Specification

Part No.	:	**GW.22.5151W**
Product Name	:	White 5dBi 2.4GHz Rubber Duck Dipole Antenna with RP-SMA(M) Straight Connector
Features	:	2.4GHz Band Operation UV Resistant, Robust TPEE Housing IP67 Waterproof Rating IK07 Impact Rating Up to 5dBi Peak Gain Connector Mount: RP-SMA(M) Dimension: 235.5mm * ∅13mm **RoHS Compliant**

1. Introduction

The GW.22 is a dipole antenna designed to provide up to 5dB of gain to 2.4GHz applications such as Bluetooth®, BLE, Thread, Wi-Fi®, WLAN and ZigBee®.

The IP67 rated enclosure makes it suitable for both indoor and outdoor applications. The flexible IK07 rated TPEE enclosure is impact resistant and durable and has the added benefit of UV resistance, allowing it to meet the needs of demanding outdoor applications. It has an omnidirectional radiation pattern and excellent efficiency of up to 70%.

The GW.22 has up to 5dBi Peak making it a cost-effective, high-performing choice for any indoor or outdoor application operating at 2.4GHz. Many module manufacturers specify peak gain limits for any antennas that are to be connected to that module. Those peak gain limits are based on free-space conditions. In practice, the peak gain of an antenna tested in free-space can degrade by at least 1 or 2dBi when installed. So ideally you should go for a slightly higher peak gain antenna than mentioned on the module specification to compensate for this effect, giving you better performance.

Upon testing of any of our antennas with your device and a selection of appropriate layout, integration technique, or cable, Taoglas can make sure any of our antennas' peak gain will be below the peak gain limits. Taoglas can then issue a specification and/or report for the selected antenna in your device that will clearly show it complying with the peak gain limits, so you can be assured you are meeting regulatory requirements for that module.

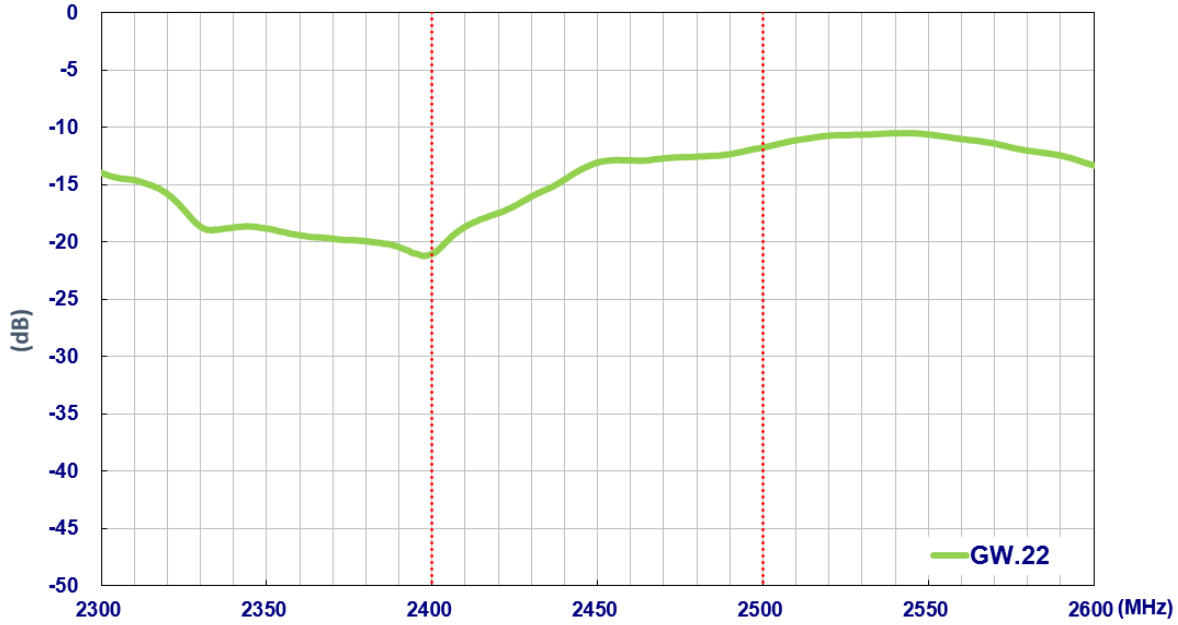
Choosing a Taoglas antenna with a higher peak gain than what is specified by the module manufacturer and enlisting our help will ensure you are getting the best performance possible without exceeding the peak gain limits.

2. Specification

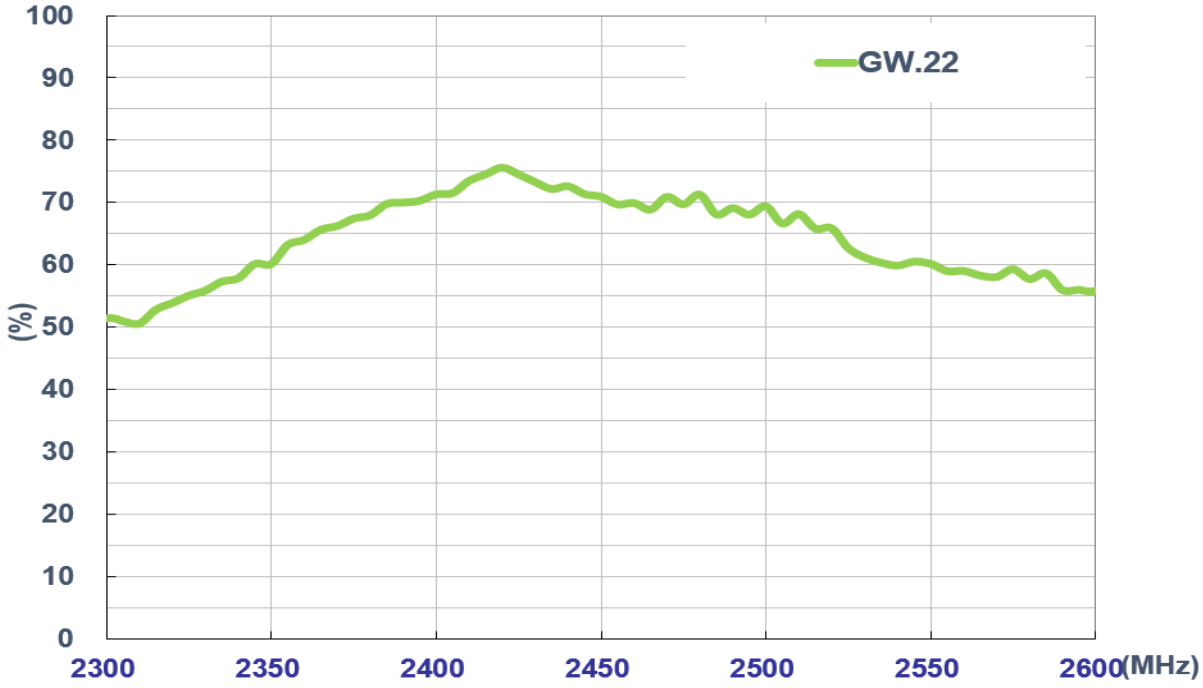
ELECTRICAL			
Frequency (MHz)	2400	2450	2500
Efficiency (%)	71.25	70.87	69.32
Average Gain(dB)	-1.47	-1.50	-1.59
Peak Gain(dBi)	4.64		
Return Loss	<-10		
Radiation	Omni-directional		
Polarization	Linear		
Impedance	50 Ω		
Input Power	10W		
MECHANICAL			
Antenna length	235mm		
Antenna Diameter	13mm		
Weight	32.5 grams		
Casing	TPEE		
Connector	RP-SMA(M)		
Waterproof	IP67		
Pendulum Hammer Test [IEC62262]	IK07		
ENVIRONMENTAL			
Operation Temperature	-40°C ~ +85°C		
Storage Temperature	-40°C ~ +85°C		
Humidity	Non-condensing 65°C 95% RH		

3. Antenna Characteristics

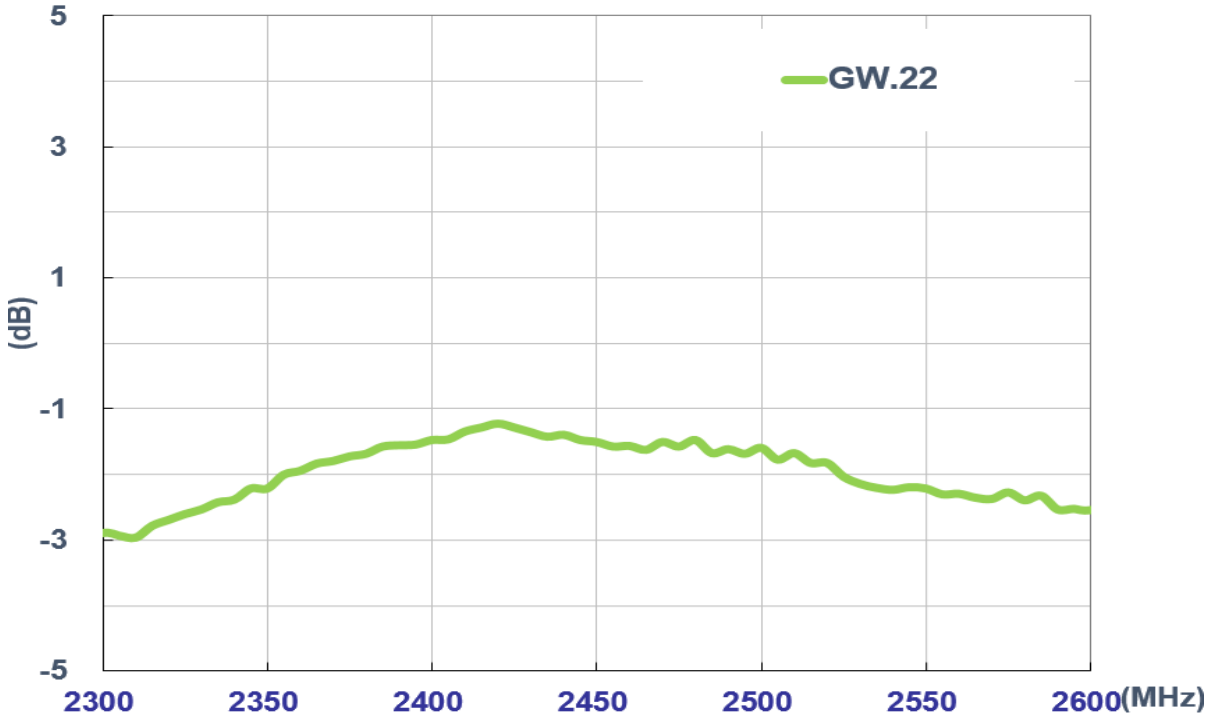
3.1 Return Loss



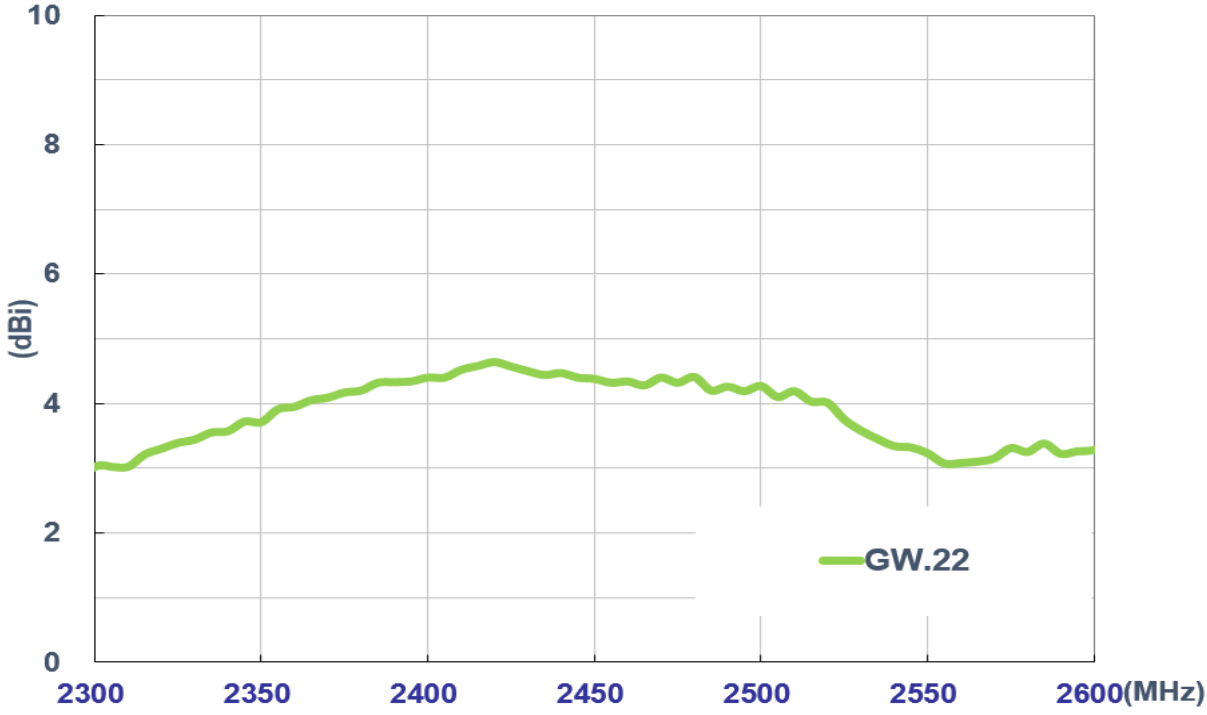
3.2 Efficiency



3.3 Average Gain

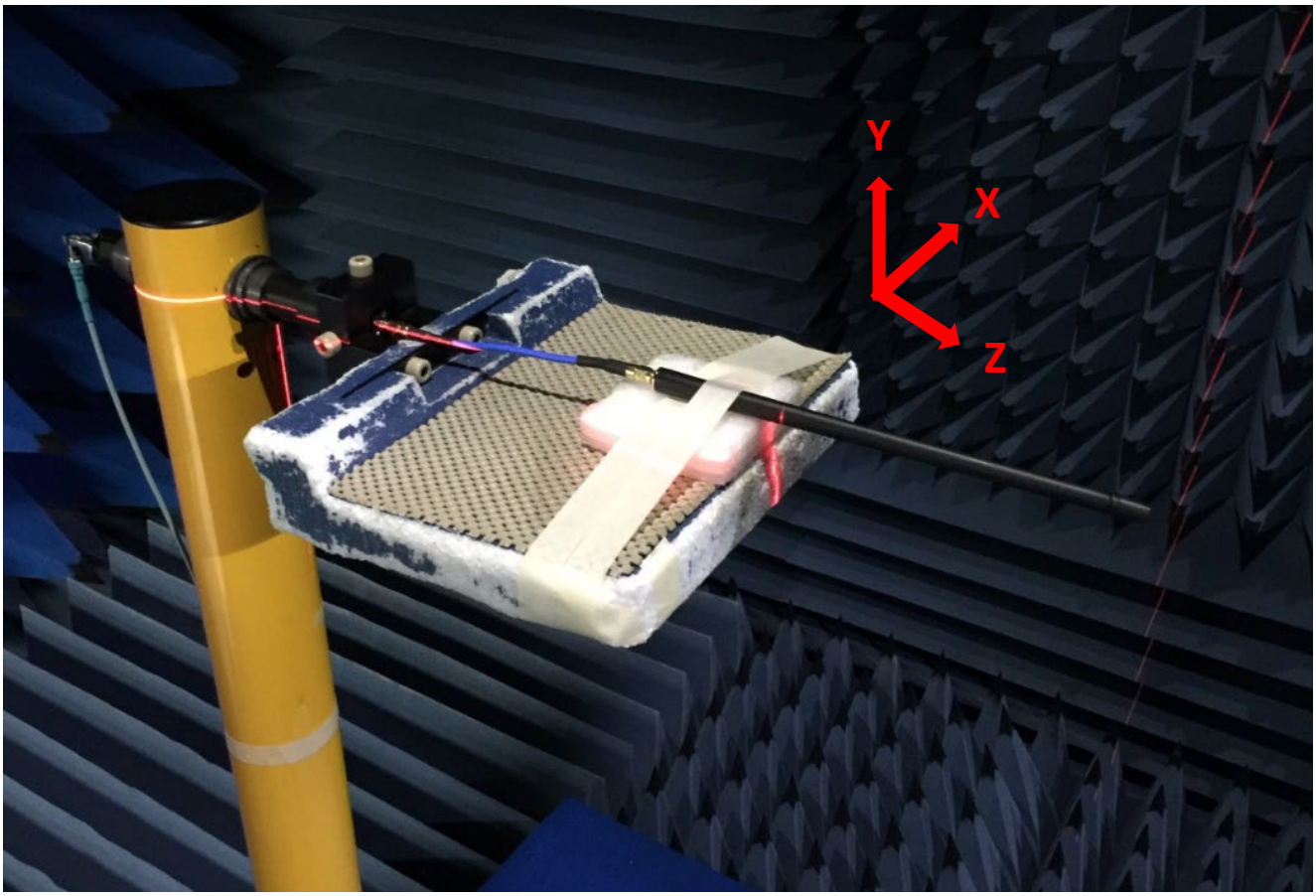


3.4 Peak Gain



4. Antenna Radiation Patterns

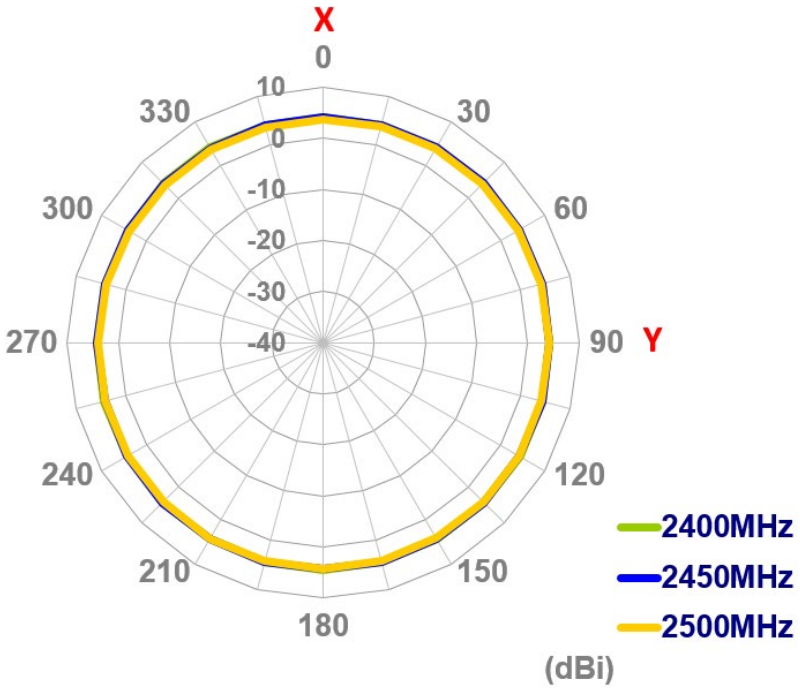
The antenna radiation patterns were measured in a CTIA certified ETS Anechoic Chamber. The measurement setup is shown below.



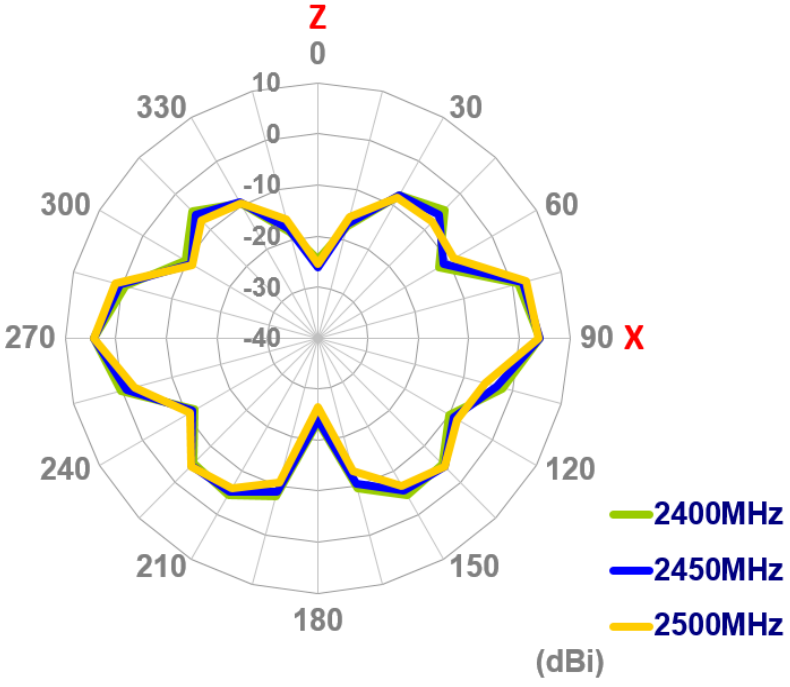
Free Space

4.1 2D Radiation Pattern (Free Space)

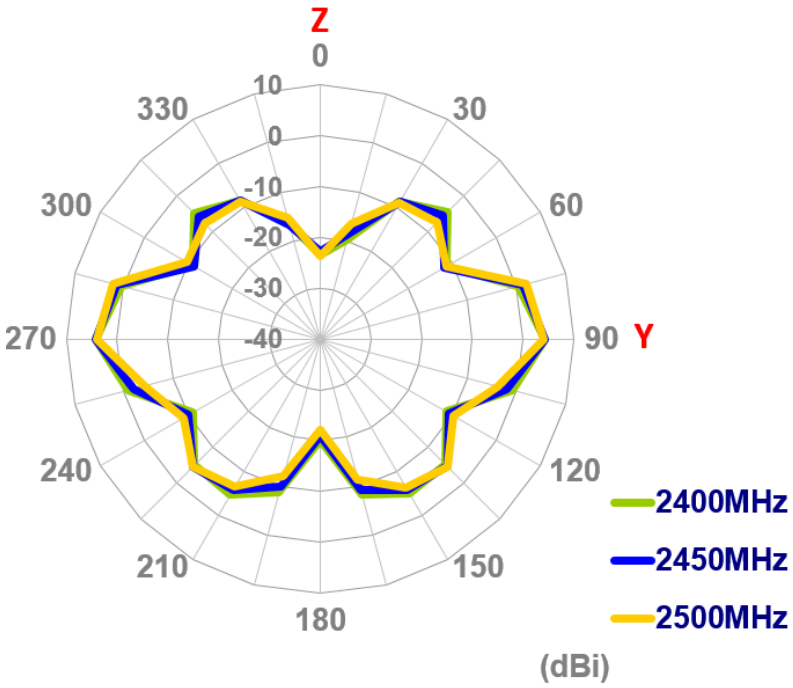
XY Plane



ZX Plane

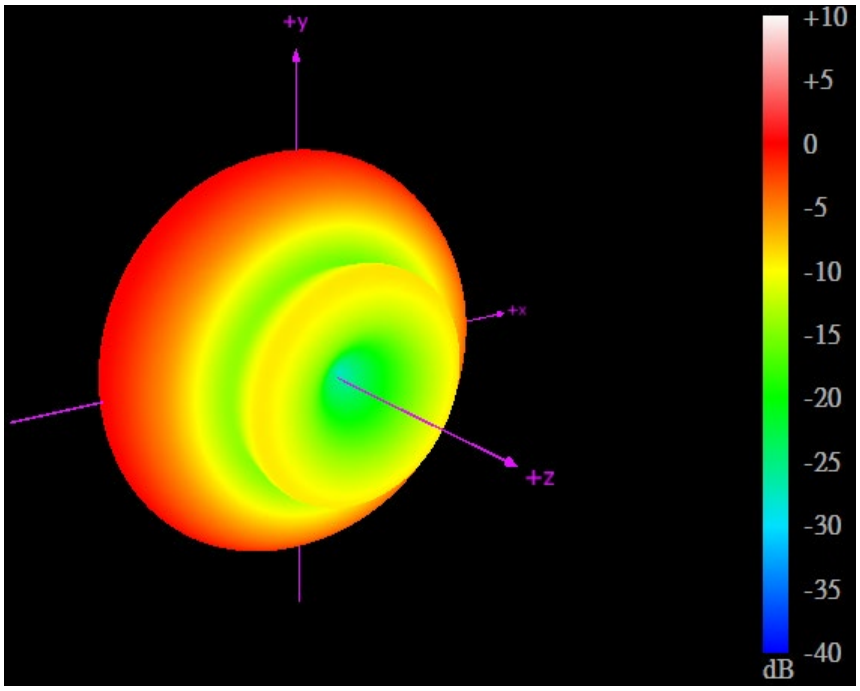


ZY Plane

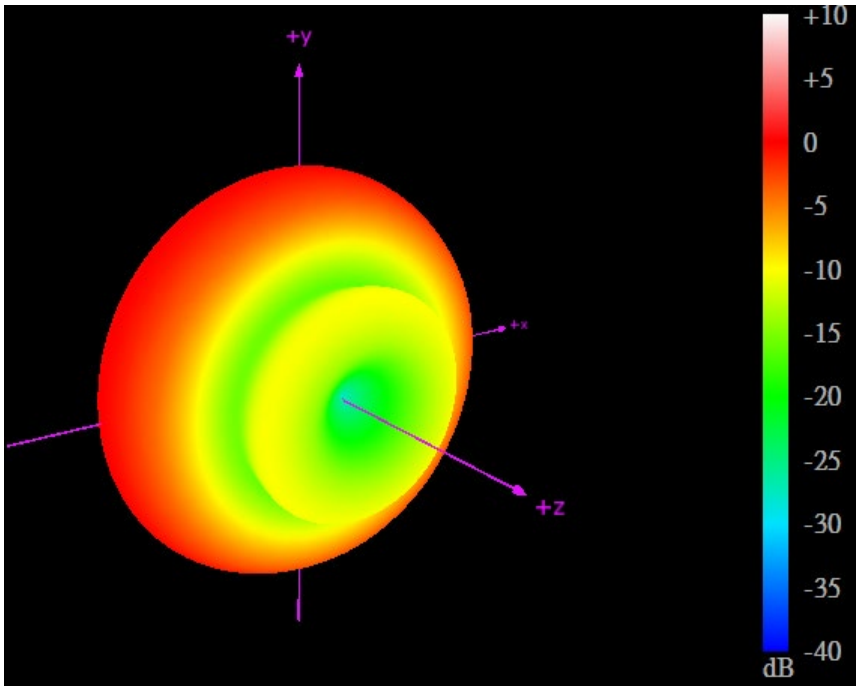

Z
0
30
60
90
Y
120
150
180
210
240
270
300
330
10
0
-10
-20
-30
-40
2400MHz
2450MHz
2500MHz
(dBi)

4.4 3D Radiation Pattern (Free Space)

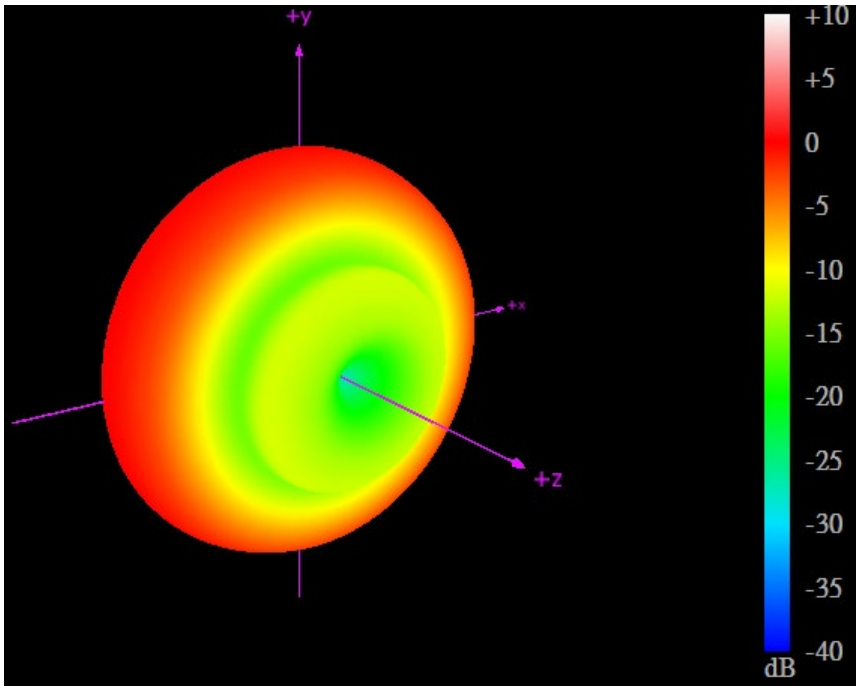
2400MHz



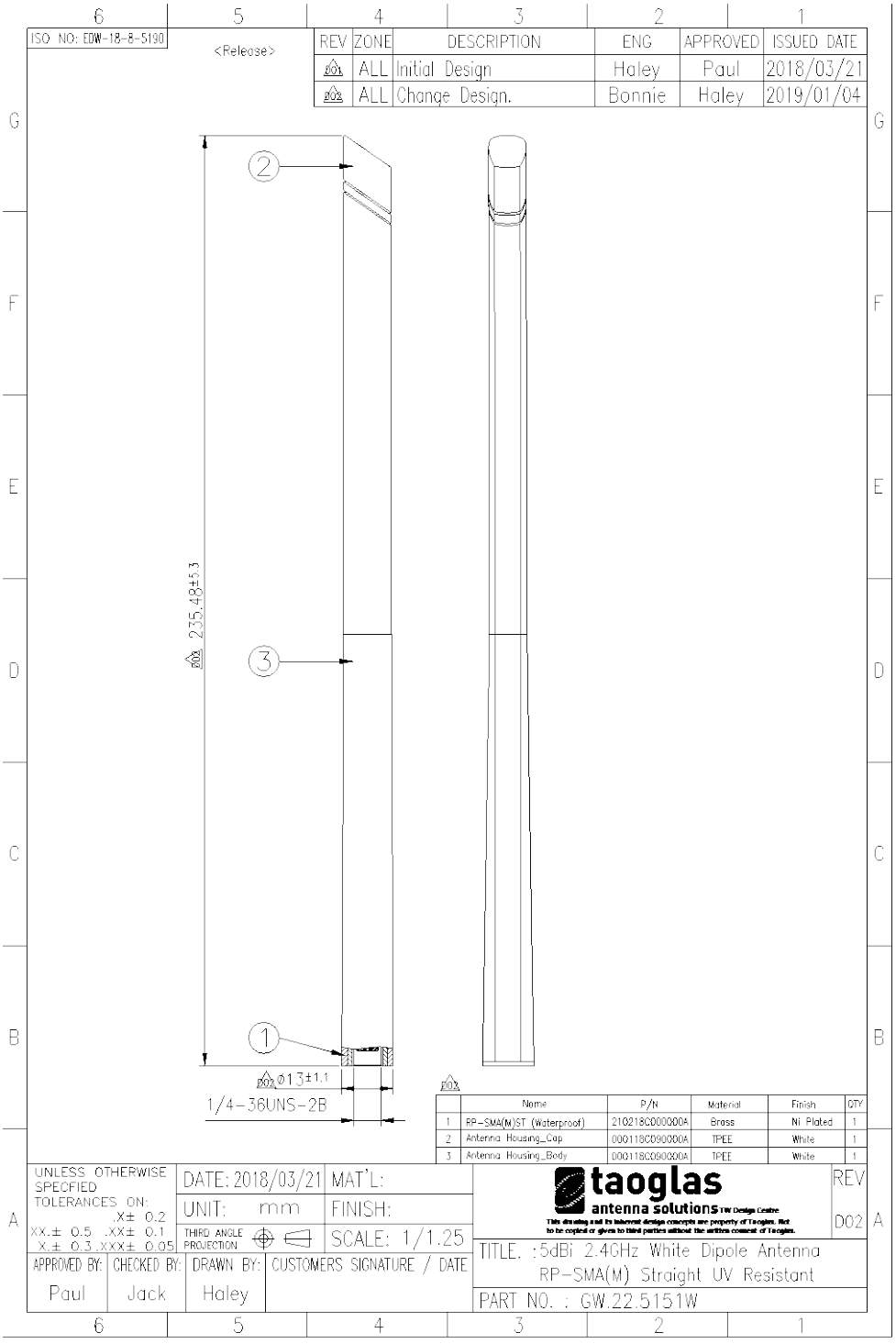
2450MHz



2500MHz

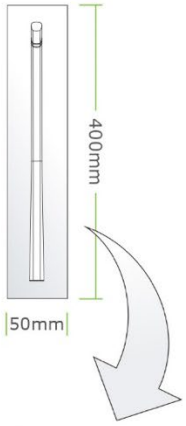


5. Mechanical Drawing

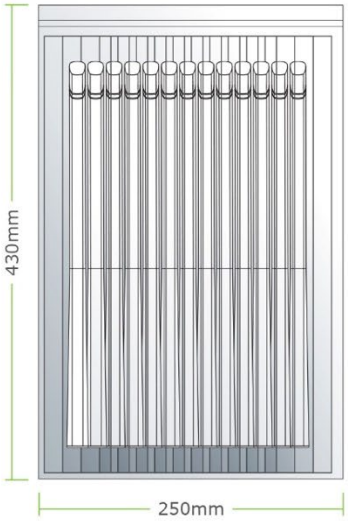


6. Packaging

1pc GW.22.5151W per Small PE Bag
PE Bag Dimensions - 50*400mm
Weight - 32.5g



15 Small PE Bags per Large PE Bag
Box Dimensions - 250*430mm
Weight - 487.5g



210pcs GW.22.5151W per Carton
Box Dimensions - 430*380*280mm
Weight - 6.825Kg