303 Terry Fox Dr., Suite 102
Kanata ON Canada K2K 3J1
Tel.: +1-613-435-8300
Fax: +1-613-435-8306

MiNi-HAC™ Hearing Aid Compatibility Automated Test System

APREL MiNi-HAC™ is the commercial compliance Hearing Aid Compatibility (HAC) bench measurement system, ideal as a primary compliance instrument for Hearing Aid Compatibility or as a design/development tool for electromagnetic near-field emission evaluation of antennas and wireless devices.
The system is designed for developers, compliance experts, regulators, and researchers.

APREL is a pioneer in the area of Hearing Aid Compatibility, and the MiNi-HAC™ brings APREL's almost three decades of experience into one package. APREL is ISO 17025 accredited for HAC standards including ANSI/IEEE C63.19.

MiNi-HAC™ is an affordable and easy-to-use system for complex HAC evaluations of wireless products (handsets, smartphones, etc.). It is an expandable system which can test devices operating up to 6 GHz and which will grow with technological developments.

This product is ideally suitable for use in a fast paced development area where assessments are needed for research & development, for pre-compliance and for final product compliance testing.

Basic system configuration

- ✓ Software platform based on industry-recognized test methodologies and FCC-mandated test standards (ANSI/IEEE C63.19)
- ✓ Software audio band testing module
- ✓ Automated X,Y,Z precision probe movement system
- ✓ Full graphic package for visualization and manipulation of measured data
- ✓ E-Field HAC probe with 2 Standard frequency calibrations
- ✓ H-Field HAC probe with 2 Standard frequency calibrations
- ✓ Active Twin Axis T-Coil probe
- ✓ 2 Standard frequency validation dipoles
- ✓ Telephone Magnetic Field Simulator (TMFS) for reference check of the HAC T-Coil measurement setup
- ✓ Helmholtz Coil (optional)
- ✓ Device Positioner
- ✓ Communications and Control Expander with integrated DAQ-PAQ and emergency stop mechanism
- ✓ 5 axis laboratory-grade robot
- ✓ Bench area of system under 6 square feet

Description	Performs HAC testing for wireless communications devices (WD) in compliance with ANSI/IEEE C63.19 methodologies
Software	User friendly GUI that allows for easy setup and data retrieval Includes signal generator (no additional equipment needed) Full FFT (Fast Furrier Transform) analysis Multiple Octave Settings (user defined or standard) Tone generation (comes with ITU P50)
Applications	RF Emissions Test - Measurements of the near-field electric and magnetic fields emitted by a WD RF E-Field emissions V/m RF H-Field emissions A/m AF T-Coil tests ABM1 intensity and frequency response ABM2 accurate evaluation
Typical Test Bands	SMR 800, SMR 900, Cellular 850, GSM 850, 900, 1800, 1900 Custom bands available on request
Report Generation	MS Word report generated according to FCC requirements
E-Field Probe	E-Field Probe used for RF emissions testing of a wireless device Typical sensitivity: 1.0 mV / (V/m) Typical isotropy: 0.2 dB
H-Field Probe	H-Field probe used for RF emissions testing of a wireless device Typical sensitivity @ 835 MHz: 200 mv / (A/m) Typical sensitivity @ 1880 MHz: 440 mv / (A/m) Typical isotropy: 0.3 dB
Active Twin-Axis T-Coil Probe	Converts magnetic fields of audio frequencies into AC voltage. Built in preamplifier module which allows for extended dynamic range Designed to sense axial and radial fields Typical frequency range: 100 Hz to 20 kHz Typical sensitivity: -60 dB(A/m) to 20 dB(A/m)
Validation Dipoles	Typical performance is better than -10dB Custom dipoles available on request
Magnetic Dipole TMFS™	Used to calibrate and validate automated methods used for HAC audio band magnetic system testing (ALSAS-10U HAC Upgrade Suite™) Serves as a known source for audio band magnetic fields for system validation and calibration
Audio DAQ-PAQ and Integrated Power Amplifier	All-in-one box ADC (DAQ-PAQ) 16 Bit Amplifier Range up to 100 dB input Output @ 50 Ω relative to 1 Khz -4 dBV Communications via USB
Field Integration	Local Co-Processor utilizing proprietary integration algorithms
LED Indication	Emergency stop and DAQ-PAQ state
Number of Input Channels	4 in total: 3 dedicated and 1 spare for future upgrades
Communication	Packet data via RS232 and USB
Ambient Noise	20 dB below intended measurement limit
Power	Robot and controller supplied by 110 or 220 V standard (country specific) supply Communications and control expander supplied by dedicated DC source (no battery required)

Optional additional APREL products available for order

- Helmholtz coil for calibration of T-Coil probe
- Additional Validation Dipoles
- Custom calibrations
- Custom test protocols
- Training (Seminars, or individual/company training)

To order a MiNi-HAC™,
please contact your representative
(www.aprel.com/representatives),
or contact us directly at
+1 613 820-2730,
or via email info@aprel.com