



Inventek Systems

Embedding Connectivity Everywhere

Inventek Systems

**Wi-Fi Dual Band Antennas
2.4 & 5 Ghz**

P/N: W2.4-5P-U



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1 General Description

The [Inventek](#) 2400-2500 and 4900-5900 MHz Dual Band Wi-Fi PCB (40 x 6.0 mm) antennas let you integrate Wi-Fi functionality into your product quickly and easily. It's suitable for a wide range of applications and recommended for use with Inventek eS-Wi-Fi modules.

2 Part Number Detail Description

2.1 Ordering Information

Device	Description	Ordering Number
W2.4-5P-U	2400-2500 & 4900-5900 MHz Dual Band Wi-Fi PCB antenna with U.FI connector and 90 mm cable length	W2.4-5P-U

3 General Features

- Stable and reliable in performances
- PCB antenna has excellent sensitivity to consistently provide high signal reception efficiency
- Compact size
- RoHS compliance

4 Applications

- IEEE802.11 (b/g/n).
- Hand-held devices when WiFi (802.11 b/g/n) functions are needed.

5 Electrical Specifications

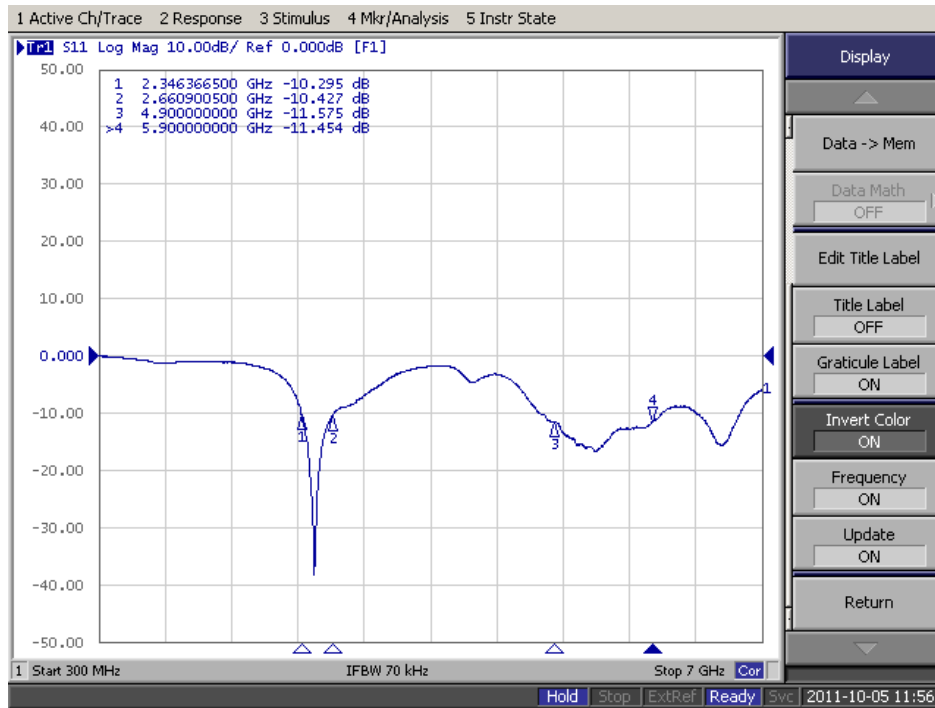
5.1 2400-2500 MHz Band

Characteristics		Specifications	Unit
Outline Dimensions		40 x 6.0 x 0.5	mm
Center Frequency		2442	MHz
Bandwidth		100 min.	MHz
VSWR		2 max.	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	2.6 (typical)	dBi
	Efficiency	79 (typical)	%

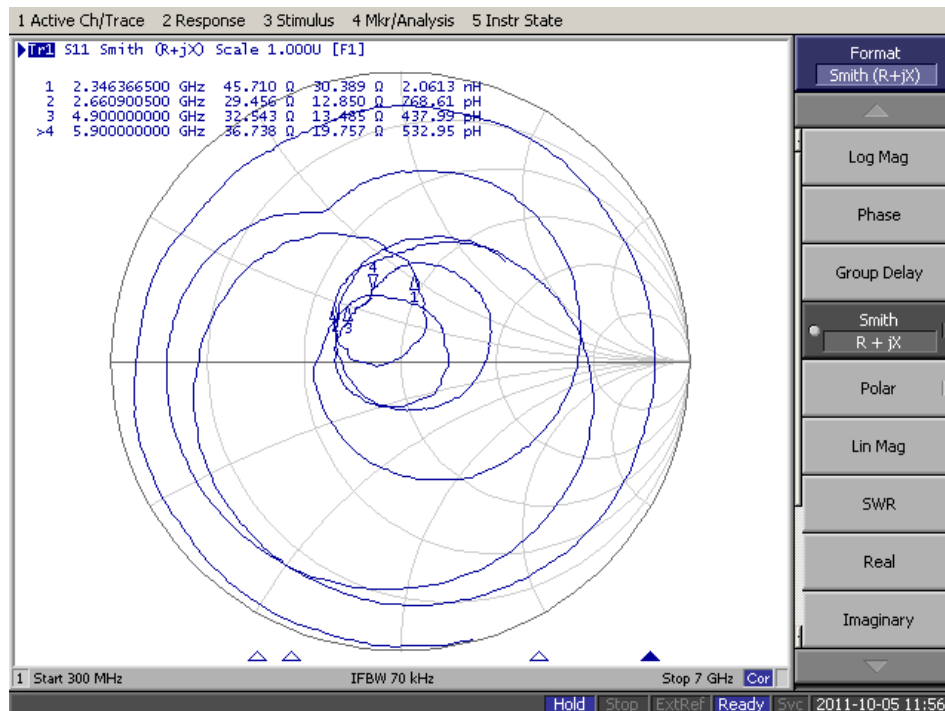
5.2 4900-5900 MHz Band

Characteristics		Specifications	Unit
Center Frequency		5400	MHz
Bandwidth		1000 min.	MHz
VSWR		2 max.	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	3.3 (typical)	dBi
	Efficiency	79 (typical)	%

5.3 Return Loss (S_{11})

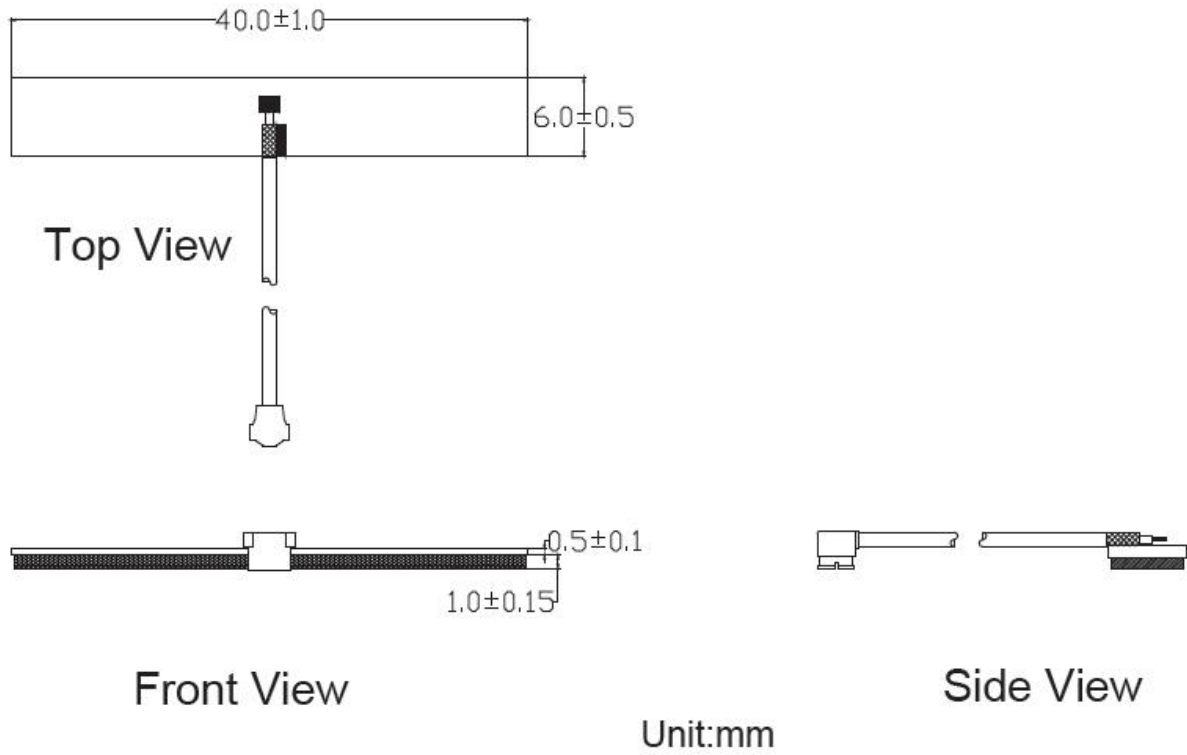


5.4 Smith Chart (S_{11})



6 Antenna Dimensions (unit: mm)

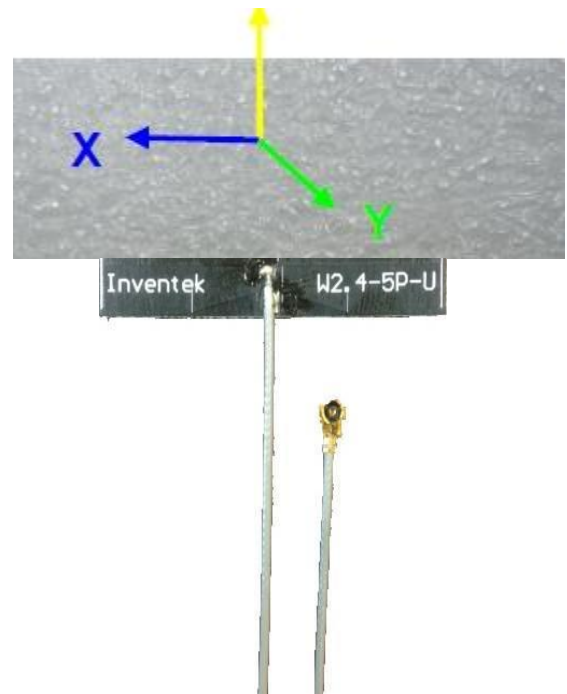
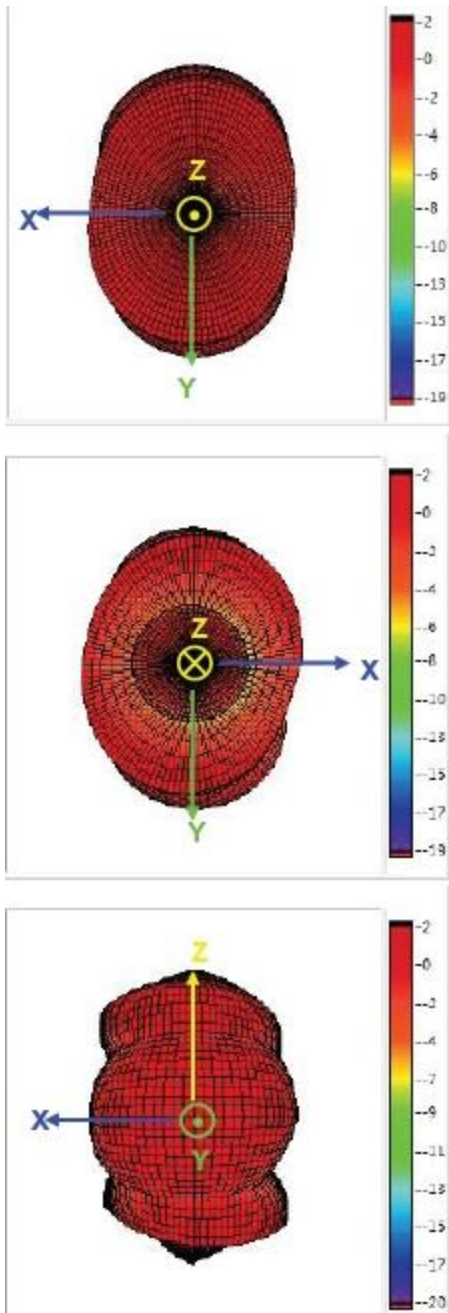
Our standard cable length is 90mm long. Custom cable lengths can be special order by request.



7 Radiation Pattern

7.1 2400-2500 MHz Band

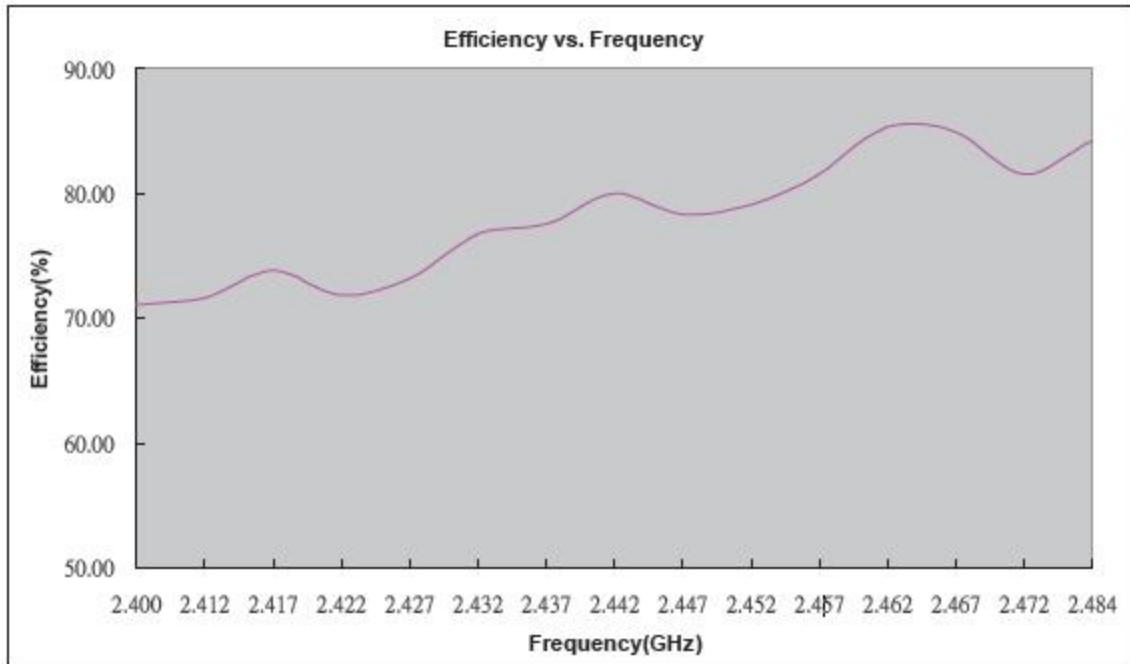
7.1.1 3D Gain Pattern at 2442 MHz



7.1.2 Efficiency Table

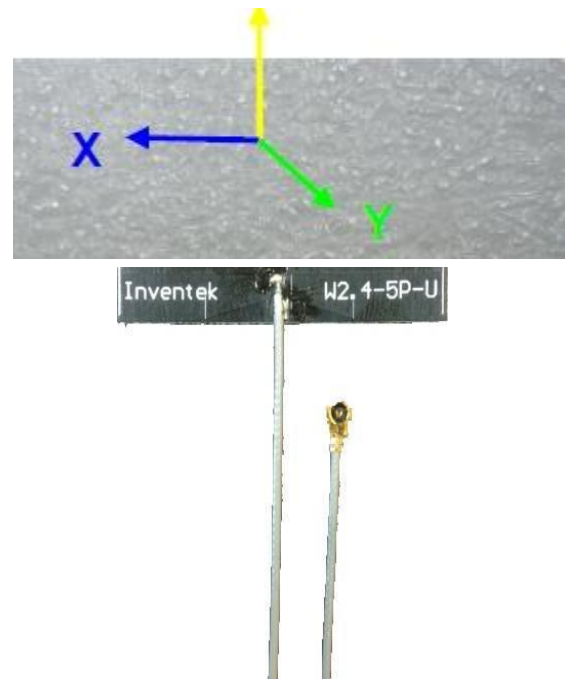
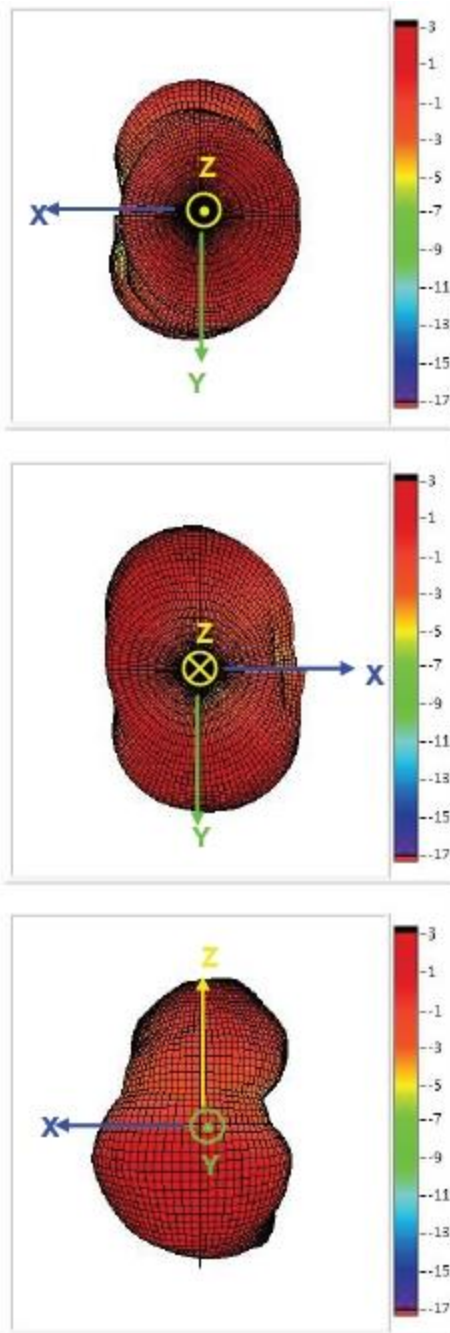
Frequency(GHz)	2.400	2.412	2.417	2.422	2.427	2.432	2.437	2.442	2.447	2.452	2.457	2.462	2.467	2.472	2.484
Efficiency(dB)	-1.49	-1.45	-1.32	-1.44	-1.36	-1.15	-1.11	-0.97	-1.06	-1.02	-0.89	-0.69	-0.71	-0.89	-0.75
Efficiency (%)	70.96	71.61	73.79	71.78	73.11	76.74	77.45	79.98	78.31	79.10	81.51	85.26	84.83	81.51	84.20
Gain(dBi)	2.11	2.21	2.34	2.26	2.33	2.49	2.52	2.68	3.07	3.21	3.50	3.73	3.69	3.39	3.42

7.1.3 Efficiency vs. Frequency

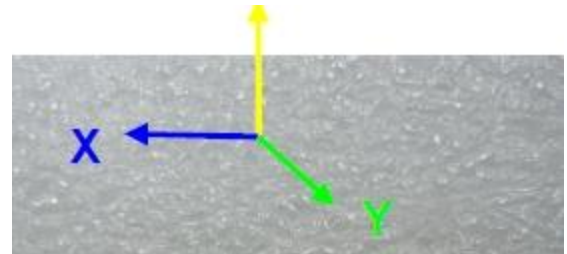
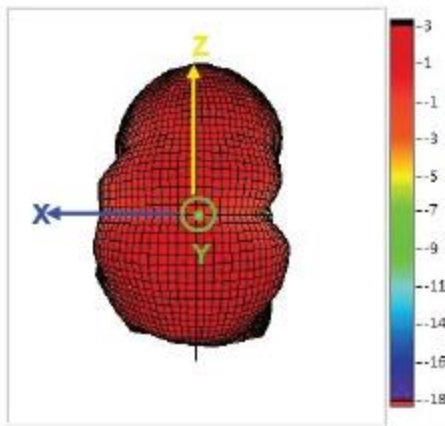
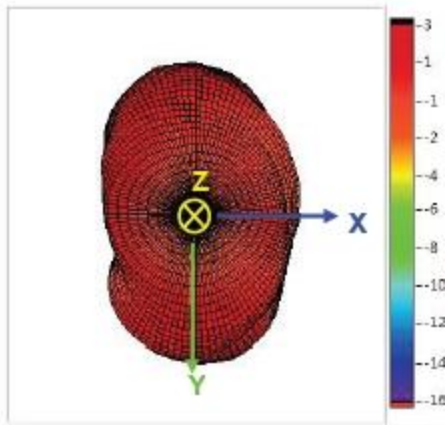
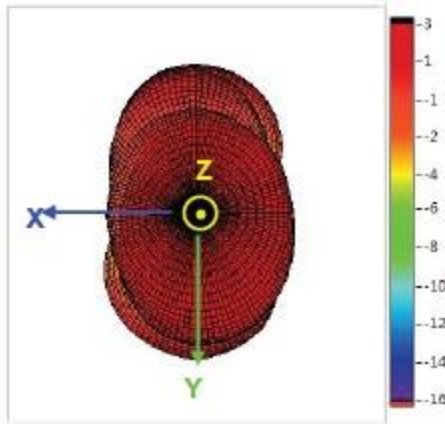


7.2 4900-5900 MHz Band

7.2.1 3D Gain Pattern at 5150 MHz



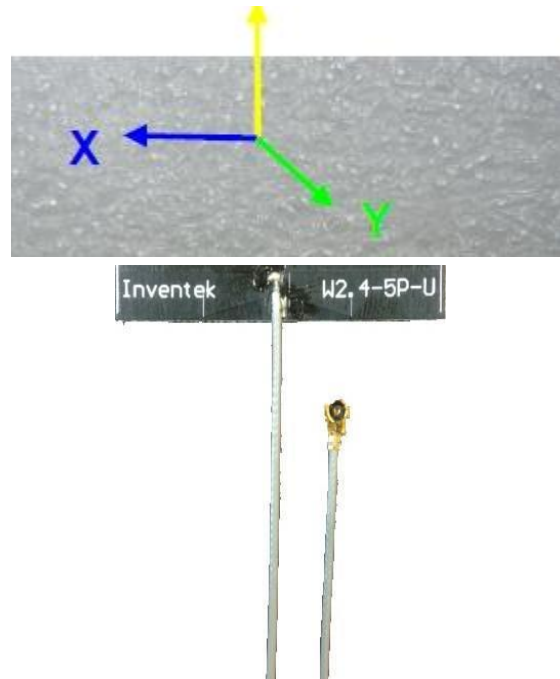
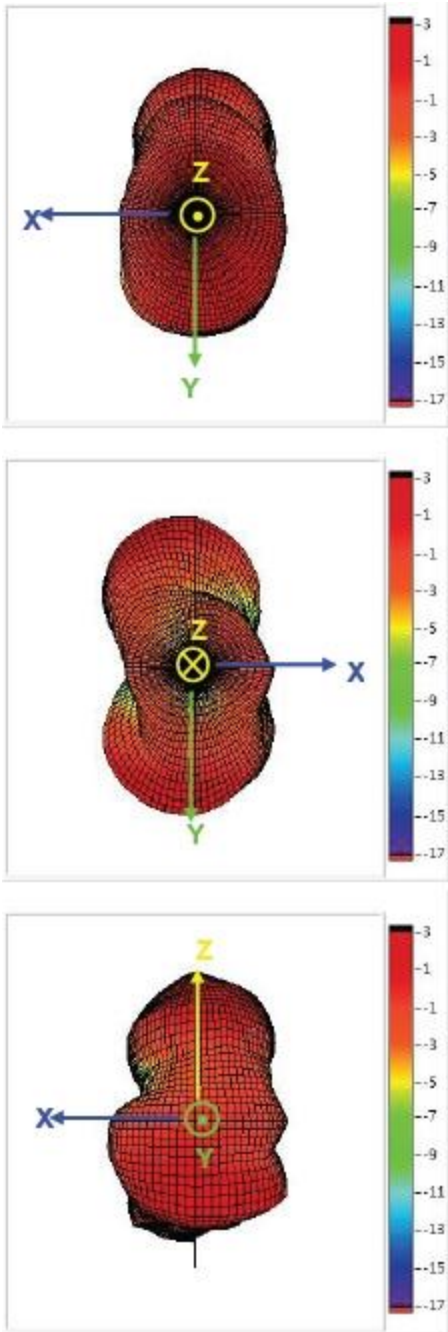
7.2.2 3D Gain Pattern at 5350 MHz



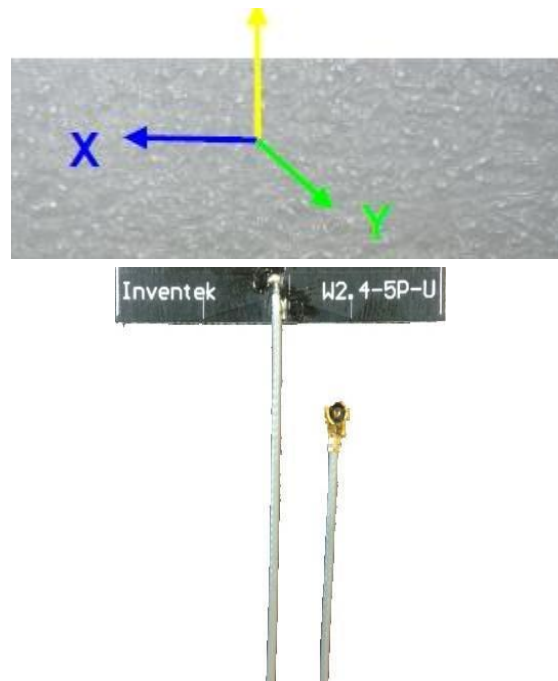
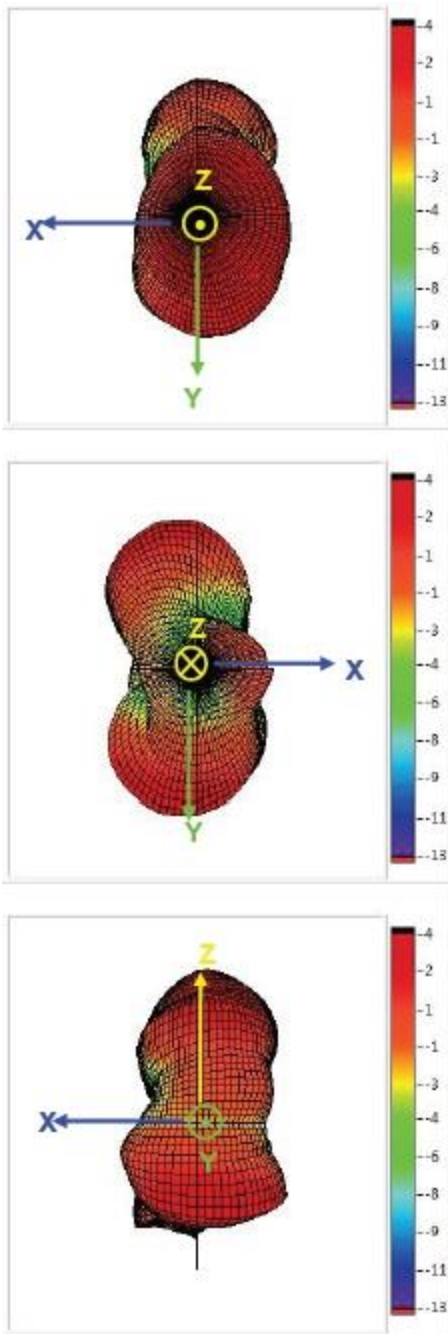
Inventek W2, 4-5P-U



7.2.3 3D Gain Pattern at 5700 MHz



7.2.4 3D Gain Pattern at 5850 MHz



7.2.5 Efficiency Table

Frequency(GHz)	4.900	4.950	5.000	5.050	5.100	5.150	5.200	5.250	5.300	5.350	5.400
Efficiency(dB)	-1.02	-1.25	-1.45	-1.41	-1.44	-1.15	-0.97	-1.07	-1.11	-0.66	-0.99
Efficiency (%)	79.07	74.99	71.61	72.28	71.78	76.74	79.98	78.10	77.50	85.95	76.62
Gain(dBi)	3.23	2.74	2.30	2.56	2.83	3.20	3.46	3.72	3.30	3.39	3.36

Frequency(GHz)	5.450	5.500	5.550	5.600	5.650	5.700	5.750	5.800	5.850	5.900
Efficiency(dB)	-1.81	-1.87	-1.41	-1.26	-1.93	-1.85	-1.53	-1.33	-0.80	-1.23
Efficiency (%)	65.92	65.01	72.28	74.82	64.09	65.37	70.31	73.62	83.11	75.34
Gain(dBi)	2.47	2.97	3.49	3.79	2.60	3.06	3.74	3.91	5.18	3.98

7.2.6 Efficiency vs. Frequency

