LUCAS NANO REMOTE

Apple iPad™ remote control app for LUCAS NANO 608i

Manual

V. 1.0

• English

1 Introduction

Welcome

to HK Audio's LUCAS NANO REMOTE app. It puts at your fingertips a digital mixing console chock-full of DSP-supported auxiliary functions that let you control your LUCAS NANO 608i remotely.

Augmenting and enhancing the LUCAS NANO 608i's onboard mixer, the app comes with professional-grade features such as a Low Cut filter, four-band EQ, Compressor and Panorama controls for each channel. You also get a graphic master EQ and the tools to save entire mixer scenes and channel presets. We tuned this feature set to make the most of your LUCAS NANO 608i. Great audio performance is within easy reach of the convenient remote control.

Tech tip:

This app addresses only NANO 608i's DSP-supported functions, and not its analog control features – that is, the Gain/Volume knob, the Input Select, Phantom Power, and Setup switches, Mix/CH 3/4 Thru and Control Mode. You have to adjust these settings physically on the NANO 608i. However, the app does retrieve and show you the settings of the Input Select, Phantom Power and Setup switches for informational purposes. The same goes for all control features on the NANO 608i, apart from the channel Gain/Volume settings.

2 Getting Started

Installing the App

You can download the LUCAS NANO REMOTE app for iPad for free from the Apple App Store. To find it, search for "LUCAS NANO REMOTE" or follow this link:

Download on the App Store

https://apps.apple.com/us/app/lucas-nano-remote/id1030344238

Install LUCAS NANO REMOTE on your iPad as you would any other app.

Tech tip:

LUCAS NANO REMOTE runs on second generation or later iPads with the iOS9 or a newer operating system.

Launching the App

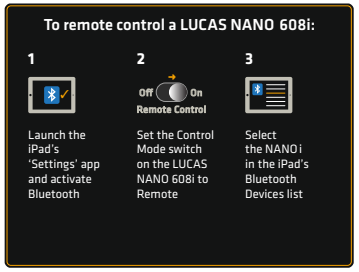
HK AUDIO
LUCAS NANO

- Tap the app icon to launch LUCAS NANO REMOTE.

Connecting the iPad to a LUCAS NANO 608i

The iPad and LUCAS NANO 608i communicate via Bluetooth, a widely used and proven radio technology that transmits data wirelessly.

You have to first pair the iPad with LUCAS NANO 608i via Bluetooth before you can control LUCAS NANO 608i remotely using the app.



To this end:

- Open your iPad's Settings app and enable Bluetooth.
- Set the Remote Control switch on the back of the NANO 608i to on.
- Tap "LUCAS NANO 608i" in the iPad Bluetooth device list.

The iPad will detect and connect to your NANO 608i if it is within range, powered up and Remote Control is set to on to enable Bluetooth.

- The blue Bluetooth LED on the NANO 608i lights up and stays on to indicate it is connected.
- If the iPad and NANO 608i already 'know' each other, they will connect automatically as soon as NANO 608i is switched on and within range.

Again, the NANO 608i has to be in Remote Control mode, connected to the iPad via Bluetooth and within range to be detected. If not, the app launches in Demo mode. All its functions are enabled in this mode, so you can do things like preconfigure a setup without having to switch on the NANO 608i.

▶ Learn more about Bluetooth in chapter 10.

3 LUCAS NANO REMOTE's Operating Panels

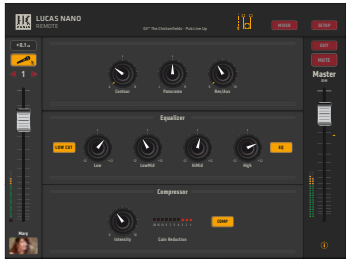
We designed LUCAS NANO REMOTE with simple, intuitive operation in mind and tailored it to help you coax the best audio performance from your LUCAS NANO 608i. The app gives you three pages to work with:

The Mixer Page

This your general-purpose operating panel. It shows you the channels' status, lets you make quick volume adjustments, and mutes and unmutes individual signals.

▶ See chapter 4 for details.

The Channel Page



This window affords you access to all settings and sound-shaping tools for the currently selected channel, such as Panorama, EQ and Compressor. You can switch between Easy mode (picture here) and Expert mode as you see fit.

▶ See chapter 5 for details on the Channel page.
▶ See chapter 6 for details on Easy mode.
▶ See chapter 7 for details on Expert mode.

The Master Page

This panel accesses the controls in LUCAS NANO 608i's output section such as the Sub and Balance knobs for the satellites, the seven-band Master EQ, and the Reverb section.

▶ See chapter 8 for details.

General Info

LUCAS NANO REMOTE is built for clarity and easy, fast access. You can jump directly from one page to another, so the most important controls are always at your fingertips:

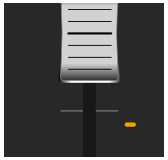
- The Master fader stays on the right of the screen so it's always there for you to make quick master volume adjustments.

- The Status display stays anchored to the top edge of the screen to indicate the operating mode (Mono, Stereo, Twin Stereo) of your remote-controlled NANO 608i. Next to it, you'll find an icon that indicates the signal strength of your iPad and NANO 608i's Bluetooth connection, alongside the Setup button for basic settings.

- The most recently used channel fader always appears on the left of the screen, except on the Mixer page. Use the left/right arrows to go from one channel to the next. On the Channel page, you can also swipe sideways to sweep through the channels.

Tech tip:

Hardware always comes first. If you turn a knob on the NANO 608i while the app is up and running, the app will register the new setting. You can continue using the app as a remote control, adjusting settings at any time from this new set point. To give you a better picture of these settings, the app uses little yellow markers to indicate the actual positions of the remotely controllable features on the LUCAS NANO 608i:



4 The Mixer Page

This panel presents the input channels' signal levels, their activation statuses and their labels. It's modeled on the standard configuration of compact mixers, with the input channels arrayed in ascending order from the left and the Master section located on the right.

Control Features and Basic Functions

Fader (Channel)

Use this fader to remotely control the volume of that channel on the LUCAS NANO 608i.

- The default position is 0 dB, as indicated by the thick line in the upper third of the control path. This setting corresponds to the Gain/Volume setting on the LUCAS NANO 608i. You can boost the level set on the LUCAS NANO 608i by up to +6 dB or cut it by as much as -90 db.
- When you touch a fader, its current value appears as a number in the Edit-Button above, and disappears again when you release the fader:

- A double-tap on the fader cap resets the fader to 0 dB.
- Channels 5/6, 7/8, and Reverb have stereo faders.
- You can combine channels 3 and 4 to create a stereo channel with linked faders. See chapter 2, section 10, of the LUCAS NANO 608i user manual for more on this.

Tech tip:

The Gain/Volume controls on the LUCAS NANO 608i are analog knobs that cannot be remote-controlled via the app.

Mute (Channel)

The Mute button switches the channel on an off.

- Activating Mute silences the channel's output. This also mutes the Rev/Aux Send bus if you have enabled Aux Send Pre Fader in the Setup menu.
- A muted channel's Mute button flashes. The corresponding Overload LED on the LUCAS NANO 608i flashes at the same rate. This way, you don't have to consult the iPad to see if a channel is muted. A quick glance at the NANO 608i tells you that.

Good to know:

If channels are muted without an iPad being connected, you can override all mutes by briefly turning the Master volume knob on the NANO 608I. This also overrides any reduction of the master volume set by the app's Master fader.

The icon on the Mute button indicates the input source (Mic/Instrument/Line) selected with the given channel's Input Select switch on the LUCAS NANO 608i. This is why you will see a diagram of a microphone, guitar, or mixer. Channel 7/8 also has a Bluetooth icon that tells you its input is configured to stream audio signals.

- The icons serve informational purposes only. You can't switch the Input Selectors via the app.

Edit (Channel)

Use the Edit button to go to that channel's page and access its auxiliary functions (Contour, Pan, Rev Send, EQ and Compressor).

LED Meter

To the left of the fader is a 20-segment level meter. When the fader is set to 0 dB, it shows precisely the level of the input signal as determined by the Gain/Volume knob on the NANO 608i.
The LED meters for channels 5/6, 7/8, and Rev/Aux are stereo indicators.

Tech tip:

These meters show the post-gain signal levels tapped post or after the Gain/Volume control.

Overload LED

The red Overload LED below the LED meter corresponds to and behaves in the same way as the physical Overload LED on the NANO 608i. It lights up to tell you an incoming signal is saturating the NANO 608i's input stage.

Tech tip:

LUCAS NANO 608i has enough headroom to handle occasional signal peaks. However, if an Overload LED lights up constantly or you can hear distortion, back off the given channel's Gain/Volume control to stop that signal from overloading the NANO 608i.

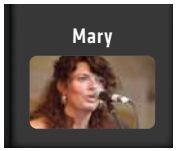
Sound tech trick:

How to dial in the right level: It is important to get the signal levels the right in the interests of minimizing noise. To this end, set the input channels as high as they will go with the signal remaining clean. Usually, this means adjusting levels to the point just before the Overload LED starts lighting up at signal peaks. Then turn up the Master volume only as far as necessary. This should leave you with a good signal-to-noise ratio.

Channel Name

Apart from Rev/Aux, you can name each input channel as you see fit. The factory names are the channel numbers. Tap the channel number below the fader and then tap Name. A keypad appears on screen; use it to enter a name and/or iPad emojis.

Channel Photo



This option lets you assign an image or photo to each input channel apart from Rev/Aux.

- Tapping the Channel Photo icon opens a selection menu. Use the iPad camera to take and load a new photo. You may also select an image from the iPad's photo library. Pinch the photo or image and open or close your fingers to scale it to fit.
- You also have a range of colored icons to color-code the input channels, making it easier to tell them apart.
- Tapping Clear deletes both the image and the file name.

Tech tip:

Channel Photo settings are stored in the iPad's memory rather than on the NANO 608i. If you do not want to lose the current settings when loading a preset or deleting the app, we recommending saving them as a scene. It retains all channel settings and photos. See the section entitled Scenes later in this chapter for more on this.

Master Fader

The Master fader controls the system's overall volume. A stereo control, it behaves like a dimmer connected to the LUCAS NANO 608i's Master knob.

- The Master fader can reduce the volume from the master level set on the NANO 608i, but it cannot boost it any higher than this. This faders' highest position corresponds to the NANO 608i's Master knob setting.
- The little yellow marker to the right of the Master fader shows the position of the Master knob on the NANO 608i.

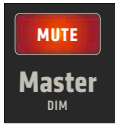
Good to know:

If you do not have an iPad at hand, by want to override a reduction of the overall volume set by the Master fader, then simply give the Master volume knob on the NANO 608i a quick turn. This also overrides all activated mutes.

Master Edit

This button takes you to the Master page, where you can access features such as the graphic Master EQ and reverb presets. See chapter 8, Master Page, for more on this.

Master Mute



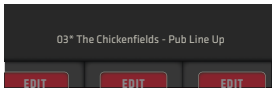
This button mutes the NANO 608i's power amp's output channels. Think of it as the system's emergency brake. Handle with care! – that's what the flashing red light is meant to tell you.

- When you tap the Master Mute button, it and the Status indicator on the NANO 608i will flash at the same frequency and the NANO 608i's rear speaker LEDs lights up orange. This way, the indicators on the NANO 608i also tell you that the Master channel is muted.
- The Mute button does not affect the Footswitch/Aux Send jack, so you can continue to use this bus for monitoring purposes.

Good to know:

If you wish to unmute the Master channel, but do not have an iPad connected, simply give the Master volume knob on the NANO 608i a quick turn. This also unmutes all channels.

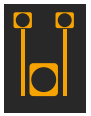
Current Scene Name



This panel shows the memory slot number and the name of the currently loaded scene at the top center of the screen. An asterisk in front of the name indicates that the scene has been edited, but not saved..

▸ See the section entitled Scenes later in this chapter.

Nano Status



The Nano Status icon indicates if the NANO 608i is operating in stereo or mono mode. The little diagram shows a stereo satellite or a satellite array, depending on the position of the Setup switch on the NANO 608i. This icon is there for informational purposes only; you can't use it to remotely switch the setup.

• This indicator also tells if you the NANO 608i's Link port is in use; that is, if two NANO 608i systems connected via a link cable and configured in a Twin Stereo setup.

Good to know:

If you wish to configure two LUCAS NANO 608i systems in a Twin Stereo setup, be sure to assign each NANO 608i to a side (left or right) using its Balance knob. For more on this, consult the "Link In/Out" section in the NANO 608i manual. The app's balance control is automatically deactivated in this mode to prevent handling errors.

Bluetooth Signal Strength

A five-segment segment indicator tells you the strength of the signal connecting the NANO 608i and iPad. It looks and works just like the indicators on smartphones.

• It gives you a visual indication as to the quality of communication between devices. If the connection is poor, you can try moving the NANO 608i or iPad a little this way or that to get a stronger, more stable signal.

▸ Read chapter 10 to learn more about the Bluetooth connection.

Scenes

Tapping the Scenes button opens a menu that serves to manage mixer scenes. A scene contains all settings on the Mixer page (Channel Fader, Mute, Names and Photos), all settings on the individual Channel pages (Contour, Rev Send, Low Cut, EQ and Compressor), the Reverb preset and the Master EQ on the Master page.

The Master Volume, Sub and Balance settings on the Master page are not stored with a scene. These settings generally vary with each event and venue, which is why you don't want a scene overriding your settings and changing the system's sound.

You can determine if the app will load the Master EQ setting of a scene using the Ignore Master EQ in Scenes option in the Setup menu. See chapter 9, Setup Menu, for more on this. This option comes in handy when you don't want the Master EQ settings stored with the scene to override your current Master EQ settings.

The app only loads Easy scenes in Easy mode and only Expert scenes in Expert mode. You can see the other mode's scenes, but they are grayed out and cannot be selected. If you wish to select a grayed-out scene, you will have to change the mode in the Setup menu. For more on this, see Chapter 9, Setup Menu.

The panels shows the loaded scene's name at the top in the header. The asterisk in front of the name indicates that the current scene has been edited, but the changes have yet to be saved. This is also indicated by the term "*modified" appearing at the bottom left above the Load button.

• Tap No. to sort the scenes by number, Name by name, and Date by date. The Mode column indicates the mode in which the scene was created, Easy or Expert. You can also sort scenes by mode.

The yellow line indicates the currently loaded scene. The currently selected scene appears with a color backdrop or frame.

The app enables the action buttons at the bottom depending on which scene you have loaded or selected:

• Tapping the Load button loads the selected scene.

• Use Save... to save the selected scene to the current position or to a newly selected position.

• Delete erases the selected scene. A CAUTIONARY WORD: This scene will be wiped out permanently, never to be retrieved.

• Use Share to manage and share the selected scene using the usual iPad tools. The iPad has be connected to the Internet to share scenes.

•The Select button lets you select several scenes at once to execute the same action for all.

• If you want to rename a scene, press and hold its name to open the Rename menu.

Caution!

The settings of the input channels' Gain/Volume controls, their Input Selectors' positions and the NANO 608i's Master volume level cannot be saved. If anyone changed these knobs/switches' settings since that scene was last saved, the volume level may jump when you load a scene. The same goes for scenes shared between NANO 608i systems. There may be considerable differences in volume if the sharing and receiving systems' knob and switch settings are not the same.

Tech tip:

Scenes are stored on the iPad rather than on the NANO 608i. All scenes will be deleted from the iPad if you delete the app. Just to be safe, it is a good idea to get into the habit of regularly backing up your settings.

The Scenes menu behaves like any iPad pop-up window. It opens in the foreground of the current page and closes again when you tap outside the window.

More About the Mixer Page

Setup

The Setup menu serves to configure the basic settings for LUCAS NANO REMOTE. You can access it from any page via the Setup button.

▶ See chapter 9, Setup Menu, for details.

Info Button

The little i button brings up a help window that briefly explains the Mixer page's key features.

Phantom Power

The NANO 608i can feed phantom power to condenser microphones connected to channels 1 and 2. Little icons appear on the channel 1 and 2 Mute buttons when you activate phantom power. These icons serve informational purposes only. You can't switch phantom power off and on via the app.

Channel 3/4 Stereo Link

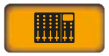
Setting channels 3 and 4's Input Selectors to Line configures a new stereo channel 3/4. Consult the LUCAS NANO 608i manual for more on this.

This option also links the two channels faders' in the app, so the DSP executes all applicable functions in stereo. The yellow Stereo Link icon tells you the faders are linked.

The Stereo Channels on the Mixer Page

Stereo channels 5/6, 7/8 and Rev/Aux are each equipped with a stereo fader. Their level indicators are also dual meters.

Channel 5/6



Channel 5/6 is strictly a line stereo channel. The inputs do not report their status to the app, so the panel will always show a stereo fader even when you use just the left L/Mono input.

Channel 7/8

You can use stereo channel 7/8 either as a stereo line input or to stream audio via Bluetooth. The respective icon will appear on the Mute button.

Tech tip:

NANO 608i is designed to pair with just one Bluetooth-enabled device at a time. If you wish to stream audio, you will have to do it from the same iPad you are using to control the NANO 608i.

You can stream audio from any Bluetooth-enabled device when you are not using the app on a connected iPad. To this end, set the channel 7/8 Input Selector on the NANO 608i to Bluetooth. Set its rear Remote Control switch to on only when using the LUCAS NANO REMOTE app to remotely control the NANO 608i.

Rev/Aux Channel

LUCAS NANO REMOTE provides an auxiliary stereo channel that you won't find on the NANO 608i. It serves as a return bus for the built-in Reverb effect processor's signal so you can adjust its level. The Rev (short for Reverb) fader controls the overall effect level. The Mute button mutes the effect and shows the name of the currently selected Reverb preset.

Selecting the 8 Aux Send Reverb preset deactivates the internal effect processor. The channel label then changes to Aux. Fader and Mute button address the Footswitch/Aux Send jack, which provides a composite signal made up of all channels' Rev/Aux Sends.

Tech tip:

You won't find an EQ or Compressor on the Rev/Aux channel, which is accessible only from the Mixer and Master pages. This is why tapping its Edit button will take you to the Master page, where we find the Reverb panel.

Sound tech trick:

You can connect a standard footswitch to the Footswitch Rev. on/off jack to mute the Reverb signal. This activates the Rev/Aux channel's Mute button remotely, leaving your hands free to play an instrument.

5 The Channel Page

Tapping an input channel's Edit button takes you to its Channel page, which affords access to all of the channel's mixer functions (Contour, Rev/Aux Send, Panorama/Balance, Low Cut, EQ and Compressor). Most of these DSP functions are only available in the app.

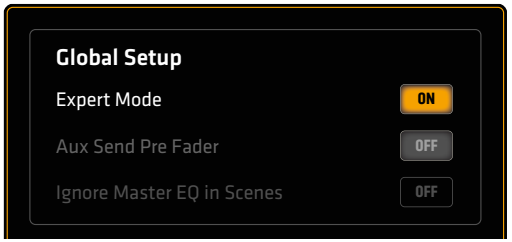
The Channel page toggles between Easy and Expert modes so you can set it up to suit your skill set. Easy mode's streamlined control panel looks a lot like an analog compact mixer with just a few knobs. Expert mode features a more complex mixer with the full parameter array, including an Equalizer that lets you draw EQ curves and quite a few Compressor controls.

Channel page in Easy mode

Channel page in Expert mode

Select Easy or Expert mode in the Setup menu.

▶ See chapter 9, Setup Menu, for details.



The app is in Easy mode when the Expert Mode button is set to off. Tap this button to switch Expert mode on.

The following applies to both operating modes:

- The currently selected channel appears on the left. This panel affords you direct access to all channel control features found on the Mixer page, for example, Fader, Mute and Name. Use the red left/right arrows to navigate to other channels or swipe sideways in the area around the center of the screen to sweep through the channels.
- At the top of the panel, you'll see the NANO Status indicator and the Bluetooth signal strength icon. At its right edge, you'll find the Master Fader, Master Mute and Master Edit, just like on the Mixer page.
- The control features for the currently selected channel appear at the center of the screen.

Good to know:

Channel presets are available in Expert mode only.

Tech tip:

A word about the signal flow: In both Easy and Expert modes, the incoming signal is first amplified by the NANO 608i's input gain stage. It then goes to the Contour, Low Cut, EQ and Compressor controls, moving on to the Rev/FX Send signal tap before it arrives at the Panorama or Balance controls – in that order.

Pro trick:

The best way to adjust LUCAS NANO REMOTE's knobs is perhaps a little counterintuitive: Place your finger in the area beside rather on the knob. The iPad's touch display is much better at tracking the motion if you rotate your finger slowly and a bit further from the knob. If you place your finger at the center of the knob, the touch display does a poor job of tracking the direction of movement.

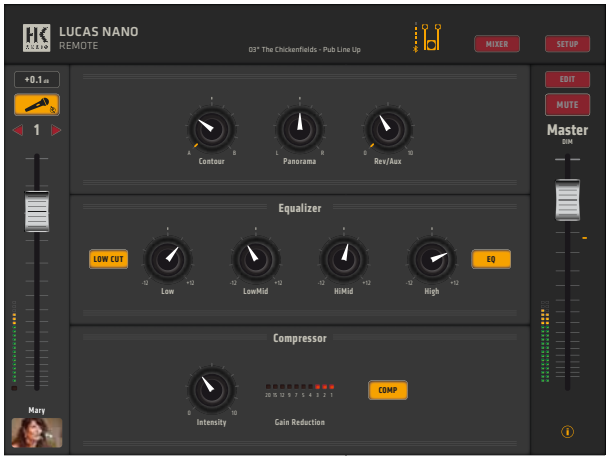
Special Features of the Channel Page

Channel 7/8 has just one Panorama knob, and no Contour and Rev Send controls, which are also unavailable on the NANO 608i.

The Rev/Aux channel is nonadjustable, which is why you won't find any channel settings for it on the Channel page.

A little yellow marker in the app indicates the actual position of every remotely-controllable feature on the NANO 608i. If you turn a knob on the NANO 608i, the control on the app moves to the same value, which you can then adjust further in the app as you see fit.

6 The Channel Page in Easy Mode



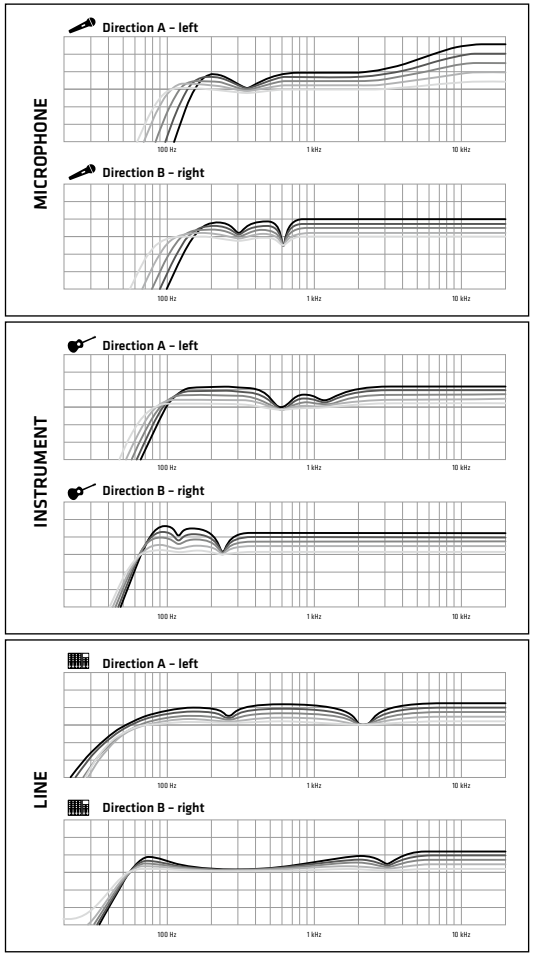
Easy mode is as easy to handle as a compact analog mixer. Tuned to get less experienced users started straightaway, its simplified EQ and Compressor parameters provide manageable control options that let people without a lot technical expertise achieve good results.

• Tapping the HK Audio logo takes you to the Mixer page.

Contour

The Contour knob works just like the NANO 608i's Contour knob. It controls a three-band voicing section that shapes the input signal's frequencies.

- The Contour knob does not affect the signal when it is set to the center or 12 o'clock position. Turning it to the left changes the tone in one direction (characteristic A); turning it to the right in another (characteristic B). The position of the Input Selector (Mic/Instrument/Line) determines what these characteristics are.
- Double-tapping the knob resets it to the center or 12 o'clock position.
- The yellow marker indicates the setting of the Contour knob on the NANO 608i. If you turn this physical knob, the app's virtual knob moves to the same position.



▸ Consult the NANO 608i manual for details on Contour characteristics.

Panorama/ Balance

You won't find these knobs on the NANO 608i, but those in the app let you move any input signal to any position in the stereo-scape. Mono channels 1 to 4 feature a Panorama knob; stereo channels 5/6 and 7/8 a Balance knob.

- If you link mono channels 3 and 4 to create stereo channel 3/4 by setting both Input Selectors on the NANO 608i to Line, the app will combine their two Panorama controls in one Balance knob.
- Double-tapping the knob resets it to the center or 12 o'clock position.

Good to know:

This feature is available on the app only.

Rev/Aux

The Rev/Aux works just like the NANO 608i's Rev/Aux knob. It adjusts the level of the signal sent from this channel to the onboard Reverb or to the Aux Send output, depending on which Reverb preset you have selected. See chapter 8, Master Page, for more on this.

- Double-tapping the knob resets it to zero.
- The yellow marker indicates the setting of the Rev/Aux knob on the NANO 608i. If you turn this physical knob, the app's virtual knob moves to the same position.

Sound tech trick:

About Rev/Aux Send Pre Fader: The Setup menu lets you move the position at which the signal is tapped from post fader to pre fader, or in Easy mode, from post to pre knob. See chapter 9, Setup Menu, for more on this.

If you go with the Pre Fader option, the app taps signals before they arrive at the Rev/Aux knobs. This way, the individual channels' reverb signals stay in the mix even when you adjust these knobs, for example, for a monitor mix.

Low Cut

The Low Cut button activates the Low Cut filter. The cut-off frequency and slope are fixed at 100 Hz and 12 dB/ octave, respectively. You can activate the Low Cut filter independently of the EQ.

Good to know:

A low-cut filter attenuates the frequency range below the cutoff frequency. It lets all frequencies above the cutoff frequency pass, which is why it is also called a high-pass filter. This type of filter serve to cut rumbling low-frequency signals such as footsteps or the popping sounds produced when people speak or sing into a microphone at very close quarters.

Pro trick:

It's all about the bass: Good sound starts with clean signals, and half of that battle is won with tight, crisp low-frequency response. Most microphones, guitars and instruments deliver more low-frequency signals than you really need, so it is a good idea to thin out the bass. You could, and perhaps should, activate Low Cut for all signals apart from kick drums, bass guitars, cellos and other instruments where the low frequencies are part of the instrument's DNA. This eliminates all those low-frequency signals that are not musically relevant.

The power amp also benefits when you dial in tight, crisp low-frequency response. That way, it does not waste a lot of power rendering signals that do nothing but muddy up your soundscape.

The Equalizer in Easy Mode

The Easy mode voicing section is a simple four-band EQ with fixed frequencies and slopes of the kind found on compact analog mixers.

- It lets you cut and boost the individual bands by 12 dB.
- We tuned it to boost a wider spectrum of the two midrange bands than it cuts, which goes to achieve more musical results.

EQ characteristics:	
Low EQ	120 Hz, shelf
LowMid EQ	300 Hz, peak
HiMid EQ	2.8 kHz, peak
High EQ	8 kHz, shelf

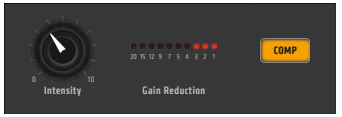
- Double-tapping a knob resets it to default.

EQ

Use the EQ button to switch the four-band equalizer on and off. The controls are grayed out when the EQ is deactivated, but they are still adjustable.

- Press and hold the EQ button to reset the entire EQ.

The Compressor in Easy Mode



There is a lot more to the Intensity knob than this no-frills panel would suggest. It accesses a very good Compressor with streamlined controls. The lone Intensity knob controls nothing but the amount of compression, yet delivers remarkably musical results.

Handling is simple, but effective:

Turn it counterclockwise to reduce compression until you arrive at the far left position, where there is none at all. Turn it clockwise to the tight to go from slight to heavy compression culminating in a very – for lack of a better word – fat signal.

The LED meter gives you a visual indication of the amount of compression.

Good to know:

A compressor shapes the dynamics of an audio signal by attenuating the loud bits at a specified ratio to iron out the peaks and valleys in the signal. The louder and softer parts of the signals are closer together, so the compressed signal's level fluctuates less to create a denser or fatter sound.

Intensity

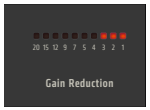
Turn this knob to adjust the amount of compression.

- Double-tapping the knob resets it to zero.

Good to know:

This Compressor provides soft-knee compression with auto gain. In other words, it gradually cuts levels and automatically brings the loudness up again as the amount of compression increases. We tuned attack, release, ratio and all other parameters for a musical response. They are preset and cannot be changed in Easy mode.

Gain Reduction Indicator



The ten-segment LED meter labeled Gain Reduction gives you a visual indication of the extent to which the compressor is reducing the signal's gain. The more LEDs light up, the greater the amount of applied compression.

Pro trick:

Moderate compression with one to three LEDs lighting up at normal signal levels and five to seven at peaks works well for speech and vocals.

Produced tracks from a CD player or Bluetooth audio stream rarely require any further compression.

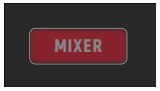
Comp Button

The Comp button inserts the compressor into the signal path. The Intensity knob is grayed out, but remains adjustable when the compressor is switched off. Pressing and holding the Comp button resets the Intensity knob to zero.

Pro trick:

Compressors are great for ironing out dynamic signals such as speech, vocals, acoustic guitars and the like. We advise caution at gigs, though. The PA is more prone to feedback with compressed signals. Compression also increases the noise level.

Mixer Button



The Mixer button quits the Channel page and takes you to the Mixer Page.

- Tapping the HK Audio icon at the top left corner also takes you there.

Info Button

The little i button brings up a help window that briefly explains the Channel page's key features.

7 The Channel Page in Expert Mode

Switch the Channel page to Expert mode if you want to carve out you sound with a more precise surgical tool. Expert Mode affords you access to the full EQ and Compressor feature sets. It works much like a professional digital mixing console.

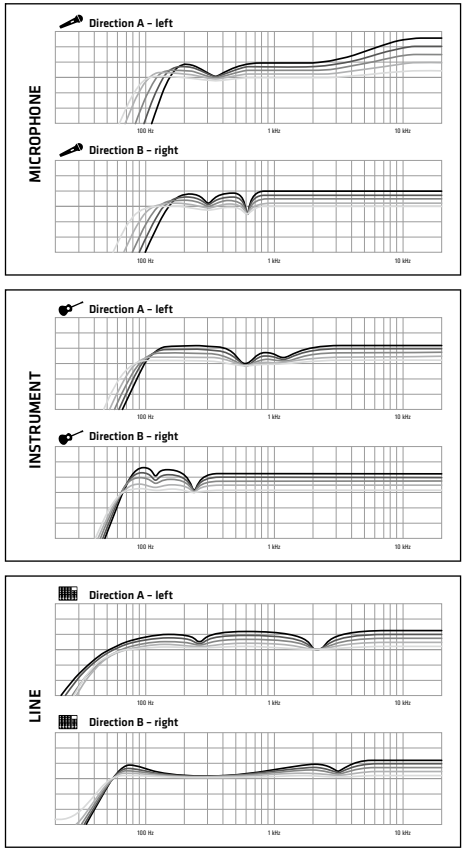
The layout in Expert mode is the same is in Easy mode, with all the familiar controls sited left, right and center. One difference is that the Contour, Panorama/Balance and Rev/Aux Send controls are faders rather than knobs. Another is the Equalizer and Compressor modules' feature sets are a lot more extensive.

You also get a Presets button for managing channel settings.

- Tapping the HK Audio logo takes you to the Mixer page.

Contour

The Contour knob works just like the NANO 608i's Contour knob. It controls a three-band voicing section that shapes the input signal's frequencies. The Contour knob does not affect the signal when it is set to the center or 12 o'clock position. Turning it to the left changes the tone in one direction (characteristic A); turning it to the right in another (characteristic B). The position of the Input Selector (Mic/Instrument/Line) determines what these characteristics are.



▸ Consult the NANO 608i manual for details on Contour characteristics.

- Double-tapping the knob resets it to the center or 12 o'clock position.
- The yellow marker indicates the setting of the Contour knob on the NANO 608i. If you turn this physical knob, the app's virtual knob moves to the same position.

Panorama/ Balance

Mono channels 1 to 4 feature a Panorama fader; stereo channels 5/6 and 7/8 a Balance fader.

- If you link mono channels 3 and 4 to create stereo channel 3/4 by setting both Input Selectors on the NANO 608i to Line, the app will combine their two Panorama controls in one Balance knob.
- Double-tapping the knob resets it to the center or 12 o'clock position.

Good to know:

This feature is available on the app only.

Rev/Aux

The Rev/Aux knob works just like the NANO 608i's Rev/Aux knob. It adjusts the level of the signal sent from this channel to the onboard Reverb or to the Aux Send output, depending on which Reverb preset you have selected. See chapter 8, Master Page, for more on this.

- Double-tapping the knob resets it to zero.
- The yellow marker indicates the setting of the Rev/Aux knob on the NANO 608i. If you turn this physical knob, the app's virtual knob moves to the same position.

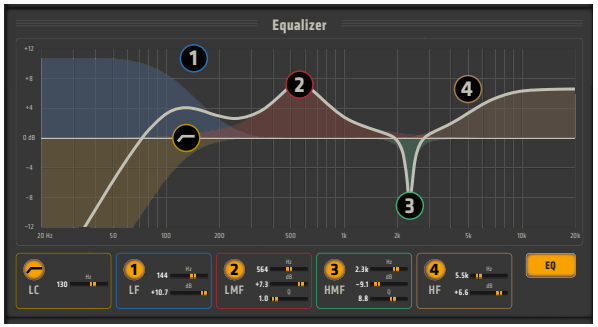
Sound tech trick:

About Rev/Aux Send Pre Fader: The Setup menu lets you move the position at which the signal is tapped from post fader to pre fader. See chapter 9, Setup Menu, for more on this.

If you go with the Pre Fader option, signals are tapped before they arrive at the Rev/Aux faders. This way, the individual channels' reverb signals stay in the mix even when you adjust the faders, for example, for a monitor mix.

The Equalizer in Expert Mode

The equalizer in Expert mode consists of a parametric four-band EQ and a tunable Low Cut filter.



Each frequency band is coded with a different color. We chose the frequency ranges for the two outer EQ bands with practicality in mind. Limited to sensible musical values, these narrow ranges preclude handling errors that could damage speakers and electronic components. The two midrange bands are fully parametric and adjustable over the entire frequency range. You can determine the filter curve's slope and center frequency as you see fit. The slopes are steep, so you can dial EQ settings with great precision..

- You can adjust the Equalizer by moving faders and by drawing the EQ curve.
- The parameter boxes and windows that show frequency curves are interactive.

LC (Low Cut)

The round LC button in the parameter box framed in yellow on the left below the frequency curve window switches on the Low Cut filter.

- Tap the parameter box to zoom up an enlarged view. Set the desired value with its Frequency fader.
- Pressing and holding the round LC button resets the Frequency fader to its default value (80 Hz).

Low Cut filter:	
LC	20 – 400 Hz • 12 dB/octave

- The frequency curve window also shows the Low Cut filter in yellow.
- Place your fingertip on the LC dot to edit the frequency graphically by drawing the desired curve.
- Double-tapping the LC dot switches the LC filter off.
- The controls are grayed out, but remain adjustable when the LC is deactivated.

Equalizer

A four-band equalizer is available for each input channel. The EQ bands for bass (LF = low frequency, blue) and treble (HF = high frequency, brown) are semi-parametric. The two mid-bands (LMF = low mid frequency, red and HMF = high mid frequency, green) are fully parametric. You can cut and boost all four bands by up to 12 dB.

EQ characteristics:	
LF	20 – 400 Hz • low shelf
LMF	20 – 20,000 Hz • Q factor 0.5 – 20 • belll
HMF	20 – 20,000 Hz • Q factor 0.5 – 20 • bell
HF	4,000 – 20,000 Hz • high shelf

- Set the corner frequency for the LF filter as you see fit – anything from 20 to 400 Hz goes. Settings are infinitely variable within this range, but the filter type is fixed (low shelf).
- The two midrange LMF and HMF filters can sweep through the entire frequency spectrum from 20 Hz to 20 kHz.
- Set the corner frequency for the HF filter as you see fit – anything from 4 to 20 kHz goes. Settings are infinitely variable within this range, but the filter type is fixed (high shelf).
- Each frequency band may be activated separately via its On button. Pressing and holding the On button sets the parameters of that frequency band to default values.
- Tapping to the right of a parameter area inside a frequency band box opens an enlarged view of the parameter box that lets you make finer adjustments.
- Double-tapping the EQ Gain fader in the parameter box only resets its gain to zero. The frequency remains at the current position, as does the Q factor for the two midrange bands.
- The controls are grayed out, but remain adjustable when the EQ is deactivated.

Drawing an EQ Curve

To draw a frequency curve, simply place your fingertip on the numbered dot for each EQ band and move it. The iPad's Multi-Touch feature lets you edit several bands at the same time.

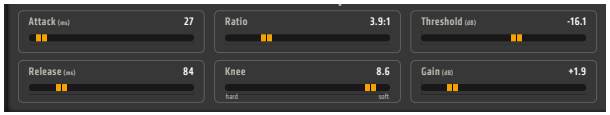
- You can also pinch the screen – that is, move your finger and thumb apart or bring them together – to adjust the steepness of the curve's slope for the midrange bands.
- You can switch each EQ band on and off by double-tapping its numbered dot.

EQ

The EQ button switches the Equalizer on and off. The controls are grayed out, but remain adjustable when the EQ is deactivated.

- Pressing and holding the EQ button resets all EQ parameters.

The Compressor in Expert Mode



Expert mode accesses a full-fledged RMS Compressor with an extensive parameter set featuring Threshold, Ratio, Attack, Release, Knee and Gain.

• Double-tapping a control resets it to its default value.

Attack

The Attack fader tells the Compressor how long to wait before it starts compressing a signal with a level exceeding the Threshold value.

Release

The Release fader tells the Compressor how long to wait before it stops compressing the signal after its level drops below the Threshold.

Threshold

Threshold is the level at which the Compressor kicks in. The Compressor processes signals with levels exceeding this threshold and lets signals with levels below the Threshold pass.

Ratio

Ratio determines how much compression is applied to a signal that crosses the Threshold. The control range sweeps from 1:1, which means no compression, to 20:1, which constitutes full-on limiting. A ratio of 2:1 means that the compressor will bring a signal that exceeds the Threshold by 2 dB down by 1 dB.

Knee

The Knee fader determines how the Compressor works. Set it to the far left for hard-knee compression and to the far right for soft-knee compression.

Good to know:

This parameter determines how hard the Compressor kicks in. The action of hard-knee compression is immediate – it kicks in as soon as the signal exceeds the set Threshold level to reduce the gain as determined by the entered Ratio. In other word, this compresses signal peaks above the Threshold hard. Soft-knee compression is slower. It reduces the gain of spiking signals gradually and to gentler, less noticeable effect. It applies the full reduction ratio only when the signal's gain goes well over the Threshold.

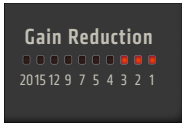
Pro trick:

Soft-knee compression is usually the better choice if you want less audible, more musical compression. Hard-knee compression is the way to go if you want anything from fast-acting surgical compression to hard limiting.

Gain

The more you compress a signal, the softer it will be. Use the Gain fader to compensate for the reduced level of the compressed signal. This control is often called Output Gain or Gain Makeup.

Gain Reduction



This ten-segment LED meter gives you a visual indication of the extent to which the Compressor is reducing the signal's gain. It tells you the actual amount of attenuation and how quickly the Compressor is kicking in and letting up.

Comp

• Tap the Comp button to activate the compressor.

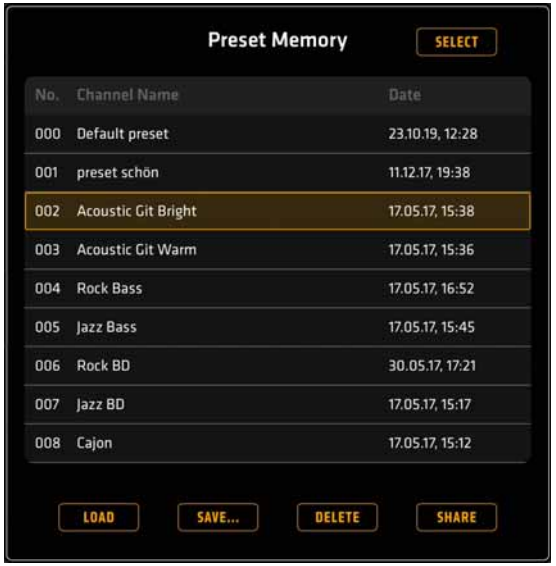
• Pressing and holding the Comp button resets all Compressor parameters to their default values.

Managing Presets

Tapping the Preset button opens the Preset Memory window. This is where you manage and save the settings for individual channel strips, and apply these setting to other channels.

- A preset contains all Contour, Low Cut, EQ and Compressor settings. The app does not save Panorama, Balance and Rev/Aux settings for the given channel. These settings you will usually make for a specific type of signal and, once you find a setup that works for you, leave it at that.
- Tap No. to sort the presets by number, Channel Name by name, and Date by date.

The colored frame distinguishes the currently selected preset from the rest. You can do several things with the selected preset:



- Tapping the Load button loads the selected preset.
- Use Save... to save the selected preset to the current position or to a newly selected position.
- Delete erases the selected preset. A CAUTIONARY WORD: This preset will be irretrievably deleted.
- Use the Share button to manage and share the selected preset with the usual iPad tools. The iPad has be connected to the Internet to share presets.
- The Select button lets you select several presets at once to execute the same action for all.
- If you want to rename a preset, press and hold its name to open the Rename menu.

If you load a mono channel preset to a stereo channel, the app will apply the same settings to both sides, and vice versa.

If the preset includes Contour and Rev/Aux settings, the app will not apply them to channel 7/8 because it lacks these controls. Conversely, the Contour and Rev/Aux settings for channels 1 through 6 will remain intact if you apply a channel 7/8 preset to any of these channels.

Tech tip:

The settings of the input channels' Gain/Volume controls and their Input Selectors' positions on the NANO 608i cannot be saved. If anyone changed these knobs and switches' settings since you last saved a preset, the volume level may jump when you load it.

A cautionary word:

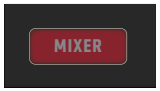
Presets are stored on the iPad rather than on the NANO 608i. All presets will be deleted from the iPad if you delete the app. Just to be safe, it is a good idea to get into the habit of regularly backing up your settings.

The Presets menu behaves like any iPad pop-up window. It opens in the foreground of the current page and closes again when you tap outside the window.

Good to know:

Presets are available in Expert mode only.

Mixer Button



The Mixer button quits the Channel page and takes you to the Mixer page.

- Tapping the HK Audio icon at the top left corner also takes you there.

Info Button

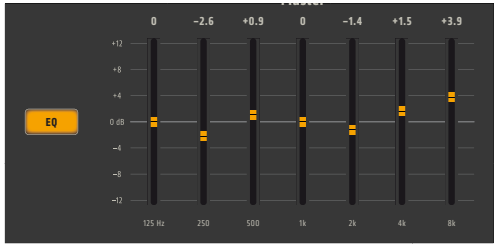
The little i button brings up a help window that briefly explains the Channel page's key features.

8 The Master Page

The Master Page accesses a graphic equalizer for the composite signal, the Rev/Aux Send controls for all channels including Reverb presets, and the Balance and Sub system settings.

- The layout of this page looks a lot like the others with the familiar controls sited at the left, right and top.
- Tapping the Edit button of the channel shown on the left takes you to its Channel page.
- The controls for the Master section and Reverb appear in the center panel.
- Double-tapping a control feature resets it to its default value.
- Tapping the HK Audio logo takes you to the Mixer page.

Master EQ



The Master EQ serves to shape the sound of the composite signal. Its On button drops this EQ into the signal path.

The Master EQ is a graphical equalizer with seven frequency bands. Each EQ band is adjustable by +/- 12 dB. We tuned its parameters to suit the NANO 608i. Its filters boost a wider range of frequencies than they cut, which makes for a more musical response.

- Double-tapping a frequency band resets it to zero.
- The Master EQ addresses only the signals sent to the NANO 608i's Speaker Outs; it does not affect the Mix Out signal.
- Go to the Setup menu to determine if a scene will overwrite the current Master EQ settings when you load it.

▶ See Chapter 9, Setup Menu, for more on this.

Good to know:

The Master EQ lets you adjust the overall frequency response of all signals rendered by the NANO 608i to suit the venue and compensate for any interference caused by the room's acoustics. This is why the EQ curve may look a bit different for every gig. You can also use the Master EQ to iron out any kinks in the frequency response, and adapt the overall sound to suit your taste.

EQ

The EQ button inserts the Master EQ into the signal path.

- The controls are grayed out, but remain adjustable when the EQ is deactivated.
- Press and hold the EQ button to reset all seven frequency faders.

Sub

The Sub knob works just like the NANO 608i's Sub knob. It adjusts the subwoofer's volume.

- Double-tapping the Sub knob resets it to its default value.
- The yellow marker indicates the setting of the Sub knob on the NANO 608i. If you turn this physical knob, the app's virtual knob moves to the same position.

Balance

The app's Balance knob controls the relative volume levels of the left and right channels. It works just like the NANO 608i's Balance knob.

- Double-tapping the Balance knob resets it to its default value.
- The yellow marker indicates the setting of the Balance knob on the NANO 608i. If you turn this physical knob, the app's virtual knob moves to the same position.

Tech tip:

Configuring the LUCAS NANO 608i as a mono system disables and grays out the Balance knob. The reasoning behind this is that when you link NANO 608i to another LUCAS NANO to operate the two in Twin Stereo mode, you don't want anyone accidentally nudging the hardware Balance knobs, which would skew the stereo image. This prevents that.

Reverb Presets

The eight Reverb Preset buttons serve the same purpose as the Reverb Preset knob on the NANO 608i – to select Reverb programs. Buttons 1 through 7 activate various Reverb presets. Preset 8 is an Aux Send that mutes the internal Reverb, in which case the signals from the Rev/Aux controls are routed to the Footswitch Rev/Aux Send jack.

- The yellow marker below a button indicates the preset selected on the NANO 608i. The app loads the same preset when you change a preset on the NANO 608i.

▸ Consult the LUCAS NANO 608i manual to learn more about Reverb presets.

Rev/Aux

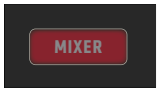
The Rev/Aux knobs are arrayed below the Reverb Preset buttons for you to see all channels' controls at a glance. These knobs serve the same purpose as the individual channels' Rev/Aux knobs on the NANO 608i.

- These knobs work interactively with the Channel page controls.
- The yellow markers indicate the positions of the Rev/Aux knobs on the NANO 608i. If you link channels 3 and 4 to create a stereo channel, a chain-link icon appears between Rev/Aux controls 3 and 4.

Pro trick:

Using reverb sparingly: Less really is more when it comes to reverb. Heaping on lots of reverb with long tails on all signals muddies your music and masks all the details. A long reverb tail may sound great with a slow ballad, but it soon becomes too much of a good thing in a fast song with a dense arrangement. Shorter reverb times better serve this purpose. Excessive use of reverb effects peaked in the '80s, but those days are long gone. ;-)

Mixer Button



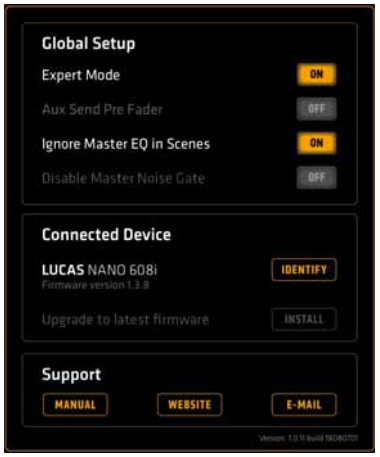
The Mixer button quits the Master page and takes you to the Mixer Page.

- Tapping the HK Audio icon at the top left corner also takes you there.

Info Button

The little i button brings up a help window that briefly explains the Channel page's key features.

9 The Setup Menu



The Setup menu is where you configure the app's basic settings. You can access it from any panel by tapping the Setup button at the top right.

The Setup menu behaves like any iPad pop-up window. It opens in the foreground of the current page and closes again when you tap outside the window.

Tech tip:

The Setup menu indicates the current version of the app running on your iPad at the bottom right (e.g. Version 1.0.11 built 18080701). This information comes in handy should you ever need support.

Expert Mode

This button sets the Channel page to Easy or Expert mode.

Easy mode offers fewer EQ and Compressor parameters and a streamlined control panel with knobs.

Expert mode provides the full set of EQ and Compressor features, parameter boxes with faders and drawable EQ curves.

The Contour, Panorama/Balance and Rev/Aux parameters are the same in both modes, the only difference being the way they are pictured.

Rev/Aux Send Pre Fader

This option relocates the effect send bus from post to pre fader.

- If you activate Rev/Aux Send Pre Fader, the app taps the Rev/Aux signals controls in front of the faders so the levels always remain at their set value even when the faders are moved.
- If you do not activate Rev/Aux Send Pre Fader, the app taps the signals after the channel faders, or post fader, at the levels determined by the Rev/Aux controls.

Tech tip:

The Rev/Aux bus comes after the Mute button in both modes. If you mute a channel, the Rev/Send controls will not receive a signal.

Another tech tip:

Rev/Aux Send Pre Fader: About Rev/Aux Send Pre Fader: If you enable this option, the app taps signals before they arrive at the Rev/Aux controls. This way, the levels set by the Rev/Aux controls stay the same, as does the monitor mix when you adjust faders.

Ignore Master EQ in Scenes

The app also stores the Master EQ settings when you save a scene. Use the Ignore Master EQ in Scenes button to determine if the Master EQ settings stored with the scene will override your current Master EQ settings.

Switch this button on if you want to keep the current master EQ settings. Switch it off if you want the scene's Master EQ setting to override your current settings.

Disable Master Noise Gate

This option switches off a low-level noise gate located in front of the NANO 608i's power amp outputs. It suppresses the noise floor during breaks – that is, when the system isn't getting a signal to amplify. The Master Noise Gate is off by default.

Tech tip:

The Master Noise Gate affects only the LUCAS NANO 608i speakers' response. It not does affect the other outputs or Link Out.

Pro trick:

To keep the system's noise floor down, be sure to turn the Gain/Volume knobs of all unused channels all the way down and set their Input Selectors to Line, which is far less sensitive than the Mic and Instrument settings. A good rule of thumb for minimizing noise is to turn up the channels' Gain/Volume as far as possible and the Master only as loud as necessary.

LUCAS NANO 608i - Identify

This box tells you if a NANO 608i is connected to the iPad. The Identify button will be enabled if this is the case. If not, the display will read "Not connected" and the Identify button will be grayed out.

- The Overload LEDs on the connected NANO 608i flash for ten seconds when you tap the Identify button. This helps you spot the connected device if you have several LUCAS NANO 608i systems on hand.

Tech tip:

Each LUCAS NANO 608i comes with a unique four-digit identification number. The iPad's Bluetooth menu displays this number.

Upgrade to latest Firmware

The Install button serves to load newly released firmware to the NANO 608i.

A yellow Install button tells you the app has found more recent firmware for the NANO 608i. A grayed out Install button means the NANO 608i is running the latest firmware version – provided that your iPad is running the latest version of the app.

- Follow the instructions on the iPad's screen when updating firmware.

Before you update firmware, check if the iPad is running the latest version of the app, as it also contains the firmware for the NANO 608i.

Heads up:

You will have to pair the NANO 608i and iPad again after a firmware update.

Tech tip:

A firmware update re-initializes the NANO 608i's EEPROM and the Bluetooth module. This wipes the iPad connection from the memory, so you will have to re-connect the iPad to the NANO 608i via Bluetooth after an update. To do so, you first have to go to the iPad's Bluetooth system settings, find "HK Audio LUCAS NANO 608i" in the list and manually select "ignore this device". Then you can pair the two devices again.

▶ See chapter 11, Firmware Update, to learn more.

Support

Manual: This button takes you straight to the online manuals for the LUCAS NANO 608i and the LUCAS NANO REMOTE app on the HK Audio website.

The iPad has to be connected to the Internet for this link to work.

Website: Tapping this button opens the iPad's Internet browser and takes you to the HK Audio website.

The iPad has to be connected to the Internet for this feature to work.

E-Mail: Tap the E-mail button to open a new e-mail in the iPad's e-mail program. The address service@hkaudio.com will automatically populate the "Send to" line.

The iPad has to be connected to the Internet for this feature to work.

10 Bluetooth

Bluetooth is a widely recognized, proven industry standard for wireless device communications. In contrast to WiFi, Bluetooth works everywhere to enable direct communication between connected devices. Pairing is an exercise in convenience. You've probably done this before if you own a smartphone or a wireless computer mouse.

The NANO 608i's Bluetooth interface serves two purposes – to control the PA remotely via the app and using an iPad, and to stream audio from Bluetooth-enabled devices. If you want to do both at the same time, you will have to do it from the same iPad because the NANO 608i can pair with just one Bluetooth-enabled device at a time.

Tech tip:

Once the NANO 608i connects to a Bluetooth device, both are invisible to other Bluetooth devices so no third device can access this pair.

LUCAS NANO 608i supports Bluetooth 2.1. Its specifications give a typical range of ten meters in general and 50 meters outdoors. The actual range will depend on factors beyond transmission power, for example, the devices' location, if the iPad is housed in a protective case, and so on. The environment also has an impact – things like walls can obstruct the transmission path.

Bluetooth Audio Stream Stutters or Drops Out

The LUCAS NANO REMOTE app sends individual data packets at short intervals, so it is a lot less susceptible to interference than an audio stream, which requires a constant flow of data.

For an uninterrupted audio stream, it is best to align the NANO 608i and the source device in line of sight of one another, with the two being no more than ten meters apart.

Tech tip:

Signal strength also depends on the iPad model or Bluetooth player's transmission power. Be aware that cases, covers, tablet holders and the like can affect signal strength.

To the Limits of Bluetooth's Range – and Beyond

The NANO 608i features Autocall, so if you take the iPad out of Bluetooth range, it will automatically restore the connection as soon as the iPad is within range again. This may take a few seconds.

The app switches to Demo mode while the connection is down.

Bluetooth Interruptus

The app switches to Demo mode if the Bluetooth connection between your iPad and the NANO 608i is severed, say because you've moved out of range. In this case, the NANO Status icon grays out and the display reads "Offline/Demo."

The blue Bluetooth LED on the NANO 608i first flashes slowly, then quickly. The NANO 608i will keep trying to reconnect to the iPad.

As soon as a Bluetooth connection between the two devices is restored, the NANO 608i synchronizes with and transmits its last settings to the app. This feature comes in handy if changes were made to the NANO 608i and/or the app while the connection was down. The NANO 608i's blue Bluetooth LED once again lights up continuously to tell you all is well with the connection.

▸ Learn more about Bluetooth at www.bluetooth.org.

11 Firmware Update

The LUCAS NANO 608i's brain is a small computer programmed for audio applications. You may have to update the firmware from time to time to bring the computer's DSP technology up to speed.

The iPad sends the firmware update to the NANO 608i via Bluetooth. Do not switch off or disconnect the devices during this process to make sure the full update arrives intact.

- Before you update firmware, check if the iPad is running the latest version of the app, as it also contains the firmware for the NANO 608i.
- Check the Apple App Store to see if a newer version of the app is available and, if so, load it to the iPad.

https://apps.apple.com/us/app/lucas-nano-remote/id1030344238

Sound tech trick:

If the Updates option under Automatic Downloads in your iPad's Settings app is enabled, your device will automatically download and install the latest version of the app as soon as the Apple App Store offers a newer version. The iPad has to be connected to the Internet for this to happen.

The Install button serves to load newly released firmware to the NANO 608i.

A yellow Install button tells you the app has found more recent firmware for the NANO. If it is grayed out, the NANO's firmware is up to date, which of course rules out any firmware update at this time.

Tech tip:

This app is smart. It detects if the firmware is up to date when it connects to a NANO 608i. If not, it automatically recommends a firmware update.

Attention, please:

You will have to pair the NANO 608i and iPad again after a firmware update.

Tech tip:

A firmware update re-initializes the NANO 608i's EEPROM and the Bluetooth module. This wipes the iPad connection from the memory, so you will have to re-connect the iPad to the NANO 608i via Bluetooth after an update. To do so, you first have to go to the iPad's Bluetooth system settings, find "HK Audio LUCAS NANO 608i" in the list and manually select "ignore this device." Then you can pair the two devices again.

A cautionary word:

Deleting the app also deletes all scenes and presets from the iPad. If possible, update the app instead of uninstalling and reinstalling it.

How to Update Firmware

First, check if your iPad is running the latest version of the app. If not, download the latest version from the Apple App Store.

Then:

- Connect the iPad to the NANO 608i. Enable Bluetooth on the iPad. Set the Remote Control switch on the NANO 608i to On. Select "HK Audio LUCAS NANO 608i" from the iPad's Bluetooth device list.
- Launch LUCAS NANO REMOTE and open the Setup menu.
- Tap "Install" next to "Upgrade to latest firmware." A grayed out Install button means LUCAS NANO 608i is already up to date, which precludes a firmware update at this time.
- Follow the instructions on the screen. Do not disconnect the NANO 608i during the update or move the iPad out of range.

A cautionary word:

The update resets the NANO 608i's Bluetooth module, so your iPad and the PA will no longer recognize each other, which is why you have pair the two up again via Bluetooth. Open the Bluetooth menu in the iPad's settings app, tap the "i" to the right of "HK Audio LUCAS NANO" and then tap "Ignore this device."

- Switch Bluetooth off on the iPad, wait a few seconds, and then switch it on again.
- Set the Remote Control switch on the rear panel of the NANO 608i to off, wait briefly, and switch it back on.
- Select "HK Audio LUCAS NANO 608i" from the iPad's Bluetooth device list.
- That should do it.

Your LUCAS NANO 608i is now up to date, running the latest firmware, reconnected to the iPad, and ready to be remote-controlled from the app.

Tech tip:

During a firmware update, all inputs and outputs on the LUCAS NANO 608i are muted to prevent it from amplifying any stray noise.

Sound tech trick:

All settings in the NANO 608i's DSP are reset by a firmware update. If you want to save a scene with the current settings, we recommend you do so on the iPad before the firmware update. Otherwise, it will be lost. Be sure to back up your scenes and presets from time to time, as you would the data on all electronic devices with a user-programmable memory.

We live in the age of wireless connectivity, but, sadly, perfection still eludes us. And experience teaches us to expect communication problems here and there, so please read and heed these dos and don'ts when updating:

- Do not update in environments with heavy wireless traffic.
- Do not consume any further bandwidth with the iPad during the update. That means no surfing, downloading or online streaming.
- Close other apps before updating, if you can.
- Place the iPad as close as possible to the NANO 608i – there should be no more than two meters between the two.
- Make sure the battery is charged more than 50% before updating.

Tech tip:

Some circumstances encourage Bluetooth and Wi-Fi to interfere with each other. Both transmission technologies use a common frequency band, so enough of the frequency spectrum has to be unoccupied to rule out interference. This is not the case in environments with lots of Wi-Fi networks and activated Bluetooth connections. Also, the greater the application's appetite for bandwidth, the better the transmission quality has to be, so shut down those applications that hog a lot bandwidth when you're working with LUCAS NANO REMOTE.

If you run into problems you can't solve on your own, feel free to contact your dealership or support@hkaudio.com.

LUCAS NANO REMOTE

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