

M2 MASTER REFERENCE MONITOR

Set Up Instructions



Hear the truth.



JBL M2 Set Up Instructions

In preparation for M2 installation, make sure you have following:

- Physical assistance moving and positioning the speakers. They are heavy - 130 lbs each.
- Speaker wire – four each 2-conductor runs from the “amp room” to the speakers. (We recommend using 12 gauge Oxygen Free Copper wire or and 10 gauge for runs greater than 50 feet.) Amplifier fan noise requires the amps are placed outside the listening area.
- The appropriate device file for the iTech 5000HD or 4X35000HD amplifier. The latest version of this can be downloaded from the M2 section at <http://jblpro.com/www/products/recording-broadcast/r-b-support> Download the file and place it on the computer desktop.

To install the required M2 device file in the amp, you'll need a USB drive with the correct file.

CAUTION: Do not play speakers without the appropriate device file installed in the associated Crown power amplifier. The M2 speaker itself has no crossover. The device file creates crossover in the power amplifier DSP. Playing M2 speakers without the device file loaded and enabled will cause poor performance and possible damage to the speakers.

To adjust the room EQ in the amps, you'll need the following:

- Harman System Architect Software.
 - The software controls the EQ in the amps and can be downloaded from the website at http://archimedia.harman.com/en-US/system_architect
 - A Windows 7 or Win XP computer to which you have administrative rights.
 - Disable the Windows Firewall (access via Windows Control Panel)
 - Turn WiFi OFF
 - An Ethernet network switch with as many ports as Amps and one additional port = For a stereo or LCR set up a 4 port switch is adequate
 - Three Ethernet cables: two short ones (3 feet each) from the network switch to each amp, and one long one (length equal to the distance of the amps to the listening position) from the switch to your computer.

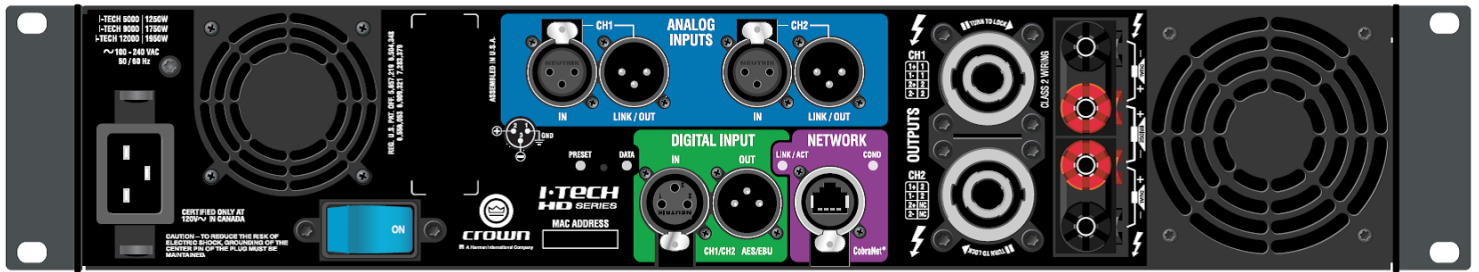
Installation: make sure the following are in place:

1. Speaker Placement

- Free-standing installation: Assuming there are no large obstructions between the speakers and the listening position, and the speakers are placed directly on the floor, the HF driver will be positioned at a height of 42.5 inches from the floor.
- In control rooms with mixing consoles: Speakers can be elevated to ensure sound coming from the woofer is not blocked by a mixing console. The speaker should be elevated so the top half of the woofer is visible above the meter bridge. For example, if the top of the meter bridge is 45 inches, the speaker should be elevated by 20" which will place the middle of the woofer just above the meter bridge and the high frequency at a height of 66 inches. You'll want to experiment to find the position that produces good imaging and good bass. A foot forward or back, closer together or wider will affect the low frequency performance. You'll want to make sure the speakers are not in placed in a spot where, at the listening position, you are not hearing the low frequency produced by the speaker.

- Located in the top of the speaker packaging is a set of removable spikes that can be used to reduce acoustic coupling of the speaker to the floor. Use these in permanent installations on carpeted floors. These can damage wood floors.
2. iTech 5000HD Power Amps are connected to a 20 amp power source, iTech 4X3500 amps are connected to 30 amp service. These Crown Amps are shipped with 20 or 30 amp NEMA plugs that cannot be connected directly to a standard 15 amp household power receptacle.
 3. To access the Room EQ in the amps, each amp is connected to a network switch using CAT5 cable.
 4. Speaker wires are run from channel 1 and 2 or each amp to the HF and LF terminals of each speaker.
 - iTECH 5000HD - Connect Amplifier Chanel 1 black and red speaker wire outputs (the upper set of black and red terminals on the rear of the amp) to the HF terminals on the rear of the speaker (the upper set of black and red terminals). Connect amplifier Channel 2 outputs (the lower set of black and red terminals on the rear of the amp) to the LF terminals on the rear of the speaker (the lower set of black and red terminals).
 - iTECH 4x3500HD - This is a four channel amp. Channel 1 of the amplifier will be used to power the LEFT Speaker High Frequency driver. Channel 2 will power the LEFT Speaker Low Frequency Driver. Channel 3 of the amplifier will power the RIGHT Speaker High Frequency driver. Channel 4 will power RIGHT Speaker Low Frequency Driver.
 5. XLR cables are used to connect the L&R outputs of your playback source to the inputs of the Left and Right M2 Power Amps. The device file loaded into the power amp will configure the amp so the LEFT XLR input of the amp receives the signal source and sends it to channels 1 and 2 of the amplifier. And in the case of the iTECH 4 x 3500, Channel 1 input sends signal to outputs 1&2, used to power the Left speaker and Channel 3 input sends signal to outputs 3&4 used to power the Right speaker.
 - iTECH 5000HD:
 - Connect the LEFT output of your system to the CHANNEL 1 INPUT of the LEFT Channel Power Amp
 - Connect the RIGHT output of your system to the CHANNEL 1 INPUT of the RIGHT Channel Power Amp
 - iTECH 4x3500HD –
 - Connect the LEFT output of your system to the CHANNEL 1 INPUT of the Power Amp
 - Connect the RIGHT output of your system to the CHANNEL 3 INPUT of the Power Amp
 6. **Loading the M2 Device file using the front panel USB Port on the amplifier:**
See instructions at the end of this document
 7. **Loading the M2 Device File and adjusting the Room EQ in the amp using a computer:**
A Windows Laptop is connected to the CAT 5 cable and System Architect Software is installed. System Architect can be downloaded from at http://archimedia.harman.com/en-US/system_architect Before playing program material at high volume, confirm the amp channels are correctly connected to the LF and HF of each speaker. Attenuate amp input level control 1 and make sure you hear signal only in the woofer. Return control 1 to full volume, attenuate amp input level control 2 and make sure you hear signal only in the HF driver. If not, check connections.

For your reference, these photos show the connections and controls on Crown iTech Power Amplifiers:



IT5000HD Rear Panel



4x3500 iTechHD Rear Panel - (IT4X3500HDS_U with Binding Posts)



4x3500 iTechHD Rear Panel - (IT4X3500HDS_U with SpeakOn connectors)

Using Harman System Architect Software to control the speakers:

1. Power ON the amps – activate Rear Panel Breaker switch, and also Front Panel soft power switch.
2. Launch System Architect software. Upon power up, your iTech power amplifiers will appear in the venue window. Click on the image of one amplifier. Click on the FILE menu and then click OPEN. Locate the iTech Device File on your computer desk top. Double click to import the file.
3. Do the same for each amplifier
4. Having done this, you have now configured the amplifiers for use with the M2 speaker.
5. Click on Q in the upper left corner of System Architect Software. Click “Save As” and save you newly created Venue File to your computer. Clicking this file in the future will launch the correct configuration of System Architect Software to match your system. Click on each if the amp in the upper left corner of the software – You will see the EQ controls for that amp.

Click on the blue EQ button in the input block shown to the left of the crossover button. The EQ graph shown below will appear and you will notice filters 1-8 and 15 and 16 are available for room EQ.

CONTINUED, NEXT PAGE....



Using filter selection tabs at the top left above the graph, select a filter button 1-8 or 15 and 16, enter the Frequency, Gain and Q values in the white fields below the graph and click the button currently indicating “OFF” located to the far left, to turn the filter ON. The button will be illuminated and will indicate ON. Also the filter selection button for the current filter will become illuminated green indicating the filter is active.

- Note: The filters used for crossover are not accessible.
- There is no limiting activated in the amps. However limiting is available and can be enabled and adjusted using the COMP button in the software.
- The Input settings can be configured using the INPUT button.

6. When you have completed system tuning, save over your original "Venue" file and you will have a complete file with crossover and room tuning for your room. You should back these files up and keep them in a safe place.

For support using System Architect Software to control Crown Amplifiers, please contact Crown Customer Support at (800) 342-6939 until 7PM EST

Loading the M2 Device file using the front panel USB Port on the amplifier

The Crown iTech5000HD Owner's Manual can be downloaded at

http://www.crownaudio.com/media/wysiwyg/ITHD2/5009241_MNL_ITHDseries_spread.pdf

The following instructions can be found in the Crown iTech5000HD Owner's Manual on page 24:

4.4 File Transfer Via the USB Port

On the front panel of the amplifier is a USB Type A port which can transfer files either direction between a USB flash drive and the amplifier. These files can be of two types:

A Preset file, which contains amplifier DSP settings for a specific loudspeaker/ amplifier configuration.

A Device file, which contain all 50 presets and the current amplifier DSP settings.

When you plug in the drive, the amplifier defaults to a file-exchange mode and is muted. Then you can load or save individual files. No computer is needed for this file transfer.

How to transfer a file from a USB flash drive to the amplifier:

1. The file must reside in the flash-drive root (top-level) directory.
2. Plug the flash drive into the amplifier's USB port on the front panel.
3. The screen asks if you want to load or save a file. Press the left Encoder to LOAD a file.
4. The screen asks whether you want to load a device file or preset file. Press the left Encoder to load a device file, or press the right Encoder to load a preset file.
5. The screen says "Select File to Load." Turn an Encoder to select the file.
6. If you are loading a preset, the front panel shows the acceptable files in the flash drive root directory. Turn the Encoder to view the files; press the Encoder to select. Note: You can't explore folders or subfolders.
7. The amplifier loads the file into its memory and displays the Eject Menu. To stop the transfers, press the left Encoder. To continue with more transfers, press the right Encoder.
8. Unplug the flash drive. The amp is unmuted and returns to the determined state.
9. If desired, recall the preset following the procedures in Sections 4.3.2 and 4.3.3.

See Menu Tree Diagram on next page...

