



2.4GHz Dual-Slot Quasi-Diversity Antenna

Description

BHWR250 is a high-performance 2.4GHz antenna based on patented dual-slot, quasi-diversity architecture, with the goal to maximize range and throughput of Wi-Fi especially products that support MU-MIMO, and high-reliability industrial IoT platforms. It features a 2-element, serial-feed topology that enables efficient radiation and gain/pattern optimization over 2.35-2.5GHz. 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

- 2.35-2.5GHz Operation Frequency Range
- VSWR < 2:1 over 2.35-2.5GHz
- Near-Omni Patterns in Horizontal Plane
- Gain~3dBi
- High Efficiency: 60%
- Stable VSWR over Housing/Cabling Effects
- Unique quasi-diversity capability without RF Switch

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
- ZigBee/Thread/Matter Range Boosters
- Generic 2.4GHz Radio Designs
- FPC or LDS Antenna Replacement with Minimum Frequency Shift

Product Information



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



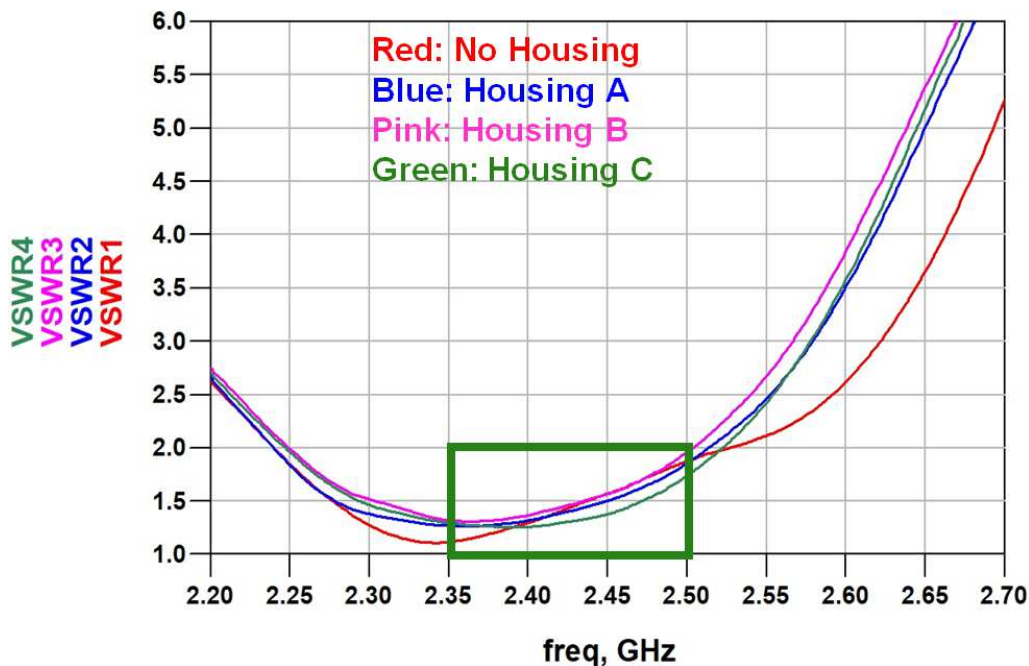
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Electrical and Mechanical Specifications*

Parameter	Condition	Specification			Unit
		Min.	Typ.	Max.	
Operating Frequency		2.35		2.5	GHz
Peak Gain			3		dBi
Radiation Efficiency			60		%
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.

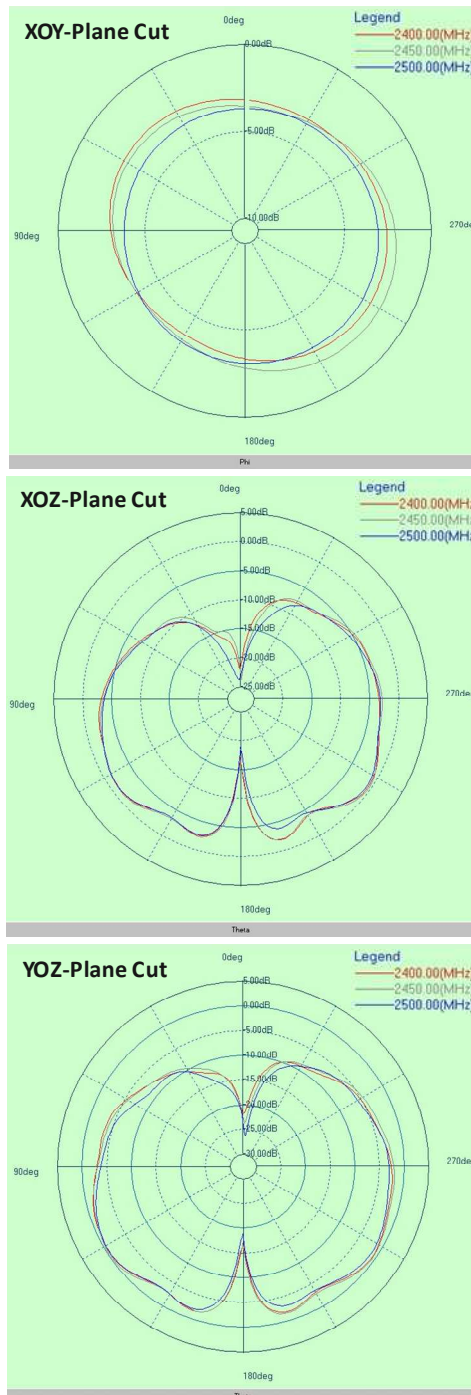
Typical Input VSWR





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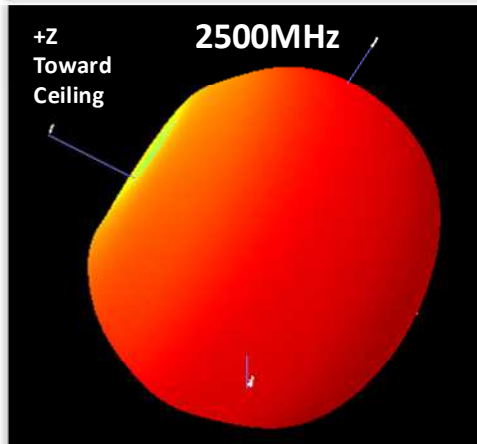
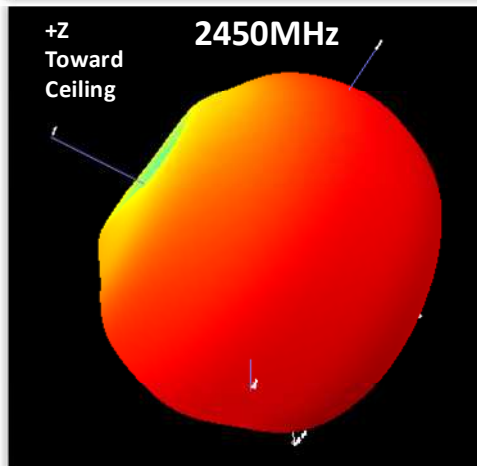
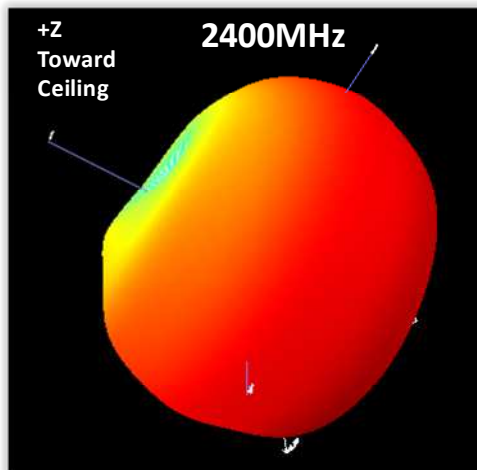
Measured Radiation Patterns: 2D Plots





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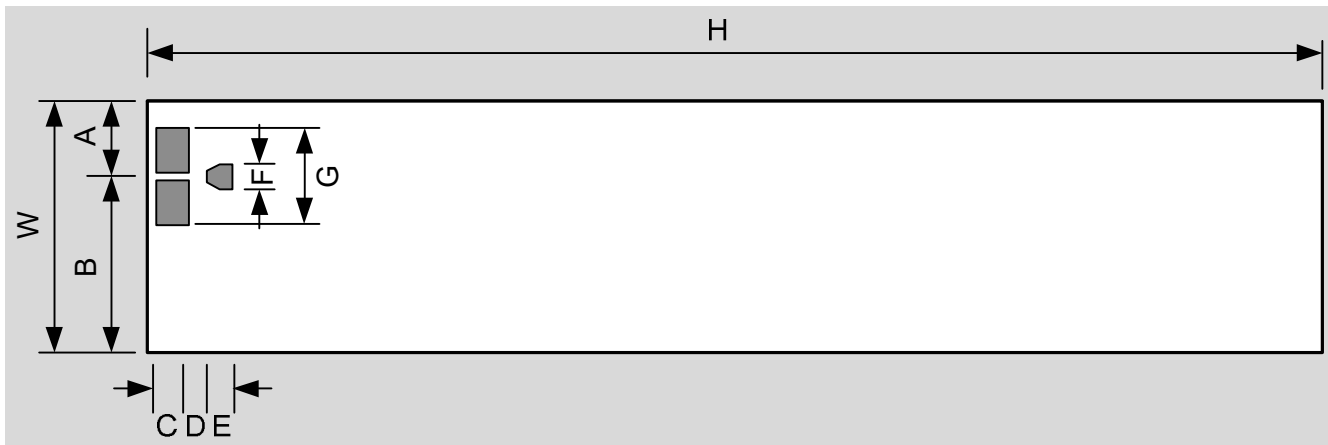
Measured Radiation Patterns: 3D Plots





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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	1.4	1.5	1.6
D	0.7	0.8	0.9
E	1.3	1.4	1.5
F	1.2	1.3	1.4
G	4.5	4.6	4.7
H	56.9	57	57.1
W	11.9	12	12.1

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