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
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<th>Description</th>
<th>Performs HAC testing for wireless communications devices (WD) in compliance with ANSI/IEEE C63.19 methodologies</th>
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| **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