

EM-ISight ANSI C63.19 2019

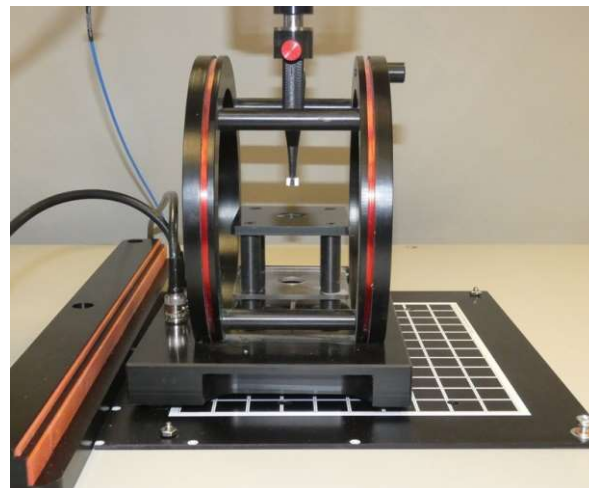
HAC Audio Band Upgrade EM-ISight (SR/ER/LR)

APREL Inc. Have developed the T-Coil Test for WCD module (ANSI C63.19 2019 Hearing Aid Compatibility module) in line with requests from existing customers who are users of the EM-ISight. By leveraging the 20 years plus experience of audio analysis we have been able to incorporate the full requirements of the measurement standard ANSI C63.19 2019 to support test requirements from regulators.

The upgrade consists of hardware and software, 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, for the SR system this could be 250 x 250mm, with a minimum step resolution of 0.02 mm.



Included in the package is the ability of utilise the EM-ISight vision system which allows for easy DUT setup and ease of reporting. All data captured is aligned with the active scan and vision settings, heat maps can be presented with 2D and 3D overlay based on the real data captured. All data can be exported in raw format for advanced user analysis. Automatically generated frequency plots form part of the software.



Helmholtz Coil is included as part of the package so users can conduct self characterisation of the HAC-Hxy Magnetic probe. A TMFS (Telephone Magnetic Field Simulator) is also part of the hardware provided, this is used to validate the system prior to conducting any certification testing for regulatory purposes. Audio band assessments can be conducted up to the ANSI C63.19 2019 frequency requirements with the added ability to test up to 300kHz. Wireless headsets/ear buds can also be assessed within the audio band region with the added ability to assess in the RF band of 2.4GHz. The system with the added frequency ability will measure up to 6GHz allowing for WiFi enabled calls to be assessed also.

Full suite of automated test profiles is also part of the feature set, this allows for the easy setup of the measurement with automatic test report generation in MS Word, user has the ability to edit test reports and add/remove information as needed. Test reports provide data for ABM 1, ABM 2, Quality (SNR) and full range frequency response per ANSI C63.19 2019 standard.

The HAC-Hxy probe has been designed to discriminate between Hx and Hy currents, this allows for greater analysis of the device being tested. A Low Frequency Amplifier provides a method for reduced noise floor and support for Spectrum Analysers provide best in class dynamic range. The HxyRF Vector probe allows for measurements from 9kHz to 6GHz, with a high spatial resolution, providing exceptional measurement scope in support of applications.

Operating System (Instrument controller “APREL Controller”)	Windows 10/11 Pro 64 Bit Native operating system EM-ISight Version 5.1.x with Kinematic engine 5.0.x WD T-Coil signal test module complies with testing methods defined in ANSI-C63.19 2019 Compatibility between Wireless Communications Devices and Hearing Aids Evaluation to section 6 12 month upgrade package included in purchase
Vision System	Custom designed software for Vision Integration and Alignment 10.7 MP CCD camera, Permanent Robot mount +/- 180 rotation, Automatic Lens and Robot Calibration in X/Y/Z Vision capture for device setup, and incorporation into test report Autofocus and Zoom Feature, export file to XML/CSV
Standard Hardware Features	HAC-Hxy Frequency Magnetic Field Probe <ul style="list-style-type: none"> • Frequency DC~300kHz • Sensitivity @ 1kHz <-40 dB V/(A/m), [<-60 dB V/(A/m) no LNA] DC to 200MHz Low Noise Amplifier (20 dB gain) Helmholtz Coil and TMFS Gauge Block (ensure center of coil = 10mm Axial & Radial) Device positioner optimised for mobile telephones Audio Signal source for tone generation and analysis up to 10kHz
Software Features	Developed to support ANSI C63.19 2019 Compatibility between WCD and Hearing Aids section 6 WD T-Coil Signal Test Automated test routines to assess the following <ul style="list-style-type: none"> • ABM 1 / ABM 2 / Frequency Response and Quality (SNR) • Test report providing all relevant data needed by regulators including charts, heat map and calibration data • Spectral filters: 1/3 octave, Full-band integrator, Half-band integrator Option to define area scan modes with a minimum of 0.02 mm resolution (typical 50x50x2 mm, 50x50x5 mm for HAC tests) Interpolation of physical scan to 1mm spatial for HAC assessments Assess wireless 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 dB A/m – Magnetic Field (HAC) measurement unit (radiated, calibrated) dBm – Standard measurement unit (conducted, uncalibrated) dBm0 – Standard measurement unit normalised to a reference dBuV – Standard measurement unit (conducted, uncalibrated) dBuV0 - Standard measurement unit normalised to a reference dBuA - Measurement unit dB uA/m - Near field (radiated, calibrated) dB uV/m – Near-Field to Far field / Chamber (radiated, calibrated) $T = V \cdot s/m^2$ (Tesla)
Typical Probe Measuring Unit	dB A/m – Magnetic Field (HAC) measurement unit (radiated, calibrated) dBm – Standard measurement unit (conducted, uncalibrated) dBm0 – Standard measurement unit normalised to a reference dBuV – Standard measurement unit (conducted, uncalibrated) dBuV0 - Standard measurement unit normalised to a reference dBuA - Measurement unit dB uA/m - Near field (radiated, calibrated) dB uV/m – Near-Field to Far field / Chamber (radiated, calibrated) $T = V \cdot s/m^2$ (Tesla)
Frequency Options	[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 HxyRF 9kHz – 6GHz – Standard Near-Field Analysis
Applications	WD T-Coil signal test module for ANSI C63.19 2019 Compatibility between WCD and Hearing Aids (Audio Band for cellular telephones) Integrated Circuit (10um pitch)/Printed Circuit Board Wireless modules : De-Sense testing (receiver circuits) Medical devices : Automotive and aviation Electronic device emissions decouple Electric & Magnetic Fields Pre-Compliance testing (emissions/susceptibility) Quality control/audit Consumer products cell phone/computer devices
DUT Orientation	Planar Horizontal (Cartesian) : Vertical : User custom settings
System Control	Windows 10/11 Pro 64 Bit : Intel i7 PC : 8GB RAM : Graphic Card : LCD Monitor
General	Temperature : 15° C to +28° C : Humidity : 40% or less AC power input : Single phase 230V, 50Hz/60Hz* Power consumption : less than 15A @ 100V Dimension : 60cm x 30cm x 60cm : Weight : 25kg Spectrum Analyzer Driver support for Anritsu, Agilent/Keysight, R&S *** Ask us about R&S-CMW automation [extra option]
Optional Software	Far Field Approximation for EMC test equivalent 3M and 10M De-Sense test Application for Radio noise floor and BER analysis Multi-Span for Spectrum Analyzer and VNA support RF-ISight for advanced data analysis Electrostatic Discharge Module and fault analysis (ER,LR robot only) High Frequency Extension modules up to 110GHz