

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 * \varnothing 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.

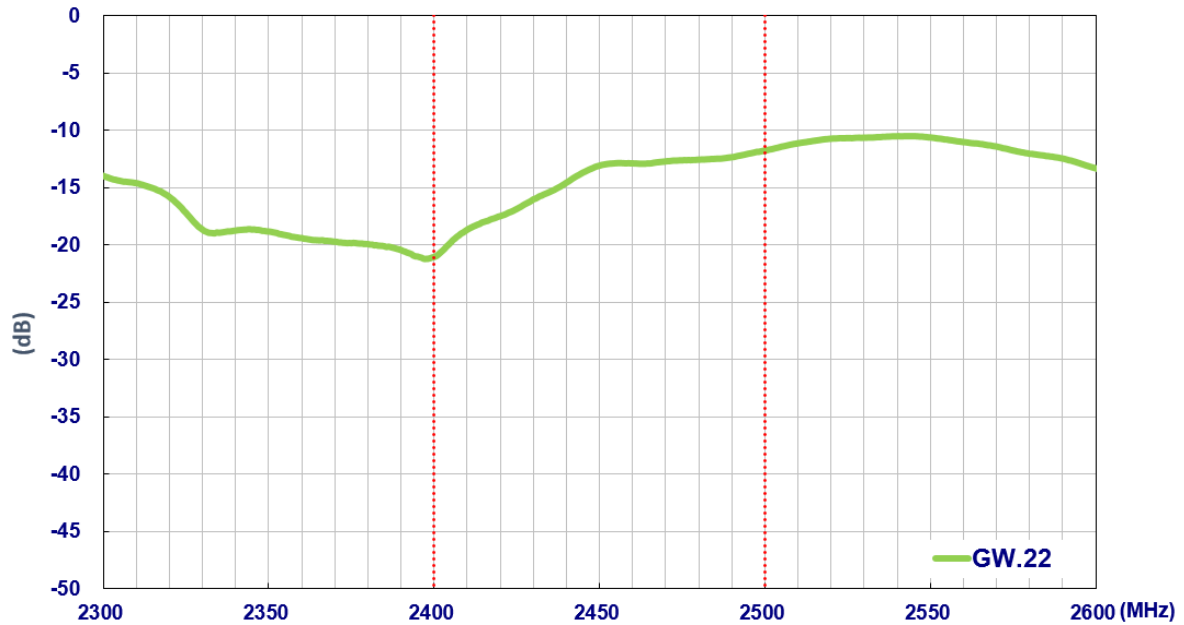
Choosing a Taoglas antenna with a higher peak gain than what is specified by the module manufacturer and enlisting our help will ensure you are getting the best performance possible without exceeding the peak gain limits.

2. Specification

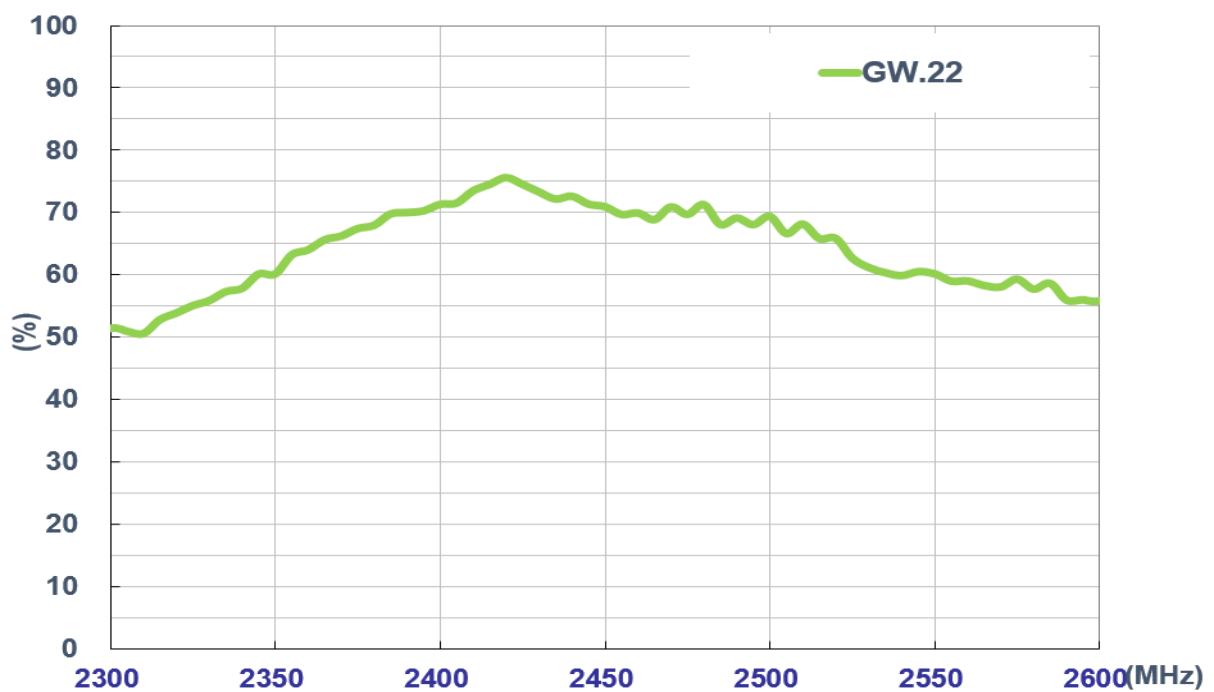
ELECTRICAL			
Frequency (MHz)	2400	2450	2500
Efficiency (%)	71.25	70.87	69.32
Average Gain(dB)	-1.47	-1.50	-1.59
Peak Gain(dBi)	4.64		
Return Loss	<-10		
Radiation	Omni-directional		
Polarization	Linear		
Impedance	50 Ω		
Input Power	10W		
MECHANICAL			
Antenna length	235mm		
Antenna Diameter	13mm		
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

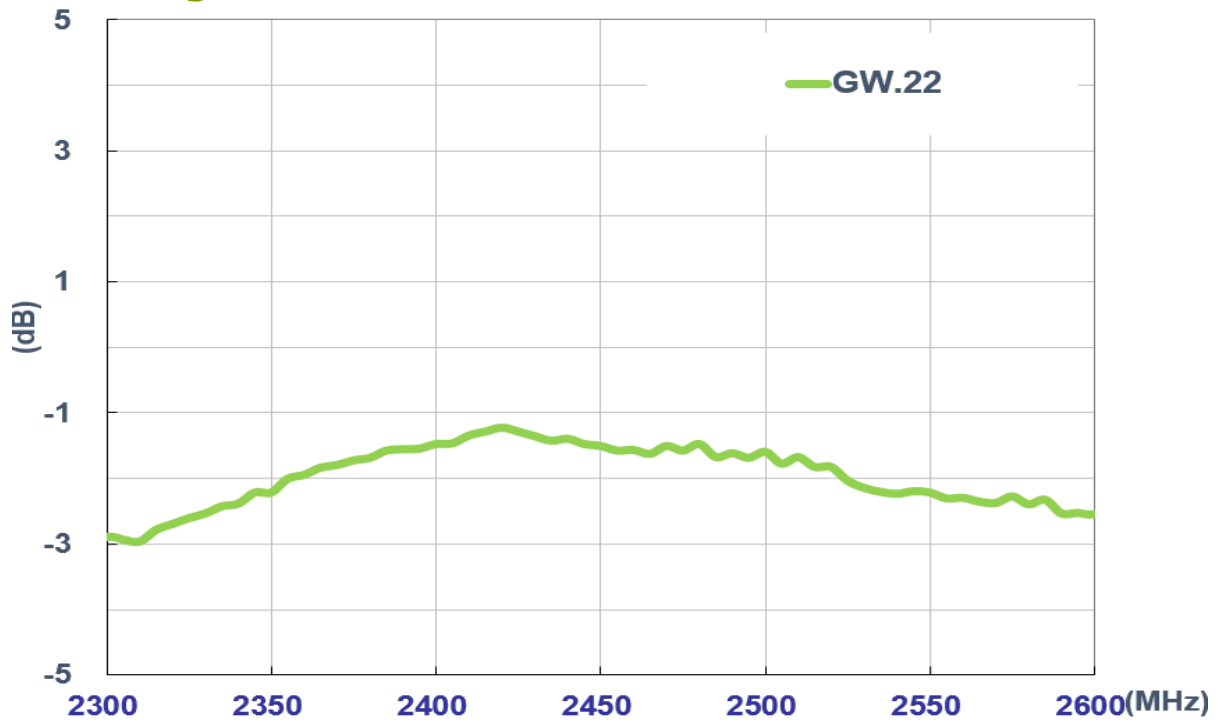
3.1 Return Loss



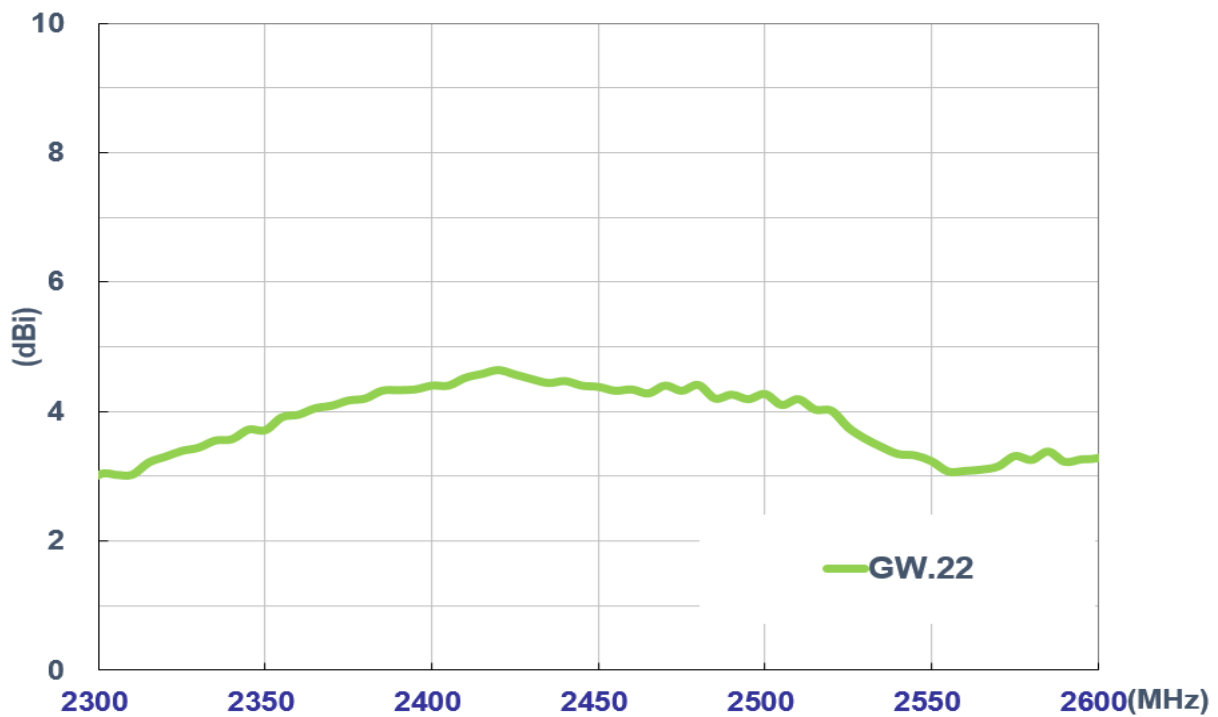
3.2 Efficiency



3.3 Average Gain

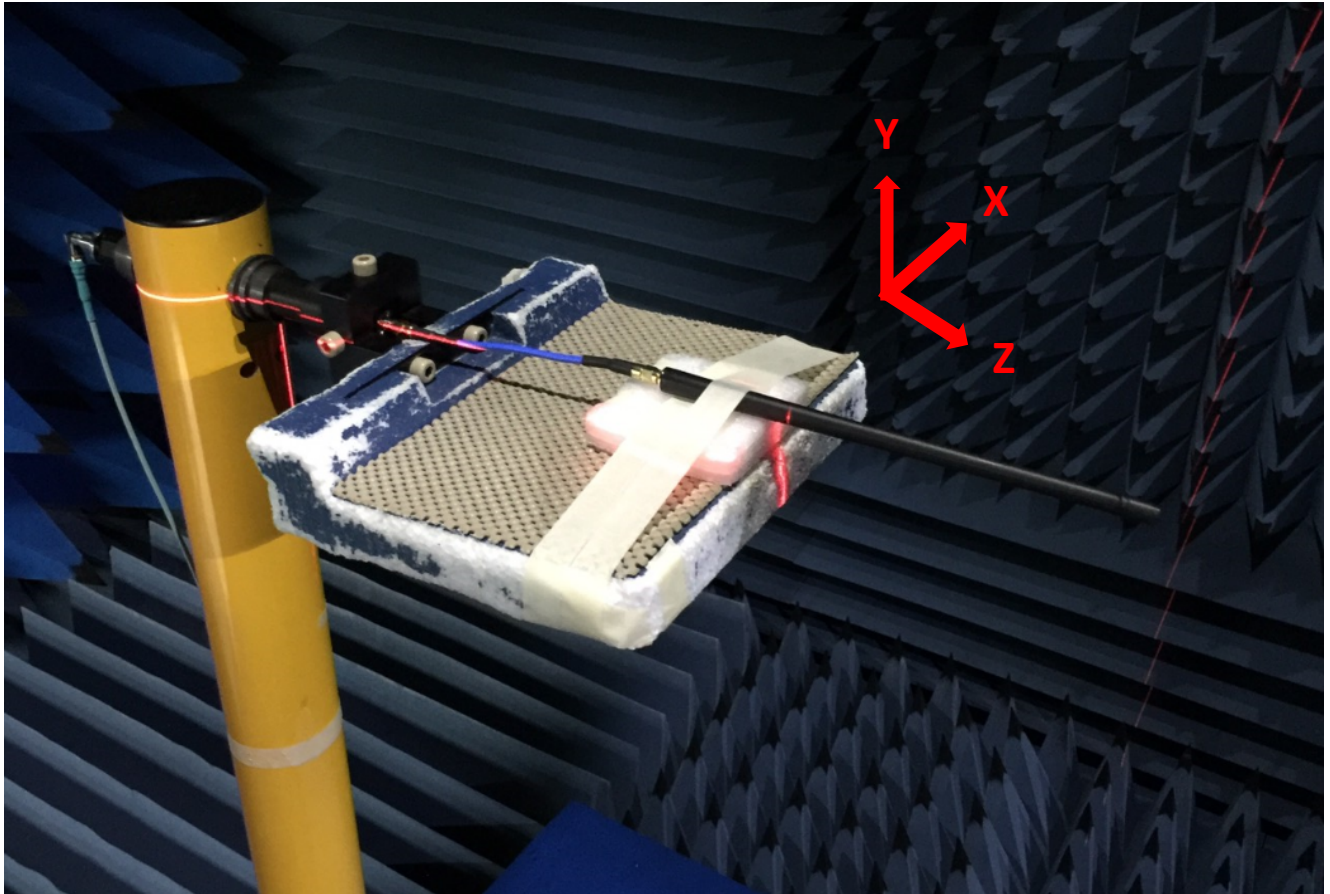


3.4 Peak Gain



4. Antenna Radiation Patterns

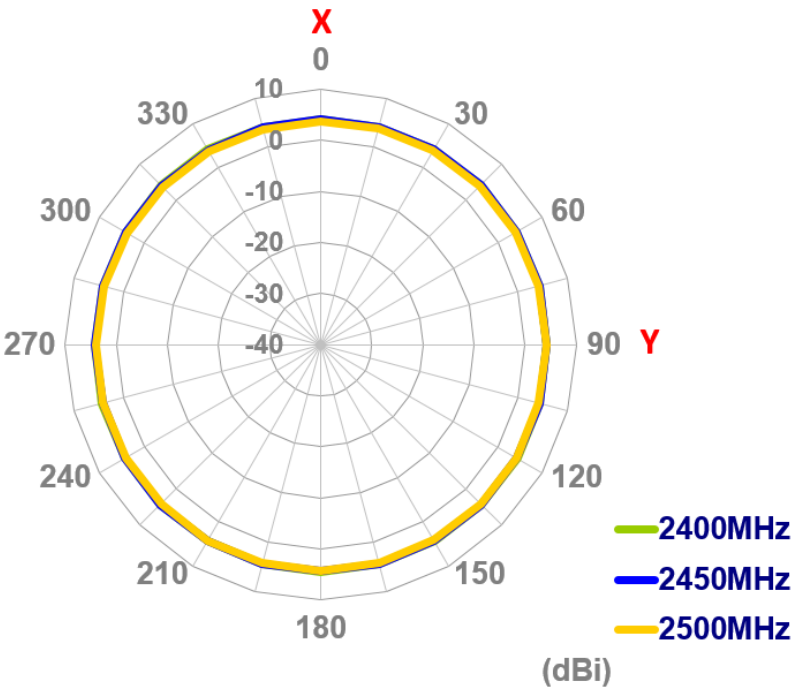
The antenna radiation patterns were measured in a CTIA certified ETS Anechoic Chamber. The measurement setup is shown below.



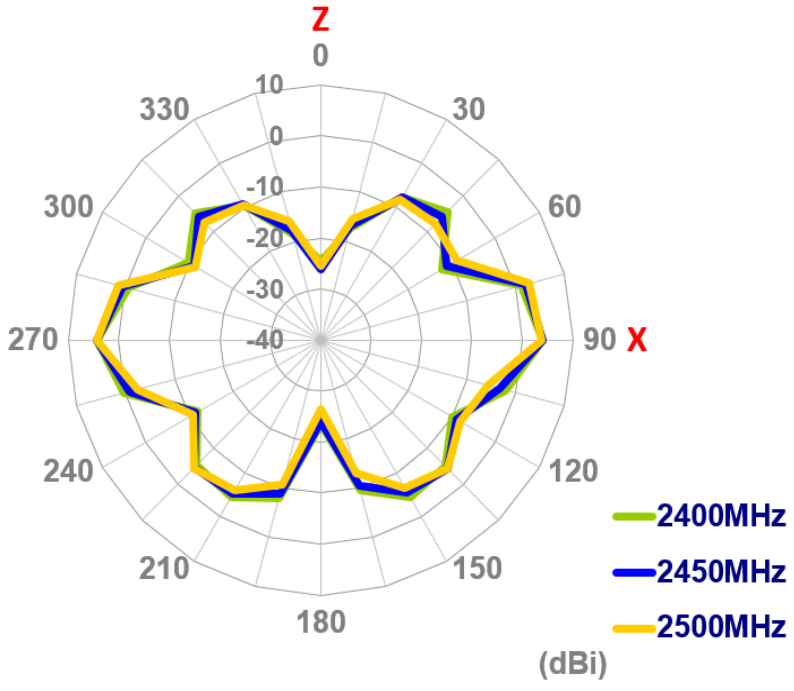
Free Space

4.1 2D Radiation Pattern (Free Space)

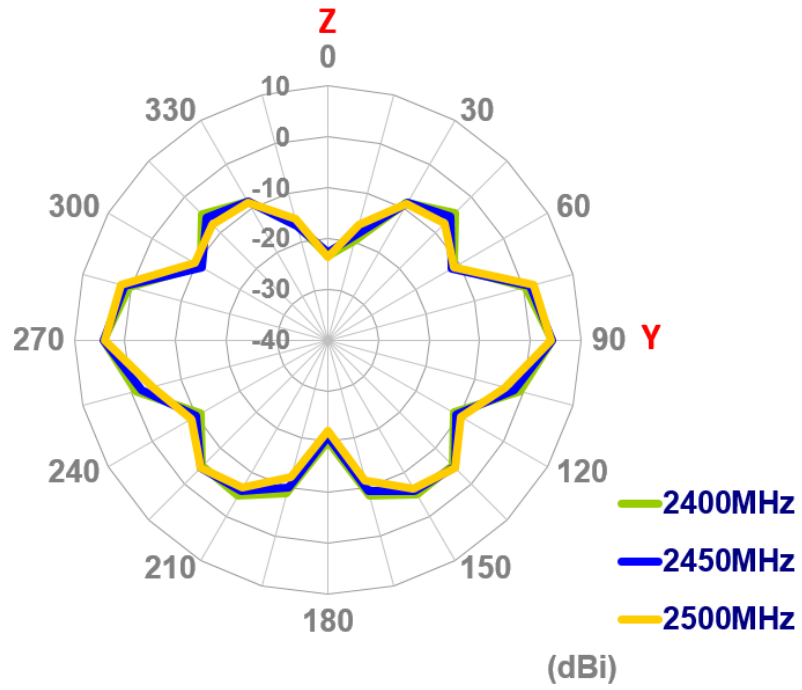
XY Plane



ZX Plane

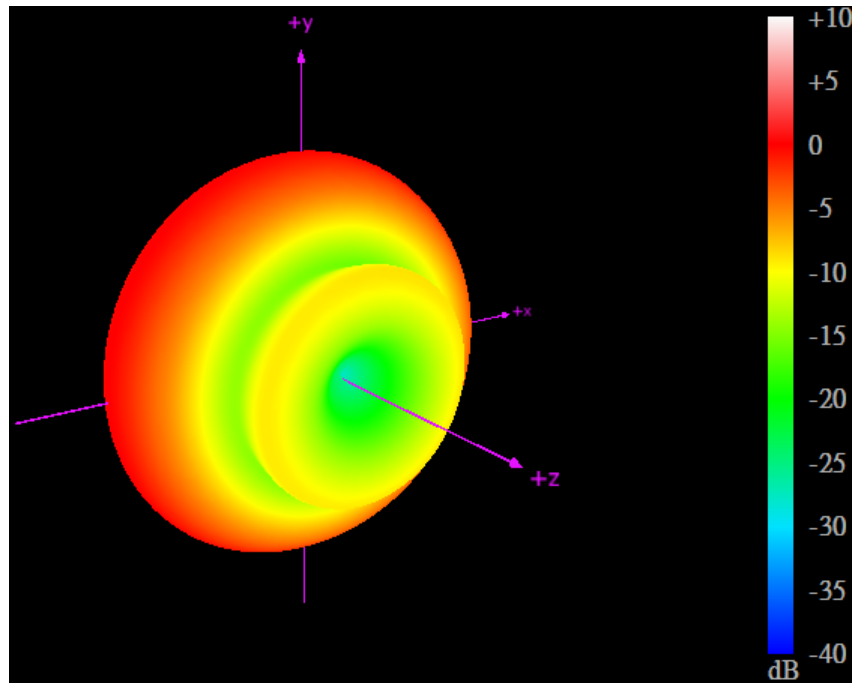


ZY Plane

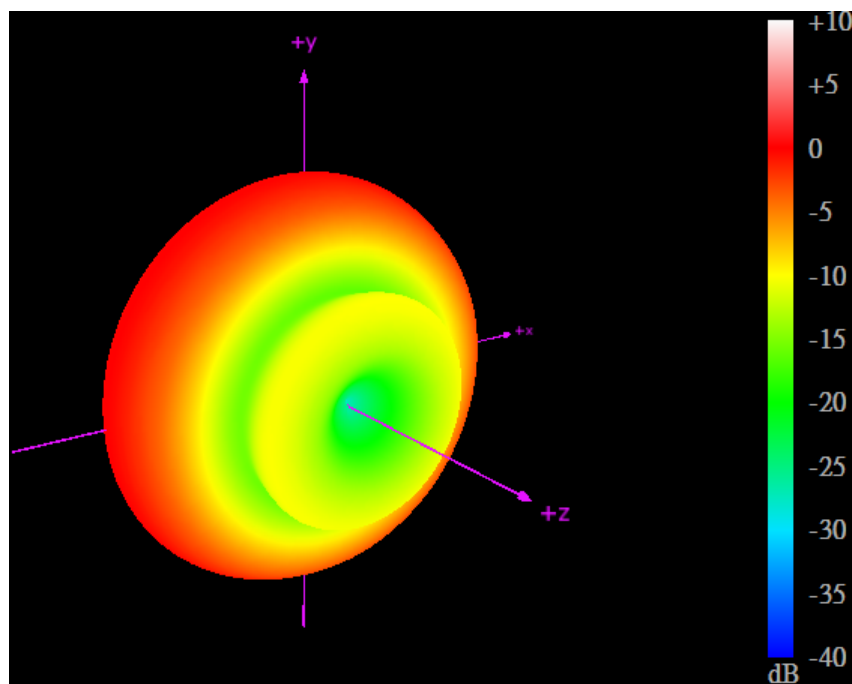


4.4 3D Radiation Pattern (Free Space)

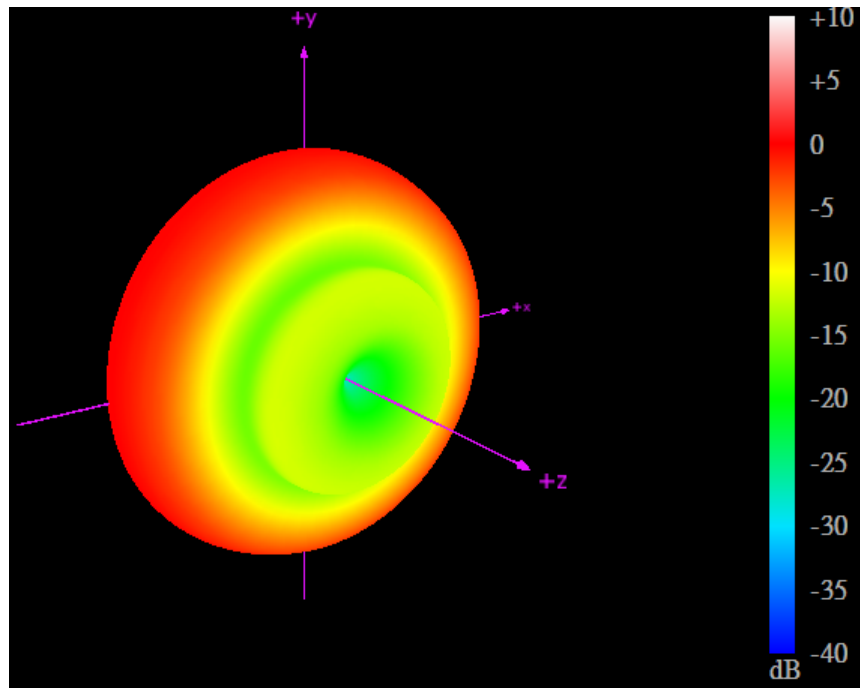
2400MHz



2450MHz

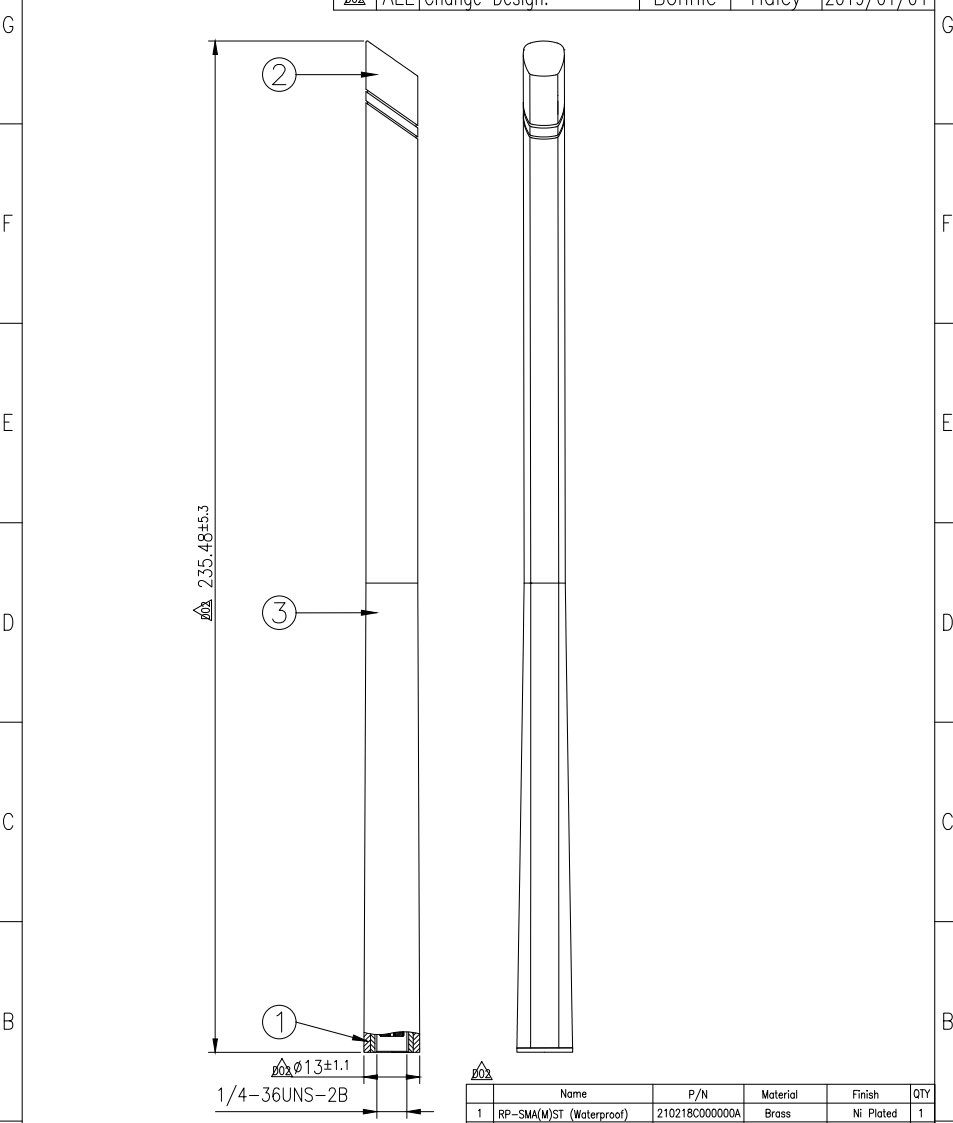


2500MHz





5. Mechanical Drawing

6	5	4	3	2	1	
ISO NO: EDW-18-8-5190	<Release>	REV ZONE	DESCRIPTION	ENG	APPROVED	ISSUED DATE
		ALL	Initial Design	Haley	Paul	2018/03/21
		ALL	Change Design.	Bonnie	Haley	2019/01/04

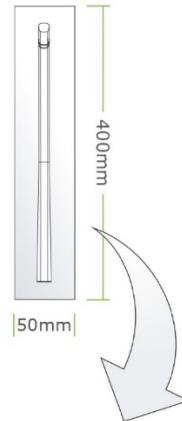


Name	P/N	Material	Finish	QTY
1 RP-SMA(M)ST (Waterproof)	210218C000000A	Brass	Ni Plated	1
2 Antenna Housing_Cap	000118C090000A	TPEE	White	1
3 Antenna Housing_Body	000118C090000A	TPEE	White	1

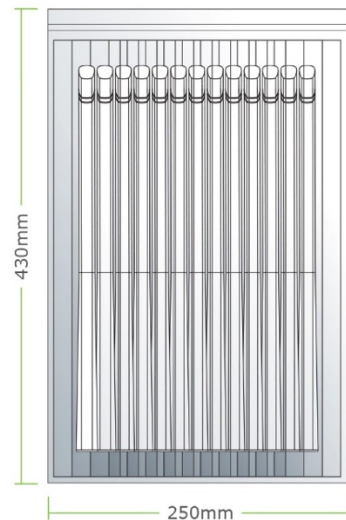
UNLESS OTHERWISE SPECIFIED TOLERANCES ON: .X± 0.2 XX± 0.1 X.± 0.3 .XXX± 0.05	DATE: 2018/03/21	MAT'L:	 <small>This drawing and its inherent design concepts are property of Taoglas. Not to be copied or given to third parties without the written consent of Taoglas.</small>	REV
	UNIT: mm	FINISH:		D02
	THIRD ANGLE PROJECTION 	SCALE: 1/1.25		A
APPROVED BY: Paul	CHECKED BY: Jack	DRAWN BY: Haley	TITLE. :5dBi 2.4GHz White Dipole Antenna RP-SMA(M) Straight UV Resistant PART NO. : GW.22.5151W	

6. Packaging

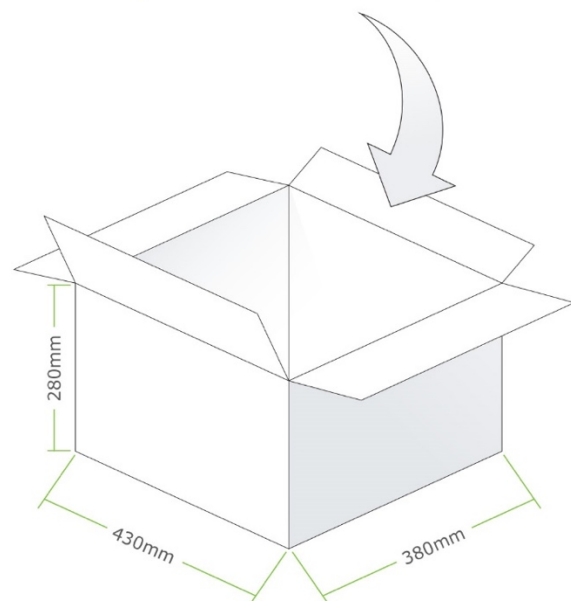
1pc GW.22.5151W per Small PE Bag
PE Bag Dimensions - 50*400mm
Weight - 32.5g



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



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