APREL

EM-ISight-ER
Electromagnetic Scanning System
Extended Reach Model

EM-ISight-ER

Extended Reach
850 mm

EM-ISight-ER EMI/EMC measurement system built on a 6 axis articulated robot designed to support multiple applications and industries including networking, automotive, integrated circuits, aviation, military, and consumer products. Used as 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-ER allowing for a complete customized test platform. The footprint of the system includes a workstation which allows for complete integration of the robot. Multiple work space including off axis horizontal and vertical assessments can be conducted. Multiple probe options are available for the system and the ability to upgrade for ESD measurements at a later date provides a fully flexible test platform. Near-field measurements can be executed from 10 kHz to 6GHz as standard with optional upgrade for 20/40GHz available.

EM-ISight-ER is an affordable and easy to use system with great return on investment when compared to traditional measurement solutions. Using the optional Far Field Approximation (FFA) module is an 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.

Measurements can be conducted in traditional Cartesian and off axis Horizontal scan configurations.

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

Supported Spectrum Analyzers

Tektronix
Keysight/Agilent
Anritsu
Rhode and Schwartz

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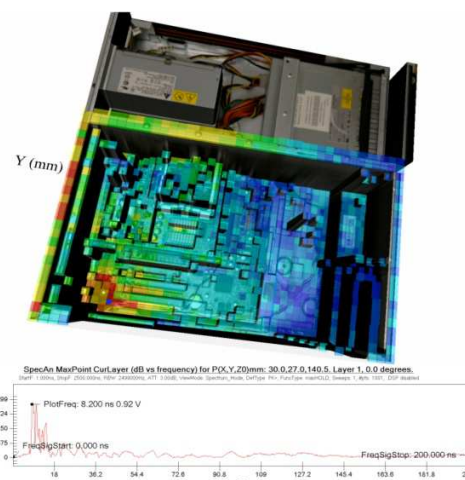
NOTE: Signal generator, spectrum analyzer is customer supplied.
Some applications require additional upgrades from a standard package spectrum analyzer; please confirm spectrum analyzer compatibility with APREL.

Subject to change without notice E&OE

Front Workspace
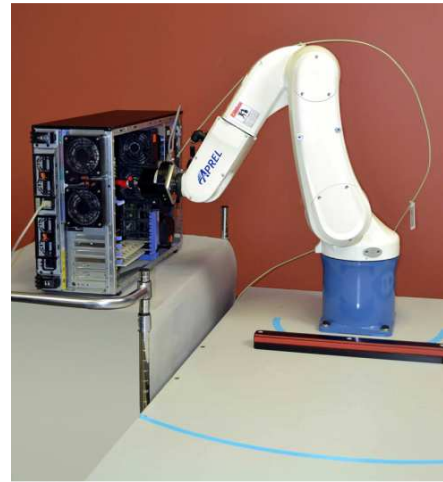
Side Workspace

Vertical scans

System Highlights

- Single probe solution from 10kHz to 6GHz
- X/Y/Z scan areas of 600mm (Cartesian)
- High resolution scan (>0.02mm)
- Coarse scan with dynamic peak search function
- Real-time topology analysis using dynamic touch detection (Cartesian or Horizontal)
- Z height distance from 0.05mm up to 600mm (Cartesian)
- 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
- Quick scan setup using Optional robot mounted vision camera with 2.2µm pixel size and auto zoom
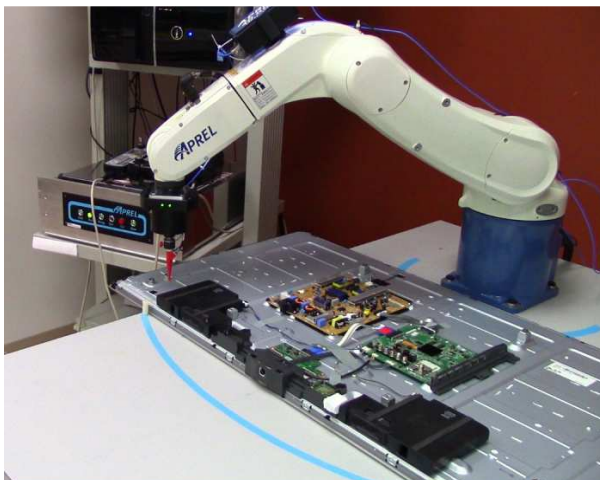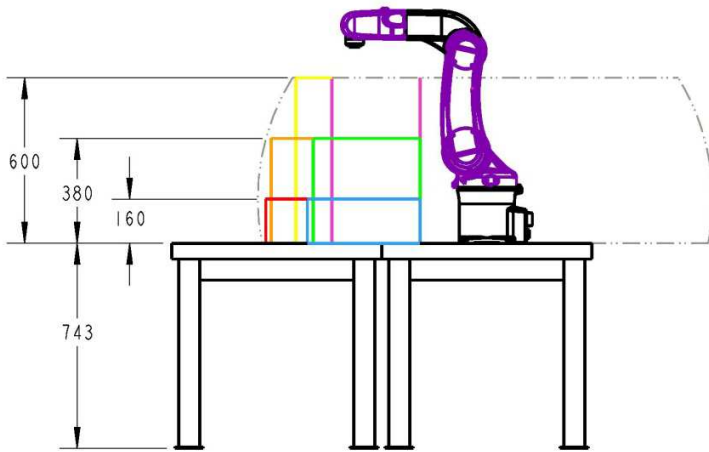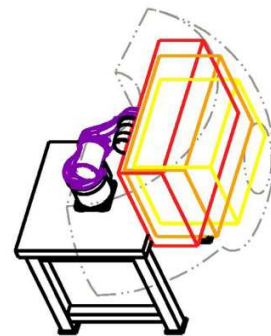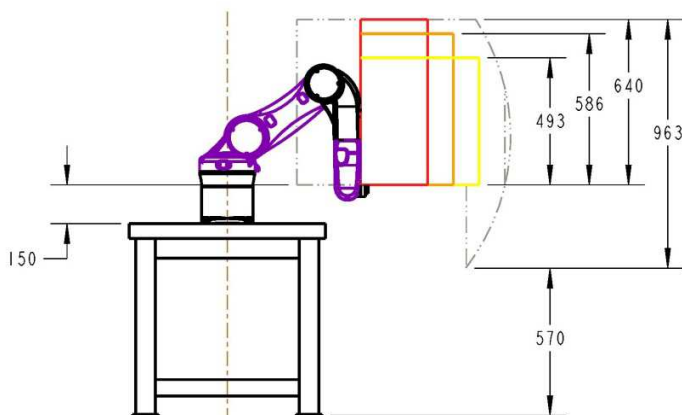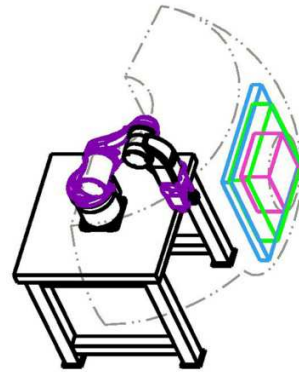

- **Front Workspace**

Side workspace

- **Horizontal Scans**

Subject to change without notice E&OE

Vertical and Horizontal Scan Concepts

Horizontal Scan

Vertical Scans

Subject to change without notice E&OE
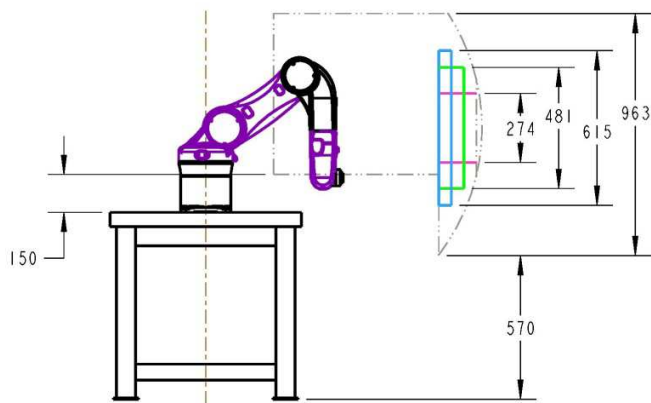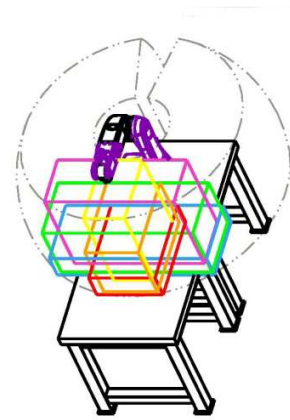
Standard System Configuration

- Single probe solution for measurements from 10kHz to 6GHz

- Low Noise Amplifier 10kHz – 6GHz

- Calibrated H-Field antenna probe to ISO/IEC-17025 standards to IEC-61967-1-6

- Software platform with 1 year fully comprehensive support and feature updates

- Software supports user defined parametric settings, user defined pass/fail graphing, and graphical measurement data for statistical readout full 3/4D graphic package for visualization and manipulation of measured fields, storage and retrieval of measurement results

- Automated precision antenna probe movement using DENSO robotics

- Remote access to measurement database

- Dynamic process control

- Z-Axis surface detection system

- Collision detection system for user/DUT safety

- Device Positioning fixture

Optional Accessories/Software

Measurement software and probe upgrade to 20/ 40GHz
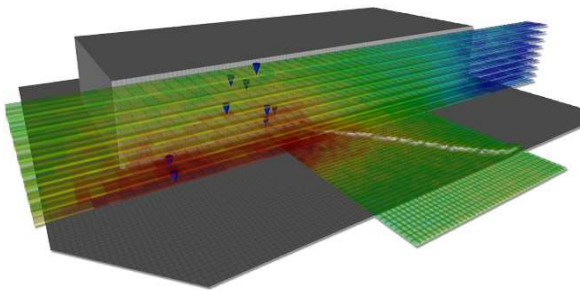
E-Field Antenna Probe

Dual Stage Low Noise Amplifiers DC to 6/20/40 GHz

FFA Far Field Approximation Software
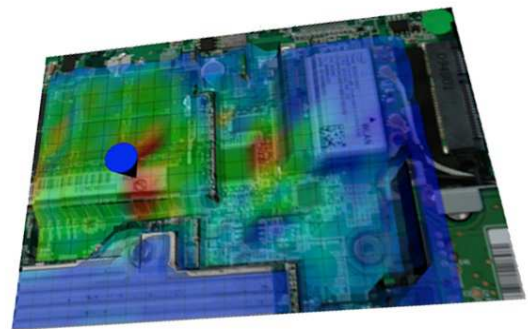
USA Ubiquitous Server Application

Robot mounted vision camera with 2.2µm pixel size and auto zoom

ESD/Susceptibility Test Suite

**FFA Tiled Volumes with
Hotspot Markers**

**4D Plot with Interpolated
Grid and 3D Hotspot Marker**

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 0.02mm spatial resolution
Typical frequency range:	Frequency sweep, in band discreet value from 10KHz to 40GHz
Sensitivity:	Probe Dependent
VSWR:	<1:2
Input impedance:	50Ω Normalized
Linearity:	<0.1dB
LNA (standard):	>30dB Preamplifier for EM Measurements from 100kHz to 6GHz
LNA (Optional)	Up to 20 GHz or 40 GHz
Noise floor:	Measured with micro strip line (-30dBm @ 10kHz -139dB with preamplifier module) Optional GPS Probe >-151dBm @ 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:	6 (X, Y, Z and θ)
Typical reach*:	
Along X & Y axes:	600 x 600 mm (factory limited Cartesian)
Along Z axis:	600mm (Cartesian)
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°
Options to increase measurement space (reach) are available.	

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