

Rayspan Metarray.n™ A Metamaterial Ultra-compact MIMO antenna array for 802.11n

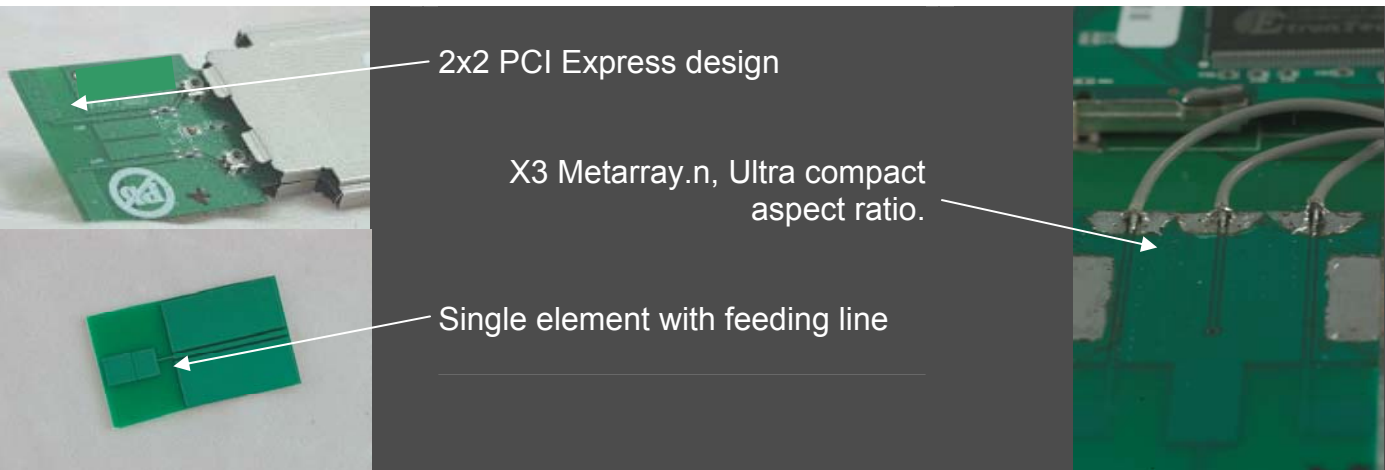
Applications

- 802.11a/b/g/n
 - Access Point
 - PCMCIA/PCI Express/USB
 - Laptop
 - Handset
 - Converged Devices
 - Media Player
 - Digital entertainer
 - Bridges

Advantages

- **Ultra-compact design**
 - A compact air interface design allows OEM to focus on industrial design and product appeal
- **Highest performance**
 - MTM Technology™ guarantees best in class product performance across the full 802.11 spectrum
- **Affordable**
 - Does not increase OEM product BOM
- **Highest quality and reliability**
 - Utilizes standard manufacturing process

Metarray.n™ is an ultra-compact antenna array for 802.11n MIMO applications. It is composed of *metamaterials*, a new class of materials that exhibit properties not found in natural materials. These unique properties enable a **20x** reduction in MIMO antenna and array size with no trade-offs in performance. Rayspan's MTM Technology™ ensures that each compact antenna element delivers efficiencies similar to free space while simultaneously providing high MIMO gain – with drastically reduced spacing between the antenna elements.

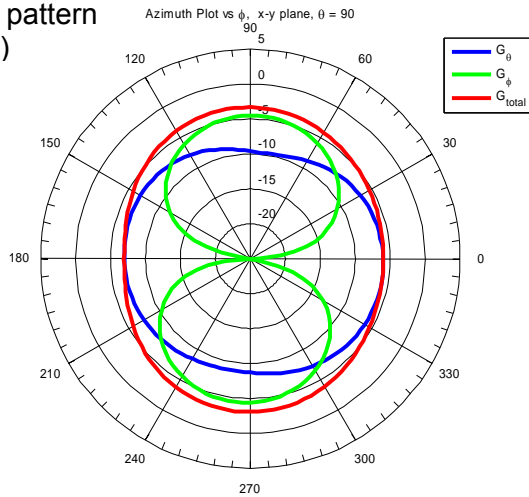


Electrical and Mechanical Characteristics

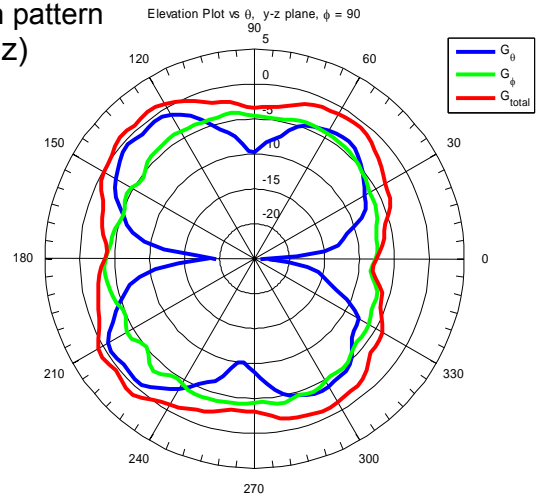
Frequency	2.4 – 2.5GHz 4.9 – 5.9GHz	Nominal Impedance	50Ω
		VSWR	<2:1
Efficiency	> 65% (2.45GHz) > 70% (5.50GHz)	Size single element	8.0 x 5.0 mm
Peak Gain	2.3dBi (2.45GHz) 4.0dBi (4.9GHz) 4.0dBi (5.8GHz)	Size x3 array Where λ is wavelength	70 x 15mm ($\lambda/4$) 50 x 15mm ($\lambda/6$) 40 x 15mm ($\lambda/8$)
Polarization	Vertical	Max Power	2W

Material	FR4	RoHS	Compliant
Thickness	Between 0.5 and 1.6mm	Can be used in conjunction with	- Power combiner - Directional coupler
Number of layers	Between 2 and 10	Finish	- Solder mask - Varnish

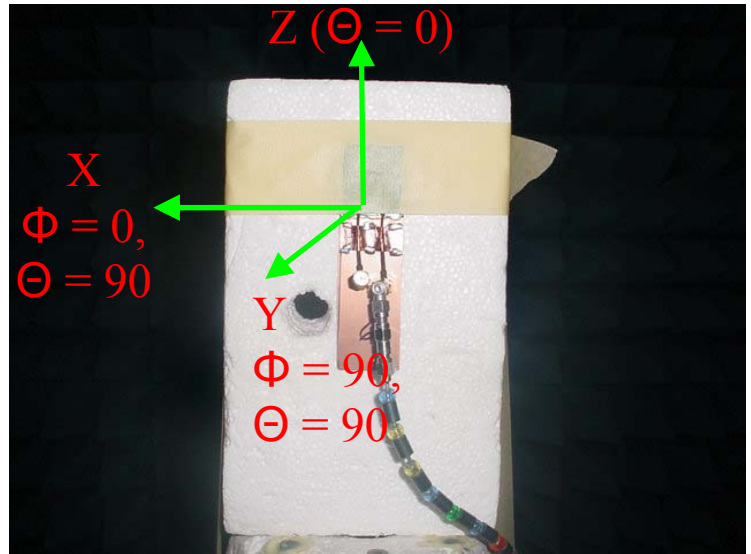
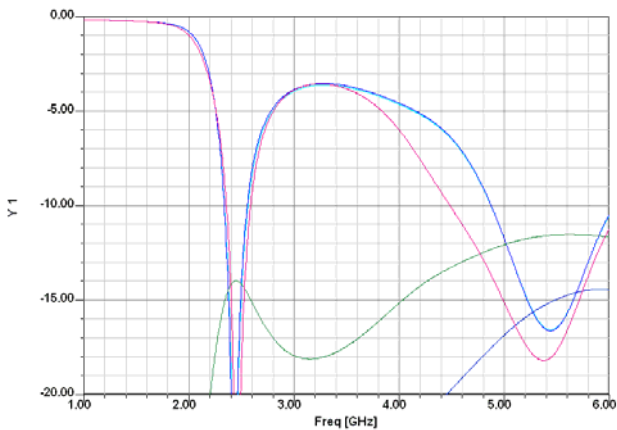
Radiation pattern (2.45GHz)



Radiation pattern (2.45GHz)



Return loss and coupling



Specifications subject to change without notice

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