

# Part No. W5P15X7W04-U100D3B0A

## Wi-Fi 6E/7 Dual-Band 5 / 6 GHz Embedded Antenna

5150 MHz – 5850 MHz, 5925 MHz – 7125 MHz  
 Supports: Wi-Fi 6E and 7



KYOCERA AVX's W5 Family antennas include an embedded Wi-Fi Antenna design in PCB and FPC 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.

### Extensive RF Experience

KYOCERA AVX 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.

### Wi-Fi 6E/7 Dual-Band 5 / 6 GHz Embedded Antenna

5.15 – 5.85 GHz  
 5.925 – 7.125 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
- Embedded design
- M2M Industrial devices
- Smart Home

### Electrical Specifications

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

Frequency Band (MHz)	5150 - 5850	5925 - 7125
Peak Gain	4.5 dBi	6dBi
Average Efficiency	77%	61%
Return Loss Match	< -11 dB	< -12 dB
Power handling	2 W	
Free Point Impedance	50 ohms unbalanced	
Polarization	Linear	
Radiation Pattern	Omni-directional	

### Mechanical Specifications

Part Number	W5P15X7W04-U100D3B0A
Overall Size (mm)	15.9 x 7.6 x 0.53
Mounting Type	Adhesive 3M 468MP
Connector(s) / Length	IPEX MHFI / 100 mm
Weight (grams)	0.5
Packaging	PE BAG
Operating Temperature	[ - 40 °C ; +85 °C ]
Storage Temperature / Humidity	[ - 40 °C ; +85 °C ]
Variant	FPC, PCB + FOAM
Color	Black

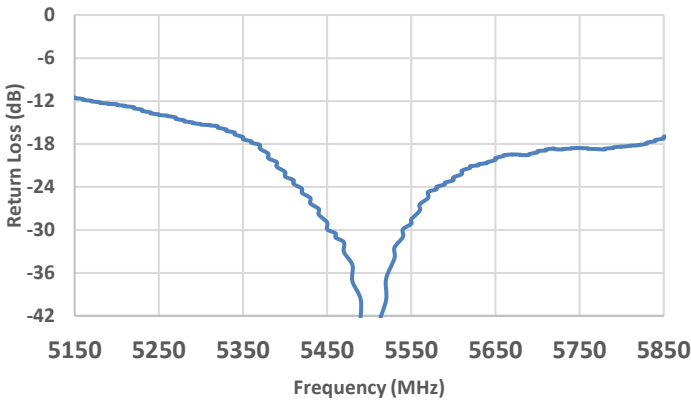
\*Additional variations available in different cable lengths, colors and connectors, refer to Appendix on page 5.

Wi-Fi 6E/7 Dual-Band 5.0 / 6.0 GHz Embedded Antenna Specifications  
 KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

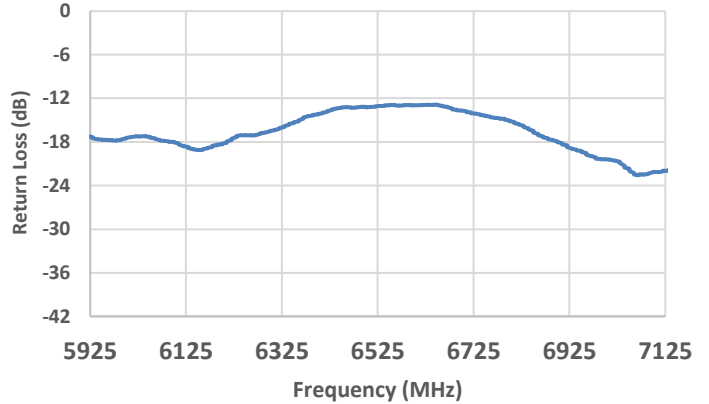
**VSWR, Efficiency and Peak Gain Plots**

Typical performance measured in device housing made in PC/ABS plastic and 100mm cable length

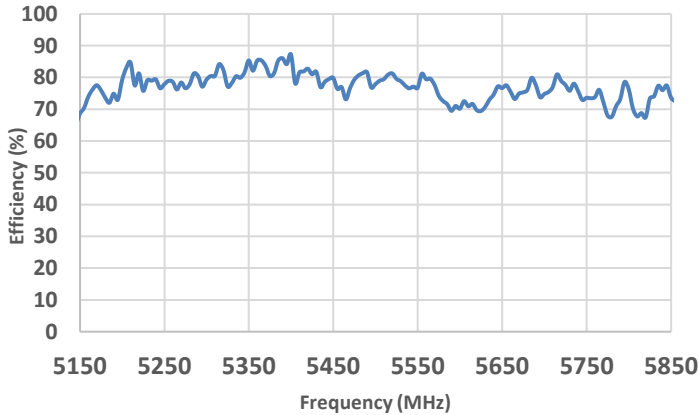
**Return Loss Data (5150 MHz – 5850 MHz)**



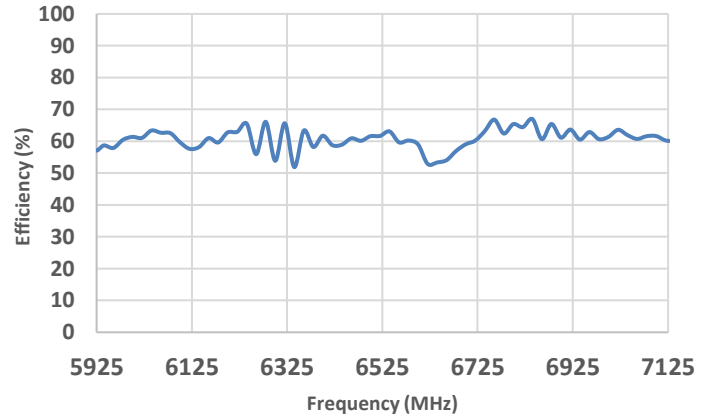
**Return Loss (5925 MHz – 7125 MHz)**



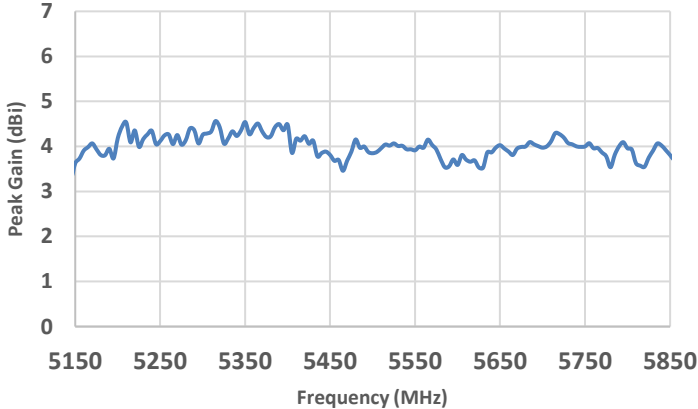
**Efficiency (5150 MHz – 5850 MHz)**



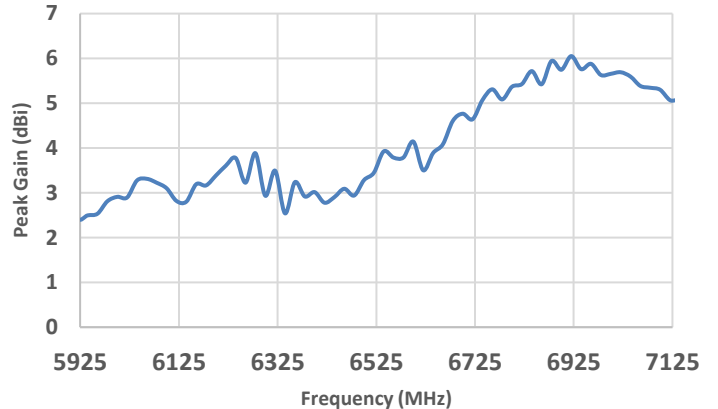
**Efficiency (5925 MHz – 7125 MHz)**



**Peak Gain (5150 MHz – 5850 MHz)**



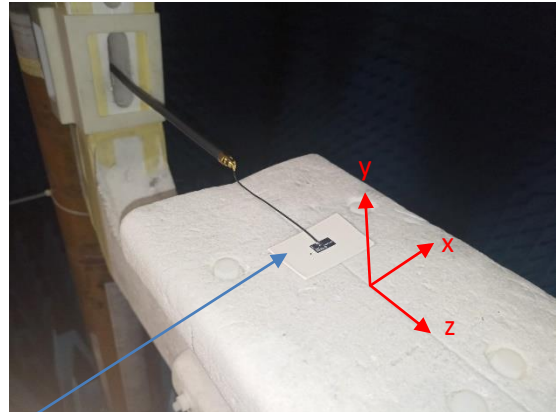
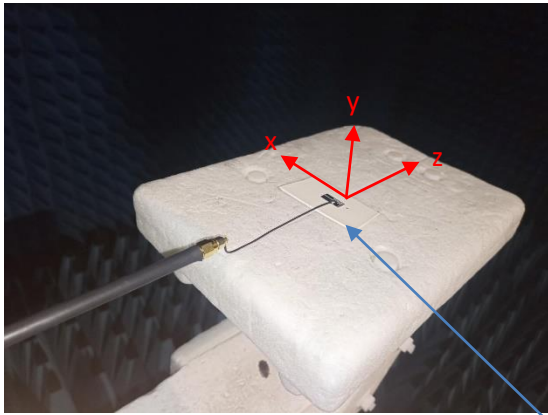
**Peak Gain (5925 MHz – 7125 MHz)**



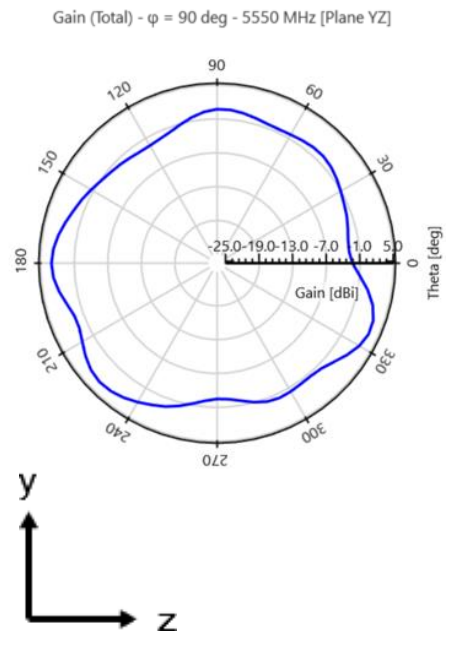
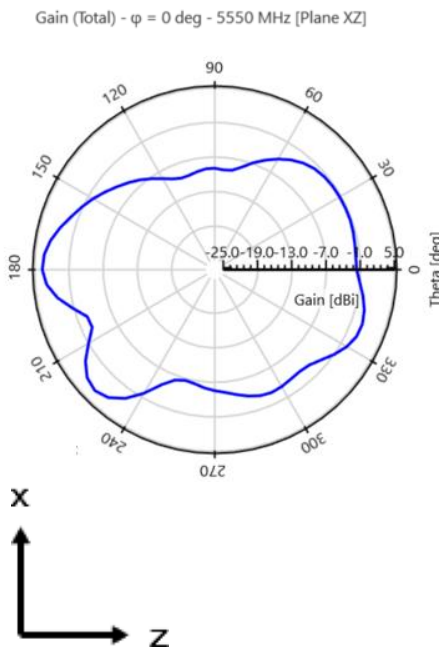
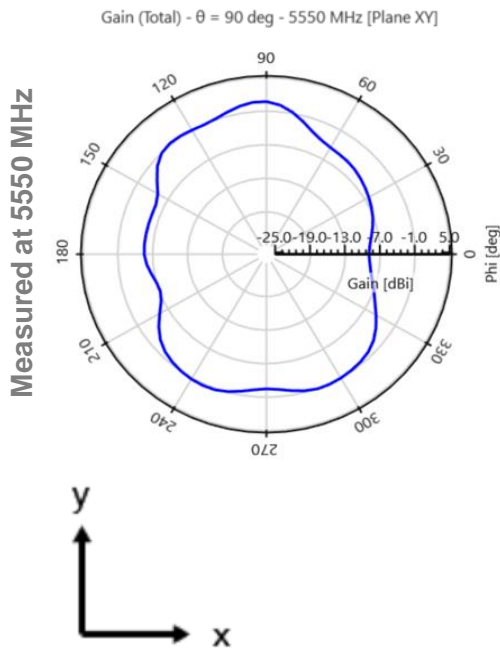
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**Antenna Radiation Patterns**

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



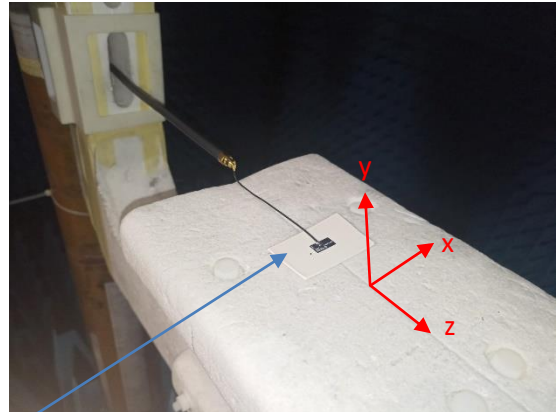
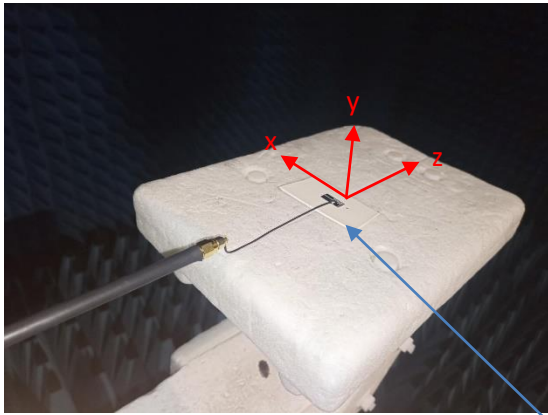
ABS



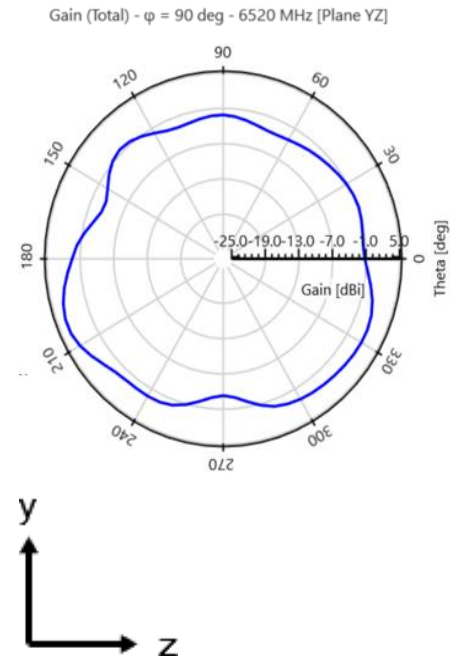
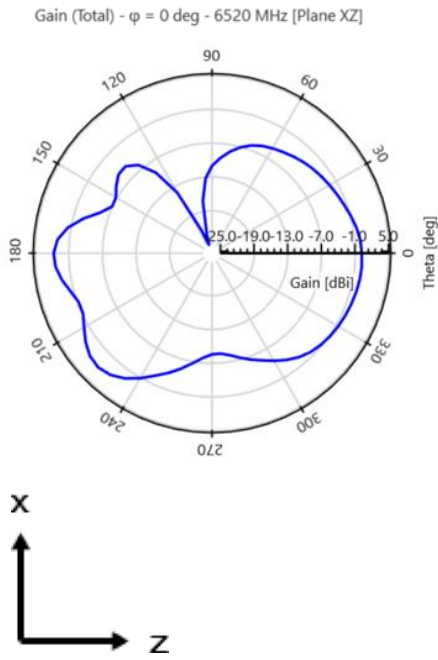
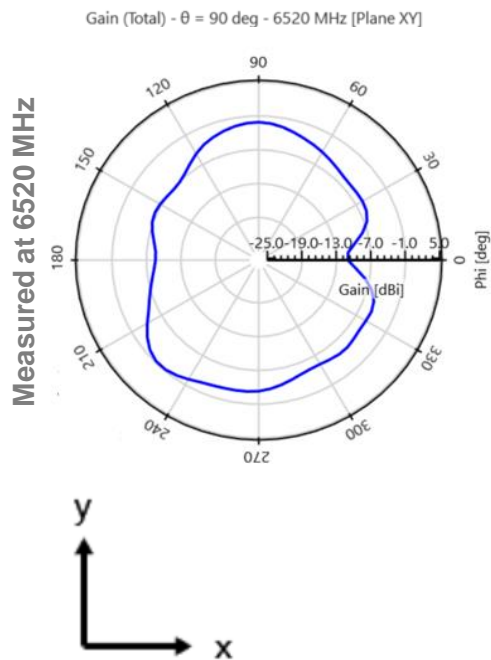
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**Antenna Radiation Patterns**

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ABS



### Generic Antenna Part Numbers

generic standard antenna part numbers for W5 Family

## Example of generic Wi-Fi PN: W5P15x7W04-U100D3B0A

### PN Nomenclature

PCB silk screen number

W	5	P	15X7	W	04
Series	Freq. of operation	Type	Size	Tuning version	PCB thickness
W = Wi-Fi Family	5 = 5 / 6 GHz	F = FPC P = PCB	15x7 = 15.9x7.6 mm	W = Tuning on plastic wall F = Tuning for foam on plastic wall	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 = MHF4L N = No connector	050 = 50mm 100 = 100mm* 150 = 150mm 200 = 200mm 250 = 250mm 300 = 300mm	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*	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

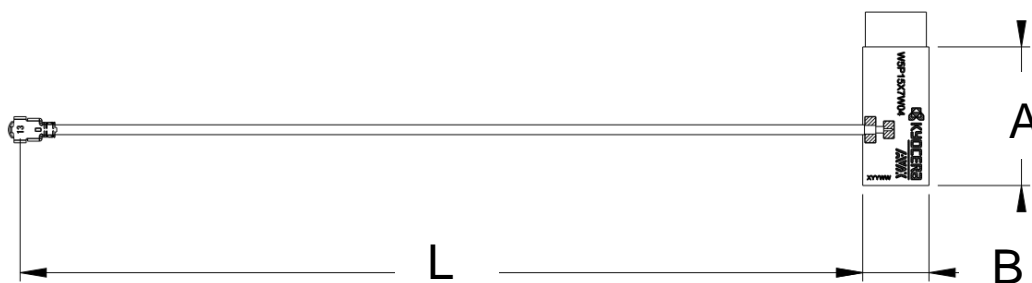
\*Default configuration

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

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Mechanical Dimensions (mm)

Part Number	A (mm)	B (mm)	C (mm)	L(mm)	Connector
W5P15X7W04-U100D3B0A	15.9 ± 0.2	7.6 ± 0.2	0.53	100 ± 3	MHFI (U.FL Compatible)



Top View



Side View



Bottom View

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



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Typical Ordering Part Numbers

PN	TYPE	ADHESIVE / TUNING VERSION	A (mm)	B (mm)	C (mm)	COMPATIBLE CONNECTOR TYPE	L CABLE (mm)
W5P15X7W04-UXXXD3B0A	PCB	3M 468MP / PLASTIC WALL	15.9	7.6	0.53	MHF I (U.FL compatible)	XXX
W5P15X7W04-HXXXD3B0A						MHF 4L	
W5P15X7W04-WXXXD1B0A						MHF III (W.FL compatible)	
W5P15X7F04-UXXXD3B0T		3M 9448A / FOAM ON PLASTIC WALL			MHF I (U.FL compatible)		
W5P15X7F04-HXXXD3B0T					MHF 4L		
W5P15X7F04-WXXXD1B0T					MHF III (W.FL compatible)		
W5F15X7W01-UXXXD3B0C	FPC	3M 467 / PLASTIC WALL	15.9	7.6	0.14	MHF I (U.FL compatible)	XXX
W5F15X7W01-HXXXD3B0C						MHF 4L	
W5F15X7W01-WXXXD1B0C						MHF III (W.FL compatible)	

XXX → Cable length on customer request

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

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