

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.

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

I

Tunes

IP Control

Apple iTunes®
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

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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 iPod®
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 °C to 40 °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.

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
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

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

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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 façon à ce que la population ne puisse y être exposée à une distance de moins de 20 cm. Installer les antennes de façon à ce que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l'antenne.

La FCC des états-unis stipule que cet appareil doit être en tout temps éloigné d'au moins 20 cm des personnes pendant son fonctionnement.

The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
les dispositifs fonctionnant dans la bande de 5 150 à 5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

All Player Products

Smart Device Operating System Requirements:

iOS 6 or greater required

Android 2.1x or greater required



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.

All Player Products

Smart Device Operating System Requirements:

iOS 6 or greater required

Android 2.1x or greater required



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