

Part No. W4P42X8W04-U100D3B0A

Embedded Wi-Fi 6E & 7 Antenna - Side Cable

2.4 / 5.0 / 6.0 GHz

Supports: Wi-Fi applications, Bluetooth, Zigbee, WLAN



Embedded Wi-Fi Antenna

2.4 / 5.0 / 6.0 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
- Smart Home

KYOCERA AVX's W4 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.

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.

Electrical Specifications

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

Frequency Band (GHz)	2.400– 2.480	5.150– 5.850	5925 - 7125
Return Loss	< -16 dB	< -12 dB	< -12 dB
Average Efficiency	74 %	71 %	64%
Peak Gain	1.7 dBi	3.4 dBi	4.2 dBi
Power Handling	2 W		
Feed Point Impedance	50 ohms unbalanced		
Radiation Pattern	Omni-directional		
Polarization	Linear		

Mechanical Specifications

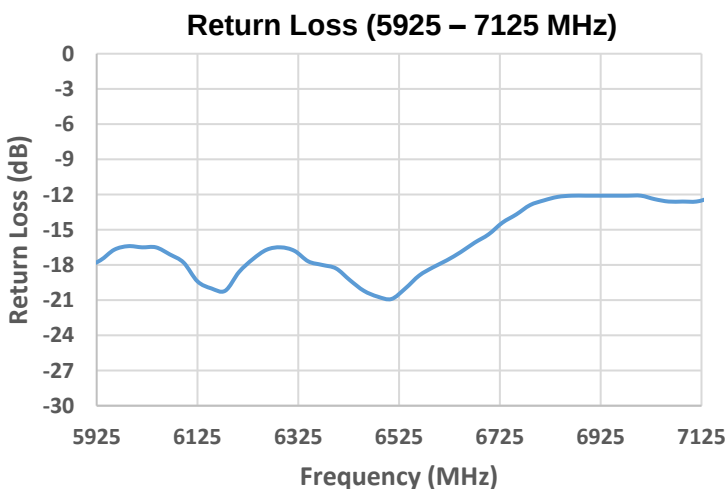
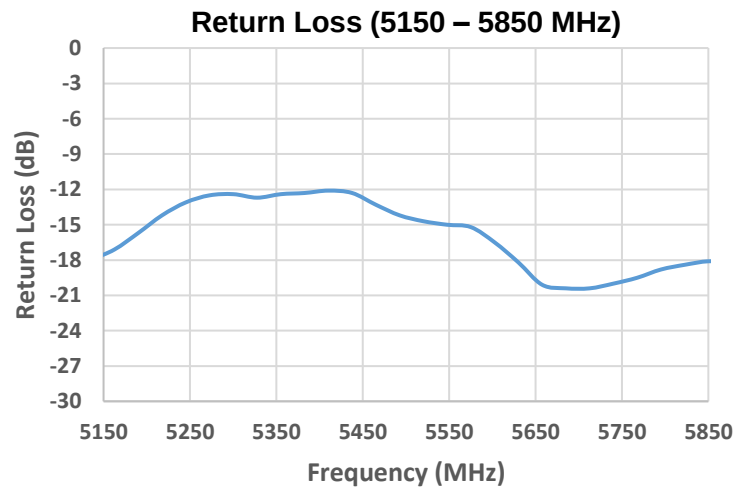
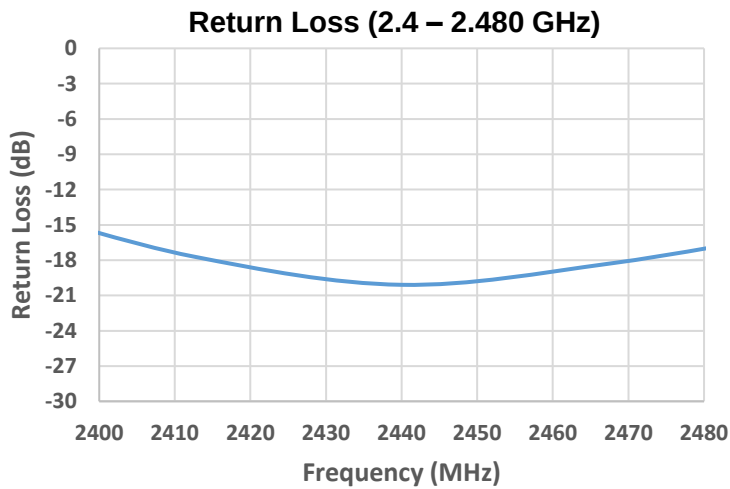
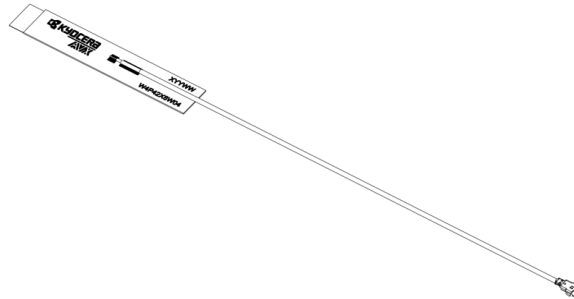
Part Number	W4P42X8W04-U100D3B0A
Size (mm)	(42.60) length (8.60) width (0.53) thickness
*Connector	MHFI (U.FL Compatible)
*Cable length (mm)	100
Weight (grams)	0.7
Mounting Type	Adhesive 3M 468MP
Packing	PE bags
Operating Temperature	[- 40°C ; + 85°C]
Storage Temperature / Humidity	[- 40°C ; + 85°C]
Variant	FPC, PCB + FOAM
Color	Black

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

Wi-Fi 6E&7 side fed KYOCERA AVX Embedded antenna specifications
KYOCERA AVX produces a wide variety of standard and custom antennas to meet user needs

Typical Return Loss Plots

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

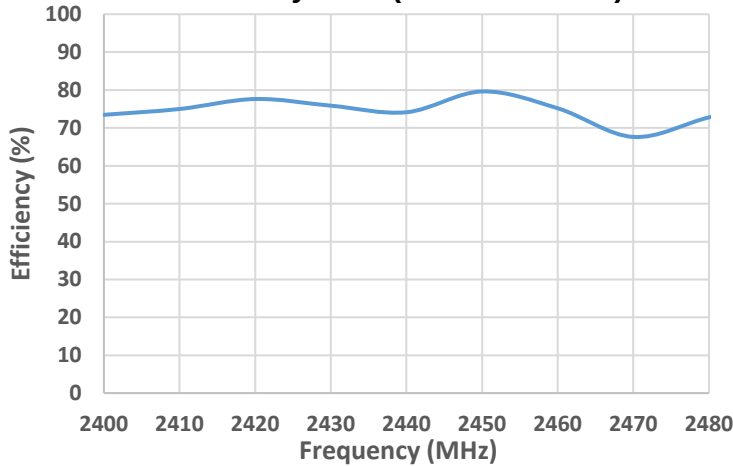


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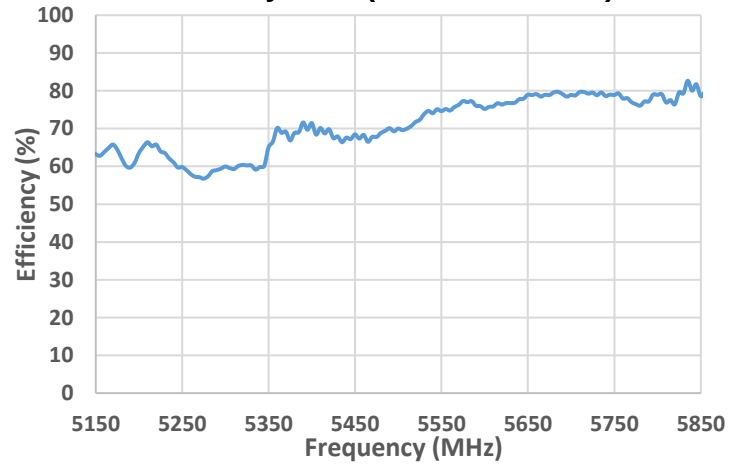
Typical Efficiency and Peak Gain plots

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

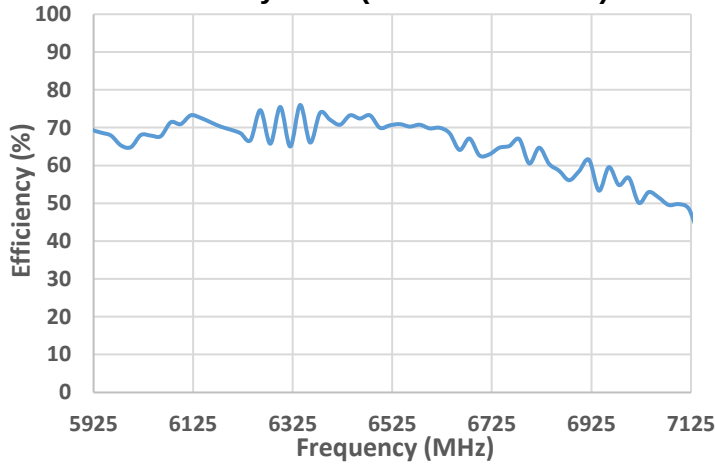
Efficiency Loss (2.4 – 2.480 GHz)



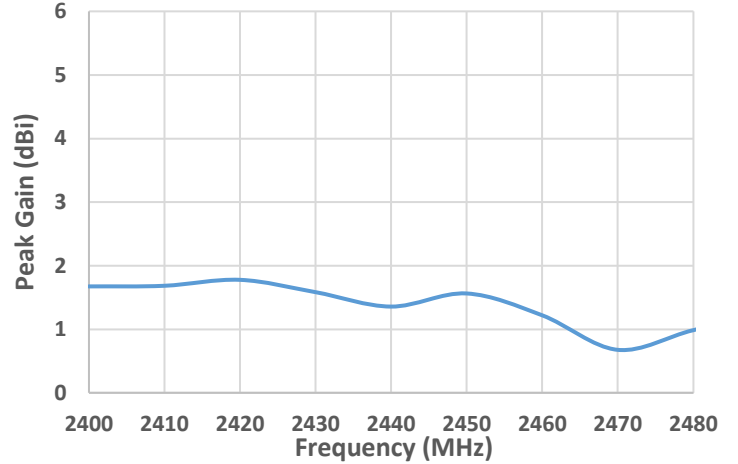
Efficiency Loss (5150 – 5850 GHz)



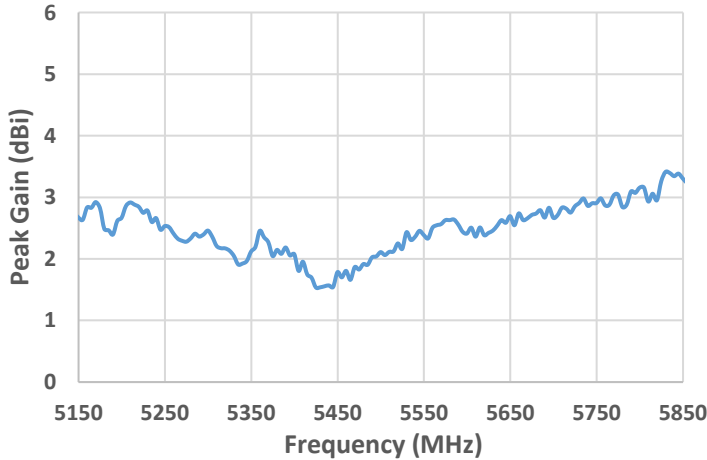
Efficiency Loss (5925 – 7125 GHz)



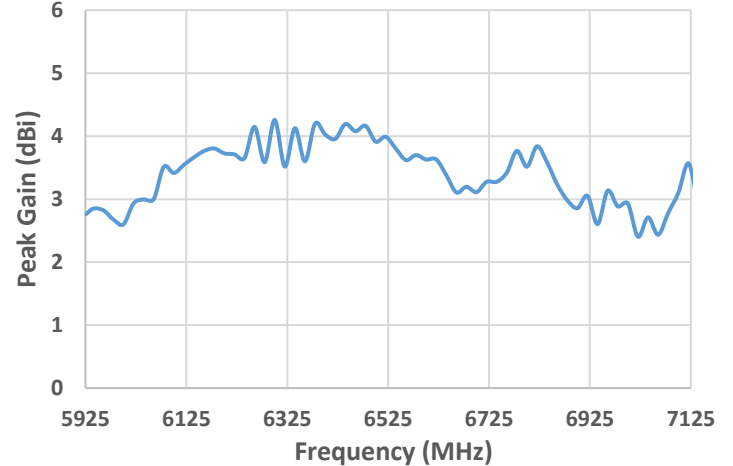
Peak Gain (2.4 – 2.480 GHz)



Peak Gain (5150 – 5850 GHz)



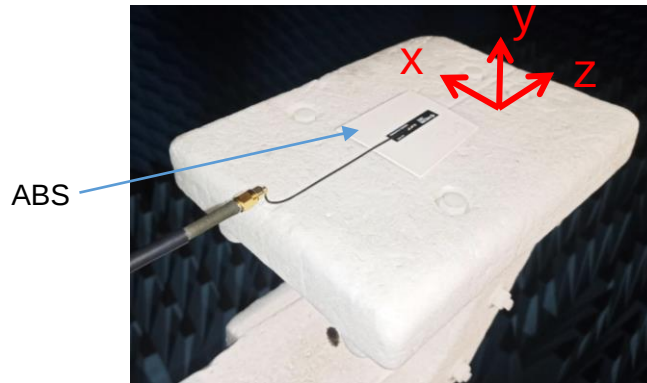
Peak Gain (5925 – 7125 GHz)



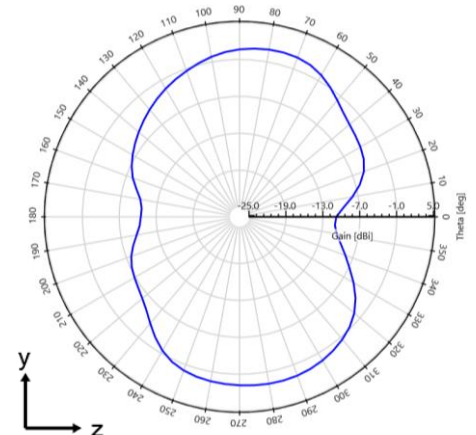
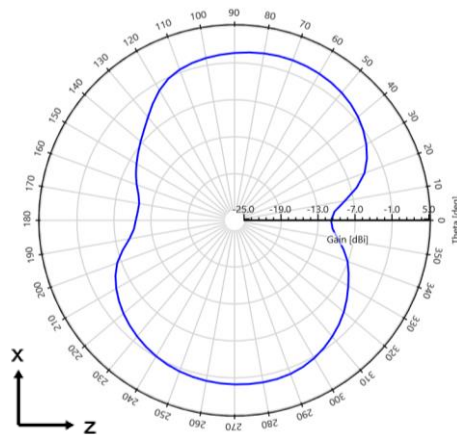
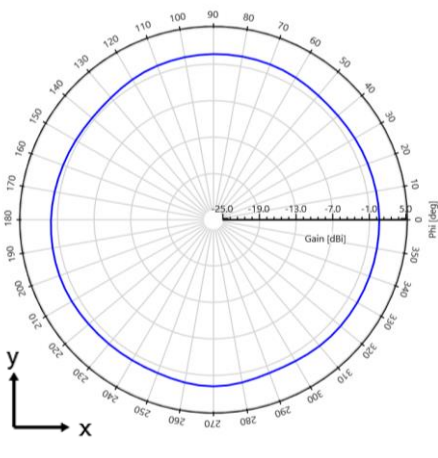
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Antenna Radiation Patterns

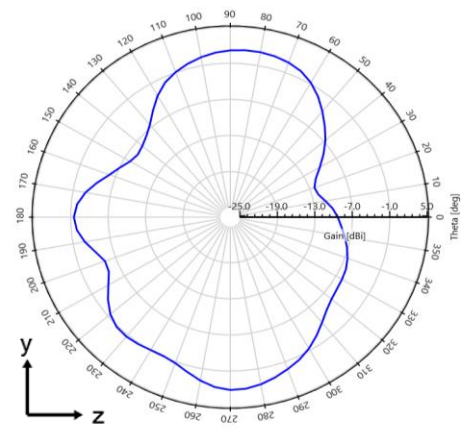
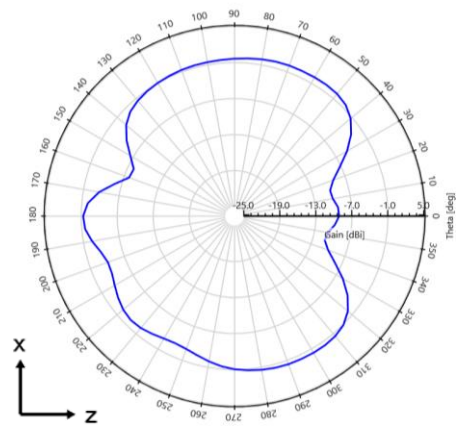
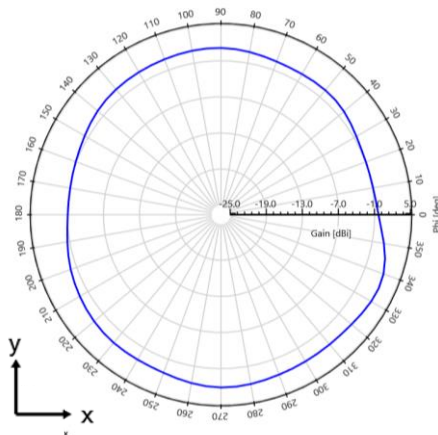
Typical Performances in reference device housing made in PC/ABS plastic and 100mm cable length



Measured at 2440 MHz



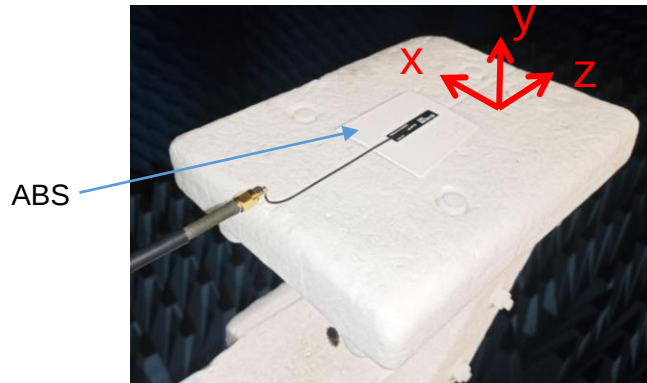
Measured at 5550 MHz



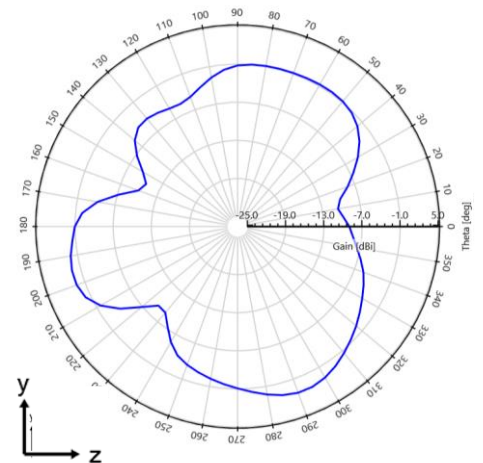
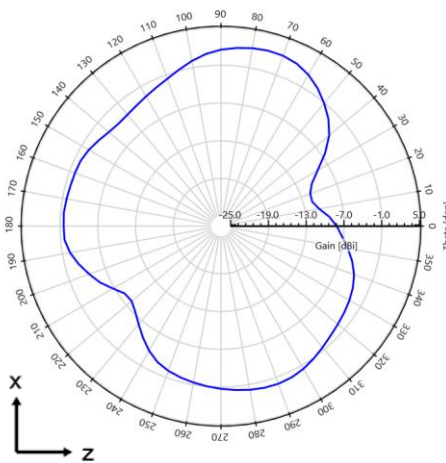
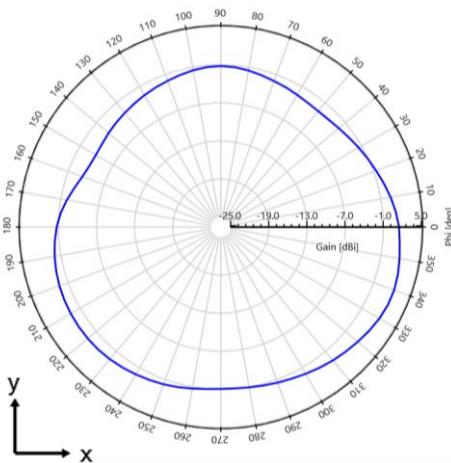
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Antenna Radiation Patterns

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



Measured at 6520 MHz



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Generic Antenna Part Numbers

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Example of generic Wi-Fi PN: **W4P42x8W04-U100D3B0A**

PN Nomenclature

PCB silk screen number

W	4	P	42X8	W	04	
T	T	T	T	T	T	
Series	Freq. of operation	Type	Size	Tuning version	PCB thickness	
W = Wi-Fi Family	4 = 2.4 / 5 / 6 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						
U	100	D	3	B	0	A
T	T	T	T	T	T	T
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	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

PN	Type	ADHESIVE/ TUNING VERSION	A (mm)	B (mm)	C (mm)	Connector	Cable length (mm)
W4P42X8W04-UXXXD3B0A	PCB	3M 468MP / PLASTIC WALL	42.6	8.6	0.53	MHF I	XXX
W4P42X8W04-HXXXD3B0A						MHF 4L	
W4P42X8W04-WXXXD1B0A						MHF III	
W4P42X8F04-UXXXD3B0T		3M 9448A / FOAM ON PLASTIC WALL			1.69	MHF I	
W4P42X8F04-HXXXD3B0T						MHF 4L	
W4P42X8F04-WXXXD1B0T						MHF III	
W4F42X8W01-UXXXD3B0C	FPC	3M 467 / PLASTIC WALL			0.14	MHF I	
W4F42X8W01-HXXXD3B0C						MHF 4L	
W4F42X8W01-WXXXD1B0C						MHF III	

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

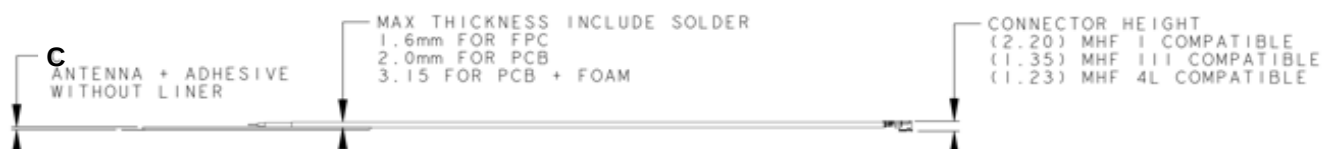
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Mechanical Dimensions

Part Number	A (mm)	B (mm)	C (mm)	L (mm)	Connector
W4P42X8W04-U100D3B0A	42.6	8.6	0.53	100	MHF I (U.FL compatible)
W4F42X8W01-U100D3B0C	42.6	8.6	1.69	100	MHF I (U.FL compatible)
W4F42X8W01-U100D3B0C	42.6	8.6	0.14	100	MHF I (U.FL compatible)



Top View



Side View



Back View

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

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<u>W4F42X8W01-H100D3B0C</u>	<u>W4F42X8W01-U200D3B0C</u>	<u>W4P42X8W04-U100D3B0A</u>	<u>W4P42X8W04-H250D3B0A</u>
<u>W4P42X8W04-H150D3B0A</u>	<u>W4P42X8W04-U250D3B0A</u>	<u>W4P42X8W04-H100D3B0A</u>	<u>W4F42X8W01-U150D3B0C</u>
<u>W4F42X8W01-H250D3B0C</u>	<u>W4F42X8W01-U100D3B0C</u>	<u>W4F42X8W01-H200D3B0C</u>	<u>W4F42X8W01-U250D3B0C</u>
<u>W4P42X8W04-U150D3B0A</u>	<u>W4P42X8W04-H300D3B0A</u>	<u>W4F42X8W01-H300D3B0C</u>	<u>W4F42X8W01-U050D3B0C</u>
<u>W4P42X8W04-H050D3B0A</u>	<u>W4F42X8W01-H150D3B0C</u>	<u>W4P42X8W04-U200D3B0A</u>	<u>W4P42X8F04-U100D3B0T</u>
<u>W4P42X8W04-U300D3B0A</u>	<u>W4P42X8W04-U050D3B0A</u>	<u>W4F42X8W01-U300D3B0C</u>	<u>W4P42X8W04-H200D3B0A</u>