TAOGLAS



Datasheet

Part No:
WPC.25.A.07.0150C

Description

2.4GHz Ceramic Patch Antenna on integral ground with cable and connector

Features:

2.4~2.5GHz Ceramic Patch Antenna
Peak Gain: 5dBi
Efficiency: Greater than 60%
Dimensions: 25mm * 25mm * 4mm
Cable: 150mm 1.37 Micro Coaxial
Connector: I-PEX MHF® I (U.FL comp)
Custom Cables and Connectors Available
RoHS & Reach Compliant

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1. Introduction



The WPC.25A 2.4GHz Ceramic Patch Antenna with cable works on Wi-Fi®, Zigbee®, Bluetooth® and ISM band at 2.4GHz. This antenna comprises of a 2.4GHz 25*25*4mm embedded patch with mini-coax cable and connector for connectivity and a PCB carrier to mount the antenna. The antenna has its own ground PCB carrier and is therefore ground independent.

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 put inside a device. 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.

For example, a module manufacturer may state that the antenna must have less than 2dBi peak gain, but you don't need to select an embedded antenna that has a peak gain of less than 2dBi in free-space. This will give you a less optimized solution. It is better to go for a slightly higher free-space peak gain of 3dBi or more if available. Once that antenna gets integrated into your device, performance will degrade below this 2dBi peak gain due to the effects of GND plane, surrounding components, and device housing. If you want to be absolutely sure, contact Taoglas and we will test. 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

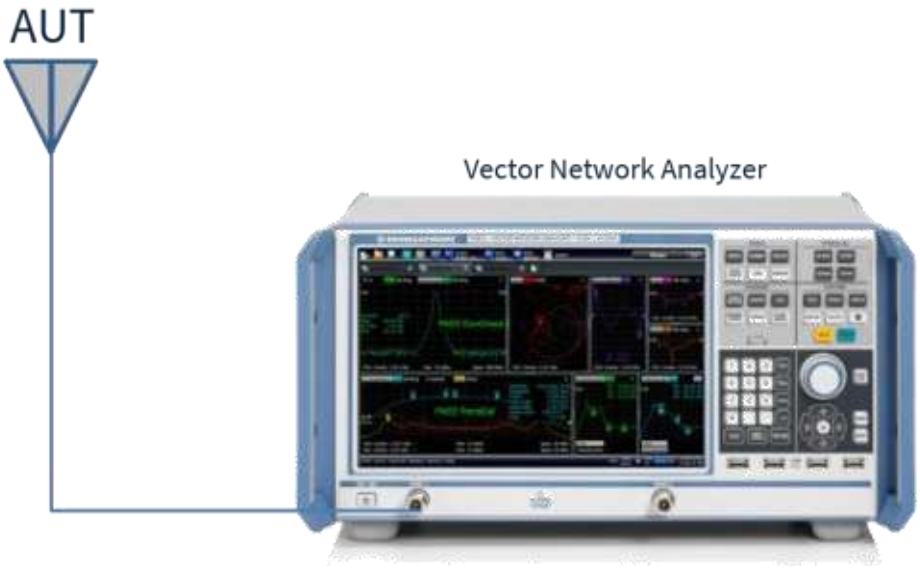
Electrical								
Band	Frequency (MHz)	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
Wi-Fi - 2GHz	2400-2500	76.9	-1.14	5.15	50 Ω	Linear	Omni	2W

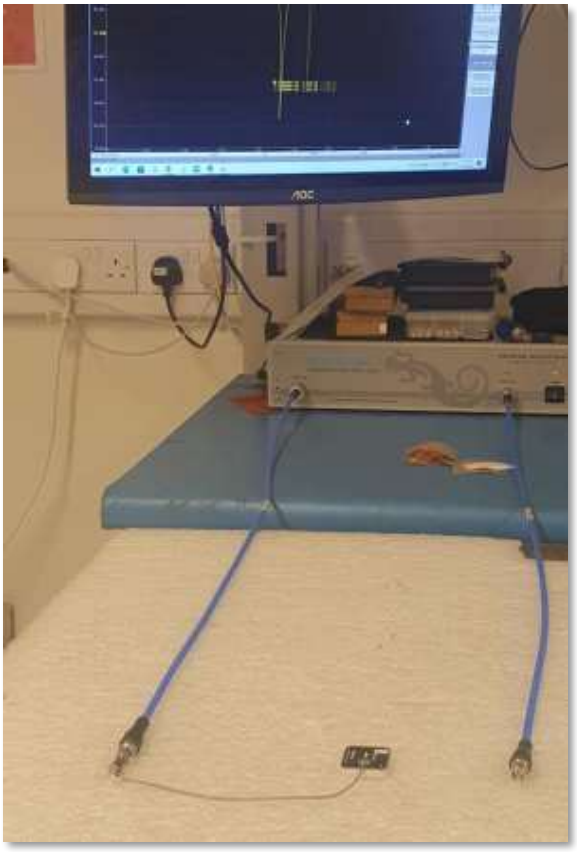
Mechanical	
Dimensions	25 x 25 x 5.5mm
Cable	1.37 mini coaxial cable
Cable length	150mm
Connector	IPEX MHF1

Environmental	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

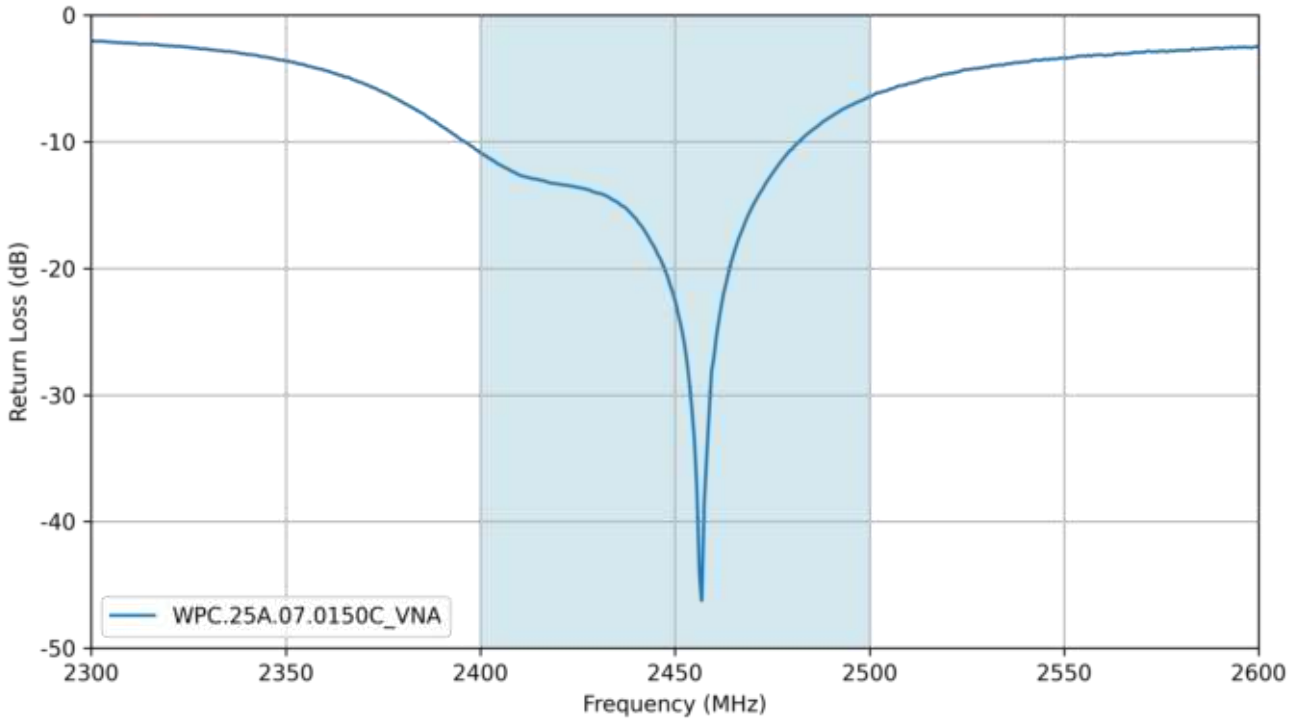
3. Antenna Characteristics

3.1 Test Setup

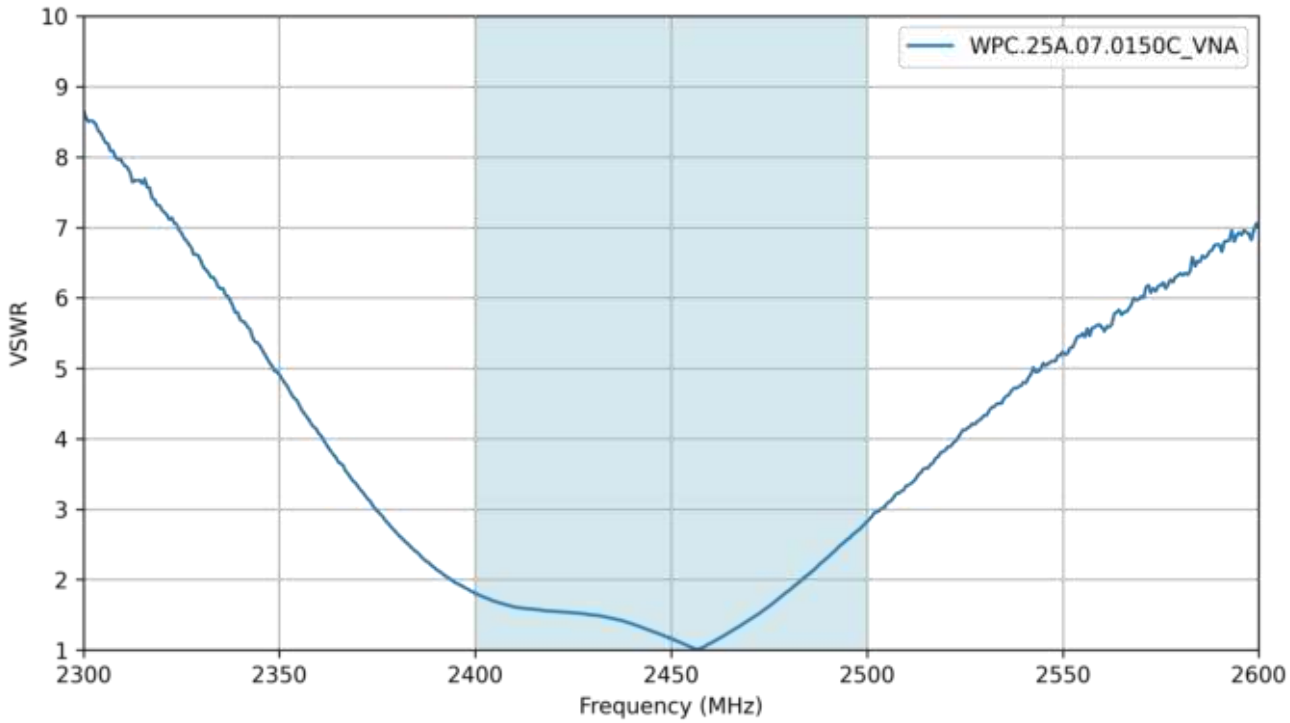




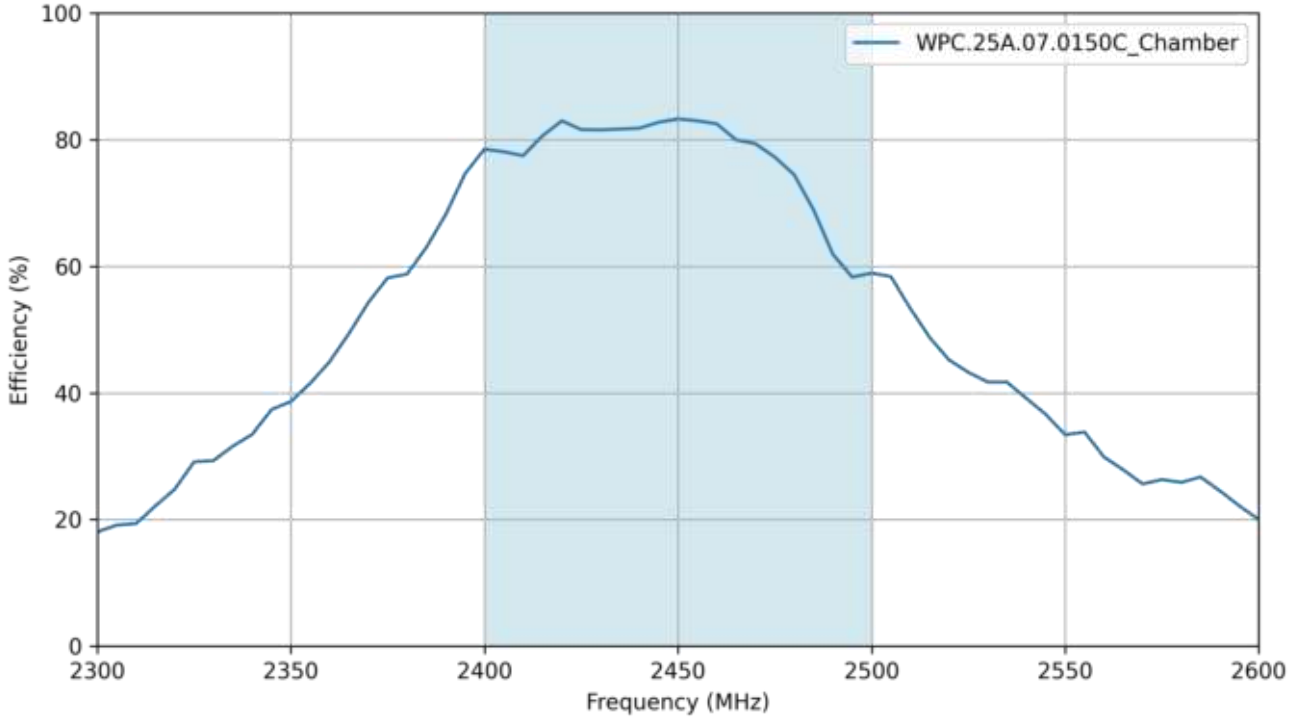
3.2 Return Loss



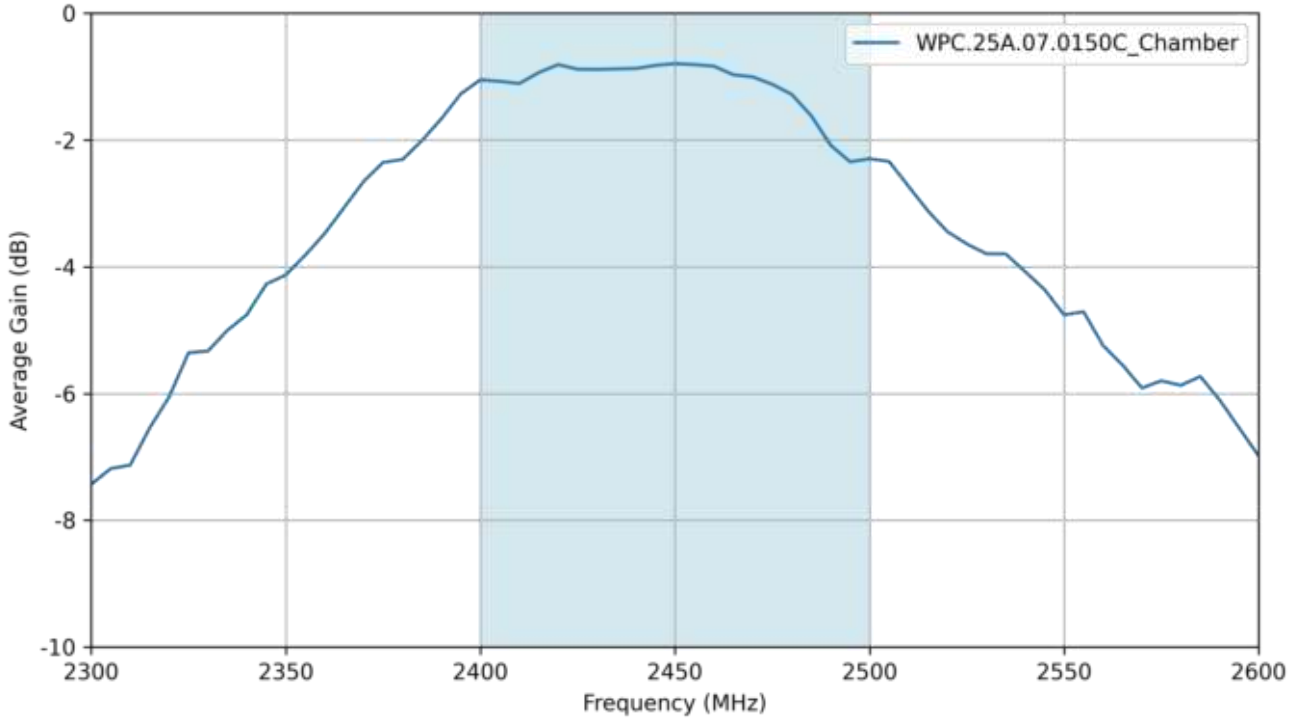
3.3 VSWR



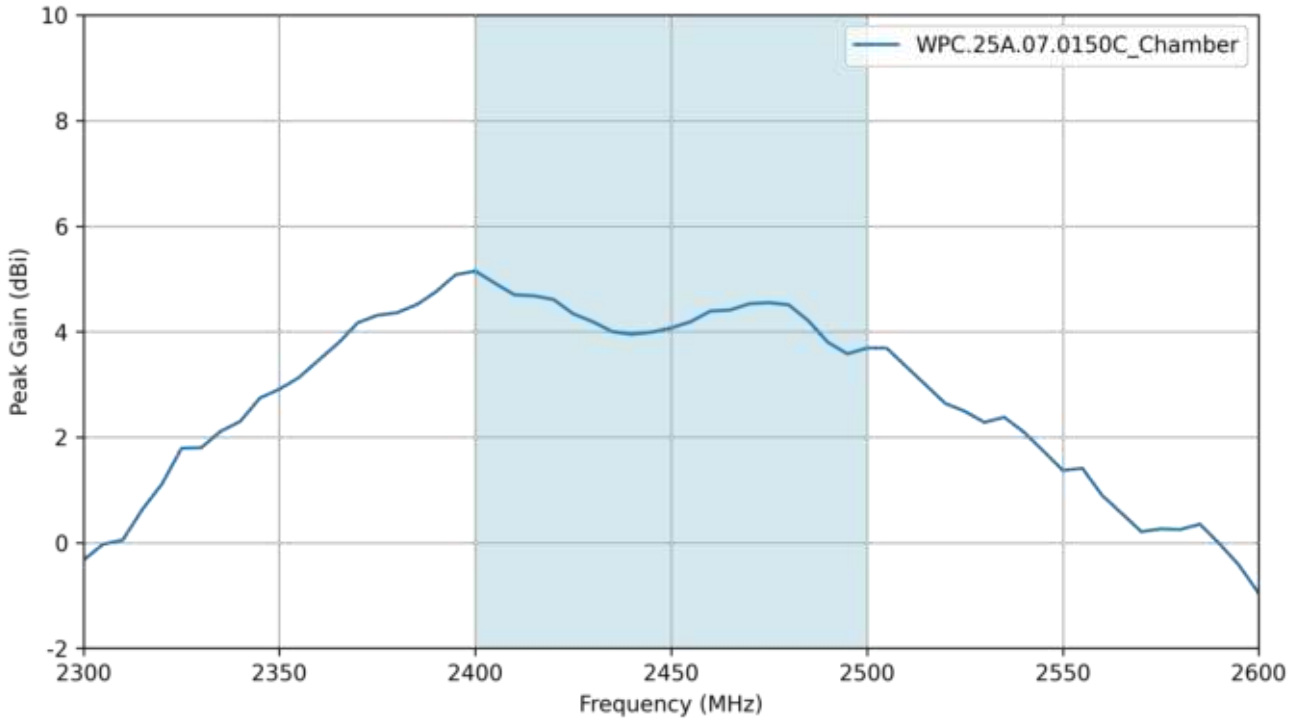
3.4 Efficiency



3.5 Average Gain

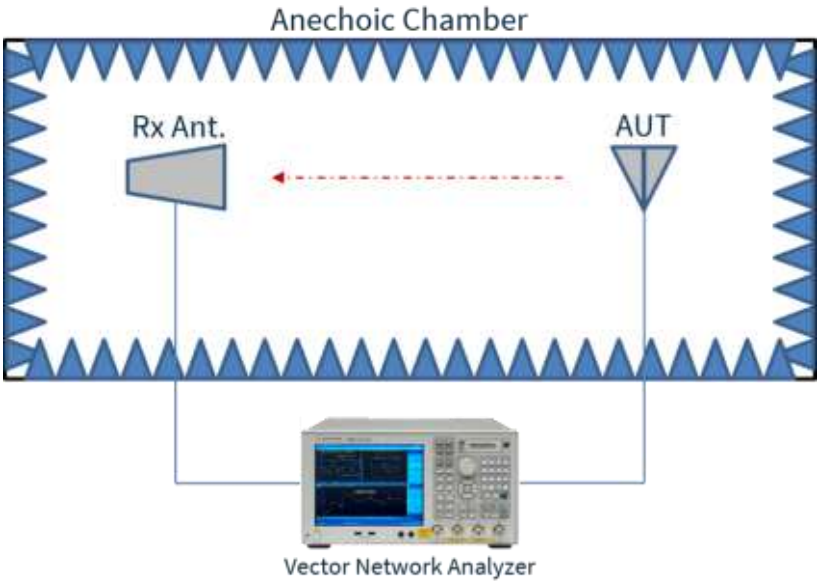


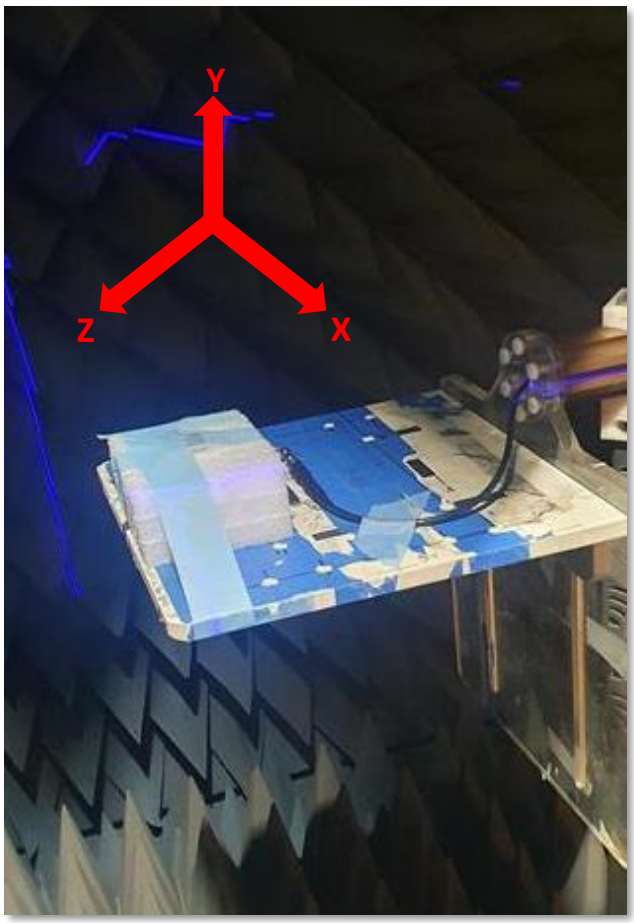
3.6 Peak Gain


WPC.25A.07.0150C_Chamber
Peak Gain (dBi)
10
8
6
4
2
0
-2
2300
2350
2400
2450
2500
2550
2600
Frequency (MHz)

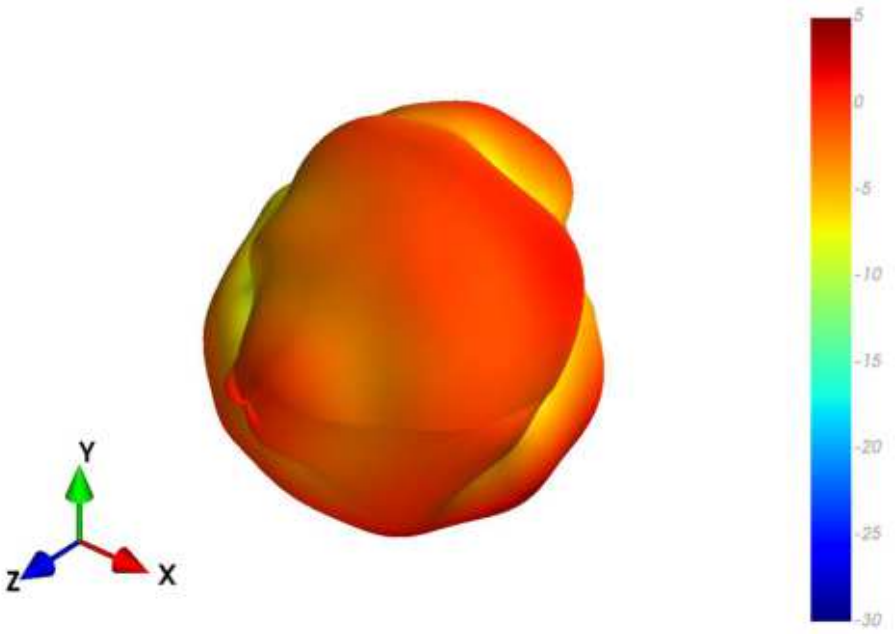
4. Radiation Patterns

4.1 Test Setup

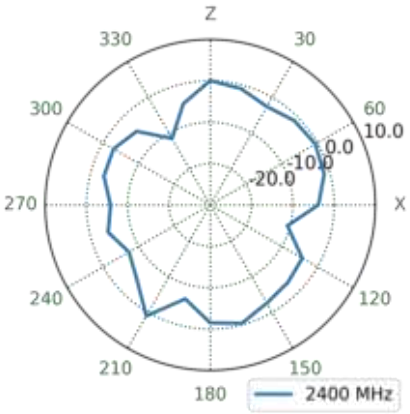


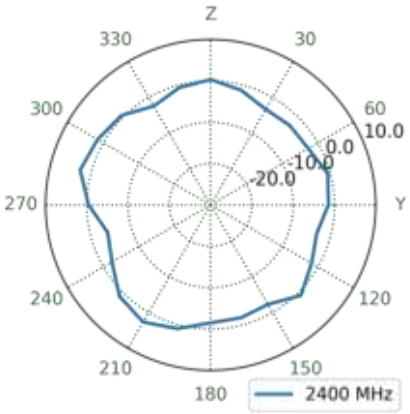


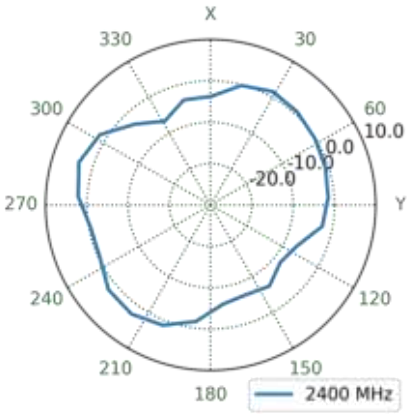
4.2 WPC.25A.07.0150C_Chamber Patterns at 2400 MHz



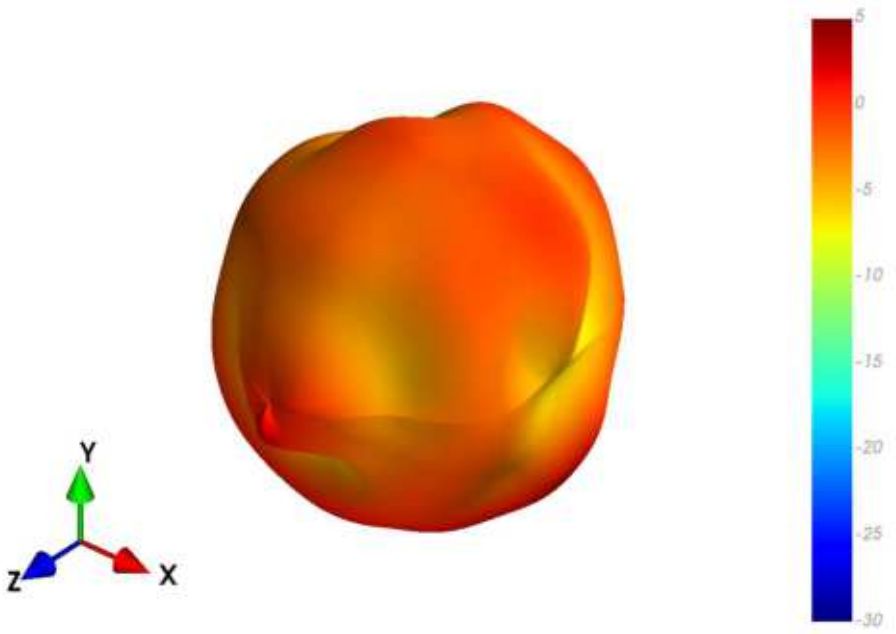
XZ Plane	YZ Plane	XY Plane



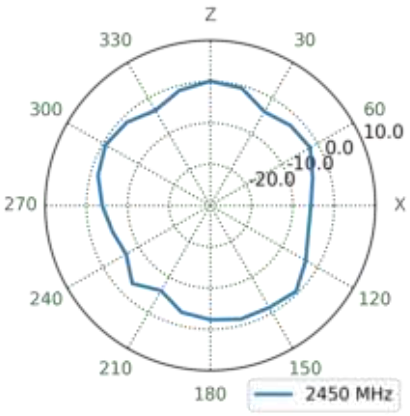


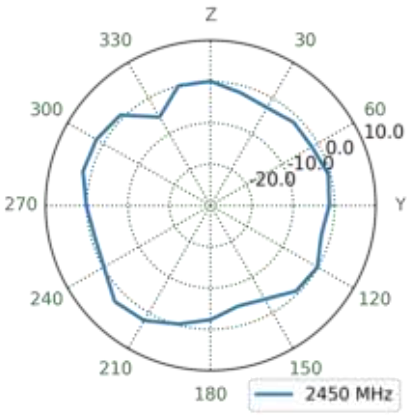


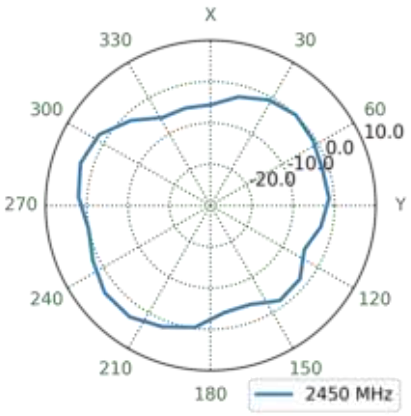
4.3 WPC.25A.07.0150C_Chamber Patterns at 2450 MHz



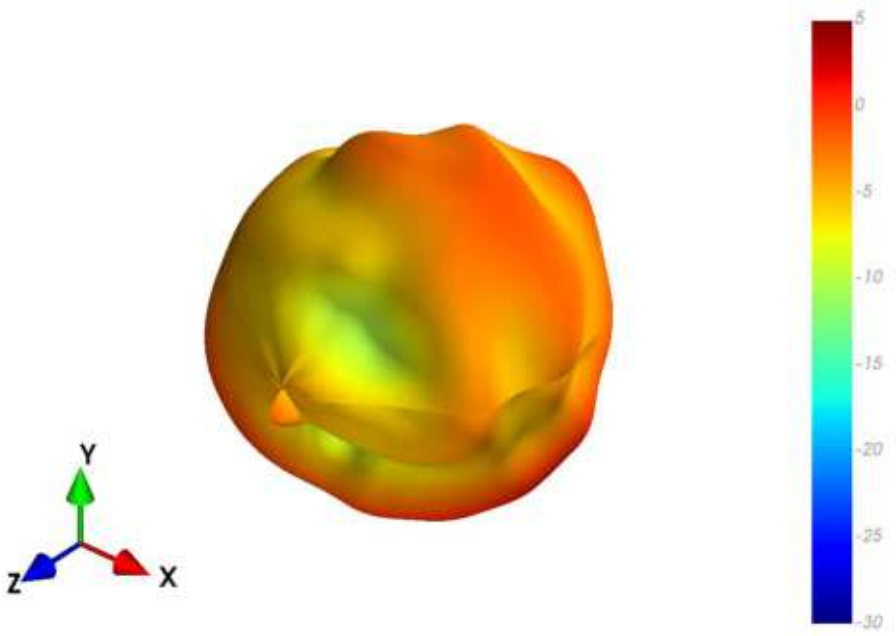
XZ Plane	YZ Plane	XY Plane

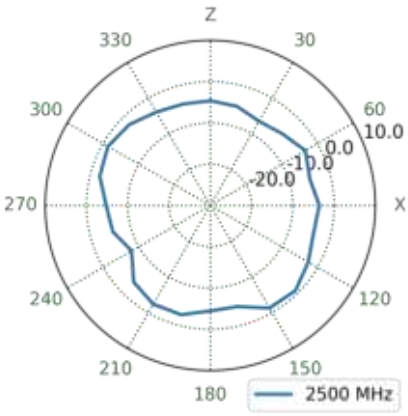
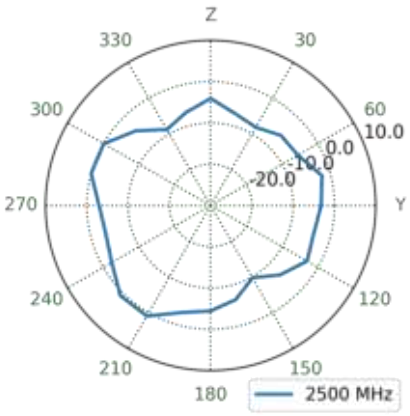
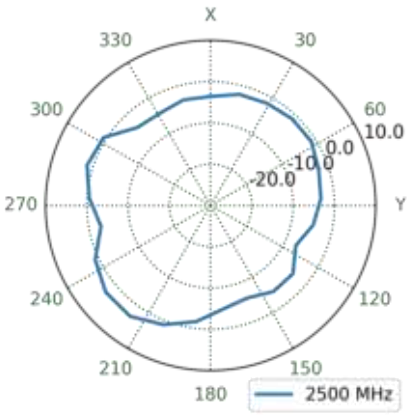




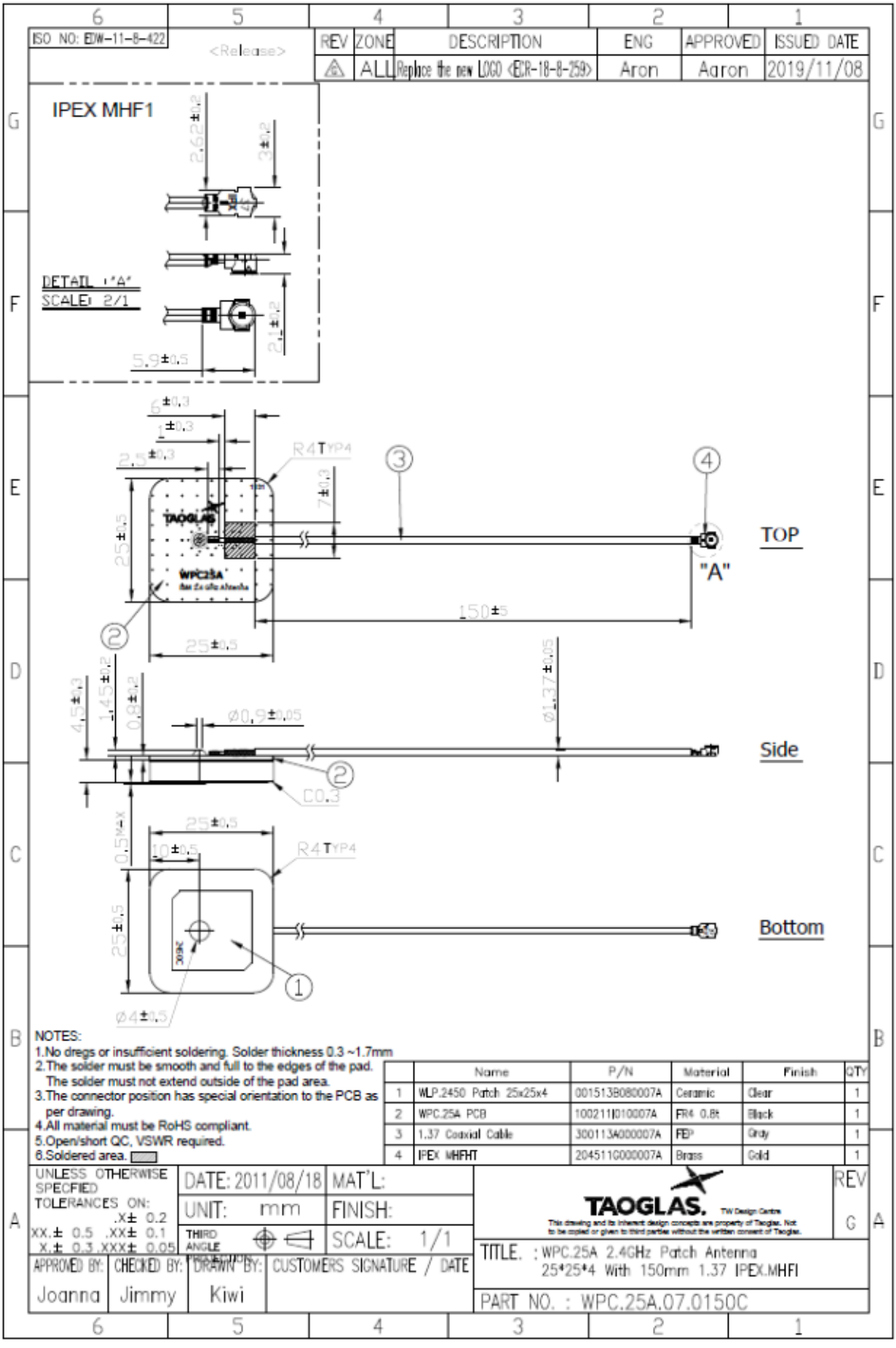


4.4 WPC.25A.07.0150C_Chamber Patterns at 2500 MHz



XZ Plane	YZ Plane	XY Plane
		

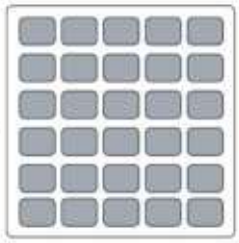
5. Mechanical Drawing



6. Packaging



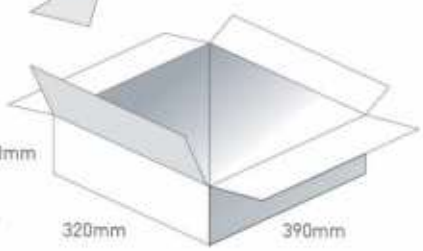
30 pcs WPC.25A.07.0150C per tray
Tray Dimensions - 365*300mm
Total Weight - 482g



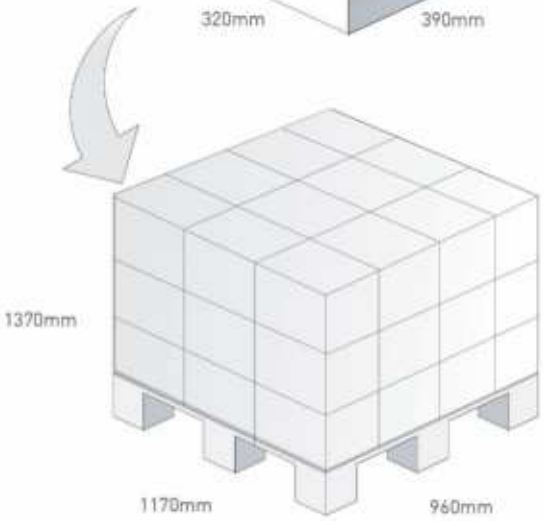
5 trays / 180 pcs WPC.25A.07.0150C per vacumm bag
Vacumm bag Dimensions - 366*300*50
Weight - 2.9Kg



15 trays / 3 vacumm bags / 540 pcs PCSG.01.A per carton
Carton Dimensions - 390*320*290
Weight - 9Kg



Pallet Dimensions 1170mm*960mm*1370mm
36 Cartons per pallet
3 Cartons per layer
12 Layers



Changelog for the datasheet

SPE-11-8-130-H - WPC.25.A.07.0150C

Revision: H (Current Version)	
Date:	2022-02-10
Changes:	Full Datasheet update
Changes Made by:	Evan Murphy

Previous Revisions

Revision: G	
Date:	2019-06-06
Changes:	
Changes Made by:	Technical Writer

Revision: F	
Date:	2015-12-08
Changes:	changed Polarization to "Broadly Linear".
Changes Made by:	Aine Doyle

Revision: E	
Date:	2015-03-02
Changes:	
Changes Made by:	Technical Writer

Revision: D	
Date:	2012-03-02
Changes:	
Changes Made by:	Technical Writer

Revision: C	
Date:	2012-02-24
Changes:	
Changes Made by:	Technical Writer

Revision: B	
Date:	2012-02-06
Changes:	
Changes Made by:	Technical Writer

Revision: A (Original First Release)	
Date:	2011-02-06
Notes:	
Author:	Technical Writer



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