

Specification

Part No. : WA.500w.301151

Product Name : Stingray Adhesive Mount
Wi-Fi/Zigbee Antenna

Features : Dual Band 2.4-2.5 GHz, 4.9-6.0 GHz
IP-67 Water Resistant
RG-174 – 3M, RP-SMA(M)

RoHS ✓



1. Introduction

The WA.500w IP67 Waterproof Stingray is a high efficiency, high gain adhesive mount dual band wireless antenna. Its high quality low profile covert housing can be attached onto the glass or plastic. The WA.500w is designed for applications that require omni-directional gain across both bands to ensure wide coverage area and constant reception and transmission for Wi-Fi and Zigbee applications.

2. Specifications

2.1 Dimensions

Parameter	Specification
Base Diameter	55mm
Base Height	10.8mm

2.2 Electrical Characteristics

Parameter	Specification
Frequency	2.4/5.8GHz
Polarization	Linear
Impedance	50Ω
VSWR	1.92 Max

2.3 Cable and Connector

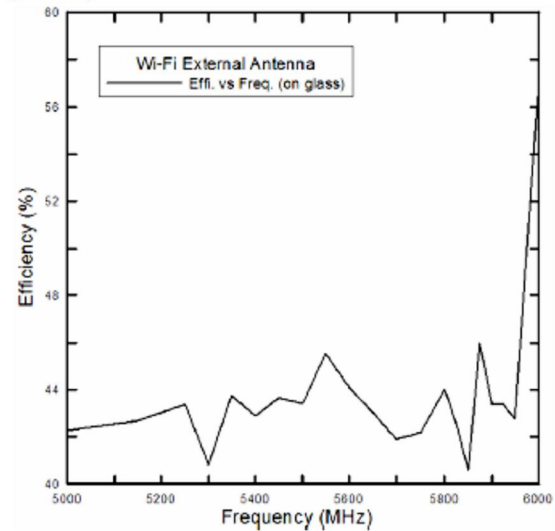
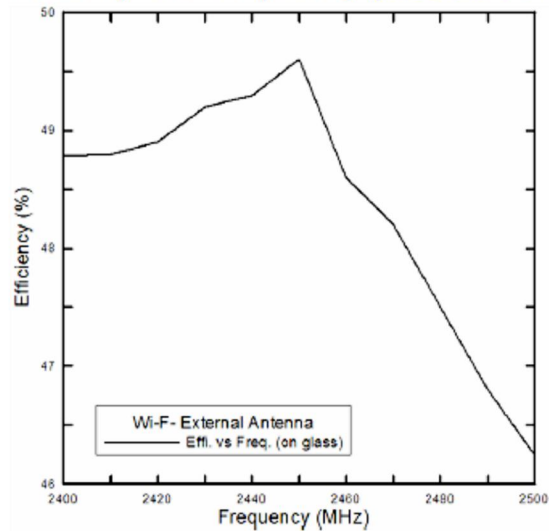
Parameter	Specification
Dimensions	Diameter 55mm Height 10.80mm
Colour	Black
Connector	RP-SMA(M) Fully Customisable
Cable	RG174 Length = 3M Fully Customisable

2.4 Efficiency, Average Gain, and Peak Gain Without cable

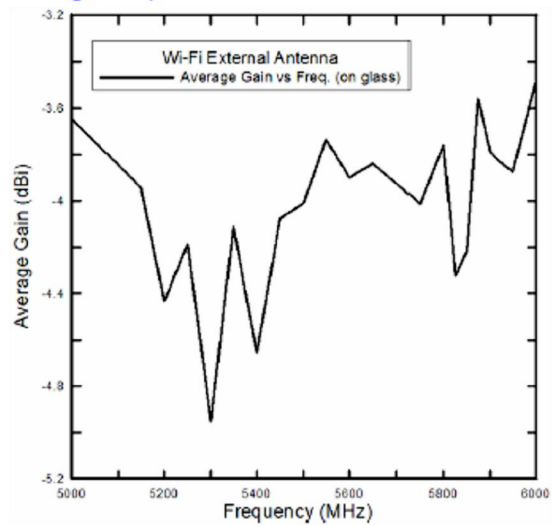
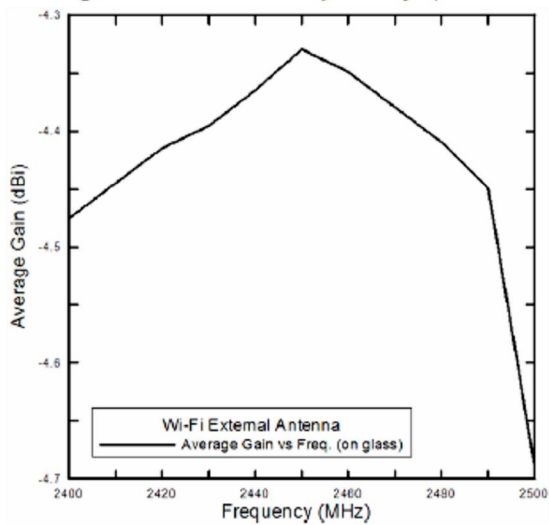
Frequency	Efficiency (%)		Average Gain dBi		Peak Gain dBi	
	On Plastic	On Glass	On Plastic	On Glass	On Plastic	On Glass
2400	30.421	48.78	-6.957	-4.475	2.452	5.382
2450	48.09	49.605	-4.217	-4.329	4.2	6.886
2500	57	46.247	-3.473	-4.687	4.933	5.844
5000	67.232	42.28	-2.45967	-3.64833	8.991	3.736
5150	71	42.7	-2.11333	-3.94167	9.161	4.532
5200	65.933	43.03	-2.448	-4.434	8.901	4.481
5250	72	43.398	-1.852	-4.18833	9.154	5.129
5300	63.761	40.8	-2.279	-4.954	8.502	4.369
5350	72.267	43.751	-1.65933	-4.11033	8.906	5.757
5400	61.363	42.88	-2.311	-4.658	7.905	5.056
5450	68.398	43.649	-1.74467	-4.076	8.135	4.739
5500	68.624	43.413	-1.69933	-4.00933	7.985	4.564
5550	70.21	45.55	-1.51533	-3.73533	7.907	5.094
5600	66.97	44.11	-1.72333	-3.898	7.656	4.863
5650	66.678	43.04	-1.78233	-3.841	7.635	4.205
5700	62.174	41.88	-2.12867	-3.92433	7.394	4.062
5750	68.187	42.21	0.311333	-4.013	7.859	4.917
5800	70.44	44.052	-1.505	-3.76133	7.901	4.308
5825	67.31	42.43	-2.113	-4.32467	7.769	3.615
5850	69.353	40.583	-1.62233	-4.21933	7.899	3.487
5875	76.068	45.984	-1.22067	-3.56	8.091	3.856
5900	69.981	43.385	-2.24767	-3.78733	7.611	3.990
5925	70.424	43.379	-1.581	-3.83533	7.701	4.262
5950	70.742	42.749	-1.59033	-3.876	7.755	3.899
6000	72.374	56.95	-1.51533	-3.48933	7.701	3.239

Plastic dimension	520×520×13.8mm ³ , PC+ABS
Glass dimension	500×500×3 mm ³

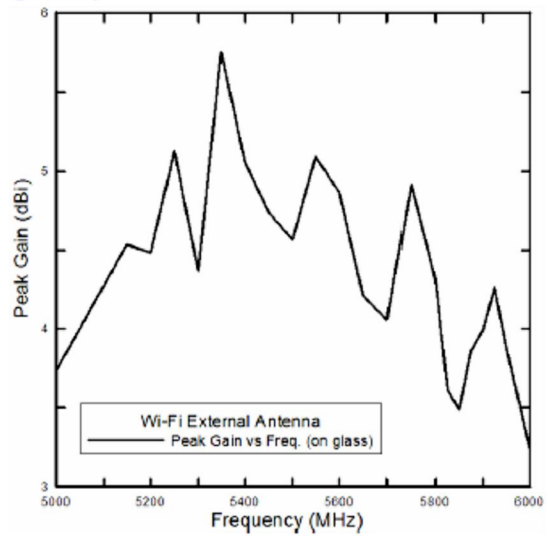
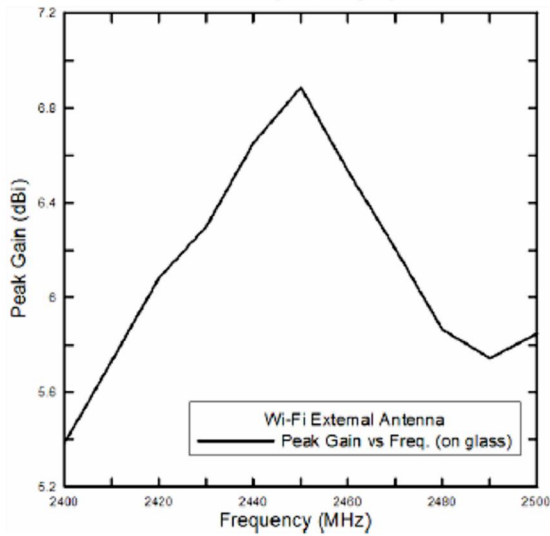
Efficiency vs. Frequency (Measured with glass)



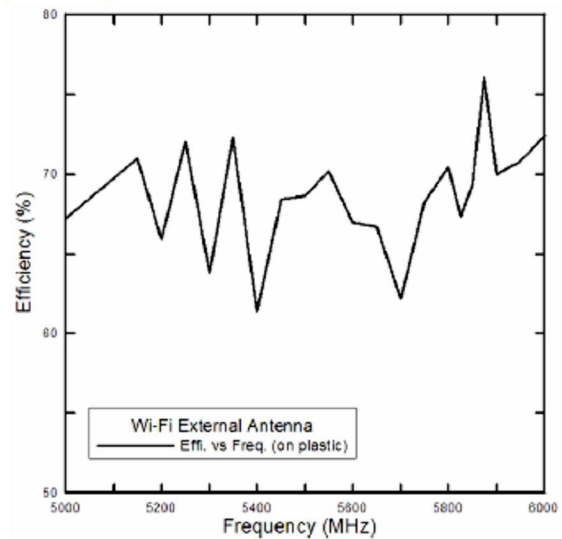
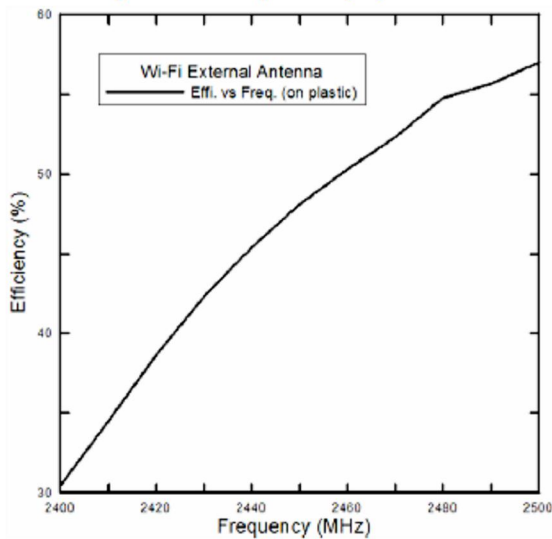
Average Gain vs. Frequency (Measured with glass)



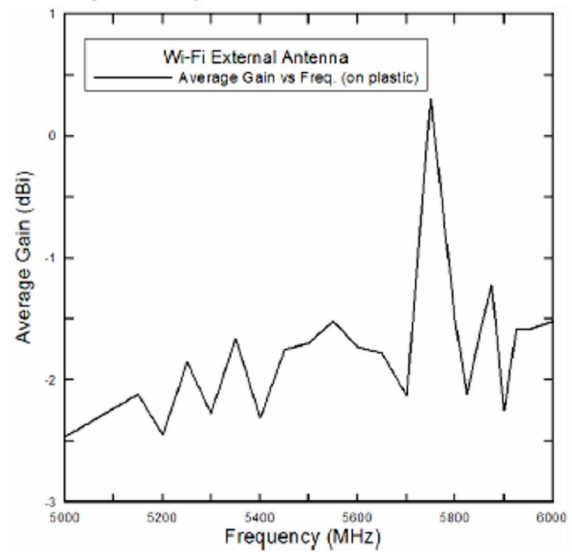
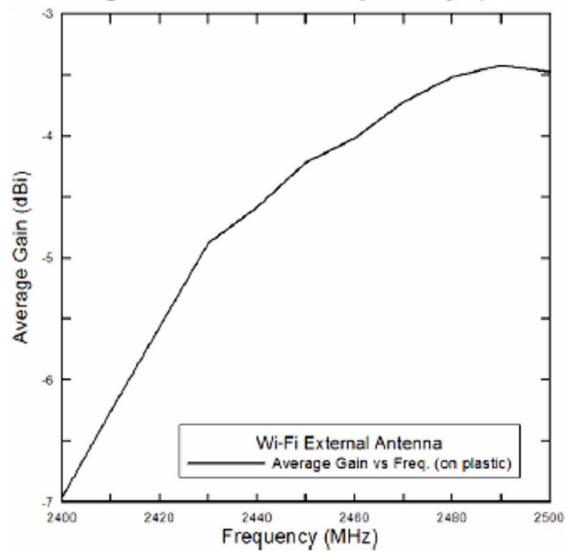
Peak Gain vs. Frequency (Measured with glass)



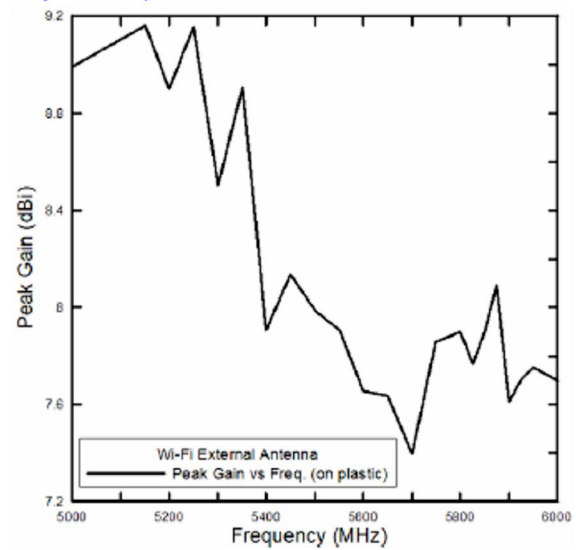
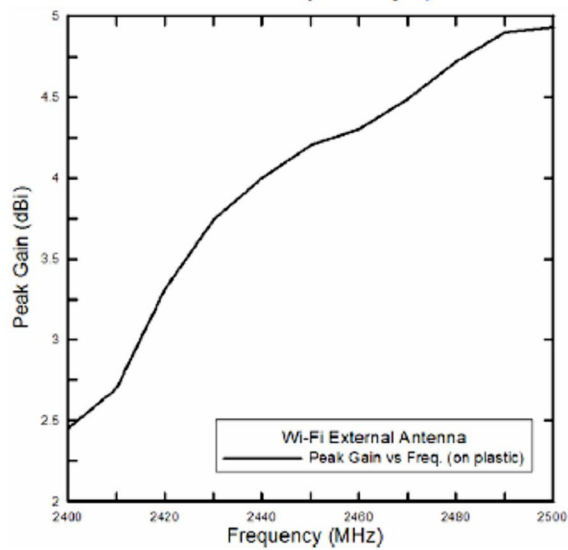
Efficiency vs. Frequency (Measured with plastic)



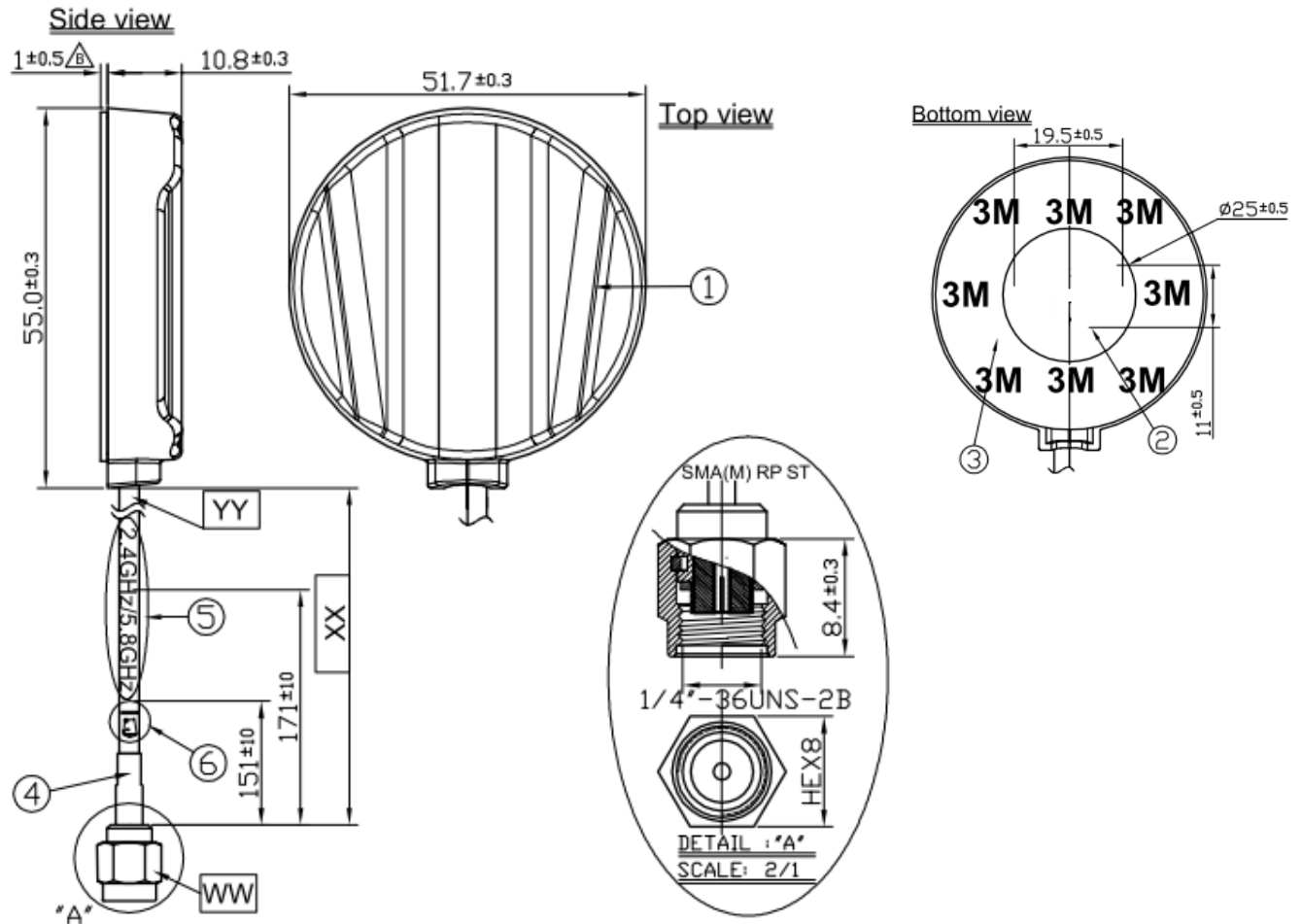
Average Gain vs. Frequency (Measured with plastic)



Peak Gain vs. Frequency (Measured with plastic)



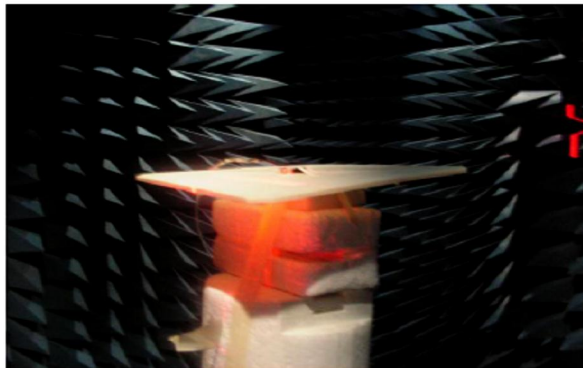
3.Drawing and Footprint



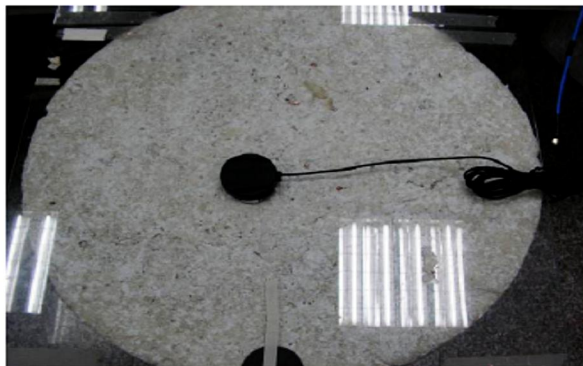
	Name	Material	Finish	QTY
1	Housing	ABS	Black	1
2	Round Lable	Art Paper	White	1
3	Scotch Brand Acrylic Foam Tape	3M 4612	Liner Whited	1
4	Heat Shrink tube	PE	Black	1
5	2.4GHz/5.8 GHz Lable	Coated Paper	Blue	1
6	WEEE Lable	Coated Paper	White	1

	Name	Spec	Finish	QTY
WW	Connector Type	SMA(M) RP ST	Gold	1
XX	Cable Length	3000mm $\pm 50\text{mm}$		1
YY	Cable Type	RG174	Black	1

4. Testing



Wi-Fi Antenna in 3D Chamber



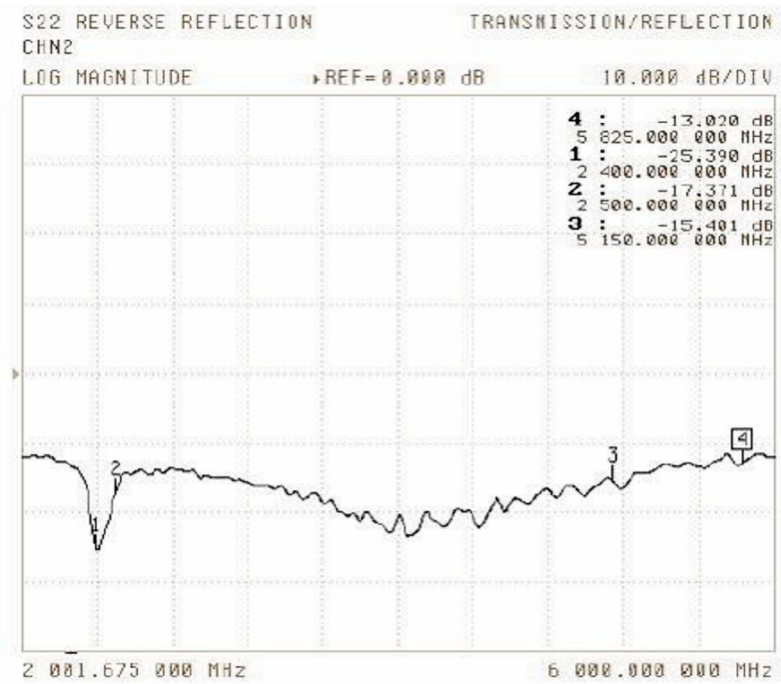
Wi-Fi Antenna Test with glass



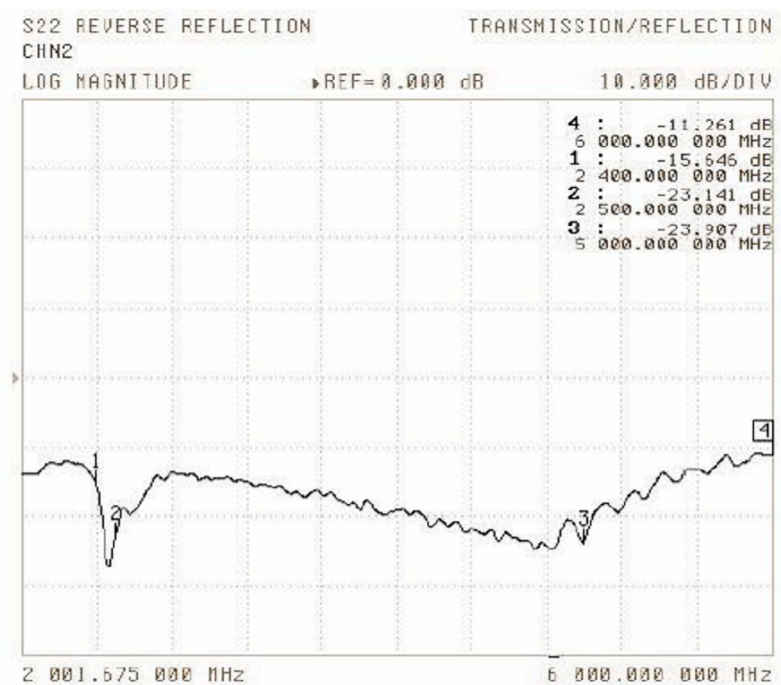
Wi-Fi Antenna Test with plastic

Wi-Fi Antenna Return Loss

(Measured with RG-174 cable, length=3 M)

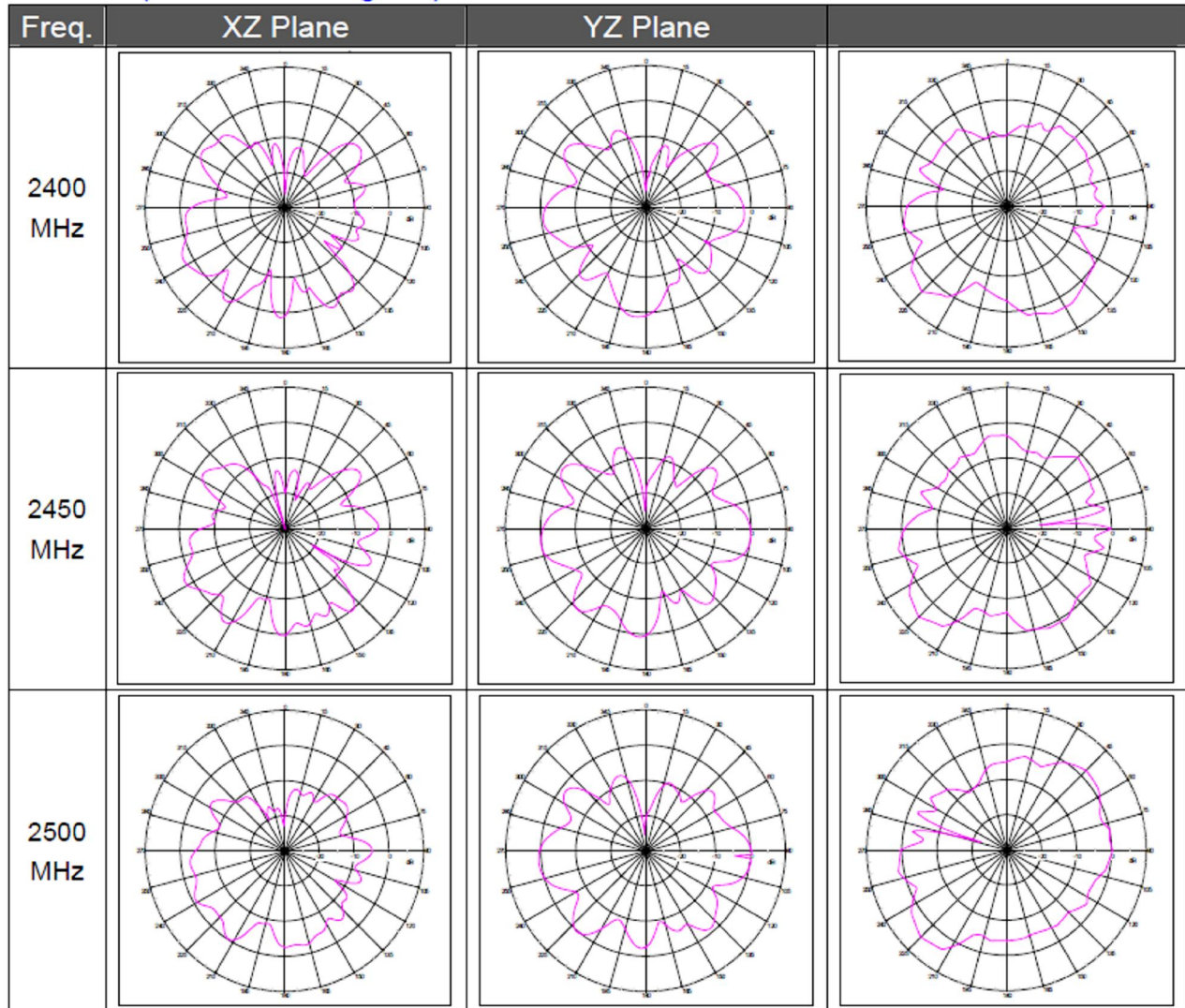


Measured with glass (500×500×3 mm³)



Measured with plastic (520×520×13.8 mm³)

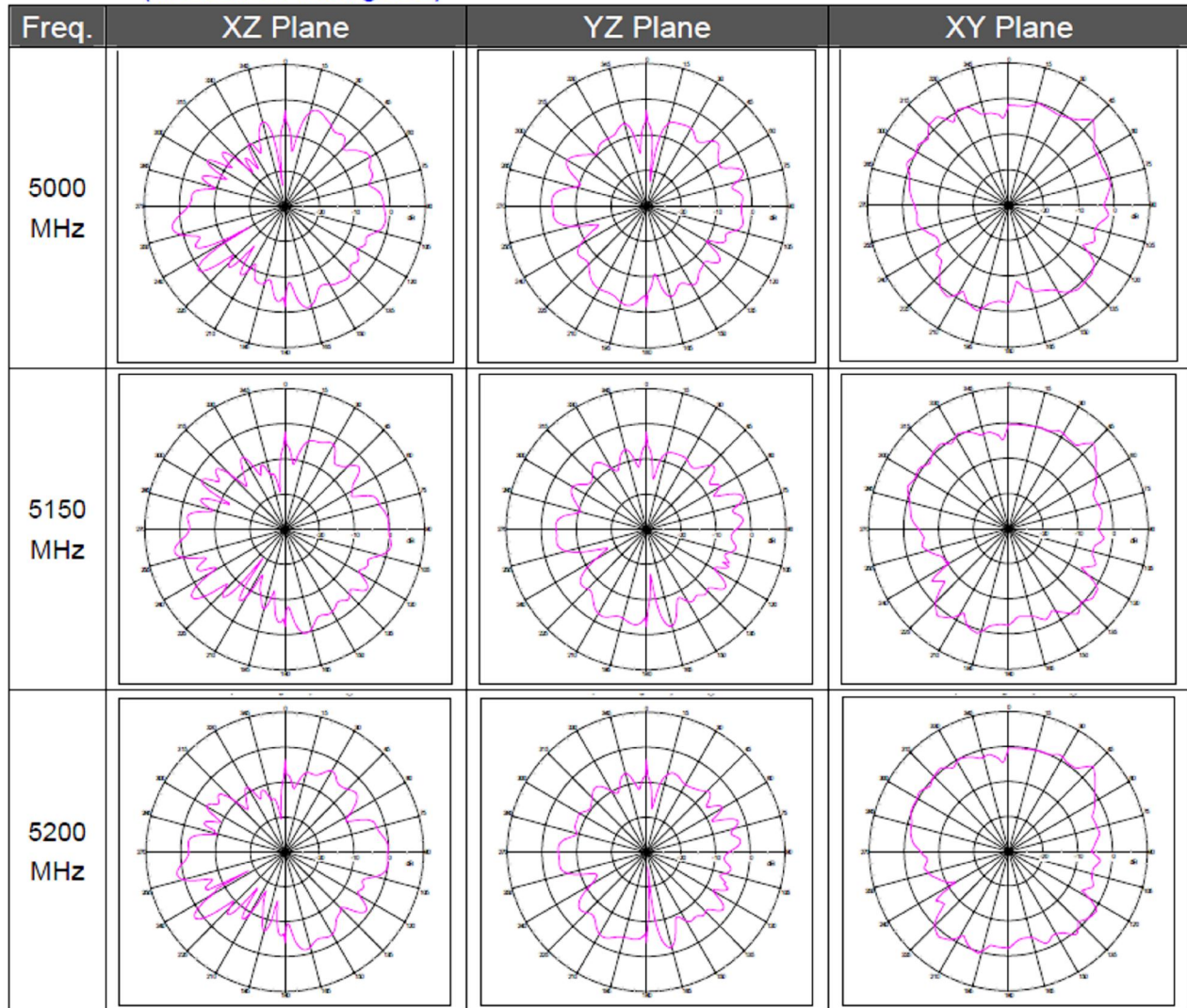
Wi-Fi Antenna Radiation Patterns (Measured with glass)



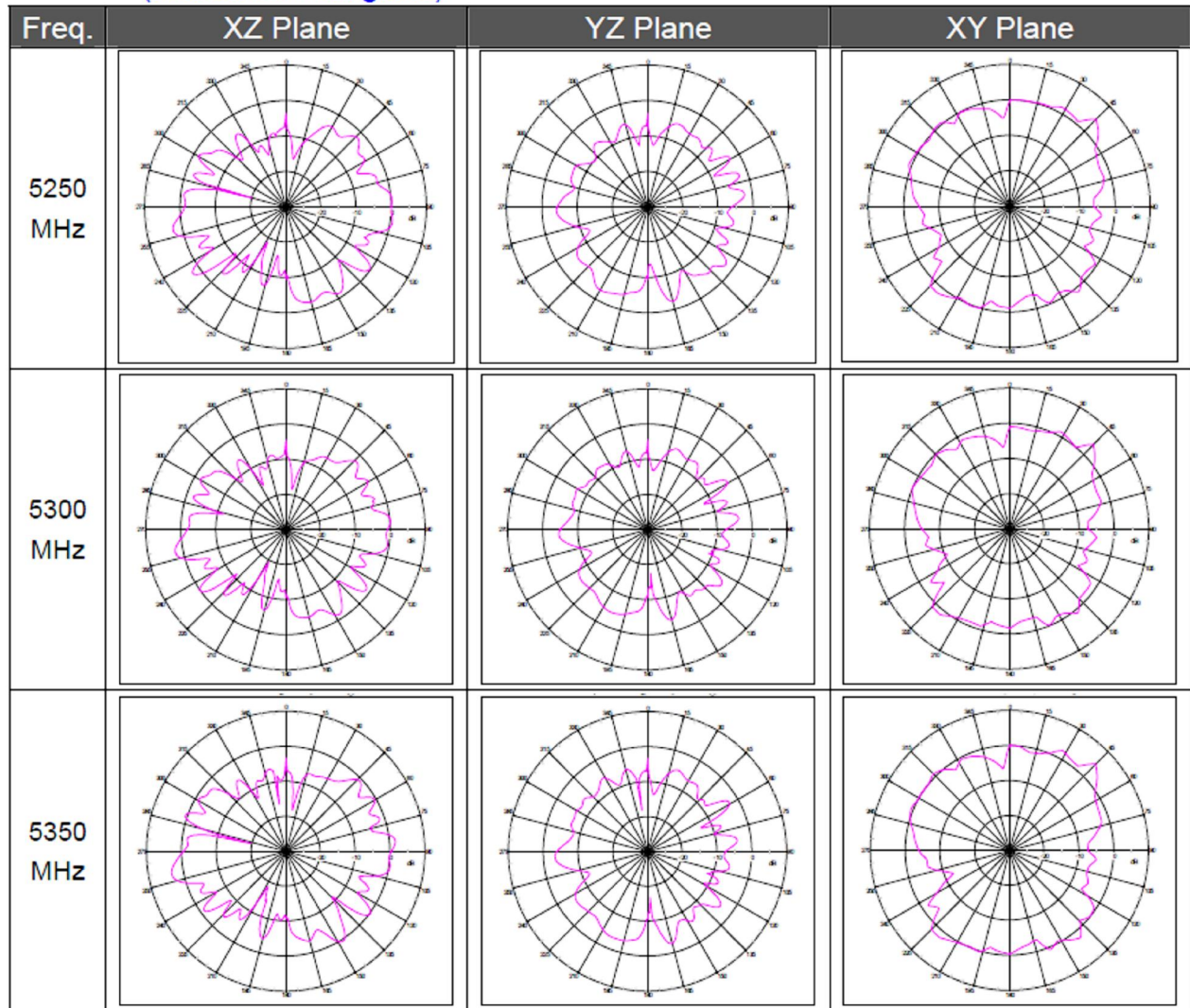
RG-174 cable attenuation (dB/100m)

GHz	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
RG-174	67	110	127	153	168	183	207	229	252	272	291	311

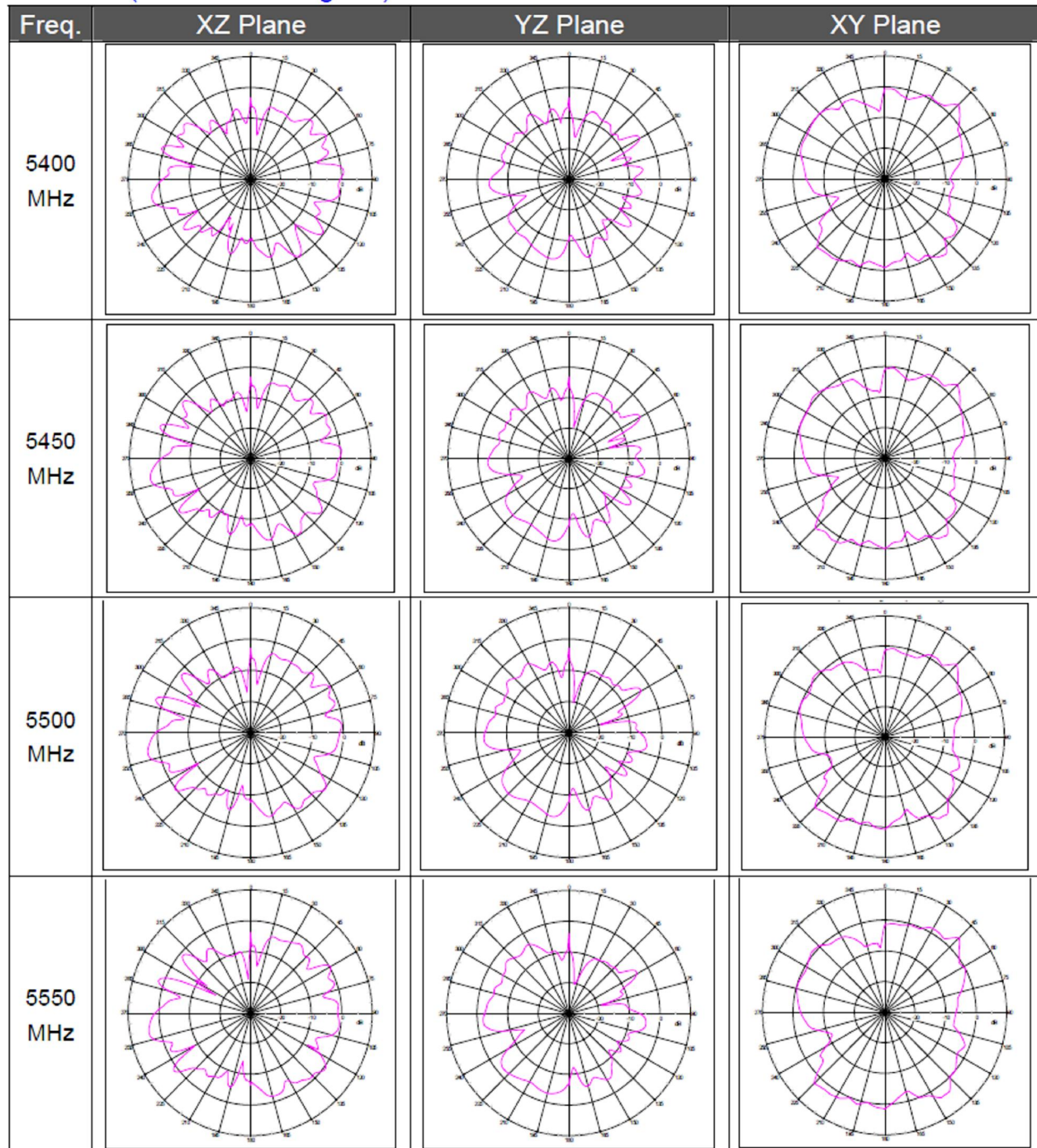
Wi-Fi Antenna Radiation Patterns (con.)
(Measured with glass)



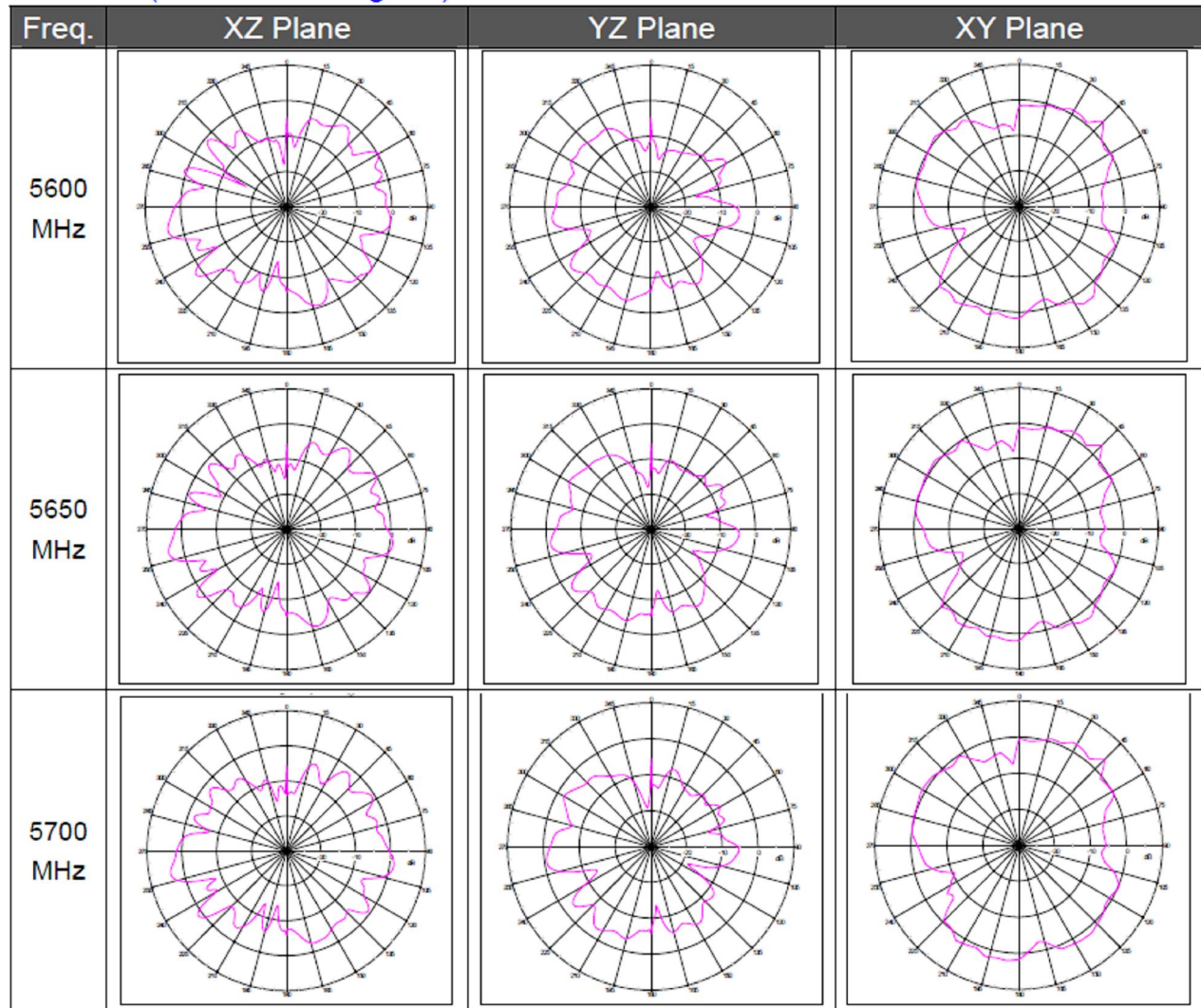
Wi-Fi Antenna Radiation Patterns (con.)
(Measured with glass)



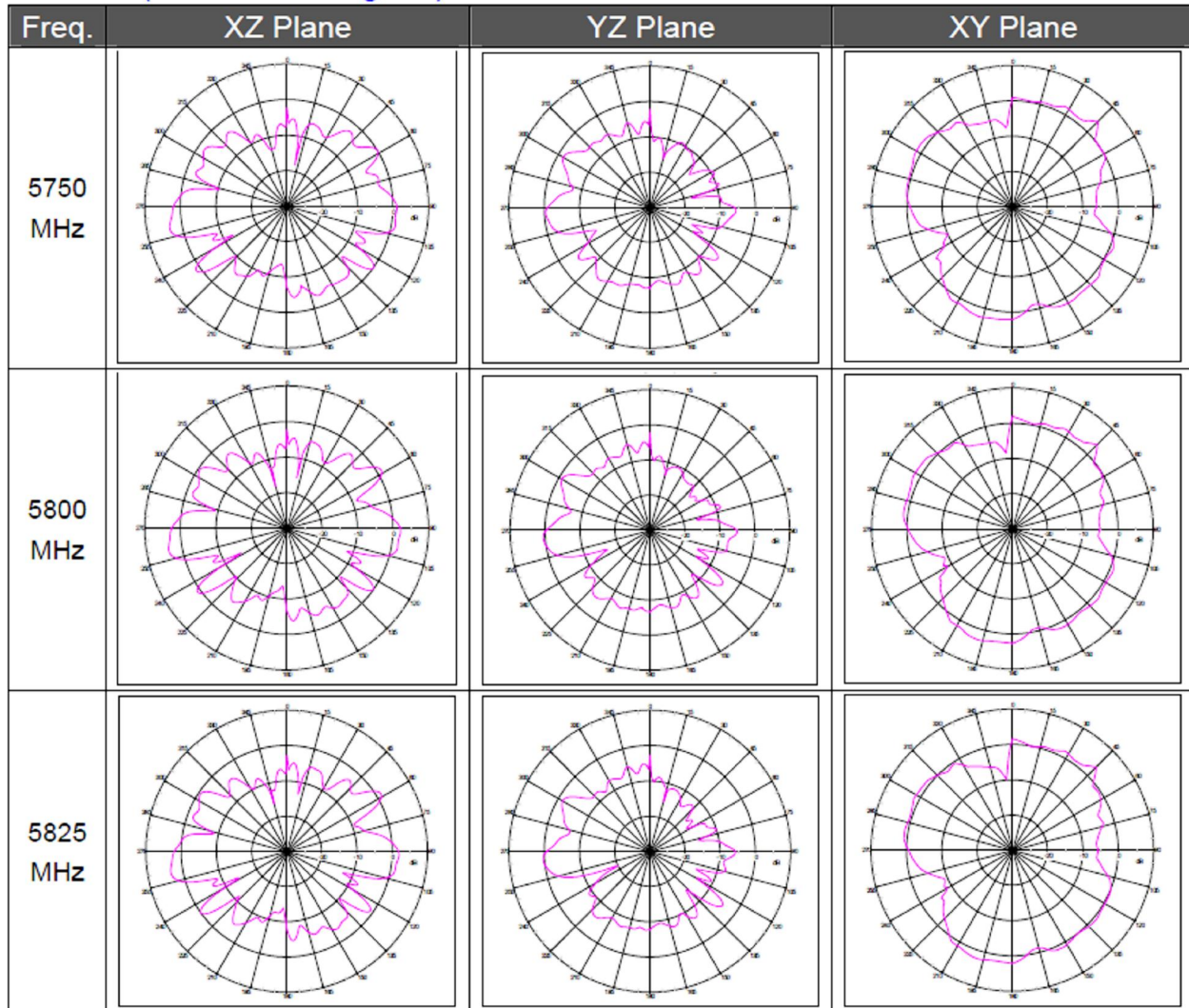
Wi-Fi Antenna Radiation Patterns (con.)
(Measured with glass)



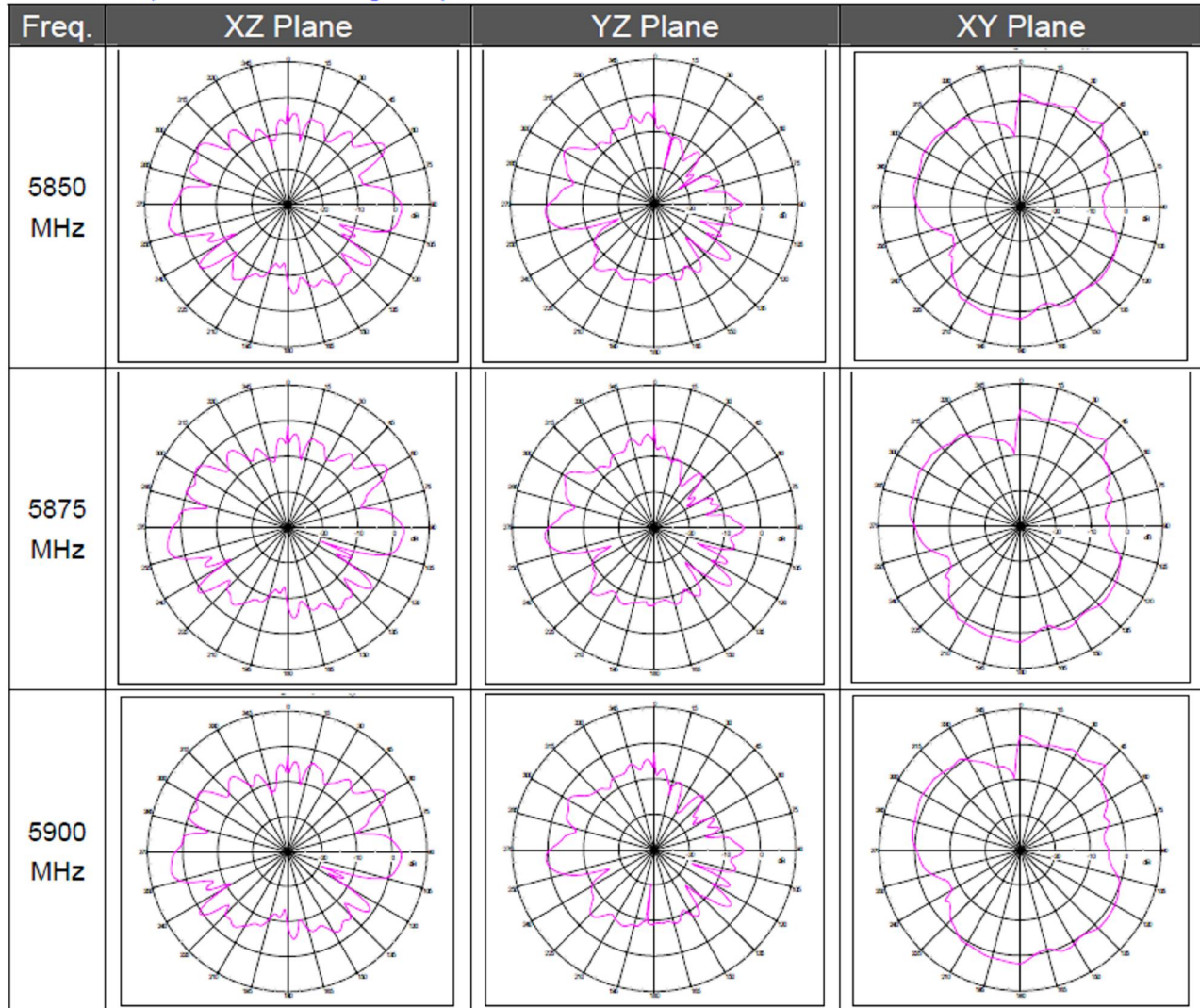
Wi-Fi Antenna Radiation Patterns (con.)
(Measured with glass)



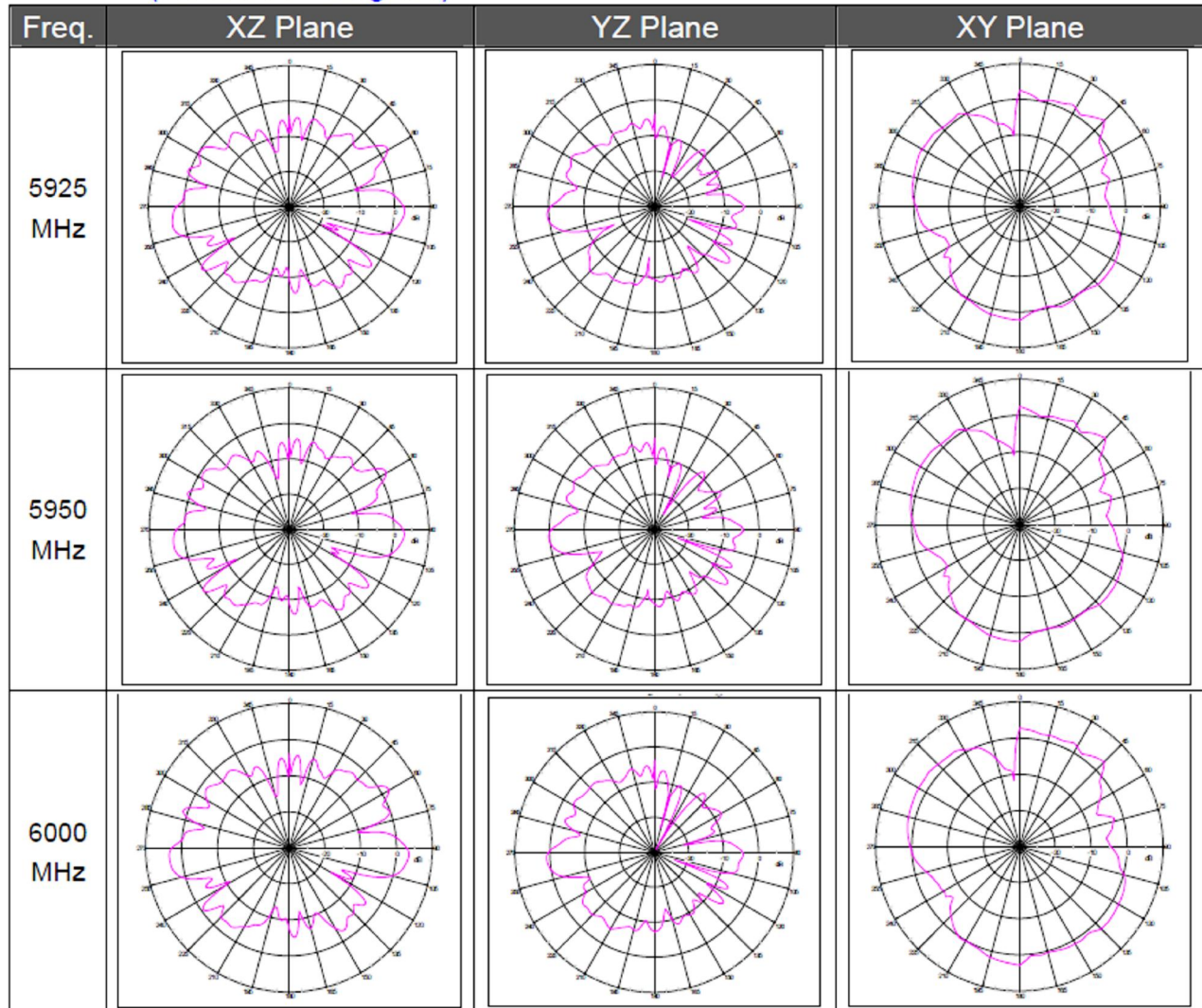
Wi-Fi Antenna Radiation Patterns (con.)
(Measured with glass)



Wi-Fi Antenna Radiation Patterns (con.)
(Measured with glass)



Wi-Fi Antenna Radiation Patterns (con.)
(Measured with glass)



5. Packaging

