



# Inventek Systems

Embedding Connectivity Everywhere

# Inventek Systems

**OEM Wi-Fi Antennas**  
**P/N: W24P-U**



## Table of Contents

1	GENERAL DESCRIPTION.....	3
2	PART NUMBER DETAIL DESCRIPTION.....	3
	<b>Ordering Information.....</b>	<b>3</b>
3	GENERAL FEATURES.....	3
3.1	Environmental Specifications.....	3
4	Features.....	4
5	Applications.....	4
6	Electrical Specifications.....	4
6.1	Return Loss( $S^{11}$ ).....	4
6.2	Smith Chart( $S^{11}$ ).....	5
7	Antenna Dimensions (unit: mm).....	5
8	Radiation Pattern.....	6
8.1	3D Gain Pattern (Radiation Pattern at 2442 MHz).....	6
8.2	9-2 Efficiency Table.....	7
8.3	9-3 Efficiency vs. Frequency.....	7
9	Electrical Specifications.....	7
10	REVISION CONTROL.....	8
11	CONTACT INFORMATION.....	8

## 1 GENERAL DESCRIPTION

The [Inventek](#) 2400-2500 Mhz Wi-Fi PCB (30 x 5 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

### Ordering Information

Device	Description	Ordering Number
W24P-U	2400-2500 Mhz Wi-Fi PCB antenna with U.FI connector and 90 mm cable length	W24P-U

## 3 GENERAL FEATURES

Characteristics		Specifications	Unit
Outline Dimensions		30 x 5.0 x .05	mm
Center Frequency		2442	MHz
Bandwith		100 min.	MHz
VSWR		2 max.	
Impedance		50	$\Omega$
Polarization		Linear Polarization	
Gain	Peak	3.2 (typical)	dBi
	Efficiency	79 (typical)	%

### 3.1 Environmental Specifications

Item	Description
Operating temperature rang	-40 deg. C to +80 deg. C
Storage temperature range	-55 deg. C to +100 deg. C
Humidity	95% max non-condensing

## 4 Features

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

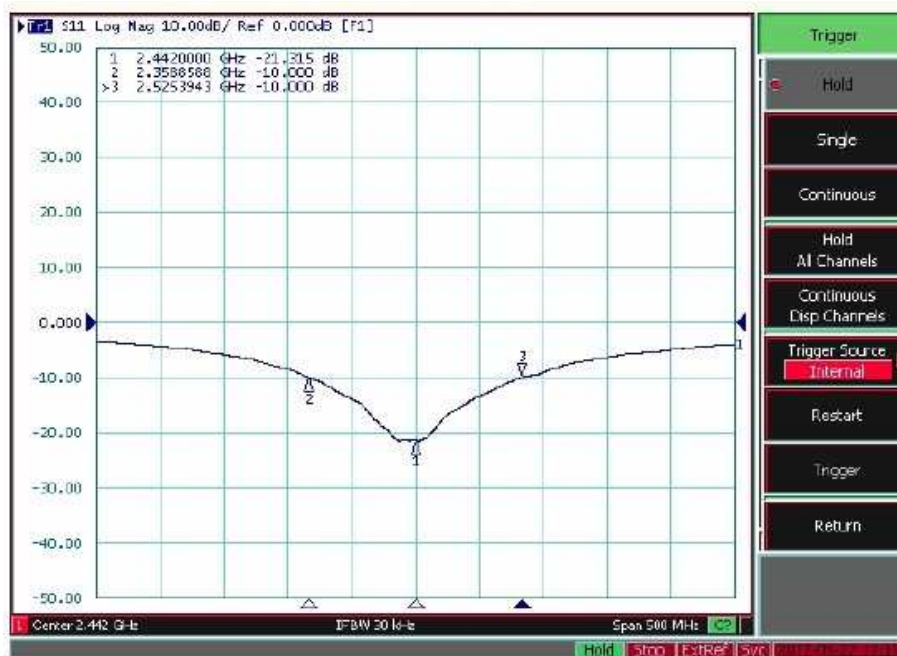
## 5 Applications

\*IEEE802.11 (b/g/n).

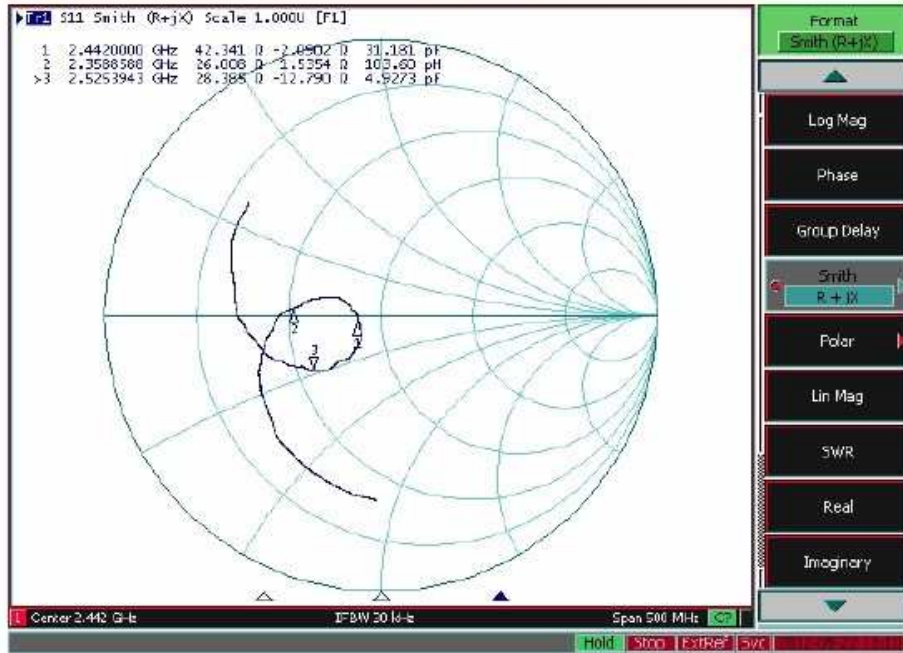
\*Hand-held devices when WiFi (802.11 b/g/n) functions are needed.

## 6 Electrical Specifications

### 6.1 Return Loss( $S^{11}$ )

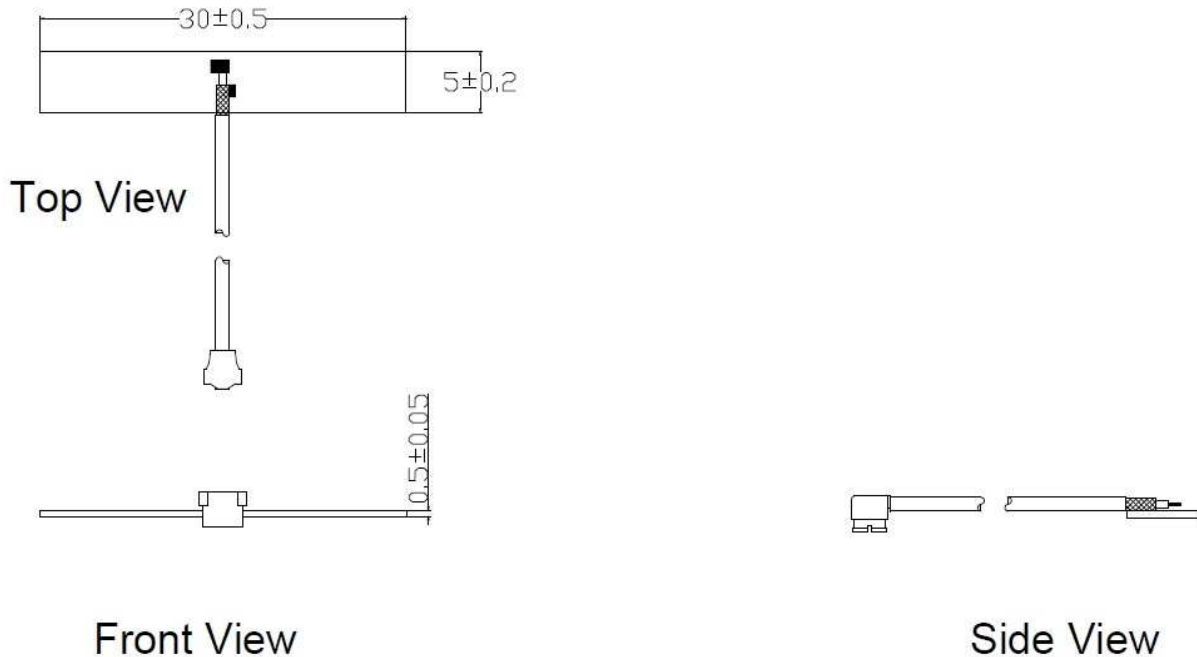


## 6.2 Smith Chart(S<sup>11</sup>)



## 7 Antenna Dimensions (unit: mm)

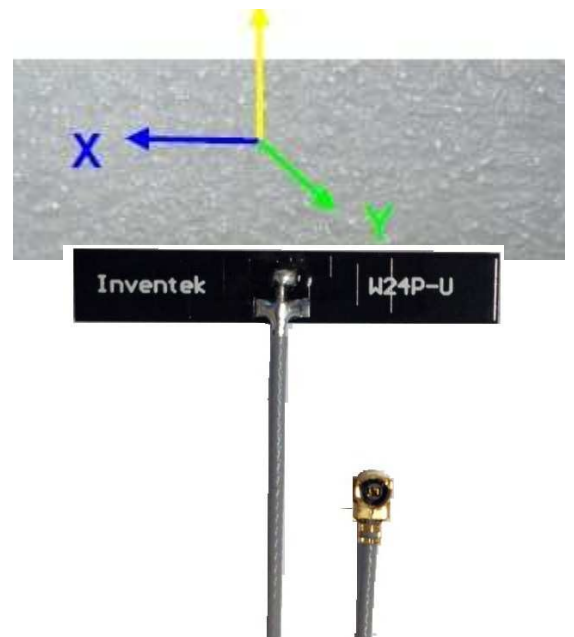
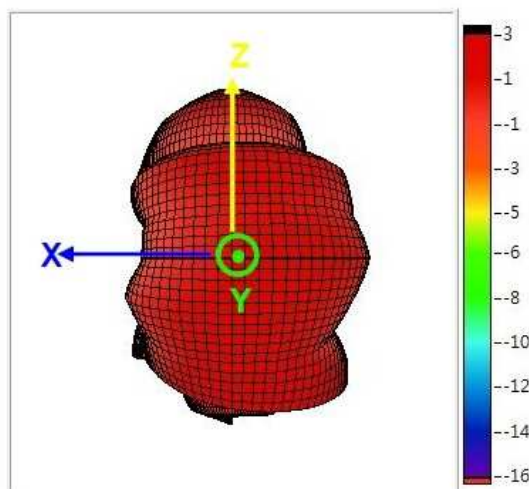
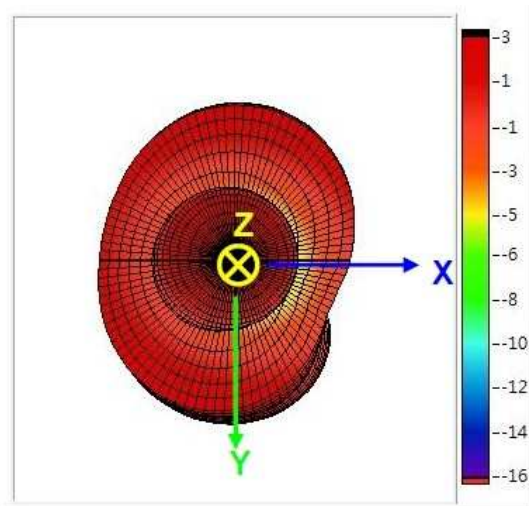
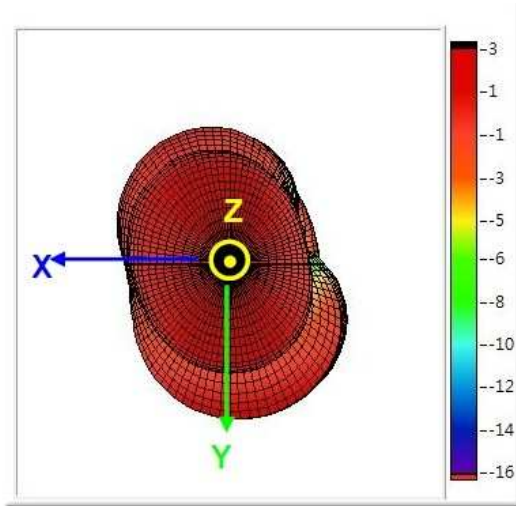
Our standard cable length is 90mm long. Minimum order custom cable lengths can be special order by request.



Unit:mm  
 Page 5 of 6

## 8 Radiation Pattern

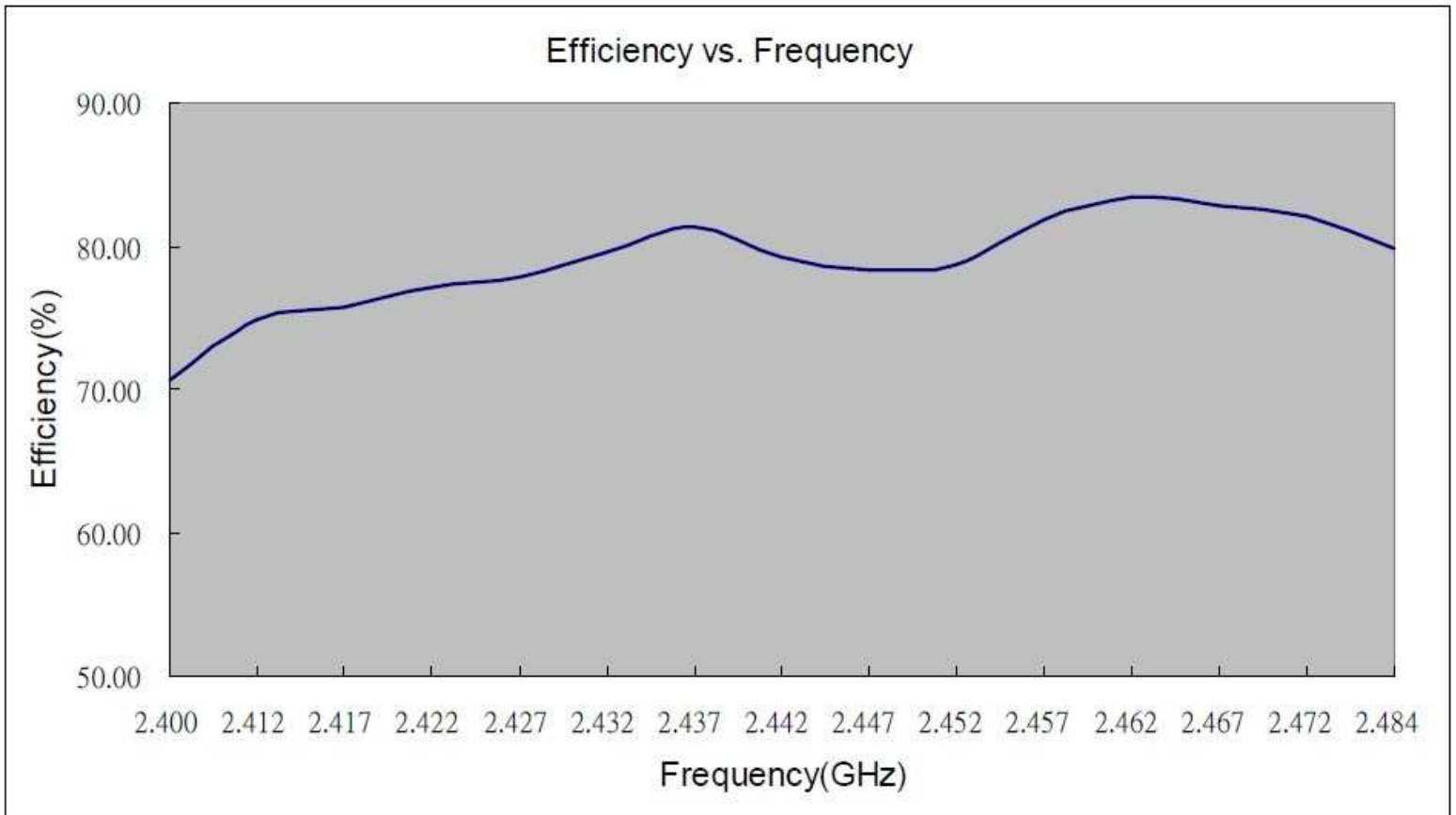
### 8.1 3D Gain Pattern (Radiation Pattern at 2442 MHz)



### 8.2 9-2 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)	-1.51	-1.26	-1.21	-1.13	-1.09	-0.99	-0.90	-1.01	-1.06	-1.04	-0.87	-0.79	-0.82	-0.86	-0.98
Efficiency (%)	70.63	74.82	75.68	77.09	77.80	79.62	81.28	79.25	78.34	78.70	81.85	83.37	82.79	82.04	79.80
Gain(dBi)	2.76	2.96	3.02	3.05	3.15	3.24	3.32	3.26	3.23	3.26	3.42	3.55	3.56	3.58	3.48

### 8.3 9-3 Efficiency vs. Frequency



**RoHS:** Restriction of Hazardous Substances (RoHS) directive has come into force since 1st July 2006 all electronic products sold in the EU must be free of hazardous materials, such as lead.

## 10 REVISION CONTROL

Document : W24P-U	2.4 Ghz PCB antenna
Internal Release	DOC-DS-20075

Date	Author	Revision	Comment
10/1/2013	FMT	1.0	Preliminary

## 11 CONTACT INFORMATION

Inventek Systems  
2 Republic Road  
Billerica Ma, 01862  
Tel: 978-667-1962  
[Sales@inventeksys.com](mailto:Sales@inventeksys.com)

[www.inventeksys.com](http://www.inventeksys.com)

Inventek Systems reserves the right to make changes without further notice to any products or data herein to improve reliability, function, or design. The information contained within is believed to be accurate and reliable. However Inventek Systems does not assume any liability arising out of the application or use of this information, nor the application or use of any product or circuit described herein, neither does it convey any license under its patent rights nor the rights of others.