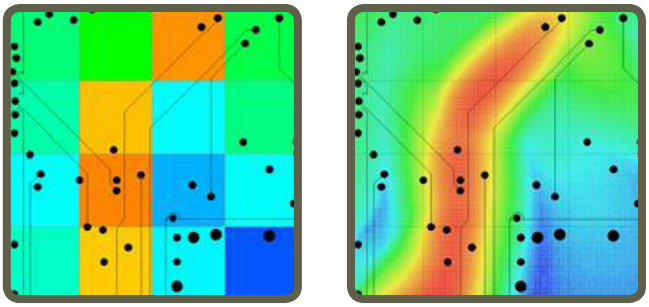
ERX™ EMxpert™

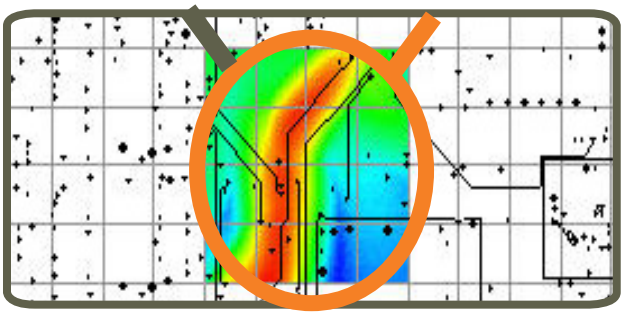
World's fastest high resolution EMC and EMI scanner (minimum resolution ≈ 60 microns)

World's fastest EMC/EMI diagnostic system has been reinvented to assist high density board designers to visualize the root causes of potential EMC and EMI problems during pre- and post-EMC compliance testing.



Standard 7.5 mm resolution and no interpolation

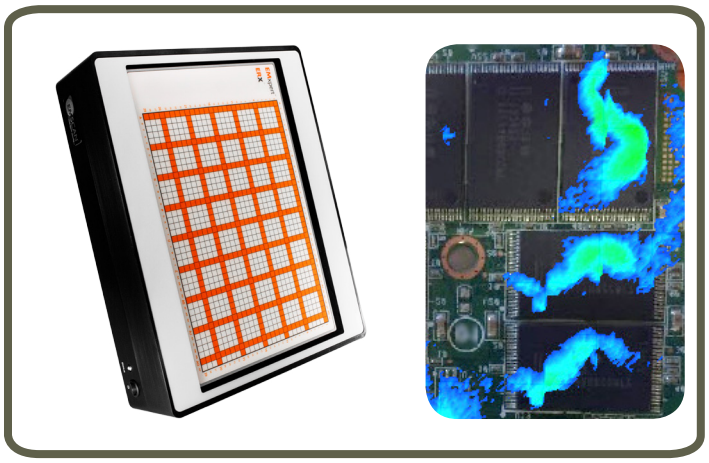
High 0.12 mm resolution and interleaved



ERX enables the PCB and design engineers to diagnose EMC/EMI problems between 150 kHz and 8 GHz. ERX provides 8 levels of resolution (60 microns - 7.5 mm). Level 1 resolution (7.5 mm) allows the engineers to visualize the hot spots, current loops or intermittent problems in **real-time**. After locating the unintended radiators, engineers can zoom into the problem by selecting the resolution level based on the density of the board design.

ERX requires a very specific customer-supplied spectrum analyzer and PC running the ERX software.

ERX provides unique pre- and post-EMC compliance testing that images **emissions**. During any new PCB development process, design engineers must find, characterize, and address unintended radiators or RF leakage to pass compliance testing. ERX allows board designers to pre-test and resolve EMC and EMI problems early on, thus avoiding unexpected EMC compliance test results.



ERX quickly delivers **repeatable** and **reliable** results that pinpoint the cause of a design failure. As a result, the user can personally test the design without having to rely on another department, test engineer, or time-consuming off-site testing. After diagnosing even an intermittent problem, the engineer can implement a design change and retest. The results provide concrete verification of the effectiveness (or not) of the design change.

EMSCAN real-time results

ERX Features

Capability	Spectral scan, spatial scan, peak-hold, continuous scanning, spectral and spatial comparison, scripting, limit lines, report generator, notes
Spatial scan time	Continuous real-time for entire scan area (1,218 probes activated) when Level 1 selected: 1 sec. Selected area 2.25 cm x 2.25 cm, 9 probes activated **Level 1:** 1 sec. **Level 2:** 4 sec. **Level 3:** 9 sec. **Level 4:** 25 sec. **Level 5:** 1 min. 16 sec. **Level 6:** 4 min. 10 sec. **Level 7:** 13 min. 52 sec. **Level 8:** 49 min. 37 sec.
Spectral scan time	1 second for L 10 cm x W 10 cm (L 4" x W 4", 178 probes activated) from 10 MHz to 110 MHZ and 122 kHz RBW. Scanning area, span and RBW are user selectable within spectrum analyzer specifications
Supported spectrum analyzers	R&S FSW v2.71 | Keysight N9040B vA.19.28 | N9030B ver A.19.29 | N9030A ver A.19.28 List at https://www.emscan.com/products/emc-emi-testing/erx/ PC must connect to the spectrum analyzer via USB
Supported operating systems	Windows 10®
Supported overlays	Picture in JPEG format Standard Gerber© RS274x and HPGL CAD files

ERX Scanner Specifications

Broadband frequency coverage	150 kHz to 8 GHz Base configuration (3-year warranty) 150 kHz to 8 GHz (Part #: 3000-2807) Alternate configuration (5-year warranty) 150 kHz to 8 GHz (Part #: 3000-2808)
Antenna array	1,218 (42 x 29) H-field probes
Measurement sensitivity	Dependent on spectrum analyzer performance

Frequency (MHz)	0.15	0.5	1	10	50	300	1000	1500	2000
Internal Preamp (dBm)	-15	-25	-35	-55	-65	-85	-85	-90	-90
with 50x Averaging (dBm)*	-20	-35	-45	-65	-75	-95	-95	-100	-100
with 50x Averaging and preamp (dBm)*	-25	-40	-45	-70	-85	-100	-100	-105	-105

Frequency (MHz)	3000	4000	5000	6000	7000	8000
Internal Preamp (dBm)	-90	-85	-80	-80	-80	-70
with 50x Averaging (dBm)**	-100	-95	-90	-90	-90	-90
with 50x Averaging and preamp (dBm)**	-106	-105	-105	-102	-98	-97

* 40 dB LNA; ** 20 dB Power amplifier (Please refer to Technical Bulletin #15 for the test setup)

Spatial resolution	**Level 1:** 7.50 mm | **Level 2:** 3.75 mm | **Level 3:** 1.88 mm | **Level 4:** 0.94 mm **Level 5:** 0.47 mm | **Level 6:** 0.24 mm | **Level 7:** 0.12 mm | **Level 8:** 0.06 mm
Scan area	L 31.6 cm x W 21.8 cm (L 12.44" x W 8.58")
Frequency accuracy of peaks	Peak marking accuracy of spectrum analyzer
Probe to probe uniformity	Calibrated before shipment. Firmware correction factors adjust for frequency dependant probe responses with +/- 3 dB accuracy
Measurement plane isolation	> 20 dB
Maximum radiated power load	10 W / 40 dBm
Scanner connections	PC: Ethernet
Enclosure	Anodized non-conductive metal
Maximum DUT voltage	Glass Cover: 4kV DC; 2.6kV AC | Metal Case: 260V DC; 200V AC (measured as dielectric withstanding voltage - DWV)
Dimensions of the scanner	L 34.5 cm x W 43.5 cm x H 11 cm (L 13.58" x W 17.13" x H 4.33")
Weight	12.70 Kg / 28 lb. (including cables and the adaptor)
Power supply	120 - 240V AC, 47 - 63 Hz, 8.3A
Fuse rating	8A
Temperature	From 15° C to 40° C

EMSCAN real-time results
#1, 1715-27 Avenue NE
Calgary, AB T2E 7E1
Canada
Tel: +1-403-291 0313
Fax: +1-403-250 8786
www.emscan.com