3. Using the iOS and Android Control App

The iOS and Android apps offer complete system control wirelessly from any Wi-Fi enabled phone or tablet. The iOS version is available for free download from the iTunes App Store and the Android version is available from Google Play. Both versions offer the same look and control options. When used with tablets, the display is nicely optimized for a view of the complete system operation on one screen.

3.1 The Dashboard

System control begins with the Dashboard. All of the available zones are represented by an icon. Your initial selection is done by dragging and dropping a zone into a new zone group, as shown in fig. 25. This can also be done by simply tapping an inactive zone. Once a music selection is made, the related album art and now playing information will appear in the zone group. Zones can play music individually or you can share music by dragging and dropping multiple zones into a single group, as shown in fig. 26.
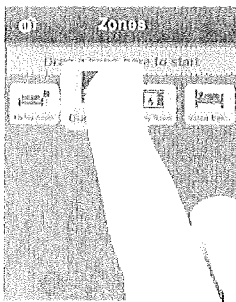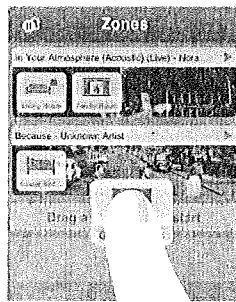
Fig. 25

Fig. 26

To deactivate a zone and stop the music playback on that zone, simply drag the icon back into the open dashboard area below the zone groups.

3.2 Music Selection

When a zone group is activated by moving a zone icon into the zone group field (see fig. 25), the app will go to the music navigation pane. From there, any streaming service, personal music libraries, Bluetooth, Direct Stream or local line in sources can be selected for playback. The available music choices are visible in a music selection ribbon. As you scroll across the selections with your finger, the active choice will be highlighted and the display will change accordingly, as shown in figs. 27, 28, 29 and 30.
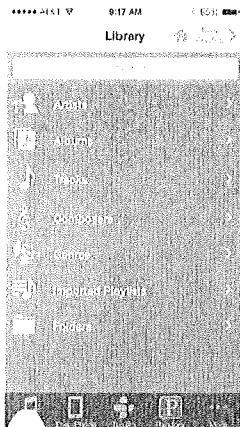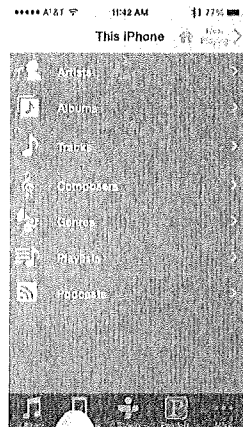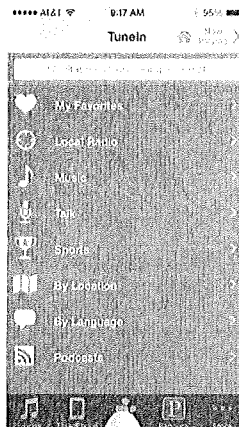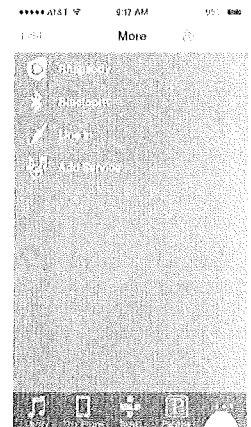
Fig. 27

Fig. 28

Fig. 29

Fig. 30

3.3 Bluetooth® Playback

An important feature of the NVP200-xx zone player is the ability to stream music content from any Bluetooth enabled device.

To take advantage of Bluetooth streaming, make sure that your device's Bluetooth is turned on. This is done within the device's settings. When in range of a NVP200-xx, the Nuvo zone will appear in your device's Bluetooth menu. Choose the zone to "pair" your device, as shown in fig 31.

Fig. 31

A paired device will remain paired and available when it is within range of the paired zone. To connect a device and initiate playback, select Bluetooth as an audio source, as shown in fig. 32. Then select the desired device, as shown in fig. 33. The app will show the selected device as "Connected", as shown in fig. 34, and the zone player will switch to the Bluetooth stream. Music content control is made from the connected device you have selected. **Tip:** Insure volume on connected device is up and desired content is playing.
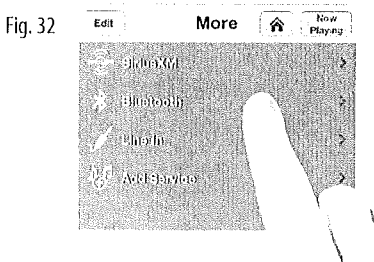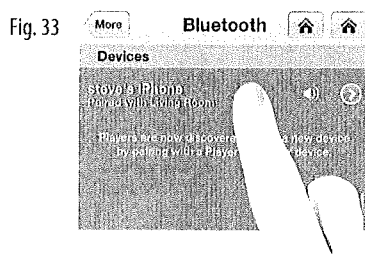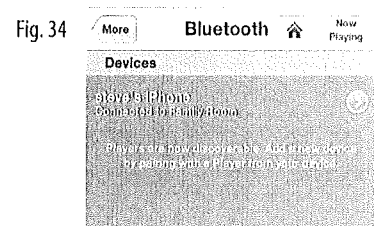
Fig. 32

Fig. 33

Fig. 34

3.4 Line In

Each player has a 3.5 mm stereo audio Line In (or RCA jacks for the NVP3500-xx) on its back panel. This input allows any local zone analog music source to be plugged in and added to the system as an additional source input. This is done by connecting a 3.5 mm stereo audio cable from the audio output on the playback device and into the input on the zone player, as shown in fig. 35 (3.5 mm stereo to RCA adapter cable used for NVP3500-xx —not shown).
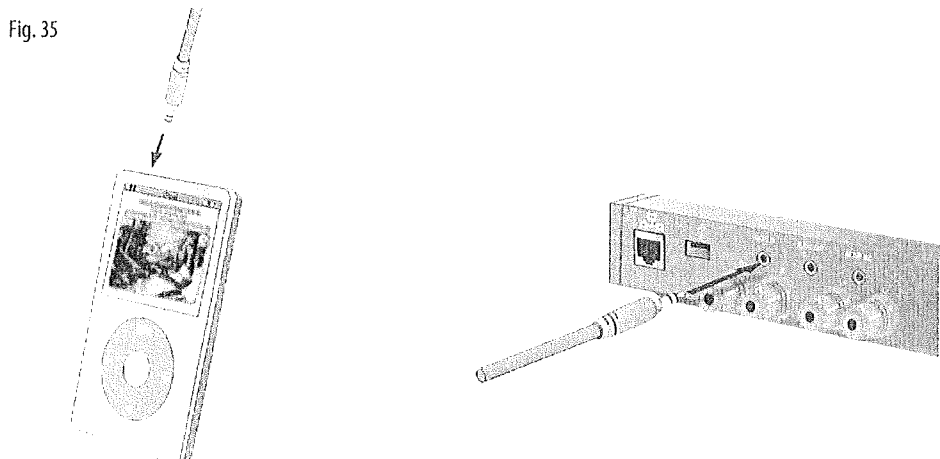
Fig. 35

When a line in device is connected to a zone, select "Line In" from the app, as shown in fig. 36. The device will appear in the "Line In" menu and be available for selection from all the zones, as shown in fig. 37. A "Rename" utility is available by touching the arrow button next to "Line Input", this allows a specific name to be given to it in the app, as shown in figs. 38 and 39.
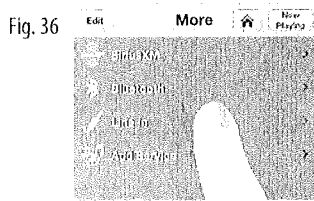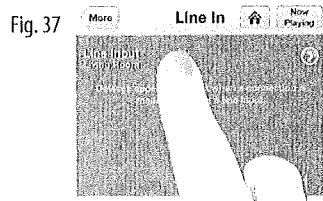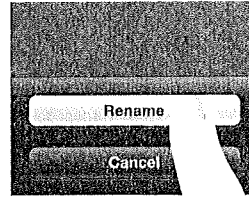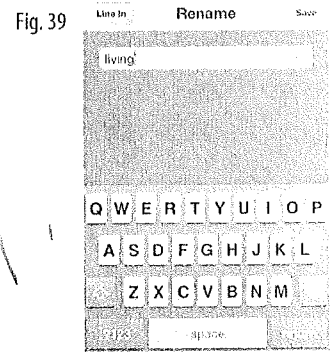
Fig. 36   Fig. 37   Fig. 38   Fig. 39

3.5 Direct Stream

If audio files such as MP3, AAC, FLAC or other audio files are resident on the smart device they can be streamed directly to a player zone by selecting the "This Phone", "This iPad", "This Tablet" or the like icon as shown in fig. 40. When "This Phone" has been selected all music playable by the smart device will be cataloged and listed in categories such as Artists, Albums, Tracks, Playlists and the like similar to what is presented when using the Library Source.

Select the desired function and the app will lead the way, once you are playing something, grouping, volume, transport mute and more will function just like it does when listening to other sources.

NOTES: Direct streaming requirements:
    A smartphone with the NuVo Player Portfolio app loaded and at a version of 1.8 or greater.
    Firmware version 1.8 or greater in the Player Portfolio system.
    A smart device being connected to the same network as the Player system.

Operation notes:
    Once a device is direct streaming to a zone, other zones can join the zone and listen but can't select content. Additional zones have transport control. Local joined zones have volume and mute control as well as the ability to leave the group.
    The number of smart devices used in a system can't exceed the number of Player zones available. i.e. A four zone system can have a maximum of four smart devices connected and streaming simultaneously, A sixteen zone system can support up to sixteen smart devices. Any file format the smart device can play, direct stream supports.

Fig. 40
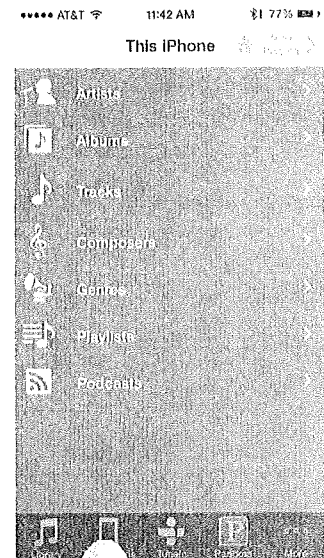
4. The Settings Menu

The Settings menu has several selections important to the system's control and operation. Access to Settings is made through the "Settings" button located at the bottom of the Dashboard. On the smaller format devices such as the iPhone, iPod Touch, or Android phones, if you are on the "Now Playing" screen or browsing musical selections, the "Home" button at the top of the screen will always return the app to the Dashboard, as shown in fig. 41. From there, touch the "Settings" button, as shown in fig. 42 to access the Settings menu, as shown in fig. 43.
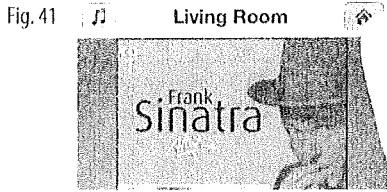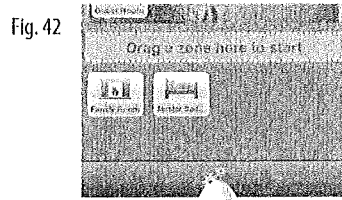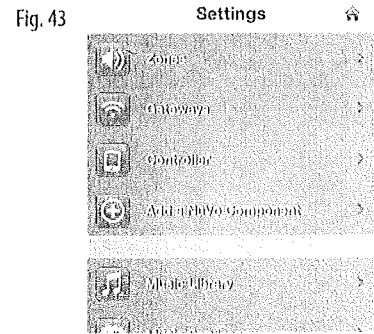
Fig. 41   ♫   **Living Room**   🏠

Fig. 42

Fig. 43   **Settings**   🏠

4.1 Zones

Selecting "Zones" in the Settings menu provides several controls for audio playback and functionality, as shown in fig. 44. When the "Zones" button is touched, the app will display the choice of zones within the system, as shown in fig. 45. When one of the zones is selected, its individual settings and controls will be available, as shown in fig. 46.
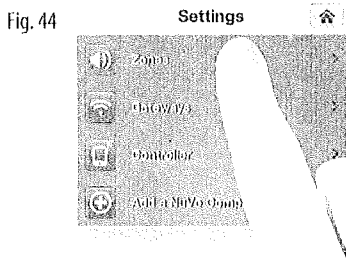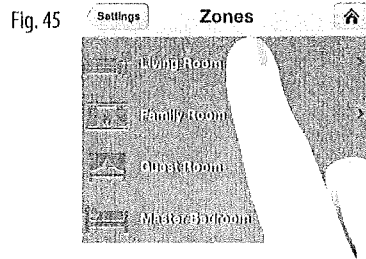
Fig. 44   **Settings**   🏠

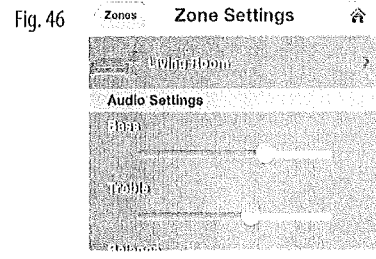Fig. 45   Settings   **Zones**   🏠

Fig. 46   Zones   **Zone Settings**   🏠

The Zone Settings menu has several zone playback choices that are simple slider adjustments or on/off choices.

Bass, Treble, and Balance: These three sliders allow individual settings for each zone.

Loudness: This on/off button allows for bass boost designed for low volume listening.

Fixed Volume Line Out: Each of the zone players has an individual audio line out. This allows the audio output of the zone to be supplied to an additional amplifier, subwoofer, or even headphones. By default, this feature is set to Off and the volume level of the zone output will adjust with the volume setting made on the app. For some uses, such as for a separate amplifier used in a sub-zone, a fixed zone output volume level is required for use with a separate volume control. For those instances, turn this feature On.

Mono: When this feature is turned on, it sums the individual left and right stereo outputs into a single identical audio output for each of the speaker terminals. This is a very useful feature in allowing a single mono speaker to provide all the stereo audio content to a zone, or you may have a large area in which the speakers would be too far apart to be in ear-shot of a single listener.

Audyssey Dynamic Volume: This is designed to level relative volume between audio selections. This feature is useful where the music is meant to be at a lower background level. It is not recommended for critical listening scenarios.

If you touch the zone icon and name at the top of the "Zones Settings" screen, as shown in fig. 47, the zone icon page will appear. From there you can change a zone's icon and name, as shown in fig. 48.
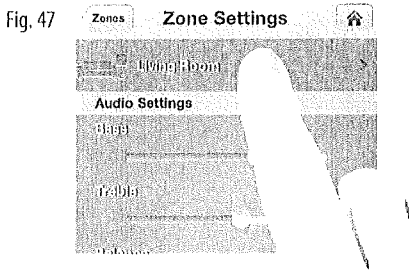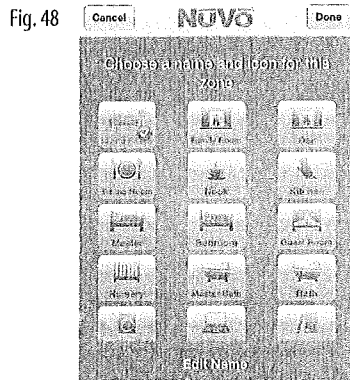
Fig. 47

Fig. 48

The "Advanced" section has a single selection, as shown in fig. 49. It allows the NVP100-xx, NVP200-xx or the NVP300-xx wireless communication to be set at the default 2.4 GHz band or the higher 5 GHz, shown in fig. 50. In most settings 2.4 is preferred. The exception is a scenario in which there are many wireless networks operating in close proximity. Since most network traffic is in the 2.4 GHz band, audio streaming could be a challenge. In these instances, the zone can be changed to 5 GHz where there is more streaming bandwidth and the traffic is much lower. **Note that the 5 GHz wireless range is lower than 2.4. Multiple Gateways can be installed to increase the wireless range when needed, see section 2.3 Adding Additional Gateways to an Existing System.**
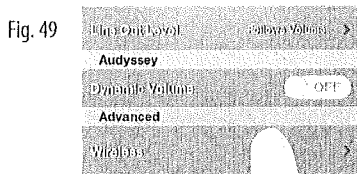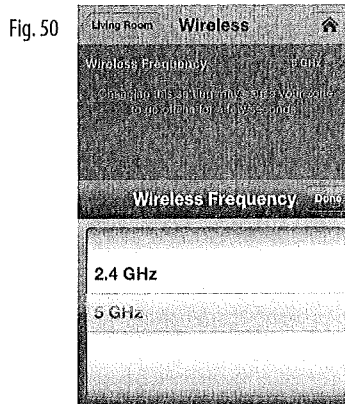
Fig. 49

Fig. 50

When this setting is changed, the NVP100-xx or NVP200-xx will go offline momentarily causing the front panel LED to flash red. When the LED returns to solid white, the zone is back on the network and ready to resume normal operation. **This wireless band selection only applies to the NVP100-xx and NVP200-xx wireless players. This feature will not be active if you are using the NVP3100-xx or NVP3500-xx.**

The NVP100-xx and NVP200-xx have a "quick change" function for toggling between 2.4 and 5 GHz communication. Simply press and hold the front panel mute button for about six seconds until you see the LED flash, as shown in fig. 51. Let go of the button. The LED will flash red momentarily as the zone is reconnecting at the new frequency. When the process is complete, the LED will return to a solid white state. At that point the zone will be fully operational.

Fig. 51
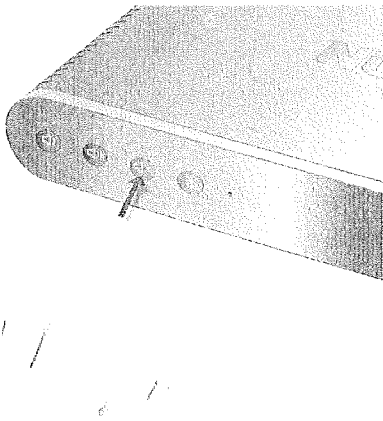
4.2 Gateways

The Gateway selection allows you to view and change important settings to the Gateway(s) operation. When "Gateway" is selected, as shown in fig. 52, the app will show the Gateways present in the system, as shown in fig. 53. The Gateway page will show "Name", "Serial Number", and "Wireless", as shown in fig. 54.
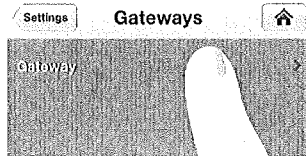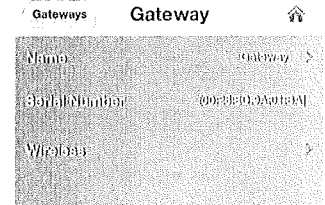
Fig. 52

Fig. 53

Fig. 54

When "Name" is selected, a screen with a keyboard will allow the name of the chosen Gateway to be edited, as shown in fig. 55. This is useful if you are using more than one Gateway in a system. "Wireless" shows the current channel selection for 2.4 and 5 GHz broadcast, as shown in fig. 56. The default is "Autoselect" but when that feature is turned off and "Channel" is selected, a manual channel select choice will appear, as shown in fig. 57.
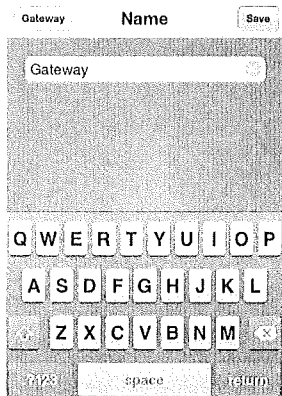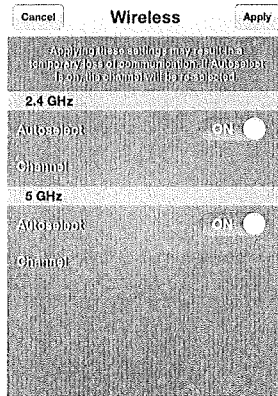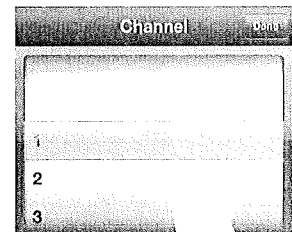
Fig. 55

Fig. 56

Fig. 57

4.3 Controller

When "Controller" is selected, as shown in fig. 58, a page will appear with the current software version number, as shown in fig. 59. It also has a "Reset" button which will disassociate the app from the system. The screen will display its original preconfigured state, as shown in fig, 60.
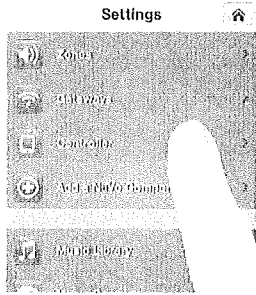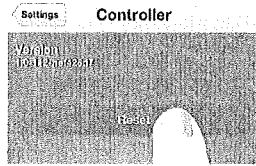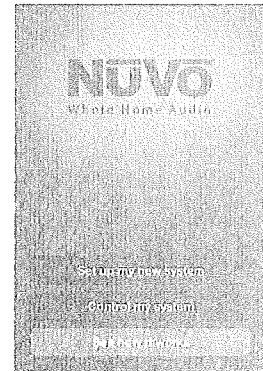
Fig. 58

Fig. 59

Fig. 60

4.4 Add a NuVo Component

See section 2.2, Adding Zones to an Existing System.

4.5 Music Library

Existing personal music is easily shared with the entire system by plugging a USB storage device into the USB port on the back panel of any of the zone players, as shown in fig. 61. The player will automatically scan the drives content and add it with its associated album art to the system's music library. **Not all USB drives are supported natively by the USB port as current draw is limited to XX amps. If a device that exceeds this is used, an external power supply must be used.**

Fig. 61

NūVō

Whole Home Audio
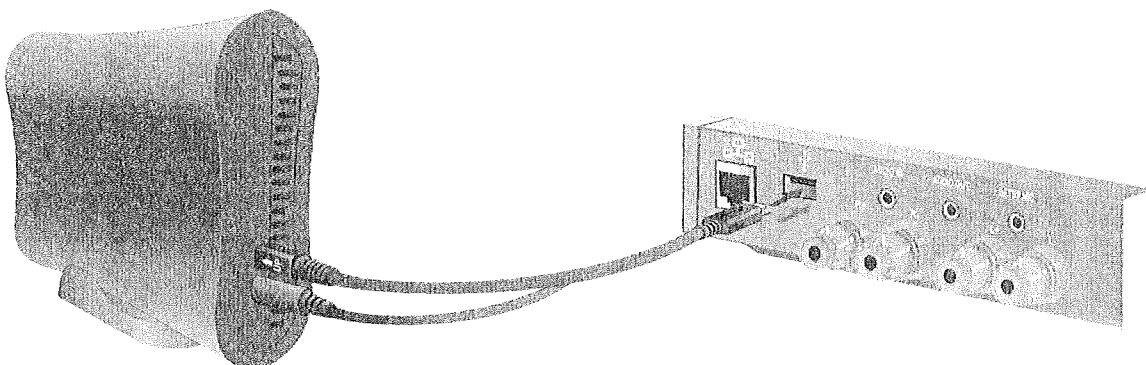
Another way to add music is to use the Music Share software, **see section 5, The Music Share Software.** Once music is added and you select "Music Library", as shown in fig. 62, the Music Library screen will display the number of songs and file size of the accumulated library, as shown in fig. 63. It will also show the individual sources for music content. An additional selection "Add Share" will allow you to type in the network path to a directory or shared drive with music content, as shown in fig. 64. When a new library is added, it may take time for the content to be refreshed. The length of time depends on the amount of content.

Fig. 62   Settings   Fig. 63   Music Library   Fig. 64   Music Library   Add Share...   Done
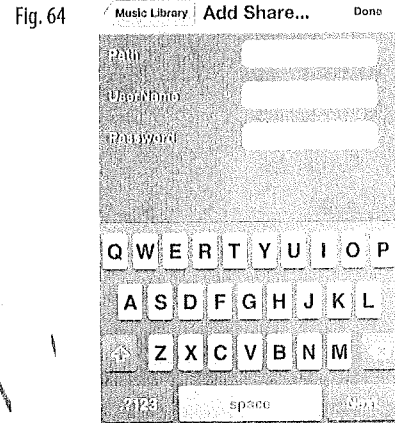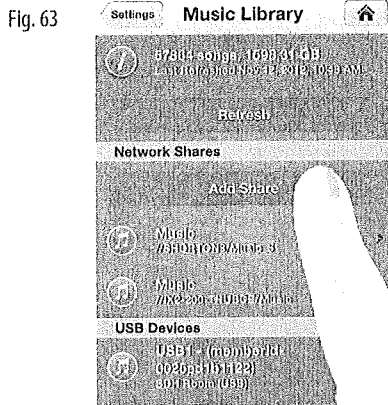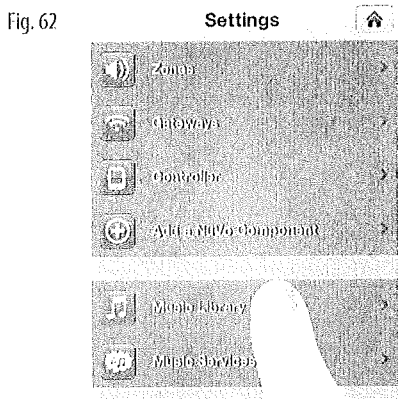
New music shares will appear in the music library as "Refreshing" while the files of the library are scanned. Once the refresh is completed, the content will be available for browsing and playback.

4.6 Music Services

When "Music Services" is selected, as shown in fig. 65, the active streaming music services on the system will be displayed, as shown in fig. 66. It also provides a button for adding new services. Most services require an online subscription account. The associated user name and password for the account must be added in this selection for the service to be active on the system.

Fig. 65   Fig. 66   Settings   Music Services
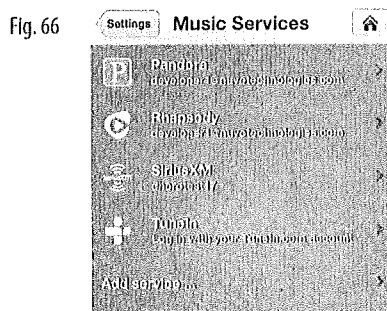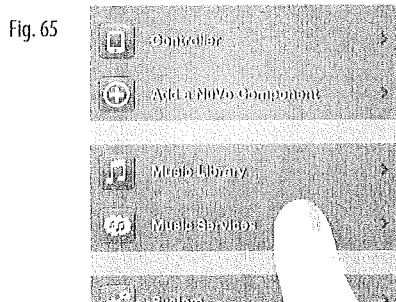
Note that music service availability is based on your region. The cost, functionality, and terms of subscription vary by service and are a function of the service provider.

25

4.7 System

When "System" is selected, as shown in fig. 67, the menu will display three important choices for information about the components of the system, as shown in fig. 68. The first choice, "About", gives specific component information for each zone, as shown in fig. 69.
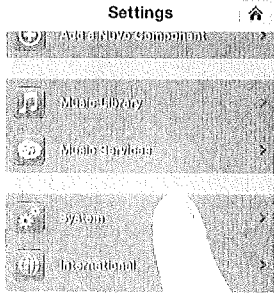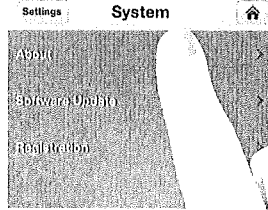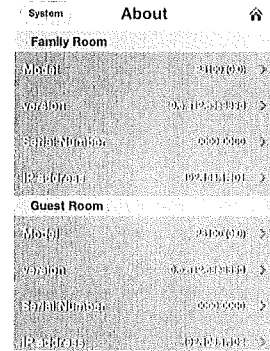
Fig. 67

Fig. 68

Fig. 69

"Software Update" will show any software updates that may be available, and allow for easy updates, as shown in figs. 70 and 71. Typically any updates will pop up on the app. An important advantage for the user is that the update is already downloaded in the background and once "install" is selected all the zones in the system will automatically be updated.
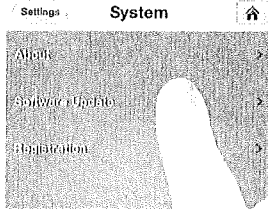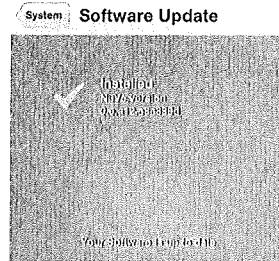
Fig. 70

Fig. 71

"Registration" will open the product warranty registration page, as shown in figs. 72 and 73. The opportunity to register the product is offered at the initial setup of the system. If the registration is completed at that time, this System selection is not necessary.
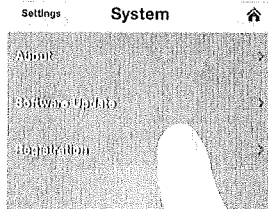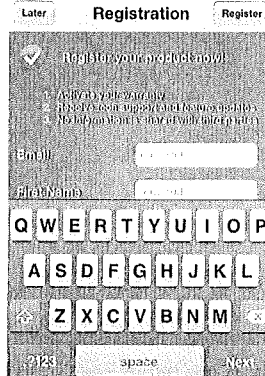
Fig. 72

Fig. 73

4.8 International

The "International" selection, as shown in fig. 74, provides a "Location" setting, as shown in fig. 75. When a country location is set, as shown in fig. 76, the legal 5 GHz wireless broadcast channel is set for the selected region. This is an important selection if you are using the 5 GHz wireless band for communication, **see section 4.1 Zones "Advanced"**.

Fig. 74

Fig. 75

Fig. 76
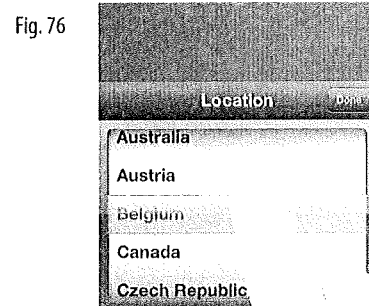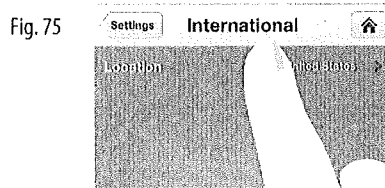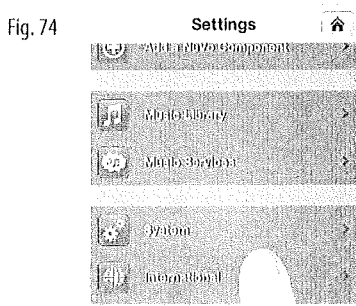
4.10 Help

The "Help" button, as shown in fig. 77, has links to contact NuVo directly or reference information on the system's components, as shown in fig. 78.

Fig. 77

Fig. 78
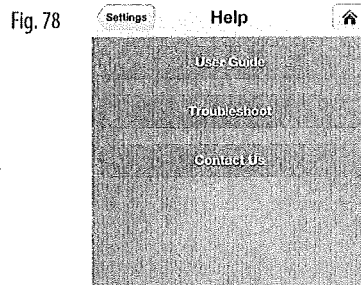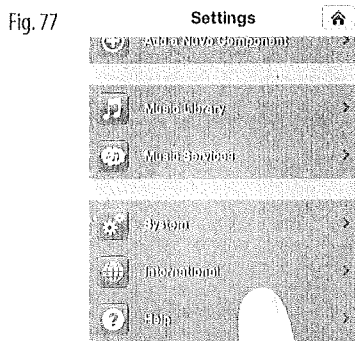
5. The Music Share Software

The Music Share Software allows music content from either shared network locations or libraries contained on personal computers to be streamed from any zone in the system.

1. From your computer, go to www.nuvotechnologies.com/musicshare to download the software from the NuVo website.
2. Follow the prompts for installing the software.
3. When the software is opened, it will connect to the network and display a blank music share page, as shown in fig. 79.

Fig. 79

4. Click on the "Add new" button at the top of the window. The music share choices will open in the next window, as shown in fig. 80. "My Music" folder is the default location for Windows Media Player libraries. If your music is stored on a Mac computer, or your preferred music library software is in iTunes, then select "iTunes media folder". When a selection is made, you will see a progress window, as shown in fig. 81.
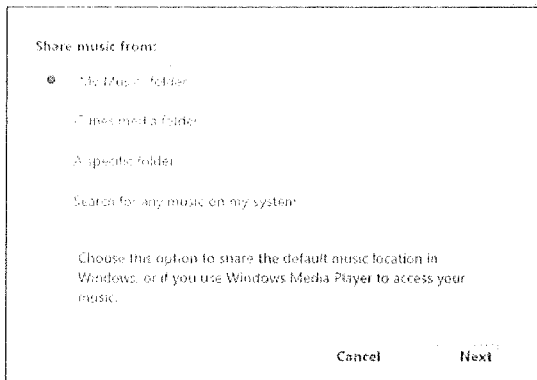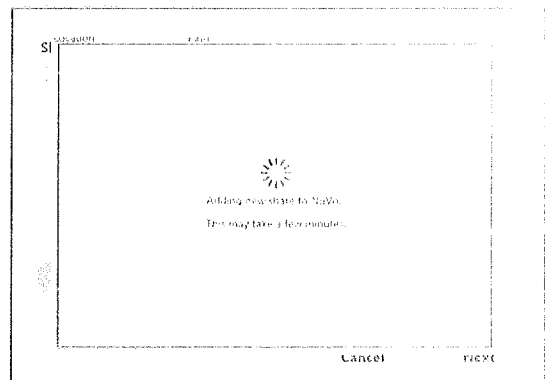
Fig. 80

Fig. 81

![NuVo Whole Home Audio logo]

5. You can also choose to share a specific folder or drive on the network. The "A specific folder..." choice will open Windows Explorer, as shown in fig. 82. From there you can choose a shared folder with music content or drive that is shared with the network.

Fig. 82
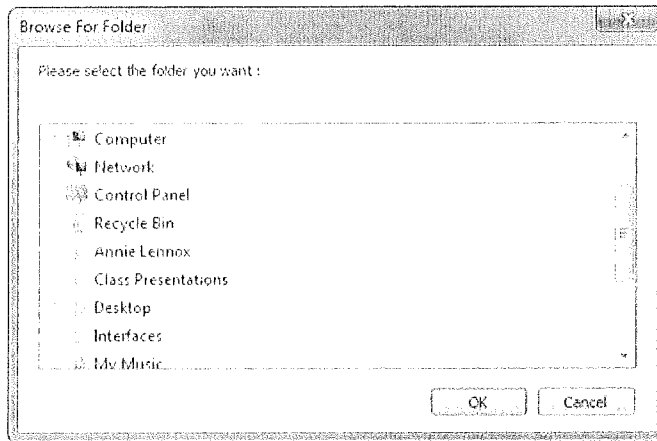
6. All shared folders and drives will be displayed in the software, as shown in fig. 83. The software can be opened at any time and content can be added or removed. Note that if you are sharing a personal library located on a personal computer hard drive, the software must actually be downloaded to that computer before the share is created. Once the share directory is created, it is not necessary to keep the Music Share Software open, although the computer hosting the music content must be active on the same network as the system for that content to be available for music playback.

Fig. 83
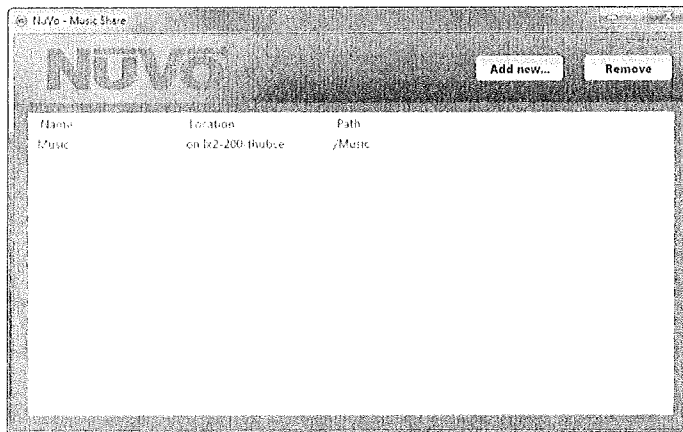
6. Troubleshooting

6.1 Front Panel LEDs

An important indicator of each zone's operation is the LED light on the front panel of the zone players. The color and either solid or flashing state of the LED provides a visual reference for the player's state of operation. Refer to the chart for an explanation of the functions and LED status.

LED Color	State of Zone Player	Explanation
●	Not Lit	Zone player is not powered on.
○	Solid White	Zone player is connected to the network and in normal operation.
○	Flashing White	Zone player processor is busy; it should return to solid white.
○	Solid Red	Hard failure. There is no network communication. Reboot by turning the power off and back on.
○	Flashing Red	If the LED is flashing Red, its state indicates that the zone player is no longer seeing the network.
○	Solid Green	Uninitialized state. It will become solid white when the zone player is added to a system and acquires a network address.
○	Flashing Green	Busy uninitialized state. This is normal during the zone setup process. The LED will turn white at the completion of the zone setup. It also means that the zone is updating to a new version. Do not unplug during this process. At the completion of the update it will return to solid white.
○	Solid Cyan	Zone is muted. When it is taken out of mute, it will return to solid white.
○	Flashing Blue	This indicates that the P200 is in Bluetooth discovery mode.

6.2 Not Connected

A common indicator for lack of communication with the system is the app's "Not Connected" screen, as shown in fig. 84. This screen appears when the controller is unable to see the zones in the system. There are several potential causes and remedies for this state that are important for troubleshooting.

Fig. 84
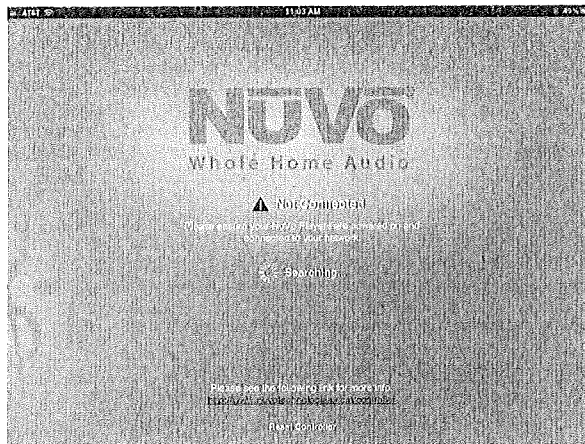
1. Look in the network settings of your control device and verify that it is connected to the same network as the Gateway and zone players.
2. This may sound relatively simple, but check the power status of the zone players. They should have a solid white (cyan if in Mute) LED light on the front panel.
3. Make sure that one or more of the players are not offline. This state would be indicated by a flashing red LED on the front panel. This can occur as a momentary state, in which case the LED will return to a solid white when the network connection is restored. This is often corrected by simply turning off and restoring power to the player. Once it is rebooted it should have a solid white LED on the front panel. If that does not restore a connection, reset the player defaults by turning the power off and back on. When the front panel LED lights up, follow the steps outlined in section **6.3 Restoring Defaults**. When that process is complete the player will have a solid green LED. Repeat the zone player setup procedure from the control app, **see section 2.2 Adding Zones to an Existing System**. When the zone is reconnected the front panel LED should once again be solid white.
4. If you are using a Gateway, check its connection to the network's router. Reboot if necessary by unplugging the power cable and plugging it back in. This resets the Gateway and puts it back into channel auto select. If there is conflicting traffic on a given Wi-Fi channel, this will often correct the situation.
5. Occasionally home routers go offline. This is typically corrected by rebooting the router.

6.3 Restoring Defaults

An important troubleshooting step is to restore defaults on a zone player. If a hard failure occurs, which results in a solid red LED, or the boot up process does not complete correctly, which will result in a flashing white LED, you should follow these steps to return the player to its original factory state. Once a zone is reset, repeat the setup procedure from the control app.

Fig. 85
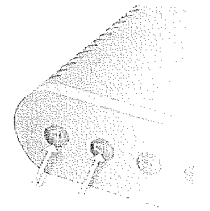
Process for the NVP100-xx and NVP200-xx wireless players:
1. Turn off the power using the power switch on the back panel above the AC plug.
2. Turn the power back on and look for a white LED to light up.
3. As soon as you see a white LED, touch the Volume UP and Volume down buttons simultaneously, as shown in fig. 85.
4. When the LED appears green, release the buttons.
5. The LED will flash green, then white.
6. When the LED becomes solid green, the process is complete and the defaults have been restored.

Process for the NVP3100-xx and NVP3500-xx players (these steps must be performed on each zone output independently):   Fig. 86
1. Turn off the power using the power switch on the back panel above the AC plug.
2. Turn the power back on and look for a white LED to light up.
3. As soon as you see a white LED, touch the zone setup button, as shown in fig. 86 (setup button on front panel of P3500).
4. When the LED appears green, release the button.
5. The LED will flash green, then white.
6. When the LED becomes solid green, the process is complete and the defaults have been restored.
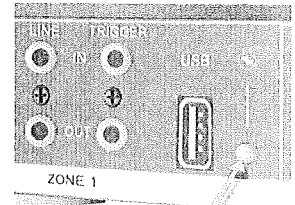
Process for the NVGW100-xx Gateway   Fig. 87
1. Press and hold the "Connect" button until the LED begins a rapid flash, as shown in fig. 87.
2. Wait for the flashing LED to return to a solid state.
3. Once the LED is solid green the reset is complete.
NOTE: If you have reset defaults on all of the zones of the system, it is a good idea to also reset the Gateway as well before reinitiating the system setup.

6.4 System Diagnostics

A valuable tool for diagnosing system performance is the built-in system diagnostic utility. This can be accessed across the network from any computer or Wi-Fi enabled device through a web browser. To access the diagnostics page, enter a zone's IP address into the browser address window followed by a forward slash (/) and the text, "diagnostics.fcgi", as shown in fig. 88. This will open the diagnostics window as shown in fig. 89.

Fig. 88

Fig. 89

The advantage of the diagnostics utility is that it provides a view of all of the zones on the network from that particular zone's view. At the bottom of the window are a series of buttons, two of which can be advantageous for the installer. On is the Site Survey button (labeled **impriv ra0 get_site_survey**). This opens a new window that shows all of the neighboring networks in view of the zone and the channel those networks are operating on depending on whether the zone is set at 2.4 GHz or 5 GHz, as shown in fig. 90. If there is significant traffic at the displayed frequency across th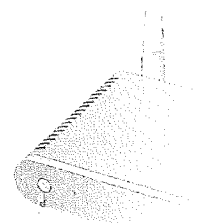e available channels, it is a good idea to change frequency. Overloading of channel traffic generally is associated with 2.4 GHz. This issue rarely occurs at 5 GHz.

Fig. 90

Networked Audio SDK

ra0   get_site_survey:

Ch	SSID	BSSID	Security	Siganl(%)	W-Mode	ExtCH	NT	WPS	DPID
36	NuVoHomeAudio9A009A	00:25:ed:9a:00:9b	WPA2PSK/AES	57	11a/n	NONE	In	NO	
36	NuVoHomeAudio9A01AA	00:25:ed:9a:01:ab	WPA2PSK/AES	78	11a/n	NONE	In	NO	
36	belkin.076.5GHz	ec:1a:59:14:20:78	WPA2PSK/AES	31	11a/n	NONE	In	YES	
40	NuVoHomeAudio9A00B4	00:25:ed:9a:00:d3	WPA2PSK/AES	73	11a/n	NONE	In	NO	
40	NuVoHomeAudio9A00E4	00:25:ed:9a:00:e5	WPA2PSK/AES	63	11a/n	NONE	In	NO	
40	dlink_media	00:18:c7:e1:7a:19	WPA1PSKWPA2PSK/TKIPAES	52	11a/n	NONE	In	YES	
44	NuVoHomeAudio9A0086	00:25:ed:9a:00:87	WPA2PSK/AES	83	11a/n	NONE	In	NO	
44	MikeKlein	58:6d:8f:c2:48:76	WPA1PSKWPA2PSK/TKIPAES	68	11a/n	ABOVE	In	YES	
48	NuVoHomeAudio9A0068	00:25:ed:9a:00:69	WPA2PSK/AES	83	11a/n	NONE	In	NO	
149	BrianGW_2_4	00:25:ed:9a:00:e1	WPA2PSK/AES	57	11a/n	NONE	In	NO	
149	NuVo Wireless	34:bd:c8:86:69:50	WPA2PSK/AES	26	11a/n	NONE	In	NO	
149	NuVoHomeAudio9A00A8	00:25:ed:9a:00:a9	WPA2PSK/AES	63	11a/n	NONE	In	NO	
153	NETGEAR-5G	74:44:01:48:60:b0	NONE	26	11a/n	BELOW	In	YES	
153	NuVo Wireless	00:26:cb:13:ee:b0	WPA2PSK/AES	100	11a	NONE	In	NO	
153	PeteCisco_5	58:6d:8f:c2:46:55	NONE	47	11a/n	BELOW	In	YES	
157	NuVoHomeAudio9A00CE	00:25:ed:9a:00:cf	WPA2PSK/AES	63	11a/n	NONE	In	NO	
157	Pete_5	28:cf:da:b1:b4:44	WPA2PSK/AES	73	11a/n	ABOVE	In	NO	
161	BachroomNuVo	98:fc:11:7d:66:8a	WPAPSK/TKIP	100	11a	NONE	In	YES	
161	NuVoHomeAudio9A0084_2	e0:46:9a:7c:54:16	WPA2PSK/AES	68	11a/n	NONE	In	YES	
165	NuVoHomeAudio9A00C4	00:25:ed:9a:00:c5	WPA2PSK/AES	78	11a/n	NONE	In	NO	
165	NuVoHomeAudio9A00B8	00:25:ed:9a:00:b9	WPA2PSK/AES	100	11a/n	NONE	In	NO	

Another useful tool is the button labeled "iPerf". This is a built-in throughput test for all of the zones in the system. When iPerf is selected, the system will run a test across all zones that measures the available throughput to each of the zones, as shown in fig. 91. The results appear as green, meaning good throughput, yellow, meaning marginal but still acceptable, and red, meaning not good enough to support necessary audio streaming. The result to be concerned about is red. If a zone result is red, the solutions are to move the zone to a better location, wire it directly to the network, try 5 GHz communication as opposed to 2.4, see section **4.1 zones page 20**, or add an additional Gateway for additional Wi-Fi coverage.

Fig. 91

Zones/Gateways	Gateway 2	
	Tx	Rx
Nook	43.7 Mbits/sec 0.270 ms [5G] 22205/41395 (54%)	63.5 Mbits/sec 4.463 ms [5G] 721/28092 (2.6%)
Living Room	42.0 Mbits/sec 0.165 ms [5G] 23874/42108 (57%)	75.6 Mbits/sec 0.202 ms [5G] 830/33026 (2.5%)
Pool	(testing)	(testing)
Garage		
Game Room	39.0 Mbits/sec 0.336 ms [5G] 23857/40804 (58%)	71.1 Mbits/sec 0.543 ms [5G] 683/30984 (2.2%)
Bedroom		

6.5 Advanced Network Management

A popular practice is to prioritize home network traffic by creating VLANs (Virtual Local Area Networks) to provide better performance for streaming audio and video. This work should only be done by a network administrator. The practice uses configurable network switches that allow specific ports to be grouped for their specific VLAN communication. Each of the VLANs are considered broadcast domains. The concept of broadcast domains is very important to proper communication among the components of the NuVo Wireless Player Portfolio System. For all zones to communicate properly they must be on the same broadcast domain. Make sure that the switch ports being used for the NuVo Player Portfolio Audio System are operating on the same VLAN.

Another potential issue with zone communication can be the way in which port security has been configured. Since the components of the system are continually sending packets of information back and forth, it is important that the switch ports being used are open to all network traffic. If they are not, this will impede the necessary communication across the entire system.

On any managed switch, speed and duplex must be set on the ports being used by the NuVo Player Portfolio Audio System to auto negotiate. This is the way in which the zones communicate. The common mistake would be to set the ports to gigabit communication which will cause a communication mismatch with the zones.

For more advanced troubleshooting, please visit **www.nuvotechnologies.com/troubleshooting/player**.

7. Specifications

NVGW100-xx Gateway

System Information

LAN Connection	5 LAN - RJ45 - 10/100/1000 Mbps
Wireless Connection	2 TX x 2 RX MIMO, IEEE 802.11a/b/g/n
	Dual Band – Concurrent
Wireless Data Rate	Up to 300 Mbps

Power Requirements

Power Supply	12V DC, 1.0A
Input Voltage	100 – 240VAC, 50/60 Hz
Rated Power	12W

Regulatory Approvals

Controller	
EMC	FCC, IC, CE-EMC, C-Tick
Power Supply	
Safety	cULus, GS Mark, CE-LVD
EMC	FCC, IC, CE-EMC, C-Tick
Environmental Compliance Europe	RoHS

Operating Temperature   0°C to 40°C

Physical Specifications

Unit Size (mm)	32.8 H x 176.5 W x 133 D (including antennas)
Unit Size (inch)	1.29 H x 6.95 W x 5.24 D (including antennas)
Unit Weight (kg)	0.55
Unit Weight (pounds)	1.21

Shipping Specifications

Unit Size (mm)	240 D x 230 W x 65.5 H
Unit Size (inch)	9.45 D x 9.06 W x 2.58 H
Unit Weight (kg)	0.90
Unit Weight (pounds)	1.98

NuVo reserves the right to change specifications without notice.

NuVo
Whole Home Audio

7. Specifications

NVP100-xx Player

Input/Output Connectors

Line Input	1 - TRS 3.5 mm stereo jack
Line Output	1 - TRS 3.5 mm stereo jack
Speaker Output	4 - Gold 5-way binding post
USB 2.0 Connection (Type A)	1
Local Area Network (LAN)	1 - RJ45

Supported Audio Formats

Music File (USB or over network)	MP3
	WMA
	AAC
	Ogg Vorbis
	FLAC
	WAV

Internet Radio	Pandora
	Sirius/XM
	Rhapsody
	TuneIn
Playlist Support	WPL
	M3U
	PLS
l	Tunes

IP Control

	Apple iTouch®
	Apple iPhone®
	Apple iPad®
	Android Mobile
	Android Tablet

Network Connectivity

LAN (Wired Connection)	10/100Base-T Ethernet
Wireless Connection	MIMO, 2 TX + 2 RX Channels
	IEEE 802.11a/b/g/n

Amplifier Output

Rated Output Power (8 ohm)	40W (20W x 2)
Two channels driven 20 Hz – 20 KHz @ 0.5% distortion	
Rated Distortion (1/2 Power)	0.20%
Speaker Impedance	6 – 8 ohms
Frequency Response (20 - 20kHz)	+/-0.5 dB
Damping Factor	50+
Signal-to-Noise Ratio, rated output:	94 dB A – weighted

Line Output

Output Level	0-2.0 V RMS
Output Impedance	5 Ohms
Signal-to-Noise Ratio, rated output	88 dB A – weighted

Line Input

Input Impedance	10 KOhms
Input Overload	2.3 V RMS

Audio Processing

Audyssey Dynamic Volume™	
Bass Equalization	+/-12 dB range
Treble Equalization	+/-12 dB range
Balance	

Regulatory Approvals

Safety:	cTUVus, CE-LVD
EMC:	FCC, IC, CE-EMC, C-Tick
Environmental Compliance Europe	RoHS

Power Requirements

Input Voltage:	100 – 240VAC, 50/60 Hz
Power Consumption (max):	70 W
Power Consumption (typical – 1/8 audio power):	13 W

Operating Temperature

	0°C to 40°C

Physical Specifications

Unit Size (mm)	42 H x 187 W x 115 D
Unit Size (inch)	1.65 H x 7.36 W x 4.53 D
Unit Weight (kg)	0.613
Unit Weight (pounds)	1.35

Shipping Specifications

Unit Size (mm)	240 D x 230 W x 65.5 H
Unit Size (inch)	9.45 D x 9.06 W x 2.58 H
Unit Weight (kg)	1.30
Unit Weight (pounds)	2.87

NuVo reserves the right to change specifications without notice.

NuVo
Whole Home Audio

NVP200-xx Player

Input/Output Connectors
Line Input	1 - TRS 3.5 mm stereo jack
Line Output	1 - TRS 3.5 mm stereo jack
Setup Mic: (Audyssey)	1 - TS 3.5 mm stereo jack
Speaker Output	4 - Gold 5-way binding post
USB 2.0 Connection (Type A)	1
Local Area Network (LAN)	1 - RJ45

Supported Audio Formats
Music File (via USB or network)	MP3
	WMA
	AAC
	Ogg Vorbis
	FLAC
	WAV
Internet Radio:	Pandora
	Sirius/XM
	Rhapsody
	TuneIn
Playlist Support	WPL
	M3U
	PLS
I	Tunes

IP Control
	Apple iTouch®
	Apple iPhone®
	Apple iPad®
	Android Mobile
	Android Tablet

Network Connectivity
LAN (Wired Connection)	10/100Base-T Ethernet
Wireless Connection	MIMO, 2 TX + 2 RX Channels
	IEEE 802.11a/b/g/n

Amplifier Output
Rated Output Power (8 ohm)	120W (60W x 2)
Two channels driven	20 Hz – 20 KHz @ 0.5% distortion
Rated Output Power (4 ohm)	120W (60W x 2)
Two channels driven	20 Hz – 20 KHz @ 0.5% distortion
Rated Distortion (1/2 Power)	0.20%
Speaker Impedance	4 – 8 ohms
Frequency Response (20 - 20kHz)	+/-0.5 dB
Damping Factor	65+
Signal-to-Noise Ratio at rated output	92 dB A – weighted

Line Output:
Output Level	0-2.0 V RMS
Output Impedance	5 Ohms
Signal-to-Noise Ratio at rated output	88 dB A – weighted

Line Input:
Input Impedance	10 KOhms
Input Overload	2.3 V RMS

Audio Processing
Audyssey Dynamic Volume™
Bass Equalization	+/-12 dB range
Treble Equalization	+/-12 dB range
Balance	

Regulatory Approvals
Safety	cTUVus, CE-LVD
EMC	FCC, IC, CE-EMC, C-Tick
Environmental Compliance	RoHS

Power Requirements
Input Voltage	100 – 240VAC, 50/60 Hz
Power Consumption (max)	150 W
Power Consumption (typical – 1/8 audio power)	31 W

Operating Temperature
$0\,^\circ C$ to $40\,^\circ C$

Physical Specifications
Unit Size (mm)	42 H x 229 W x 127 D
Unit Size (inch)	1.65 H x 9.02 W x 5.0 D
Unit Weight (kg)	1.11
Unit Weight (pounds)	2.45

Shipping Specifications
Unit Size (mm)	260 D x 240 W x 65.5 H
Unit Size (inch)	10.24 D x 9.45 W x 2.58 H
Unit Weight (kg)	2.0
Unit Weight (pounds)	4.41

NuVo reserves the right to change specifications without notice.

NVP3100-xx Player

Input/Output Connectors

Line Input	3 - TRS 3.5 mm stereo jack
Line Output	3 - TRS 3.5 mm stereo jack
Trigger Input	3 - TS 3.5 mm stereo jack
Trigger Output	3 - TS 3.5 mm stereo jack
Speaker Output	3 - (4 contact) Pluggable
USB 2.0 Connection (Type A)	3
Local Area Network (LAN)	1 - Dual RJ45

Supported Audio Formats

Music File (USB or over network)	MP3 (.mp3)
	WMA (.wma)
	AAC (.aac/.mp4a/.mp4)
	Ogg Vorbis (.ogg)
	FLAC (.flac)
	WAV (.wav)

Internet Radio	Pandora
	Sirius/XM
	Rhapsody
	TuneIn
	Deezer
Playlist Support	WPL
	M3U
	PLS
I	Tunes

IP Control

	Apple iTouch[5]
	Apple iPhone[o]
	Apple iPad[5]
	Android Mobile
	Android Tablet

Network Connectivity

LAN (Wired Connection)	10/100Base-T Ethernet
Internal Ethernet switch to 3 independent zone nodes	

Amplifier Output (typical of 3 zones)

Rated Output Power (8 ohm)	40W (20W x 2)
Two channels driven	20 Hz – 20 KHz @ 0.5% distortion
Rated Distortion (1/2 Power)	0.20%
Speaker Impedance	6 – 8 ohms
Frequency Response (20 - 20kHz)	+/-0.5 dB
Damping Factor	50+
Signal-to-Noise Ratio, rated output	92 dB A – weighted

Line Output:

Output Level	0-2.0 V RMS
Output Impedance	5 Ohms
Signal-to-Noise Ratio, rated output	91 dB A – weighted

Line Input:

Input Impedance	10 KOhms
Input Overload	2.3 V RMS

Audio Processing

Audyssey Dynamic Volume™	
Bass Equalization	+/-12 dB range
Treble Equalization	+/-12 dB range
Balance	

Regulatory Approvals

Safety	cTUVus, CE-LVD
EMC	FCC, IC, CE-EMC, C-Tick
Environmental Europe	RoHS

Power Requirements

Input Voltage	100 – 240VAC, 50/60 Hz
Power Consumption (max)	200 W
(typical – 3 zones, 1/8 audio power)	42 W

Operating Temperature

	0°C to 40°C

Physical Specifications

Unit Size without feet (mm)	44 H x 430 W x 250 D
Unit Size without feet (inch)	1.73 H x 16.93 W x 9.84 D
Unit Size with feet (mm)	54 H x 430 W x 250 D
Unit Size with feet (inch)	2.13 H x 16.93 W x 9.84 D
Unit Weight (kg)	2.81
Unit Weight (pounds)	6.20

Shipping Specifications

Unit Size (mm)	565 D x 328 W x 130 H
Unit Size (inch)	22.24 D x 12.91 W x 5.12 H
Unit Weight (kg)	3.50
Unit Weight (pounds)	7.72

NuVo reserves the right to change specifications without notice.

NVP3500-xx Player

Input/Output Connectors

Line Input	3 – Dual RCA
Line Output	3 – Dual RCA
Trigger Input	3 -TS 3.5 mm stereo jack
Trigger Output	3 -TS 3.5 mm stereo jack
Speaker Output	3 - (4 contact) Pluggable
USB 2.0 Connection (Type A)	3 (Zone 3 on Front)
Local Area Network (LAN)	1 - Dual RJ45

Supported Audio Formats

Music File (USB or over network)	MP3 (.mp3)
	WMA (.wma)
	AAC (.aac/.mp4a/.mp4)
	Ogg Vorbis (.ogg)
	FLAC (.flac)
	WAV (.wav)
Internet Radio	Pandora
	Sirius/XM
	Rhapsody
	TuneIn
	Deezer
Playlist Support	WPL
	M3U
	PLS
	Tunes
IP Control	Apple iTouch®
	Apple iPhone®
	Apple iPad®
	Android Mobile
	Android Tablet

Network Connectivity

LAN (Wired Connection)	10/100Base-T Ethernet
	Internal Ethernet switch to 3 independent zone nodes

Amplifier Output (typical of 3 zones)

Bang & Olufsen Ice Power Amplifiers

Rated Output Power (1KHz / 1% Distortion)	4 Ohm - 200W (100W x 2)
	6 Ohm - 150W (75W x 2)
	8 Ohm - 100W (50W x 2)
Total Harmonic Distortion (1/2 Power)	100Hz - 0.003%
	1KHz - 0.003%
	6.67KHz - 0.020%
Speaker Impedance	4 / 6 / 8 ohms
Frequency Response (20 - 20kHz)	+/-0.5 dB
Damping Factor	80+
Signal-to-Noise Ratio (IHF-A)	100 dB

Line Output:

Output Level	0-2.1 V RMS
Output Impedance	470 Ohms
Signal-to-Noise Ratio (IHF-A)	100 dB

Line Input:

Input Impedance	100K Ohms
Input Overload	2.3 V RMS

Audio Processing

Audyssey Dynamic Volume™

Bass Equalization	+/-12 dB range
Treble Equalization	+/-12 dB range
Balance	
Loudness compensation	

Regulatory Approvals

Safety	cTUVus, CE-LVD
EMC	FCC, IC, CE-EMC, C-Tick
Environmental Europe	RoHS

Power Requirements

Input Voltage	100 – 240VAC, 50/60 Hz
Power Consumption	
Maximum	680W
Typical (music)	260W
UL60065 (1/8th power)	120W
Operating Temperature	0° C to 40° C

Physical Specifications

Unit Size without feet (mm)	44 H x 430 W x 250 D
Unit Size without feet (inch)	1.73 H x 16.93 W x 9.84 D
Unit Size with feet (mm)	54 H x 430 W x 250 D
Unit Size with feet (inch)	2.13 H x 16.93 W x 9.84 D
Unit Weight (kg)	3.50
Unit Weight (pounds)	7.70

Shipping Specifications

Unit Size (mm)	565 L x 328 W x 130 H
Unit Size (inch)	22.24 L x 12.91 W x 5.12 H
Unit Weight (kg)	4.90
Unit Weight (pounds)	10.80

NuVo reserves the right to change specifications without notice.

NVP300-xx Preamplifier

Input/Output Connectors

Line Input	1 - TRS 3.5 mini TOSLINK Combo Receiver
Line Output	1 - TRS 3.5 mini TOSLINK Combo Receiver
USB 2.0 Connection (Type A)	1
Local Area Network (LAN)	1 - RJ45

Supported Audio Formats

Music File (USB or over network)	MP3
	WMA
	AAC
	Ogg Vorbis
	FLAC
	WAV

Internet Radio	Pandora
	Sirius/XM
	Rhapsody
	TuneIn

Playlist Support	WPL
	M3U
	PLS
	iTunes

IP Control

	Apple iTouch©
	Apple iPhone©
	Apple iPad©
	Android Mobile
	Android Tablet

Network Connectivity

LAN (Wired Connection)	10/100Base-T Ethernet
Wireless Connection	MIMO, 2 TX + 2 RX Channels
	IEEE 802.11a/b/g/n

Line Output—Digital

Sample Rates	44.1KHz-192KHz
Bit Rate	24B
Signal-to-Noise Ratio, rated output	>120 dB SNR
THD+n	<0.0005%
Frequency Response	+/-0.1 dB 20 Hz to 20 KHz

Line Input—Digital

Sample Rates	44.1KHz-192KHz
Bit Rate	24B
Signal-to-Noise Ratio, rated output	>120 dB SNR
THD+n	<0.0005%
Frequency Response	+/-0.1 dB 20 Hz to 20 KHz

Line Output—analog

Output Level	0-2.0 V RMS
Output Impedance	5 Ohms
Signal-to-Noise Ratio, rated output	>100 dB SNR
THD+n	<0.005%
Frequency Response	+/-0.5 dB 20 Hz to 20 KHz

Line Input—analog

Input Impedance	10 KOhms
Input Overload	2.3 V RMS
Signal-to-Noise Ratio, rated output	>100 dB SNR
THD+n	<0.005%
Frequency Response	+/-0.5 dB 20 Hz to 20 KHz

Audio Processing

Audyssey Dynamic Volume™	
Bass Equalization	+/-12 dB range
Treble Equalization	+/-12 dB range
Balance	

Regulatory Approvals

Safety:	cTUVus, CE-LVD
EMC:	FCC, IC, CE-EMC, C-Tick
Environmental Compliance Europe	RoHS

Power Requirements

Input Voltage:	100 – 240VAC, 50/60 Hz
Power Consumption (max):	10 W
Power Consumption (typical)	5.1 W

Operating Temperature

	0°C to 40°C

Physical Specifications

Unit Size (mm)	38 H x 145.5 W x 90.5 D
Unit Size (inch)	1.5 H x 5.73 W x 3.56 D
Unit Weight (kg)	0.2
Unit Weight (pounds)	0.5

Shipping Specifications

Unit Size (mm)	240 D x 230 W x 65.5 H
Unit Size (inch)	9.45 D x 9.06 W x 2.58 H
Unit Weight (kg)	1.30
Unit Weight (pounds)	2.87

NuVo reserves the right to change specifications without notice.

All Player Products

Smart Device Operating System Requirements:
iOS 6 or greater required
Android 2.1x or greater required

Compliance Information

Input/Output Connectors
This device complies with Part 15 of the FCC Rules / Industry Canada licence-exempt
RSS standard(s). Operation is subject to the following two conditions: (1) this device
may not cause harmful interference, and (2) this device must accept any interference
received, including interference that may cause undesired operation.

(Note: the paragraph above also should be added on the label)

*Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux
appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions
suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de
l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est
susceptible d'en compromettre le fonctionnement.*

Changes or modifications not expressly approved by the party
responsible for compliance could void the user's authority to operate the
equipment.

This equipment has been tested and found to comply with the limits for
a Class B digital device, pursuant to part 15 of the FCC Rules. These
limits are designed to provide reasonable protection against harmful
interference in a residential installation. This equipment generates
uses and can radiate radio frequency energy and, if not installed and
used in accordance with the instructions, may cause harmful interference
to radio communications. However, there is no guarantee that interference
will not occur in a particular installation. If this equipment does cause
harmful interference to radio or television reception, which can be
determined by turning the equipment off and on, the user is encouraged
to try to correct the interference by one or more of the following
measures:
---Reorient or relocate the receiving antenna.
---Increase the separation between the equipment and receiver.
---Connect the equipment into an outlet on a circuit different from that
to which the receiver is connected.

---Consult the dealer or an experienced radio/TV technician for help.

MPE Requirements
To satisfy FCC / IC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

*Les antennes installées doivent être situées de facon à ce que la population ne puisse
y être exposée à une distance de moin de 20 cm. Installer les antennes de facon à ce
que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l'
antenne.
La FCC des éltats-unis stipule que cet appareil doit être en tout temps éloigné d'au
moins 20 cm des personnes pendant son functionnement.*

All Player Products

Smart Device Operating System Requirements:
iOS 6 or greater required
Android 2.1x or greater required

NUVō
Whole Home Audio

Compliance Information

Region Selection
Limited by local law regulations, version for North America does not have region selection option.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Gain of antenna: _dBi max.
Type of antenna: 50ohm, _(Omni-directional, PCB, Chip, Dipole...)

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Gain d'antenne: _dBi maximal

Type d'antenne: 50 ohm, _(Omni-directionnel...)

All Player Products

Smart Device Operating System Requirements:
iOS 6 or greater required
Android 2.1x or greater required

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