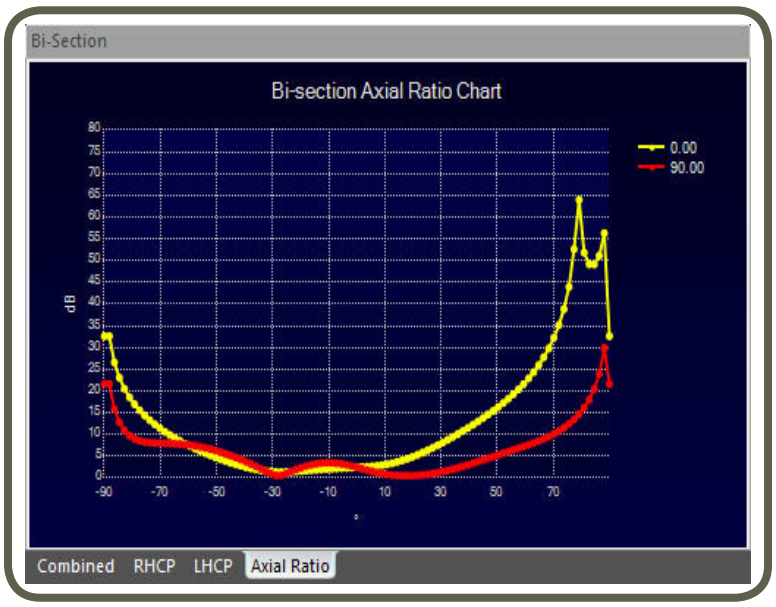
Circular Polarization Option

RFxpert™

Determine proper alignment of antennas for maximum signal strength and characterize CP antennas in less than a second

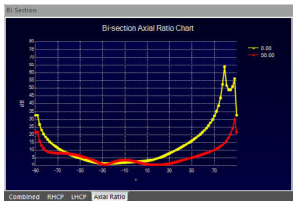
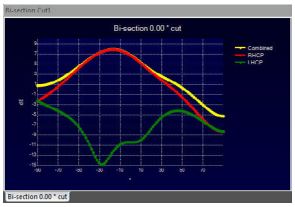
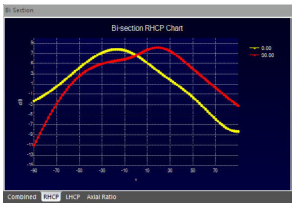
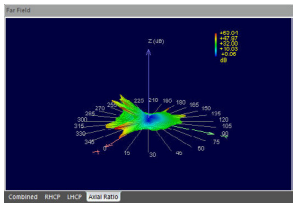
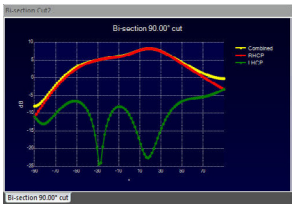
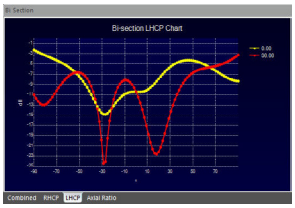
With the Circular Polarization (CP) option, the RFxpert calculates the right and left hand circularly polarized patterns and displays axial ratio patterns in sub-second. The CP application will also calculate and display axial ratio patterns. Having access to both the left hand and right hand patterns can be used to identify the orientation of the circular polarization as well. This feature will allow designers of circularly polarized antenna to characterize the effectiveness of their design in seconds.



RFxpert users can execute real-time analysis of their embedded antenna designs and test multiple design iterations, on the lab bench, in seconds at each stage of the design process. RFxpert also gives wireless engineers the freedom to do rapid prototyping and explore new designs, new materials and new forms.

With the RFxpert wireless engineers and designers won't waste time waiting in congested anechoic chamber lines. They can optimize positioning and effects from layout, monitor changes from packaging or layout changes or verify performance of final product in real-time and then go to the chambers for final certification requirements with their mind at ease, knowing that their design will achieve a first time pass.

Circular Polarization Features

Part number	3000-0300
Features	RHCP and LHCP 3D patterns and 2D cuts Axial Ratio 3D pattern and 2D cuts
Measurement time	<1 sec to display patterns on screen
Frequency limits	700 MHz to 6 GHz
Accuracy	Co-polarized patterns within +/- 1.5dB in +/-30degrees from center. Cross-polarized patterns accurate to -20dBc
Software requirement	RFxpert 3.2.0.4 and above
Sample test results of a 2.4 GHz RHCP antenna	 Axial Ratio  Bi-section 0° cut  Bi-section RHCP  Axial Ratio (Far-field)  Bi-section 90° cut  Bi-section LHCP

RFxpert Scanner Specifications

Broadband frequency coverage	300 MHz to 6 GHz
Antenna array	RFX 384 (24 x 16) H-field probes RFX2 1,600 (40 x 40) H-field probes
Measurement sensitivity	0 dBm source power for a reasonably efficient antenna
Measurement accuracy	

Band 1: 300 MHz - 1GHz			Band 2: 1 GHz - 3 GHz			Band 3: 3 GHz - 6 GHz		
σ	2σ	N	σ	2σ	N	σ	2σ	N
1.54	3.08	195	0.81	1.62	517	0.94	1.88	247

Measurement repeatability	+/- 0.2 dB
Far-field resolution	1.8° for theta and 3.6° for phi
Maximum radiator size	RFX L 16 cm x W 10 cm (L 6.30” x W 3.94”) RFX2 L 32 cm x W 32 cm (L 12.60” x W 12.60”)
Probe to probe uniformity	Calibrated before shipment Firmware correction factors adjust for frequency dependant probe responses with < +/- 0.5 dB accuracy
Probe to probe isolation	> 20 dB
Maximum radiated power	+33 dBm
Modulation formats	GSM / CDMA / WCDMA / WiFi / WiMAX / LTE Bluetooth, RFID, GPS, Custom antenna
Scanner connections	PC: USB Power for RFX: 6VDC, 3.0A Power for RFX2: 12VDC, 3.4A

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