



BluOS URC Module

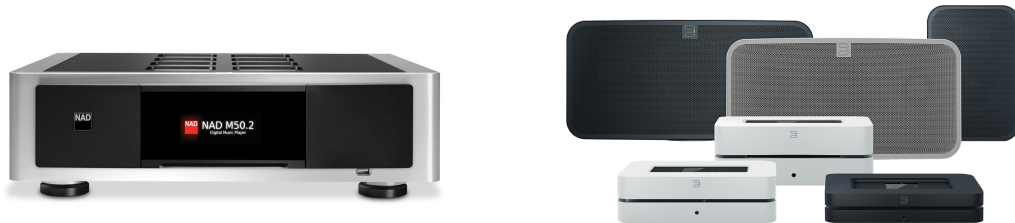
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Overview	4
Installation	5
Import TCM	5
Add the module to your project	5
Core Module	6
Interface Module	7
Network Settings	8
System Parameters	9
POLL RATE	9
POLL DELAY	9
OFFLINE TIME	10
DEBUG	10
Home Page	12
Browse Page	12
Main Browsing Controls	13
Context Menu	15
Now Playing	16
Search	17
Grouping Page	18
Presets Page	19
Settings Page	20
Queue Control	21
Moving Players To A Different Room	21
Moving Players To A Different Network	22
Driver Commands	23
Automation Events	23
Playback State	23
Service Change	23
Two Way Commands	24
Get Artist [string]	24
Get Album [string]	24
Get Track [string]	24
Get Volume [number]	24

Get Mute [number]	24
Get Service [string]	24
BluOS Zone List	25
Fetching Log Files	26
Using CyberDuck	27

Overview

The BluOS URC module allows for control over various BluOS enabled players. BluOS® is an advanced operating system and music management software that allows you to access and stream lossless music up to 24-bit/192kHz to every room using your home network.



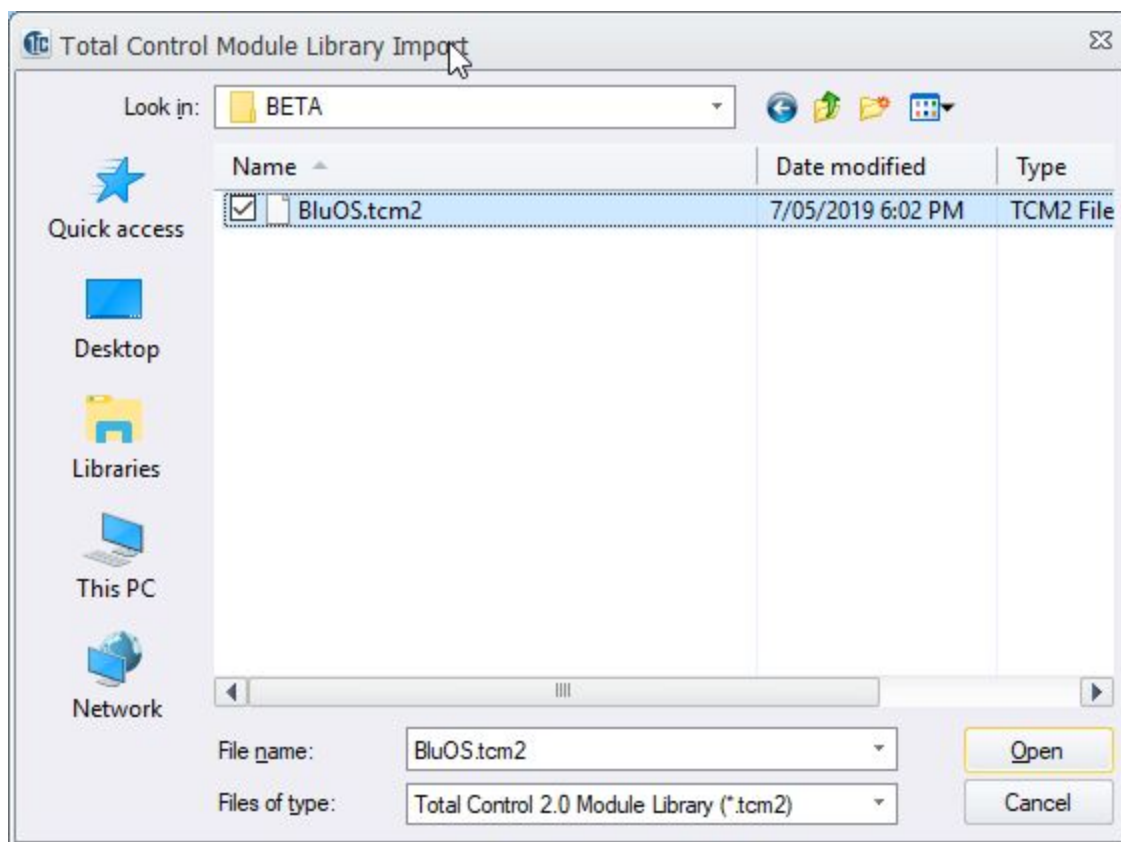
The module is built using the Core + Interface design giving you both easy installation and easy automation control. The module provides browsing of local music and streaming music services as well as control over grouping players, presets and queue management. It also provides events and two way commands for various levels of integration.

Installation

To install the BluOS module you will need to do the following.

Import TCM

From the File menu -> Import TCM files



Add the module to your project

This module has two modules to load, the Core module which typically lives in your shared room and Interface modules that get loaded into each room. You need an Interface module for each player in your system.

Core Module

In Step 4. Add Other Devices

Step 1 - select the shared room for the module

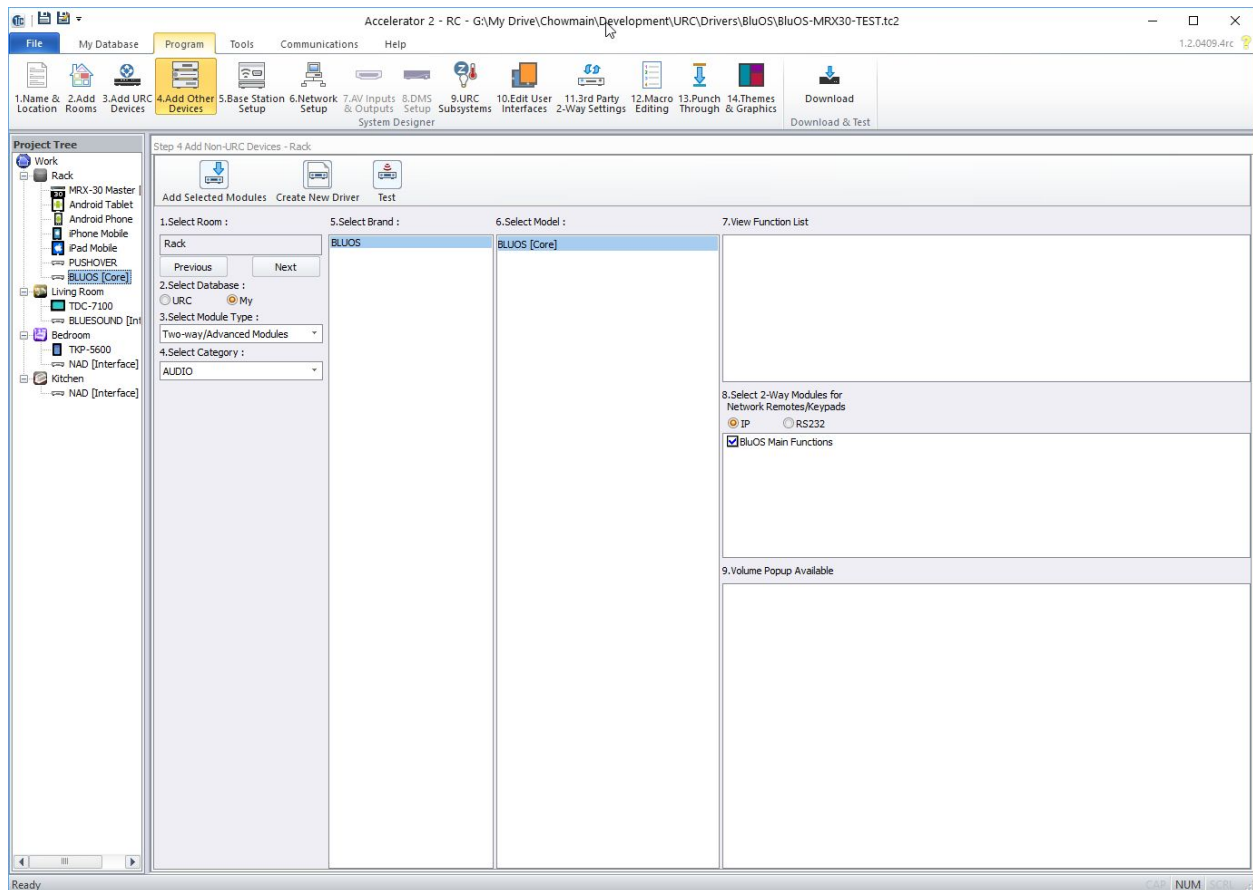
Step 2 - Select My

Step 3 - Select IP Database

Step 4 - Select AVR's and Amplifiers

Step 5 - Select BLUOS

Step 6 - Select BluOS [Core]



Interface Module

In Step 4. Add Other Devices

Step 1 - select the shared room for the module

Step 2 - Select My

Step 3 - Select IP Database

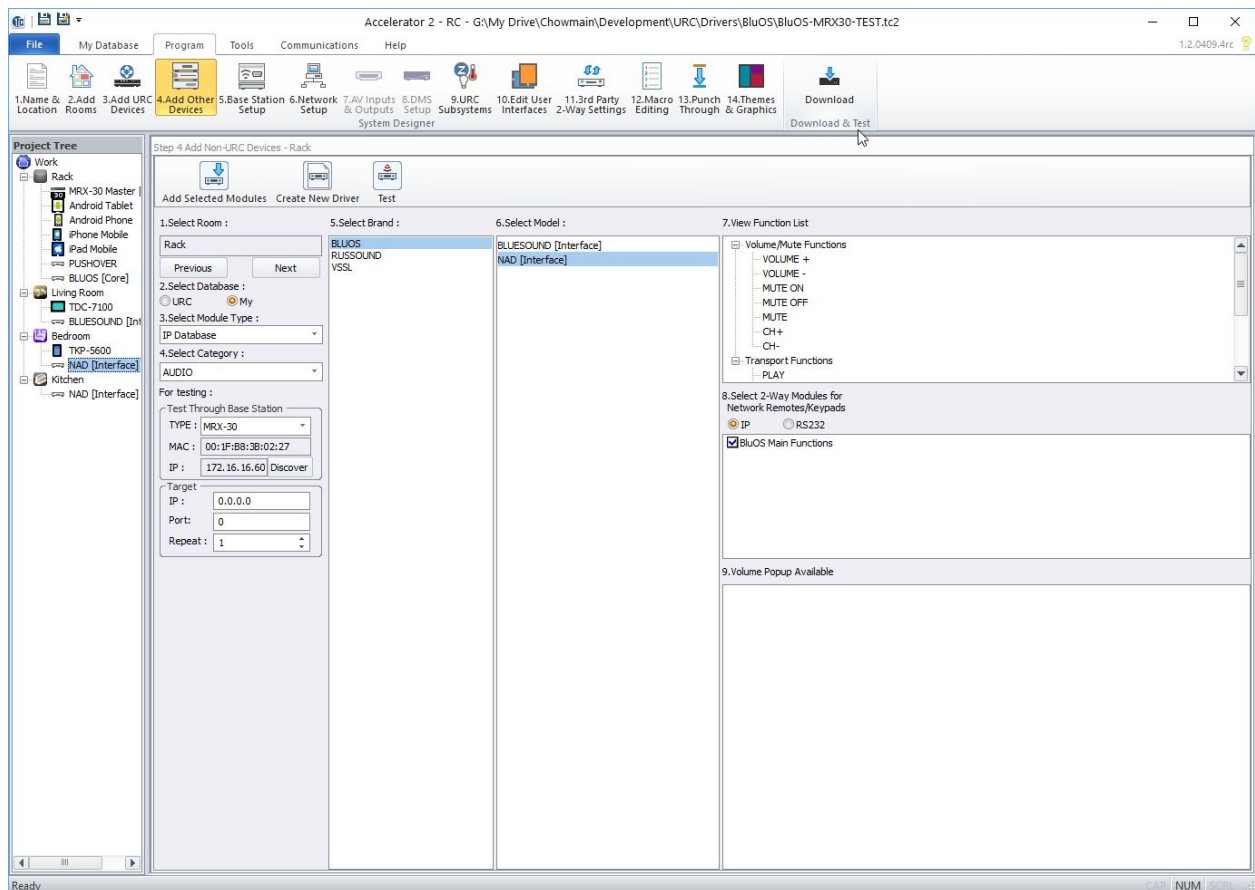
Step 4 - Select AVR's and Amplifiers

Step 5 - Select BLUOS

Step 6 - Select the Bluesounds [Interface] or NAD [Interface]

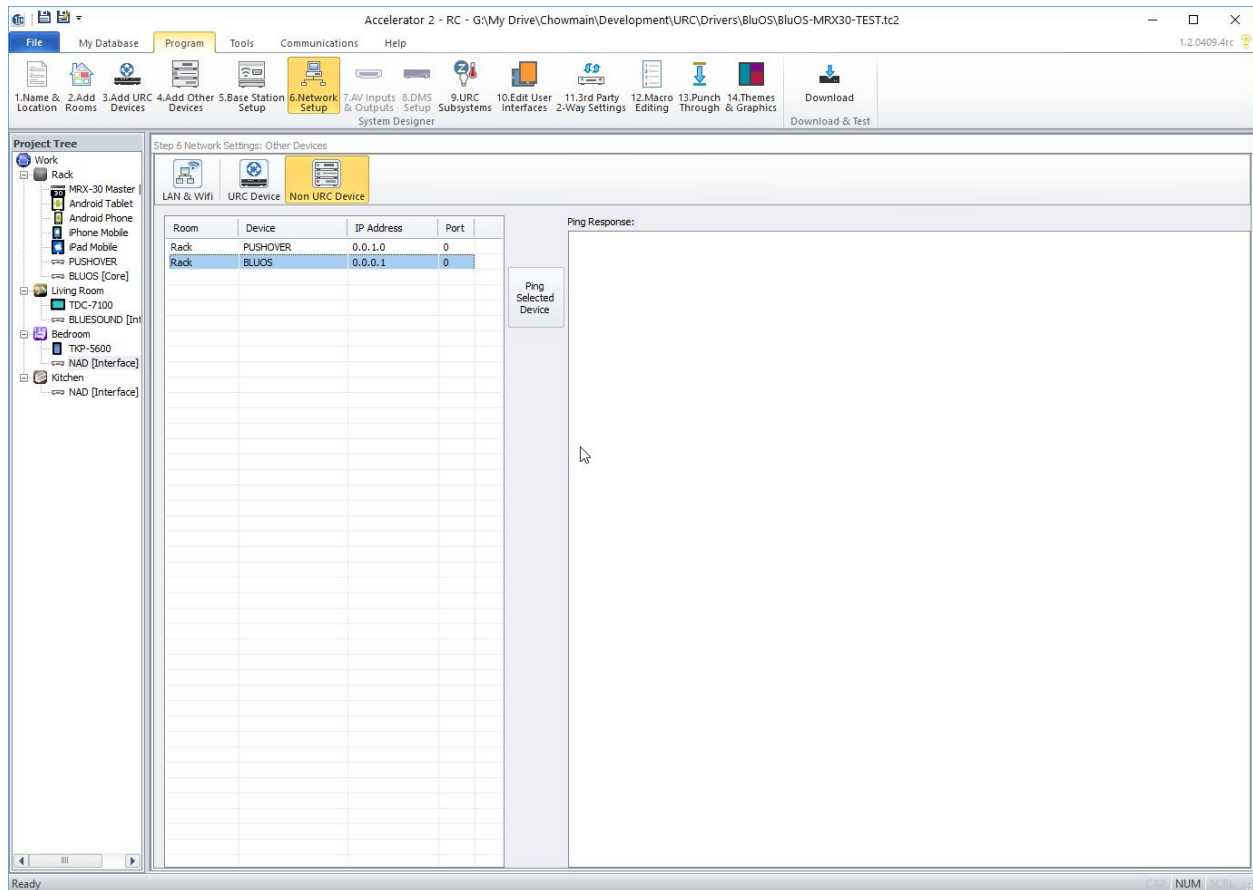
Step 8 - Name the player and associate it with BLUOS core module

Step 7 - Repeat for each room that you have a player in



Network Settings

Finally go to Step 6. Network Settings and Choose Non URC Devices. The modules finds the IP addresses of the players automatically so you don't need to enter a players IP address, instead use an address like 0.0.0.1. The Port field is not used and can be left at 0.



System Parameters

The BluOS module doesn't require any parameters but there are some options that have been detailed below.

All system parameters are entered in the following format

KEY=VALUE

The following table details the system parameters that work with this module.

POLL_RATE	The time between state updates
POLL_DELAY	The time to wait after a players status update
OFFLINE_TIME	The time a player can remain undiscovered before being removed
SELF_HEAL	This controls whether or not old players are removed automatically
CLEAN_INSTALL	This option clear any saved settings
DEBUG	Puts the module into it's debug mode
LOG_LEVEL	The amount to be logged.

POLL RATE

The poll rate is the time between state updates. The state that gets updated includes the track artist and album names, the queue contents, the current play state and a variety of other data. If the POLL_RATE parameter is not used it will default to 5 seconds before polling again. The poll rate is given in 1000's of a second, so a poll rate of 8 seconds would be entered by adding POLL_RATE=8000 to the system parameters.

POLL DELAY

The poll delay is the time to wait between polling each discovered player. The default value for this is delay is 500ms. The poll delay is given in 1000's of a second, so a poll rate of 100 milliseconds would be entered by adding POLL_DELAY=100 to the system parameters.

NOTE: The poll delay runs simultaneously with the poll rate, so you may need to adjust the poll rate to suit the value you have here and the total number of players. For example, if you have 12 players and you leave the default poll-delay set to 500ms you would need to change the poll rate to at least 6 seconds (although 8-10 would be a better value in this case)

OFFLINE TIME

The offline time is the length of time to wait before removing a player that hasn't responded to discovery scans from the allocated zones. If a player is offline for the period set by this command it will be automatically removed from the zone. Note its not required to wait if you are moving a player - see the section below about moving players.

If this parameter is not set the default time will be 1 minute (60000). The time is set in ms, so if you wished to have this check run once every 5 minutes, you would need to add

```
OFFLINE_TIME=300000
```

SELF_HEAL

The self heal option will remove players that don't respond for a period of time. This can be useful if you have transient devices that move. The default for this setting is OFF. To turn it on you need to add

```
SELF_HEAL=ON
```

DEBUG

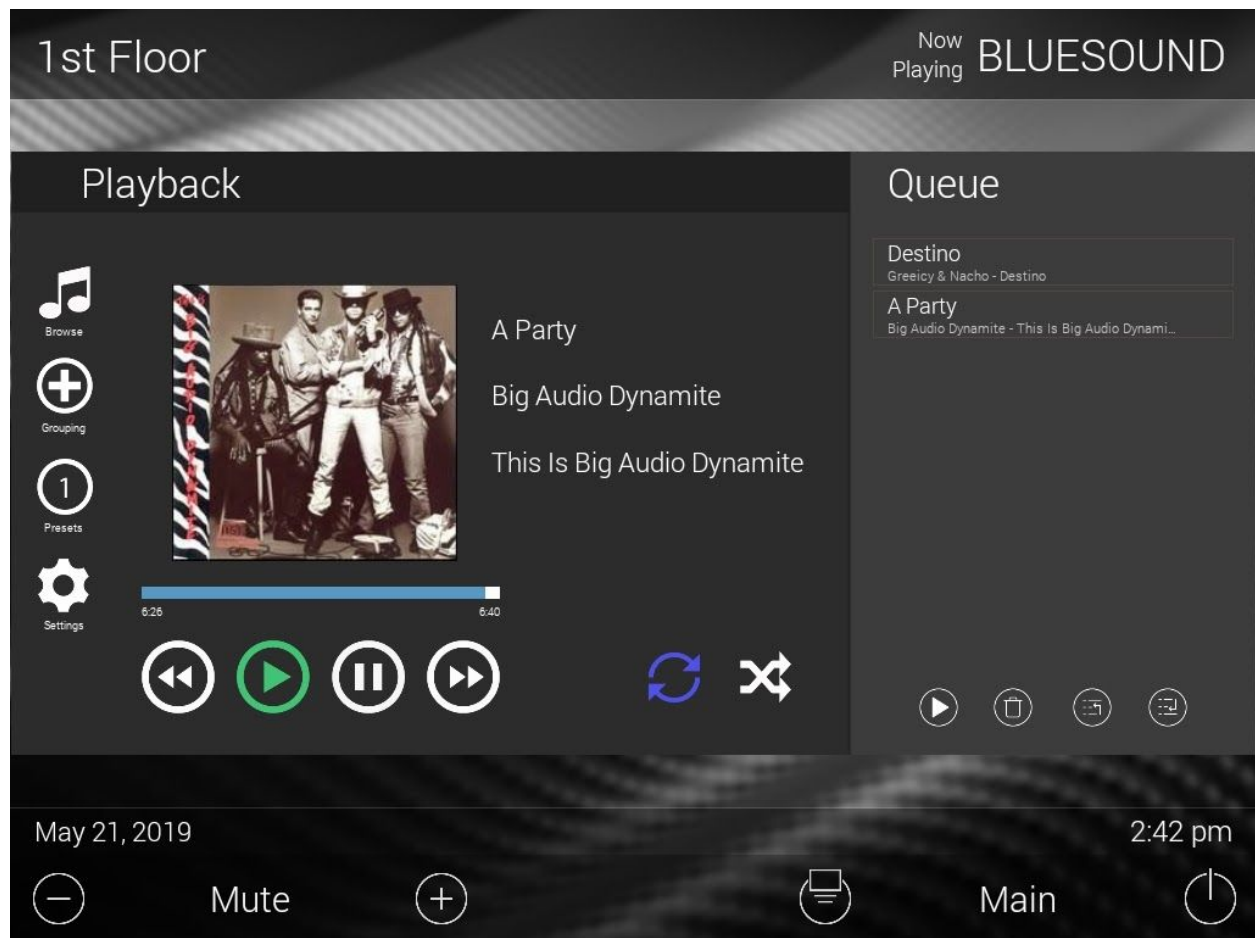
If the DEBUG parameter is present and set to ON (DEBUG=ON) then detailed log files will be written to the base station. The log files can be fetched by connecting to the base station with FTP and looking in the /data/UrcDebugging/LOG/BluOS/<NUM> folder. The <NUM> value is set by URC so there may be more than one, just chekc the file dates if your not sure which one if up to date.

NOTE: This will cause additional load on the processor so it should be left off unless you are asked to turn it on.

Touchscreen Layout and Control

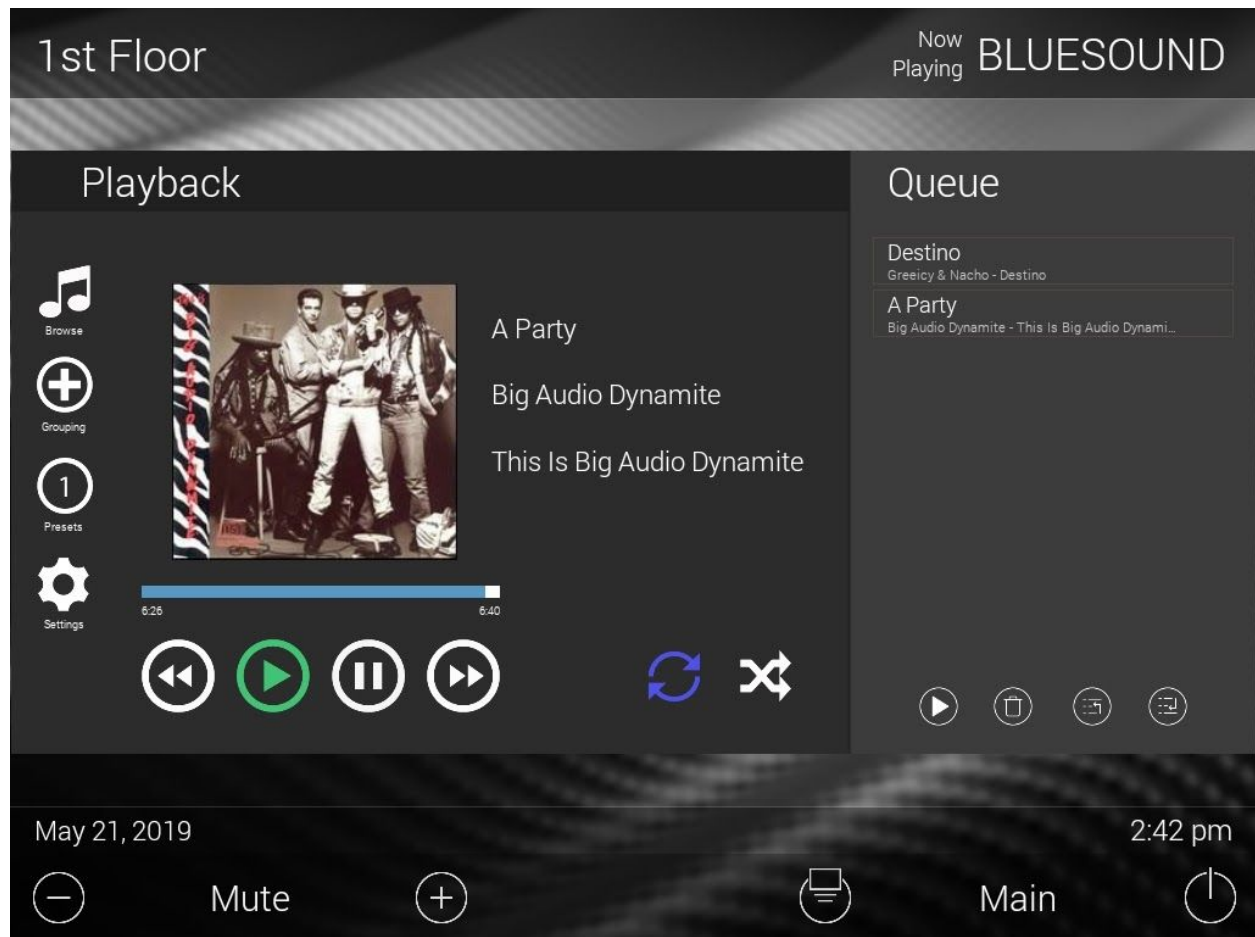
When you first load the module there will be no players allocated to your zones. When you select the device on your touchscreen you will be taken to the Settings page to select a player for that zone. After you have saved a player for the zone when you next select the device you will be taken straight to the home page.

The current page is displayed at the top of the page and, if it's not the home page, will have a back button to return to the home page.



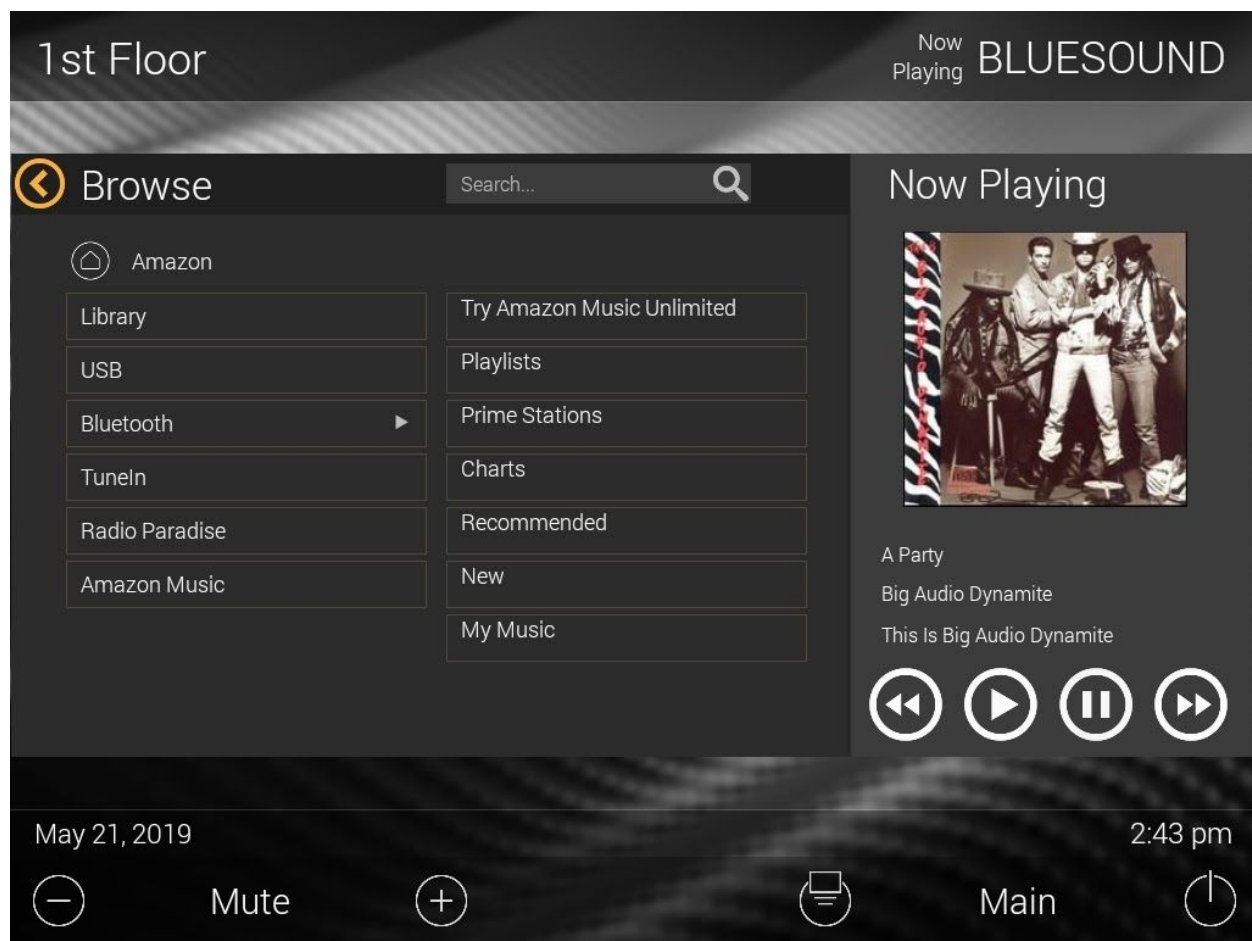
Home Page

The home page gives you easy access to the currently playing track with cover-art, track metadata and transport controls. You will also have access to the queue on the right. There is a separate section on the queue below.



Browse Page

The browse page allows you to search through your local library or any of the attached streaming services you have configured. This screen is split into three sections. To the left is the browse controls themselves. To the right is the currently playing information (and transport controls). Finally at the top of this section is a search bar. Each of these sections will be explained in detail below.



Main Browsing Controls

The majority of the screen is taken up with the browse controls. These are a series of menus that let you navigate your local music, attached devices (Bluetooth, USB, etc) and any streaming sources that you have configured. This list will populate with the services that are available / configured automatically on a per device basis.

The menu on the left will always show the list of available services. If there are more services than can be shown on one screen you can scroll up and down the list by dragging your finger up or down.

To select a source, simply press the button with the name matching your choice. <Most devices will have a more detailed menu that will then be presented on the right. As you progress through these menus a back button will appear letting you go back one level in the menu.

For devices that are designed to play directly, Bluetooth for example, a small play icon will appear on the button to the right to let you know there is no associated menu and pressing this button will immediately trigger that source.

In general, pressing the button will continue through the menu as you would expect, however some items offer more options. In these cases a context button will appear to the right of the search bar to indicate there is more options available for these items. See the content section below for more details.

If you are many menus deep and want to return to the first level of the menu you can either select the source again from the menu on the left, or you can press the home icon that is shown at the top of the left list, to the left.



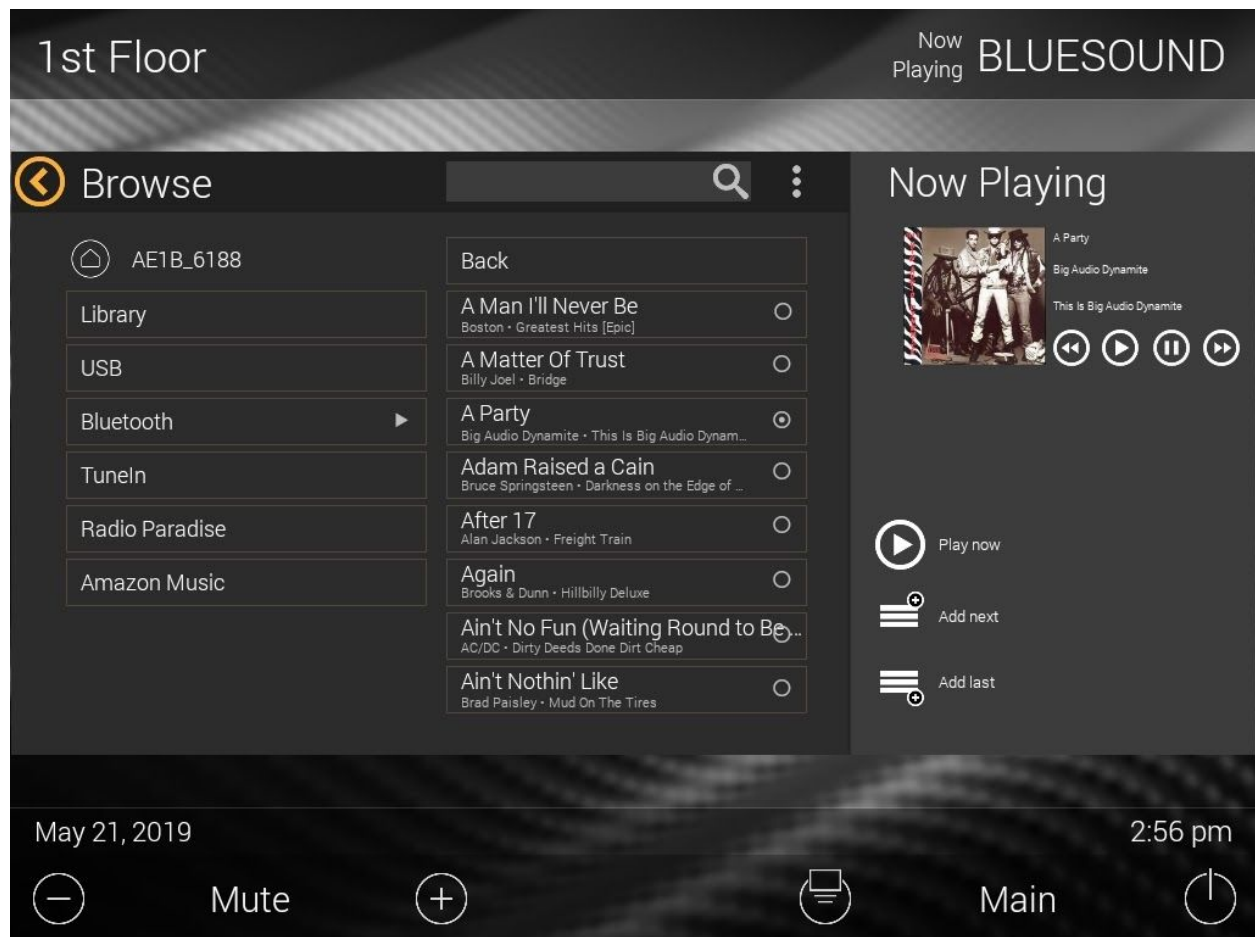
This home icon is shown to the left.

Context Menu

Some of the results will have the option to perform more detailed actions. When these results are shown in the browse menu the content icon will appear to the right of the search bar. The context button looks like three dots arranged vertically, shown below..



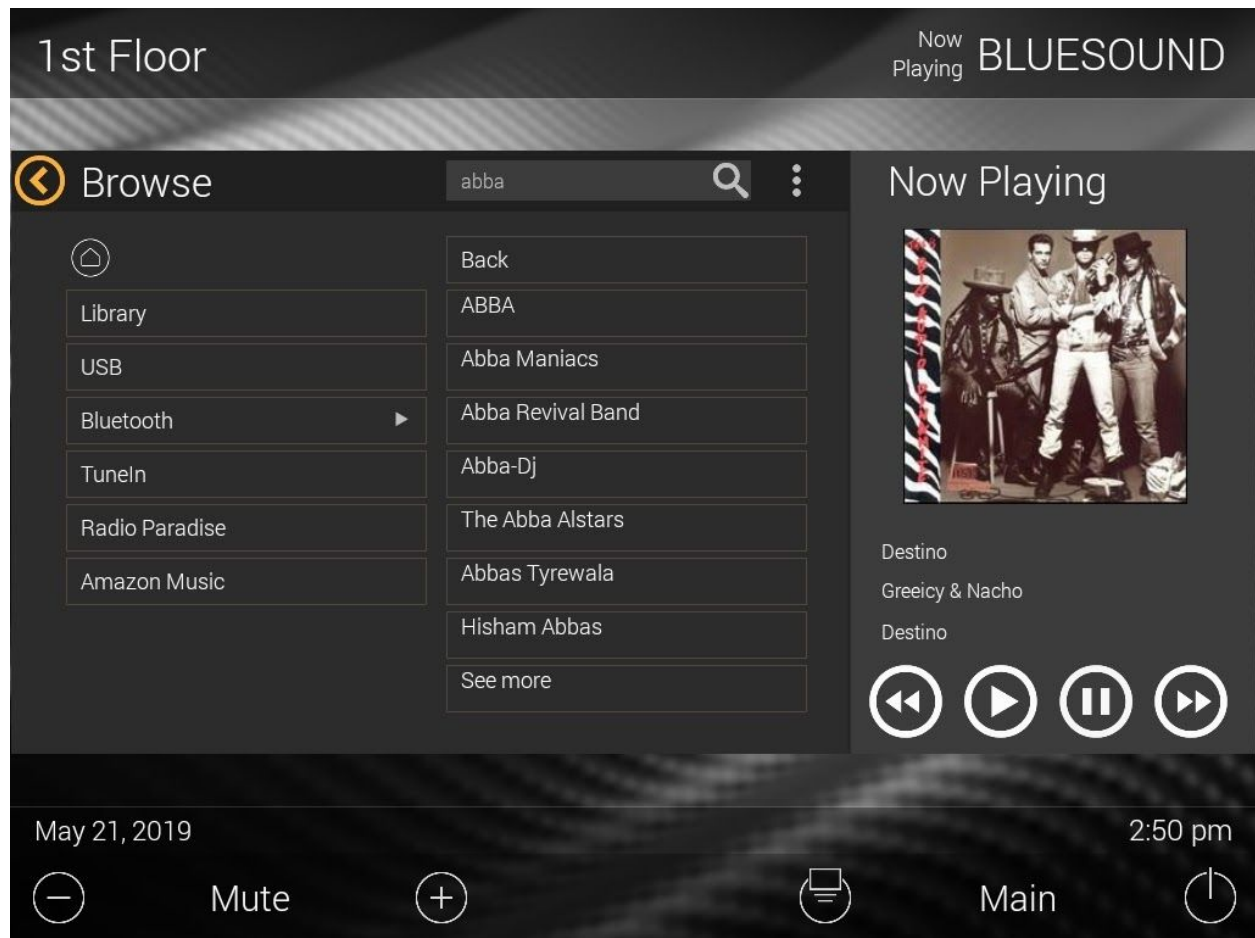
The context menu allows actions like adding all songs from an artist, setting a favourite or playing a song immediately. The options vary depending on the results so a new menu will be displayed when you press this button for you to select from. The new menu will sit below the Now Playing data, causing it to reduce in size until the menu is cleared.



Selecting an option from the menu or pressing the context menu again will clear the content menu and return the now playing section to normal.

Now Playing

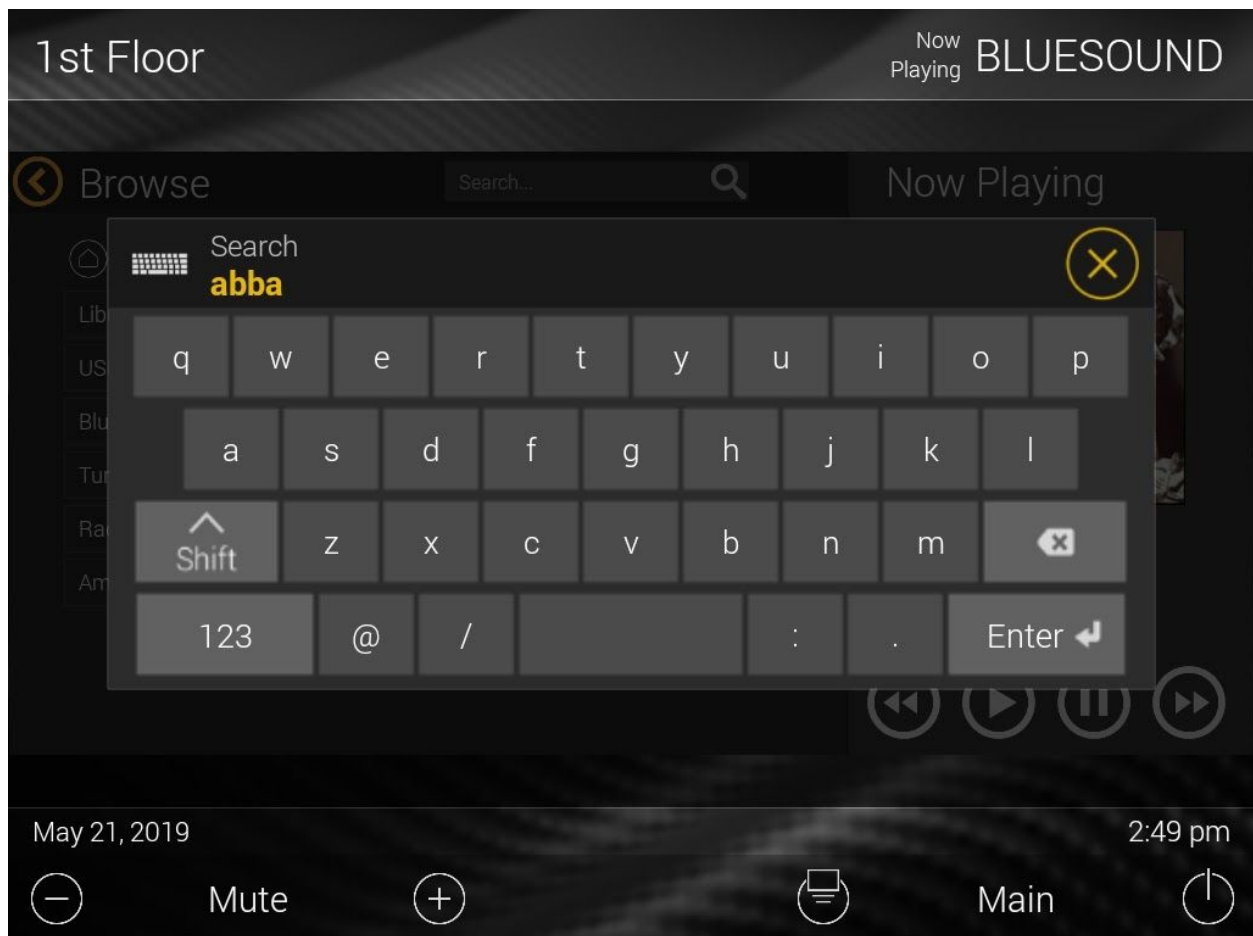
The Now Playing section will show the current metadata for the track that is active (or the last active track). In addition to the coverart, artist, track and album information playback control are displayed so you always have control over the device.



Search

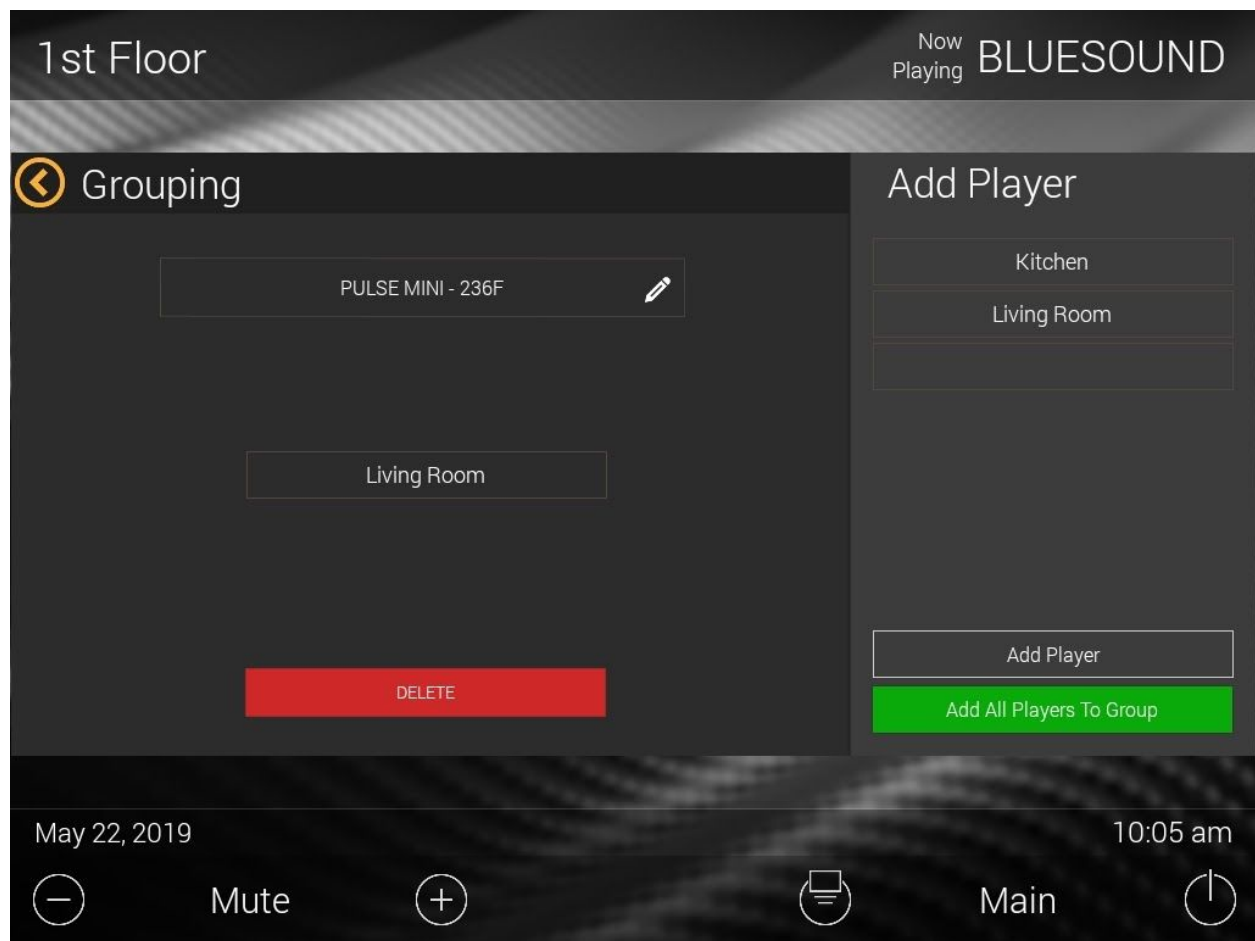
Once you have selected a source you can search within that source. To perform a search press inside the search box. This will show an on screen keyboard and allow you to enter a search term. Once your done, hit the enter key and the search will be perfoemd.

Depending on the service the search may take a little while to return its results. Once the results have been sent back they will be displayed in the right section of the browse lists.



Grouping Page

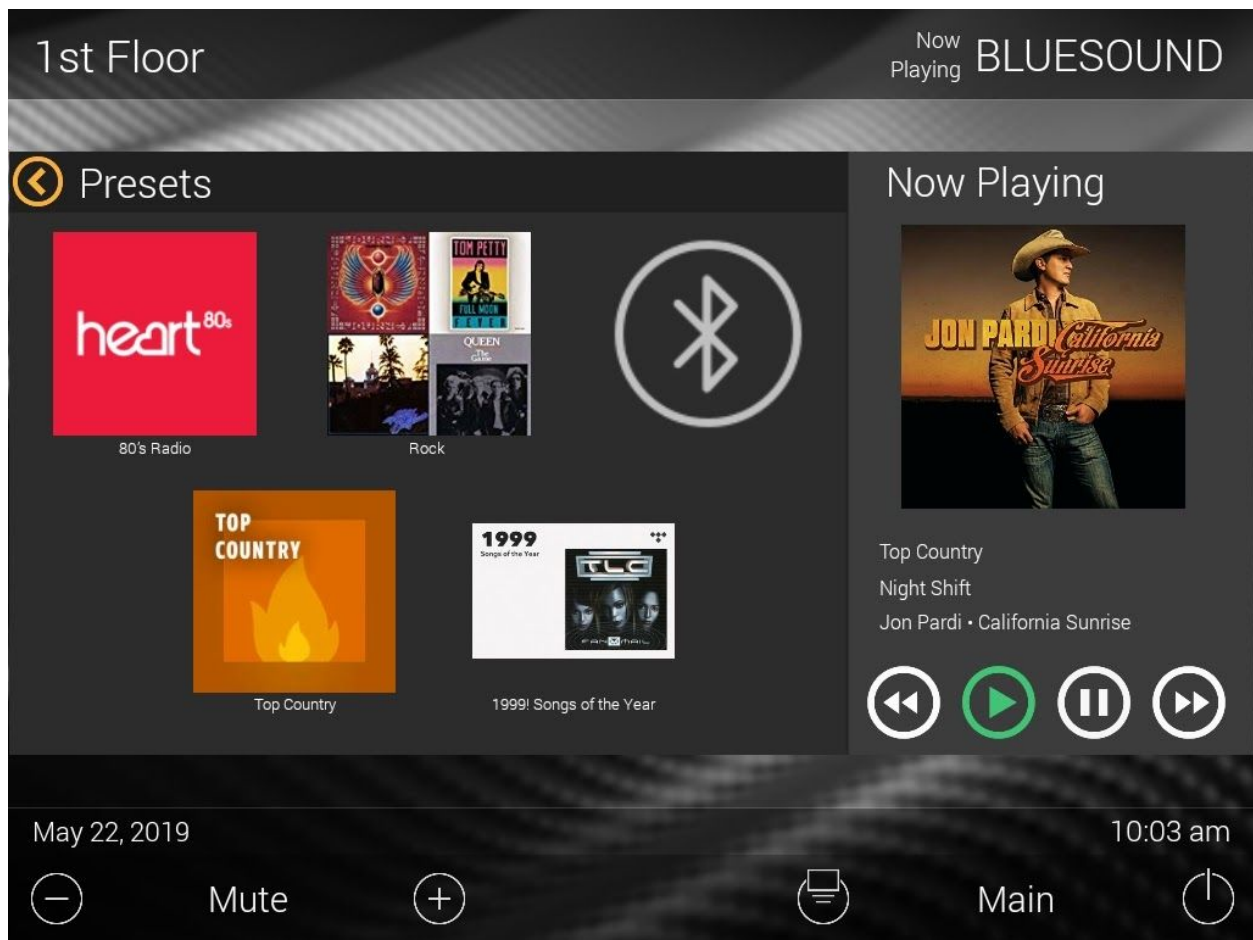
The grouping page allows you to maintain groups of players. The group is built with the player in the room you currently have selected as the master. A list of available zones to add to this group is shown to the right. Selecting a player will make it available to add. An indicator will show the currently selected player.



To add this player hit the Add Player button at the bottom right. If you want to have this player sending music to all the players you have, then hit the Add All Players to Group.

Presets Page

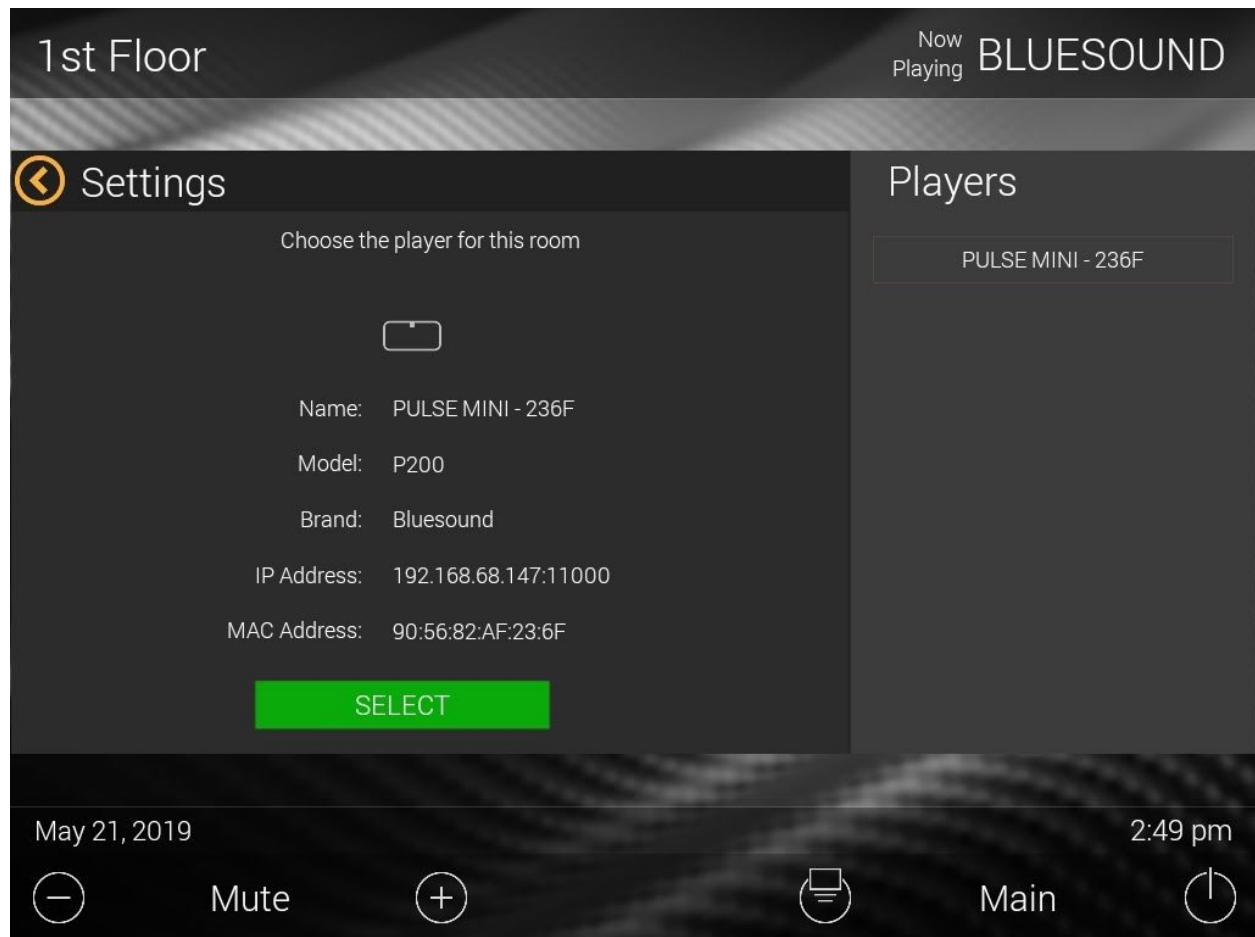
The presets page will display the previously saved presets from the selected player. To load the preset, simply press the matching preset image.



The currently playing track will be shown to the right, with transport controls available at the bottom.

Settings Page

The settings page can be used to change the player that is associated with the selected URC room. If no player has been selected for this room then this page will be loaded immediately.







The list of available players will be shown on the right hand side under the title Players. Selecting one of these players will fill in the left section with details about the player including its Name, Model, IP address and MAC address. Hitting the SELECT button at the bottom will save this played to the selected URC room.

Queue Control

The queue is visible on the Home page, giving you access to view, play, delete promote or demote items that are currently in your queue.

The item you wish to affect need to be selected first by pressing it. The selected item will show a marker on the right to show which one is currently selected.

[IMAGE]

ICON	ACTION
	Pressing the Play icon will immediately play the selected item
	Pressing the Delete icon will remove this track from the queue
	Pressing the Promote button will move the selected track up one position in the queue.
	Pressing the Demote button will move the selected track down one position in the queue.

Moving Players To A Different Room

It is quite straightforward to move a player to a different room. To change a player, go to the room you wish to move it to on the URC touchscreen and hit the settings button (if there was no player set up in this room, you will be taken straight to the settings page). From this page select the player you wish to associate with this room and hit the green SELECT button. The player will now function in that room.

Moving Players To A Different Network

In the course of an installation it's likely that you may want to move the players to a different network - for example you may have tested the players in your office but now they need to go to site. When you save a player into a room in the settings screen, that information gets saved on to the processor, so when you go to site the IP addresses of the players are all likely to have changed. The best option here is to clear your existing players and re-discover them.

To do this you need to clear the existing player list. There is a hidden button on the settings page for this purpose.

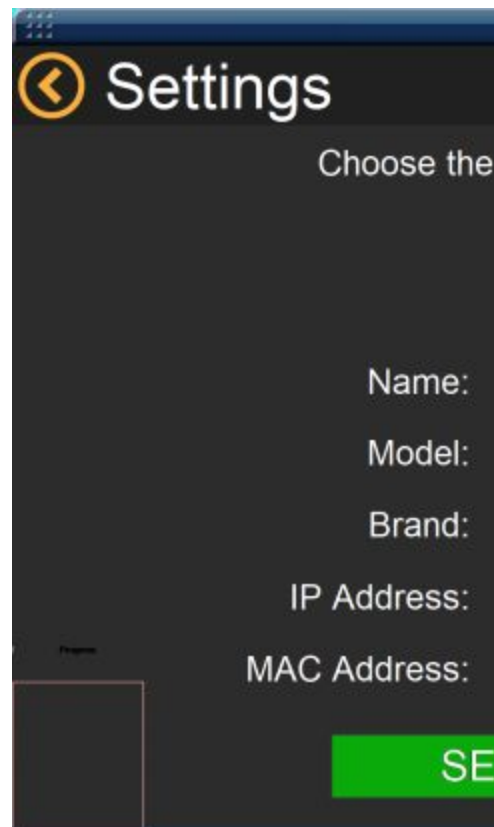
To clear the existing list of players you need to press the hidden button at the bottom left of the Settings page - you can see its location highlighted in the image to the right.

Because this will cause all the existing settings to be removed you will need to press and hold this button for 10 seconds to confirm this action.

A progress bar will show above the button to show the progress of the action, and text will be displayed stating "Keep Holding to remove zones file".

Once the 10 seconds has elapsed the player list will be removed and the message will briefly change to read "Zone file removed".

At this point you can go through the discovery process for each zone and set the players up appropriately.



Driver Commands

Many of the BluOS functions can be accessed directly from the driver commands (Connected Device). This includes the transport control, volume and mute.

Automation Events

Automation events can be used to trigger a macro based on the state of the BluOS player. These events can be used to control anything in the URC ecosystem. The available events are listed below

Playback State

The Playback state automation event will trigger for the room you have specified when the playback type you specified has changed. The available play states are Play, Stop and Pause.

Service Change

The Service Change event will trigger whenever the service (stream or local music) changes. The service types can be found at the top of the Browse screen (see Browse section for details)

Two Way Commands

The two way commands can be used to make choices while you are running macros based on the feedback provided in the command.

Get Artist [string]

This command will return the current Artist so that it can be used in your macros. The return value will be a string.

Get Album [string]

This command will return the current Album so that it can be used in your macros. The return value will be a string.

Get Track [string]

This command will return the current Track name so that it can be used in your macros. The return value will be a string.

Get Volume [number]

This command will return the current Volume so that it can be used in your macros. The return value will be a number.

Get Mute [number]

This command will return the current Mute so that it can be used in your macros. The return value will be a number, with a 1 representing Mute being ON and a 0 for OFF.

Get Service [string]

This command will return the current Service name so that it can be used in your macros. The return value will be a string. The service names can be seen on Browse Screen.

BluOS Zone List

The BluOS saves the IP addresses of the various zones into a file called zones.txt on the processor. This file is created automatically but there may be instances where you may want to remove this file to force the system to re-scan the players. An example might be if you have set the players up in your office and have now taken them to site which uses a different IP address range.

The file is located on the base station in the /Common/BluOS folder and can get fetched using FTP.

There are many ways you can use FTP, but if you are not sure there is a section at the end of the document titled, Fetching Logs Files that details how to connect and download using FTP.

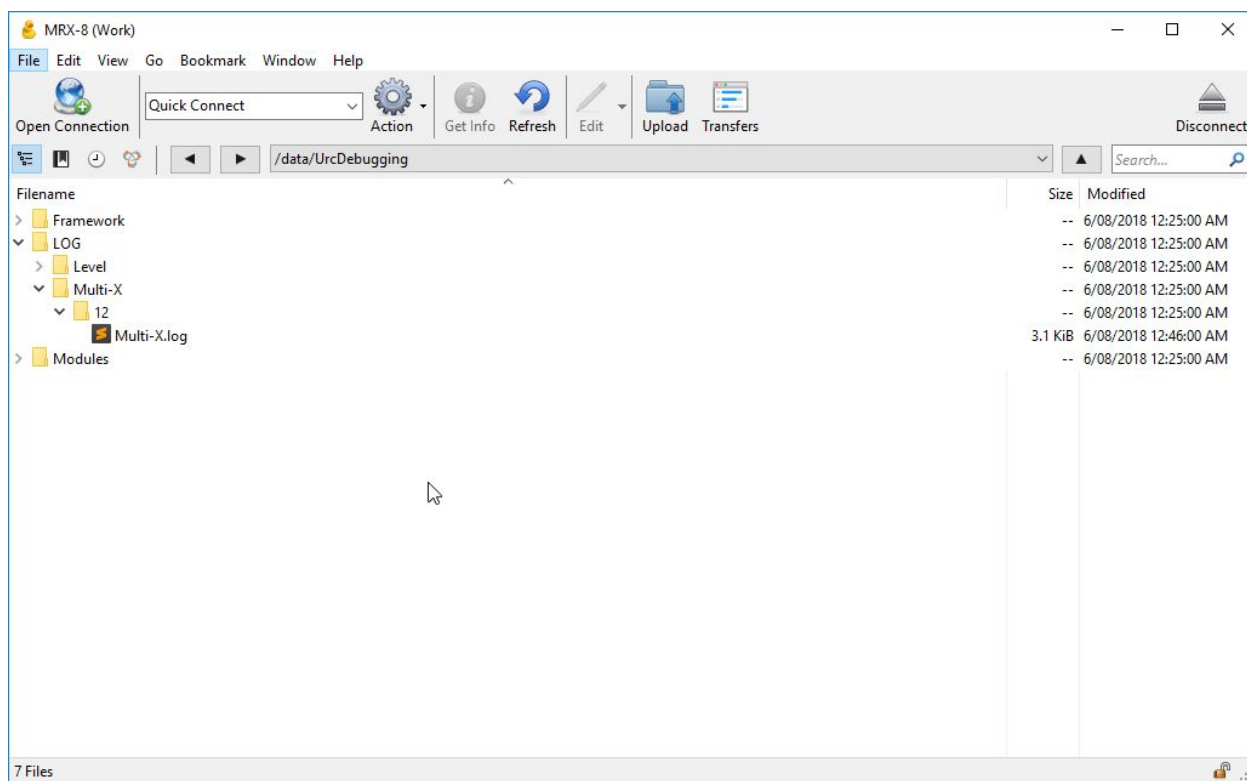
Fetching Log Files

If you want to check on what the driver is doing or if you are having problems then you will need to turn on the logging facility. To enable logging you need to add

DEBUG=ON

To your system parameters. Once you have done that and restarted your project logs will be written to the process in the /data/UrcDebugging/LOG/BluOS/<NUM>. The <NUM> is a number that is generated internally to URC and will be different on each processor. The number itself isn't important but if you modify your project and add more Two-Way modules this number might change so be sure to check the dates of the logs to make sure you are checking the correct ones.

You can see an example of the log location below.



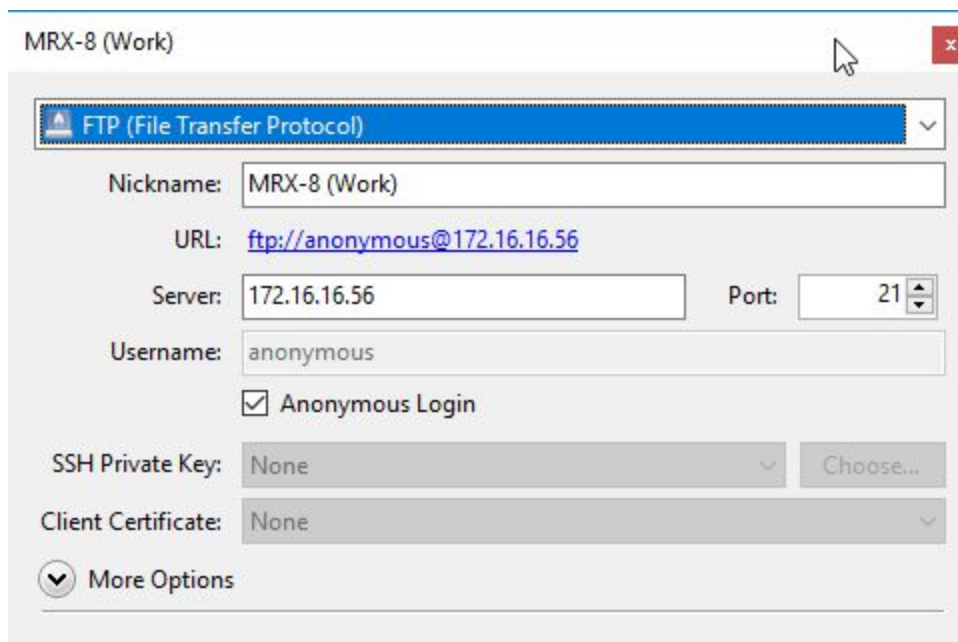
To get the files you will need to connect to the processor using FTP. The following section details how to do that with CyberDuck.

Using CyberDuck

First you will need to download CyberDuck from <https://cyberduck.io/>

When you open CyberDuck, from the menu select Bookmark, New Bookmark

Double click on the new bookmark you have created and you will see a screen like the one below.



Most options can stay as the defaults but you will need to make sure the following are set.

Type: Select FTP from the pulldown menu at the top of the bookmark window.

Nickname: Select a name for your bookmark

Server: This is the address of your URC base station

Anonymous Login: This needs to be ticked.

When you have finished editing the bookmark close that window and you will see your updated entry in the bookmark window (if you are not seeing the bookmarks, select the bookmark icon from the icon bar - its second from the left).

Double click on the bookmark to make the connection to the base station.