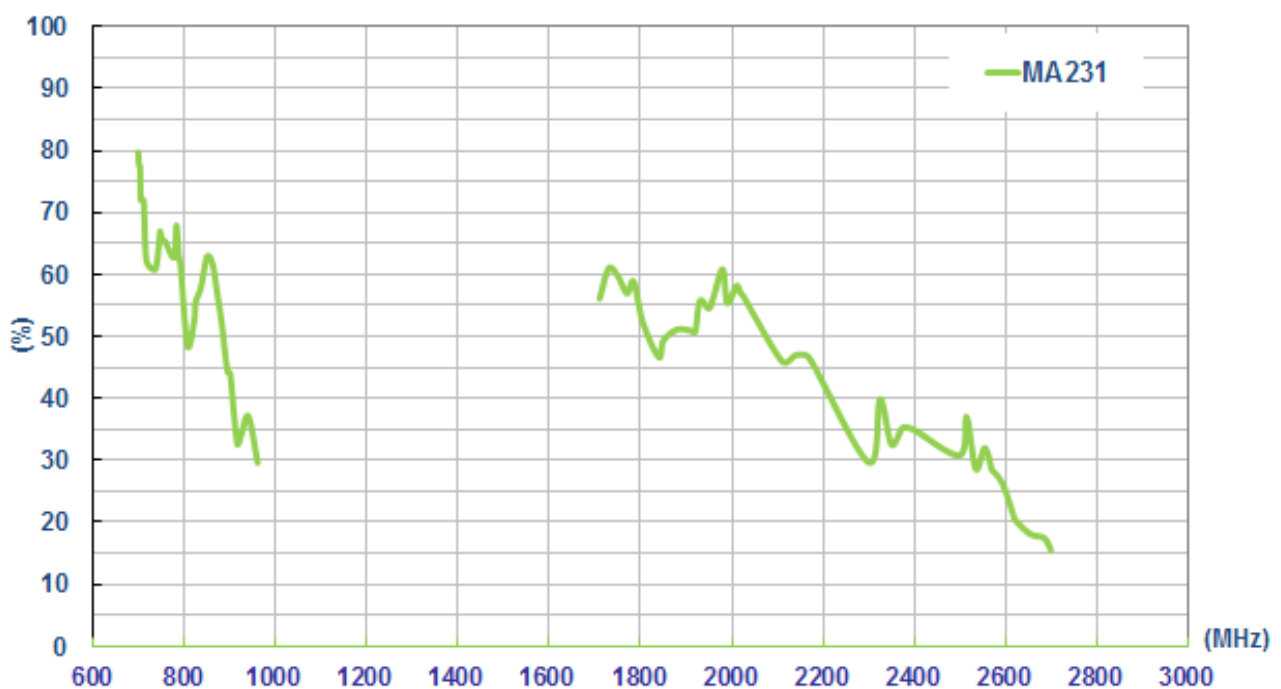
LNA Gain and Output of VSWR at 3.0V

4. Cellular 4G/3G/2G antenna

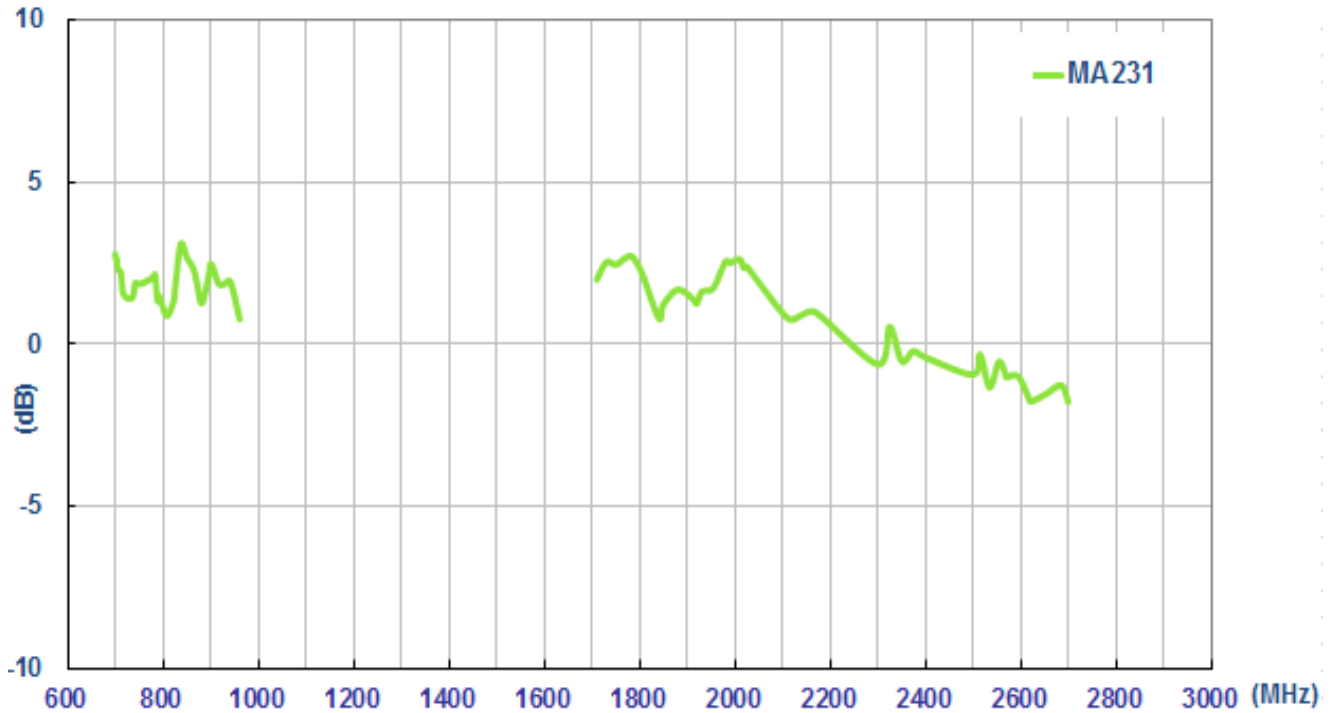
4.1. VSWR



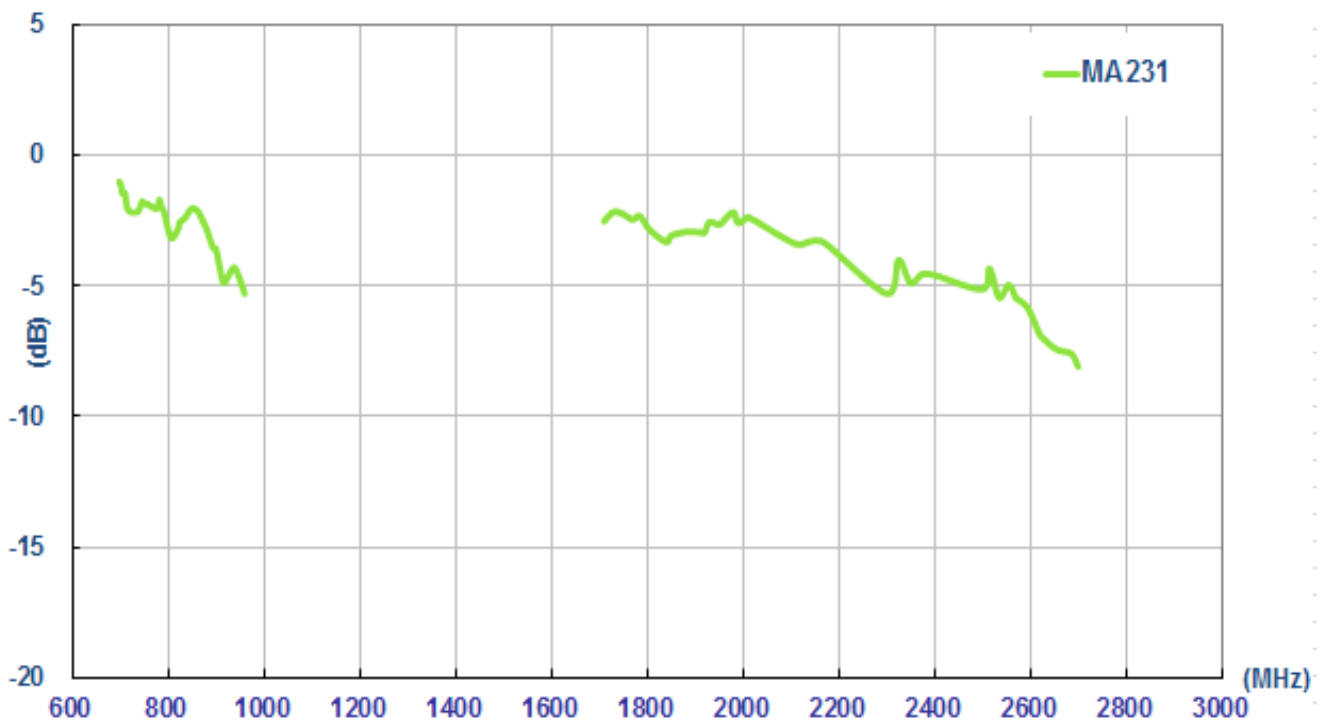
4.2. Efficiency



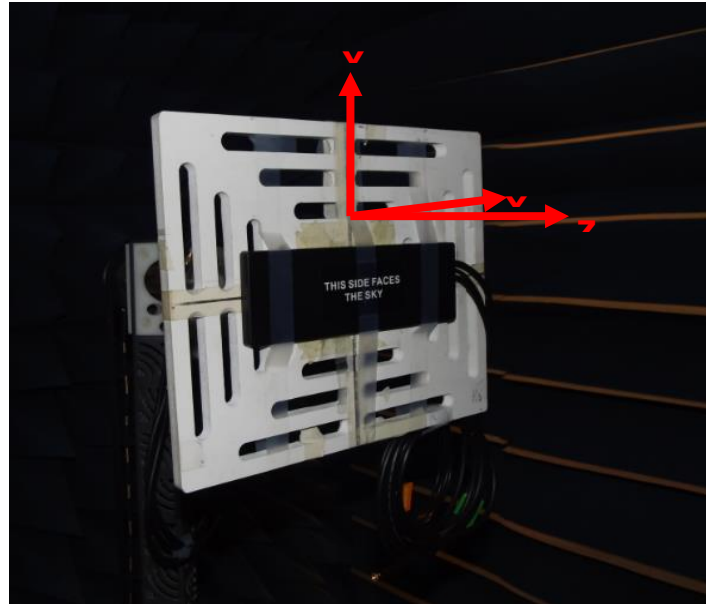
4.3. Peak Gain



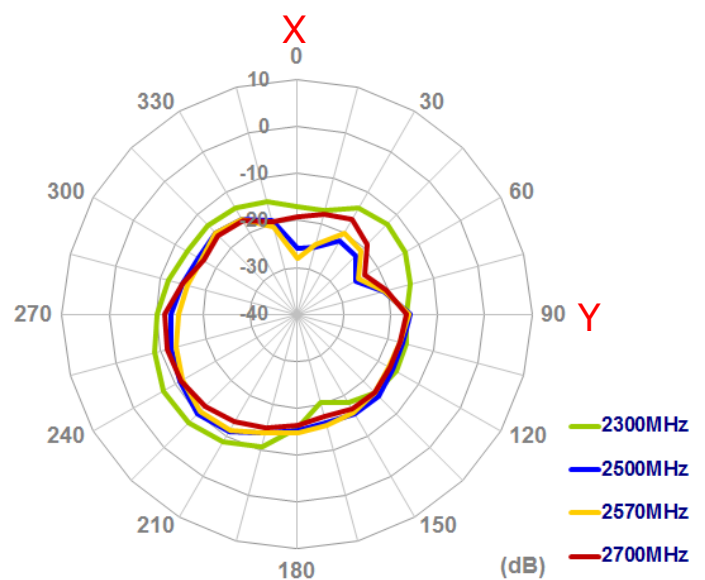
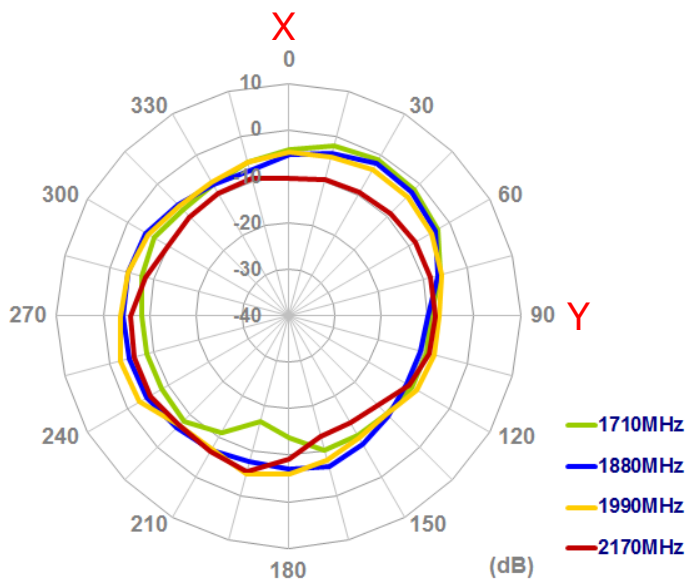
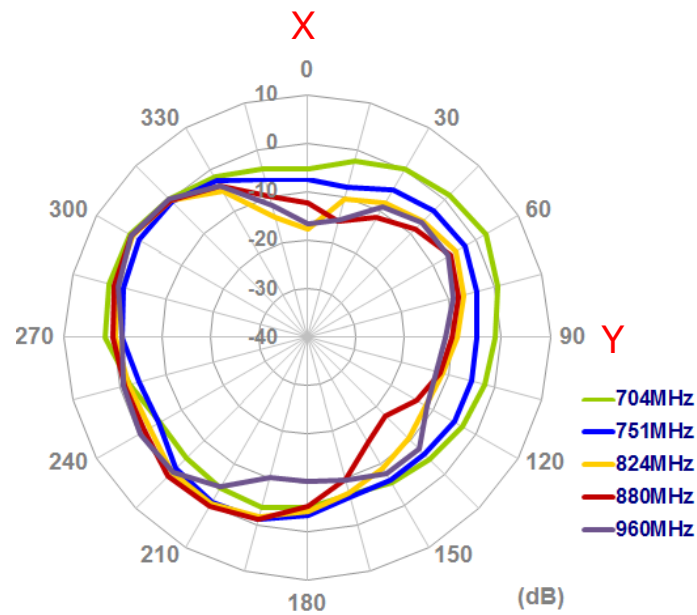
4.4. Average Gain



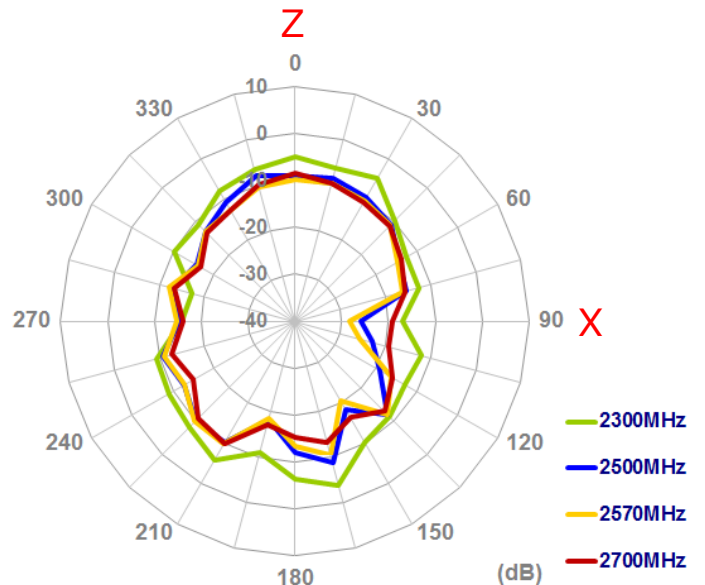
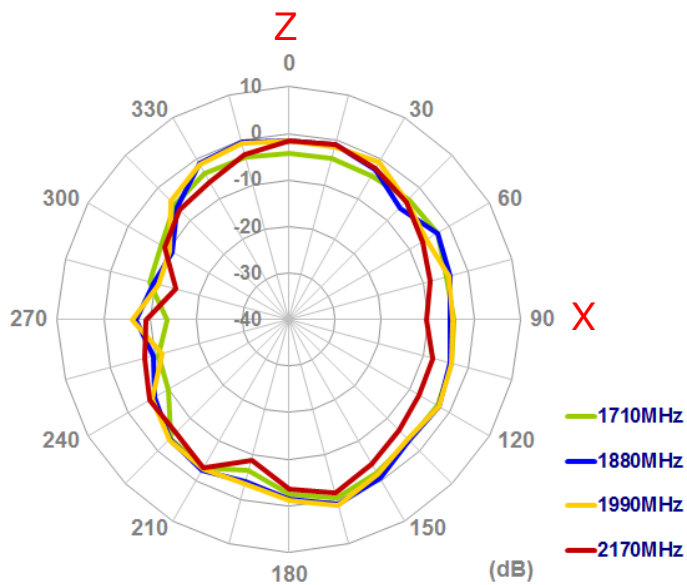
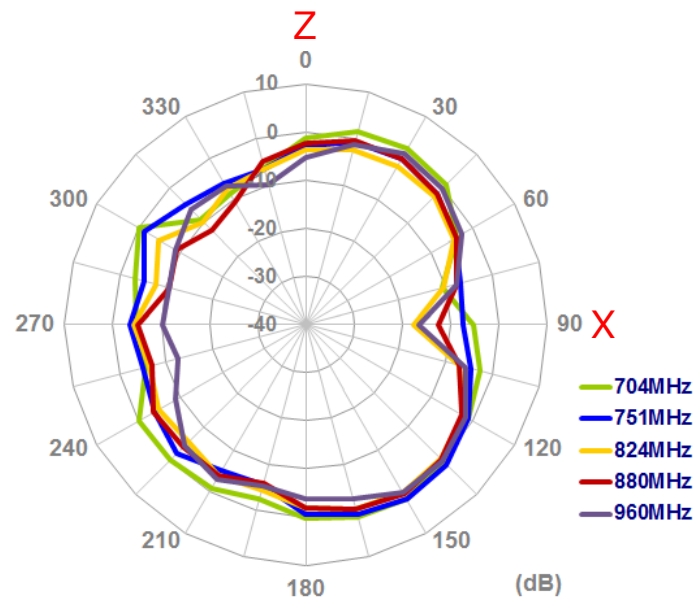
4.5. Antenna Radiation Pattern



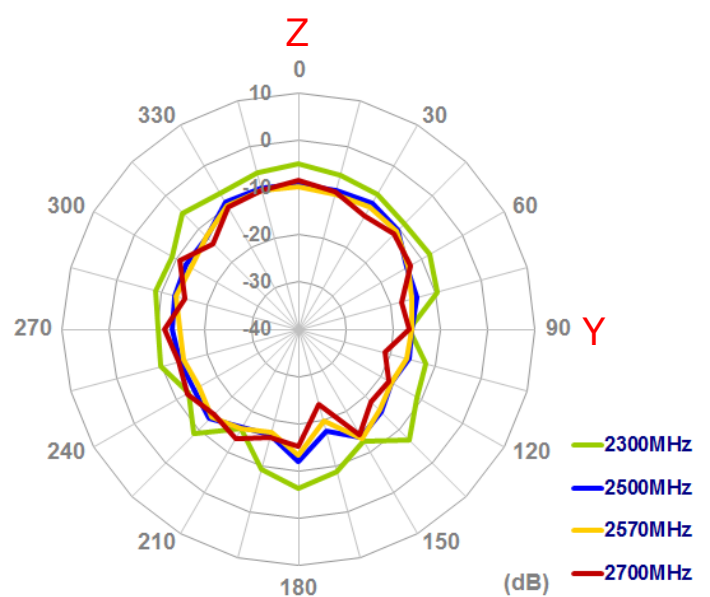
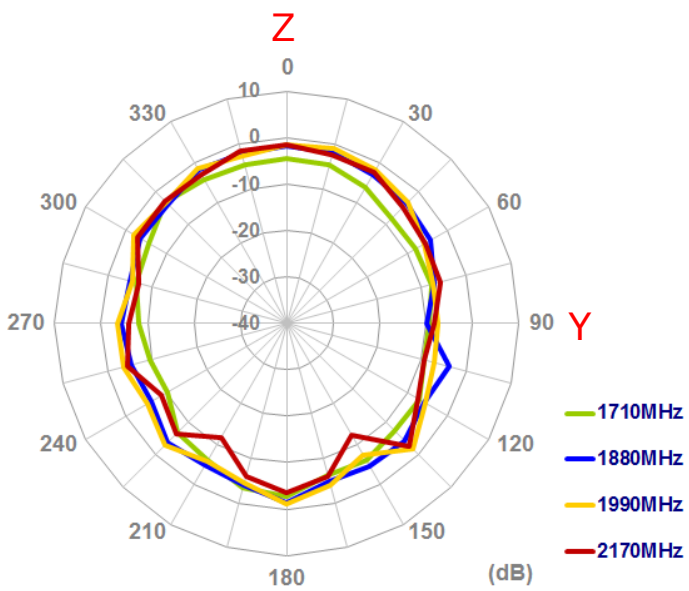
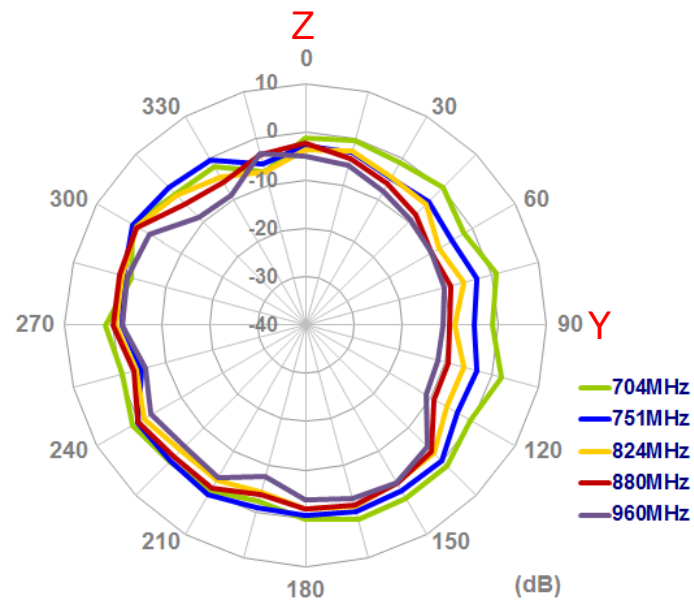
XY Plane



ZX Plane

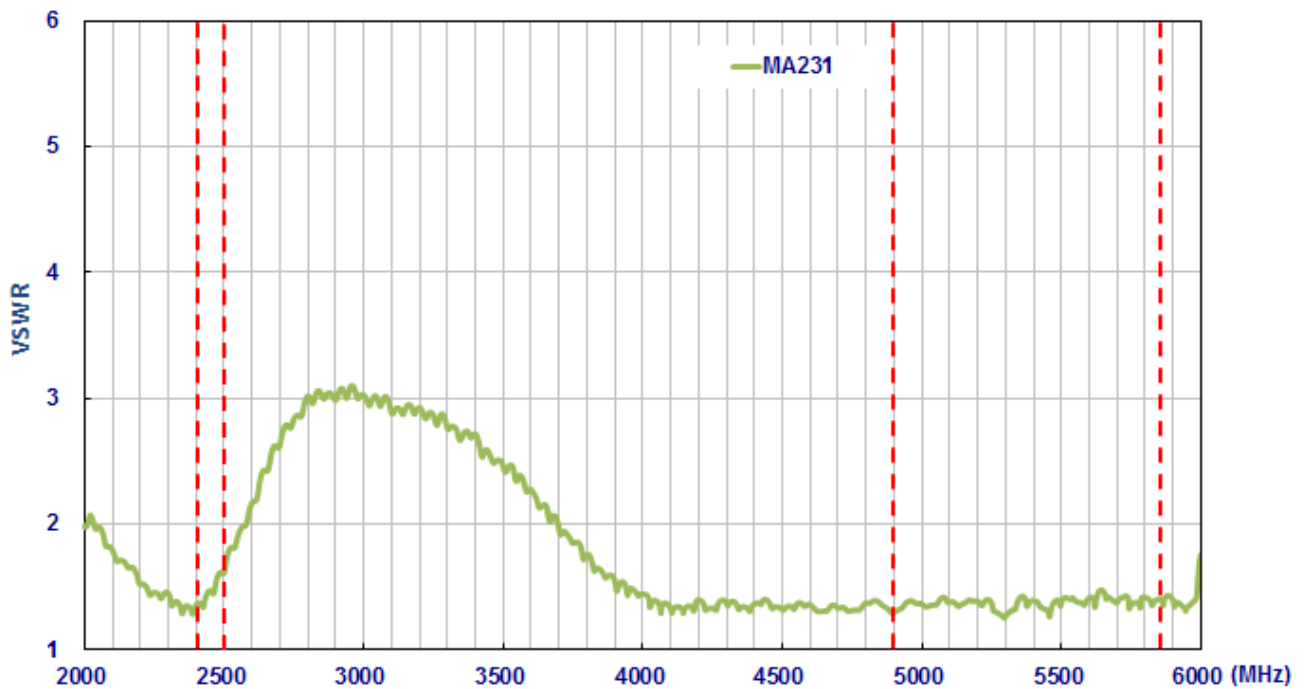


ZY Plane

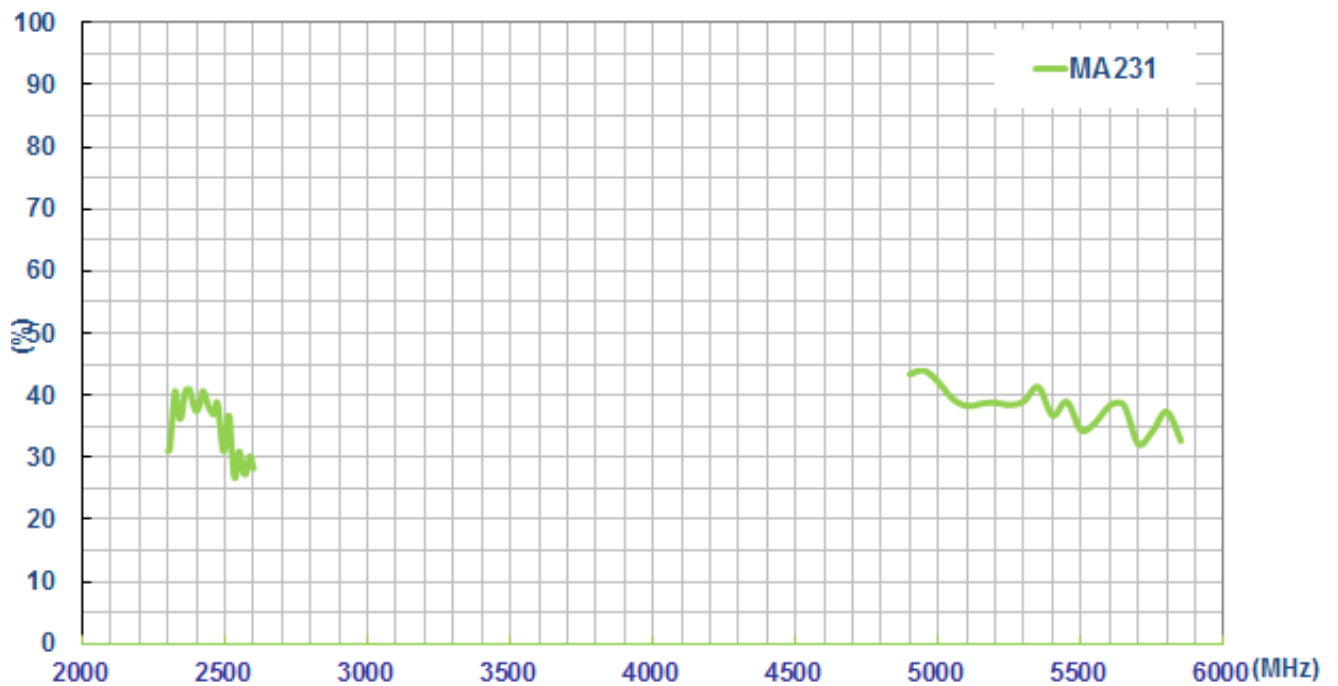


5. Wi-Fi 2.4/5.0 GHz antenna

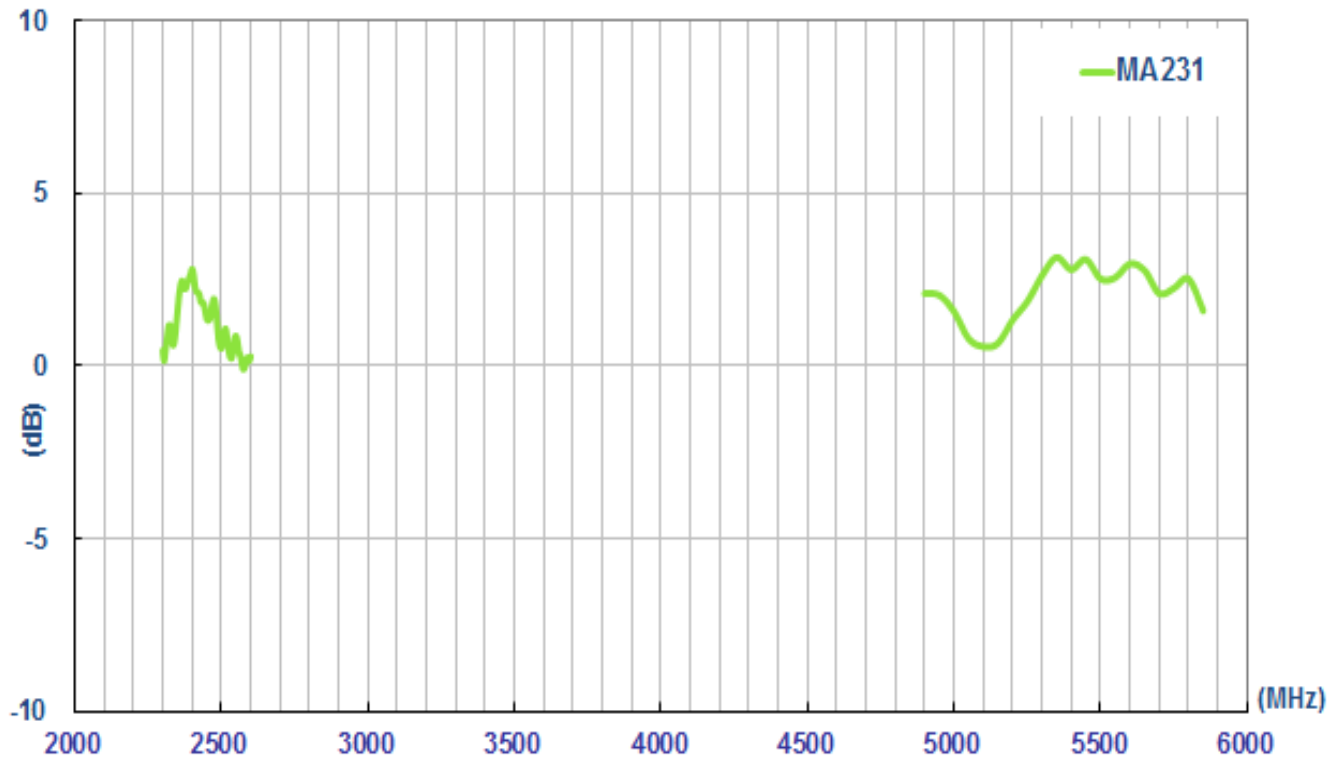
5.1. VSWR



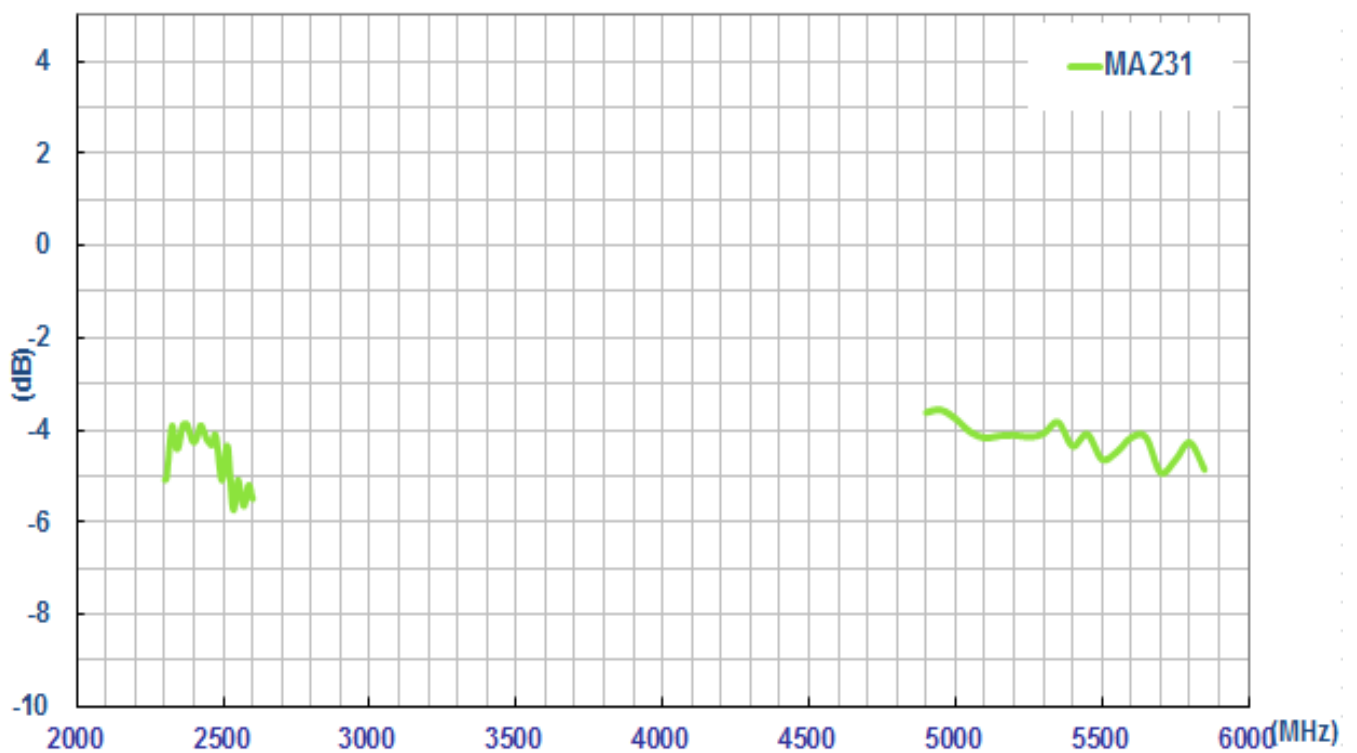
5.2. Efficiency



5.3. Peak Gain

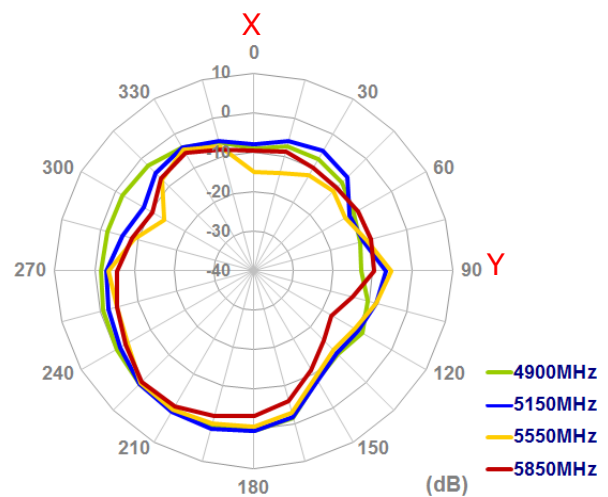
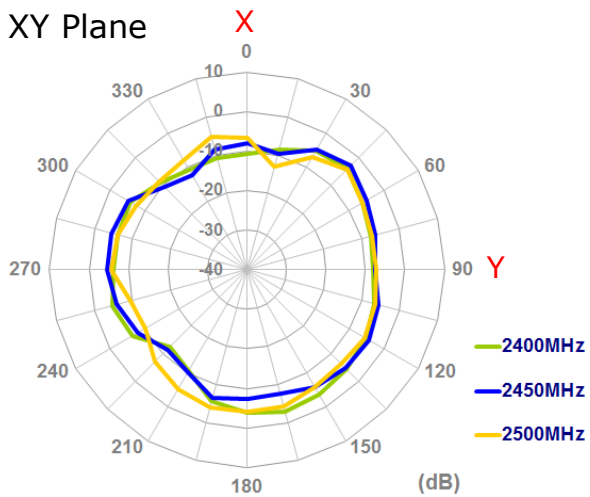


5.4. Average Gain

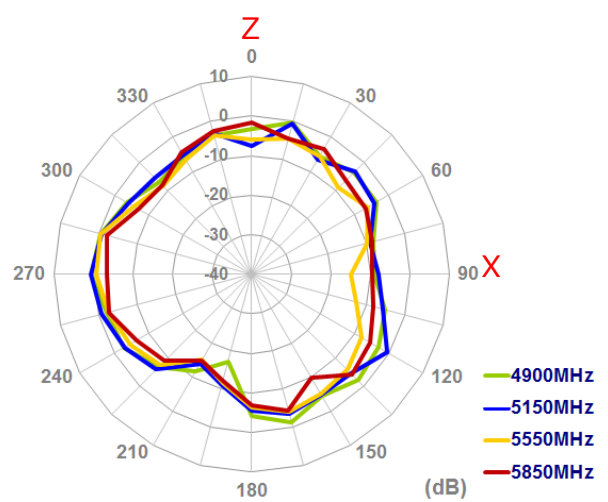
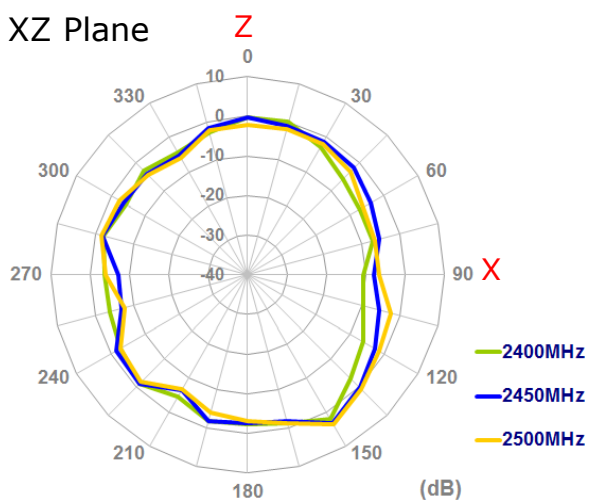


5.5. 2D Radiation Pattern

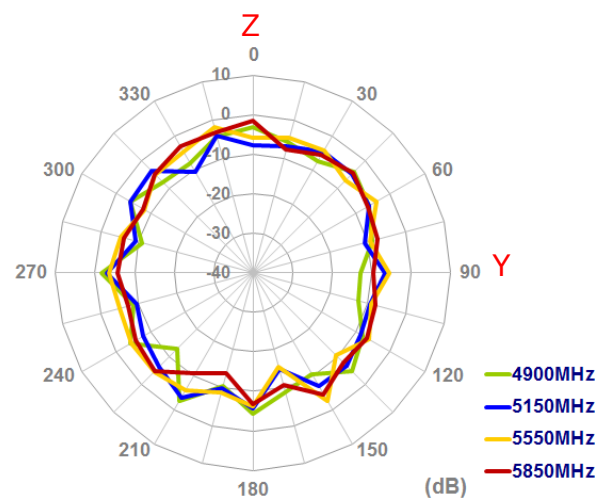
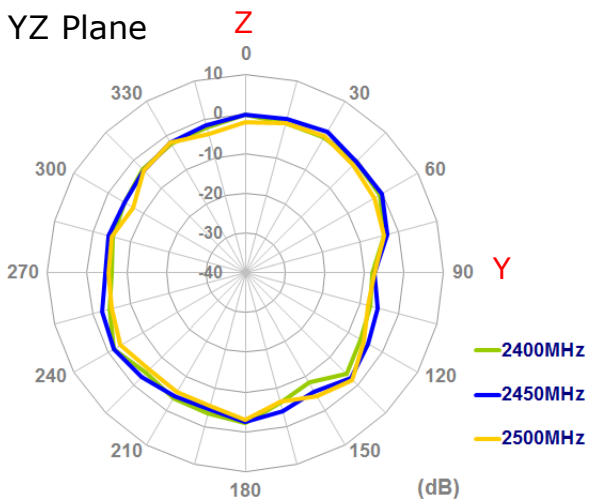
XY Plane



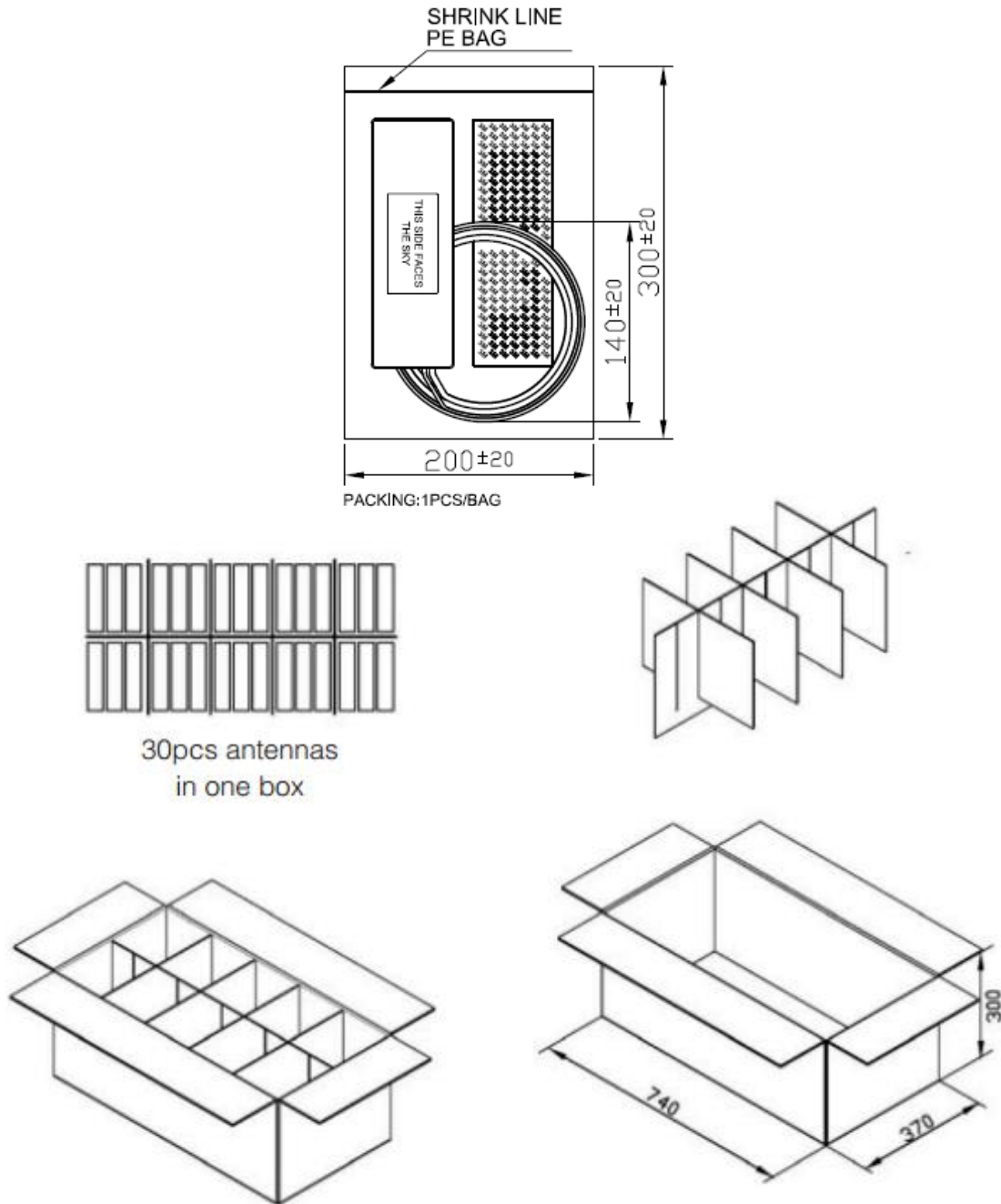
XZ Plane



YZ Plane



7. Packaging



Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein.

Reproduction, use or disclosure to third parties without express permission is strictly prohibited.

Copyright © Taoglas Ltd.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9