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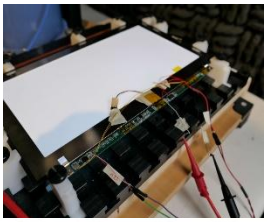
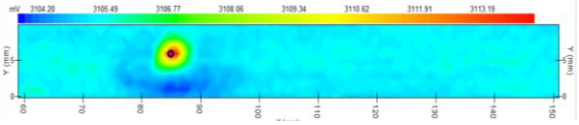
Electromagnetic Susceptibility & Side Channel Attack Test Solution





The **APREL EMS (Electromagnetic Susceptibility) & SCA (Side Channel Attack)** application is designed to support the design, development, and assessment of ICs, mobile devices, automotive components, and electronic assemblies for vulnerabilities of cryptographic attacks. This solution enables testing the security of circuits against radio frequency side-channel attacks.
Key features include:
•**Decoupled Electric and Magnetic Probes**: These allow the separation of attack field types, aiding in precise analysis.
•**Weakness Detection**: Developed to identify design vulnerabilities susceptible to environmental or generated noise, with resolution capabilities down to 10µm @ 10V/m.
Built on the **EM-ISight automated measurement platform**, the EMS application provides a comprehensive testing solution:
•**Localized Signal Exposure**: Devices can be exposed to localized signals, including complex signaling tailored to user needs.
•**Customizable Parameters**: Frequency, sweep, power, and location are fully user-defined, with results visualized on a heatmap.
•**RF Disturbance Generation**: Includes methods for generating radio frequency disturbances and assessing voltage or impedance changes within circuits to identify potential weaknesses.
This application is ideal for verifying circuit or assembly security against unwanted sources, ensuring robust design and operational integrity.
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Solution Includes

EMS Software	Complete suite of measurement tools for susceptibility measurement running EM-ISight V5.4; Setup DUT within EM-ISight application, expose location to radiated signal, review results Control Signal Source; Frequency, Sweep, Power. Control Data Acquisition; Level and signal type. Define low to high power steps for frequency/spatial location. Data Analysis; User defined failure level, free run level analysis, PASS/FAIL analysis, heatmap, 4D plotting, failure level V/m , A/m, dBm & Si Data Review; Frequency, failure power level, spatial location, vector, and PASS/FAIL automated report IEC TS 62132-9 2014 standard support for immunity with 3 V/m supported
Probes	Custom Designed 1mm Ez Vector Probe ; Thermally characterised probe to allow for 10V/m output ; Ceramic tip to allow for heat dissipation and pure RF exposure 2mm Hxy Vector Probe ; Use to validate E-Field coupling within a circuit
Data Acquisition	Keysight Digital Multimeter with custom drivers and electrical connection (included) Keysight MSO (bandwidth restricted)* Keysight Spectrum Analysers (frequency dependent)*
RF Power Amplifier Options	Power amplifier sourced to support 3V/m application; Frequency 700MHz – 6GHz. Typical Gain 37dBm. Power amplifier sourced to support 10V/m application; Frequency 700MHz – 6GHz. Typical Gain 50dBm.
Conducted Injection Probe	Probe with stainless steel contact tip. Terminated signal transmission line. Injection probe positioner/holder
Signal Path	Source** – Amplifier – Probe. DUT* – Data Acquisition – **EM-ISight (can be quoted as turnkey with automated Near Field noise emission measurement system 9kHz – 6GHz)**
Applicable Test Standards	IEC TS 62132-1 2015: IEC TS 62132-9 2014: IEC 61000-4-3 [Class 1 1v/m] [Class 2 3V/m] [Class 3 10V/m] IEC 61000-4-39: IEC 62132-X: IEC 62215-X: ISO 11451-X: ISO 11452-x: ISO 7637-X : NIST SP 800-57 Part 1**ISO/IEC 17825:2024**
Calibration	IEC TS 62132-9 Probe to Probe & Probe Factor. Normalised Field for V/m linear output. Vector orientation. Sensitivity. Noise Margin; >20dBm Continuous
Minimum Step Resolution	EM-ISight-SR; 10um XYZ. 360 Probe Rotation. EM-ISight-ER; 10um XYZ. 360 Probe Rotation. EM-ISight-LR; 20um XYZ. 360 Probe Rotation.

NOTE: This module is only available for use on the EM-ISight System

Please contact your local agent or distributor for more information.

***Equipment NOT included. **RF Disturbance Source needs a signal generator which can be quoted if required**