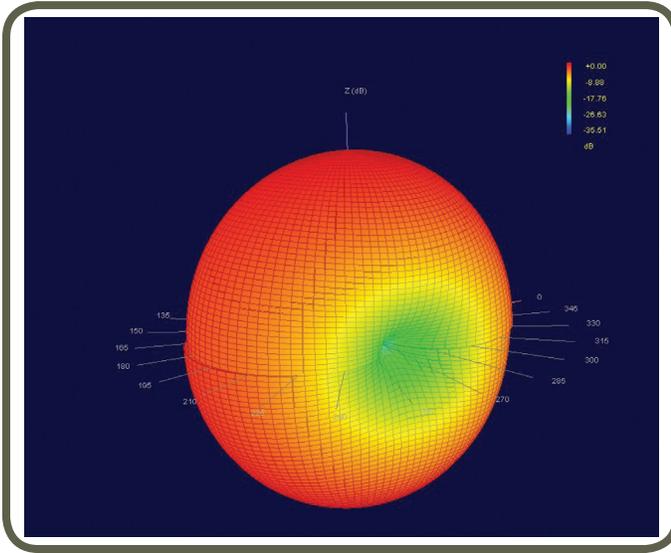


## Antenna pattern measurement in seconds

The RFX is a compact bench-top scanner that characterizes antennas in your own lab environment in **real-time**. RFX provides far-field patterns, bisections, EIRP and TRP in seconds. Novel near-field results, including amplitude, polarity and phase give insights into the root causes of antenna performance challenges and help troubleshoot far-field radiation patterns.



RFX can also integrate with a network analyzer to measure gain, efficiency and  $S_{11}$  of an antenna, and with a base station emulator to test cell phones. 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. RFX also gives wireless engineers the freedom to do rapid prototyping and explore new designs, new materials and new forms. Wireless engineers and designers can test multiple design variations and optimize complex embedded antenna designs at their lab bench in seconds without wasting 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.

With the Circular Polarization (CP) option, the RFX calculates the right and left hand circularly polarized patterns and displays axial ratio patterns. RFX can be integrated into virtually any automated test bed and production line by using DLL programming. As a golden sample comparison tool with real-time results, the RFX is also ideal for sample lot testing and product verification for wireless service providers or for manufacturing support.

RFX allows design teams to **reduce testing time** by at least one order of magnitude. Users have also documented fifty percent reductions in design cycle times. RFX provides antenna designers and wireless engineers with an **easy-to-use, cost-effective, and proven tabletop solution**.

With its real-time capability, RFX is a perfect tool to improve the design process for manufacturers of cellular, GPS, WiFi, RFID, Bluetooth, LTE, MIMO, custom and medical devices.



## RFX Features

<b>Capability</b>	2D and 3D near-field patterns (amplitude, phase and polarization) Far-field patterns and bi-sections (cartesian and polar) EIRP and TRP Graph $S_{11}$ Calculate gain and efficiency Automatic comparisons with user defined Golden Sample (sample lot testing and production line testing) Separately purchased options Circular Polarization: Right (RHCP) and left hand circularly polarized patterns (LHCP) and Axial Ratio (AR) (Part #: 3000-0303) Base Station Emulator programmable control (Part #: 3000-0300)
<b>Scan time</b>	in seconds
<b>Supported base station emulators</b>	List at <a href="https://www.emscan.com/products/antenna-testing/rfx/">https://www.emscan.com/products/antenna-testing/rfx/</a> If your BSE is not listed, please contact EMSCAN for custom driver
<b>Supported network analyzers</b>	List at <a href="https://www.emscan.com/products/antenna-testing/rfx/">https://www.emscan.com/products/antenna-testing/rfx/</a> If your VNA is not listed, please contact EMSCAN for custom driver
<b>Supported operating systems</b>	Windows 10®

## RFX Scanner Specifications

<b>Broadband frequency coverage</b>	300 MHz to 6 GHz Base configuration 300 MHz to 6 GHz (3-year warranty Part #: 3000-0603, 5-year warranty Part #: 3000-0601) Option 300 MHz to 2.75 GHz (3-year warranty Part #: 3000-0602, 5-year warranty Part #: 3000-0600) Upgrade option 2.75 GHz to 6 GHz (Part #: 3000-0121; 3000-0602 pre-requisite)																											
<b>Antenna array</b>	384 (24 x 16) H-field probes																											
<b>Measurement sensitivity</b>	0 dBm source power for a reasonably efficient antenna																											
<b>Measurement accuracy</b>	<table border="1"> <thead> <tr> <th colspan="3">Band 1: 300 MHz - 1GHz</th> <th colspan="3">Band 2: 1 GHz - 3 GHz</th> <th colspan="3">Band 3: 3 GHz - 6 GHz</th> </tr> <tr> <th><math>\sigma</math></th> <th><math>2\sigma</math></th> <th>N</th> <th><math>\sigma</math></th> <th><math>2\sigma</math></th> <th>N</th> <th><math>\sigma</math></th> <th><math>2\sigma</math></th> <th>N</th> </tr> </thead> <tbody> <tr> <td>1.96</td> <td>3.92</td> <td>170</td> <td>0.81</td> <td>1.62</td> <td>514</td> <td>1.10</td> <td>2.20</td> <td>246</td> </tr> </tbody> </table>	Band 1: 300 MHz - 1GHz			Band 2: 1 GHz - 3 GHz			Band 3: 3 GHz - 6 GHz			$\sigma$	$2\sigma$	N	$\sigma$	$2\sigma$	N	$\sigma$	$2\sigma$	N	1.96	3.92	170	0.81	1.62	514	1.10	2.20	246
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<b>Measurement repeatability</b>	+/- 0.2 dB																											
<b>Far-field resolution</b>	1.8° for theta and 3.6° for phi																											
<b>Maximum radiator size</b>	L 16 cm x W 10 cm (L 6.30" x W 3.94")																											
<b>Resolution Bandwidth</b>	Resolution Bandwidth = IF Bandwidth of 60MHz																											
<b>Probe to probe uniformity</b>	Calibrated before shipment Firmware correction factors adjust for frequency dependant probe responses with < +/- 0.5 dB accuracy																											
<b>Probe to probe isolation</b>	> 20 dB																											
<b>Maximum radiated power</b>	+33 dBm																											
<b>Operating temperature</b>	From 15 °C to 40 °C (continuous fixed frequency scan at 2440 MHz)																											
<b>Modulation formats</b>	GSM / CDMA / WCDMA / WiFi / WiMAX / LTE Bluetooth RFID GPS Custom antenna																											
<b>Scanner connections</b>	PC: USB Power: 6 VDC, 3.0 A																											
<b>Dimensions</b>	L 32.1 cm x W 24 cm x H 7 cm (L 12.64" x W 9.45" x H 2.76")																											
<b>Weight</b>	3.8 kg / 8.38 lb (including cables and adaptor)																											



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