

# Part No. W3P42X8W04-U100D3B0A

## Embedded Dual-band Wi-Fi Antenna - Side Cable

2.4 / 5.0 GHz

Supports: Wi-Fi applications, Agriculture, Bluetooth, Smart Home, Healthcare, Digital Signage, Zigbee, WLAN



### Embedded Wi-Fi Antenna

2.4 / 5.0 GHz

#### KEY BENEFITS

##### Quicker Time-to-Market

Standard part means fewer design changes, and Simple implementation

##### Superior Network Coverage

Better network coverage means more reliable wireless connections

##### Faster Data Rates

Improved performance also means faster data rates for downloading e-mail, surfing the internet and watching mobile video

##### Environmental Compliance

Products are the latest RoHS version compliant

#### APPLICATIONS

- Access Points and Routers
- Gateways
- Wi-Fi applications
- M2M industrial devices

KYOCERA AVX's W3 side cable fed Family antennas includes embedded Wi-Fi Antenna designs in FPC and PCB style solutions. Alternatively, a PCB with foam on the back side is also offered to minimize the detuning of the antenna on different surfaces that delivers on the key needs of today's wireless product designers: miniaturized design and superior signal sensitivity.

#### Excels in Real-Life Conditions

Meets the ever-growing demand for smaller, thinner product designs by eliminating whip and stub antennas.

#### Extensive RF Experience

KYOCERA AVX's antennas are supported by documentation, and when needed, by the expertise of RF engineers who have integrated hundreds of antenna designs into wireless devices.

#### Global Operations & Design Support

KYOCERA AVX's global operations support an integrated network of design centers that can take projects from concept to production.

#### Electrical Specifications

Typical Characteristics (in reference device housing made in PC/ABS plastic and 100mm cable length)

Frequency Band (GHz)	2.400– 2.500	5.150– 5.900
Return Loss	< -4.5 dB	< -7.4 dB
Average Efficiency	38 %	63 %
Peak Gain	< -1 dBi	< -1 dBi
Feed Point Impedance	50 ohms unbalanced	

#### Mechanical Specifications

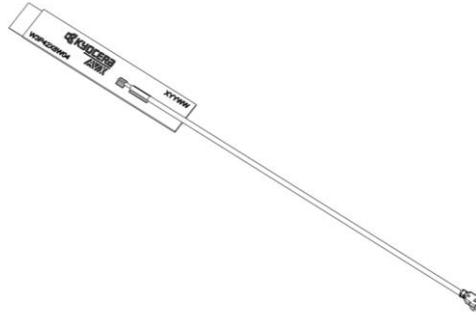
Part Number	W3P42X8W04-U100D3B0A
Size (mm)	(42.60) length (8.60) width (0.4) thickness
*Connector	MHF (U.FL Compatible)
*Cable length (mm)	100
Weight (grams)	0.3
Adhesive	3M 468MP
Packing	Individual PE bags (default) or tray (per request)

\*Additional variations available in different cable lengths, colors and connectors, refer to page 6.

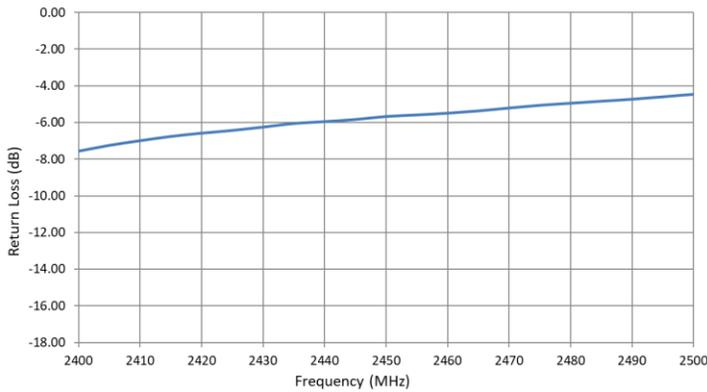
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 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

### Typical Return Loss & Efficiency Plots

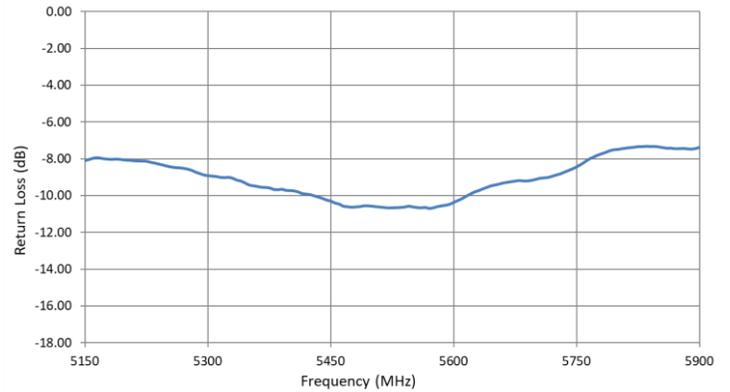
Measured in reference device housing made in PC/ABS plastic and 100mm cable length



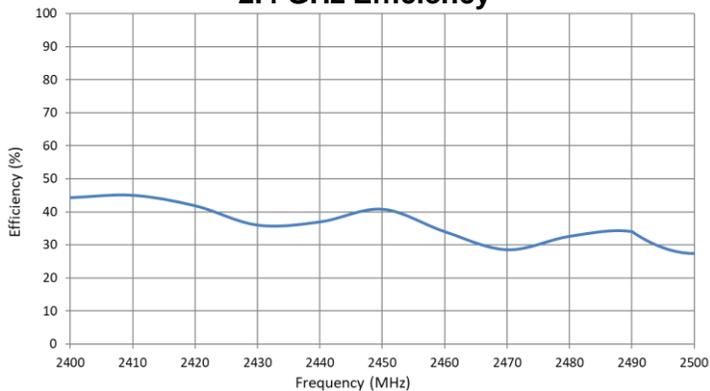
**2.4 GHz Return Loss**



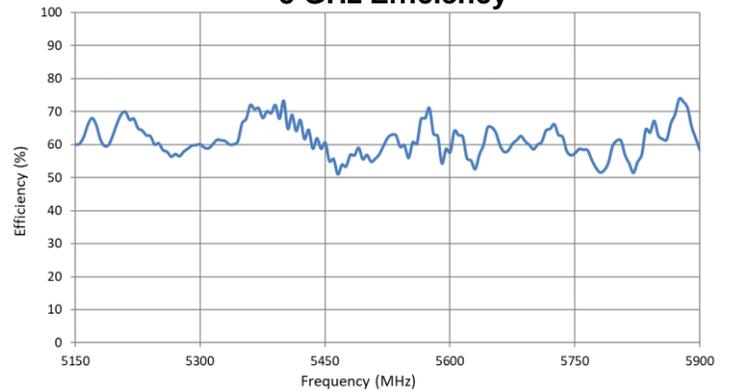
**5 GHz Return Loss**



**2.4 GHz Efficiency**



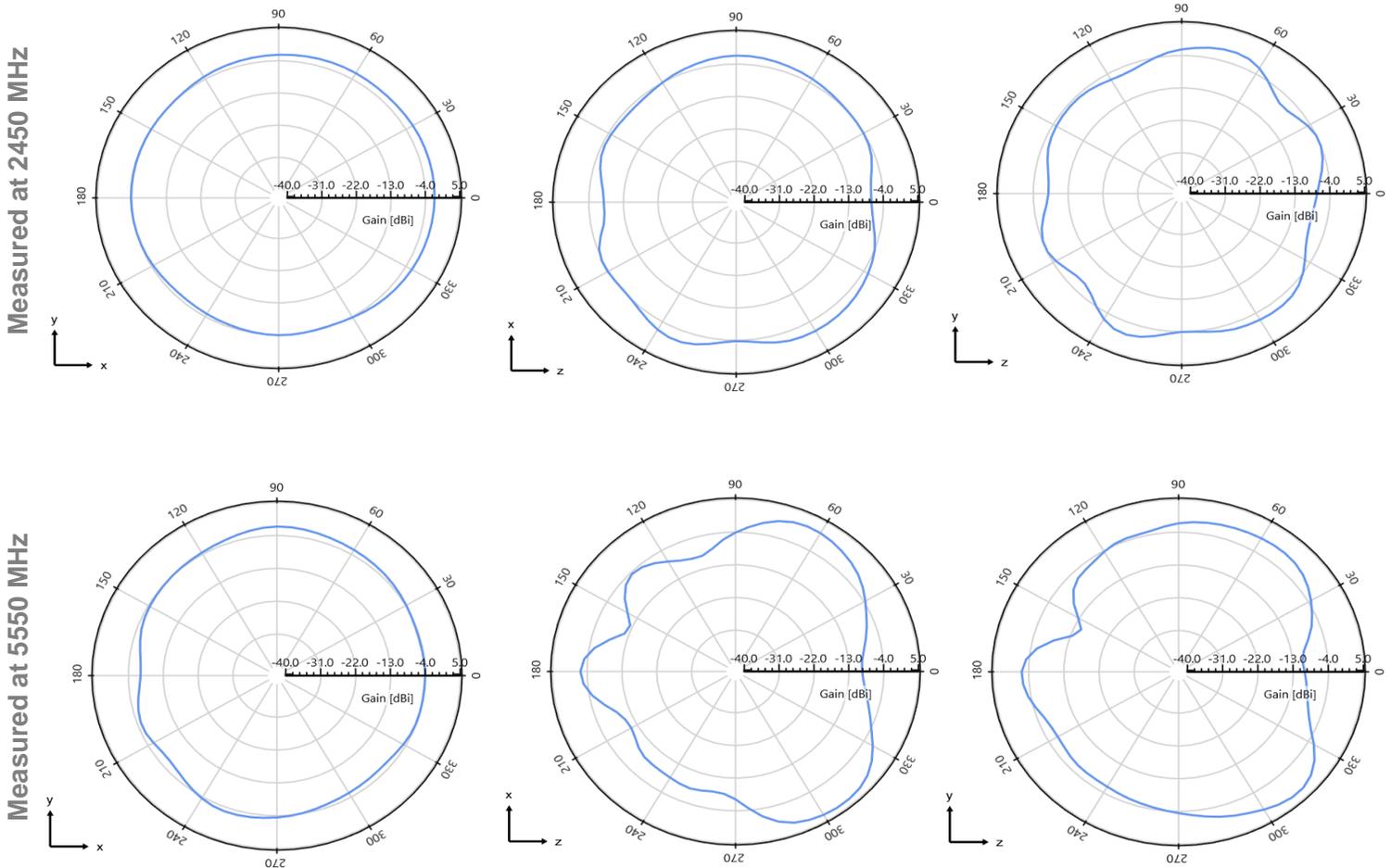
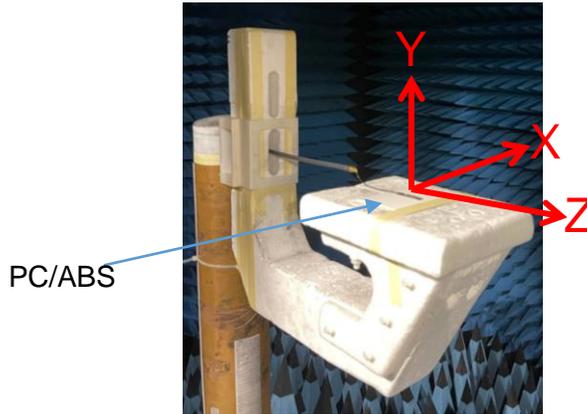
**5 GHz Efficiency**



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### Antenna Radiation Patterns

Typical Performances in reference device housing made in PC/ABS plastic and 100mm cable length



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### Generic Antenna Part Numbers

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## Example of generic Wi-Fi PN: W3P42X8W04-U100D3B0A

### PN Nomenclature

PCB silk screen number

W	3	P	42x8	W	04
Series	Freq. of operation	Type	Size	Tuning version	PCB thickness
W = Wi-Fi Family	3 = 2.4 / 5.0 / 6.0 GHz	F = FPC P = PCB	42x8 = 42.6x8.6 mm*	W = Tuning on plastic wall F = Tuning for foam on plastic wall R = Tuning with ribs	01 = 0.1mm** 04 = 0.4 mm* 08 = 0.8 mm***

\*Typical thickness for PCB

\*\* Thickness for FPC

\*\*\*Recommended for assembly with ribs

### PN Nomenclature

Second part of the PN

U	100	D	3	B	0	A
Connector type	Cable from connector to PCB edge	Connector orientation compared to PCB silkscreen printing	Cable diameter	Cable color	Ferrite beads	Mounting options
U = u.fl compatible* W = w.fl compatible H = MHF4 N = No connector	050 = 50mm 100 = 100mm* 150 = 150mm	D = Connector down* U = Connector Up L = Left Side R = Right Side N = No connector	1 = 0.81 mm 3 = 1.13mm* 7 = 1.37 mm	B = Black* G = Gray	0 = No* 1 = Yes	N = No adhesive A = using adhesive 3M468MP* C = using adhesive 3M467** T = using adhesive 3M9448A***

\*Typical connector

\*Typical length

\*Typical orientation

\*Typical diameter for u.fl

\*Typical color

\*Default configuration

\*Adhesive for PCB  
 \*\*Adhesive for FPC  
 \*\*\*Adhesive for PCB + foam

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### Typical Ordering Part Numbers

Below are the generic standard antenna part numbers for Wi-Fi

Part Number	Type	Tuning version	Connector	Cable length (mm)	Mounting Adhesive Options
W3P42X8W04-HXXXD3B0A	PCB	Tuning on Plastic Wall	MHF4L	XXX	3M468MP
W3P42X8W04-UXXXD3B0A			MHF (U.FL compatible)	XXX	
W3P42X8W04-WXXXD1B0A			MHFIII (W.FL compatible)	XXX	
W3P42X8F04-HXXXD3B0T		Tuning for foam on plastic wall	MHF4L	XXX	3M9448A
W3P42X8F04-UXXXD3B0T			MHF (U.FL compatible)	XXX	
W3P42X8F04-WXXXD1B0T			MHFIII (W.FL compatible)	XXX	
W3F42X8W01-HXXXD3B0C	FPC	Tuning on Plastic Wall	MHF4L	XXX	3M467
W3F42X8W01-UXXXD3B0C			MHF (U.FL compatible)	XXX	
W3F42X8W01-WXXXD1B0C			MHFIII (W.FL compatible)	XXX	

### Cable Lengths

XXX (mm)	Condition	Tolerance Z
050	XXX < 150	50 ± 3.0
100	XXX < 150	100 ± 3.0
150	150 ≤ XXX ≤ 300	150 ± 4.0
200	150 ≤ XXX ≤ 300	200 ± 4.0
250	150 ≤ XXX ≤ 300	250 ± 4.0
300	300 ≤ XXX ≤ 500	300 ± 5.0
400	300 ≤ XXX ≤ 500	400 ± 5.0
500	500 ≤ XXX ≤ 1000	500 ± 7.0
600	500 ≤ XXX ≤ 1000	600 ± 7.0

\*All dimensions provided in this document are for informational purposes only

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### Mechanical Dimensions

Part Number	A (mm)	B (mm)	C (mm)	L (mm)	Connector
W3P42X8W04-U100D3B0A	(42.6)	(8.6)	(0.4)	100	MHF (u.FL compatible)



**Top View**



**Side View**



**Back View**

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