EM-ISight-4
Electromagnetic Scanning System
Single Probe Solution 10kHz – 40GHz

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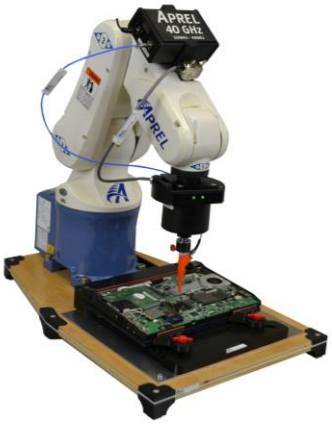


EM-ISight is the first fully flexible EMI/EMC measurement system built on 5 or 6 axis articulated robots designed to support multiple applications and industries including networking, automotive, integrated circuits, aviation, military, and consumer products. Used as a compliance system for IEC-61967-1-6 or a pre-compliance / development tool, the abundance of features meet most requirements for research, design and analytical needs. Custom applications can be developed by the user for EM-ISight allowing for a complete customized test platform. The footprint of the system means that it can be introduced to most measurement environments with multiple frequency range and robot sizes to choose from. The system can be housed in the optional mobile shield, and has an assessed noise floor (sensitivity) of below -139 dBm* when used with high end spectrum analyzers.

EM-ISight is an affordable and easy to use system with great return on investment when using the Far Field Approximation (FFA) module. It is a true alternative to costly pre-compliance EMC chambers which have high maintenance costs and use significant floor space. Integration of high end Low Noise Amplifiers at the core of the transmission line yield low insertion loss and high unwanted field rejection of better than 25dBm. Easy setup for measurement profiles (less than 60 seconds) using the optional camera and touch detection allow complex topologies of a PCB to be taught in real time.

Integration of 6 axis robots allows for measurements in traditional Cartesian or advanced Horizontal plains. Users can utilize a measurement frequency span of 10 kHz to 40 GHz using our proprietary single probe solution.

Applicable Standards

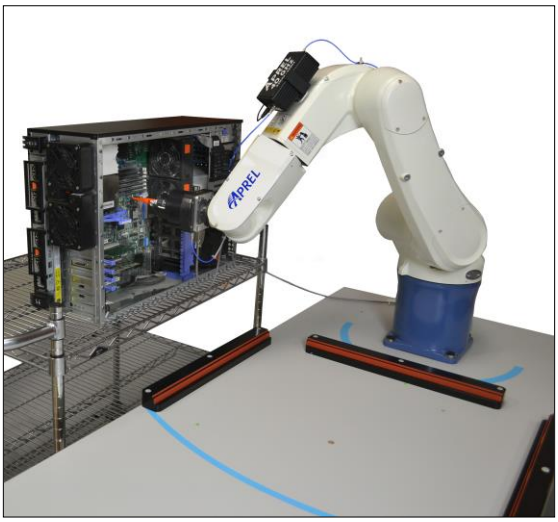
IEC-61967-1-6
VCCI/CISPR 22/FCC Pt 15/22 EN55022
CISPR 12/FCC Pt 18/EN55011/
EN60555/VDE0871
EN55024/EN6100-6-4/GR-1089-CORE
ITU-T/ETS300/
IEC-6100-3

Applications

Integrated Circuit/Printed Circuit Board
Wireless modules
De-Sense testing (receiver circuits)
Medical devices
Automotive and aviation
Electronic device emissions
Pre-Compliance testing (emissions/susceptibility)
Quality control/audit
Consumer products cell phone/computer devices
Susceptibility / ESD

Supported Spectrum Analyzers

Tektronix
Keysight/Agilent
Anritsu
Rhode and Schwartz
*@1600MHz



NOTE: Signal generator, spectrum analyzer is customer supplied.
Some applications require additional upgrades from a standard package spectrum analyzer; please confirm spectrum analyzer compatibility with APREL.

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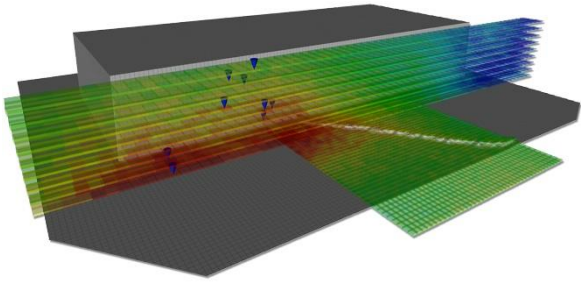
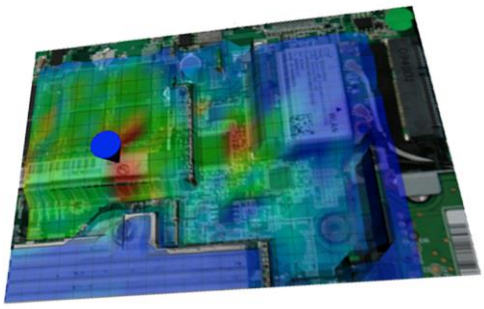


FFA Tiled Volumes with Hotspot Markers



4D Plot with Interpolated Grid and 3D Hotspot Marker

System Highlights

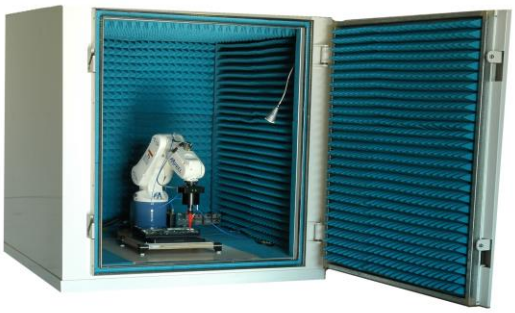
- Single probe solution from 10kHz to 40GHz
- X/Y/Z scan areas of 300/600/1,000 mm dependent on system
- High resolution scan (>0.02mm)
- Coarse scan with dynamic peak search function
- Real-time topology analysis using dynamic touch detection
- Z height distance from 0.05mm up to 300/600/1,000mm dependent on system
- 4D Measurements of DUT by integrating X/Y/Z & Phi
- Field distribution presented in 2D, 3D or 4D plotting with quick snap image processing @ 2.2µm
- Source direction plots (vector)
- Customizable reports based on user requirements automatically exported to MS Word
- Delta plot measurement function (compare before/after measurements)
- Frequency distribution plots based on span and trace with added limit lines
- AVI export function for real-time visualization of field and frequency distribution
- Advanced measurement functions, single point analysis, quick check, free move and point delta
- Micro Strip Line 10kHz to 6GHz, 6GHz to 40GHz (included)
- Quick scan setup using Optional robot mounted vision camera with 2.2µm pixel size and auto zoom

40GHz Applications

High-speed Either Net IC
High-speed connectors and IO interfaces
10GB Ethernet
Optical Transceivers

Third Harmonic analysis (up to 10th harmonic or 40GHz)

- HDMI
- 3G/4G/LTE AWS/BRS/ABS
- 802.11abgn
- 802.11ac
- USB 3.0
- Intel CPU i7 965 Extreme
- AMD A8-38xx
- Optical Transceivers 10GBd
- LTE Chipset
- Frequency Multipliers



Custom mobile shields available for purchase with EM-ISight Systems

Optional Accessories/Software

Mobile Shield for isolation of ambient sources (-145dBm >700MHz)
E-Field Antenna Probe
Dual Stage Low Noise Amplifiers DC to 40GHz
FFA Far Field Approximation Software
USA Ubiquitous Server Application
Robot mounted vision camera with 2.2µm pixel size and auto zoom
ESD/Susceptibility Test Suite (available winter 2015)

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Description	Perform EM Near-field scanning on a PCB, IC, LCD, RFID tag, wireless module, or antenna's for quality control and design optimization, pre-test and certification
Software	Windows XP, Vista, 7, 8 and MAC Boot Camp User friendly GUI that allows for easy setup and data retrieval Automatic antenna probe movement control Automatic system control or user definable parametric setup incorporating optional vision camera Visual display including storage and retrieval of measured results in full 3/4D Data tracking for project improvement/quality control Importation of previous measurement profiles to track design/quality improvements
Applications	Perform EM Test - measurements of (near-field) magnetic fields emitted by a DUT, including RF circuit, PCB and IC EM field values measured using an optional spectrum analyzer and presented in 2D/3D/4D form via PC Typical applications include, EMI noise emission analysis Shielding placement/optimization PCB board or IC design optimization/placement Antenna design optimization RF-Immunity/emitted radiation analysis of mobile handset LCD or LCD controllers Optional Susceptibility and ESD test modules
Typical Probe Measuring Unit	Antenna: E or H-field with 0.03mm spatial resolution Typical frequency range: Frequency sweep, in band discreet value from 10KHz to 40GHz Sensitivity: Probe Dependent VSWR: <1:2 Input impedance: 50Ω Linearity: <0.1dB LNA (standard): 30dB Preamplifier for EM Measurements from 100kHz to 6GHz **Optional 50MHz to 40GHz nominal 45dB Gain** Noise floor: Measured with micro strip line (-30dBm @ 10kHz -139dB with preamplifier module @ 1600MHz) Measurement Uc: 0.05dBm @ 0.05mm Z and 0.1dBm @ 0.2mm X & Y Optional probes: Rosenberger Micro-Coax rectangular and small loop and interface
Measuring Reach and Movement	NO. of axes: 5/6 (X, Y, Z and θ) Typical reach*: Along X & Y axes: 400 x 400mm / 800 x 800 mm / 1000 x 1000 mm / 1100 x 1100 mm Along Z axis: 300mm / 700mm / 1140mm Rotation θ axis: 360° Resolution: X and Y axes: 0.02mm Z axis: 0.02mm θ axis: 0.1° Alignment accuracy: X and Y axes: 0.02mm Z axis: 0.02mm θ axis: ± 1° Optional interface for Rosenberger Micro-Coax probes
DUT Orientation	Typical: Horizontal Vertical Custom
System Control	Controller for overall control: IBM PC compatible machine, Intel i3 or better and 512 RAM Operating system: Windows XP/Vista/Win 7/8 Motor controller: Denso Measuring interface: GPIB/LAN/Serial port
General	Operating requirement: Temperature: 0° C to +60°C humidity: 60% or less AC power input: Single phase 100V ~ 230V, 50Hz/60Hz* Power consumption: less than 15A @ 100V Weight: 25kg Dimension: 80cmx50cmx70cm
Additional Features SW	Multiple plots recorded in single report Multiple layers on single measurement process Automated peak search Dynamic touch detection and vision control User defined plotting for multiple scan locations Limit exceed search function & User defined limit function Optional Far Field Approximation for EMC test equivalent sites of 3M and 10M Ubiquitous Server Application for custom development of test applications Automated data summary reporting AVI plotting over device or in 3/4D mode Remote access for database data retrieval and batch scanning process Multiple driver support for Anritsu, Agilent/Keysight, Rhode & Schwarz Spectrum Analyzers

***Customer must specify at time of order (standard build is 110V)**
6 Axis systems require 220V

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