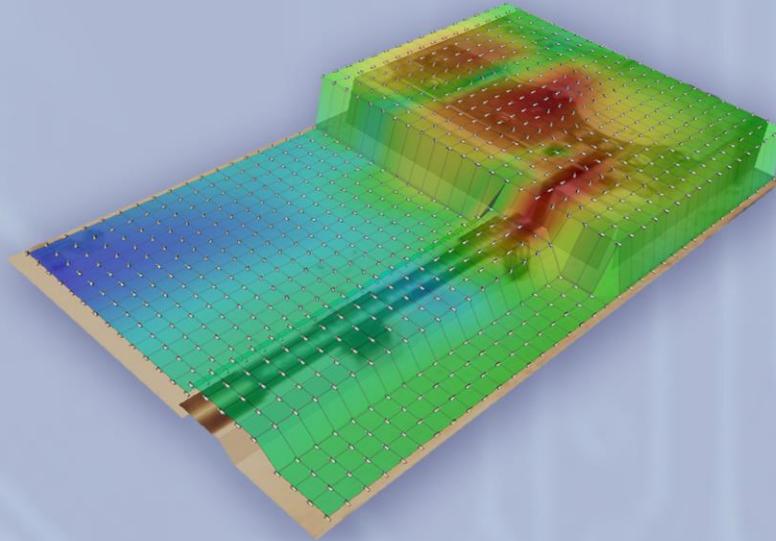


# APREL



## **EM-ISight-2** **Electromagnetic Scanning System** **Single Probe Solution 10kHz – 20GHz**



APREL, a pioneer in the area of automated system solutions, introduces the EM-ISight - an automated tool for detecting the source of electromagnetic noise to aid in improving the design of electronic circuits. This near field detection system can be correlated to far field measurements and the dynamic software settings allows users to incorporate limits based on previous assessed data or international standards.

EM-ISight presents resultant data from 5 or 6 dimensions of kinematical scanning of a test sample. The measurement system can be used in support of many international standards. Pre-certification or product approval for Integrated Circuits, LCD, GPS, Video Controllers, connectors, wireless modules, antennas and electrical/electronic interfaces can be conducted on the EM-ISight using the fully flexible test application software. The integration of 5 or 6 axis robots as supplied by DENSO means that this system can measure in traditional Cartesian or

advanced horizontal plains. With a frequency span of 10 kHz to 20 GHz using our proprietary single probe solution no other near-filed system can compete.

The EM-ISight is a fully flexible measurement system 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 power of features will meet most requirements for modern design and analytical needs. Custom applications can be added to this truly unique test platform. The footprint of the system means that it can be introduced to most measurement environments with little effort. The system can be located into a controlled environment, and has a noise floor (sensitivity) of below -145 dBm when used with the optional mobile shield.

EM-ISight is an affordable and easy to use system, a true alternative to costly pre-compliance EMC chambers which have high maintenance costs and use significant floor space.

### Applicable Standards

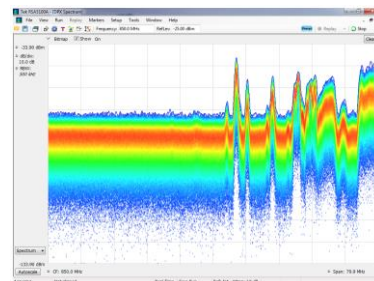
IEC-61967-1-6  
VCCI/CISPR 22/FCC Pt 15/22 EN55022  
CISPR 12/FCC Pt 18/EN55011/  
EN60555/VDE0871  
EN55024/EN6100-6-4/GR-1089-CORE  
ITU-T/ETS300/  
IEC-6100-3

### Applications

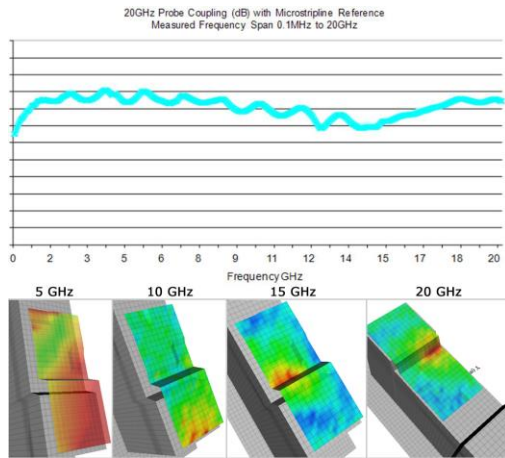
Integrated Circuit/Printed Circuit Board  
Wireless modules  
De-Sense testing (receiver circuits)  
Medical devices  
Automotive and aviation  
Electronic device emissions  
Pre-Compliance testing (emissions/susceptibility)  
Quality control/audit  
Consumer products cell phone/computer devices

### Supported Spectrum Analyzers

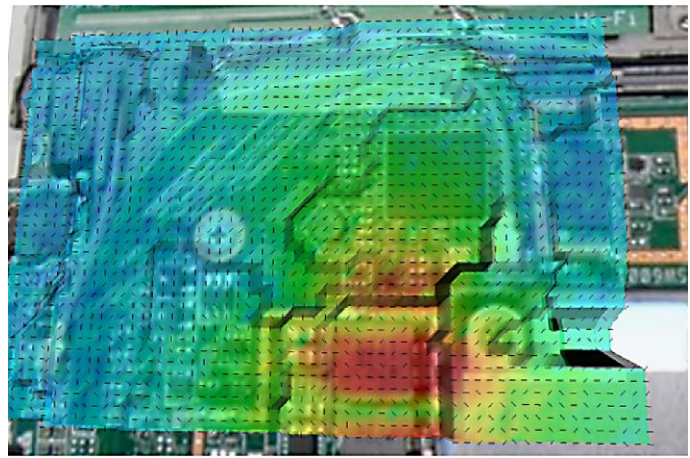
Tektronix  
Agilent  
Anritsu  
Rhode and Schwartz



**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.**



**Harmonic Analysis**



**4D High Resolution Flux Scan**

## System Highlights

- Single probe solution from 10kHz to 20GHz
- High resolution scan of problem areas (>0.02mm)
- Coarse scan function with larger steps (>10mm)
- Dynamic touch detection
- Z height distance from 0.05mm up to 250mm for standard system
- 4D Measurements of a PCB using X, Y, Z and PHI movements
- Complete distribution of the fields presented in 3D or 4D plot
- Source direction plots (vector)
- Customizable reports based on user requirements automatically exported to MS Word
- High gradient fields are identified in red and can be auto adjusted to international limits
- Frequency distribution plots based on span and trace with added limit lines
- AVI export function for real-time visualization of field and frequency distribution
- Full integration of Tektronix DPX functions for RSA line of spectrum analyzers
- Runs on Windows XP/Vista/Windows 7 and MAC Boot Camp

## 20GHz Applications

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

### Third Harmonic analysis

- HDMI
- 3G/4G AWS/BRS/ABS
- 802.11abgn
- 802.11ac
- USB 3.0
- Intel CPU i5
- Intel CUP i7 965 Extreme
- AMD FX-81xx
- AMD A4-34xx
- AMD A6-36xx
- AMD A8-38xx
- Frequency Multipliers

Other applications and technologies can be tested with the 20GHz system the above are highlights of key technologies which have been assessed using EM-ISight-2.

## Optional Accessories

Mobile shield for isolation of ambient sources (-145dBm >700MHz)  
 E-Field antenna probe  
 Low noise amplifier 100MHz-26GHz, 100MHz to 40GHz

<b>Description</b>	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	
<b>Software</b>	Windows XP, Vista, Win 7 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 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	
<b>Applications</b>	Perform EM Test - measurements of (near-field) magnetic fields emitted by a PCB, populated board, LCD or IC in X, Y, Z and $\theta$ (probe antenna rotation angle), measure feed current uniformity for antenna design 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 Video LCD monitors	
<b>Typical Probe Measuring Unit</b>	Antenna:	H-field with 0.03mm spatial resolution
	Typical frequency range:	Frequency sweep, in band discreet value from 10KHz to 20GHz
	Sensitivity:	Probe Dependent
	VSWR:	<1:2
	Input impedance:	50 $\Omega$
	Linearity:	<0.1dB
	LNA (standard):	30dB Preamplifier for EM Measurements from 100kHz to 6GHz <b>Optional 2 Stage DC to 44GHz 22dB Gain</b>
	Noise floor:	Measured with micro strip line (-30dBm @ 10kHz -139dB @ 750MHz dependent on DANL of Spectrum Analyzer
	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
<b>Measuring Reach and Movement</b>	NO. of axes: 5/6 (X, Y, Z and $\theta$ ) 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 $\theta$ axis: 360° Resolution: X and Y axes: 0.02mm Z axis: 0.02mm $\theta$ axis: 0.1° Alignment accuracy: X and Y axes: 0.02mm Z axis: 0.02mm $\theta$ axis: $\pm 1^\circ$ Optional interface for Rosenberger Micro-Coax probes	
<b>DUT Orientation</b>	Typical:	Horizontal Vertical Custom
<b>System Control</b>	Controller for overall control:	IBM PC compatible machine, Intel i3 and 512 RAM
	Operating system:	Windows XP/Vista/Win 7
	Motor controller:	Denso
	Measuring interface:	GPIB/LAN/Serial port
<b>General</b>	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
<b>Additional Features SW</b>	Multiple plots recorded in single report Multiple layers on single measurement process Automated peak search Dynamic touch detection User defined plotting Limit exceed search function User defined limit function Automated data summary reporting AVI plotting over device or in 3/4D mode Remote access for database data retrieval Multiple driver support for Anritsu, Agilent and Rhode & Schwarz Spectrum Analyzers	

\*Customer must specify at time of order (standard build is 110V)