M
STUDIO
Software

AVANT HIT+
HEARING INSTRUMENT
TEST CHAMBER

MedRx

Studio Software HIT Training Manual

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MedRx

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MedRx's Archived manuals are available at www.medrx-diagnostics.com/support/manuals-avant-software/archive

Contents

Hearing Instrument Testing (HIT) measures the hearing instrument response in a 2cc coupler in the test chamber. The coupler response is then compared to the manufacturer specification to ensure quality performance or to detect possible malfunctions of the hearing instrument.

This system follows the ANSI S3.22 and IEC 60118-7 standards for hearing aid measurement methods.

The Avant HIT+ supports the following measurements:

OSPL-90	Frequency Response
Input/Output (AGC)	Induction Coil
Full on Gain	Equivalent Input Noise
Battery Current	Reference Test Gain
Harmonic Distortion	Attack/Release

This manual assumes that the system hardware, software and drivers are installed and working properly. Please refer to the MedRx Avant HIT+ Installation Manual for assistance.

Getting to Know Your AVANT HIT+

Intended Use Statement:

The MedRx AVANT HIT device is an acoustic chamber that utilizes loudspeakers and measurement microphones for verification of overall performance of hearing aids for adults and children. The measurements are made without the hearing instrument being worn. These devices are to be operated by professionals with education and/or training in the field of audiometry.

Indication for Use Statement:

The Avant HIT Chambers are for use by professionals with education and/or training in the field of audiometry to evaluate the overall performance of hearing aids for adults and children utilizing loudspeakers and measurement microphones. The measurements are made without the hearing instrument being worn.

The AVANT HIT+ represents a new era of precision Hearing Instrument Testing for your office. Compact yet rugged, this PC-Based system is USB powered and performs all required ANSI and IEC tests. The following section of this manual will familiarize you with the physical features and accessories of the HIT+ system
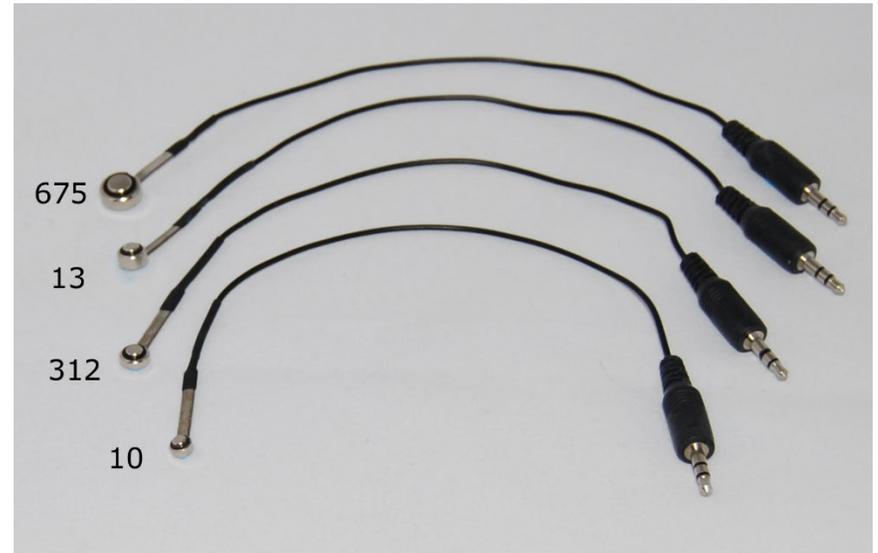
Accessories

Couplers & Adapters

The system includes the couplers and adapters shown above. These will allow you to perform all ANSI and IEC Hearing Instrument Tests.

NOTE: There is a flexible O-ring inside both the 2cc Coupler and the Body Adapter. These must remain in place for the couplers to function properly. Replacement O-rings are available from MedRx. The Allen Wrench is used when removing the Reference Microphone for re-calibration or replacement.
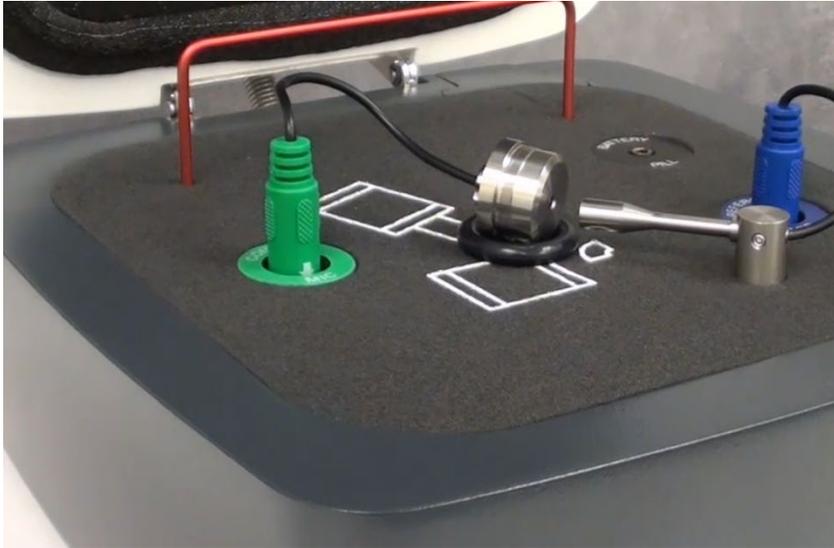

Battery Pills

Battery Pills, also known as Battery Simulators, provide power to the hearing instrument during testing. The system includes a complete set of Battery Pills as shown above.

Coupler Mic

Take care when handling these components as they are delicate precision calibrated instruments.

Setting up the Reference & Coupler Mic

The Reference Microphone (blue) is pre-installed at the factory.

Carefully install the Coupler Microphone (green) as shown. Take care when handling these components as they are delicate precision calibrated instruments.

The Coupler Microphone plug is "keyed". The arrowhead molded into the green plug must face the front of the Avant HIT+ when installed.

HIT MODULE
Studio Software Overview

The MedRx Studio software can run stand-alone or from Noah System or the TIMS® Noah-Compatible Office System.

Launching the MedRx Studio Software

Stand Alone

- Double click the MedRx Studio shortcut on your Windows desktop.

Noah

- Launch Noah.
- Select a patient.
- Launch MedRx Studio module following Noah procedures.

Basic Software Options

Several options are available which allow the user to customize the MedRx Studio software to meet their needs.

Access these options by clicking the settings wheel in the top right menu bar.
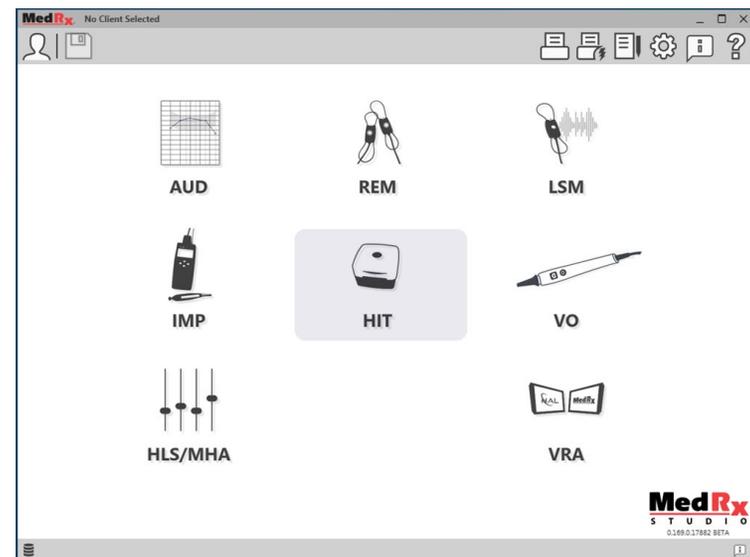
The MedRx Studio software main screen.

Icons are selectable depending on your equipment.

The Main Screen settings allows you to set the default modules, database, print templates and more.

If you have more than one MedRx product you can show/hide modules in the Main Screen settings.

NOTE: Remember, more information is always available in the Interactive Help System by clicking the "?" Icon in the top right corner of the software or pressing the F1 key.

HIT Module

Select HIT from the main menu.

HIT

Tool Bars

Top Tool Bar

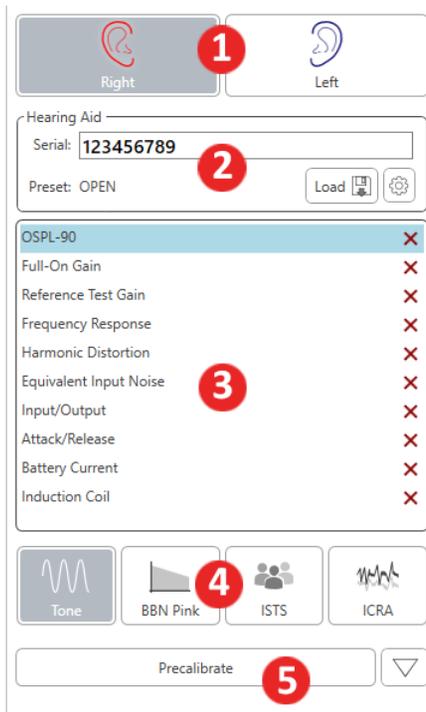The **Tool Bar** icons have the following functions:

1. Save Session and Exit
2. Save Session
3. Print
4. Show Journal
5. Show Settings
6. Show Help
7. More Options

The **More Options** icons have the following functions:

1. Save the Current Session to a File
2. Open session from a file
3. Clear Data from Current Test
4. Open HitBox Verification

Side Tool Bar

1. On the right side of the screen, Hearing Aid Ear Selection is displayed.

2. Hearing Aid Serial Number and Type of Hearing Aid.

3. Test Set-up window.

4. Stimulus Selection (Select Speech Noise, ICRA, to evaluate the performance of noise reduction circuits).

5. Precalibrate Function. This function allows you to calibrate the reference level without the hearing aid turned on and then run the tests without referencing. (Precalibrate can be used if it is suspected that a high gain hearing aid is leaking sound thus affecting the reference microphone).

Settings Auto Test Preferences and Procedure Options
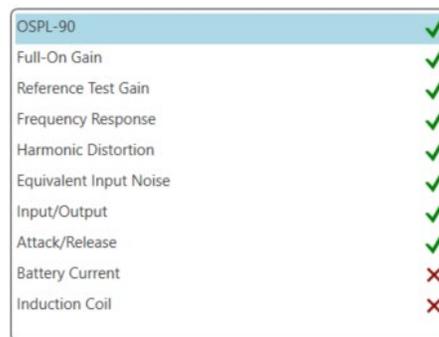
1. In the Test Set-Up Window, add or remove the tests you want to include in your Auto Test Battery by clicking on the red X or green check mark. The tests with the green check mark will run when clicking on the Start Auto Button.
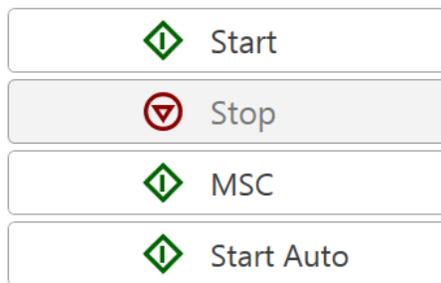
2. Click Start to run a single test that is selected in the Test Set-up Window. The test will finish after the measurement is complete.

3. Click MSC (Manual Signal Control) to start a single test in continuous mode. The test will not finish by itself and will have to be stopped by clicking Stop icon.

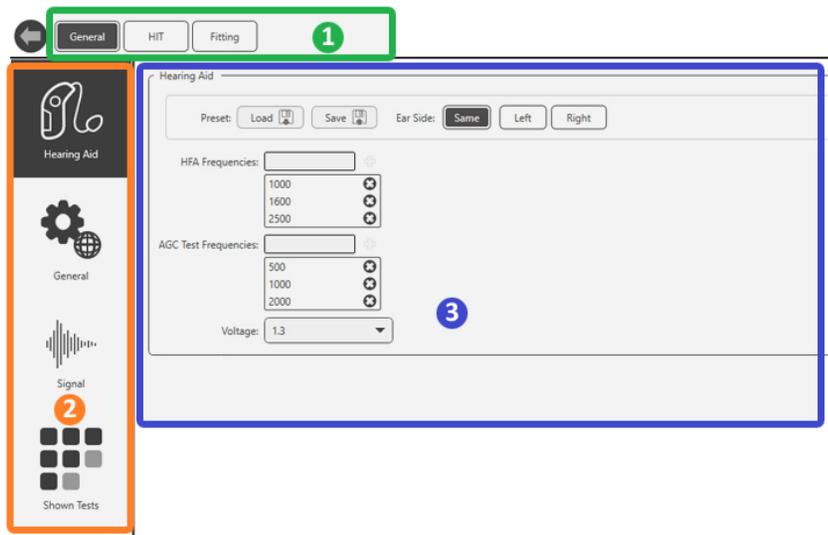4. Click Start Auto to run the selected tests in sequence.

Configuring the HIT Software

It is important to note that each module will have different setting available for customization.
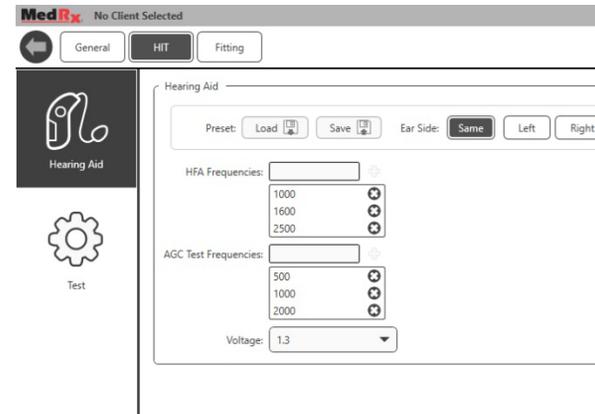
HIT

Enter the module and click the settings wheel to customize.

To navigate the settings you will:

- Select the group of settings from the header (1).
- Then choose the setting options from the left sidebar (2).
- The customization options will change based on the group and settings chosen in the main body (3).

Under Hearing Aid, select the appropriate hearing instrument, battery type, voltage and test frequencies. You can also load and save hearing aid defaults.
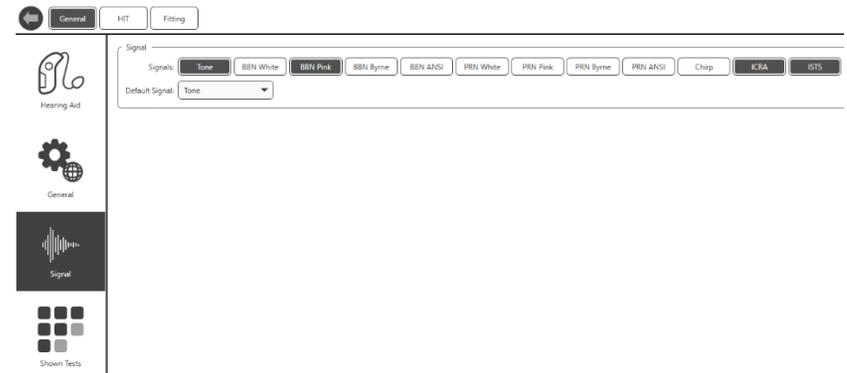
To select your displayed stimuli, under general, select signal. Click on each stimulus to display on the main page as dictated by your clinic policies or jurisdiction's regulations.

For ANSI and IEC tests, Tone is used as the stimulus.

Calibrate Coupler Response and HIT Box Verification
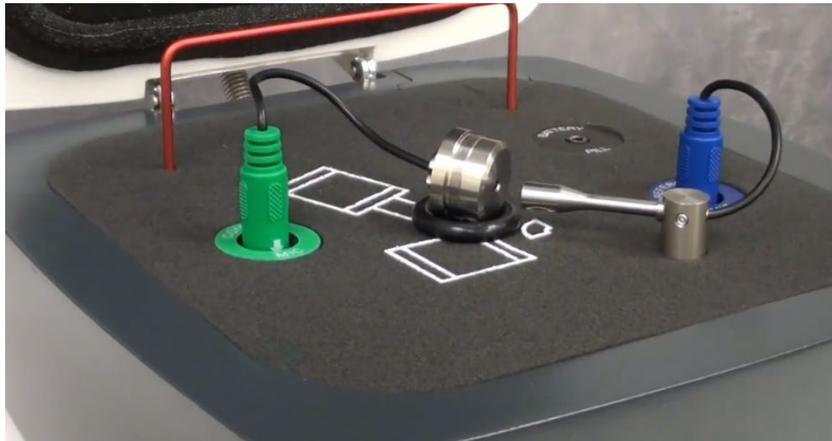
Place the coupler microphone (green) between 2 and 8mm from the reference microphone (blue). Use the large O-ring to raise the coupler mic to the same level as the reference microphone as shown in picture below.

In the Studio software go up to the top right menu bar:

- Click the three vertical dots.
- Click on the check mark. The HIT Box Verification widow will pop-up.
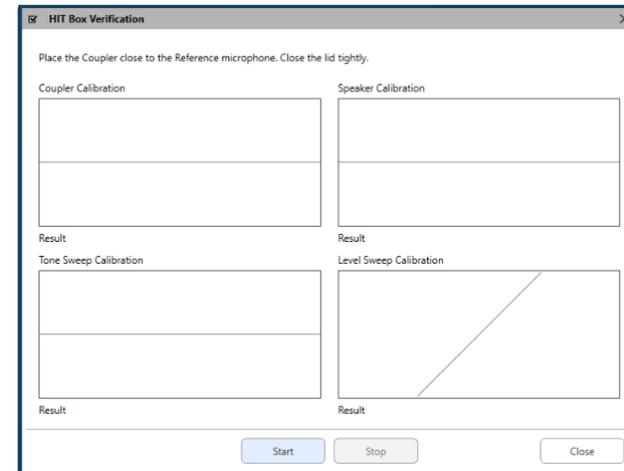
Click start and blue lines will show up on top of the calibration lines. Those lines will turn green when that calibration test passes or will they will turn red if that test fails. *See picture below.*

If you do not get green calibration line responses, make sure the coupler mic is in the proper position and re-run the calibration.
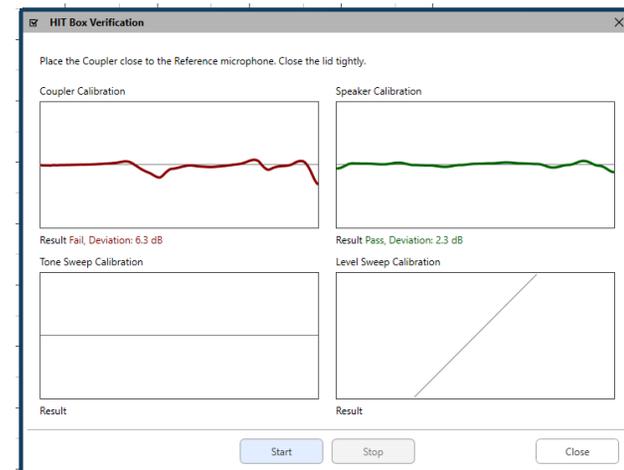
Performing HIT+ Measurements

Hearing Instrument Test (HIT) Box standards and procedures are defined by ANSI and IEC. Each test has separate reference and tolerances that can be located in the interactive help files of our software by clicking the "?" Icon or pressing the F1 key. Please refer to these for additional information about each test.

Attaching Hearing Instruments to the Coupler

ITE (In the Ear), ITC (In the Canal) and MIC (Mini Canal) Hearing Instruments

1. Seal acoustic vents.

2. Wrap the canal portion of the instrument with a hermetic sealing material such as Bostik Blu-Tack.

3. Align the sound bore with the opening of the ITE coupler adapter. Press the sealing material firmly into the ITE adapter.

4. Ensure that the black O-ring is installed in the 2cc coupler and snap the ITE adapter in place.

RIC (Receiver in Canal) Hearing Instruments

1. Align the receiver with the opening of the silicone adapter. Press firmly through hole.

2. Align the receiver with the opening of the 2cc coupler adapter. Press the silicone adapter onto the 2cc coupler.

3. Ensure that the black O-ring is installed in the 2cc couple.
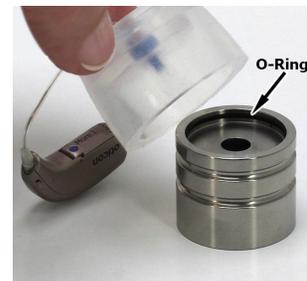
NOTE: If the RIC hearing aid has an earmold it can remain on the hearing aid and be attached to the coupler in the same method as an ITE hearing aid.

BTE (Behind The Ear) Hearing Instruments

1. Remove the earmold from the hearing instrument.
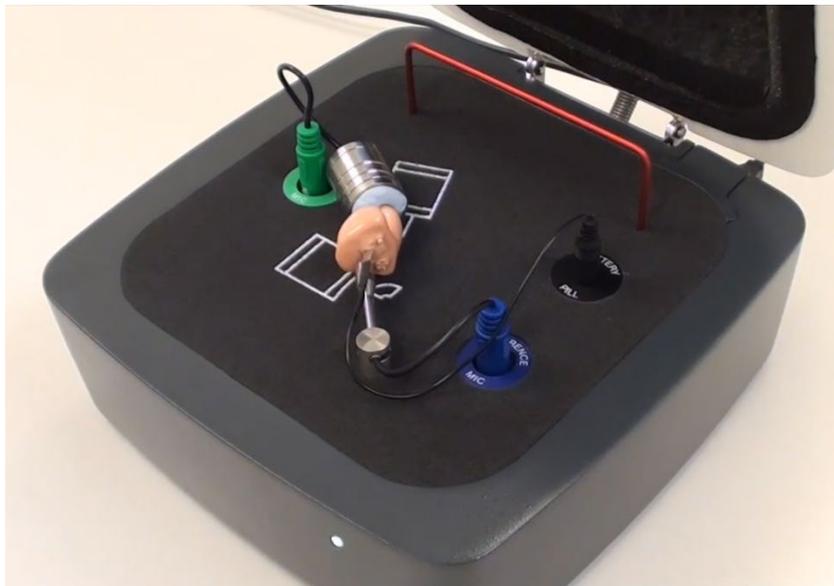2. Attach the ear hook to the 20mm long Tygon tube on BTE Coupler Adapter.
3. Snap the BTE Coupler Adapter onto the 2cc Coupler.

Battery Pills

- If performing Battery Current test, place the battery pill in hearing instrument. If not, place a new battery in the instrument or make sure the instrument is properly charged.

- Battery pills are used for ITE and BTE Instruments.

  *Note: Battery Current can also be performed on its own after the selected battery of tests are completed. Battery Current testing cannot be done with rechargeable or body worn instruments.

Setting Up the Hearing Instrument for HIT Measurements

1. Open manufacture's hearing aid fitting software and connect hearing aid.
2. The hearing instrument should be set to Full-On Gain mode for OSPL90 and Full-On Gain tests and then will need to be adjusted to Reference Test Gain mode for Frequency Response, Equiv. Input Noise, Harmonic Distortion, Battery Current, Input-Output, and Attack/Release.

   *Note: The location of each manufacture's test box mode varies. If necessary, please contact the hearing aid manufacturer to see where this setting can be found in their fitting software. If test box mode is not available, set to Real Ear Mode (REM) and increase overall gain until hearing aid is at full-on gain.

Positioning Hearing Instruments in the Test Chamber

The AVANT HIT+ chamber utilizes a speaker located below the test surface. When placing hearing instruments in the chamber, it is critical to place the hearing instrument microphone adjacent to the reference microphone. The center of the sound inlet of the hearing instrument microphone should be between 2mm and 8mm from the center of the reference microphone. The hearing instrument's sound inlet should be directly above the fan shaped marking on the test surface, and at the same distance (height) above the foam surface of the test chamber as the reference microphone inlet. Proper positioning for ITE, BTE and RIC hearing instruments are shown below.

Once the instrument is properly placed in the test chamber be sure the hearing aid is on and connected to your fitting software and close the lid of the chamber.

Note: If necessary, a neck loop or other connection device can be placed inside the test box around the hearing instrument. Wireless programmers will still maintain connection even when the box is closed.

BTE Hearing Instrument

ITE Hearing Instrument

RIC Hearing Instrument

Standard HIT Protocol

The MedRx Studio HIT software is designed to make the process of making HIT measurements simple. The easiest way to complete them is to use the Auto Test feature.

1. Once the hearing instrument is in a Full-On Gain mode and positioned in the test box as stated in the previous section, you can either run each test individually by clicking on the Start button or perform as many tests as you wish automatically by clicking on the Start Auto button.

   a. In order to use the Start Auto feature, you must select each test that you want to run by clicking on the red X next to it and it will change to a green check mark. All tests with the green check mark will run after clicking on the Start Auto button.

2. Once the OSPL90 and Full-On Gain tests are completed, a prompt will instruct you to adjust the hearing aids settings to Reference Test Gain before moving on to the next test.

3. Put the hearing aids into a RTG mode in your manufactures software to match the RTG displayed as close as possible. The calculated RTG is based on OSPL90 and Full-On Gain measurements.

   *Note: If software does not have test box mode and you are using real ear mode at full on gain, then lower overall gain until measured output reaches the RTG.

4. Once at RTG click Accept to continue to Frequency Response, Equiv. Input Noise, Harmonic Distortion, Battery Current, Input-Output, and Attack/Release.

Sample HIT Measurements

The screenshots below illustrate the Avant HIT+ representations of the ANSI S3.22-2009 Hearing Instrument Test Battery. The system also supports the IEC 60118-7 2005-10.

Many manufacturers include a technical data sheet with the hearing instruments to compare your measurement results to. They can also commonly be found in the fitting software or online on the manufacture's website. If you cannot locate the specs sheet or the manufacturer does not send one, you can simply call and request one be sent with each hearing aid.
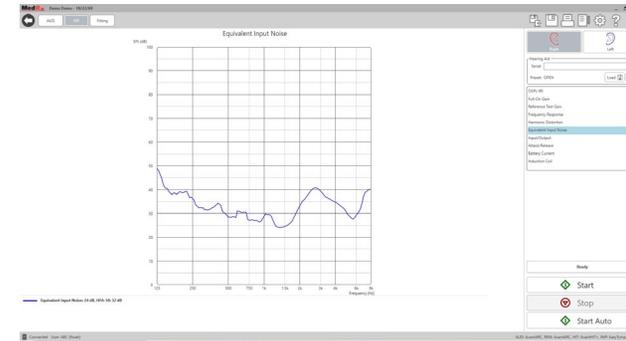
References and tolerances for each test can be found in the interactive help files by clicking the "?" Icon or pressing the F1 key.
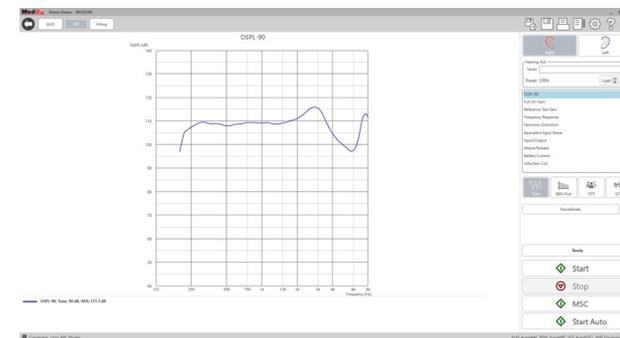
OSPL90
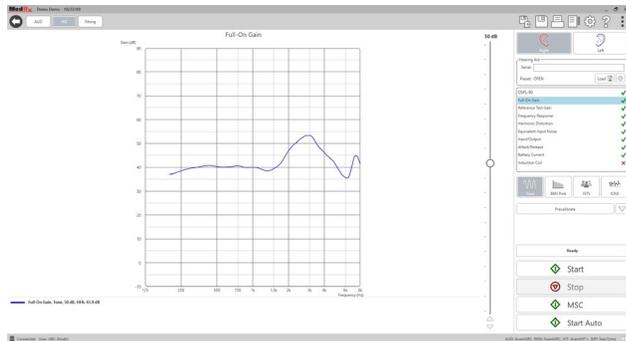
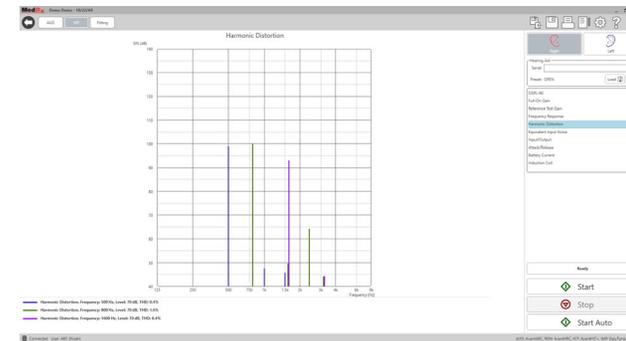Full-On Gain

Equivalent Input Noise

Reference Test Gain ✕

Adjust Hearing Instrument Gain to Match Target

Target: 34.1

Gain: 29.9

[Accept] [Stop]

Reference Test Gain

Total Harmonic Distortion
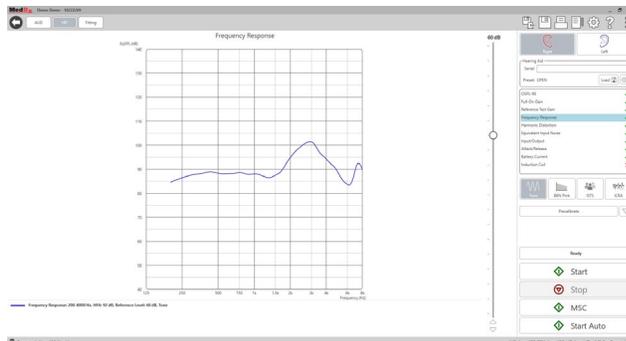
Frequency Response
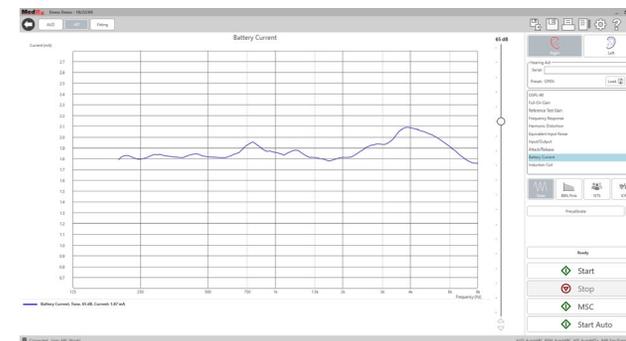
Battery Current
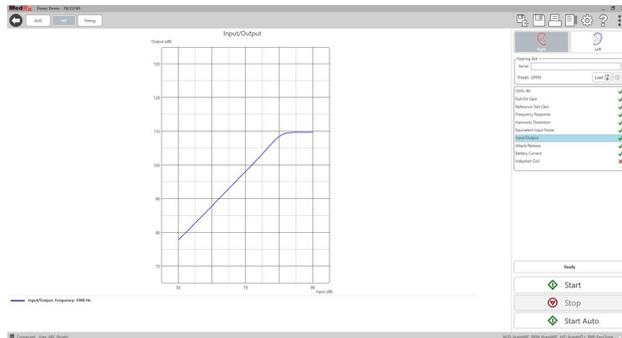
Input/Output
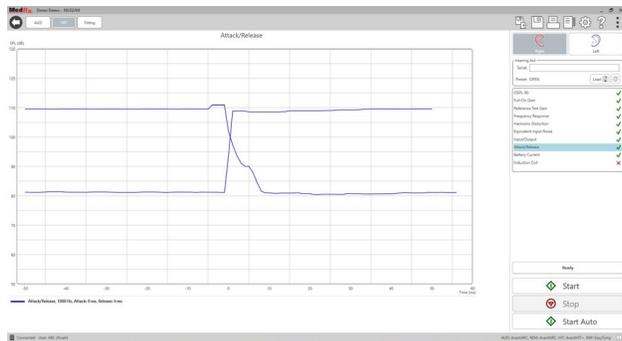
Attack and Release
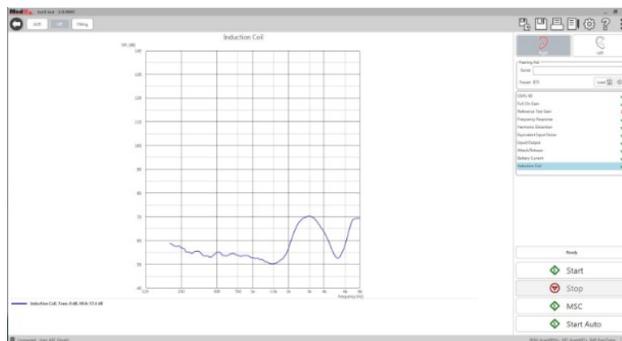
Induction Coil

HIT Fitting

HIT Fitting is designed to allow hearing aids to be programmed inside the Hearing Instrument Test Box to fitting targets with 2 CC Coupler Measurements.

HIT fitting will use predicted or measured RECD targets based on the hearing aid settings and fitting target selected. HIT Tone Audiometry must be completed for targets to display.

To obtain RECD values:

- Open the REM module within Studio.

- Select RECD.

If using actual RECD values:

Follow the RECD instruction guide in the Studio Software REM/LSM Training Manual on pg. 25-26. You need a REM system in order to measure RECD.

If using predicted values:

- Select the **Target** icon in the bottom right.

- Be sure to input the client info and hearing aid type to calculate your RECD.

- Select **Left**, **Right** or **Both**.

- Once your RECD values appear, return to the HIT fitting screen.
- Under RECD select Client or Predicted RECD values.
- Select the Target icon in the bottom right.
- Be sure to select your target type and input the client info and hearing aid type.

This will set RECD with predicted values calculated by selected target rule.

Continue?

Left | Right | Both | Cancel

- Select the **Wrench** icon.
- Select **Predict.**
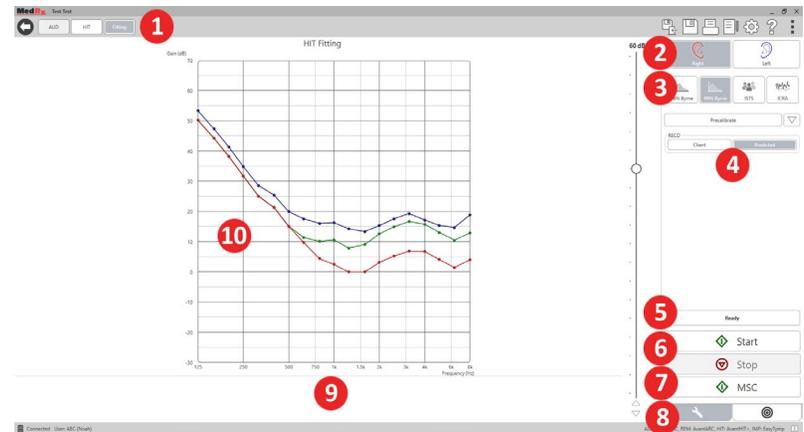
1. HIT Test Options
2. Ear Selection
3. Test Stimulus
4. Select Client or Predicted RECD
5. Time Indicator
6. Start and Stop Buttons
7. MSC (Manual Signal Control)
8. Tools Tab and Target Selection Tab
9. Legend
10. Target Area – can be any of the following:
   a. DSL IO
   b. NAL-NL2
   c. NAL-NL1
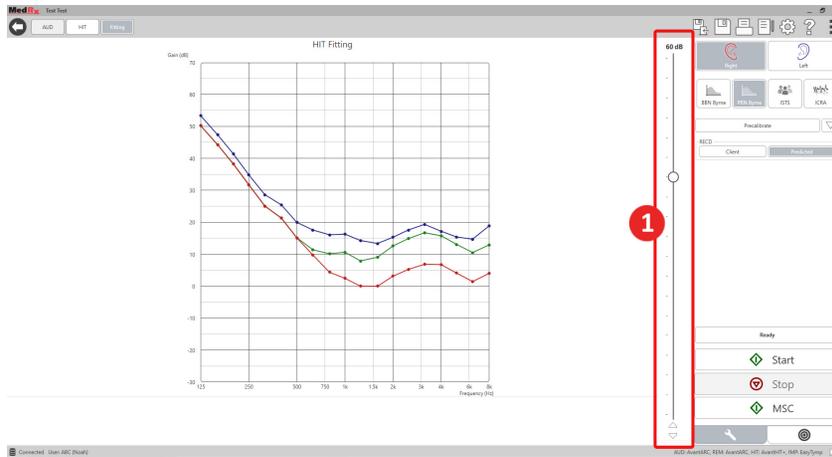
1. The stimulus level can be set with the slide bar to the right of the HIT Fitting graph.

Stimulus Signal Types

Broadband Noise (BBN): Uniform random noise with normal (Gaussian) amplitude distribution. Can be weighted to White, Pink, Speech ANSI, and Speech Byrne.

Pseudo Random Noise (PRN): A "synthetic" broadband random noise. It is less uniform than BBN, has lower spectral density and random volleys. Can be weighted to White, Pink, Speech ANSI, and Speech Byrne.

ICRA Noise: This stimulus was developed for measuring characteristics of non-linear instruments. The noise is weighted to Byrne LTASS.

ISTS: (International Speech Test Signal) Initiated by European Hearing Instrument Manufacturing Association (EHIMA.) This signal is based on natural recordings of 21 female speakers in six different languages - American English, Arabic, Chinese, French, German and Spanish. The signal is largely non-intelligible because of segmentation and remixing. The speech material was filtered to Byrne LTASS.

Printing

Printing within the MedRx Studio software. You can use the templates provided at installation or create your own templates to suit your needs.

Icons in the Print Window
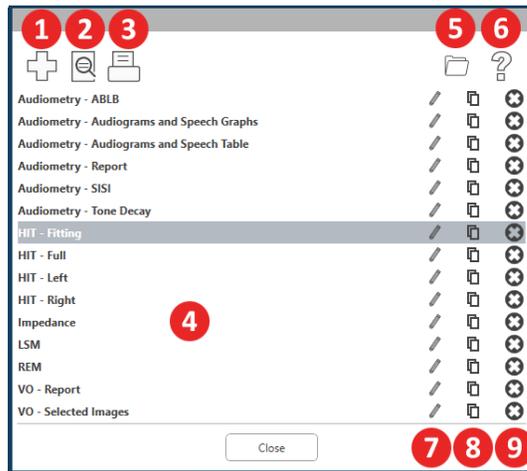
1. Create a new template.
2. Preview template icon.
3. Print template icon.
4. Select the template you would like to use.
5. Shortcut to templates folder on your desktop.
6. Studio Help icon.
7. Edit the template with the pencil icon. Editing a template will open the print editor and allow you to adjust print elements.
8. Duplicate existing templates icon.
9. Delete template icon.

To Use an Existing Print Template

1. Click the print icon in the top tool bar or hold down the Ctrl key and click the P key on your keyboard.
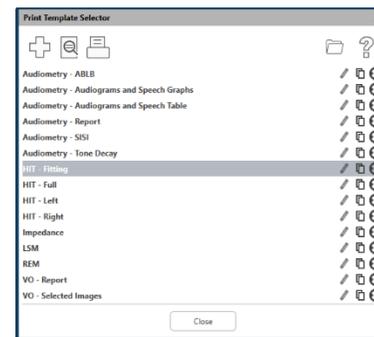
2. Select the template you would like to use.

3. Click the print preview icon to see the patient's data & images on the template before printing.

4. Click the print icon.
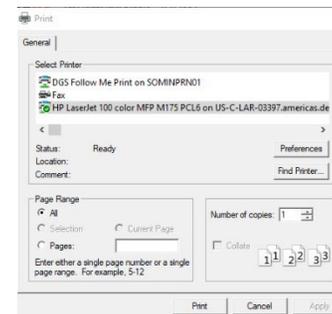
5. The printer options box will pop-up.

6. Click print.

7. Or click Ctrl+Shift+P to print the modules default template.

Create New Print Templates

1. Select the printer icon.

2. Select the + icon to create a new template.

New Template

3. Name the template you are creating.

4. Choose page orientation.
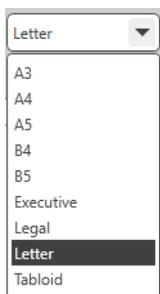
5. Use the drop-down menu to choose the size of paper you will be using.
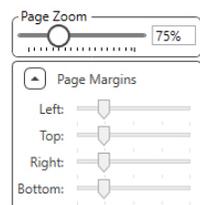
6. In the bottom left, Page Zoom will allow you to zoom in/out of the template for easier editing.

7. In the bottom left, the Page Margin is set by default to the ideal level. Adjusting this will determine how far items will print from the edges.
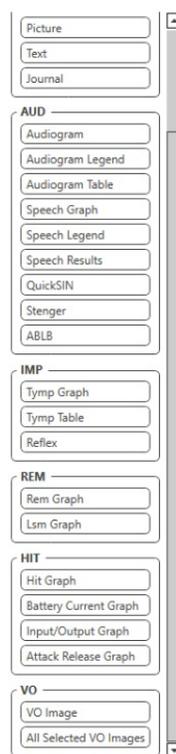
8. Drag and drop elements onto the page to create your template.

   a. You can combine data from multiple modules into a single template.
   b. Elements may overlap and will stack/cover previously added elements.
   c. Certain elements will have settings that can be adjusted after dropping onto the page.
   d. You can resize all elements. The contents of each element will resize within the box depending on the amount of data in the element.

9. Use the + button to add additional pages if needed.

10. After template completion, use the Save, Save As, Preview and Print Icons for your template.

Saved templates will be available for future sessions.

Print a template to ensure that all elements print as expected.

EMC Precautions

The Avant Hearing Instrument Test (HIT) Box needs special precautions regarding EMC and needs to be installed according to the following EMC information.

List of all cables and maximum lengths of cables, transducers and accessories:

Transducer / Accessories	Maximum Cable length
USB Cable	2.9 meters
Battery Simulators (All Versions)	0.3 meters
Microphones (All Version)	0.3 meters

⚠ Warnings!

- The use of accessories, transducers and cables other than those specified, with the exception of transducers and cables sold by the manufacturer of the Avant Hearing Instrument Test box as replacement parts for internal components, may result in increased emissions or decreased immunity of the Avant Hearing Instrument Test Box.
- The Avant Hearing Instrument Test Box should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the Avant Hearing Instrument Test Box should be observed to verify normal operation in the configuration in which it will be used.
- The Avant Hearing Instrument Test Box may be interfered with by other equipment, even if that other equipment complies with CISPR emission requirements.
- The Avant Hearing Instrument Test Box does not have a life supporting function.
- Portable and mobile RF communications equipment can affect the Avant Hearing Instrument Test Box.

Guidance and manufacturer's declaration – electromagnetic emissions		
The Avant Hearing Instrument Test Box is intended for use in the electromagnetic environment specified below. The customer or the user of the Avant Hearing Instrument Test Box should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Avant Hearing Instrument Test Box uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The Avant Hearing Instrument Test Box is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Non applicable	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Non applicable	

Guidance and manufacturer's declaration – electromagnetic immunity			
The Avant Hearing Instrument Test Box is intended for use in electromagnetic environment specific below. The customer or the user of the Avant Hearing Instrument Test Box should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD)| IEC 61000-4-2	+/- 8 kV contact discharge +/- 2, 4, 8 &15kV air discharge	+/- 8 kV contact discharge +/- 2, 4, 8 &15kV air discharge	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst IEC 61000-4-4	+/- 2 kV for power supply lines +/- 1 kV for input / output lines	+/- 2 kV for power supply lines +/- 1 kV for input / output lines	Mains power quality should be that of a typical commercial or hospital environment.
Power frequency (50/60 Hz) Magnetic field IEC 61000-4-8	NA	NA	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Guidance and manufacturer's declaration – electromagnetic immunity

The Avant Hearing Instrument Test Box is intended for use in electromagnetic environment specific below. The customer or the user of the Avant Hearing Instrument Test Box should assure that it is used in such an environment.

Immunity test	IEC 60601- test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the Avant Hearing Instrument Test Box, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:
Conducted RF IEC 61000-4-6	0.15 - 80 MHz 3 Vrms & 6Vrms in ISM Band 1 kHz AC Mains	0.15 - 80 MHz 3 Vrms & 6Vrms in ISM Band 1 kHz AC Mains	$d = 1{,}17 \times \sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	$d = 1{,}17 \times \sqrt{P}$ 80 to 800 MHz $d = 2{,}33 \times \sqrt{P}$ 800 MHz to 2,5 GHz
			Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey [a], should be less than the compliance level in each frequency range [b]. Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE 1   At 80 MHz and 800 MHz, the higher frequency ranges applies.

NOTE 2   These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a.   Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones, land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Avant REM is used exceeds the applicable RF compliance level above, the Avant REM should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Avant REM.
b.   Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between
Portable and mobile RF communications equipment and the Avant Hearing Instrument Test Box
The Avant Hearing Instrument Test Box is intended to use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Avant Hearing Instrument Test Box can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Avant Hearing Instrument Test Box as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter meters		
	150 kHz to 80 MHz $d = 1{,}17 \times \sqrt{P}$	80 MHz to 800 MHz $d = 1{,}17 \times \sqrt{P}$	800 MHz to 2,5 GHz $d = 2{,}33 \times \sqrt{P}$
0,01	0,12	0,12	0,233
0,1	0,37	0,37	0,74
1	1,17	1,17	2,33
10	3,7	3,7	7,40
100	11,7	11,7	23,3

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1   At 80 MHz and 800 MHz the separation distance for the higher frequency range applies.

NOTE 2   These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Safety

Regarding electrical safety, this device is designed to be used only by professionals in the hearing healthcare industry.

- Regarding electrical safety, this device is to be used only by professionals in the hearing healthcare industry.
- It is Class II Medical Electrical (ME) equipment that is part of an ME system.
- Power is supplied by the USB cable connected to a computer. An in-line optical isolator with medical power supply is recommended to achieve optimum safety. A medical grade computer is recommended and a medical grade isolation transformer will help minimize ground current. It is recommended that powered speakers are connected to an isolation transformer. The use environment should be between 10°C and 35°C, humidity within 30% to 90%. All components with operator contact are made of bio-compatible materials.
- The green "ready" light on the front of the device indicates that the device and software are ready for use. Mild soapy water on a clean cloth is the preferred cleaning solution.
- The Instructions for Use (the Installation and Software Training manuals) are supplied as an electronic copy on a USB flash drive. Paper copies of the manuals may be also requested from the company, and will be sent within one business day of the request.
- All repairs should be sent to MedRx for evaluation and / or repair.

Symbols that may be used

Read the instruction manuals for safe usage of the device (operating instructions)	Indicates that the device serial number will follow	Type B applied part. (Type B equipment)	Manufacturer (MedRx)	Authorized Representative in Europe

Technical Information

The Avant HIT+ is an active, diagnostic device.

Standards: Hearing Aid Analyzer As Per ANSI S3.22, IEC 60118-7

Speaker Output: Max 95 dB SPL

Frequency Range: 125 Hz – 8000 Hz ± 0.5%

Coupler Mic: Max Input Level: 140 dB SPL

Reference Mic: Omni Directional Microphone

Battery Simulator Output: Adjustable Output Voltage: 0.1V – 1.5V In 100m

Steps Accuracy ± 5%. Current Measurement: 20uA – 20mA Accuracy ± 5%.

Battery Pills Provided: 10A, 13, 312 And 675

Magnetic Loop: 31.6mA/m Magnetic Strength, per ANSI Standard

Communication Port: USB

Power Requirements: USB Power

Dimensions: Approx. 24 cm x 25 cm x 16 cm (L x W x H)

Net Weight: Approx. 1,8 kg / Approx 7 lbs

Enclosure: Acoustically dampened enclosure

Environmental Requirements: Working temperature range from 10°C to 35°C

Routine checking and subjective tests

The user of the instrument should perform a subjective instrument check once a week. The purpose of routine checking is to ensure, as far as possible, that the equipment is working properly, that its calibration has not noticeably altered and that its attachments, leads and accessories are free from any defect that might adversely affect the test result.

Complaints/Safety Reporting

Please contact your local distributor in case of any incidents related to product defects (hardware defects or software bugs) or adverse events (which does not necessarily have a causal association to the product). It is recommended for a user to report all the known facts about the incident. Upon receipt of any serious incident with serious health impact for the patient or user (serious adverse events), local distributor shall report to MedRx through its appropriate vigilance system. MedRx shall ensure that the regulatory authority in patient's home country is informed according to the vigilance requirements. MedRx shall handle all the product complaints and adverse events as per the internal procedure.

Limited Warranty

MedRx, Inc warrants this product to be free from defects in material and workmanship for one year from the time of purchase. If this system fails to perform as specified during this period, the purchaser is responsible for calling MedRx at (888) 392-1234 or (727) 584-9600. The company's representative will advise the owner to either return specific components or the entire system to:

MedRx, Inc.
1200 Starkey Road #105
Largo, FL 33771 USA

MedRx will repair or replace any defective devices, fully test the system and/or components and ship the system promptly back to the owner. There is no cost for the repair or return shipping, provided the system is one year old or less and has not been misused, abused or damaged. Such damage includes, but is not limited to, dropping, exposure to excessive heat greater than 100ºF and water/liquid damage.

Repair or replacement of the system as provided under this warranty is the sole and exclusive remedy of the purchaser. MedRx shall not be liable for any consequential or incidental damages or for breach of any express or implied warranty. Except to the extent of applicable law, any implied warranty, merchantability or fitness of this product is limited to the duration of this warranty.

MedRx will, at its discretion, service and repair out of warranty products at the purchaser's request, charging for parts and labor as necessary.

The limited warranty is deemed void if software or hardware is installed on this product which is not pre-approved by MedRx, Inc. Approved software includes Noah and HIMSA approved hearing aid manufacturer programming modules for fitting hearing aids.

MedRx, Inc. is not responsible for problems resulting from installation of unapproved software or hardware. In the event of unapproved software or hardware installed on the system causing a conflict, MedRx will service the product for a fee to be determined at the time of service.

Any extension of this warranty past the initial one-year warranty is subject to the following (where applicable).

1. A $300 deductible per repair.
2. Extended warranty does not include cables, connectors or peripherals.