NUVO®

A Group brand | legrand

HIGH QUALITY DIGITAL MUSIC
IN EVERY ROOM

DESIGN AND INSTALLATION GUIDE

bticino

For more information visit the following website:

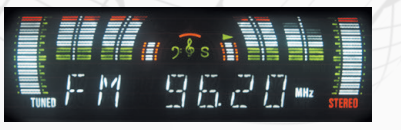
http://www.bticino.com

Contents

NUVO

high quality digital music in every room of the house

FROM RADIO BROADCASTS AND COLLECTIONS OF MUSIC ON CD....



In recent years developments in electronics have contributed to a gradual replacement of analogue sound sources (FM radios, CD players etc.) by high-quality audio sources in digital format.

Stored on PCs, local hard disks and Cloud services as personal libraries or available streamed from the Internet, digital audio is more and more often played for local listening by Tablets and Smartphones.

Rock music in the dining room, classical music in the bedroom and jazz music in the living room.

BTicino's **NUVO** solution is now available to play audio in various rooms in the home with Hi-Fi sound levels and quality.

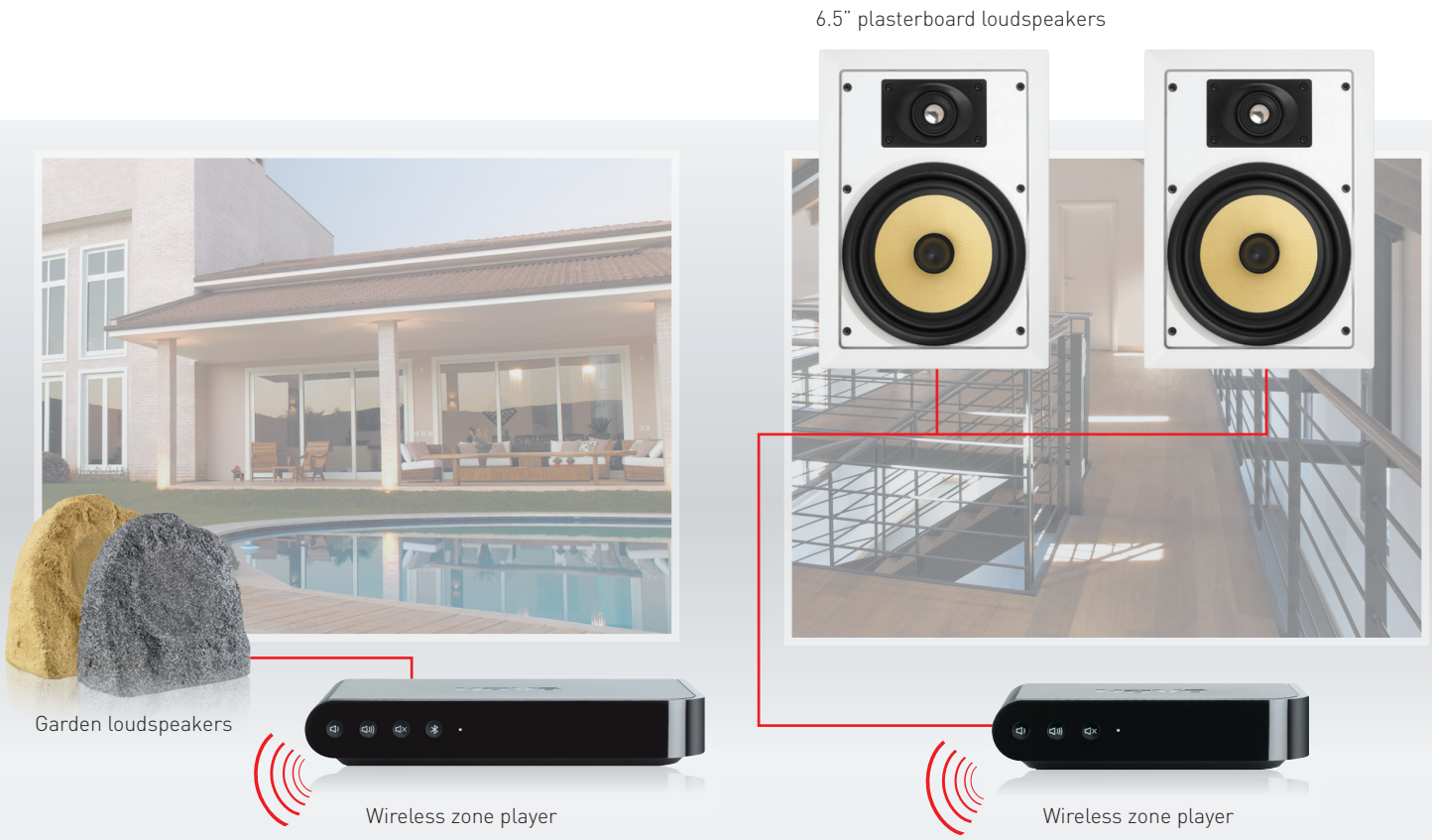
Using single zone players linked to high-quality loudspeakers, **NUVO** allows you to listen to your favourite music saved on your Smartphone or Android Tablet, shared online in iTunes and Windows Media libraries or available from Internet services such as streamed radio and Cloud services, in every room of the home, up to a maximum of 16.

All the functions are freely controlled by Tablet and Smartphone with a specific APP which can be downloaded free from the Android Play Store and the Apple APP Store.

TO DIGITAL AUDIO SHARED VIA LAN NETWORK AND THE INTERNET

Wireless solution

The ideal solution for flexible and fast systems with minimal structural interventions.



The system

Easy to install and configure, the multiroom digital audio system consists of zone amplifier devices (players) connected to the loudspeakers and to the home LAN network in order to listen to several audio files at the same time in the different rooms, up to a maximum of 16 audio files.
There are two installation modes:
- wired solution, suitable for new houses fitted with wired LAN network;
- dual-band wireless (2.4 and 5 Ghz) solution for existing homes or to extend wired systems, in rooms of new homes without wired LAN network. In this case use of an appropriate Wi-Fi **NUVO** Gateway item NV-GW100R1-EU for the radio connection of the players.

Wired solution

Ideal for sound systems in rooms with wired LAN network and to centralise players in racks.

8" plasterboard loudspeakers

6.5" ceiling loudspeakers

Multi-zone player

LAN

Desktop PC

PC

Network hard disk

tunein

DEEZER

Internet

ADSL

Modem/Router Wi-Fi

iTunes

Windows Media

NUVO APP

Connect and listen to

A specific APP, available free from the Android and iOS stores, configures the devices and manages all the system functions using just a Tablet or a Smartphone connected to the home Wi-Fi network.

Zone player

NV-P100-EU (2x20W)
NV-P200-EU (2x60W)
NV-P300-EU (preamplifier)
Stand-alone player

NV-P3100-EU (3 zones 2x20W)
NV-P3500-EU (3 zones 2x100W
Rack player

Gateway

NV-GW100R1-EU

SYSTEM components

Zone player

This device is a "D Class" Hi-Fi quality audio stereo amplifier available in two versions:

- stand-alone, with 2x20 W (item NV-P100-EU) and 2x60 W power (item NV-P200-EU) for sound system in **one zone.**
  Preset for wired and wireless LAN network connection.

- for mounting in modular rack cabinets and for sound system in max. **three different zones.**
  There are two available powers for every zone: 2x20 W (item NV-P3100-EU) and 2x100 W (item NV-P3500-EU).
  Preset for wired LAN network connection.

Non-amplified zone player

This device, item NV-P300-EU, is specially made to use an audio or audio/video power amplifier of other brands for the sound system of a zone.

The players have USB port and IN audio connector, to which mobile devices such as Pen drives and MP3/CD readers can be connected.
This solution allows further audio files to be added for home listening, as well as those stored in the devices on the LAN network (hard disk and computer) and those streamed via Internet.
The wireless player item NV-P200-EU can also be connected via Bluetooth to your tablet or smartphone to play your favourite playlists.

Gateway

It is the device the wireless system needs because when it is connected to the home data network Wi-Fi modem router it ensures the correct distribution to the various zone players of the audio files and metadata stored on the home LAN network devices (PC, Hard disks) and/or available from Internet (streamed audio services).
The Gateway, item NV-GW100R1-EU, uses the advanced 2.4 and 5 GHz dual-band wireless communication protocol laid down by standard 802.11n to guarantee synchronisation of data and avoid interferences between the various players.
To guarantee radio signal coverage in large rooms up to a **maximum of 3 gateways** can be used at the same time.

Note: the amplifier power refers to coupling with loudspeakers with impedance 8 Ω.
The power is in W rms.

Loudspeakers

Outdoor Accent Plus Rock series

Accent PLUS1 series

Accent PLUS2 series

Loudspeakers

A range of loudspeakers with powers between 50 – 120 W and with various shapes and types of installation is available, for a superb listening experience in every room of the home.

The range consists of:

- **AccentPLUS1 series** made up of loudspeakers for mounting on the ceiling, wall and floor with polypropylene woofer and tweeter with silk dust cap.
- **AccentPLUS2 series** like the above but with better performance, with Dupont Kevlar woofer and tweeter with titanium dust cap.
- **AccentPLUS Rock series**, featuring a special rock shape – waterproof for external applications.

NUVO APP for system control

A single and specific app is available free from the Android Play Store or the Apple App Store for the configuration, system diagnostics and management of all the listening functions.
This will let you manage the entire **NUVO** system freely and anywhere in the house by selecting the audio sources (local audio libraries, Internet streaming services etc.) to be associated with the various rooms which will have a sound system.

Download the free APP

Available on App Store

AVAILABLE ON Google play

PROJECT GUIDELINES

The following factors must be taken into account when designing the NUVO audio multiroom system:

A. type of home LAN network available or to be created: wired or Wi-Fi.

B. number and type of player as a function of the zones to be fitted with a sound system and the audio power.

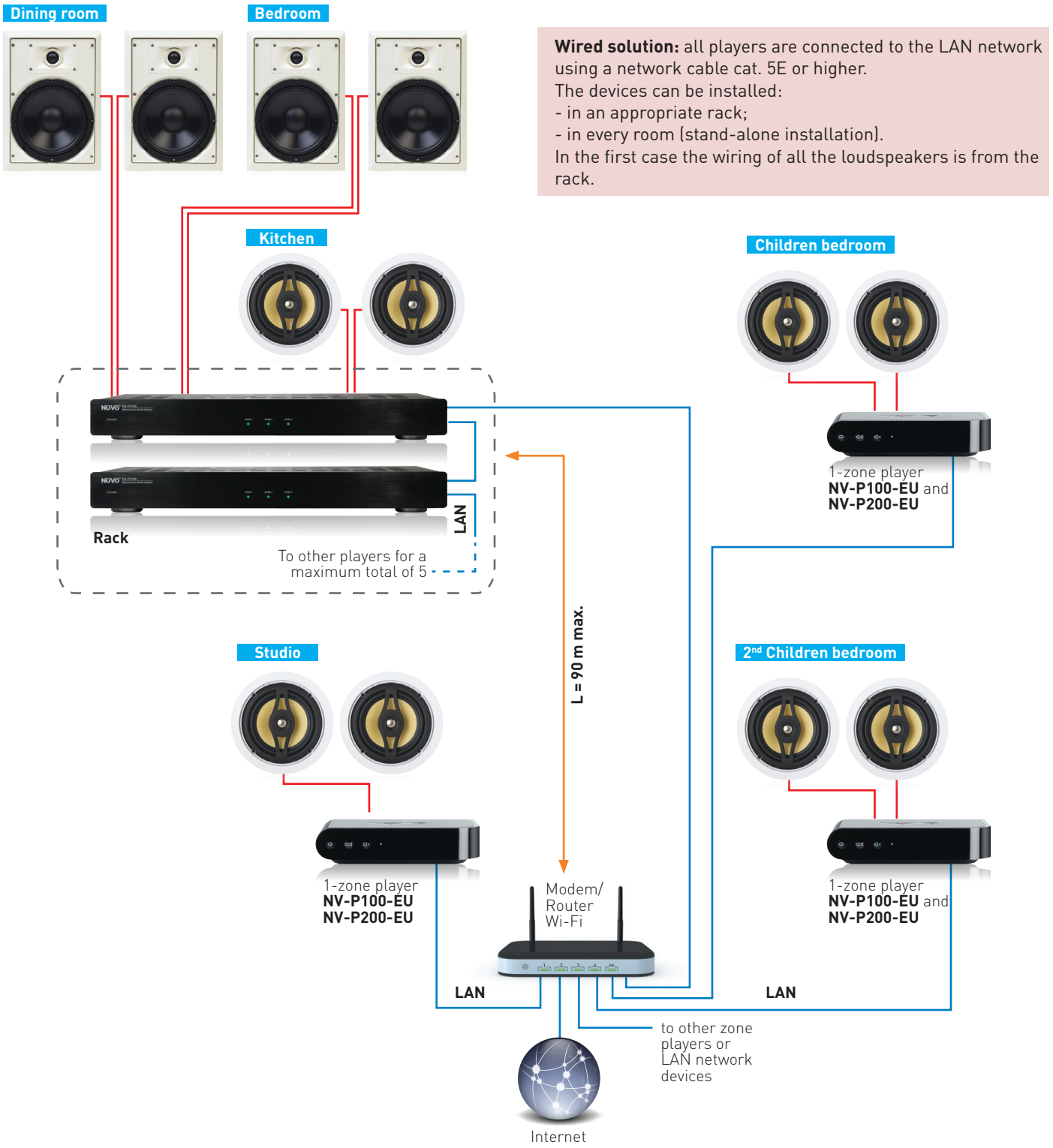
C. loudspeaker type and positioning.

A. TYPE OF LAN NETWORK

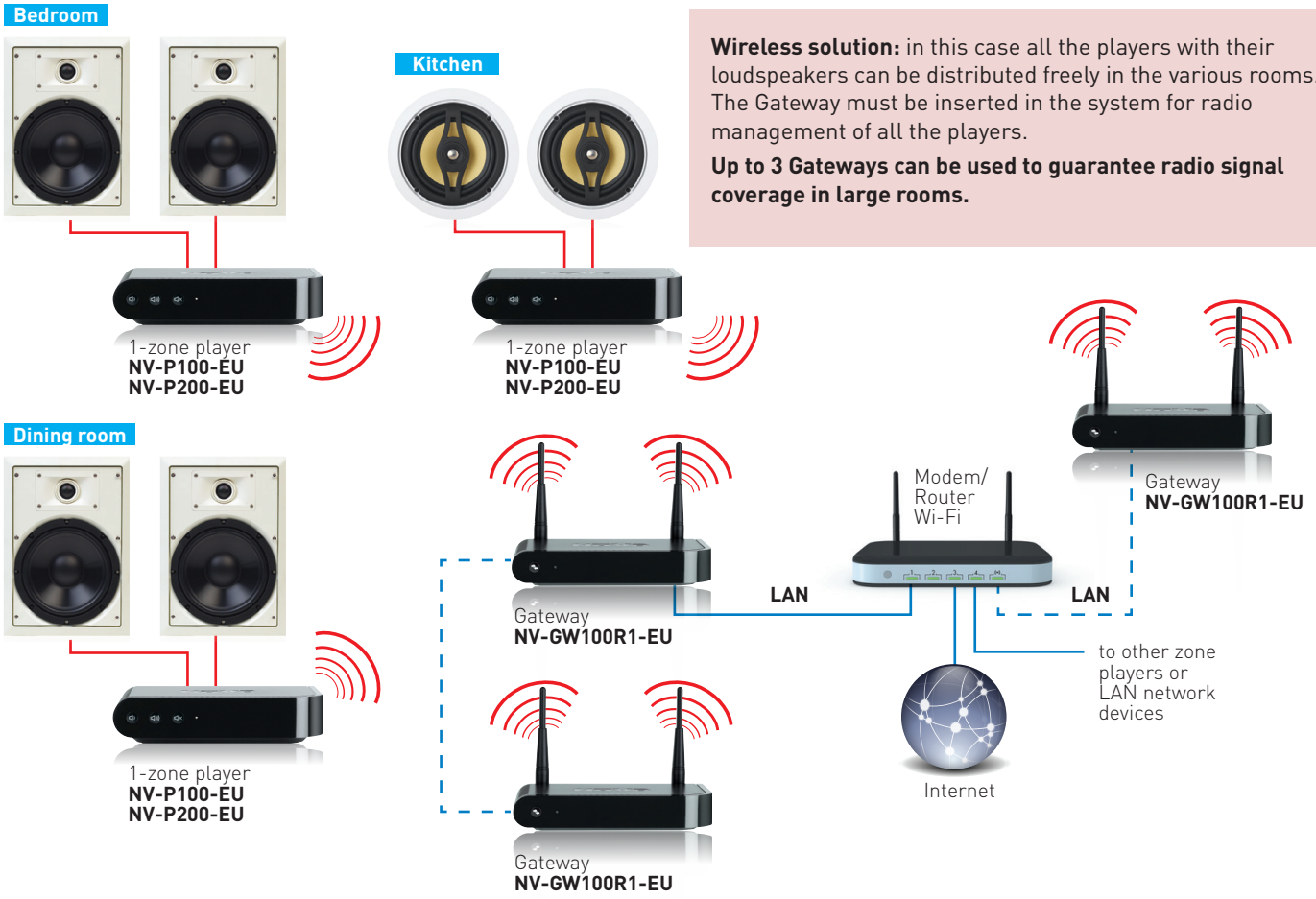
To use all the functions of the NUVO system it must be connected to a LAN network with Wi-Fi modem/router. The Internet connection must be available so that you can use the streamed music services and for any firmware updates of the products and the management APP.

Wired solution: all players are connected to the LAN network using a network cable cat. 5E or higher.
The devices can be installed:
- in an appropriate rack;
- in every room (stand-alone installation).

In the first case the wiring of all the loudspeakers is from the rack.



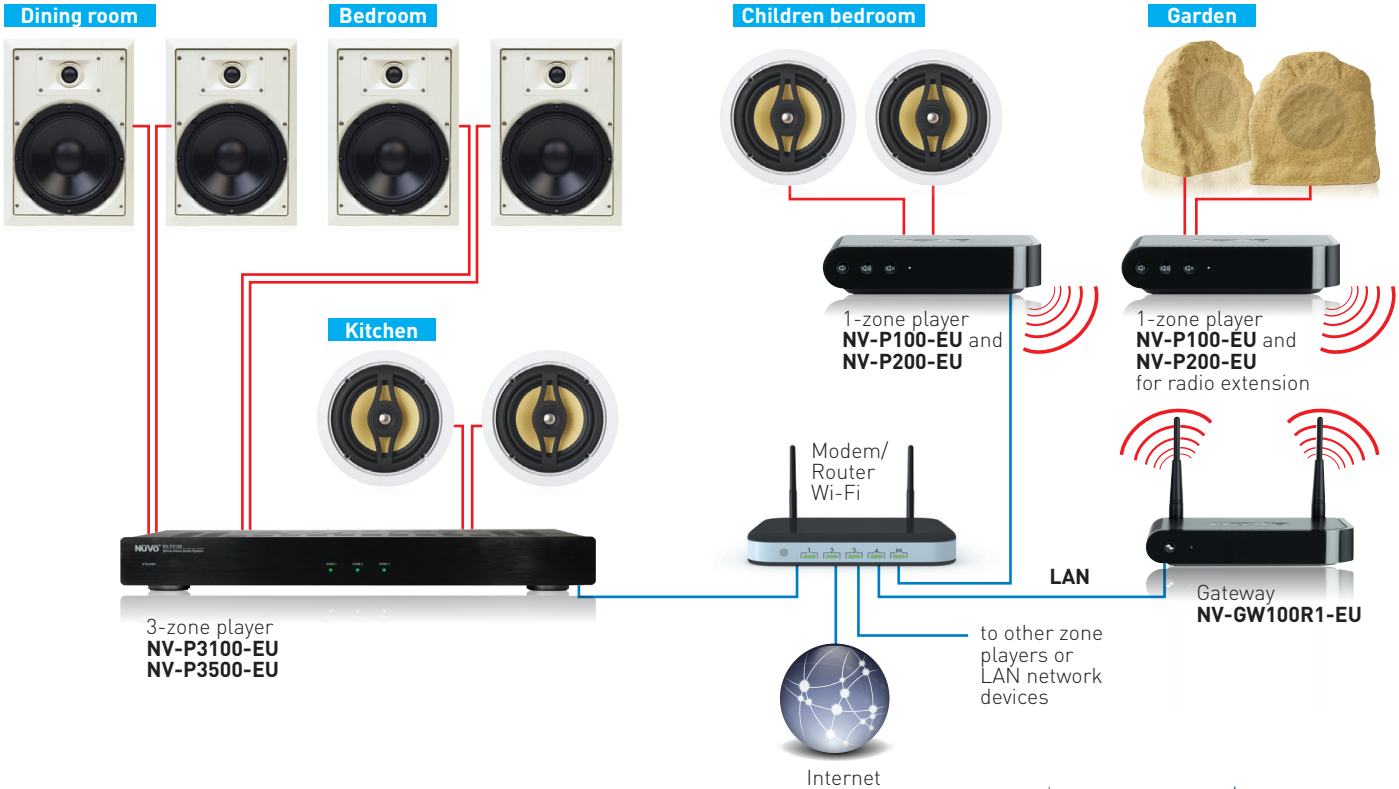
NOTE: it is possible to create a system that can manage up to 16 different zones.
Follow the provisions of the standards in force when making the LAN network data system.
It is recommended the use of cables with cat. 5E or higher.



Wireless solution: in this case all the players with their loudspeakers can be distributed freely in the various rooms. The Gateway must be inserted in the system for radio management of all the players.

Up to 3 Gateways can be used to guarantee radio signal coverage in large rooms.

Mixed solution (wired LAN with radio extension): if sound systems are to be set up in rooms which do not have wired LAN network a mixed wired-radio system can be created.



PROJECT GUIDELINES

B. PLAYER SELECTION

After establishing the type of system to make, with wired LAN network, Wi-Fi or mixed, select the player and loudspeakers to be used with it taking account of:
- the user's listening habits: quiet background music or full volume;
- from the size of the room to be fitted with a sound system.

An applicable criterion in most cases is to assign players with power 20W for sound systems in small rooms such as small kitchens, corridors, bathrooms and small bedrooms. Players with power more than 50W are suitable for sound systems in medium-large rooms such as living rooms, basements, master bedrooms and outside rooms. Consult the following table to select the players on the basis of the criteria stated above.

Note: in the design also consider any external noise sources such as roads or industrial activities which could disturb listening to the music programme.

Player	Mounting	Connection to the LAN network	Bluetooth connection	No. of managed zones	Power per zone (8 Ohm loudspeaker)	Power per zone (6 Ohm loudspeaker)	Power per zone (4 Ohm loudspeaker)
NV-P100-EU	stand-alone	wired + Wi-Fi	NO	1	20 W	n.d.	n.d.
NV-P200-EU	stand-alone	wired + Wi-Fi	YES	1	60 W	n.d.	n.d.
NV-P3100-EU	rack	wired	NO	3	20 W	n.d.	n.d.
NV-P3500-EU	rack	wired	NO	3	50 W	75 W	100 W
NV-P300-EU	stand-alone	wired	NO	1	-(1)	-(1)	-(1)

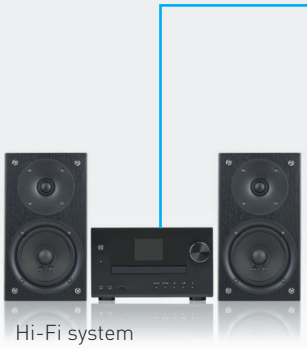
Note (1): the audio power is the power supplied by the connected amplifier.

PREAMPLIFIER PLAYER ITEM NV-P300-EU

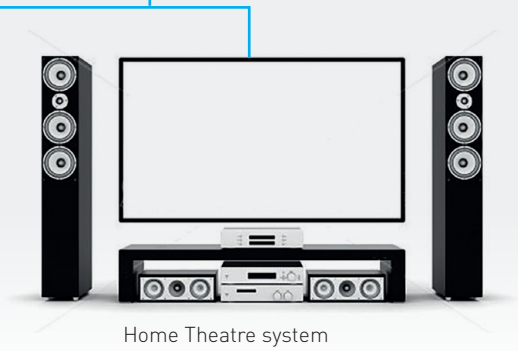
This device does not have a power amplifier and thus is not connected to the loudspeakers; it is expressly designed to be connected to any amplifier of different brands (even with audio power different from those supplied by the amplified players) already in the room.
The amplifier becomes an integral part of the system for setting up a sound system in a room and can play contents streamed from Internet Radio or audio content in the domestic network.

The NV-P300-EU player has USB input connectors and TOSLINK analogue and optical input and output connectors, specific for connection also to A/V televisions and receivers which have this connection standard.

NV-P300-EU



Hi-Fi system



Home Theatre system

C. LOUDSPEAKER SELECTION AND POSITIONING

This operation must be carried out taking account of the features of the room where the sound system will be installed and the player selected.
Respect the following rule:
- with 20W Players use loudspeakers with maximum power of 60W;
- with 50/60W Players use loudspeakers with maximum power of 100/120W;

The NUVO series range of loudspeakers includes:
- AccentPLUS1 series polypropylene loudspeakers with power up to 60W, featuring good audio reproduction;
- AccentPLUS2 series loudspeakers with power up to 120W and excellent audio reproduction because they have Kevlar loudspeakers for a wider reproduction of the audio frequencies.

Both types of loudspeaker are available for flush-mounting on the wall or false ceiling or for placing on shelves or the floor.

FLUSH-MOUNTED LOUDSPEAKERS
for false ceiling

FLUSH-MOUNTED LOUDSPEAKERS
for plasterboard walls

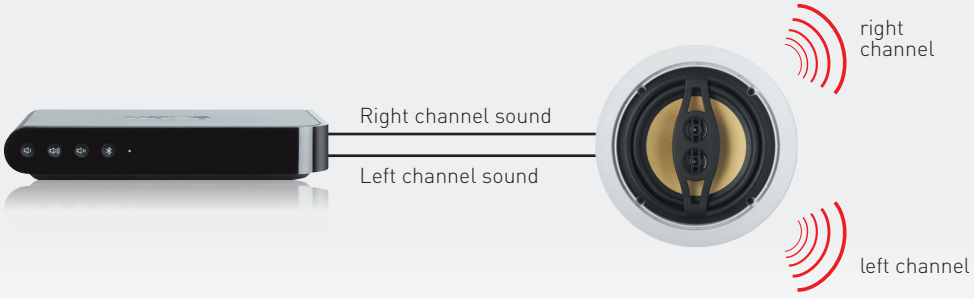
LOUDSPEAKERS
for bracket or floor

PARTICULAR LOUDSPEAKERS

Rock-shaped plastic loudspeakers with rainshields of the AccentPLUS Rock series are available for use outside the home.

Rock-shaped
loudspeakers

Stereo loudspeaker: the NV-AP16CS (AccentPLUS1 series) and NV-AP26CS (AccentPLUS2 series) loudspeaker, with a woofer and two independent tweeters (one for the right channel and one for the left channel), is available for rooms which are too small for the installation of two loudspeakers, to play stereophonic sound.



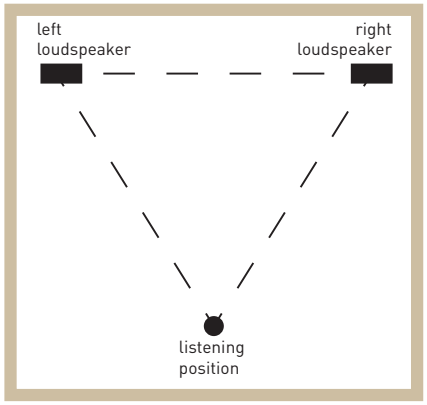
For more information about the loudspeakers, see the tables in the "Catalogue" section.

PROJECT GUIDELINES

C. LOUDSPEAKER SELECTION AND POSITIONING

The loudspeakers must be positioned in the various rooms taking account of the user's needs.
If there is only one listening position because the listener wishes to experience the stereo effect, the two loudspeakers must be positioned at the corners of an equilateral triangle and the listener must be at the vertex.

If the listening position is not a fundamental requirement, the loudspeakers can be installed on the wall or the ceiling and so positioned that the sound is uniformly distributed in each room.
In medium sized or large rooms there should be 2.5 – 3 metres between two or more loudspeakers installed on the same wall to guarantee wide sound distribuition.
The following pictures show some installation examples.



Positioning the loudspeakers for stereophonic listening.

INSTALLATION EXAMPLES

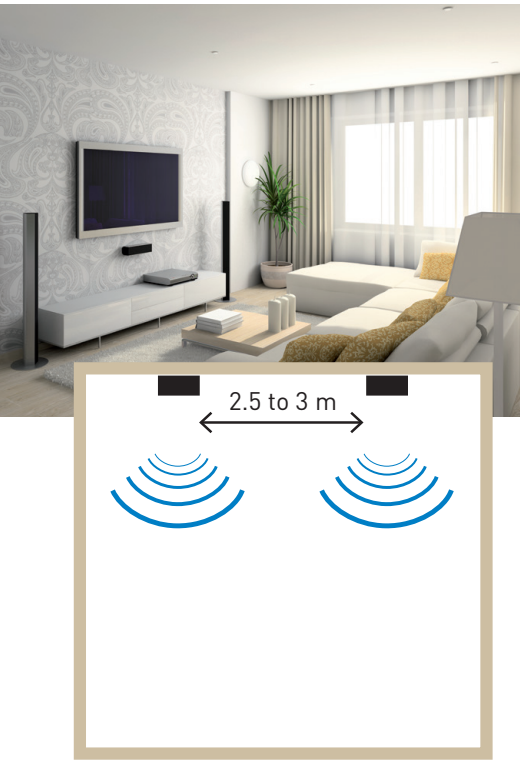


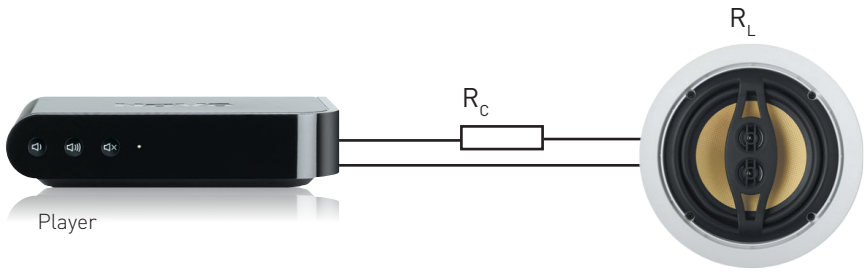
Fig. 1 - loudspeaker positioning on the same wall

Fig. 2 - loudspeaker positioning on two different walls

Fig. 3 - use of 4 ceiling loudspeakers for sound system in large areas. Each pair of loudspeakers is connected in parallel to each of the two outputs (right channel and left channel) of the player. This configuration is possible using only player item NV-P200-EU and item NV-P3500-EU and loudspeakers with an impedance of 8Ohm.

Connection cable selection

The wire which connects the players to the loudspeakers, by its nature, attenuates the signal depending on its cross-section and length. In general for connections up to a few tens of meters a bipolar wire (twin lead) with cross-section 1.5 mm^2 (for 20 W player) and 2.5 mm^2 (for 50 W and 60 W players) should be used. For both wires mentioned, the signal attenuation level is very low because the value of the resistance (indicated by Rc in the drawing to the side) is negligible with respect to the value of the RL impedance of the loudspeaker (typically 8 Ohm).
For very great distances or for wires with smaller cross-sections, the wire resistance Rc increases with consequent increase in the loss of useful signal.

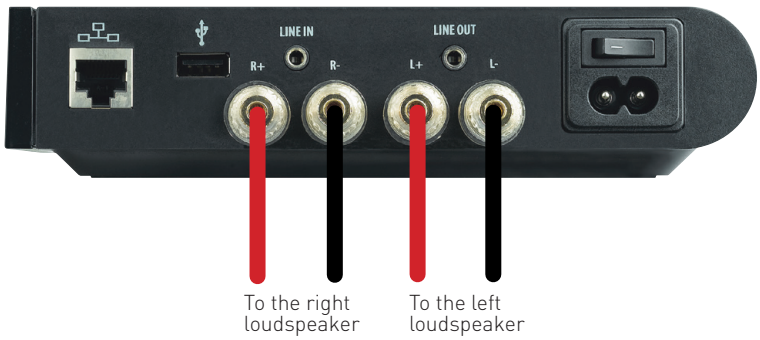


To evaluate the attenuation introduced by the wire, the following table gives the value of the power in Watts which is available at the terminals of an 80 Ohm loudspeaker connected to a player which supplies a power of 50 W.

Cable section (mm^2)	Connection cable length		
	5 m	7.5 m	10 m
1.5	49.18	48.78	48.39
2.5	49.50	49.26	49

The player must be connected to the loudspeakers respecting the colouring of the terminals: the player's red terminal should be connected to the loudspeaker's red terminal and player's black terminal connected to the loudspeaker's black terminal. Failure to respect this rule may lead to a reduction of the emitted signal (loudspeaker's right channel and left channel not in phase) or may lead to damage to the player or to the loudspeakers.

To avoid any errors wires with two conductors distinguished by different colours or printing should be used.

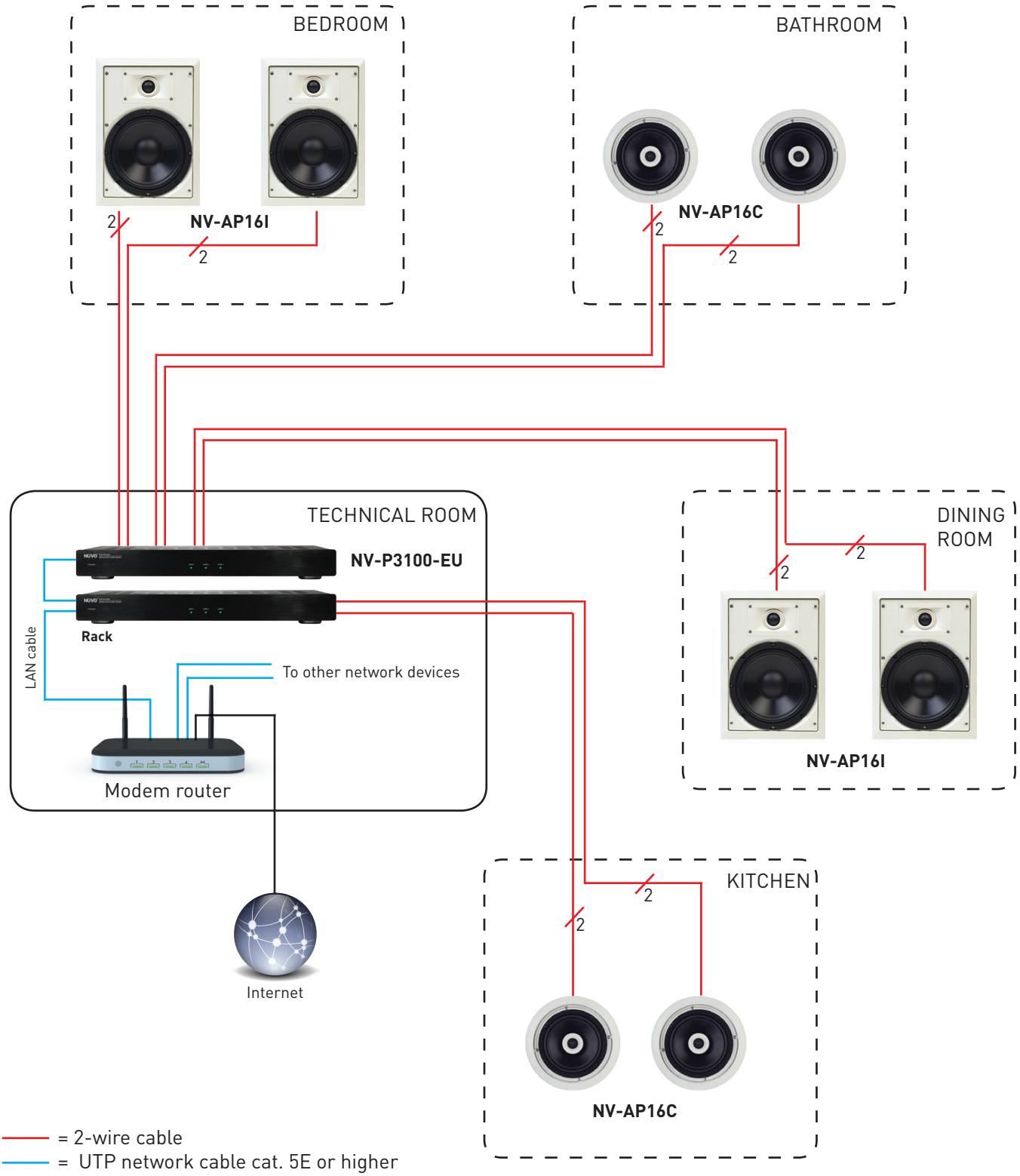


WIRING DIAGRAMS

Example 1

SYSTEM WIRED FOR SOUND SYSTEM IN 4 ZONES WITH MAXIMUM POWER 20 W (CENTRALISED SOLUTION)

The diagram shows a new four-roomed apartment on a single floor with sound system fitted with wired and wireless LAN network. Two item NV-P3110-EU players will be used which can manage 3 zones each, centralised in an equipment room in the home; the first player manages the three zones (bedroom, bathroom and living room) and the second the fourth zone (kitchen).
There are loudspeakers item NV-AP18I flush-mounted on the walls while in the smaller rooms such as the bathroom and the kitchen there are ceiling loudspeakers item NV-AP16C.

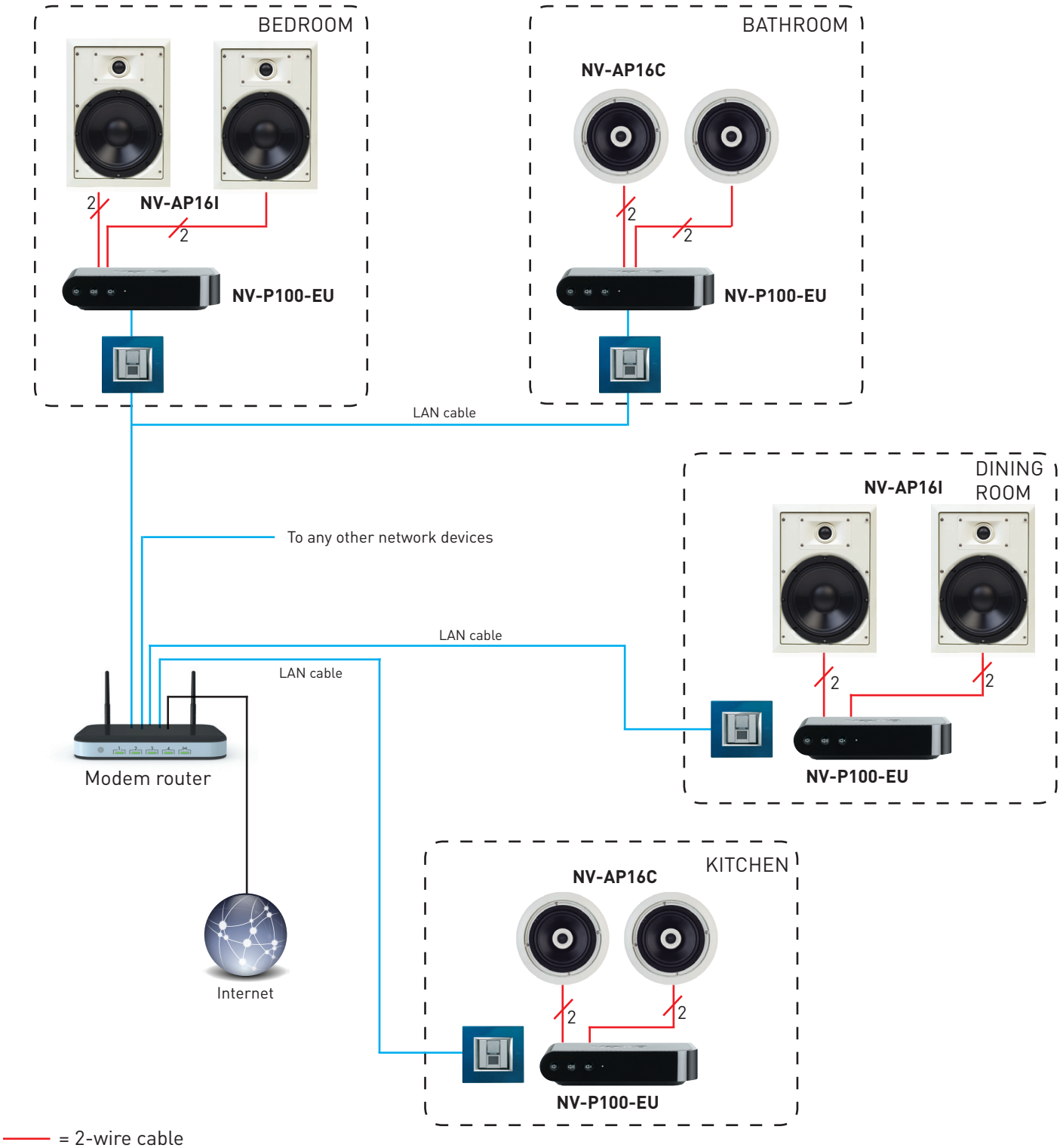


Example 2

SYSTEM WIRED FOR SOUND SYSTEM IN 4 ZONES WITH MAXIMUM POWER 20 W (STAND-ALONE SOLUTION)

The system shown in the previous page can also be made using stand-alone player item NV-P100-EU. In this case a wired LAN network must be installed in the home to connect each player to the modem router.

The LAN network can be sized for the connection of other network devices (hard disk, PC etc.).

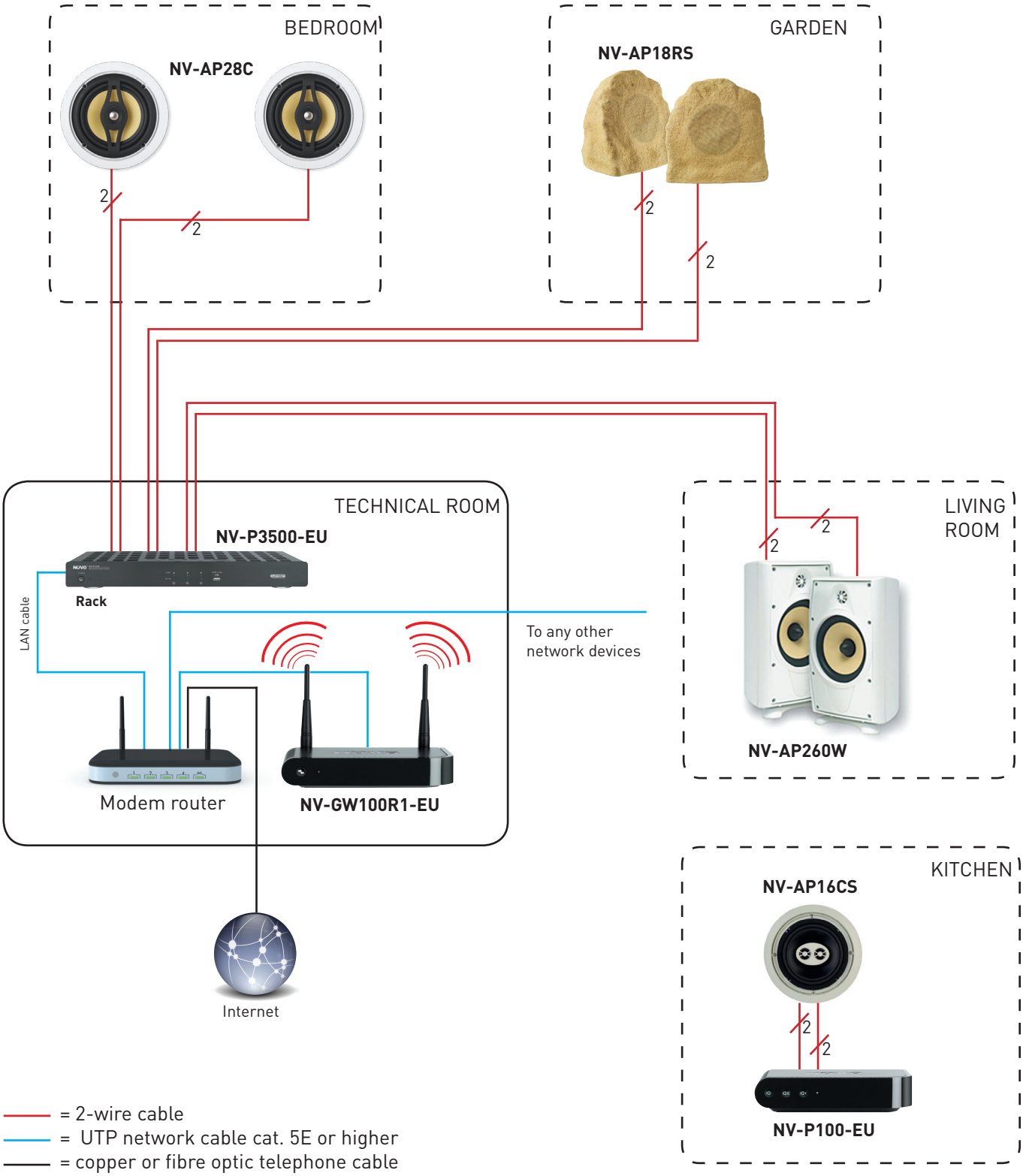


WIRING DIAGRAMS

Example 3

SYSTEM WIRED WITH RADIO EXTENSION FOR SOUND SYSTEM IN 4 ZONES WITH MAXIMUM POWER 60 W

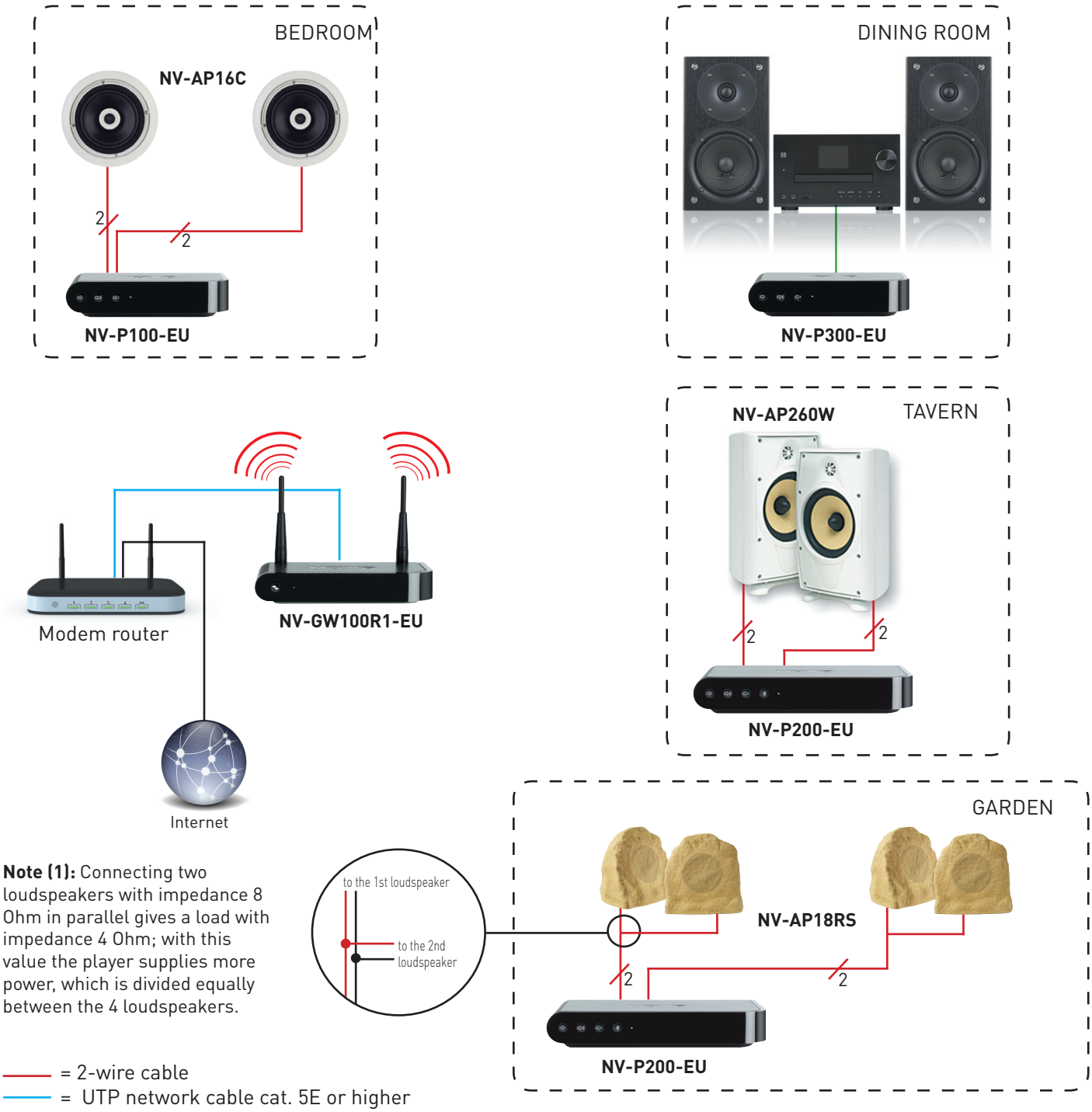
The system shown illustrates the use of a player item NV-P3500-EU to manage 3 zones with maximum power 50 W. Sound in the kitchen does not require a particular sound power – use player item NV-P100-EU with a maximum power of 20W connected to a stereo loudspeaker item NV-AP16CS and to the LAN network via radio using Gateway item NV-GW100R1-EU.



Example 4

RADIO SYSTEM FOR SOUND SYSTEM IN 4 ZONES WITH MAXIMUM POWER 60 W AND INTEGRATION WITH A/V AMPLIFIERS OF OTHER BRANDS

This diagram shows the wireless system solution which is applicable in existing homes which do not have a wired LAN network. All players are interconnected to the LAN network using the Gateway device item NV-GW100R1-EU.
For sound systems in large areas such as the basement and the garden use player item NV-P200-EU with maximum power 60W; for more uniform audio playing in the garden there are 4 external loudspeakers connected to the player in pairs in parallel (1). The "living room" zone is managed using the preamplifier player item NV-P300-EU connected to the pre-existing Hi-Fi system. Use the player item NV-P100-EU with power 20 W and false ceiling loudspeakers to listen to music in the bedroom.

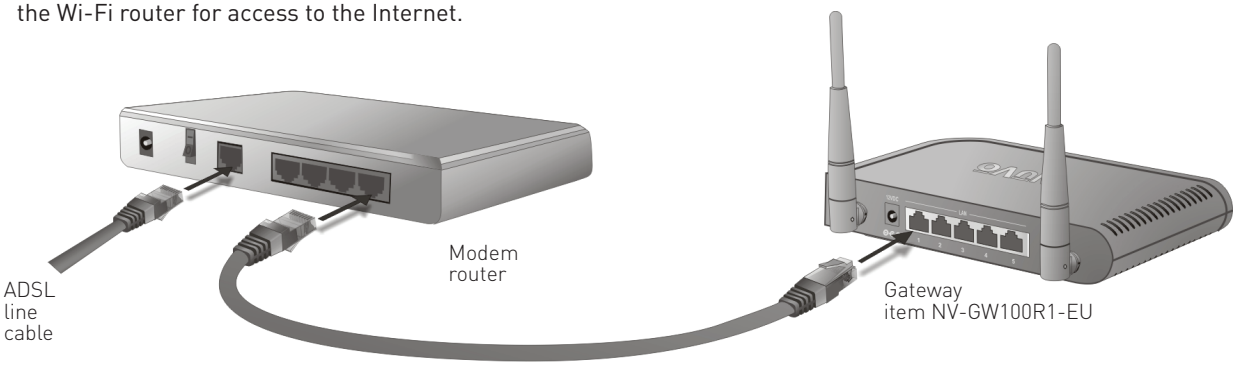


Note (1): Connecting two loudspeakers with impedance 8 Ohm in parallel gives a load with impedance 4 Ohm; with this value the player supplies more power, which is divided equally between the 4 loudspeakers.

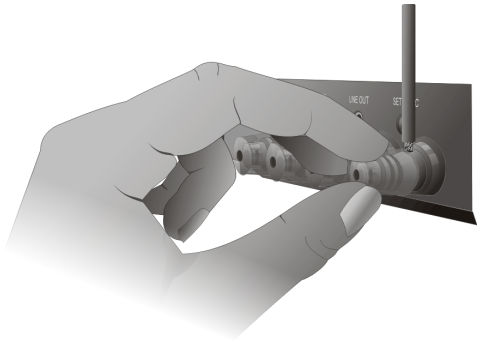
= 2-wire cable
= UTP network cable cat. 5E or higher
= copper or fibre optic telephone cable
= audio cable with RCA connectors

CONFIGURATION

1 Connect the players by means of network wire and possibly gateway item NV-GW100R1-EU (if the system is wireless or wired with wireless extension) to the LAN network router or to the Wi-Fi router for access to the Internet.



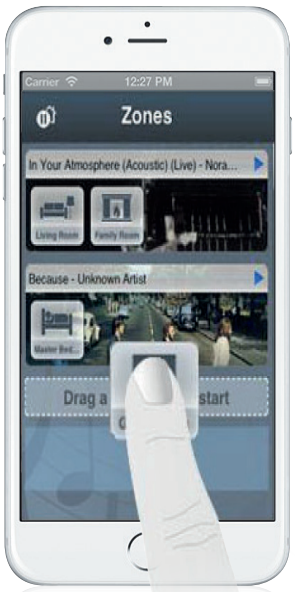
2 Install the loudspeakers in the rooms where sound is to be played and connect their wires to the terminals at the back of the zone players.



Zone player

3 Download the free app from the Android Play Store or the Apple App Store and perform the setup operation for recognition of the various system devices and to assign the zone to which they belong to the players.

4 At the end of the setup procedure, check the system by selecting to the music to be listened to in every room of your home.



See the video for the configuration

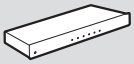
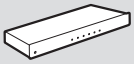
CATALOGUE

Gateway and zone Player

NV-GW100R1-EU

NV-P100-EU

NV-P3100-EU

Item	GATEWAY
NV-GW100R1-EU 	Wireless access point for the NUVO Player, type: Dual Band 2.4/5Ghz, 802.11n powered.
	ZONE PLAYER FOR WIRED SYSTEMS
NV-P3100-EU 	Professional Rack version. Contains 3 P100 zone players each of which has a 20W x 2 amplifier. USB inputs and 3.5 mm jack to connect any other device - Loudspeaker output impedance: 6 - 8Ω.
NV-P3500-EU 	Professional Rack version. Allows the management of 3 zones with rated output power for each zone of 100W 8 Ω, 150 W 6Ω and 200 W 4Ω. USB and RCA inputs to connect any other device.

Item	ZONE PLAYER FOR WIRELESS AND WIRED SYSTEMS
NV-P100-EU 	Wireless zone Player, Stereo Amplifier 20 Watt x 2. From the zone Player, it is possible to access the contents through the wireless or wired network. USB input and 3.5 mm jack to connect any other device. Loudspeaker output impedance: 6 - 8Ω
NV-P200-EU 	Wireless zone Player, Stereo Amplifier 60 Watt x 2, code aptX Bluetooth. From the zone Player, it is possible to access the contents through the wireless or wired network. USB input and 3.5 mm jack to connect any other device. Loudspeaker output impedance: 4 - 6 - 8Ω
NV-P300-EU 	Wireless zone player with preamplifier function made for linking to an audio or audio/video amplifier of other brands to play sound in the room to which it belongs. From the zone Player, it is possible to access the contents through the wireless or wired network. USB input and 3.5 mm jack for analogue and digital connection to the amplifier.

TECHNICAL FEATURES

Model	NV-P100-EU	NV-P200-EU	NV-P300-EU	NV-P3100-EU	NV-P3500-EU
Dimensions H x W x D (mm)	42 x 187 x 115	42 x 229 x 127	42 x 187 x 115	44 x 430 x 250	44 x 430 x 250
Power (watt)	40 (8 ohm, 20 W x 2)	120 (8 ohm, 60 W x 2)	–	3 zones x 40 (8ohm, 20w x 2)	3 zones x 200 (4ohm, 100w x 2)
D Generation high energy efficiency amplifier	■	■	–	■	■
Reduction of the distortion	■	■	■	■	■
Optimisation of the digital signal	■	■	■	■	■
Audyssey dynamic volume	■	■	■	■	■
Zone grouping	■	■	■	■	■
Management of independent zones	■	■	■	■	■
Management Apps for Apple / Android	■	■	■	■	■
Internet radio	■	■	■	■	■
Wi-Fi	■	■	■	–	–
Ethernet connection	■	■	■	■	■
Input / Output	■	■	■	■	■
USB port	■	■	■	■	■
Audio playback without loss	■	■	■	■	■
Bluetooth aptX	–	■	–	–	–

CATALOGUE

Accent PLUS® 1 loudspeakers

NV-AP16C

NV-AP16CS

NV-AP16I

NV-AP160W

Item		FOR CEILING INSTALLATION
NV-AP16C		AccentPLUS1 6.5" ceiling loudspeaker (a pair) 50W 8Ω
NV-AP18C		AccentPLUS1 8" ceiling loudspeaker (a pair) 60W 8Ω
NV-AP16CS		Stereo loudspeaker with double ceiling tweeter 6.5" AccentPLUS1 (single) 50W 8Ωx2
		FOR FLUSH MOUNTED INSTALLATION ON PLASTERBOARD WALL
NV-AP16I		AccentPLUS1 6.5" flush mounted loudspeaker (a pair) 50W 8Ω
NV-AP18I		AccentPLUS1 8" flush mounted loudspeaker (a pair) 60W 8Ω

Item		FOR OUTDOOR, WALL MOUNTED OR FLOOR INSTALLATION
NV-AP160B		AccentPLUS1 6.5" loudspeaker - black colour - (a pair) 50W 8Ω
NV-AP160W		AccentPLUS1 6.5" loudspeaker - white colour - (a pair) 50W 8Ω

TECHNICAL FEATURES

	NV-AP16C	NV-AP16CS	NV-AP18C	NV-AP16I	NV-AP18I	NV-AP160W NV-AP160B
Power:	50 W	50 W	60 W	50 W	60 W	50 W
Impedance:	8 ohm	8 ohm	8 ohm	8 ohm	8 ohm	8 ohm
Efficiency:	91 db 1 W/1 M	91 db 1 W/1 M	92 db 1 W/1 M	91 db 1 W/1 M	92 db 1 W/1 M	88 db 1 W/1 M
Frequency range	55 Hz-20 kHz	55 Hz-20 kHz	45 Hz-20 kHz	55 Hz-20 kHz	45 Hz-20 kHz	60 Hz-20 kHz +/- 3 dB
Tweeter filter:	12 db / Octave; 4 khz	12 db / Octave; 4 khz	12 db / Octave; 4 khz	12 dB / Octave; 4 kHz	12 dB / Octave; 4 kHz	12 db
Loudspeaker material:	-	-	-	-	-	Polyethylene with minerals
Grid material:	-	-	-	-	-	Painted aluminium
Support material:	-	-	-	-	-	Painted steel
Size:	diameter 228 mm	diameter 228 mm	diameter 272 mm	306 mm x 220 mm	358 mm x 256 mm	330 mm x 193 mm x 190 mm
Size for flush mounting:	204 mm	204 mm	248 mm	284 mm x 198 mm	336 mm x 232 mm	-
Depth for flush mounting:	75 mm	75 mm	86 mm	75 mm	86 mm	-
Weight:	-	-	-	-	-	3.4 kg
WOOFER						
Type and size of the magnet:	80 x 30 x 15 mm/ Y35	80 x 30 x 15 mm/ Y35	100 x 45 x 15 mm/ Y35	80 x 30 x15 mm / Y35	100 x 45 x15 mm / Y35	Ferrite
Cone material:	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene	Polypropylene
Suspension material:	Butyl rubber	Butyl rubber	Butyl rubber	Butyl rubber	Butyl rubber	Butyl rubber
TWEETER						
Magnet material:	Neodymium	Neodymium	Neodymium	Neodymium	Neodymium	Neodymium
Dust cap material:	Silk	Mylar	Silk	Silk	Silk	Polyetherimide
Type:	Swivel 30°	Fixed	Swivel 30°	Swivel 30°	Swivel 30°	Fixed

Accent PLUS® 2 loudspeakers

NV-AP26CS

NV-AP28C

NV-AP28I

NV-AP26OW

Item		FOR CEILING INSTALLATION
NV-AP26C		AccentPLUS2 6.5" ceiling loudspeaker (a pair) 100W 8Ω
NV-AP28C		AccentPLUS2 8" ceiling loudspeaker (a pair) 120W 8Ω
NV-AP26CS		Stereo loudspeaker with double ceiling tweeter 6.5" AccentPLUS2 (single) 100W 8Ωx2
		FOR FLUSH MOUNTED INSTALLATION ON PLASTERBOARD WALL
NV-AP26I		AccentPLUS2 6.5" flush mounted loudspeaker (a pair) 100W 8Ω
NV-AP28I		AccentPLUS2 8" flush mounted loudspeaker (a pair) 120W 8Ω

Item		FOR OUTDOOR, WALL MOUNTED OR FLOOR INSTALLATION
NV-AP26OB		AccentPLUS2 6.5" loudspeaker - black colour - (a pair) 50W 8Ω
NV-AP26OW		AccentPLUS2 6.5" loudspeaker - white colour - (a pair) 50W 8Ω

TECHNICAL FEATURES

	NV-AP26C	NV-AP26I	NV-AP26CS	NV-AP28C	NV-AP28I	NV-AP26OW NV-AP26OB
Power:	100 W	100W	100 W	120 W	120 W	50 W
Impedance:	8 ohm	8 ohm	8 ohm x 2	8 ohm	8 ohm	8 ohm
Efficiency:	91 dB 1 W/1 M	91 dB 1 W/1 M	92 dB 1 W/1 M	92 dB 1 W/1 M	92 dB 1 W/1 M	89 dB 1 W/1 M
Frequency range	50 Hz-20 kHz	50 Hz-20 kHz	50 Hz-20 kHz	40 Hz-20 kHz	40 Hz-20 kHz	55 Hz-20 kHz +/- 3 dB
Tweeter filter:	12 dB / Octave; 4 kHz	12 dB / Octave; 4 kHz	12 dB / Octave; 4 kHz	12 dB / Octave; 3 kHz	12 dB / Octave; 3 kHz	12 db
Woofer filter	12 dB / Octave; 4 kHz	12 dB / Octave; 4 kHz	-	12 dB / Octave; 3 kHz	12 dB / Octave; 3 kHz	-
Loudspeaker material:	-	-	-	-	-	Polyethylene with minerals
Grid material:	-	-	-	-	-	Painted aluminium
Support material:	-	-	-	-	-	Painted steel
Size:	diameter 228 mm x 96 mm	306 mm x 220 mm	diameter 228 mm x 96 mm	diameter 272 mm x 112 mm	358 mm x 256 mm x 101 m	330 mm x 193 mm x 190 mm
Size for flush mounting:	204 mm	284 mm x 198 mm	204 mm	248 mm	248 mm	-
Depth for flush mounting:	75 mm	75 mm	75 mm	86 mm	86 mm	-
Weight:	-	-	-	-	-	3.4 kg
WOOFER						
Type and size of the magnet:	80 x 30 x 15mm / Y35	0 x 30 x 15mm / Y35	80 x 30 x 15mm / Y35	100 x 45 x15 / Y35	100 x 45 x15 / Y35	
Cone material:	DuPont™ Kevlar®	DuPont™ Kevlar®	DuPont™ Kevlar®	DuPont™ Kevlar®	DuPont™ Kevlar®	
Suspension material:	Butyl rubber	Butyl rubber	Butyl rubber	Butyl rubber	Butyl rubber	
TWEETER						
Magnet material:	Neodymium	Neodymium	Neodymium	Neodymium	Neodymium	
Dust cap material:	Titanium	Titanium	Mylar	Titanium	Titanium	
Type:	Swivel 30°	Swivel 30°	Fixed	Swivel 30°	Swivel 30°	

CATALOGUE

Outdoor Accent PLUS® Rock loudspeakers

NV-AP18RS (Sandstone)
NV-AP18RG (Granite)

Item	ROCK-SHAPED OUTDOOR LOUDSPEAKERS
NV-AP16RG	6.5" outdoor rock loudspeaker - Granite (a pair) 50W 8Ω
NV-AP16RS	6.5" outdoor rock loudspeaker - Sandstone (a pair) 50W 8Ω
NV-AP18RG	8" outdoor rock loudspeaker - Granite (a pair) 100W 8Ω
NV-AP18RS	8" outdoor rock loudspeaker - Sandstone (a pair) 100W 8Ω

TECHNICAL FEATURES	NV-AP18RS NV-AP18RG	NV-AP16RS NV-AP16RG
Power:	100 W	50W
Impedance:	8 ohm	8 ohm
Efficiency:	91dB 1 W/1 M	88 dB 1 W/1 M
Frequency range	45 Hz-20 Hz +/-3 dB	60 Hz-20 Hz +/- 3 dB
Tweeter filter:	12 db	12 db
Woofer filter	12 db	12 db
Size:	340 mm x 340 mm x 300 mm	165 mm x 280 mm x 226 mm
Weight:	7.3 kg	4.4 kg
WOOFER		
Type and size of the magnet:	20 oz/100 x 45x 15 mm	10 oz/80 x 30 x 15 mm
Cone material:	205 mm Polypropylene	165 mm Polypropylene
Suspension material:	Butyl rubber	Butyl rubber
TWEETER		
Magnet material:	Neodymium	Neodymium
Dust cap material:	PEI (Polyetherimide) 25 mm	PEI (Polyetherimide) 25 mm
Type:	Fixed	Fixed

Audio solutions for classrooms and fixing accessories for loudspeakers

NV-WA4OW-AMP

NV-BK6C

Item	AUDIO SOLUTIONS FOR CLASSROOMS
NV-WA40W-DC	Amplifier with 40W loudspeakers - installation mode on vertical 503E box
NV-WA40W-AMP-DC	40W amplifier - installation mode on vertical 503E box
NV-WA40W-RC	Remote control

	LOUDSPEAKER FIXING SYSTEM
NV-BK6C	Fixing system for 6.5" ceiling loudspeakers (a pair)
NV-BK6I	Fixing system for 6.5" wall loudspeakers (a pair)
NV-BK8C	Fixing system for 8" ceiling loudspeakers (a pair)
NV-BK8I	Fixing system for 8" wall loudspeakers (a pair)
NV-BK6CS	Fixing system for 6.5" ceiling loudspeakers for "stereo" model

TECHNICAL SHEETS

NV-GW100R1-EU 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	12 W
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)	112.5 H x 177 W x 133 D (including antennas)
Unit Size (inch)	4.82 H x 6.97 W x 5.24 D (including antennas)
Unit Weight (kg)	0.30
Unit Weight (lbs)	0.65
Shipping Specifications	
Unit Size (mm)	240 L x 230 W x 66 H
Unit Size (inch)	9.45 L x 9.06 W x 2.60 H
Unit Weight (kg)	0.975
Unit Weight (pounds)	2.15

NV-P100-EU single zone wireless 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 (via USB or network)	MP3
	WMA
	AA
	C
	Ogg Vorbis
	FLAC
	WAV
Internet Radio	
	Pandora®
	Sirius/XM
	Rhapsody
	TuneIn
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 at rated output	94 dB A – weighted

Line Output	
Output Level	0-1000 mV 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)	70 W
Power Consumption (typical – 1/8 audio power)	13 W
Operating Temperature	0° C to 40° C
Physical Specifications	
Unit Size (mm)	43 H x 187 W x 137 D
Unit Size (inch)	1.69 H x 7.36 W x 5.39 D
Unit Weight (kg)	0.635
Unit Weight (pounds)	1.40
Shipping Specifications	
Unit Size (mm)	240 L x 230 W x 66 H
Unit Size (inch)	9.45 L x 9.06 W x 2.60 H
Unit Weight (kg) 1.25 Unit Weight (pounds)	2.75

TECHNICAL SHEETS

NV-P200-EU single zone wireless 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
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	0-1000 mV 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)	43 H x 247 W x 175 D
Unit Size (inch)	1.69 H x 9.72 W x 6.89 D
Unit Weight (kg)	1.20
Unit Weight (pounds)	2.65
Shipping Specifications	
Unit Size (mm)	360 L x 240 W x 66 H
Unit Size (inch)	14.17 L x 9.45 W x 2.60 H
Unit Weight (kg)	2.00
Unit Weight (pounds)	4.41

NV-P300-EU preamplifier player

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 Files (via USB or network):	MP3
	WMA
	AAC
	Ogg Vorbis
	FLAC
	WAV
Internet Radio:	Pandora
	Sirius/XM
	Rhapsody
	TuneIn
	Deezer
	Napster
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	44.1 KHz-192KHz
Bit Rate	24B
Signal-to-Noise Ratio at rated output	>120 dB SNR
THD+n	<0.0005%
Frequency Response	+/-0.1 dB 20 Hz to 20 KHz
Line Input - Digital:	
Sample Rates	44.1 KHz-192KHz
Bit Rate	24B
Signal-to-Noise Ratio at 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	2.0 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	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

TECHNICAL SHEETS

NV-P3100-EU three-zone 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 (via USB or network)	MP3
	WMA
	AAC
	Ogg Vorbis
	FLAC
	WAV
Internet Radio	
	Pandora®
	Sirius/XM
	Rhapsody
	TuneIn
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)	
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 at rated output	92 dB A – weighted

Line Output:	
Output Level	0-1000 mV RMS
Output Impedance	5 Ohms
Signal-to-Noise Ratio at 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 Compliance	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 (mm)	54 H x 430 W x 258 D (including feet)
Unit Size (inch)	2.13 H x 16.93 W x 10.16 D (including feet)
Unit Weight (kg)	2.90
Unit Weight (pounds)	6.45
Shipping Specifications	
Unit Size (mm)	565 L x 330 W x 130 H
Unit Size (inch)	22.24 L x 12.99 W x 5.12 H
Unit Weight (kg)	3.92
Unit Weight (pounds)	8.65

NV-P3500-EU three-zone 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
	WMA
	AAC
	Ogg Vorbis
	FLAC
	WAV
Internet Radio:	
	Pandora
	Sirius/XM
	Rhapsody
	TuneIn
	Deezer
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)	
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-.2.1V 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 Compliance	RoHS
Power Requirements	
Input Voltage	100 – 240VAC, 50/60 Hz
Power Consumption (max)	680 W
(typical - music)	260 W
(UL60065 - 1/8 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

NOTES

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bticino

A Group brand | legrand