TAOGLAS

Datasheet

Part No:
FXP522.A.07.A.001

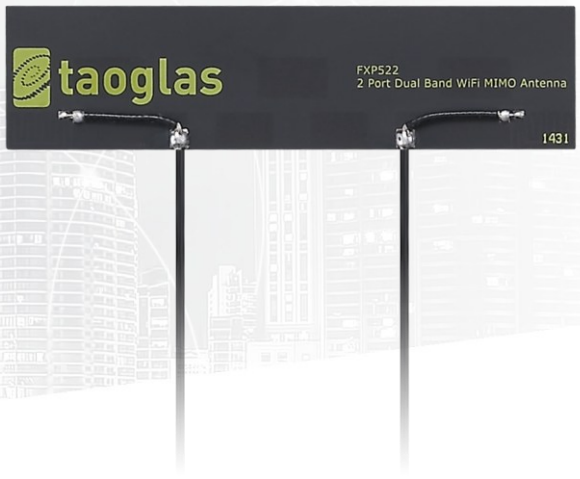
Description:

Venti Flex PCB Wi-Fi® MIMO 2.4/5.8/7.1GHz Antenna with 2 ports with Wi-Fi® 6 frequency bands included

Features:

Covers Extended Wi-Fi® Frequencies of 2.4-2.5GHz, 5-7.125GHz
Flex PCB MIMO Antenna
Adhesive Tape for ease of installation
Dimensions: 80*20*0.2mm
Cables: 100mm of Ø1.13mm
Connectors: I-PEX MHF® I (U.FL Compatible)
RoHS & Reach Compliant

1. Introduction



The FXP522 Venti antenna is a 2* MIMO, flexible embedded monopole type antenna designed to be used inside high speed devices on modern Wi-Fi® networks, including new Wi-Fi® 6 and extended Wi-Fi® networks.

Applications
- High speed HD video streaming
- High capacity mass transit communication networks

Omni-directional, the antenna has excellent efficiency and isolation performance for Wi-Fi® applications. With a thickness of only 0.15mm, the FXP.522 is an ideal solution for maintaining high performance while fitting into narrow spaces such as plastic enclosures for routers, gateways, set-top boxes and other Wi-Fi® applications. the FXP.522 was specifically tuned on ABS plastic, ensuring reliable performance on PC and ABS housings.

The antenna has been designed on a flexible polymer with a rectangular form-factor and cable connection for an easy installation. The antenna comes with double-sided 3M tape for easy "peel and stick" mounting. The antenna cables feature IPEX MHF(U.FL) connectors for easy installation.

In order to comply with some module FCC requirements, peak gain can be reduced by using longer cable lengths or when tested in actual device environment.

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. Customized cable lengths and connector versions can be supplied Contact a Taoglas regional support center for support.

2. Specifications

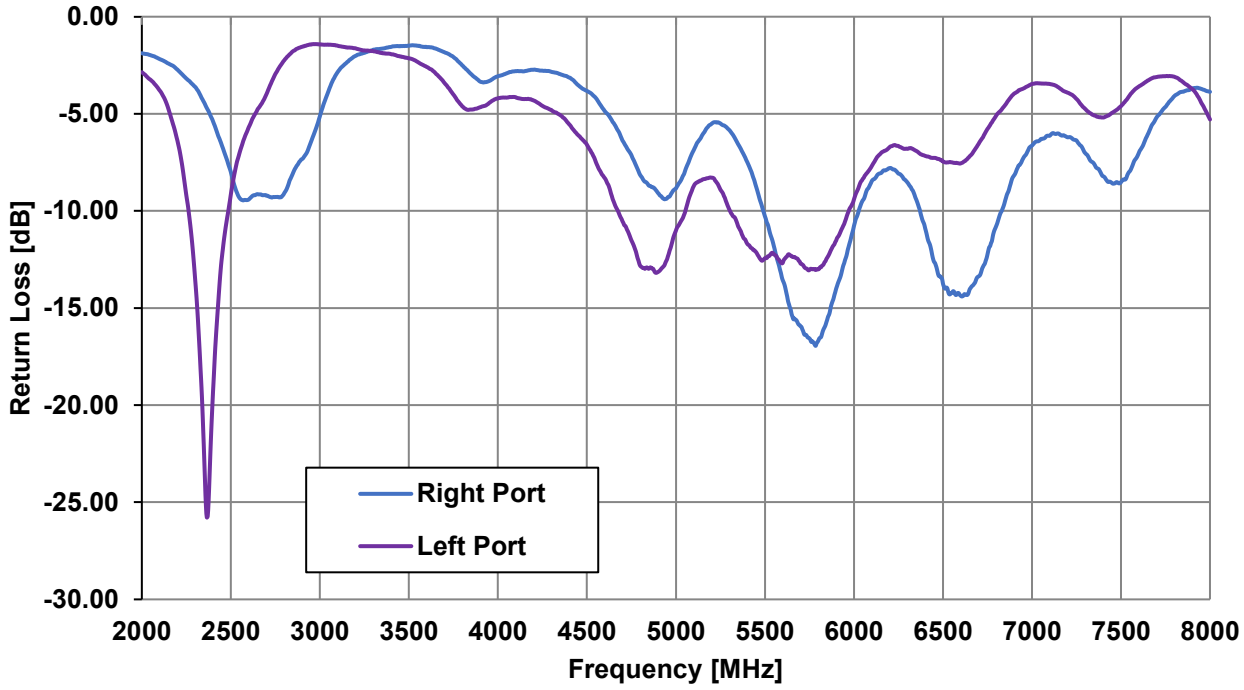
Electrical									
Band	**Frequency (MHz)**	**Setup**	**Efficiency (%)**	**Average Gain (dB)**	**Peak Gain (dBi)**	**Impedance**	**Max Power Input**	**Polarization**	**Radiation Pattern**
2.4GHz Wi-Fi	2400~2500	Port 1	62	-2.1	2.5	50Ω	2W	Linear	Omnidirectional
		Port 2	60	-2.2	2.5				
5.8GHz Wi-Fi	5150~5850	Port 1	65	-1.9	6.1				
		Port 2	65	-1.8	6				
7.1GHz Wi-Fi 6	5925~7125	Port 1	49	-3.3	8				
		Port 2	42	-4	6.4				

Mechanical	
Dimensions	80mm X 20mm X 0.1mm
Antenna Body Material	Polymer
Cable	2* Black 1.13mm Coaxial Cable
Cable Length	100mm
Connector	IPEX MHFHT
Weight	8g

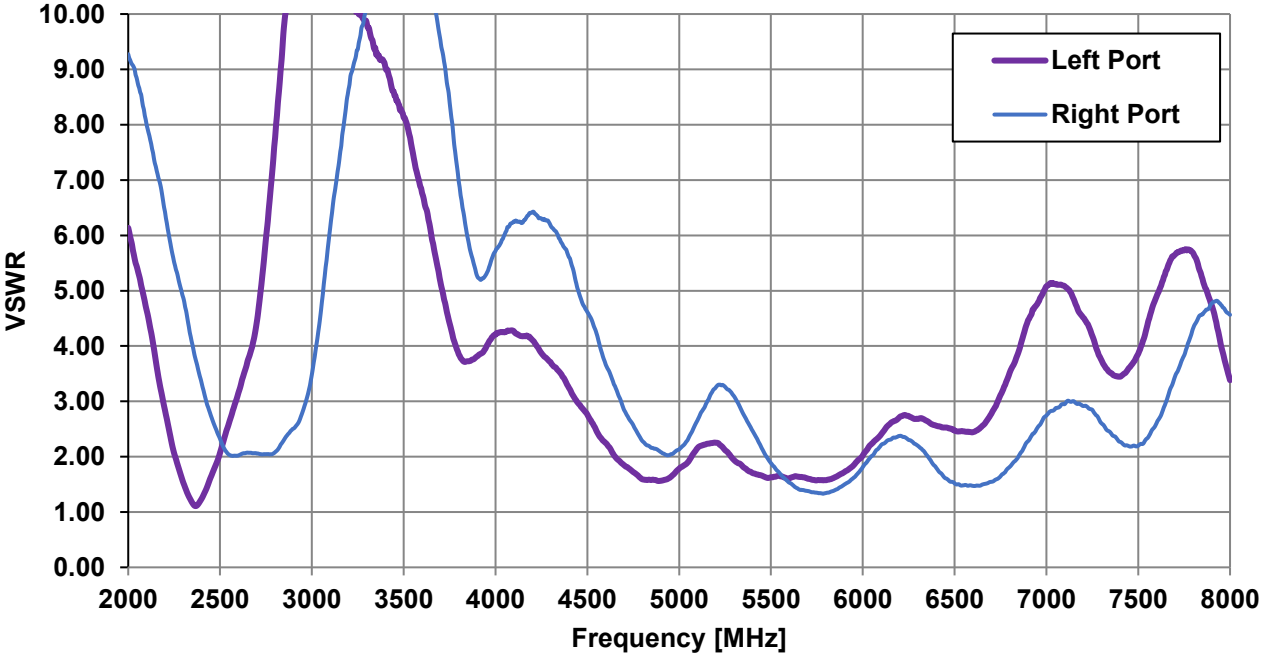
Environmental	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

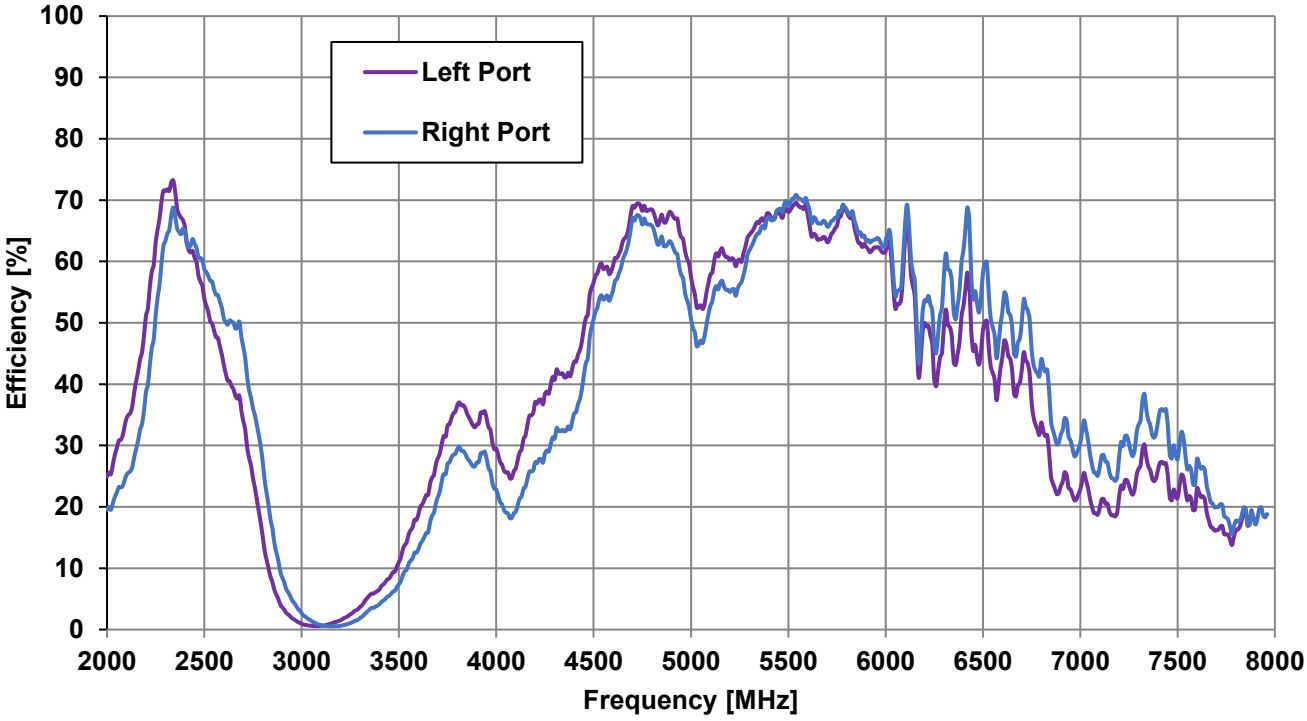
3.1 Return Loss



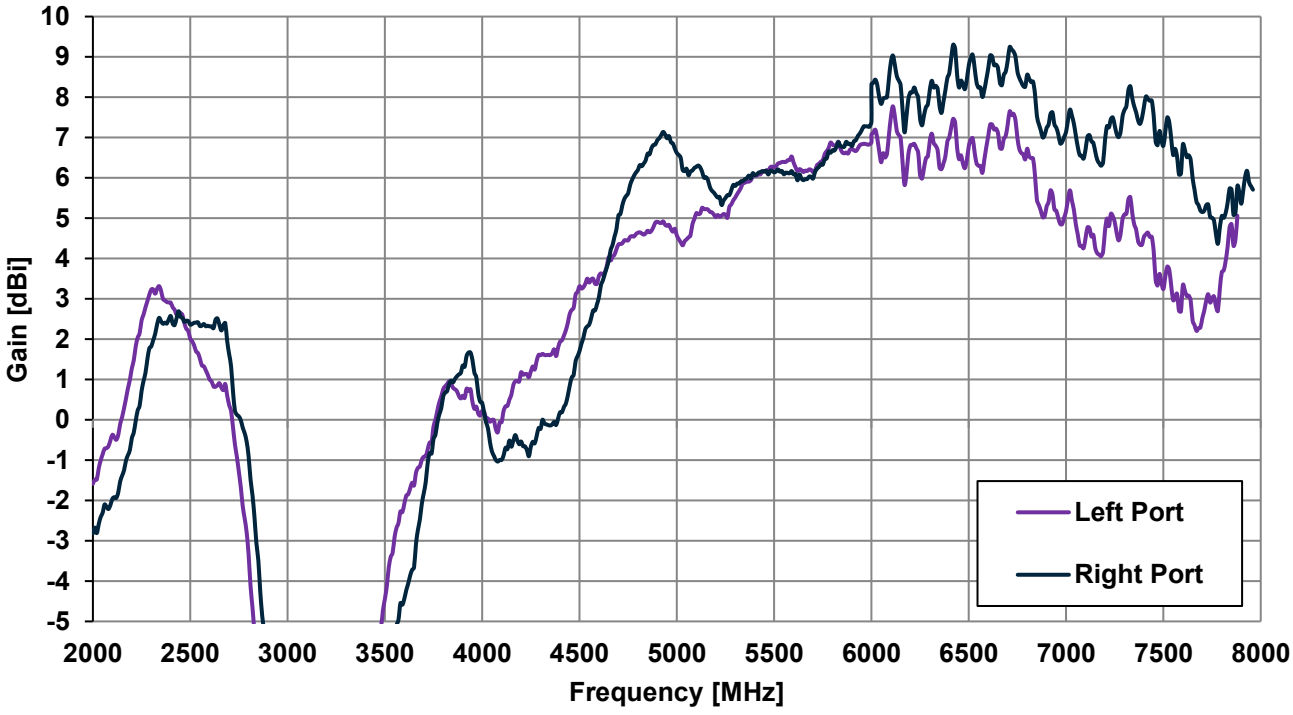
3.2 VSWR



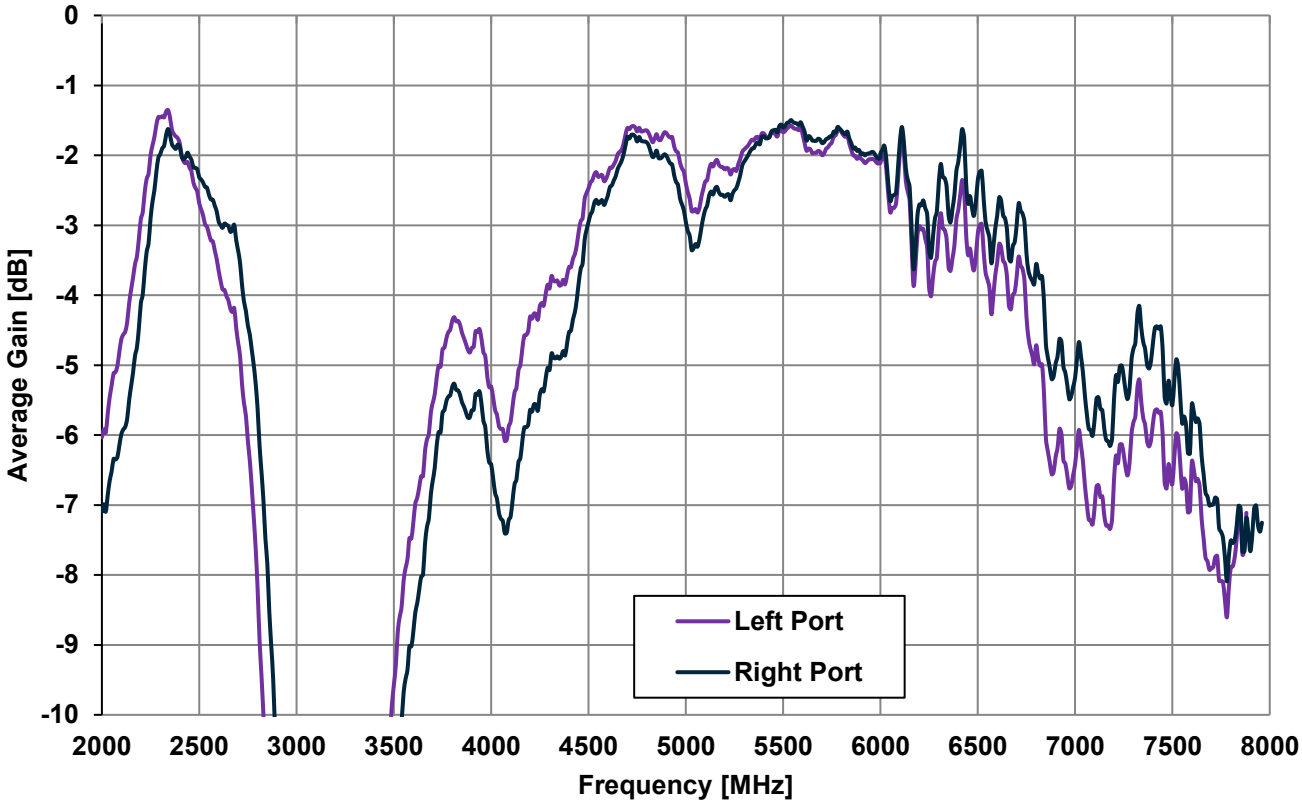
3.3 Efficiency



3.4 Peak Gain



3.5 Average Gain

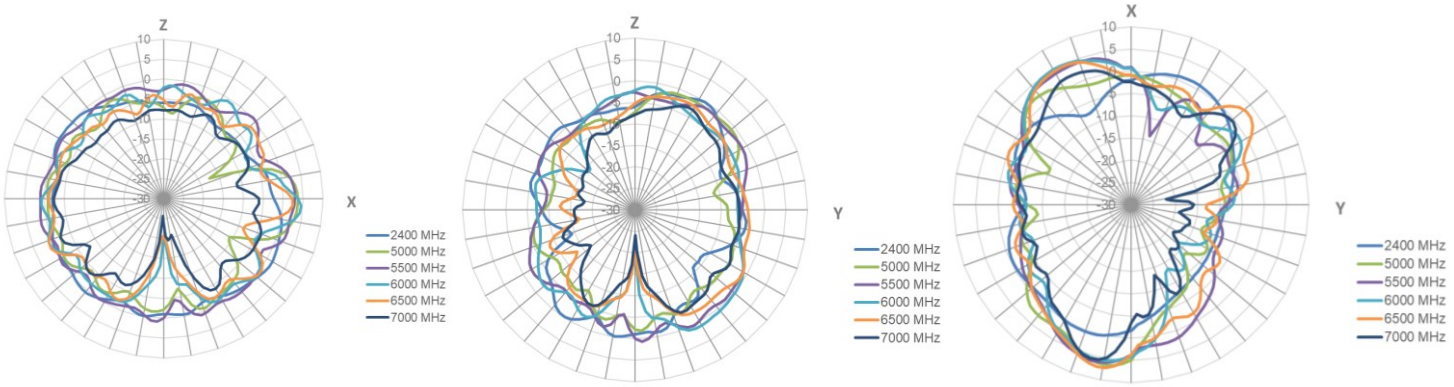


4. Radiation Patterns

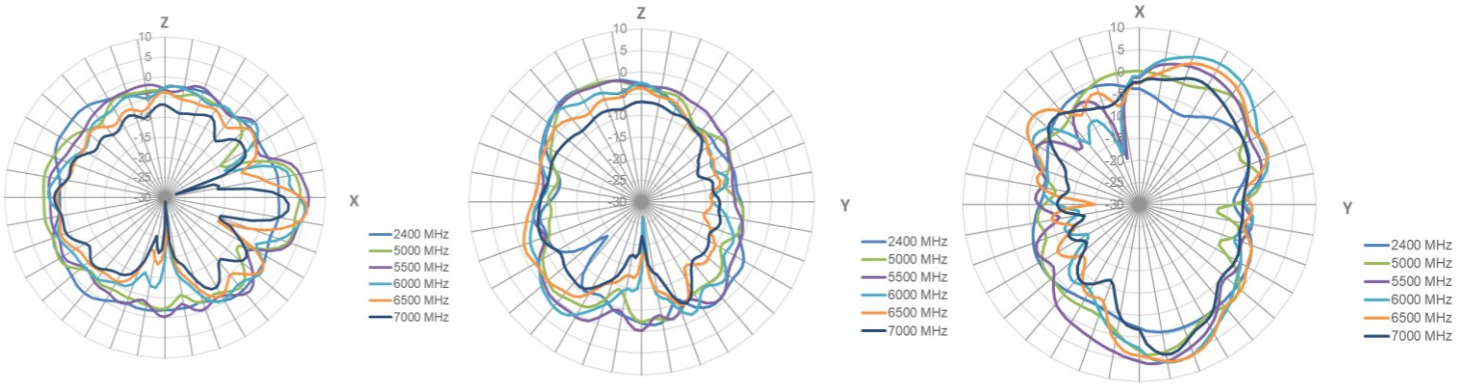
4.1 Test Setup – 2mm ABS

4.2 3D and 2D Radiation Patterns

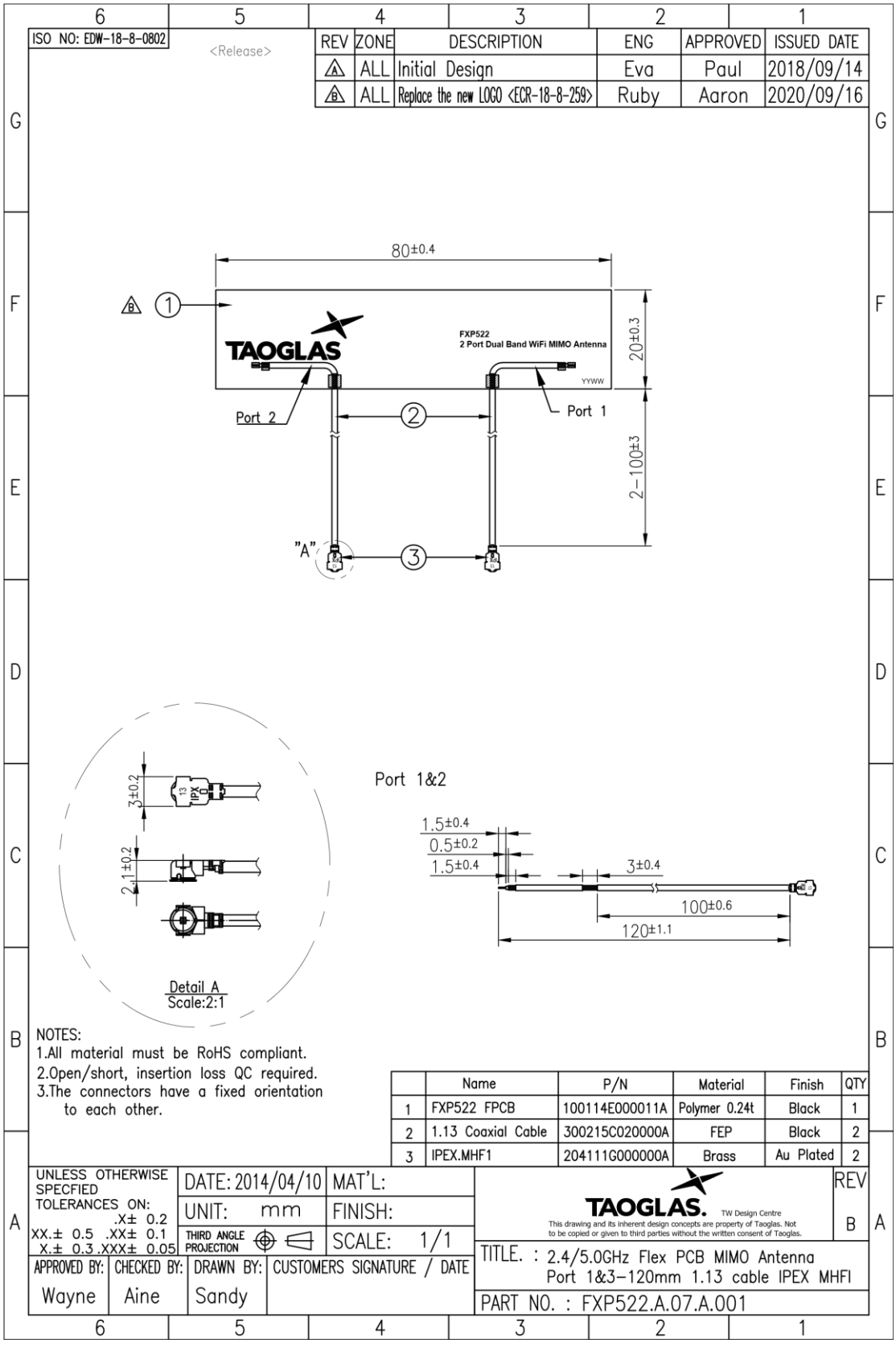
Port 1		
XZ Plane	YZ Plane	XY Plane



Port 2		
XZ Plane	YZ Plane	XY Plane

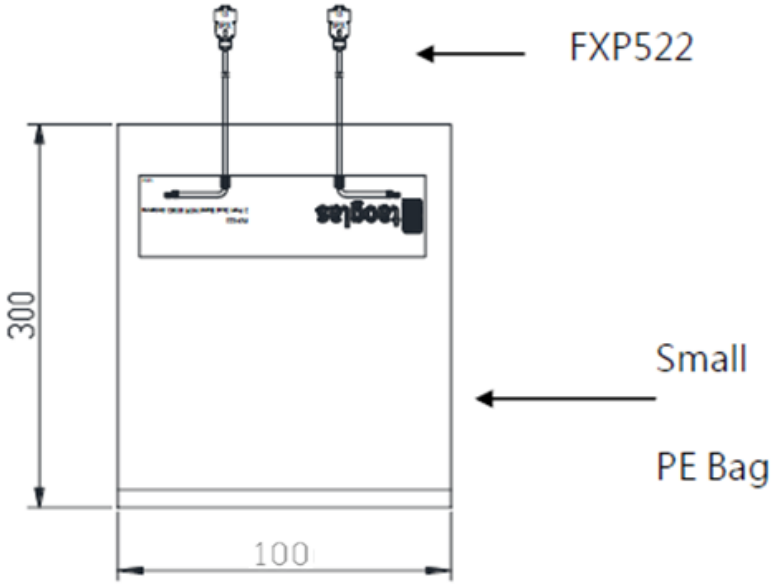


5. Mechanical Drawing (Units: mm)



6. Packaging

10 pcs per small PE Bag



Changelog for the datasheet

SPE-14-8-112 – FXP522.A.07.A.001

Revision: E (Current Version)	
Date:	2024-05-29
Changes:	Drawing updated
Changes Made by:	Cesar Sousa

Previous Revisions

Revision: D	
Date:	2020-07-01
Changes:	Updated to Include Wi-Fi 6
Changes Made by:	Jack Conroy

Revision: C	
Date:	2015-08-24
Changes:	Amended Note Gain
Changes Made by:	Aine Doyle

Revision: B	
Date:	2015-01-14
Changes:	Updated Intro
Changes Made by:	Aine Doyle

Revision: A (Original First Release)	
Date:	2014-10-24
Notes:	
Author:	Technical Writer

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