



2.4GHz Slot Array Antenna for Wi-Fi MU-MIMO

Description

BHWR250 is a high-performance 2.4GHz antenna based on patented slot array antenna architecture, with the goal to maximize range and throughput of Wi-Fi especially products that support MU-MIMO. It features a 2-element, serial-feed topology that enables efficient radiation and gain/pattern optimization over 2.4-2.5GHz for Wi-Fi and other applications. BHWR250 features a well-defined, near-omnidirectional radiation pattern in the horizontal plane when placed vertically, while providing moderate gain enhancement suitable for MU-MIMO beamforming. It has a small-form factor of 12x57mm, compatible with common IPX/UFL cable assemblies, and delivers stable VSWR over housing and cabling effects.

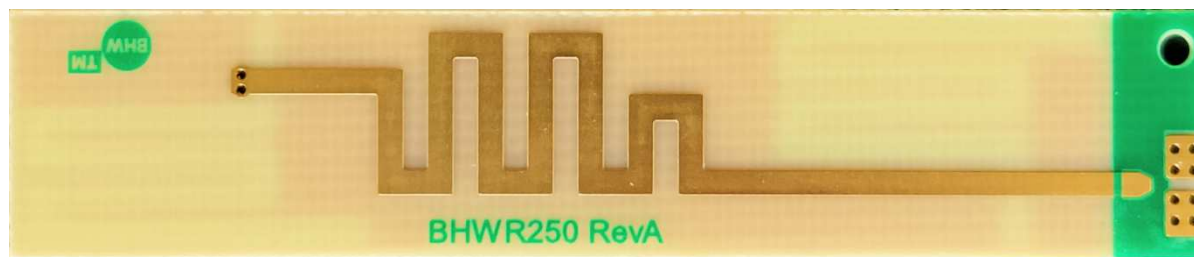
Key Features

- 2.4-2.5GHz Operation Frequency Range
- VSWR < 2:1 over 2.4-2.5GHz
- Near-Omni Patterns in Horizontal Plane
- Gain~3dBi, Optimized for MU-MIMO Beamforming
- High Efficiency: TBD
- Stable VSWR over Housing/Cabling Effects
- Au-Plated Finish for Maximal Efficiency

Key Applications

- Wi-Fi MU-MIMO Solutions
- Wi-Fi 3/4/5/6 Routers/Repeaters
- Wi-Fi Modules/Data Links
- 2.4GHz Audio/Video Streaming
- Long-Range BLE, ZigBee, IoT Solutions
- Generic 2.4GHz Radio Designs
- FPC Antenna Replacement with Minimum Frequency Shift

Product Information



12x57x0.6mm PCBA for IPX/UFL Cable Assembly



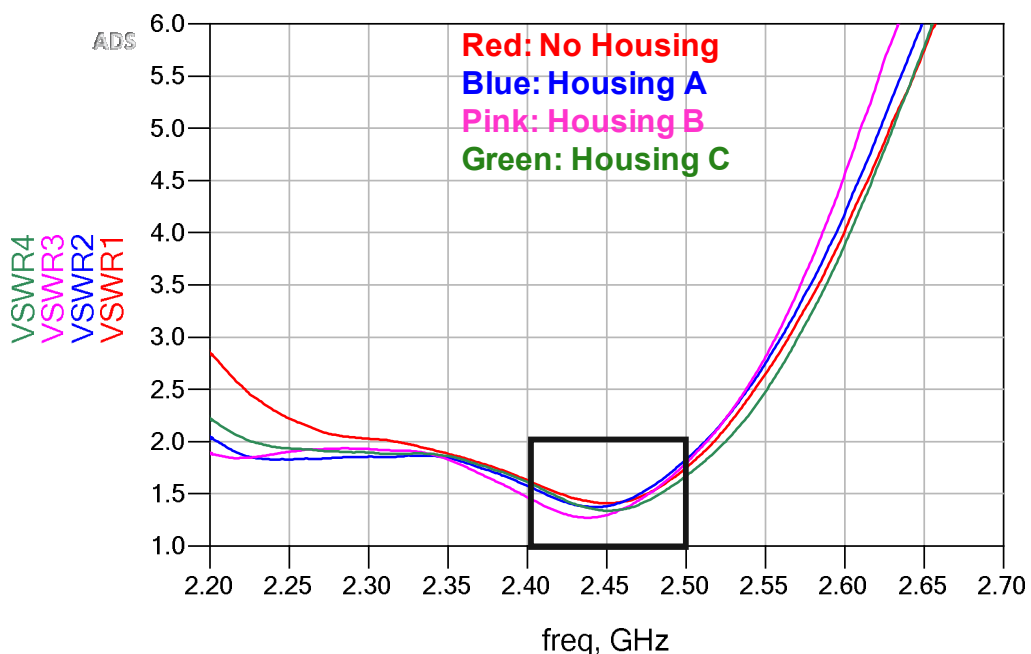
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Electrical and Mechanical Specifications*

Parameter	Condition	Specification			Unit
		Min.	Typ.	Max.	
Operating Frequency		2.4		2.5	GHz
Peak Gain			3		dBi
Radiation Efficiency			TBD		%
Radiation Pattern	Antenna Placed Vertically		Omni		
Input VSWR	Typical Antenna Housing			2:1	
Height	H		57		mm
Width	W		12		mm
Thickness	T		0.6		mm
Weight			1		g

*For details of EVB test data and application related information please refer to BHW AppNote #025.

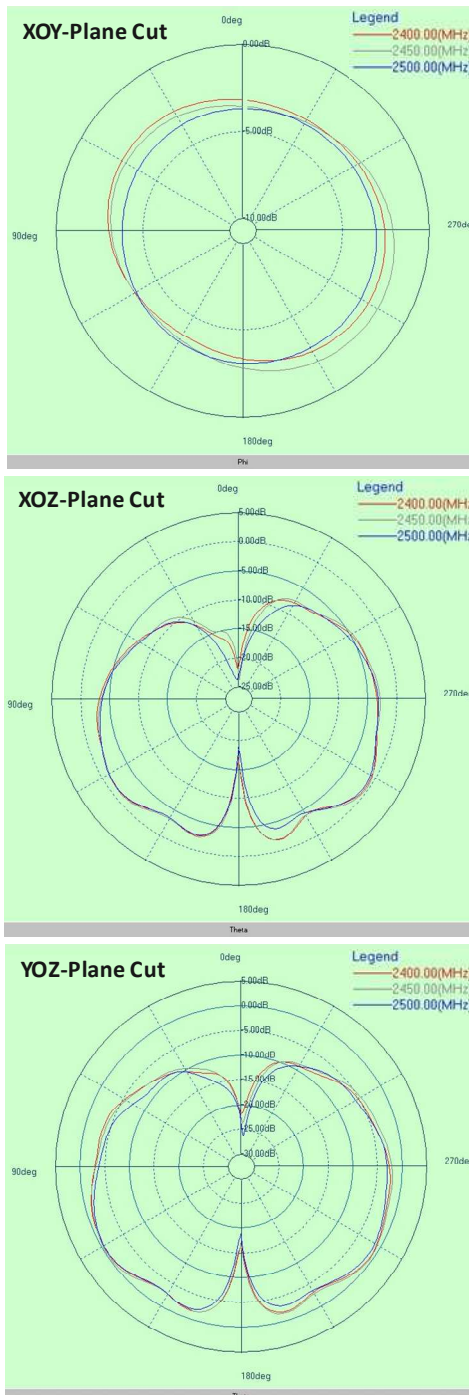
Typical Input VSWR





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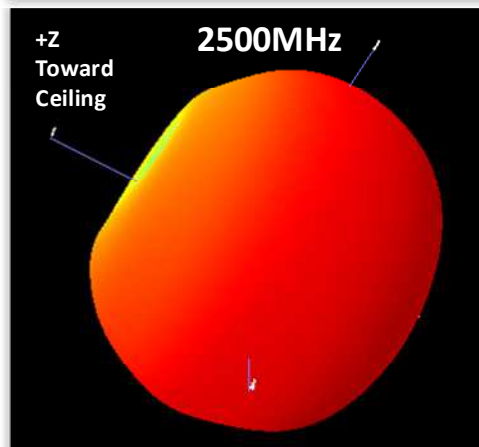
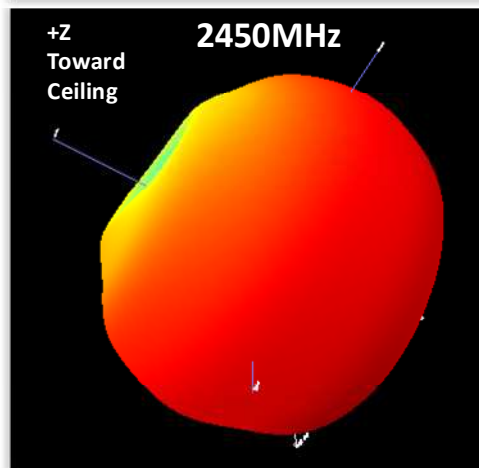
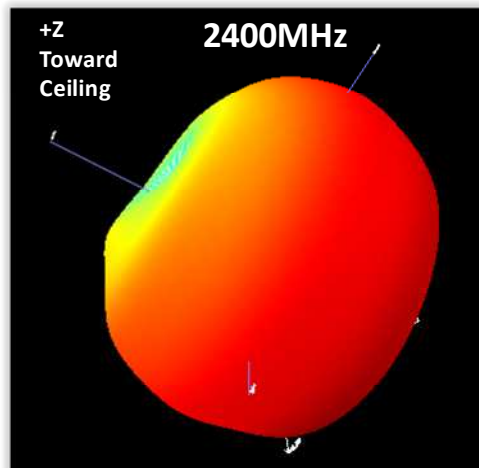
Measured Radiation Patterns: 2D Plots





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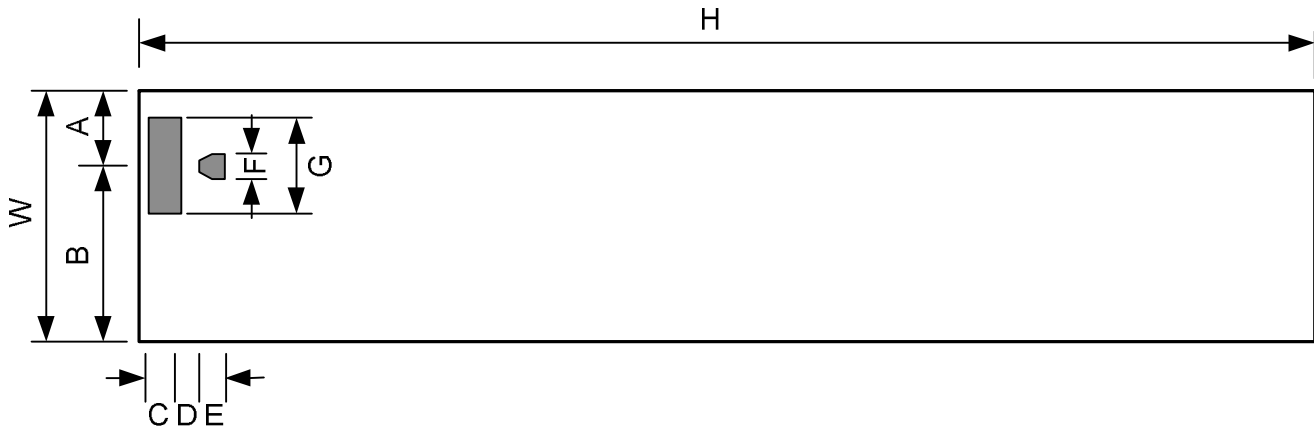
Measured Radiation Patterns: 3D Plots





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Mechanical Drawings



Symbol	Min. (mm)	Typ. (mm)	Max. (mm)
A	3.5	3.6	3.7
B	8.3	8.4	8.5
C	1.6	1.7	1.8
D	0.7	0.8	0.9
E	1.2	1.3	1.4
F	1.1	1.2	1.3
G	4.7	4.8	4.9
H	56.9	57	57.1
W	11.9	12	12.1

Note: Grey area is solder mask opening for IPX/UFL cable assembly.