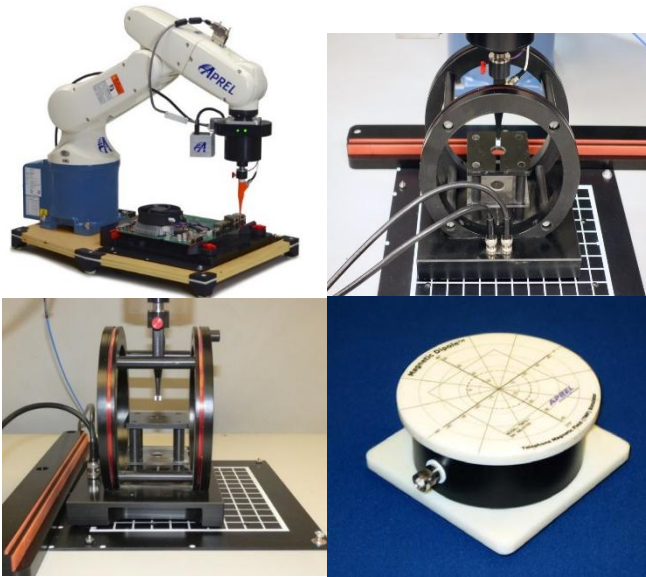


# EM-ISight Hearing Aid Compatibility System



APREL Inc. Have developed EM-ISight-HAC for T-Coil Test of WCD module (ANSI C63.19 2019 Hearing Aid Compatibility) in line with certification needs for the assessment of wireless devices. Analysis features include the ability to assess radios operating beyond the traditional audio bands including wireless earbuds, headphones and loudspeakers.

The system includes all hardware and software needed to certify a device; all hardware is calibrated to support regulatory requirements along with the added features for advanced analysis or fault finding. Scan areas are fully dependent on the system type, e.g. Standard Reach (SR) or Extended reach (ER) where the size can be defined up to the maximum reach of the robotics; for the SR system this could be 250 x 250mm, with a minimum step resolution of 0.01mm.

System comes with the full suite of accessories needed to conduct certification testing; TMFS, Hxy, Hz and DAQ; included is a full suite of Audio Analysis tools for advanced design and development use. The C63.19 2019 software is fully backward compatible with the 2011 edition. The EM-ISight-HAC comes with full near-field functionality to support 9kHz to 6GHz.

<b>HAC Software</b>	ANSI C63.19 2019 WCD and Hearing Aids section 6 WD T-Coil Signal Test Automated test routines to assess the following <ul style="list-style-type: none"> <li>• ABM 1 / ABM 2 / Frequency Response and Quality (SNR)</li> <li>• Test report providing all relevant data needed by regulators including charts, heat map and calibration data</li> <li>• Spectral filters: 1/3 octave, Full-band integrator, Half-band integrator</li> </ul> Step Size minimum of 0.02 mm resolution (typical 50x50x2 mm, 50x50x4 mm for HAC tests) Interpolation of physical scan to 1mm spatial for HAC assessments : Assess warless ear buds and hearing aid tele-coil with 3D mapping : Measure frequency response to >20kHz : Full EMI Near-Field operating system with data exportation User defined point, measurement analysis and reporting
<b>Probe</b>	HAC-Hxy Frequency Magnetic Field Probe : HAC-Hz Frequency Magnetic Field Probe <ul style="list-style-type: none"> <li>• Frequency DC~300kHz</li> <li>• Sensitivity @ 1kHz &lt;-40 dB V/(A/m), [&lt;-60 dB V/(A/m) no LNA]</li> </ul>
<b>Data Acquisition</b>	Audio Signal source and audio DAQ for tone generation and analysis up to 10kHz
<b>Optional Accessories</b>	DC to 200MHz Low Noise Amplifier (20 dB gain) Hxy Extended frequency audio probe, Exy Vector probe, Hz and Ez Near-Field probes
<b>Additional Software Features</b>	[1a] HAC-Hxy Audio Analysis 300Hz – 3kHz – ANSI C63.19 2019 minimum [1b] HAC-Hxy Extended 10Hz – 10KHz [1c] HAC-Hxy Ultra Extended low frequency 10Hz – 300KHz [2] Standard System Hxy RF 9kHz – 6GHz – Standard Near-Field Analysis Backwards Compatible to ANSI C63.19 2011
<b>Typical Measurement Units</b>	dB A/m – Magnetic Field (HAC) measurement unit (radiated, calibrated) dBm; dBuV; dBuA; dBuV/m; V/m; Tesla (dBuT)
<b>Applicable Test Standards</b>	ANSI/IEEE C63.19 American National Standard -- Methods of Measurement of Compatibility Between Wireless Communications Devices and Hearing Aids
<b>Hardware Integration</b>	Tesla meter & Hall effect probe for mT field assessment of permanent magnetic fields and Qi evaluation

Available Upgrades on Next Page





## System Options

EM-ISight-SR

EM-ISight-ER

EM-ISight-LR

EM-ISight-ESD

Available Options	EM-ISight-SR	EM-ISight-ER	EM-ISight-LR	EM-ISight-ESD
DC-200MHz Low Frequency Module includes Tesla Field Strength Measurement Function for Battery and Vehicles Includes Hxy/Hz Probe and LNA	•	•	•	•
10GHz to 72GHz Frequency Option	•	•	•	
10GHz to 110GHz Frequency Option		•	•	
Vector Probes (standard for all XY types)	•	•	•	•
Full Probe Rotation 360° (standard)	•	•	•	•
2mm Hxy & Exy Vector Probe (standard)	•	•	•	•
2mm Ez (optional)	•	•	•	•
2mm Hz (optional)	•	•	•	•
1mm Exy & Hxy Vector Probe (optional)	•	•	•	•
1mm Ez (optional)	•	•	•	•
Scan Volume 300 x 300 x 200mm	•	•	•	•
Scan Volume 500 x 500 x 400mm		•	•	•
Scan Volume 1,050 x 1,050 x 900mm			•	
Vision System for DUT Capture, Device Teaching and Measurement Parameters (standard)	•	•	•	•
Off Axis (horizontal scanning) includes 5 Scanning locations 2 x Horizontal & 3 x Cartesian		•	•	
Far Field Approximation		•	•	•
Ubiquitous Server Module	•	•	•	•
Advanced Measurement Suite Option, Includes Phase, s11/s22, Vector Network Analyser and Multi Span Support for Analysers	•	•	•	•
Active Phase Module, Supports the measurement of digital devices operating in normal conditions, includes Contact Probe and optional Exy/Ez/Hxy/Hz Characterized probes		•	•	•
RF-ISight Advanced measurement module, Power Density, Poynting Vector, Phase Passive/Active, Wavefront, Vector and Antenna Assessments and Backscatter: Includes Module for Import and Export of Simulation Data	•	•	•	•
ESD Measurement Upgrade		•	•	
ESD Launch Pad kit Option, includes probes, contact discharge, air discharge and ESD immunity measurement suite				•
Hearing Aid Compatibility for C63.19 20013 & 2019	Incl	Incl	•	•
Modular Workstation Options		•	•	
Mobile Isolation Chamber (shield)	•			
Shielded Enclosure	•	•	•	•
Advanced Device Positioner	•	•	•	•
ESD Extended Ground Plane				•
ESD 61000 workstation and ground plane				•
Calibration set for High frequency, includes horn, MSL and LNA (50-72GHz/50-110GHz)		•	•	
Electromagnetic Susceptibility Measurement Suite Includes 3V/m or 10V/m Support, RF Amplifier, DVM and Ez Probe	•	•	•	•
Extended Maintenance Program (software/hardware) Includes software updates and support beyond first 12 months	•	•	•	•