

bticino

MY HOME

2 wire sound system

TECHNICAL GUIDE 06





BTicino answers

For all the technical or commercial information go to the BTicino site.



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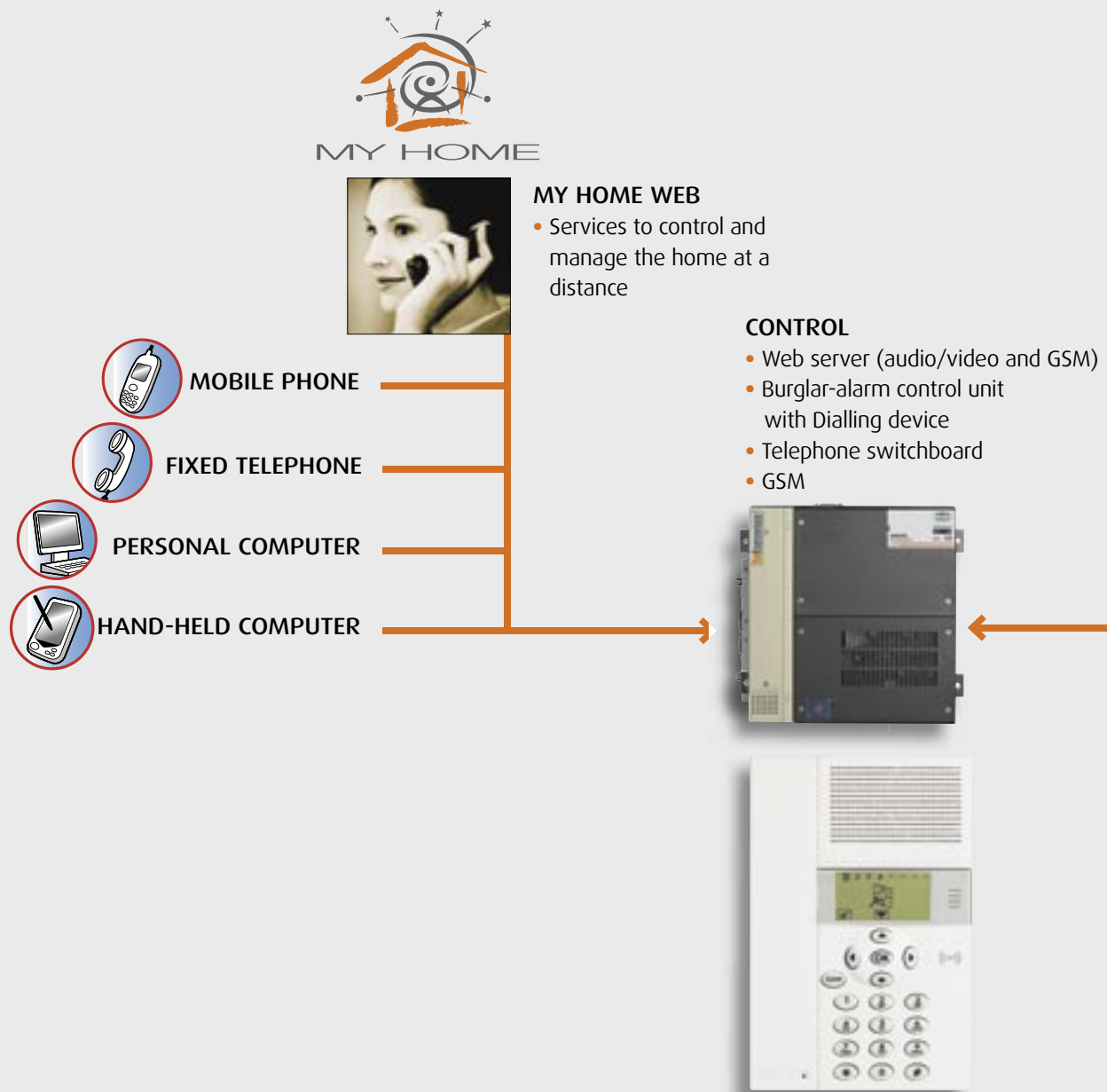
MY HOME GENERAL FEATURES

MY HOME

The home as you want it

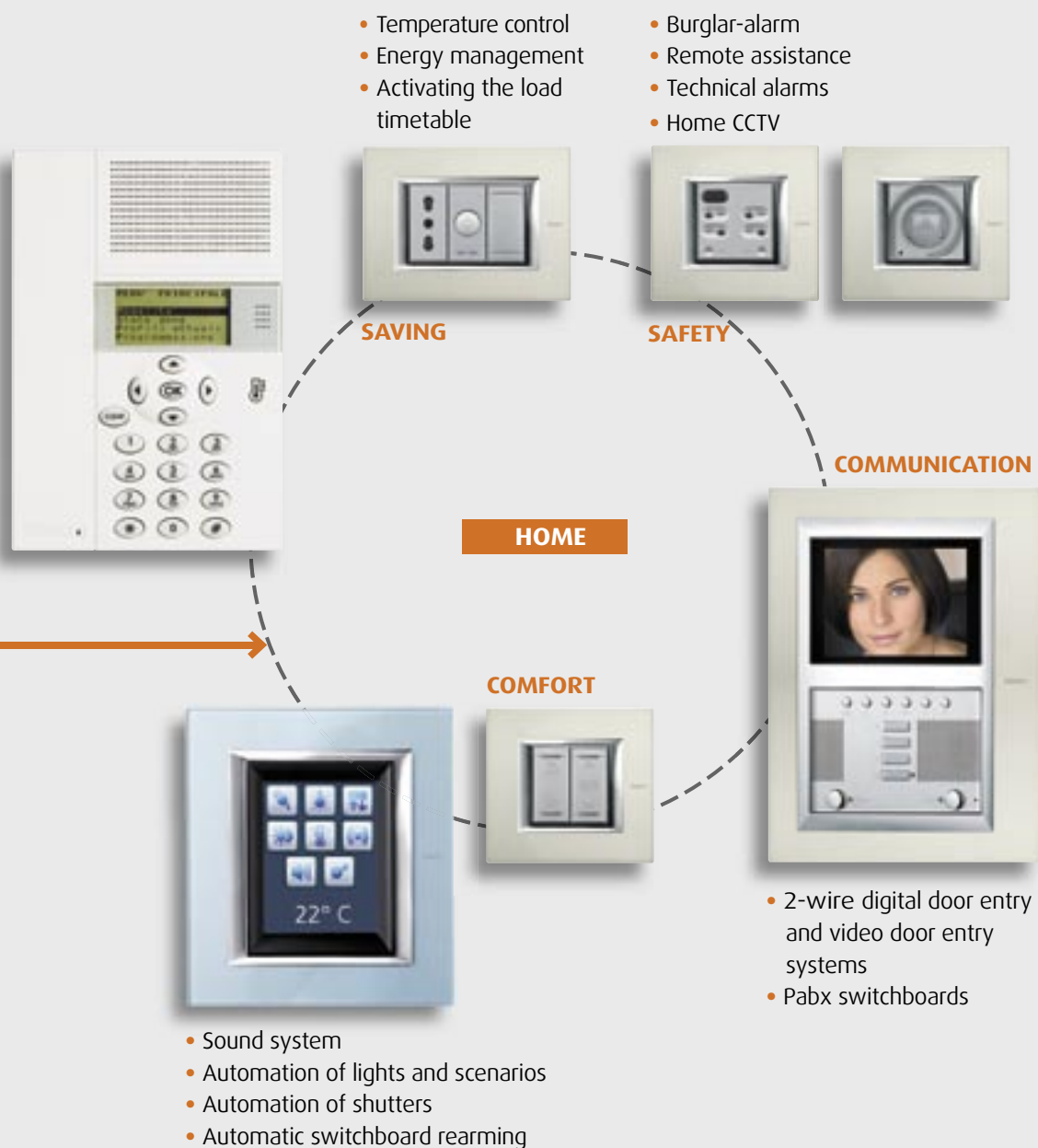
MY HOME is a home automation system which offers state-of-the-art solutions, which are in increasing demand in the home and in the service sector. It offers all the house-automation functions and applications concerning comfort, safety, energy saving, communication and control.

A common feature of all the MY HOME devices is that they use the same system technology, based on the digital bus, so that the various system components can be combined as the customer chooses and requires.



The installation modularity and functional integration of the various devices also allows optimisation of costs, as the user can select which applications he wants to adopt now and which he will choose in the future.

MYHOME can, moreover, communicate with the outside world by means of special devices which interact with the home through fixed-line telephones and mobile phones and/or any Personal Computer via local network or Internet.



MY HOME

The home as you want it

Today, the MY HOME system is also available in AXOLUTE styles and can cover all the domotic solutions associated with comfort, security, saving, communication and control. Furthermore, with AXOLUTE, advanced devices such as the colour Touch Screen, the VIDEODISPLAY and the VIDEOSTATION, add images to the control, thus providing the user with a simpler and more intuitive interface. The Bus technology and the configuration of the products have not changed and are common to all systems achieved so far with the LIVING, LIGHT and LIGHT TECH styles.



Totally free to choose the control

MY HOME brings you the maximum choice in selecting the control, thus enabling you to manage your own

domotic system; from simple controls to controls for rooms, scenarios and local and remote monitoring.

■ BASIC CONTROL

Enabling and adjusting a single function with:

- standard controls
- infrared controls
- touch controls

■ ROOM CONTROL

Colour Touch Screen:

- customizable icons
- control of all functions of a single room



Standard control



Touch control



Infrared control with Burglar alarm detector



Colour Touch Screen

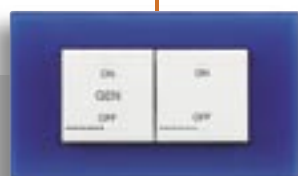
LIGHT



LIGHT TECH



AXOLUTE



■ MONITORING CONTROL

- control of all system functions
- many customization possibilities
- simple and intuitive interface thanks to the use of sounds and images via the VIDEO STATION and VIDEO DISPLAY



VIDEO DISPLAY



VIDEO STATION

■ SCENARIO CONTROL

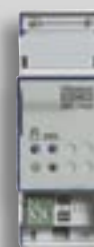
The scenarios, complete with all the MY HOME functions, are stored in the scenario module and can be selected from different devices, depending on the user's needs.



Touch Screen



Scenario control



Scenario module



Other devices



Standard control

The possible functions

SAFETY



BURGLAR-ALARM CONTROL UNIT

You can monitor the whole house or just one particular room.



GAS-STOP DETECTOR

Just a small leak and the solenoid valve stops the gas escaping.

COMFORT - AUTOMATION



TOUCHSCREEN

Just one room command for several MY HOME functions.



MOTORISED ROLLING SHUTTERS

When you wake up you can control the movement of one or more rolling shutters to give more light in the home effortlessly.

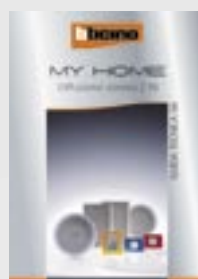


COMFORT - SOUND SYSTEM



SOUND SYSTEM AMPLIFIER

With a simple movement you can switch the radio on from anywhere in the home and listen to your favourite programme.



SAVING - TEMPERATURE CONTROL



TEMPERATURE PROBE

You can set different temperatures for each room and for every hour of the day. With savings up to 30%.



SAVING - ENERGY MANAGEMENT



SOCKET WITH ACTUATOR

To disconnect the less important loads and avoid a blackout because of an overload.



COMMUNICATION



MINIATURISED CAMERAS

A friendly eye in each room lets you check the whole house.



TELEPHONE WITH VIDEO SECTION

In each device you will find all the communication you need with the interphone, video door entry and telephone functions.



CONTROL



WEB SERVER

By means of the computer you can control and activate your home even when you are away.





MY HOME WEB


My Home Web is the complete range of services which allow the user to manage and control remotely all the My Home functions of the home at any time and with different means of communication, such as a computer connected to the Internet, a hand-held computer or a telephone (fixed or mobile).


WHAT MY HOME WEB CAN DO


The following functions can be activated with a simple telephone or by connecting to the reserved area of the Internet MY HOME portal:


 **Controls:** to manage the lighting, heating, electrical appliances, power and all the automatic devices in the home.


 **Scenarios:** to simultaneously activate several predefined commands such as, for example, opening the gate and switching on the driveway lights at the same time, with just one action. A scenario saved in the system can be activated by means of a scenario unit and Web house-automation scenarios. The Web house-automation scenarios are scenarios programmed in the Web pages of the MY HOME portal.


 **Alarms:** when there is a dangerous event, the house contacts the telephone numbers and programmed addresses with a telephone call, an SMS and an e-mail with audio/video attached and automatically activates by responding to the preset actions (e.g. the automatic switching on of all the lights in the home).

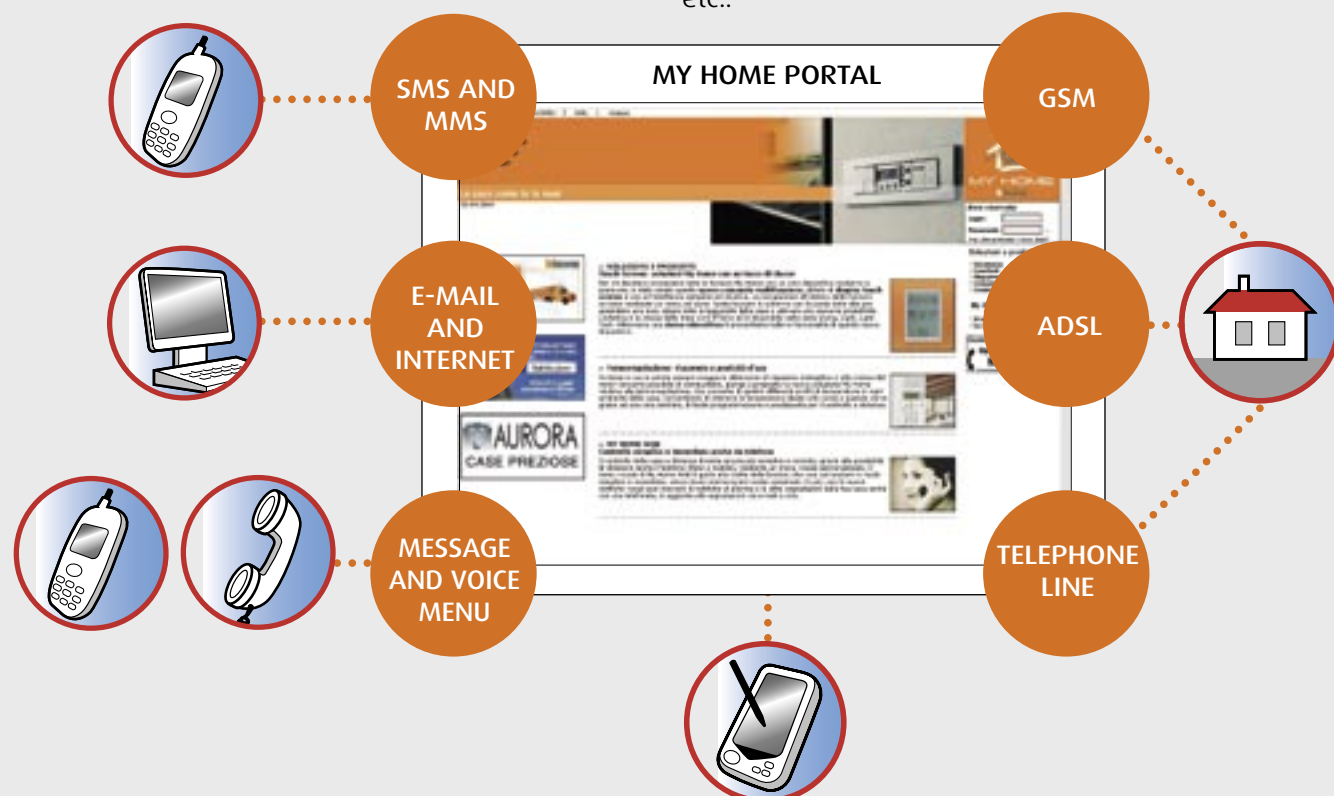
 **Planning:** with a single order one can manage the watering or temperature control or simulate the presence of the user in the home. It will be possible to determine the actions that the house shall automatically perform during the days, hours and for the time periods chosen.

 **Archives:** MY HOME Web records all the actions and events which have occurred in the home and makes them available for consultation by the user.

 **Images:** to see the rooms of the house taken by the cameras in real time.

 **Answering machine:** an event such as a door-entry call can be notified to the user by sending SMS or e-mail messages with an audio/video attachment. The signal can also be consulted by entering the reserved area of the My Home portal.

 **Check:** the state of the home functions can be managed to find out, for example, whether the intrusion system is switched on, the lights are on etc..



MY HOME WEB

The advantages

MY HOME WEB can check all the house-automation functions simply, customisable and conveniently. Simple because the user does not have to remember special passwords to access the service via telephone or computer. Customisable because the user can arrange schedules, WEB domotic scenarios as well as the answering machine introduction message. Convenient because thanks to the MY HOME Portal the services can be used with different means of communication such as a computer and fixed and mobile phones, regardless of the type of device used.

Devices such as the telephone actuator, the burglar alarm unit with an integrated dialling device and the telephone dialling device specifically designed for being managed via the telephone line can also be, with MY HOME WEB, controlled with a PC connected to the Internet or with voice commands and SMS's. The MY HOME Web installer can benefit from the advantages offered because, when the customer requests, he can modify the programming, the system parameters and make diagnosis and maintenance remotely.

EXAMPLE OF WEB PAGE TO CONTROL THE CAMERAS



MY HOME SOUND SYSTEM

THE NEWS

AXOLUTE devices



Sound source



Flush-mounted amplifier



TOUCH SCREEN



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The pleasure of being surrounded by pure sound

The new stereo sound system lets you **choose and control the sound** playing it in **several rooms** at the same time **with high sound quality**.

The system technology uses **amplifiers and loudspeakers** perfectly integrated in the electrical system which allow you to listen both to an external sound source, like a **Hi-Fi system**, and an internal source, like the **integrated FM radio**.



Flush-mounted amplifier



TOUCH SCREEN

Music wherever you want it

Thanks to its complete range and its many functions it is the ideal solution for applications which range from the residential to the service sector. The performance, possibility of extending the system and

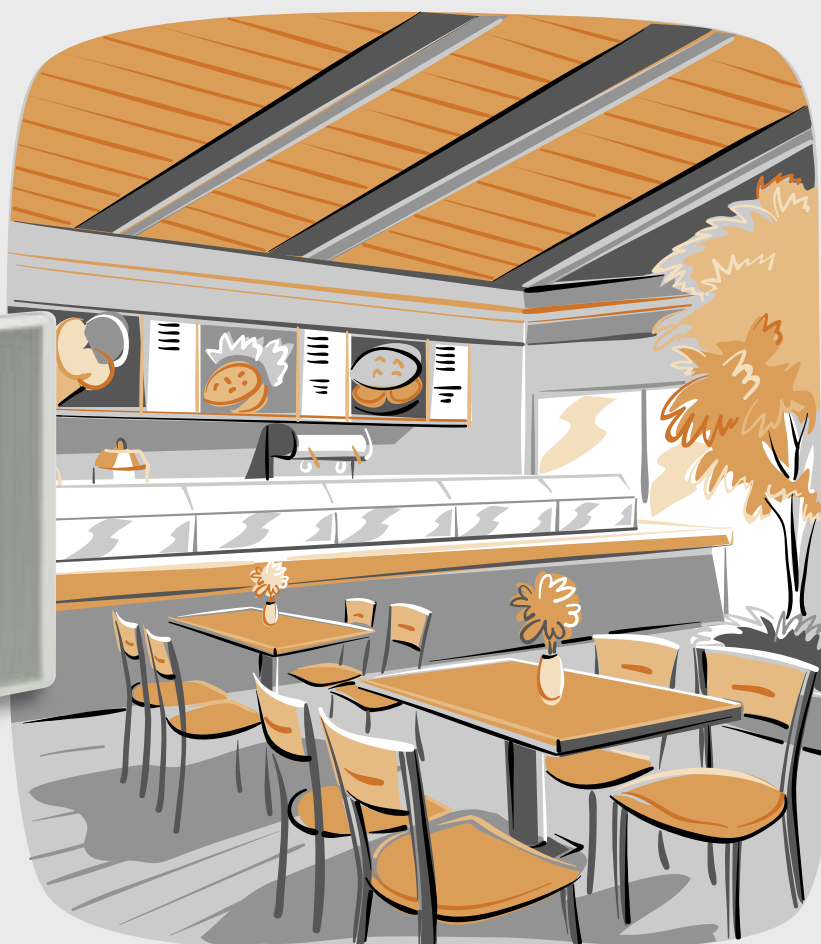
its sound quality mean that it can be used in both the classical home environment and in service rooms such as doctors' or dentists' surgeries, shops, cafes, restaurants and supermarkets.

MUSIC IN THE HOME WHERE AND WHEN YOU WANT IT

The sound sources can be controlled from every room, for example changing the radio stations or modifying the volume, with flush-mounting control devices (amplifiers and TOUCH SCREEN) and radio remote controls.



Wall-mounted loudspeakers



In the residential sector In the service sector

The BTicino stereo sound system is recommended not only to anyone who wants to hear quality sound in his home, but also to anyone working in the **service sector**, professionals who always need

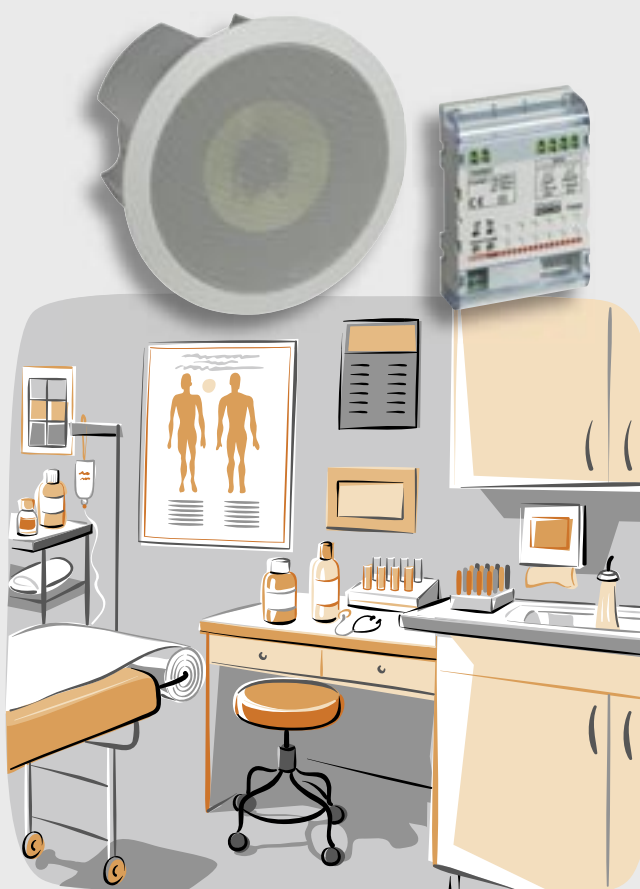
a system which not only plays music but also lets them communicate with their co-workers and with customers.

Wall-mounted loudspeakers
for applications in the home



Flush-mounted amplifiers in just two modules and slim wall-mounted loudspeakers (only 37 mm) allow a discreet installation.

Ceiling-mounted loudspeakers for
applications in the service sector



Loudspeakers dedicated to the service sector and DIN amplifiers directly supplied at 230V to expand the system up to 80 loudspeakers.

A MY HOME solution

The new stereo sound system has been studied and designed to **fit into MY HOME solutions**, such as the video door entry system or automation.

TWO APPLICATIONS

1. It is morning. Press just one pushbutton to raise the rolling shutters and switch on the radio or stereo, playing the music desired in the background.
2. The music goes quiet automatically to let you hear any calls from the video door entry system. Also voice messages from the video handset can be sent through the loudspeakers.

2 TWO WIRES OF SIMPLICITY

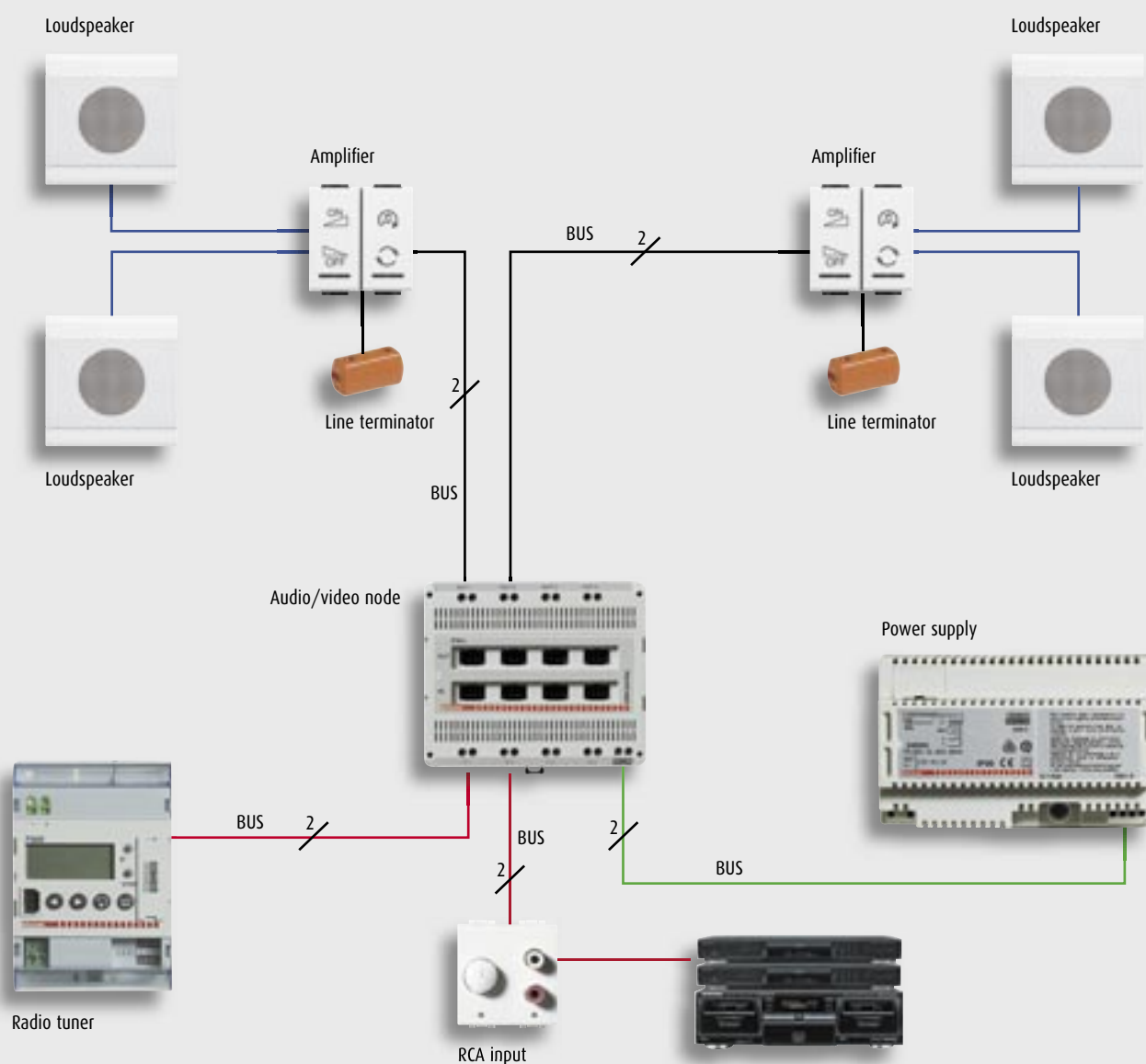
Installation of the system is simple and flexible because it uses the MY HOME two wire system. Like all the MY HOME solutions this can be simply expanded and altered later. The new sound system uses the same power supply and cable as the 2 wire video door entry system.



A complete system

The components to make the sound system can be divided into the following families:

- AUDIO/VIDEO NODE
- SOUND SOURCES
- CONTROL DEVICES
- SOUND AMPLIFIERS
- LOUDSPEAKERS



The sound system components

AUDIO/VIDEO NODE (ITEM F441)

The audio/video node mixes high-frequency stereo signals from several external sources (home stereo, radio tuner ...), towards the amplifiers positioned inside the home.

The device also integrates between the sound system and the two wire video door entry system without using SCS/SCS interfaces (item F422).



Audio/video node

SOUND SOURCES

The sound sources are devices which generate a stereo audio signal. BTicino proposes a modular radio tuner and interfaces for the connection of external sound sources (e.g. Hi-Fi system).

■ FM RADIO TUNER (ITEM F500)

The BTicino radio tuner is a device to be installed on DIN35 rail to receive FM stereo radio programmes, which can display RDS messages.



Radio tuner

■ RCA INPUT (ITEM HC/HS4560 AND ITEM L/N/NT4560)

This device is an interface which can connect an external stereo source (CD reader, DVD...) to the sound system.



RCA input

■ STEREO CONTROL (ITEM L4561)

It can manage an external stereo source which has infrared remote control. This device saves the commands given by the source remote control to make them available on the amplifiers, special controls and TOUCH SCREEN.



Stereo control

CONTROLS

These devices can manage the amplifiers from different rooms.

■ SPECIAL CONTROL (ITEM H4651/2 AND ITEM L4651/2)

Correctly configured it can manage the operation of a single amplifier, several amplifiers, or all the system amplifiers.

■ TOUCH SCREEN (ITEM H4684 AND ITEM L/N/NT4683)

A simple touch on the display can control all the functions of the MY HOME system, including the sound system applications.



Special control



TOUCH SCREEN

SOUND AMPLIFIERS

Devices which amplify the audio signal from the BUS on the loudspeakers in the system.

■ STEREO AMPLIFIER (ITEM H4562 AND ITEM L4562)

Switches loudspeakers on/off, manages the volume, cycles the sources available and changes the CD track or selects the favourite radio station from those saved.

■ DIN AMPLIFIER (ITEM F502)

Supplied directly at 230V a.c., allows installations in large systems (up to 80 loudspeakers). Suitable in service rooms such as offices, restaurants, supermarkets...



Flush-mounted amplifier



DIN amplifier

LOUDSPEAKERS

The new sound system can be used with all the loudspeakers from 8Ω to 16Ω normally available on the market. The BTicino loudspeakers are:

■ FLUSH-MOUNTED LOUDSPEAKERS (ITEM HC/HS4565 AND ITEML/N/NT4565)

Loudspeakers with 16Ω impedance and 12W power, for installation in flush-mounted boxes item 506E.

■ WALL-MOUNTED LOUDSPEAKERS (ITEM L4567)

Loudspeakers with 37 mm thickness, 40W power and 8Ω impedance.

■ CEILING-MOUNTED LOUDSPEAKERS (ITEM L4566)

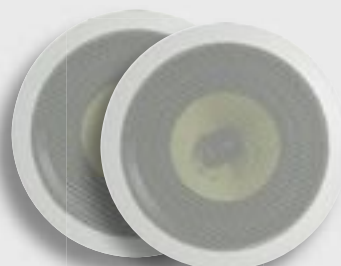
100W loudspeaker with 8Ω impedance, for installation in large rooms.



Wall-mounted loudspeakers

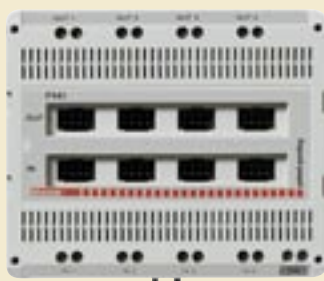


Flush-mounted loudspeakers



Ceiling-mounted loudspeakers

Audio/video node, sound sources



F441

AUDIO/VIDEO NODE

Item	Description
F441	Audio/Video node to mix audio signals (Max 4 sources) towards 4 outputs - 6 DIN modules - complete with depth compensator for DIN rail



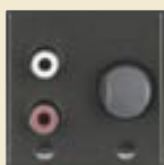
F500



L4561

SOUND SOURCES

Item	Description
F500	RDS stereo radio tuner - 4 DIN modules - complete with depth compensator for DIN rail
L4561	Device to control stereo sources with infrared remote control - the source can be managed by the amplifiers or the special controls - 4 DIN modules - complete with RCA/RCA cable and cable with jack to connect the IR transmitter
HC4560 HS4560	Flush-mounted RCA input - two AXOLUTE - modules to control a stereo source
L4560	Flush-mounted RCA input - two LIVING INTERNATIONAL modules to control a stereo source
N4560	Flush-mounted RCA input - two LIGHT modules to control a stereo source
NT4560	Flush-mounted RCA input - LIGHT TECH modules to control a stereo source



HS4560



HC4560



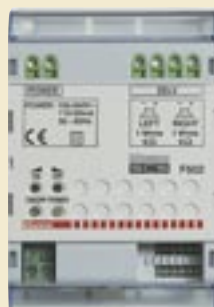
L4560



N4560



NT4560



F502



H4562



L4562

AMPLIFIERS

Item	Description
F502	4 DIN module amplifier to be installed in units
H4562	Flush-mounted amplifier - two modules - to be completed with AXOLUTE button covers
L4562	Flush-mounted amplifier - two modules - to be completed with LIVING INTERNATIONAL, LIGHT or LIGHT TECH button covers

Control devices



H4684



L4683
N4683
NT4683



H4651/2



L4651/2

CONTROLS

Item	Description
H4684	TOUCH SCREEN AXOLUTE
L4683	TOUCH SCREEN LIVING INTERNATIONAL
N4683	TOUCH SCREEN LIGHT
NT4683	TOUCH SCREEN LIGHT TECH
H4651/2	Special control to manage amplifiers to be completed with AXOLUTE button covers to switch on/off, control volume, change source and change programmed radio stations - two modules
L4651/2	As above - to be completed with LIVING INTERNATIONAL/LIGHT e LIGHT/TECH button covers



L4572SB



3527

RADIO CONTROLS

Item	Description
L4572SB	Radio control with standalone power supply (no battery required) - used in the MY HOME Sound system with interface Item L/N/NT4575SB
3527	Remote control with 6 customizable pushbuttons with graphic labels. Set up for being used by disabled people - power supply with two 1.5 Volt AAA batteries - used in MY HOME Sound systems with interface Item L4575N

RECEIVING RADIO INTERFACES- POWER SUPPLY 27V C.C. FROM BUS

Item	Description
HC4575	AXOLUTE interface for remote control Item 3527.
HS4575	Size 2 modules.
L4575N	LIVING interface for remote control Item 3527 Size 2 LIVING/LIGHT modules.
N4575N	As above - LIGHT
NT4575N	As above - LIGHT TECH
L4575SB	LIVING interface for control Item L4572SB. Size 2 LIVING/LIGHT modules.
N4575SB	As above - LIGHT
NT4575SB	As above - LIGHT TECH



HS4575



HC4575



L4575N
L4575SB



N4575N
N4575SB



NT4575N
NT4575SB

Button covers and connectors



HC4911AF HC4911AI HC4911BE HC4911BF



HS4911AF HS4911AI HS4911BE HS4911BF



L4911BF N4911BFM NT4911BFM



L4911AF N4911AFM NT4911AFM
L4911AI N4911AIM NT4911AIM
L4911BE N4915BEM NT4915BEM



L4919SB N4919SB NT4919SB



336983 336982 336984

BUTTON COVER

With silk-screen printing - 2 functions - 1 module

Item	Silk-screen description	
LIGHT	DARK	
AXOLUTE	AXOLUTE	
HC4911AF	HS4911AF	ON-OFF-GEN
HC4911AI	HS4911AI	ON-OFF-adjustment
HC4911BE	HS4911BE	treble clef symbol
HC4911BF	HS4911BF	sound system functions

Item	Silk-screen description	
LIVING	LIGHT	LIGHT TECH
INTERNATIONAL		
L4911BF	N4911BFM	NT4911BFM
L4911AF	N4911AFM	NT4911AFM
L4911AI	N4911AIM	NT4911AIM
L4911BE	N4915BEM	NT4915BEM

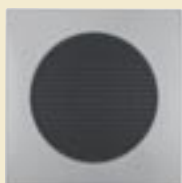
For radio control Item L4572SB

Item	Silk-screen description	
LIVING	LIGHT	LIGHT TECH
INTERNATIONAL		
L4919SB	N4919SB	NT4919SB

CONNECTORS FOR STEREO CONTROL BUS CABLE INTERFACE

Item	Description
336983	LIVING INTERNATIONAL 8-contact connector to connect interface item L4685 to the BUS
336982	as above - LIGHT series
336984	as above - LIGHT TECH series

Loudspeakers and kit



HC4565



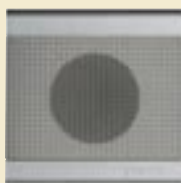
HS4565



L4565



N4565



NT4565



L4566



L4567



MHKIT90



MHKIT100

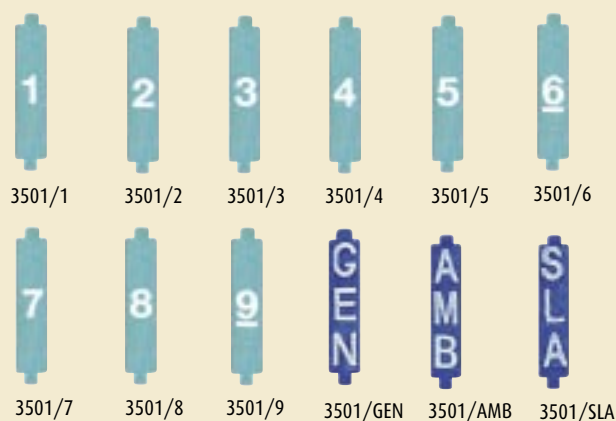
LOUDSPEAKERS

Item	Description
HC4565	Flush-mounted loudspeaker for box 506E AXOLUTE 16Ω series
HS4565	
L4565	Flush-mounted loudspeaker for box 506E LIVING INTERNATIONAL 16Ω series
N4565	Flush-mounted loudspeaker for box 506E LIGHT 16Ω series
NT4565	Flush-mounted loudspeaker for box 506E LIGHT TECH 16Ω series
L4566	Ceiling-mounted loudspeaker 8Ω
L4567	Wall-mounted loudspeaker 8Ω

SOUND SYSTEM KIT

Item	Description
MHKIT90	LIVING sound system kit including an audio input module, 3 amplifiers and 6 loudspeakers
MHKIT100	As above - LIGHT

Configurators and wiring accessories



CONFIGURATORS ONE-TYPE PACKAGE OF 10 PIECES

Item	Description
3501/0	configurator 0
3501/1	configurator 1
3501/2	configurator 2
3501/3	configurator 3
3501/4	configurator 4
3501/5	configurator 5
3501/6	configurator 6
3501/7	configurator 7
3501/8	configurator 8
3501/9	configurator 9
3501/GEN	configurator GEN
3501/AMB	configurator AMB
3501/SLA	configurator SLA



CONFIGURATOR KIT

Item	Description
3501K	Configurator kit from 0 to 9
3501K/1	Configurator kit AUX, GEN, GR, AMB, ON, OFF, O/I, PUL, SLA, CEN, ↑↓, ↑↓ M



346000



336904

POWER SUPPLY

Item	Description
346000	power supply for sound system - input 230Va.c. output 27Vd.c. - maximum current supplied 1200 mA - fastening on DIN rail with size 8 modules



3499



3515

CABLE FOR SYSTEMS

Item	Description
336904	twisted 2-conductor cable which can be buried in piping - corresponds to standards IEC 20-13 and IEC 20-14 - coil length 200 m

LINE TERMINATOR

Item	Description
3499	line terminator - to be installed on the used outputs of the audio/video node



335919
3559

VARIOUS ACCESSORIES

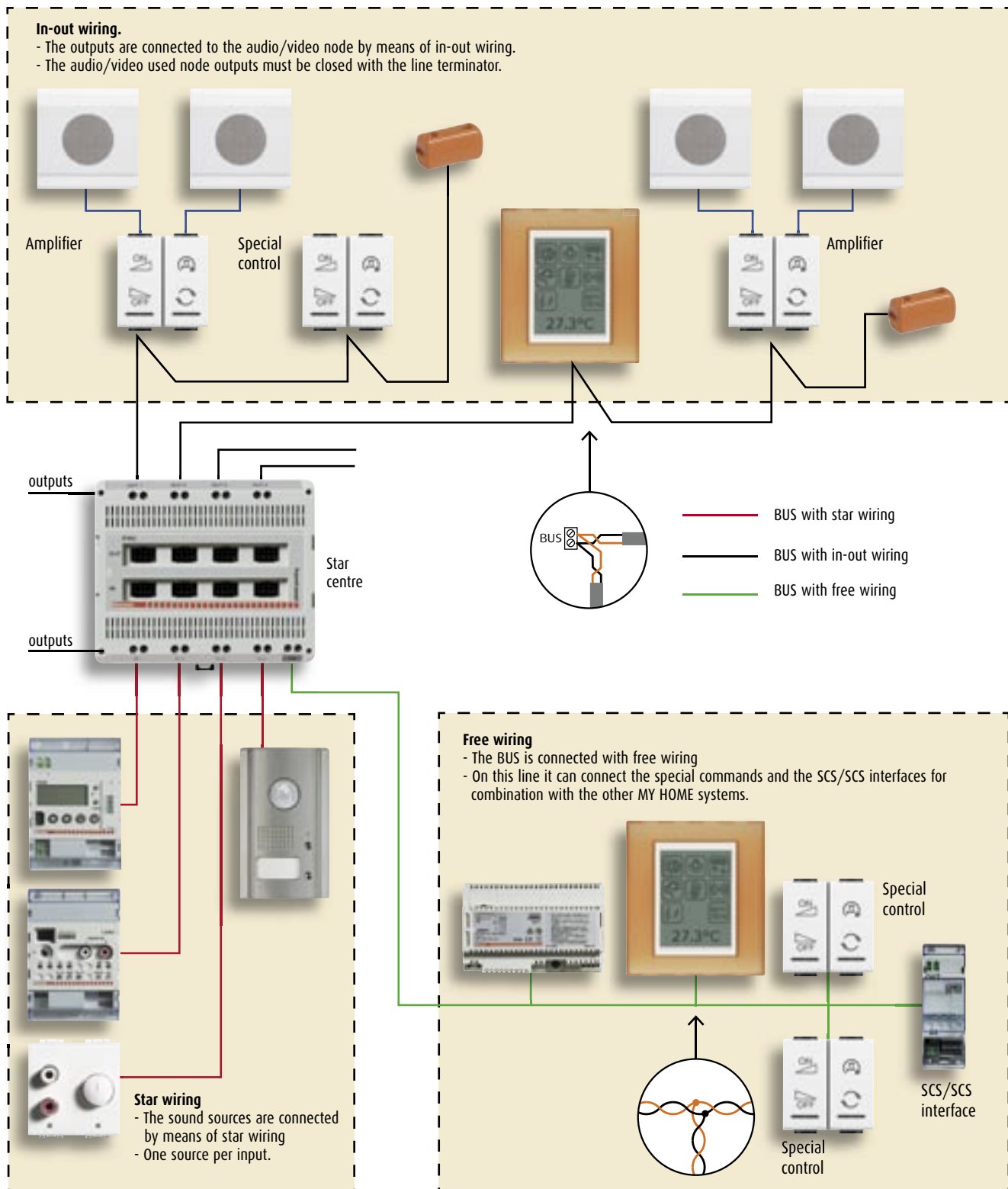
Item	Description
3515	spare pull-out terminal
335919	cable to connect the TOUCH SCREEN to the PC to program the device
3559	cable above - for USB port

GENERAL RULES FOR INSTALLATION

Sound system wiring

When wiring the Sound System remember some installation general rules: the distribution system is made by means of star wiring, where the signals from the external stereo sources and the wirings from the command devices and amplifiers converge.

The following diagram shows the type of wiring to be made to make a Sound System.



GENERAL RULES FOR INSTALLATION

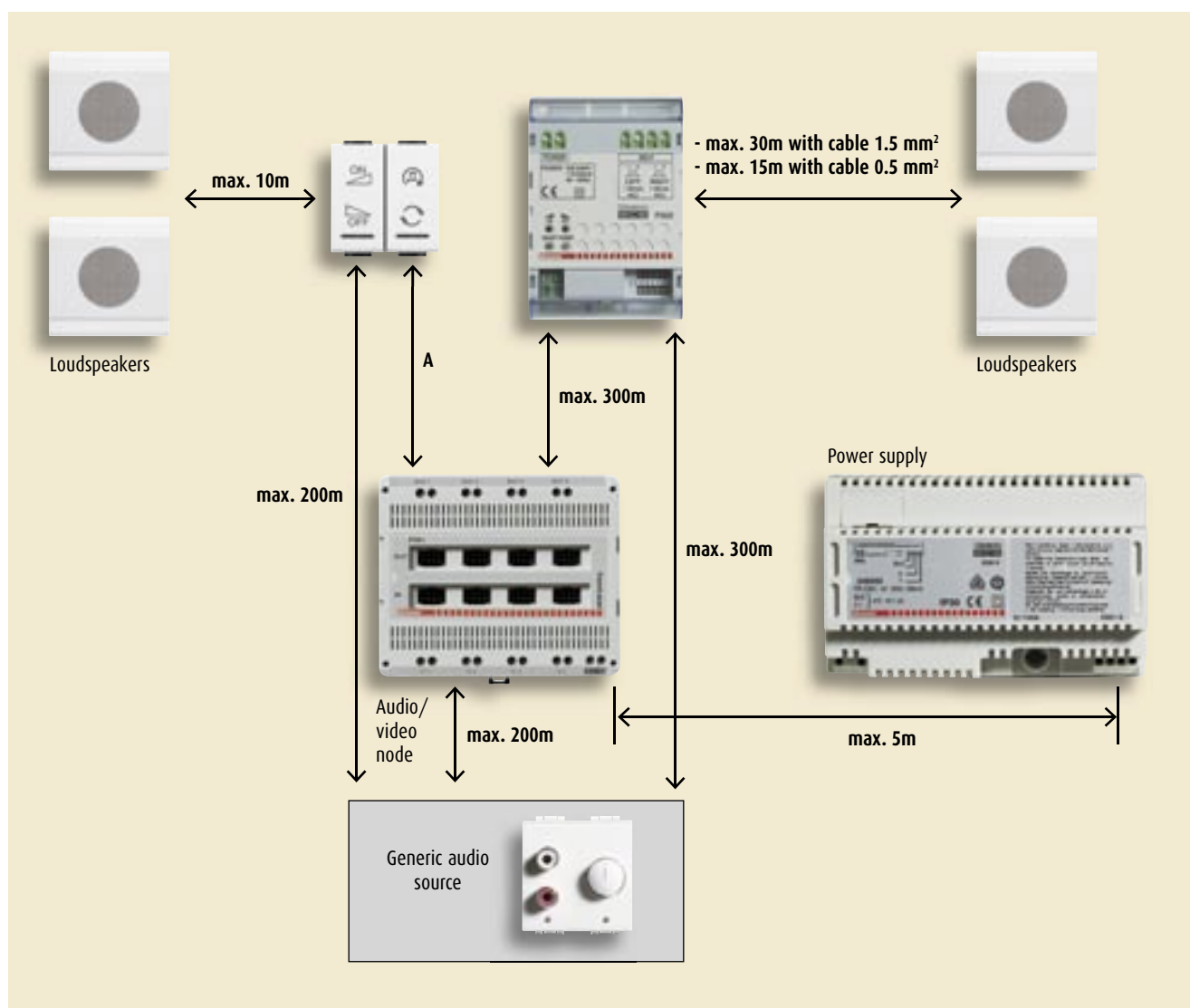
Max. distances and cable features

When sizing the system remember the following system limits as a function of the type of amplifier installed and the impedance features of the loudspeaker used.

To keep the fidelity of the audio signal reproduced unaltered, lay the wiring of the BUS 2 wire Sound /Video door entry System and the accessory wirings (cables for loudspeakers etc.) in separate piping from the power cables

(230V line). The above wirings can only share inside junction boxes using cables with suitable insulation (e.g. Item 336904).

Failure to respect the above provisions may affect the quality of the audio signal reproduced.



Max. distance between the devices (A)

Maximum cable length on the basis of the number of amplifiers item L4562 installed along an output of the audio/video Node

	Loudspeaker impedance	With No. 1 amplifier	With No. 2 amplifiers	With No. 3 amplifiers	With No. 4 amplifiers
Using cable Item 336904	8Ω	160m	60m	-	-
	16Ω	200m	160m	100m	60m
Using cable UTP cat.5E	8Ω	80m	30m	-	-
	16Ω	160m	80m	50m	30m

NOTE: - using amplifiers DIN item F502, a maximum of 10 amplifiers can be cabled for each audio/video node output

- for the lengths of the Video door entry wirings, refer to the Technical Communication Guide

- total stretched cable max 800m.

GENERAL RULES FOR INSTALLATION

Calculation of the current absorption

The system absorption is always calculated whenever the diagrams in the guide are not followed.

When calculating the current absorbed by the components, remember that the maximum current which can be supplied by the power supply must not be exceeded.

To calculate the current absorbed by the sources, consider the source with greatest absorption in "ON" and all the others in "stand-by".

While for the flush-mounting amplifiers L4562 consider the ON absorption relative to the type of load connected (loudspeaker impedance and number of outputs connected to the loudspeakers).

There must be at most 100 SCS devices.

There must be at most 8 L4562 amplifiers.

There must be at most 40 F502 amplifiers

(maximum 10 for output of node F441).

The maximum current of each individual Node audio/video output F441 must be less than 600mA continuous. This limit translates as a maximum of 2 flush-mounting amplifiers L4562 with 8 ohm loudspeakers or 4 flush-mounting amplifiers L4562 with 16 ohm loudspeakers.

Table of absorptions

Description	Item	Stand-By	ON
Power supply:	346000		1200mA (max. suppliable current)
	346001		1000mA (max. suppliable current)
Audio Video Node:	F441	-	20mA
RCA input source:	HC/HS/L/N/NT4560	12mA	30mA
Radio Tuner:	F500	12mA	50mA
Stereo control source:	L4561	12mA	40mA
Flush-mounted stereo amplifier:	L4562	6mA	250mA with 8ohm loudspeakers on the 2 L-R outputs. 130mA with a 8ohm loudspeaker on 1 L-R output. 130mA with 16ohm loudspeakers on the 2 L-R outputs. 90mA with a 16ohm loudspeaker on 1 L-R output. 40mA (MUTE)
	H4562		
Service sector amplifier:	F502	-	5mA (from BUS)
Special control:	H/L4651/2	-	7.5mA
TOUCH SCREEN:	H4684		
	L/N/NT4683	-	20mA
Scenario module:	F420	-	20mA
SCS/SCS interface (on OUT):	F422	-	3mA
SFERA B/W 2 wire camera	342510	12mA	250mA
Sfera 2 wire speaker module	342170	25mA	75mA
PIVOT B/W 2 wire video handset	344102	5mA	505mA

EXAMPLE 1

A calculation example considering the diagram called **Small house** is proposed below.

Material list	Quantity	Absorption (mA)
F500 Tuner	1	1 x 50
L4561 Stereo control	1	1 x 12
L4562 Flush-mounted amplifiers	8 (loaded with 2 loudspeakers, 16ohm each)	8 x 130
F441 A/V Node	1	1 x 20
TOTAL		1122

EXAMPLE 2

A calculation example considering the diagram called **House** with integrated 2 wire Video door entry is proposed below. To calculate the current absorbed

during the video door entry call, consider the MUTE absorption of the flush-mounting amplifiers.

Material list	Quantity	Absorption with sound system	Absorption in video door entry conversation
F441 A/V Node	1	1 x 20mA	1 x 20mA
F500 Tuner	1	1 x 50mA	1 x 50mA
L4561 Stereo Control	1	1 x 12mA	1 x 12mA
L/N/NT4560 RCA input	1	1 x 12mA	1 x 12mA
L4562 Flush-mounted amplifiers	6 (with 2 16 ohm loudspeakers)	6 x 130mA	6 x 40mA
L/N/NT4683 TOUCH-SCREEN	1	1 x 20mA	1 x 20mA
32510 SFERA B/W 2 wire camera	1	1 x 2mA	1 x 250mA
342170 SFERA 2 wire Speaker Module	1	1 x 25mA	1 x 75mA
344102 PIVOT B/W video handset	2	2 x 5mA	1 x 505mA
TOTAL		941mA	1184mA

To calculate the current margin consider the higher absorption, thus $1200 - 1184 = 16\text{mA}$

GENERAL RULES FOR INSTALLATION

Positioning the loudspeakers

When designing the Sound System the correct positioning of the listening points must be identified.
A precise layout of the loudspeakers in fact guarantees better sound quality

ROOM IN THE HOME AND SMALL SERVICE SECTOR

The distances to adopt to position loudspeakers and the areas which BTicino loudspeakers cover are given below, as a function of the sound quality for a room in the home. For rooms in the small service sector, the sound level required is on average lower than in the home. In this case it is assumed that a loudspeaker covers double the area.

Positioning the loudspeakers

Description	Distance (m)
Distance between loudspeakers (A)	2-4
Distance from the floor (B)	1-2.5
Distance between loudspeaker and listener (C)	2-4

Loudspeaker coverage

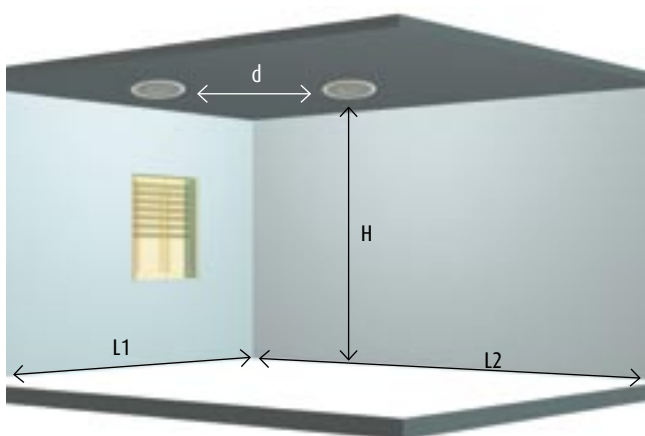
Type of loudspeaker	Area covered by the loudspeakers			
	In the home		In the small service sector	
	GOOD	SUFFICIENT	GOOD	SUFFICIENT
L4565 (flush-mounted box item 506E)	3m ²	7m ²	-	-
L4567 (wall-mounted)	5m ²	12m ²	10m ²	24m ²
L4566 (ceiling-mounted)	6m ²	15m ²	12m ²	30m ²

ROOM IN THE SMALL SERVICE SECTOR

If a Sound System is to be installed in a room of the small service sector, the type of room where the system is to be installed must be identified. When positioning playing points remember:

- The height from the playing point (H)
- The area to be covered (S)
- The distance between the playing points (d)
- The distance between the listener and the playing point (D)

Identifying the room and calculating the playing points



The table gives the recommended distances between the ceiling-mounted loudspeakers referring to the room height.

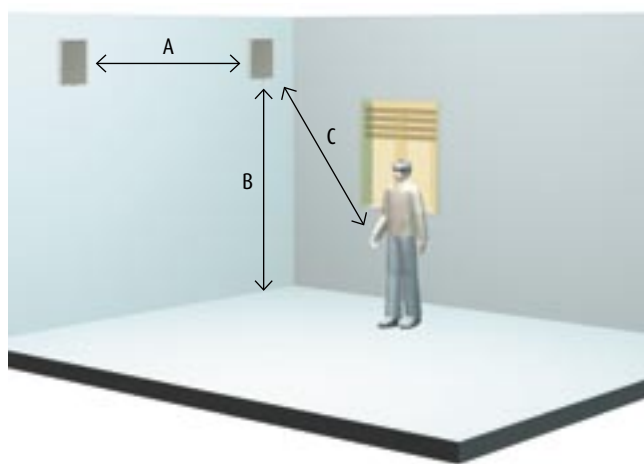
Location of the loudspeakers Item L4566

H (m)	2.5	3	3.5	4	4.5
d (m)	3	4	5	6	7

and balance in the whole room.

Rules to be applied to identify the number of loudspeakers to install are given below.

The loudspeakers should be at a height of 1m near to listening points where people are seated. Instead use a height of 2.5m near to listening points where people are standing (e.g. waiting room.).



Level of room sound coverage

Type of room	Sound coverage value (dBA)	Type of surroundings (dBA)	Sound coverage value
Mechanical industry	80	Shopping centre	60
Mechanical workshop	75	Café	60
Gymnasium	70	Shop	60
Conference room	70	Restaurant	55
Electronics industry	70	Meeting room	55
Supermarket	65	Hotel corridors	55
Fast-food outlets	65	Offices	55
Warehouses	65	Museums	50
Places of prayer	65	Hotel rooms	40

The formula to apply to obtain the number of loudspeakers to be installed in a room on the basis of its total area is given below.

$$N = \frac{L_1 \times L_2 - [(L_1 \times d) + (L_2 - d) \times d]}{d^2}$$

Legend:

N: playing points

L1 e L2: length of the sides of the room to be covered

d: distance between the loudspeakers referring to the room height (see table above)

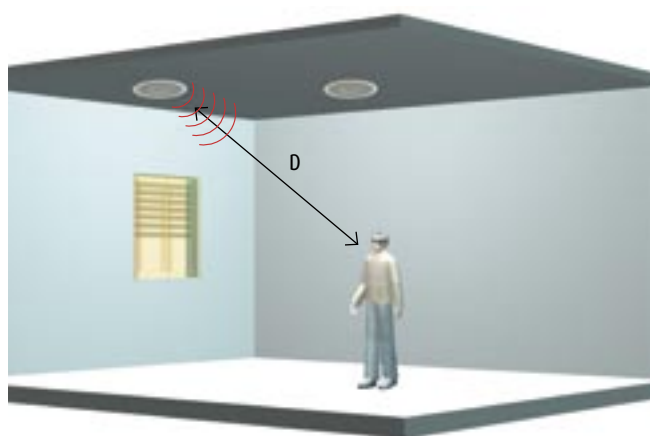
Example: $N = \frac{20 \times 40 - [(20 \times 7) + (40 - 7) \times 7]}{7^2} = 8.8$ consider **N=10**

Legend: **L1:** 20m² - **L2:** 40m² - **H:** 4.5m from the table one obtains **d:** 7

Calculating the attenuation and checking the sound level

Another feature to be considered to cover a room correctly is the sound level. In fact the sound level of a loudspeaker decreases as the distance between loudspeaker and listener increases. When calculating the attenuation leave a margin of 10dB with respect to the values indicated above (e.g. electronic industry 80dB + 10dB).

If distance **D** is known the attenuation can be obtained:



Attenuation

D (m)	Attenuation (dB)
1	0
2	-4
4	-8
8	-12
16	-16

Checking the sound level

$$LSA + 10dB > S + A$$

Legend:

LSA = room sound level (see "sound coverage level" table)

10dB = margin to be added

S = sensitivity of the loudspeakers (dB)

A = attenuation as a function of the distance between the loudspeaker and the listener (see "attenuation" table)

Note: When there are metal iodide lamps or sodium vapour lamps at high and low pressure (loads A) lay the wiring respecting the following rules:

1. to supply Loads A use power cables with minimum insulation 300/500V;
2. provide a dedicated power line for amplifiers F502;
3. keep "power line Loads A" and "BUS line or power line F502" separate by at least 1 m;
4. wire the loudspeakers with twisted cables (e.g. Item 336904);
5. keep the wiring to the loudspeakers as short as possible positioning the F502 amplifiers near the loudspeakers.

Failure to respect the above rules may affect correct operation of the devices.

EXAMPLE OF THE SOUND LEVEL CALCULATION

Some examples for identifying the sound level are given below. If when calculating the sound level the value obtained is greater by a small margin (2 - 4dB) we have sufficient sound coverage for the room. If it is smaller the possibilities are as follows:

1st example

The first example refers to a shop showroom with the following features:

H = 3.5m thus d = 5m

L1 = 10m²

L2 = 20m²

shop showroom = 60dBA + 10dB = 70dBA

From the data one obtains:

N = 3

d = 5

locating 3 loudspeakers one obtains D = 12

Attenuation (D = 12m) = -14dB

Loudspeaker sensitivity = 88dB

Sound level required = 74dBA (perfect sound coverage)

1. put two loudspeakers close together at each playing point (this gives an equivalent loudspeaker with sensitivity +6dB greater than that of the single loudspeaker);
2. put four loudspeakers close together at each playing point (this gives an equivalent loudspeaker with sensitivity +12dB greater than that of the single loudspeaker).

2nd example

The second example refers to a electronics industrial site with the following features:

H = 4.5m thus d = 7m

L1 = 20m²

L2 = 40m²

electronics industry = 70dBA + 10dB = 80dBA

From the data one obtains:

N = 10

d = 7

locating 10 loudspeakers one obtains D = 6

Attenuation (D = 6m) = -10dB

Loudspeaker sensitivity = 88dB

Sound level required = 78dBA (insufficient sound coverage)

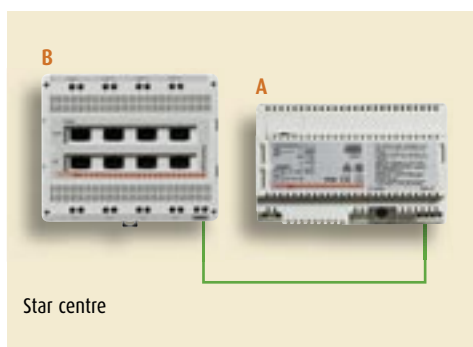
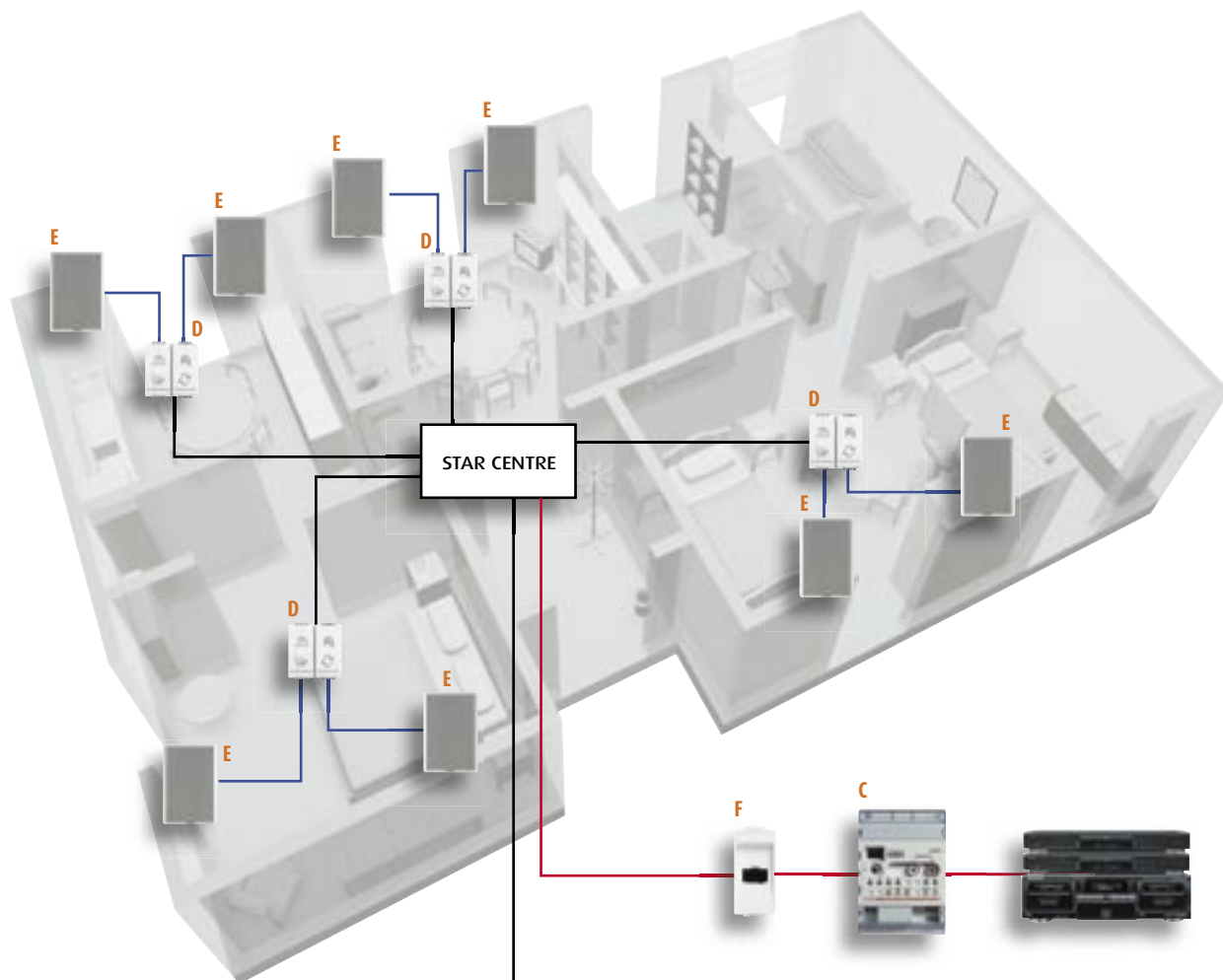
As the sound level calculated is insufficient, just put two loudspeakers close together at each playing point (giving an equivalent loudspeaker with sensitivity +6dB greater than that of the single loudspeaker) and the sound coverage is found to be sufficient.

WIRING DIAGRAMS

Flat

Below is shown a flat, on a single floor, with four rooms (living room, kitchen and 2 bedrooms). The stereo control can play the music from the Hi-Fi stereo inside the flat. An amplifier with 4 pushbuttons is installed in each room. This amplifier can switch the loudspeakers on and off, adjust the

volume, cycle the sound sources available (if there is more than one) and change the CD track or choose the favourite radio station from those saved. Two flush-mounted loudspeakers with 8Ω impedance are connected to the amplifier.

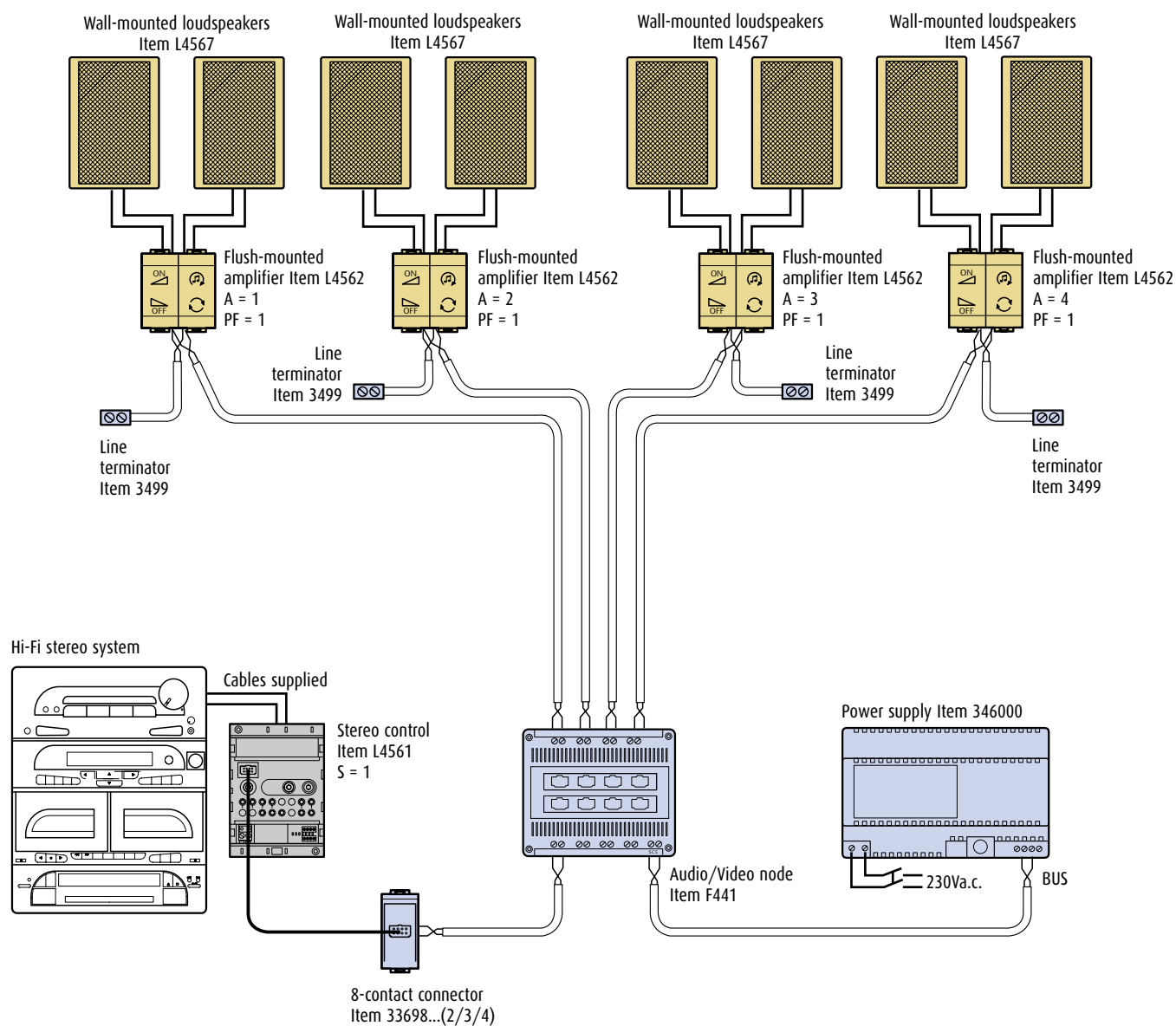


List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/Video node	1	B
L4561	Stereo control	1	C
L4562	Flush-mounted amplifiers	4	D
L4567	Wall-mounted loudspeakers	8	E
L/N/NT4911BF	Right button cover	4	
L/N/NT4911AI	Left button cover	4	
3499	Line terminators	4	
33698...(2/3/4)	8-contact connector	1	F
336904	Twisted cable with 2 conductors	1	

NOTE: the above system can also be achieved with AXOLUTE Items

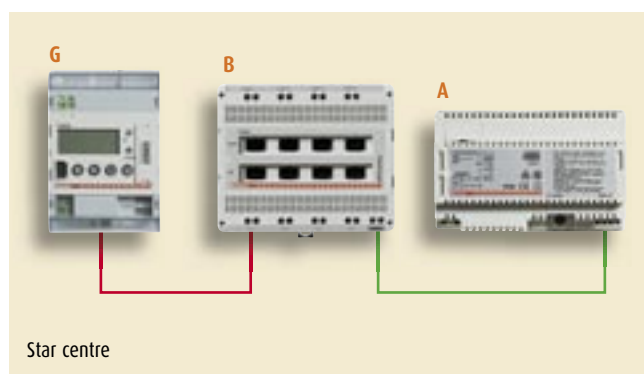
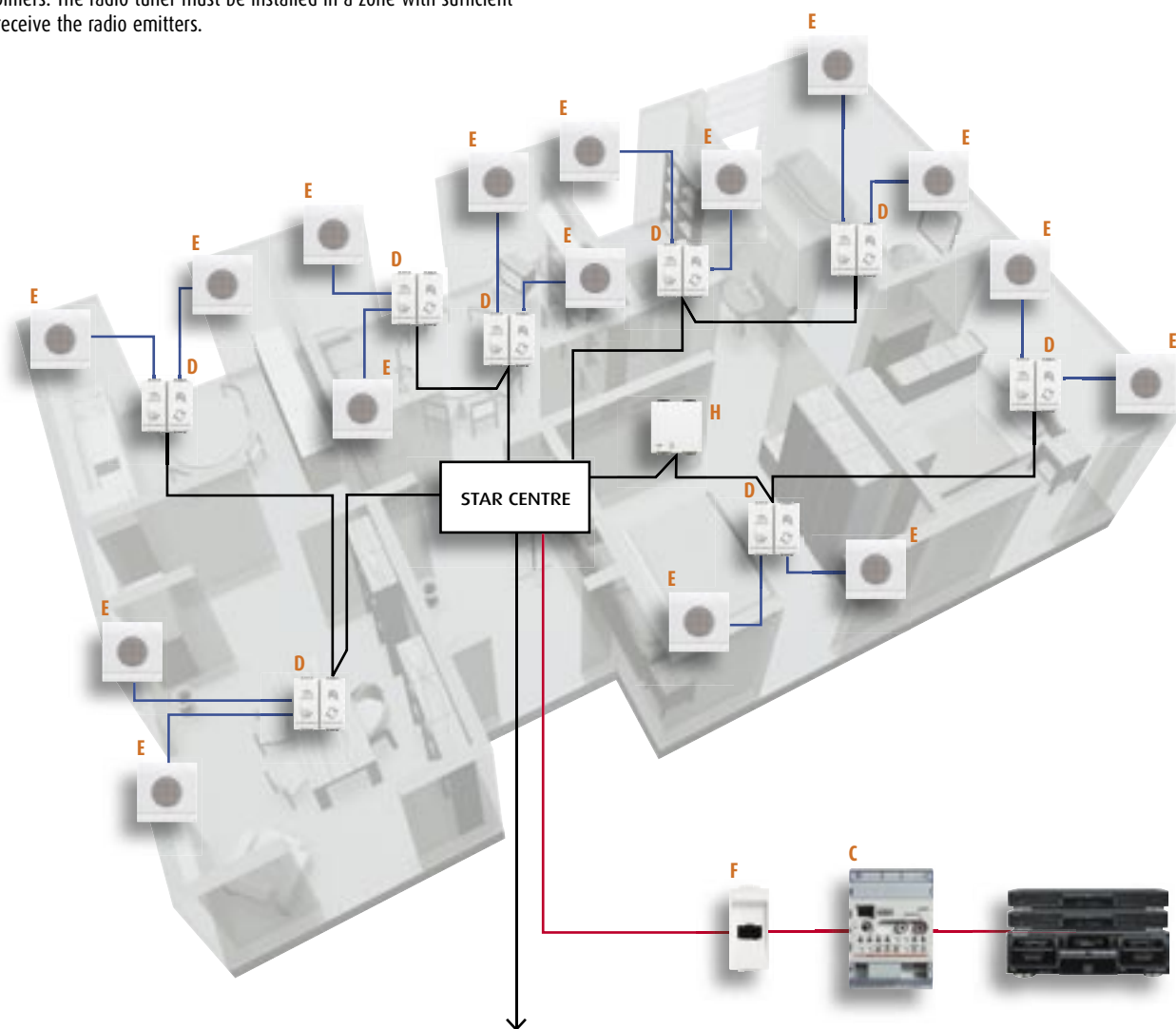
DIAGRAM 1 FLAT – 4 FLUSH-MOUNTED AMPLIFIERS – 8 8 OHM LOUSPEAKERS



WIRING DIAGRAMS

Small house

The following diagram refers to a small house with two sound sources: a stereo control to manage the Hi-Fi system and an FM radio tuner with RDS. In this case 16 flush-mounted loudspeakers are installed to play music in up to 8 rooms. A radio remote control is required for the management of one of the 8 amplifiers. The radio tuner must be installed in a zone with sufficient signal to receive the radio emitters.

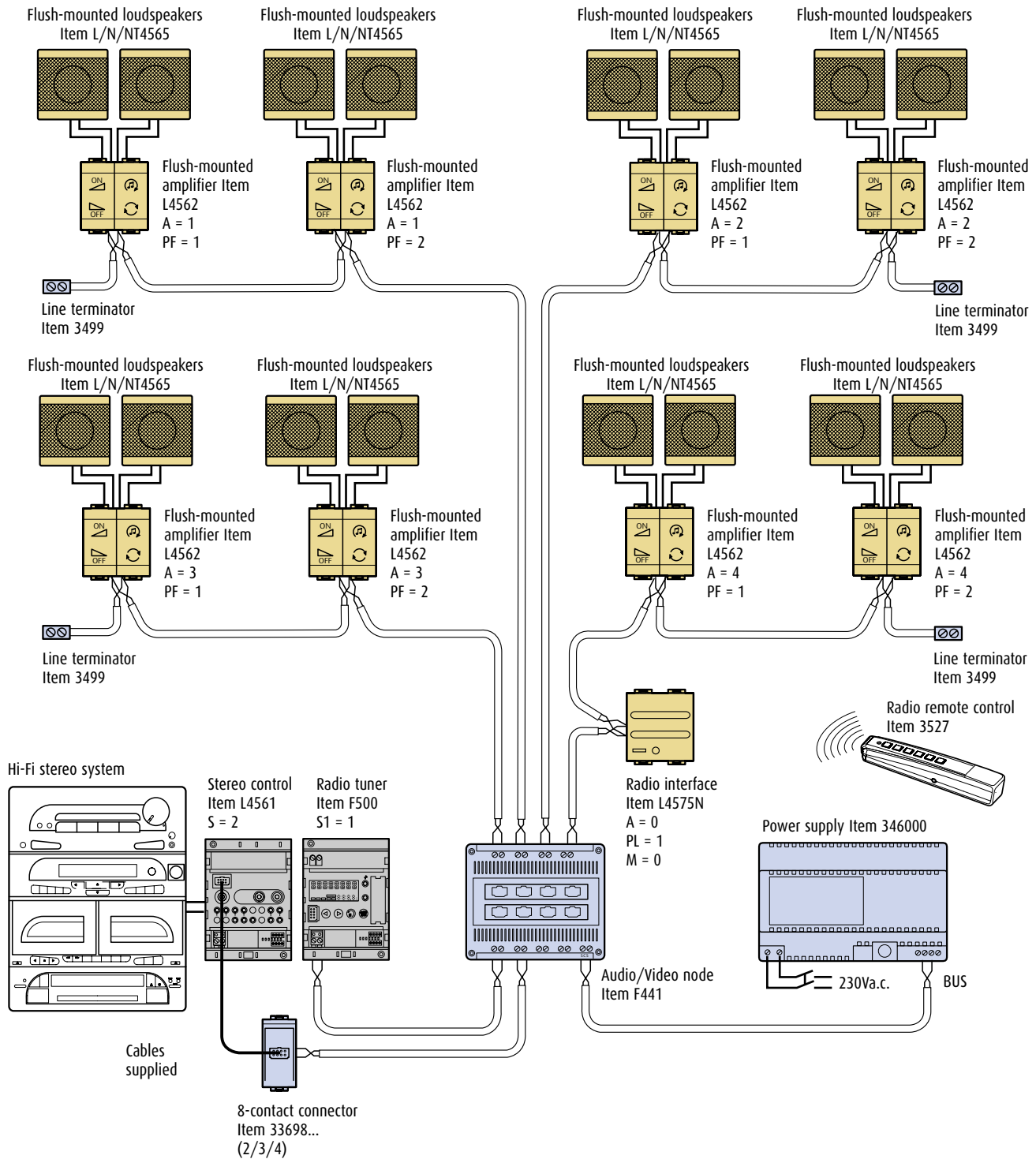


List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/Video node	1	B
F500	Radio tuner	1	G
L4561	Stereo control	1	C
L4562	Flush-mounted amplifiers	8	D
L/N/NT4565	Flush-mounted loudspeakers	16	E
L/N/NT4911BF	Right button cover	8	
L/N/NT4911AI	Left button cover	8	
3499	Line terminator	4	
33698...(2/3/4)	8-contact connector	1	F
336904	Twisted cable with 2 conductors	1	
L/N/NT4575N	Radio interface	1	H
3527	Remote control	1	

NOTE: the above system can also be achieved with AXOLUTE Items

DIAGRAM 2 SMALL HOUSE – 8 FLUSH-MOUNTED AMPLIFIERS – 16 16 OHM LOUDSPEAKERS

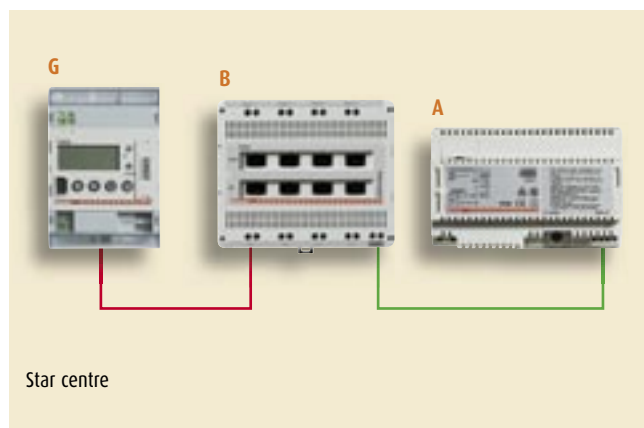
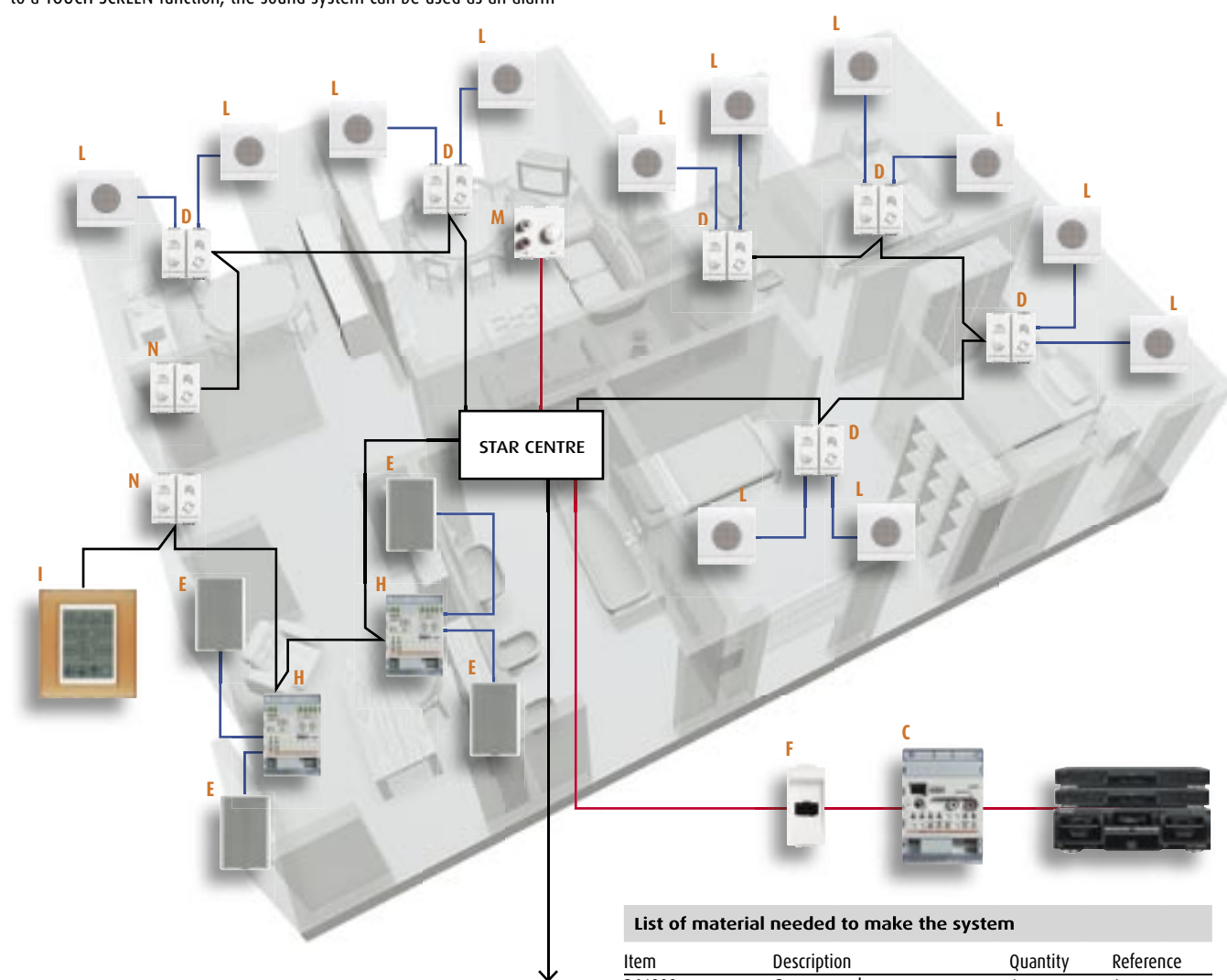


WIRING DIAGRAMS

Large house

The sound system inside a large house uses 16 loudspeakers and can control up to four external sound sources. Flush-mounted amplifiers and a DIN rail are used to make up the system. The system is managed by a TOUCH SCREEN and two special configured controls: one to activate the complete sound system (main control) and the other to activate all the amplifiers inside a room (room control), such as the amplifiers of the whole living room. Thanks to a TOUCH SCREEN function, the sound system can be used as an alarm

clock. In fact, on setting the time on TOUCH SCREEN, the sound source set will switch on at the time set and the loudspeakers will switch on, first at a low sound level and then at a higher level. The alarm clock is switched off by touching the TOUCH SCREEN or the "OFF" pushbutton.

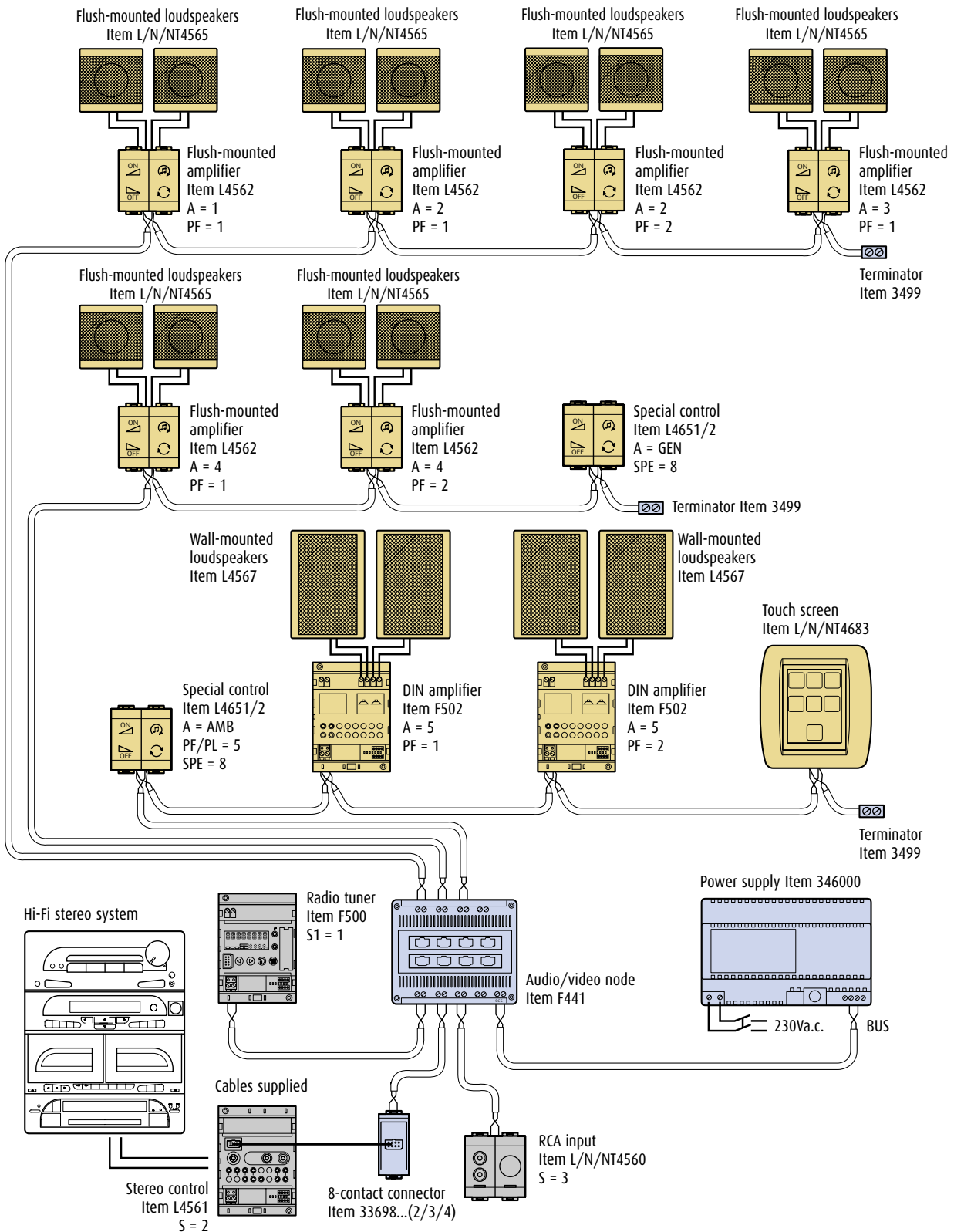


List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/video node	1	B
F500	Radio tuner	1	G
L4561	Stereo control	1	C
L/N/NT4560	RCA input	1	M
L4562	Flush-mounted amplifiers	6	D
L4651/2	Special control	2	N
F502	DIN amplifier	2	H
L/N/NT4683	TOUCH SCREEN	1	I
L/N/NT4565	Flush-mounted loudspeakers	12	L
L4567	Wall-mounted loudspeakers	4	E
L/N/NT4911BF	Right button cover	8	
L/N/NT4911AI	Left button cover	8	
3499	Line terminator	3	
33698...(2/3/4)	8-contact connector	1	F
336904	Twisted cable with 2 conductors	1	

NOTE: the above system can also be achieved with AXOLUTE Items

DIAGRAM 3 LARGE HOUSE – 6 FLUSH-MOUNTED AMPLIFIERS AND 2 ON DIN RAIL – 12 16 OHM AND 4 8 OHM LOUDSPEAKERS

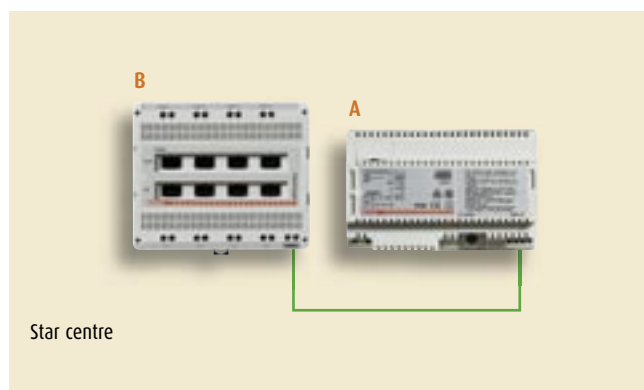
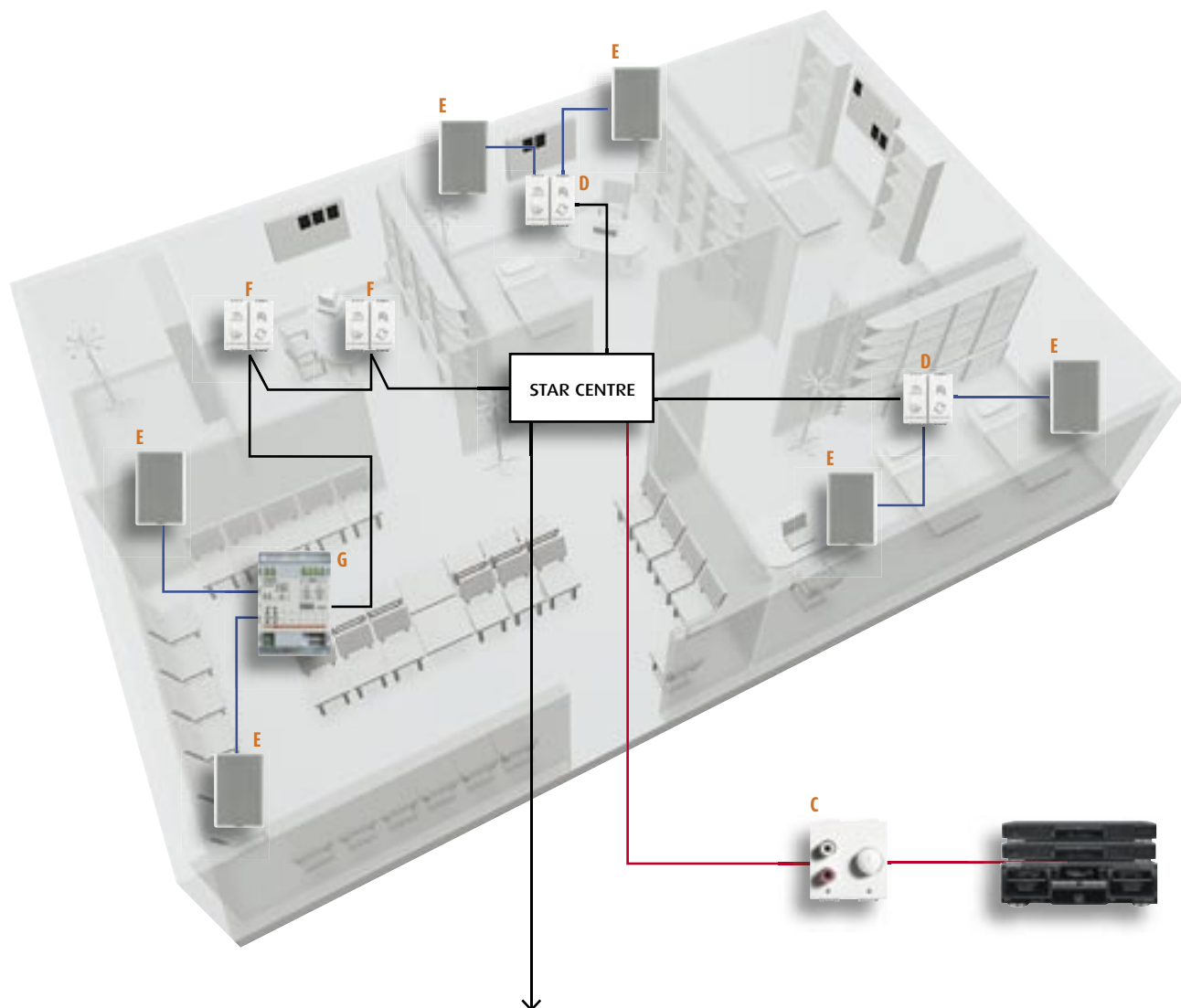


WIRING DIAGRAMS

Doctor's surgery

This solution is ideal in surroundings where the amplifiers and sound sources should only be controlled by authorised personnel. The example shows a doctor's surgery with a waiting room, the reception and two visiting rooms. An amplifier on DIN rail is used in the waiting room, the Hi-Fi system is positioned in the reception (so that the source is directly controlled by the secretary or doctor) and there are two special controls: one control

configured in general mode to activate all the loudspeakers of the doctor's surgery, the other configured to control the loudspeakers in the waiting room. In the visiting rooms there are two flush-mounted amplifiers for local management of the amplifiers.

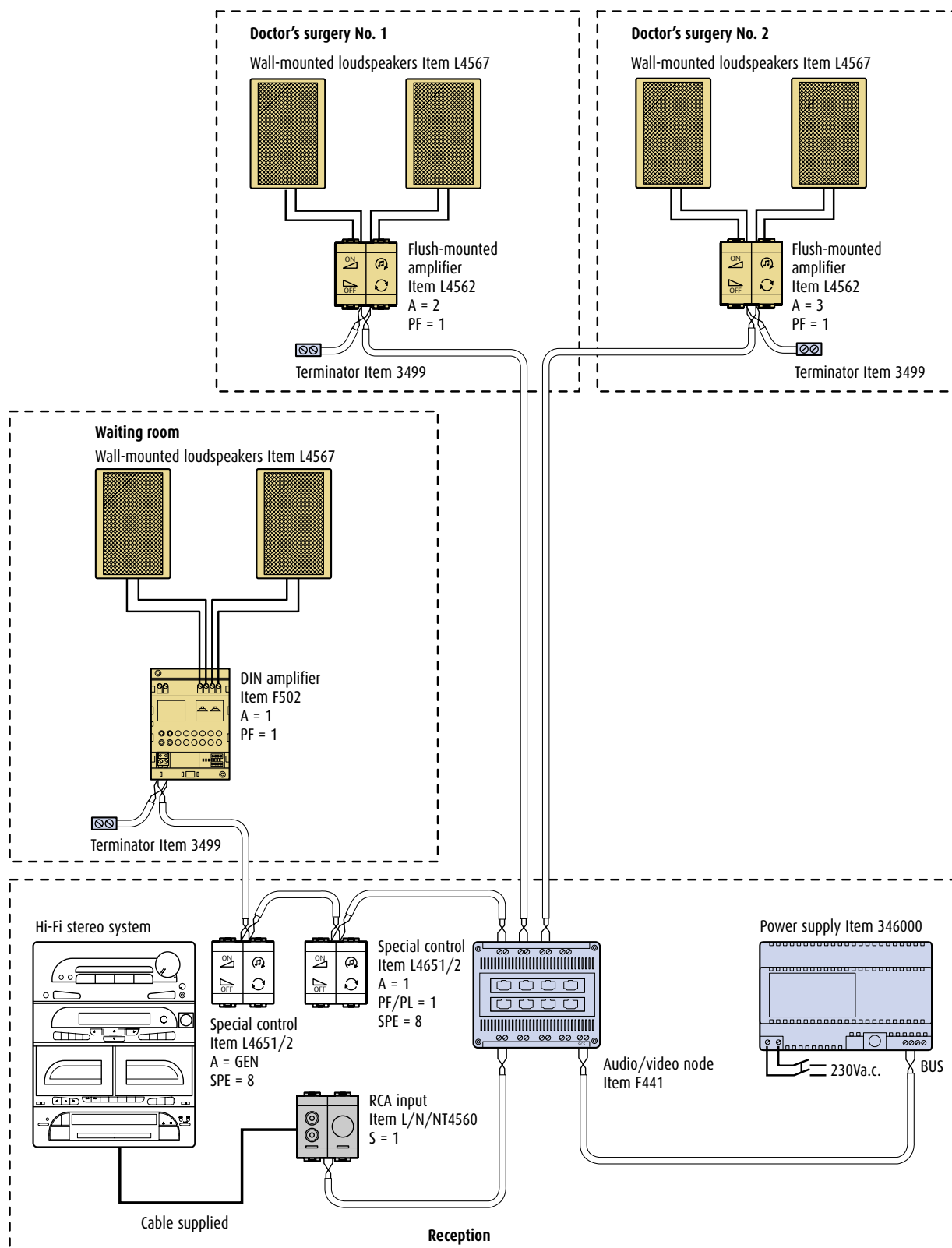


List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/video node	1	B
L/N/NT4560	RCA input	1	C
L4562	Flush-mounted amplifiers	2	D
F502	Amplifier for the service sector	1	G
L4651/2	Special control	2	F
L4567	Wall-mounted loudspeakers	6	E
L/N/NT4911BF	Right button cover	4	
L/N/NT4911AI	Left button cover	4	
3499	Line terminator	3	
336904	Twisted cable with 2 conductors	1	

NOTE: the above system can also be achieved with AXOLUTE Items

DIAGRAM 4 DOCTOR'S SURGERY – 2 FLUSH-MOUNTED AMPLIFIERS – 1 DIN AMPLIFIER – 3 ROOMS

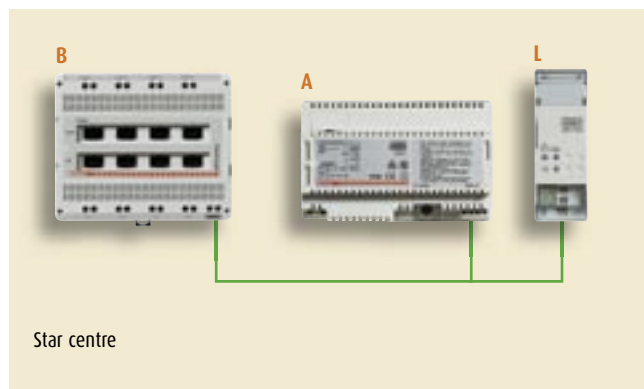
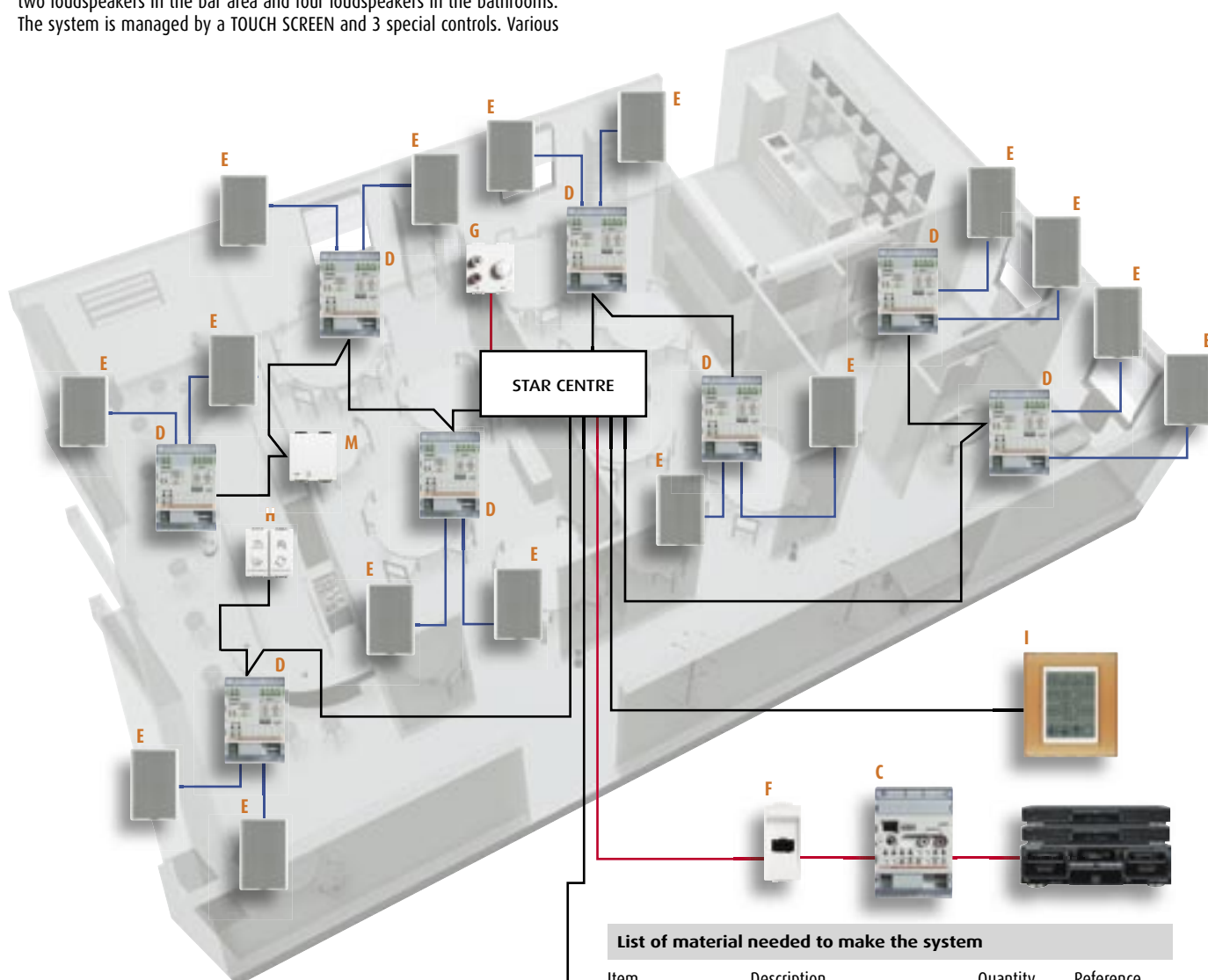


WIRING DIAGRAMS

Restaurant

The example has two rooms, a bar area and bathrooms for men and women. A sound system can be constructed inside a restaurant by installing wall-mounted loudspeakers for each room (connected to DIN amplifiers), two loudspeakers in the bar area and four loudspeakers in the bathrooms. The system is managed by a TOUCH SCREEN and 3 special controls. Various

scenarios can be saved using a scenario module (programmed by the TOUCH SCREEN): for example the loudspeakers can be switched on in the rooms with different sound levels.

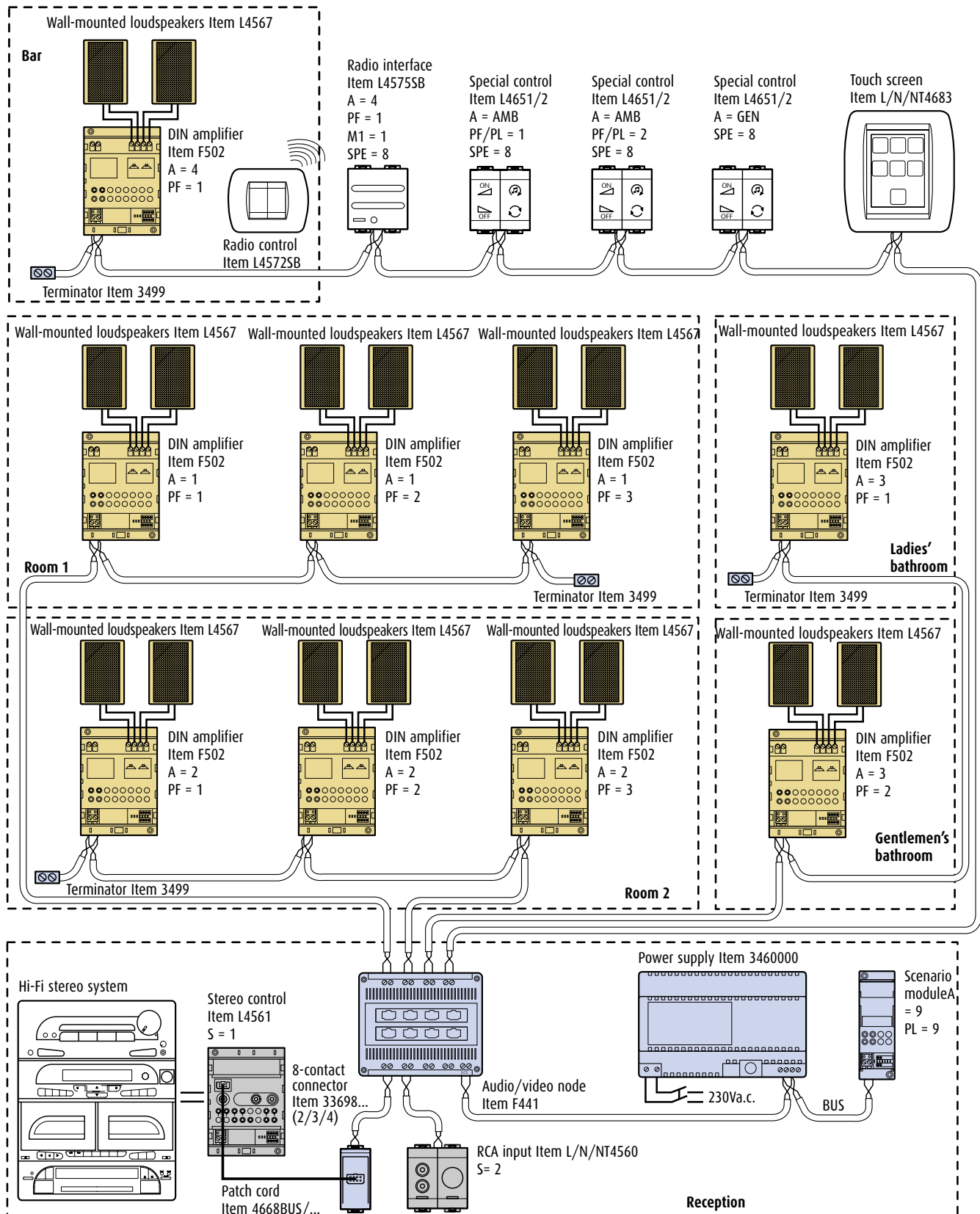


List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/video node	1	B
L/N/NT4560	RCA input	1	G
L4561	Stereo control	1	C
F502	Amplifier for the service sector	9	D
L4567	Wall-mounted loudspeakers	18	E
L4651/2	Special control	3	H
L/N/NT4683	TOUCH SCREEN	1	I
F420	Scenario modules	1	L
L/N/NT4911BF	Right button cover	3	
L/N/NT4911AI	Left button cover	3	
3499	Line terminator	4	
33698...(2/3/4)	8-contact connector	1	F
336904	Twisted cable with 2 conductors	1c	
L/N/NT4575SB	Radio interface	1	M
L4572SB	Radio control	1	
L/N/NT4919SB	Button cover	2	

NOTE: the above system can also be achieved with AXOLUTE Items

DIAGRAM 5 RESTAURANT – AMPLIFIER ON DIN RAIL

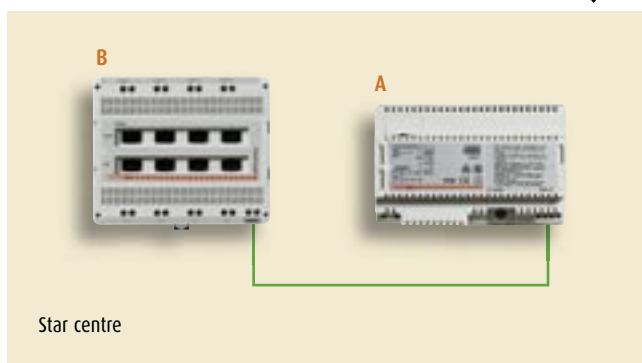
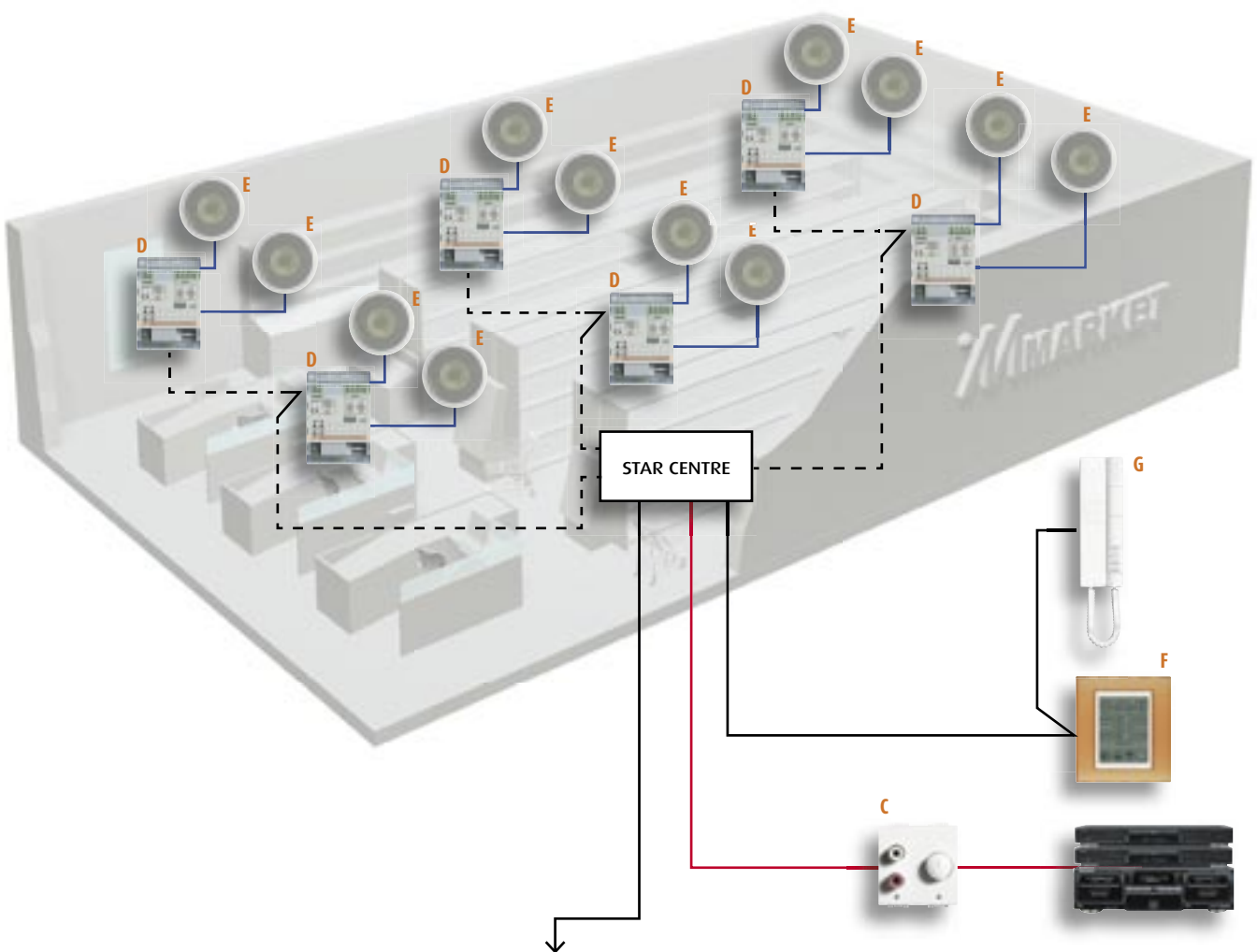


WIRING DIAGRAMS

Supermarket

The sound system inside a supermarket (large area) can be made using a maximum of 40 ceiling-mounted loudspeakers managed by amplifiers on a DIN rail connected in mono. The mono system is configured by inserting configurator 3 into housing M3 of the amplifier. The solution presented is made by installing a TOUCH SCREEN to manage all the amplifiers, an RCA

input to play the audio signal from a Hi-Fi system and one or more PIVOT handsets (using key 4 of the handset) to call personnel by means of the loudspeakers inside the supermarket or installed near the cash desks.

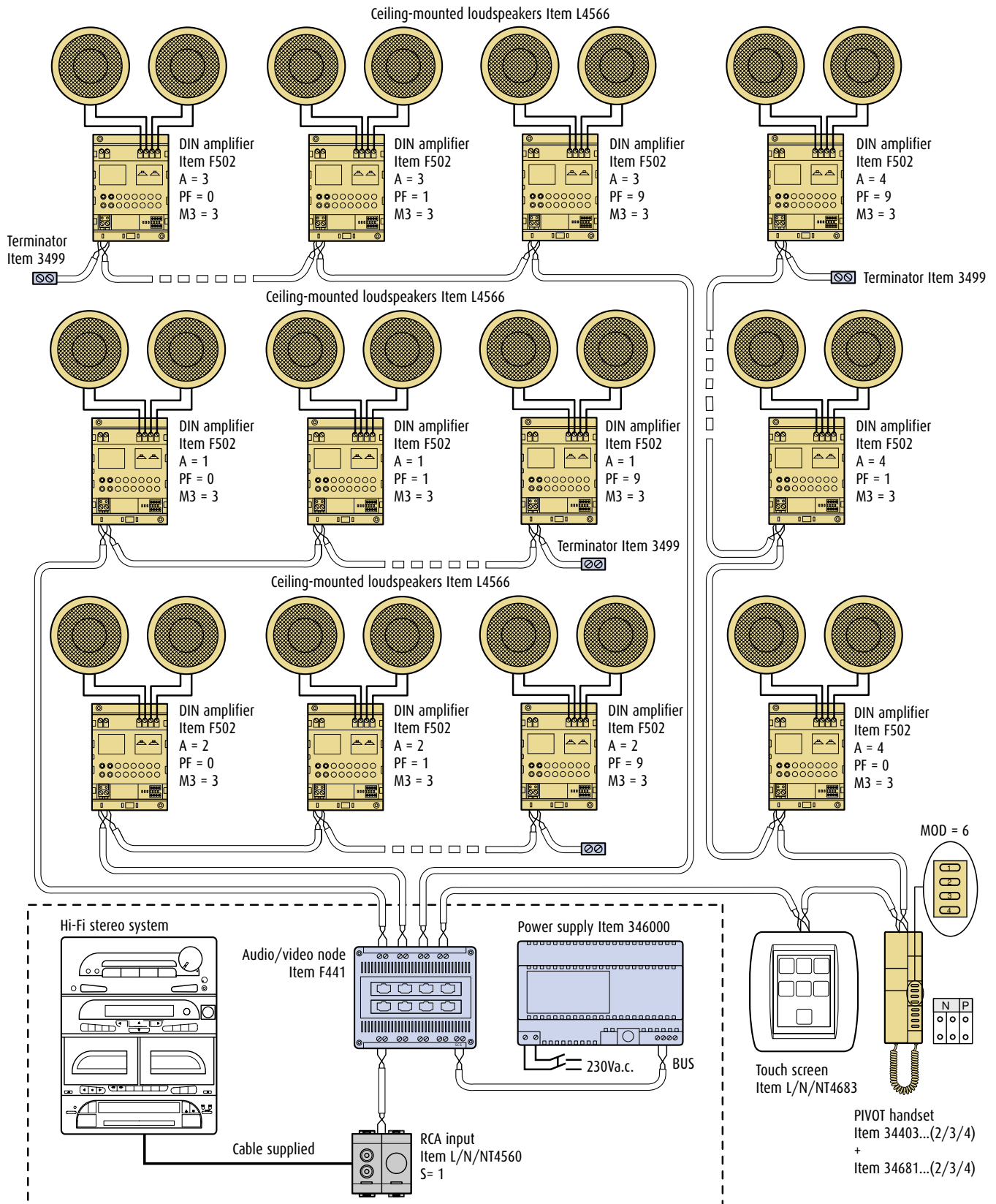


List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/video node	1	B
L/N/NT4560	RCA input	1	C
F502	Amplifier for the service sector	Max 40	D
L4566	Ceiling-mounted loudspeakers	Max 80	E
L/N/NT4683	TOUCH SCREEN	1	F
34403...(2/3/4)	PIVOT handset	1	G
34681...(2/3/4)	4-pushbutton block	1	
3499	Line terminator	4	
336904	Twisted cable with 2 conductors	1	

NOTE: the above system can also be achieved with AXOLUTE Items

DIAGRAM 6 SUPERMARKET – MAX 40 AMPLIFIERS ON DIN RAIL – MONO PLAY

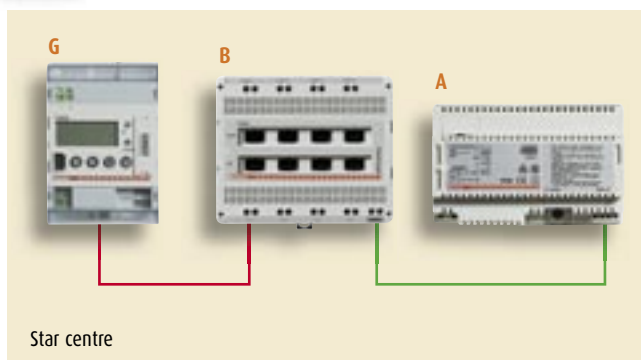
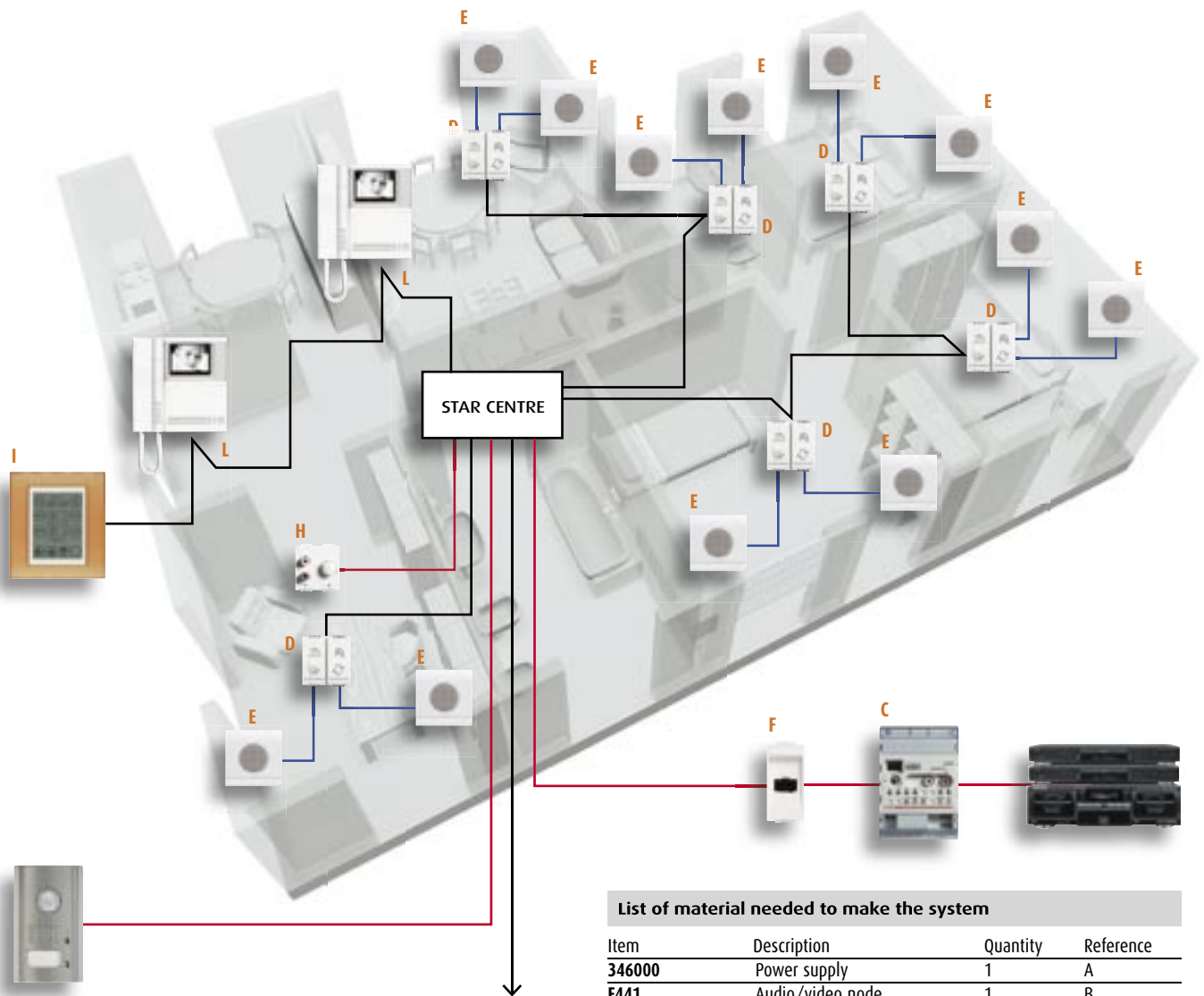


WIRING DIAGRAMS

Large house with 2 wire video door entry system

The two wire sound system can be combined with the two wire video door entry system. A TOUCH SCREEN and flush-mounted amplifiers, 1 entrance panel and 2 PIVOT handsets are installed in the system. When the entrance panel is activated, the sound system reduces the volume of the stereo sources so that the sound of the bell can be heard.

The audio will return to its original volume when the internal unit handset is replaced. Using the 4-button block installed in the video door entry units the loudspeakers in the home can be used to page people.



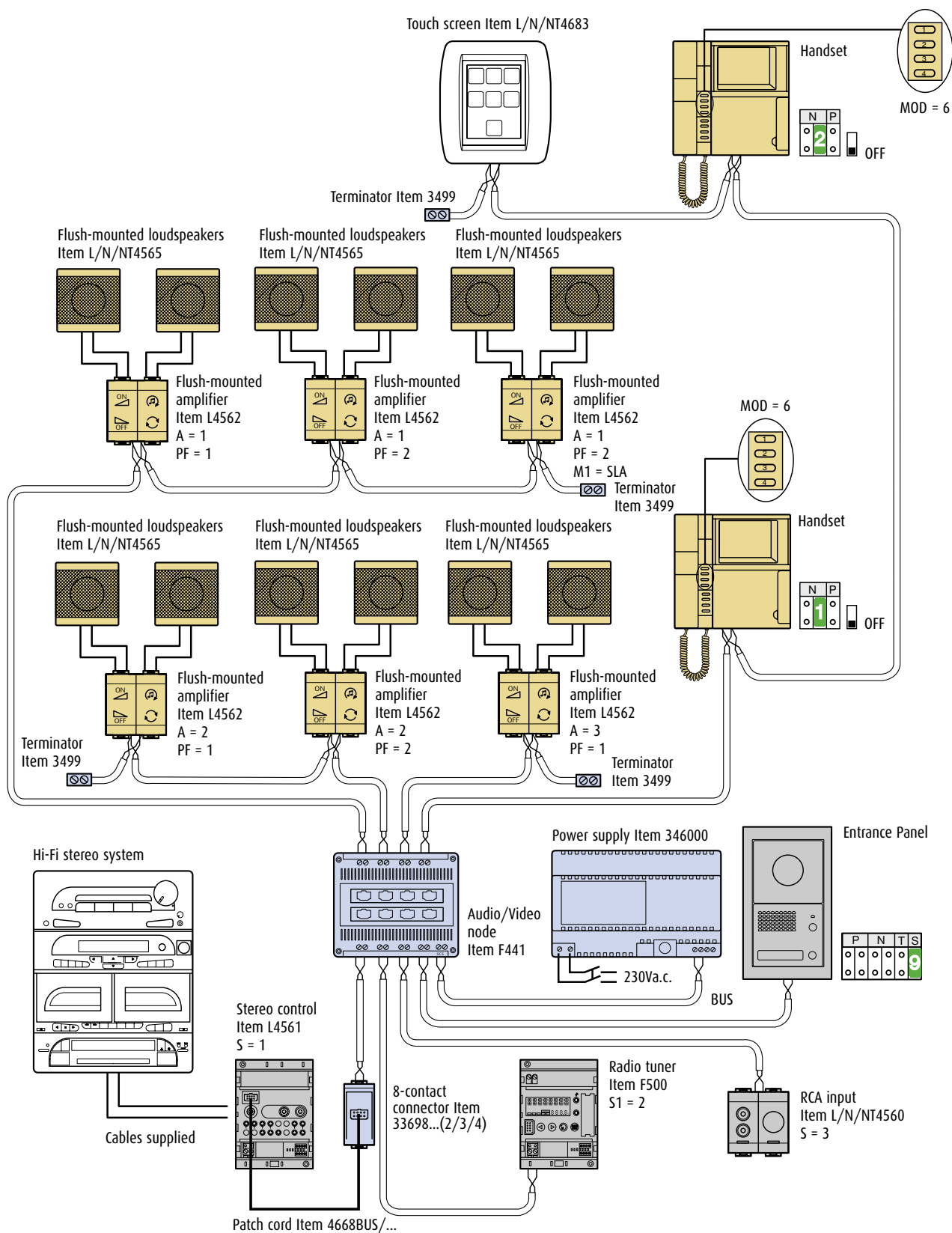
Star centre

List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/video node	1	B
L/N/NT4560	RCA input	1	H
L4561	Stereo control	1	C
F500	Radio tuner	1	G
L4562	Flush-mounted amplifier	6	D
L/N/NT4565	Flush-mounted loudspeakers	12	E
L/N/NT4683	TOUCH SCREEN	1	I
344102	VideoPIVOT handset	2	L
34681...(2/3/4)	4-pushbutton block	2	
342510	Entrance panel camera	1	
342170	One-family speaker unit	1	
3499	Line terminator	4	
33698...(2/3/4)	8-contact connector	4	F
336904	Twisted cable with 2 conductors	1	

NOTE: the above system can also be achieved with AXOLUTE Items

DIAGRAM 7 LARGE HOUSE – SOUND SYSTEM COMBINED WITH 2 WIRE VIDEO DOOR ENTRY SYSTEM AND TOUCH SCREEN

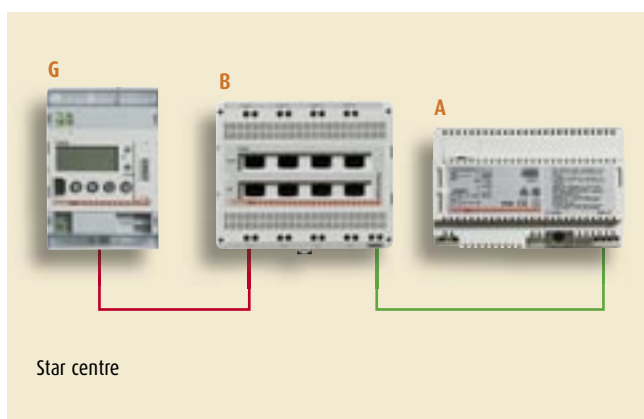
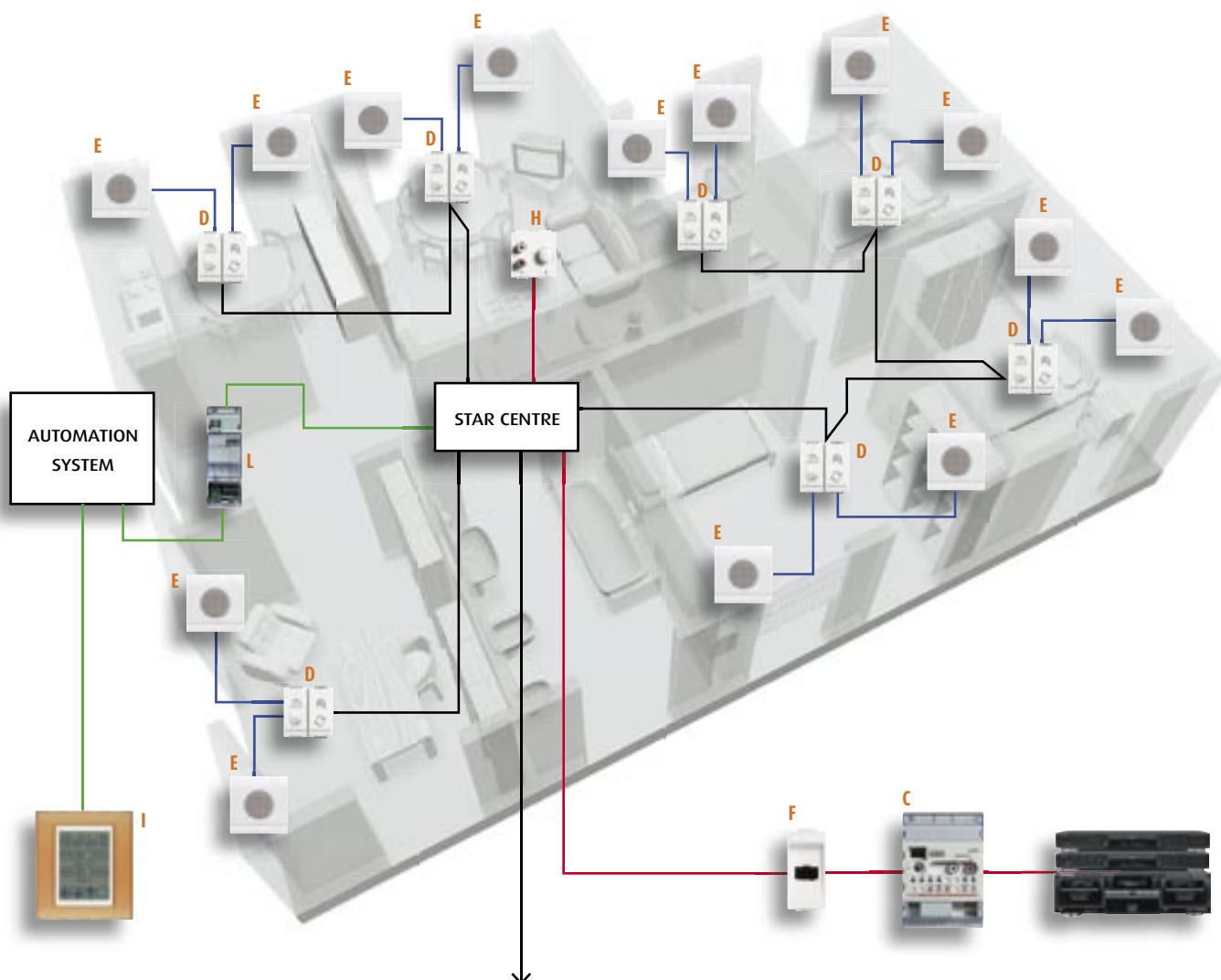


WIRING DIAGRAMS

Large house with automation system

The two wire sound system can also be used with MY HOME automation. This is brought about by using an SCS/SCS interface Item F422, where the sound system BUS is connected in output (OUT) and the automation BUS is connected in input (IN) (the interface does not require configurations). Both the sound system and the automation system can be managed by a TOUCH

SCREEN. The system proposed has automation controls, a series of amplifiers and loudspeakers, a stereo control to control a Hi-Fi system, a radio tuner and an RCA input. Using a scenario module you can: save the switching on of the sound system, switch on the lights and raise the rolling shutters with just one pushbutton.

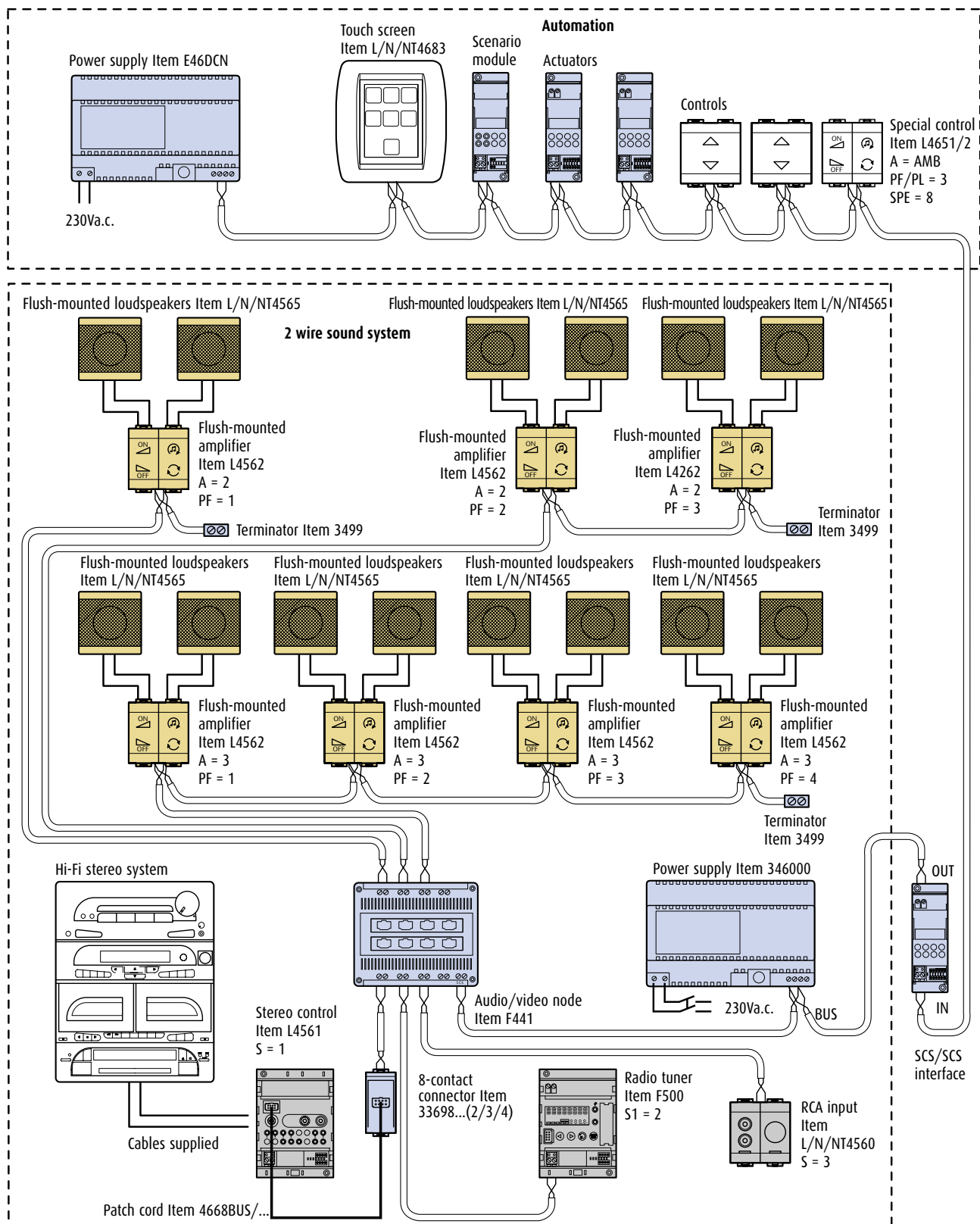


List of material needed to make the system

Item	Description	Quantity	Reference
346000	Power supply	1	A
F441	Audio/video node	1	B
L/N/NT4560	RCA input	1	H
L4561	Stereo control	1	C
F500	Radio tuner	1	G
L4562	Flush-mounted amplifier	7	D
L/N/NT4565	Flush-mounted loudspeakers	14	E
L/N/NT4683	TOUCH SCREEN	1	I
F422	SCS/SCS interface	1	L
3499	Line terminator	3	
33698...(2/3/4)	8-contact connector	1	F
336904	Twisted cable with 2 conductors	1	

NOTE: the above system can also be achieved with AXOLUTE Items

DIAGRAM 8 LARGE HOUSE – SOUND SYSTEM COMBINED WITH 2 WIRE AUTOMATION SYSTEM



CONFIGURATION

General description

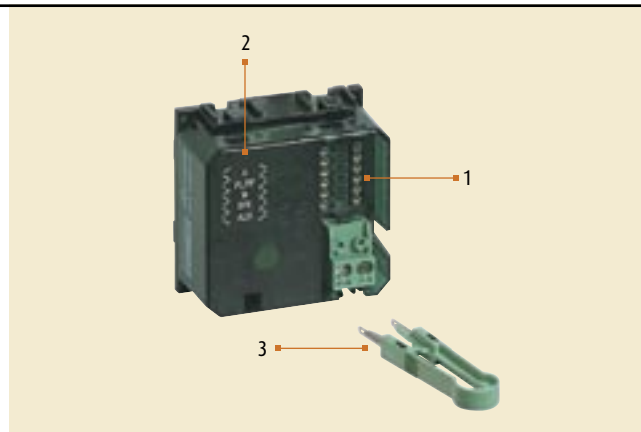
So that each Sound System device can perform its function correctly, it must be correctly configured to define:

- the device address in the system (what it is);
- its mode of operation (what it must do).

This operation is performed by inserting configurators differentiated by number and letter in the device housings.

Legend

1. configurator housing
2. description of the configurator housings
3. tool to insert the configurator



ADDRESSING THE DEVICES

To understand the device addressing logic some terms which will occur frequently in this guide should be defined.

Address of the local amplifiers (Item L4562)

- **(A) = Room**
set of amplifiers belonging to a logical zone (in a home, for example, the living room, bedroom, etc...)
- **(PF) Sound point**
number identification (1 - 9) of each amplifier inside the Room (A)
- **(M1 e M2) = mode**
housings for special configurations

Amplifier addressing mode

Type of command	Amplifiers	
	Configurator housing	Configurator value
Point - point	A	1 to 9
	PL	1 to 9
Room	A	1 to 9
	PL	1 to 9
General	A	1 to 9
	PL	1 to 9

Address of the special controls (Item L4651/2)

- **(A) = Room**
if correctly configured can control either a single amplifier (configurator 1 - 9) or a set of amplifiers (AMB configurator) or become a general switching on point (GEN configurator) of all the amplifiers, even configured with different rooms.
- **(PF/PL) = Sound point/light point**
number identification (1 - 9) of each amplifier inside the Room (A) or if configured differently can manage the switching on of the all amplifiers on a whole room (the room concerns the number from 1 - 9 inserted in housing "A" of the amplifier).
- **(SPE)**
for operation in the Sound System must be configured with the number "8".

Special control addressing mode

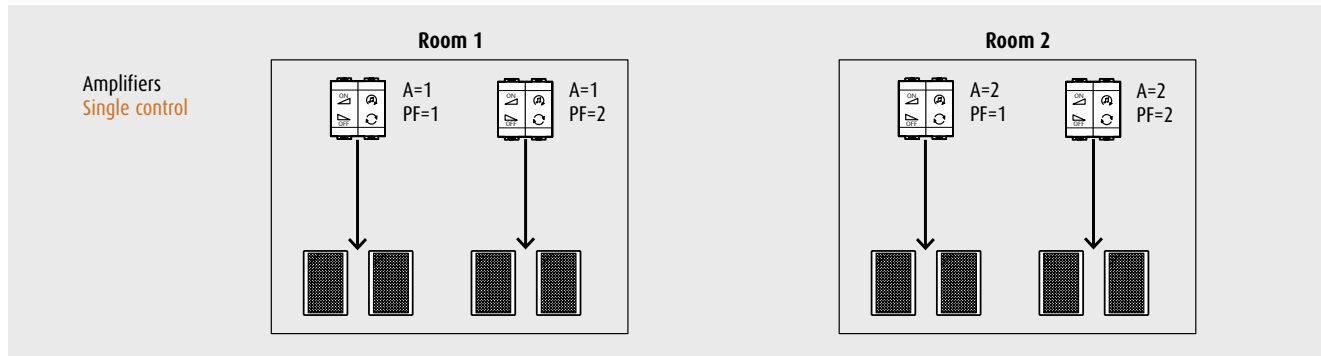
Type of command	Special control	
	Configurator housing	Configurator value
Point - point	A	1 to 9
	PL/PF	1 to 9
Room	A	AMB
	PL/PF	1 to 9
General	A	GEN
	PL/PF	

Address of the sound sources

- **(S) = Source**
Number identification (1 - 4) of the single sound source in the Sound System.

SINGLE CONFIGURATION

Using only the amplifiers, without them being controlled by special controls or TOUCH SCREEN, the devices are configured on housings **A** and **PF**.

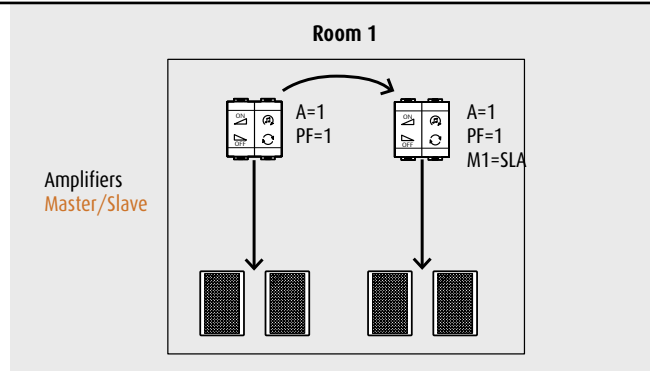


MASTER/SLAVE CONFIGURATION

Using 2 amplifiers configured with:

- 1st amplifier: **A=1, PF=1**
- 2nd amplifier: **A=1, PF=1, M1=SLA**

If the volume is adjusted on one amplifier, it is automatically adjusted on the other amplifier as well. Any command performed on one amplifier takes place on the other amplifier.



POINT TO POINT CONFIGURATION

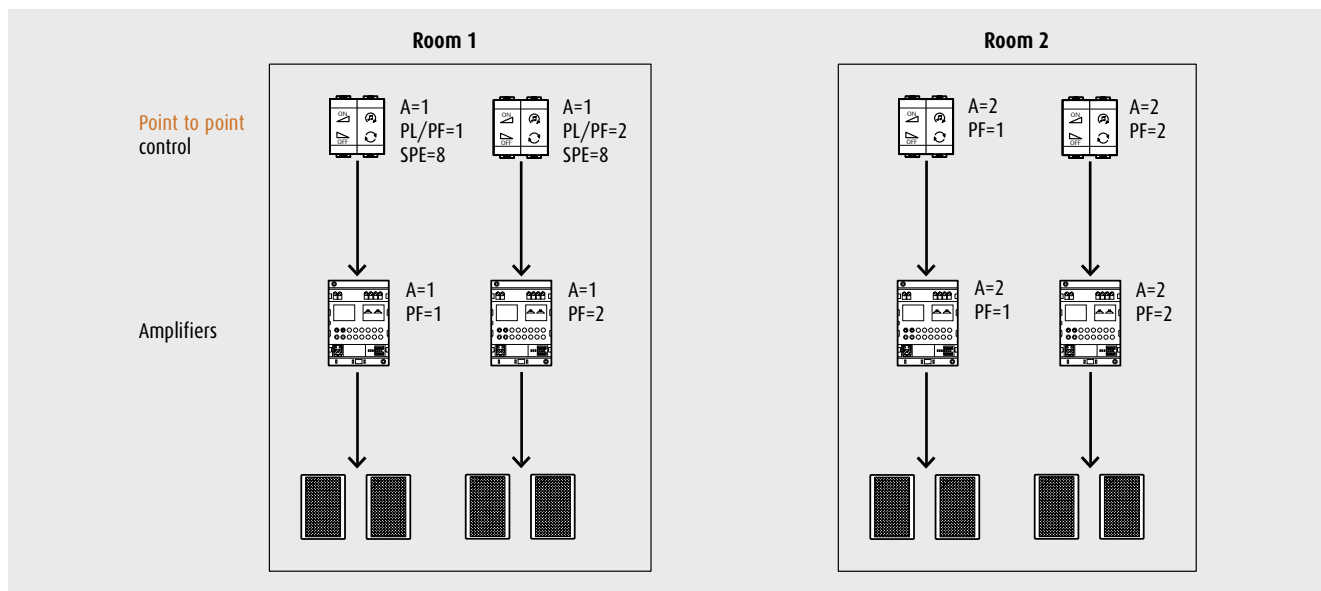
This configuration uses the special controls or a TOUCH SCREEN to control the amplifiers remotely.

Configuring the special control:

- **A=1**
- **PL/PF=1**

• **SPE=8** (sound system mode)
on pressing the special control buttons, the device sends its command to the configured amplifier.

- **A=1**
- **PF=1**



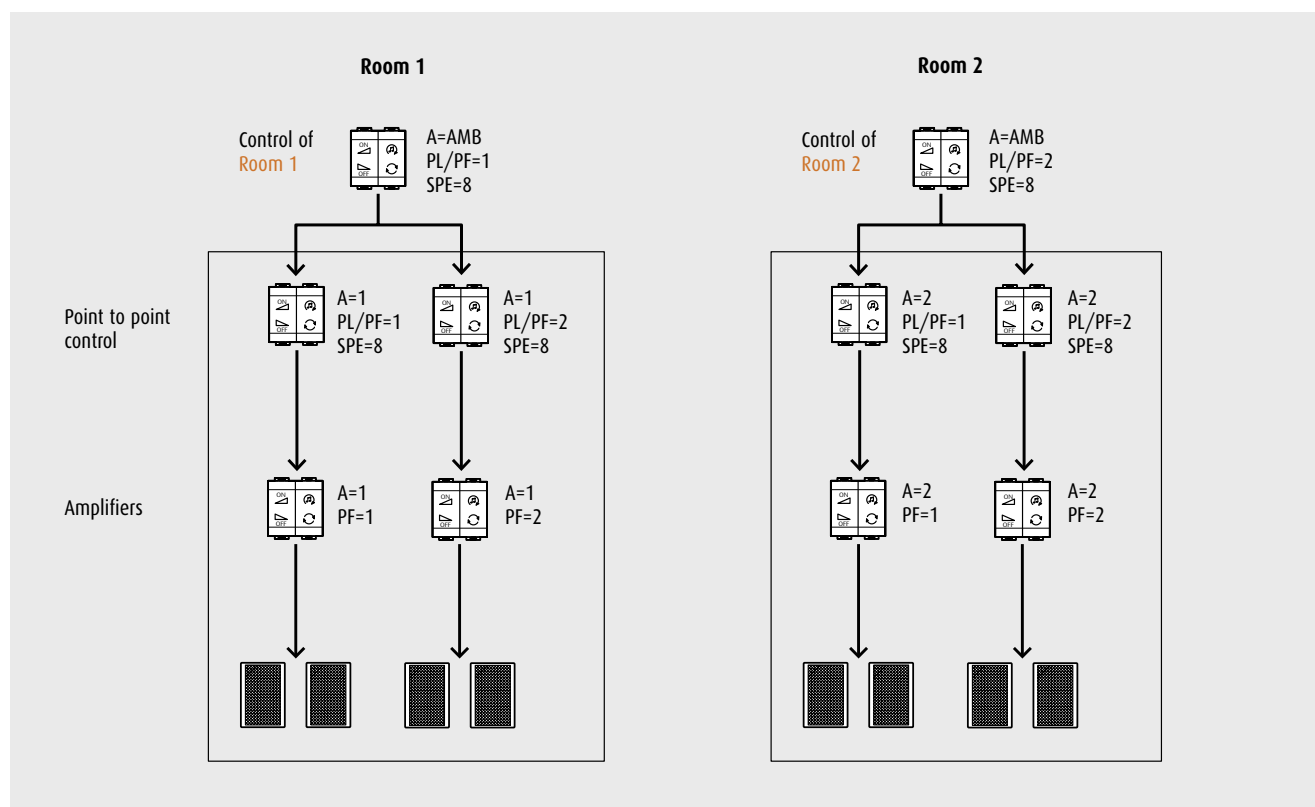
CONFIGURATION General description

CONFIGURATION FOR ROOM CONTROL

A configuration which is only performed on the special controls or when programming the TOUCH SCREEN. All the management commands on amplifier Item L4562 can be performed. Configuring the device:

- **A=AMB**
- **PL/PF=1**
- **SPE=8**

Pressing the device buttons affects all the amplifiers configured with “A”, the same as the configurator positioned on the device “PL/PF” (in this case all the amplifiers with A = 1).



CONFIGURATION FOR GENERAL COMMAND

A configuration which is only performed on the special controls or when programming the TOUCH SCREEN. All the management commands can be performed as in the room control configuration apart from adjusting the volume.

Configuring the device:

- **A=GEN**
- **PL/PF=** (in this situation the PL/PF is not configured)
- **SPE=8**

This configuration lets the device act on the operation of all the amplifiers inside the room independent of the type of amplifier configuration.

CONFIGURATION

Operating modes

SOUND SOURCES

Radio tuner FM Item F500

S1 = 1 to 4 local address of the sound source

RCA input Item HC/HS/L/N/NT4560

S1 = 1 to 4 local address of the sound source

Stereo control Item L4561

S1 = 1 to 4 local address of the sound source

M1 = 1 to 4 configuration of how many devices must be commanded inside the same device, Max 4 (example HI-FI systems with radio, CD reader etc...)

M2 = 1 to 6 time which elapses between a command and the next during the source switching on sequence (see instruction sheet)



Radio tuner



Stereo control



RCA input

SPECIAL CONTROL

Special control Item L4651/2

A = 1 to 9 address of the room of the amplifier to be commanded

PL/PF = 0 to 9 address of the amplifier to be commanded

SPE = 8 sound system mode

M = 0 (follow me mode)*

or

A = AMB room configuration

PL/PF = 1 to 9 configuration of the room to be commanded (in this case all the amplifiers of the same room will be commanded)

SPE = 8 sound system mode

M=1 (source activation S = 1) *

or

A = GEN this command switches on all the amplifiers in the home

PL/PF = /

SPE = 8 sound system mode

M = 4 (source activation S = 4)*



Special control

NOTE (*):

M 0 to 9 indicates the source to be activated before switching on the amplifier. If M = 0, source 1 will switch on without first switching the sources to OFF (follow-me mode)

Example:

- if **A = 1**, **PL1/PF1** and **M1 = 3** the Radio control will manage the amplifier with address A = 1 and PF = 1 and will activate source number 3.

AMPLIFIERS

Stereo amplifier Item L4562

A = 1 to 9 address of the amplifier room

PL = 0 to 9 amplifier address

M2 = - (no configurator) when the amplifier is switched on, the last source which was on is activated, "FOLLOW ME" mode

= **1 to 4** when the amplifier is switched on, the source with the same configuration as that set on the device itself switches on (example amplifier with M2=2, in this case the source with S=2 will switch on), "NO FOLLOW ME" mode.

Amplifier for DIN rail Item F502

A = 1 to 9 address of the amplifier room

PL = 0 to 9 address of the amplifier

M1 = - (no configurator) supplies 20% of the maximum volume

= **2** supplies 50% of the maximum volume

= **4** supplies 100% of the maximum volume

M2 = - (no configurator) when the amplifier is switched on, the last source which was on is activated, "FOLLOW ME" mode

= **1 to 4** when the amplifier is switched on, the source with the same configuration as that set on the device itself switches on (example amplifier with M2=2, in this case the source with S=2 will switch on), "NO FOLLOW ME" mode.

M3 = 1 both the outputs reproduce the signal received on the LEFT channel
= 2 both the outputs reproduce the signal received on the RIGHT channel
= 3 the amplifier reproduces a monophonic signal on both the loudspeaker outputs

* : configure M1 only if the system is integrated with the video door-entry system.



DIN amplifier



Stereo amplifier

CONFIGURATION

Operating modes

WIRE-INTERFACE RADIO ITEM L/N/NT4575SB

The interface used in the Sound system with the Radio control Item L4572SB can be set up in both "self-learning" mode and in "sound system" mode so as to associate the following functions with the two pairs of front keys of the Radio control:

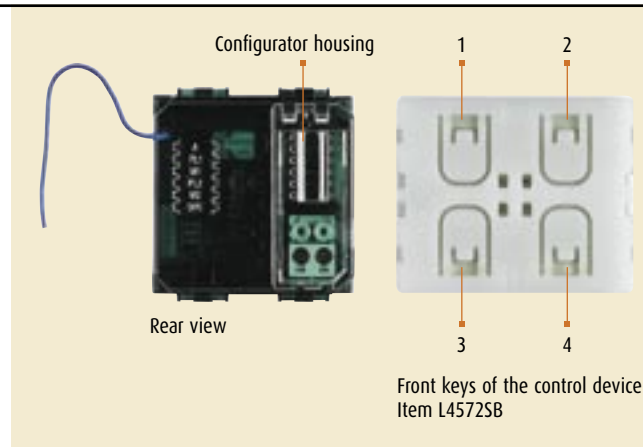
- system ON/OFF and volume adjustment (pair of keys 1-3 for the "sound system" mode, pair 1-3 or 2-4 for the self-learning" mode);
- Selection of the sound source and track/radio station selection (pair of keys 2-4 for "sound system" mode, pair 1-3 or 2-4 for "self-learning" mode);

The device must be configured in the four positions indicated by the graphic labels **A**, **PL1/PF1**, **M1** and **SPE** (positions PL2 and M2 must not be configured).

"SELF-LEARNING" MODE

It allows you to associate the four keys of the Radio control Item L4572SB with any of the amplifiers to be managed in the system. For information on the storage procedure, please refer to the instructions sheet supplied with the interface.

A = 0 to 9	Interface address
PL=1 to 9	Interface address
SPE and M1 = 0	configurator "zero" or no configurator



"SOUND SYSTEM" MODE

It allows you to use one or more radio controls Item L4572SB to manage one or more amplifiers with an address specified in positions A and PL1/PF1. For information on the storage procedure, please refer to the instructions sheet supplied with the interface.

Configuration for controls in sound point

A = 0 to 9	Room of the amplifier
PL1/PF1 = 0 to 9	amplifier sound point

Configuration for room controls

A = AMB	room configurator
PL1/PF1 = 0 to 9	Control related to the room

Configuration for general controls

A = GEN	General configurator
PL1/PF1 = 0	configurator "zero" or no configurator

OPERATION MODE

SPE = 8	"sound system" mode
M1 = 0 to 9	indicates the source to be activated before switching on the amplifier. If M1=0, source 1 will switch on without first switching the sources to OFF (follow-me mode).

Example:

- if **A= 1**, **PL1/PF1 = 1** and **M1 = 3** i, the Radio control will manage the amplifier with address A = 1 and PF = 1 and will activate source number 3.
- if **A=AMB**, **PL1/PF1 = 2** and **M = no configurator** the Radio control will manage all amplifiers indicated with address A=2 (Room No. 2) thus the source activation mode will be "follow-me".
- if **A=GEN**, **PL1/PF1 = 0 (no configurator)** and **M1 = 1** the radio control will manage all the amplifiers of the system and will activate source number 1.

WIRE-RADIO INTERFACE ITEM HC/HS4575 E ITEM L/N/NT4575N

In order to use the interface in the Sound system with the remote control Item 3527, it can be set up in "self-learning" mode, thus associating a single function with any of the six keys of the remote control.

Hence, it is possible to perform all the functions required for the Special control Item L4651/2, such as:

- amplifier ON/OFF function;
- volume adjustment;
- selection of the sound source;
- Radio station or track change;

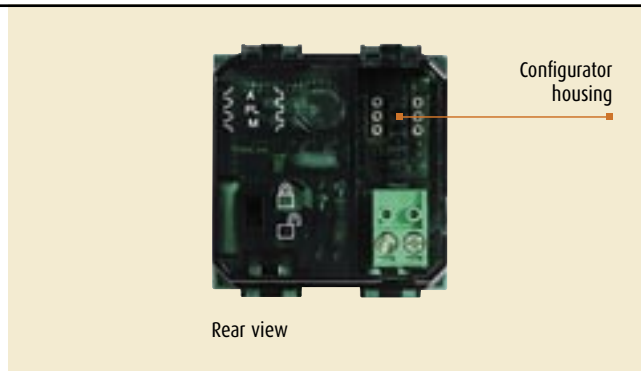
For information on the storage procedure, please refer to the instructions sheet supplied with the interface.

There are three positions to be configured. These are indicated by graphic labels **M**, **A** and **PL**.

M = 0 (no configurator). Assigns the "self-learning" mode of the interface, for using the remote control Item 3527.

A = 0 to 9 Interface address

PL = 1 to 9 Interface address



TECHNICAL FEATURES

Audio/video node Item F441

The audio/video node is a mixer which can distribute up to 4 sound sources. A series of terminals or patch cords Item 4668/BUS... on the front part of the device can be used to wire the sound systems at the input of the sound sources and the amplifiers and controls at the output to the audio/video node.

The simultaneous use of connection terminals and the BUS connectors is not allowed.

Technical data

Supply voltage: 18 to 27 Vd.c.

Size: 6 DIN modules

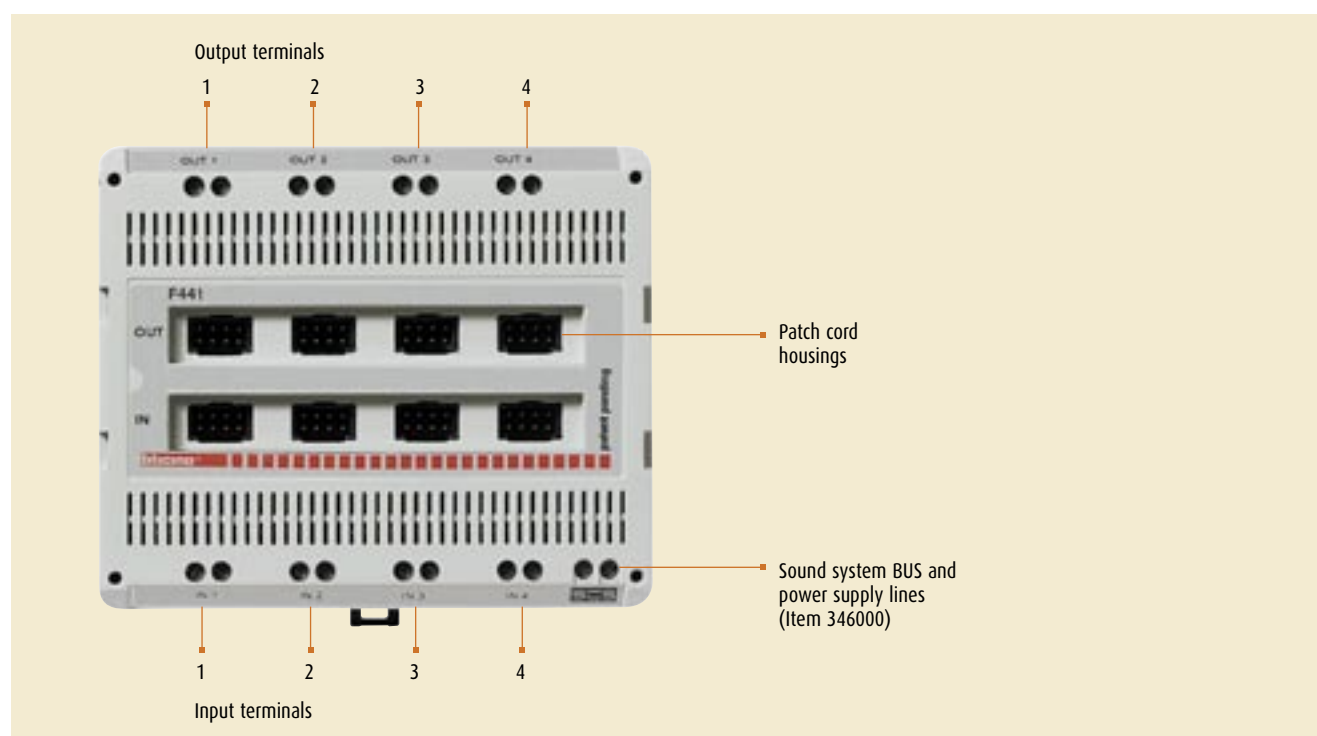
Absorption: 20mA

No. of inputs available: 4

No. of outputs available: 4

Dissipated power: 0.5W

Operating temperature: 5°C to 45°C



TECHNICAL FEATURES

FM radio tuner Item F500

The radio tuner can receive FM radio emissions. The front pushbuttons and the backlit display adjust the device locally, save 5 radio stations and display RDS messages and the tuned frequency.

The device can perform two types of search: manual or automatic.

The device can be managed (switch on/off, change frequency etc.) by flush-mounted amplifiers L4562 or by using correctly configured control devices Item L4651/2 and/or TOUCH SCREEN Item L/N/NT4683 and Item H4684.

The tuner must be installed in a zone with sufficient signal to receive the radio emitters.

Technical data

Supply voltage from BUS: 18 to 27 Vd.c.

Extra supply voltage: 18 to 30 Vd.c.

Size: 4 DIN modules

Range: 87.5MHz to 108MHz

Dissipated power: 1W

Absorption:

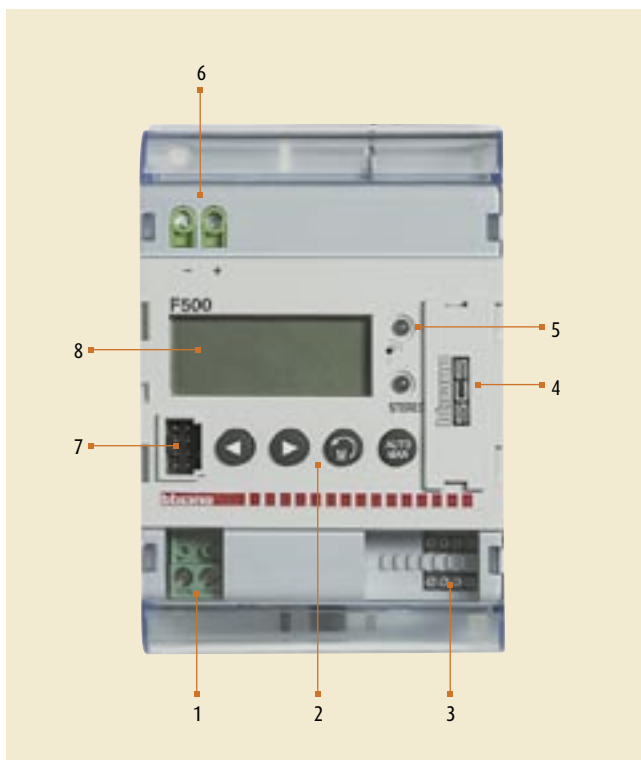
- In stand-by: 12mA

- When working: 50mA (with extra 3mA power supply)

Operating temperature: 5°C to 45°C

Legend


1. pull-out terminal for connection to the BUS
2. radio tuner programming and radio programme scanning buttons
3. configurator housings:
4. housing for future expansions
5. radiophonic signal indication LED
6. terminal for extra power supply
7. terminal for connection to the BUS via patch cord
8. backlit display to show the frequency, RDS messages and saved stations

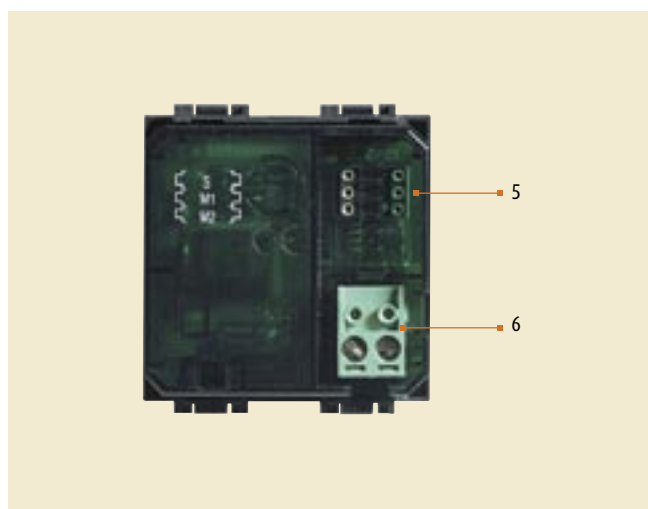
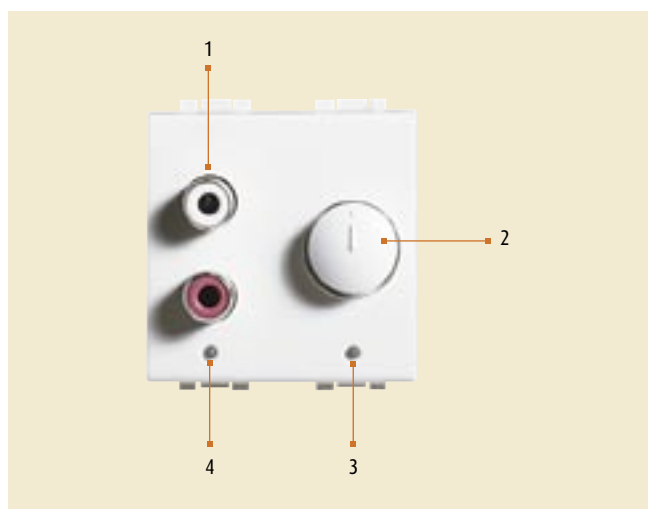


TECHNICAL FEATURES

RCA input Item L/N/NT4560 and Item HC/HS4560

The device allows the interfacing and adaptation of the signal level of an external stereo audio source. It is connected with the audio signal by means of two RCA female connectors (red = right channel; white = left channel) on the front of the device. There is also a knob to adjust the input signal sensitivity and two LED to indicate the device state (ON/STANDBY) and the correct adjustment.

The device must only be connected to class II external sound sources (IEC EN 60065). These sources are identified by the double insulation symbol . Pre-amplified outputs should be used because their level is independent of the volume set on the external sound source amplifier. The earphone outputs should thus not be used.



Technical data

Supply voltage from BUS: 18 to 27 Vd.c.

Size: 2 modules

Absorption:

- In stand-by: 12mA max

- When working: 30mA

Operating temperature: 5°C to 45°C

Stereo audio features

- RCA input impedance: 14K Ω

- Input sensitivity: 100mVrms to 1Vrms

- TYP channel balancing: $\pm 0.5\text{dB}$

- MIN channel balancing: $\pm 1.5\text{dB}$

- Frequency range @ -3dB: 20Hz to 20Khz

Legend


1. RCA female connectors for stereo audio input
2. adjustment knob
3. LED for audio adjustment on the BUS of the sound system:
 - off: no audio signal
 - green: signal with minimum level
 - flashing orange: best adjustment
 - steady orange: signal too high
4. state indication LED
 - green: standby
 - orange: device ON
5. configurator housing
6. pull-out terminal for connection to the BUS

TECHNICAL FEATURES

Stereo control Item L4561

The device manages and interfaces an external stereo audio source (e.g. Hi-Fi system) with infrared remote control. The device can save and reproduce the commands given by the stereo source remote control. The commands saved by the stereo control are sent to the external stereo control through a cord with infrared transmitter (supplied). In this way one can, by means of the various control devices (special controls and TOUCH SCREEN) and the amplifiers, manage the switching on and control of the source (e.g. activation of the radio and scanning of the saved stations or activation of a CD reader and changing the CD track).

It is connected to the stereo source by means of two RCA/RCA connectors (white = left channel; red = right channel) on the front of the device (the RCA/RCA cable is supplied). As well as the RCA connectors on the front of the stereo control there are pushbuttons which, with the aid of an indication LED, adjust the audio signal entering the device. There are also 4 pushbuttons which are used to programme the stereo control and an infrared receiver which is used to save the signals from the source remote control.

During normal operation of the stereo control, when the device activates the Hi-Fi system, the loudspeakers directly connected to the system switch on as well. When the last amplifier switches off, giving an OFF command, the loudspeakers switch off but the Hi-Fi system remains active for one minute. The device must only be connected to class II external sound sources (IEC EN 60065). These sources are identified by the double insulation symbol . Pre-amplified outputs should be used because their level is independent of the volume set on the external sound source amplifier. The earphone outputs should thus not be used.

Technical data

Supply voltage from BUS: 18 to 27 Vd.c.

Size: 4 DIN modules

Absorption:

- In stand-by: 12mA

- When working: 40mA

Operating temperature: 5°C to 45°C

Stereo audio features

- RCA input impedance: 14KΩ

- Input sensitivity: 200mVrms to 1Vrms

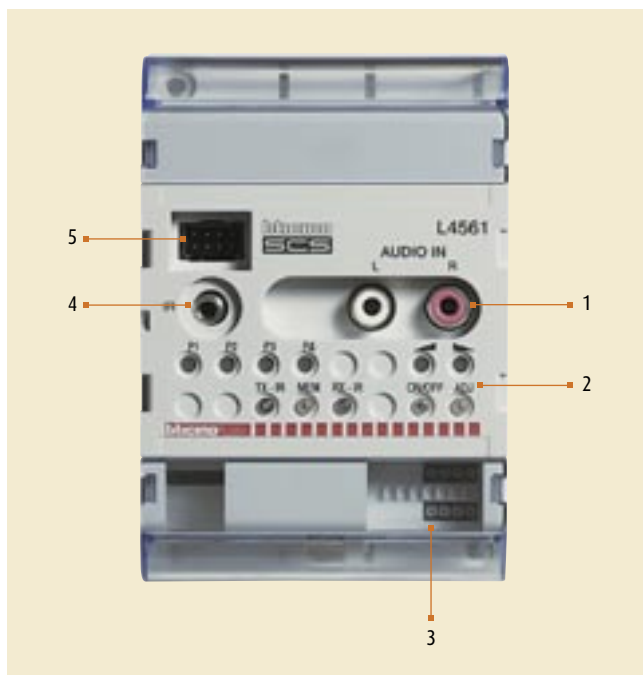
- TYP channel balancing: ± 0.5dB

- MIN channel balancing: ± 1.5dB

- Frequency range @ -3dB: 20Hz to 20Khz

Legend

1. RCA female connectors for stereo audio input
2. buttons, LED and sensors to programme the stereo control and adjust the output audio on the BUS
3. configurator housing:
4. jack input for connection of cable with IR sensor (supplied)
5. terminal for connection to the BUS by patch cord



TECHNICAL FEATURES

Special control Item L4651/2 and Item H4651/2

This device, correctly configured (SPE = 8), is used to send commands to manage the various devices such as amplifiers, FM tuners, external sound sources etc. on the BUS. In point to point or room configuration the special control can switch one or more amplifiers ON/OFF, manage the volume, change the source and cycle the saved stations (for the radio) or change the CD track. In general control configuration, the special control performs the commands just mentioned apart from managing the volume. The device is completed with 1 module button covers Item L/N/NT4911...

Technical data

Supply voltage from BUS: 18 to 27 Vd.c.

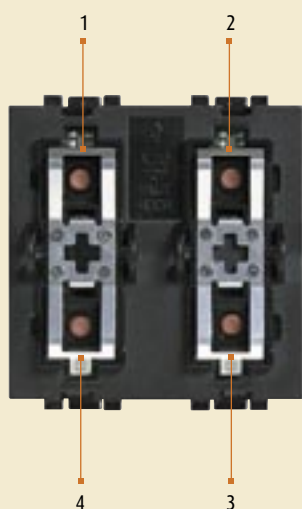
Size: 2 modules

Absorption: stand-by: 7.5 max

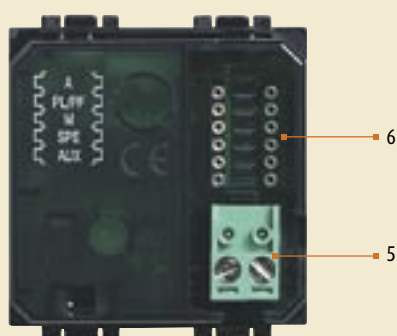
Operating temperature: 5°C to 45°C

Legend

1. control to switch on amplifier(s) (simple touch) and increase the volume (long press)
2. control to cycle and activate the available stereo sources
3. control to scan the emitters saved (for the radio) or the CD tracks
4. control to switch off amplifier(s) (simple touch) and decrease the volume (long press)
5. pull-out terminal for connection to the BUS
6. configurator housing



Front view



Rear view



The single black control buttons inside the package are used for the sound playing mode.

TECHNICAL FEATURES

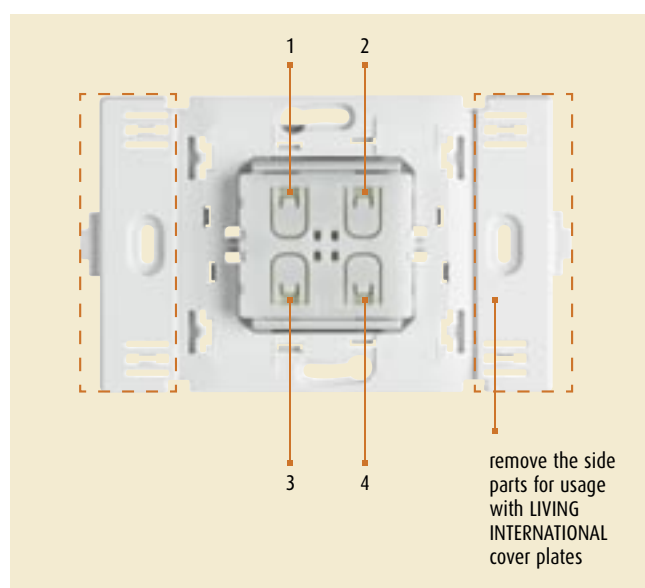
Radio control devices

RADIO CONTROL ITEM L4572SB

Self-supplied 4-channel radio transmitting device (does not require batteries) characterized by its low profile which allows it to be wall-mounted with double-sided adhesive tape or with screws or screw anchors, with no flush-mounted box.

The control can be completed with a button cover Item L/N/NT4919SB and LIVING INTERNATIONAL/LIGHT E LIGHT TECH cover plates.

In order to use the Radio control, it is necessary to install a special receiving interface Item L/N/NT4575SB in the Sound System.



Technical data

Power supply:	does not require batteries
Transmission frequency:	868 MHz
Length:	100 metres in free air
Size:	2 LIVING INTERNATIONAL/LIGHT modules
Operating temperature:	+5°C to +35°C

Legend

- 1 A short pressure activates the source and the amplifier; a prolonged pressure increases the volume
- 2 Changes the sound source
- 3 A short pressure switches off the amplifier; a prolonged pressure decreases the volume
- 4 Changes the track or radio station

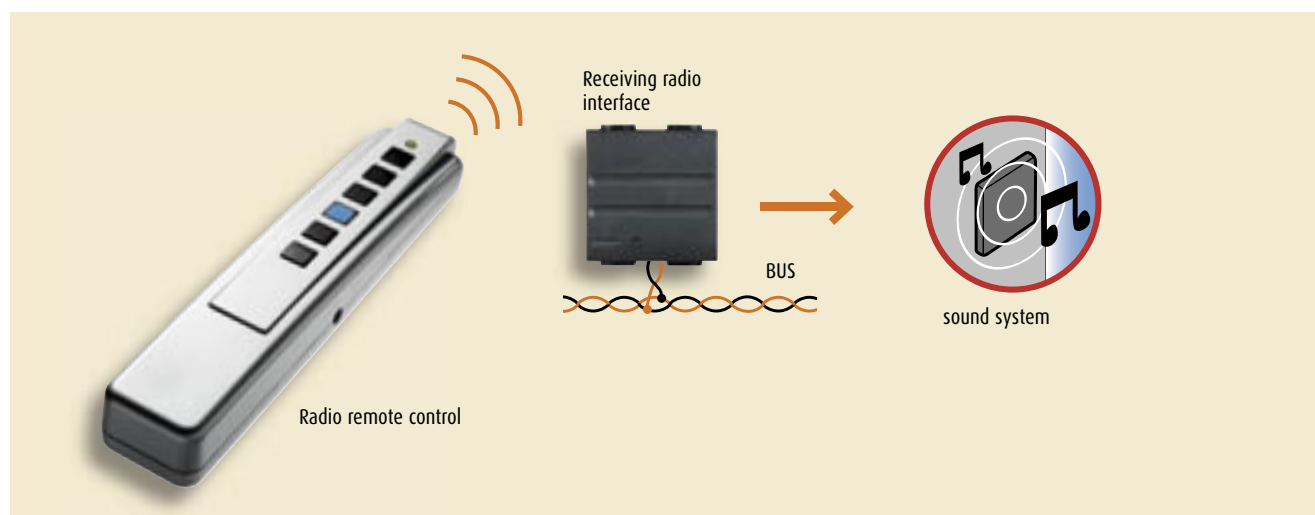
RADIO REMOTE CONTROL ITEM 3527

6-channel radio transmitting device powered by 2 alkaline pen batteries – 1.5 V. It is characterized by an ergonomic handle; this remote control has 6 backlit keys that can be graphically customised by the user. The device can also be connected to a blow detector to be used by disabled people.

In order to use the remote control, it is necessary to install a special receiving interface Item L/N/NT4575N or HC/HS4575 in the Sound system.

Technical data

Power supply:	Two 1.5V alkaline pen batteries – type AA
Transmission frequency:	868 MHz
Length:	100 metres in free air
Operating temperature:	+5°C to +35°C



TECHNICAL FEATURES

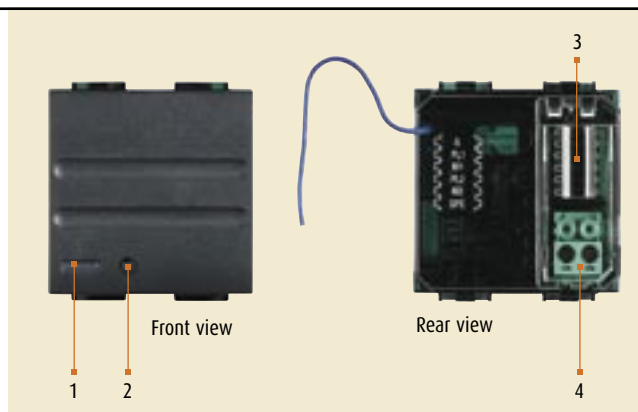
Wire-radio interface and Touch Screen

RADIO INTERFACES ITEM HS/HC4575, ITEM L/N/NT4575N E ITEM L/N/NT4575SB

With an appropriate configuration, these My Home Automation system devices can be used to receive signals from the radio controls and to manage the following functions of the 2-wire Sound system:

- ON/OFF function of the amplifiers;
- volume adjustment;
- selection of sound sources;
- change of stored radio stations (from radio Item F500) or track (when using a CD reader).

The interface Item L/N/NT4575SB is specifically used with the Radio control Item L4572SB.



Technical data

Power supply:	27V d.c. from BUS
Transmission frequency:	868 MHz
Absorption:	22mA (Item L/N/NT4575N and Item HC/HS4575) 33mA (Item L/N/NT4575SB)
Size:	2 LIVING INTERNATIONAL/LIGHT MODULES
Operating temperature:	+5°C to +35°C

Legend

- 1 LED
- 2 Pin button for programming
- 3 Configurator housing (see chapter "Configuration" for details)
- 4 Pull-out terminal for connection to the BUS

TOUCH SCREEN ITEM L/N/NT4683 AND ITEM H4684

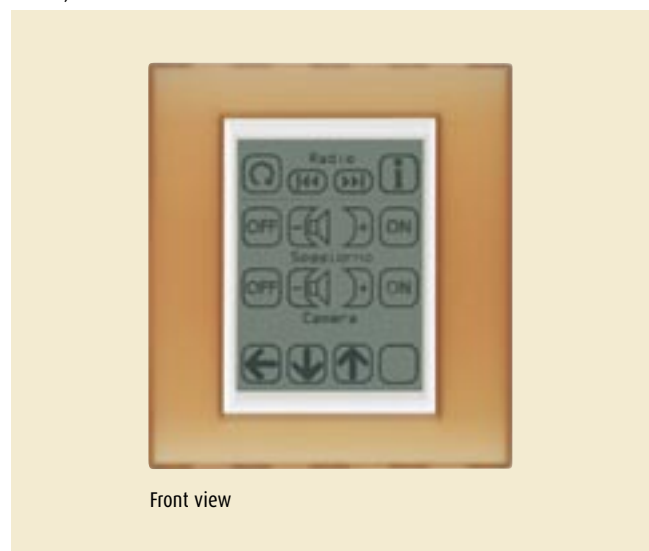
This device can centralise and control all the functions of the MY HOME system (Sound System, Automation, Burglar-Alarm, etc.) at the touch of a finger. By interacting with various icons on the backlit display, previously configured with the Tidisplay software, you can select and activate the various sound sources, adjust the volume, select the radio stations to be listened to and read the RDS messages. A TOUCH SCREEN function allows using the Sound System as an alarm clock. After setting the time on the TOUCH SCREEN, the sound source set will switch on at the time set and the loudspeakers will switch on, first at a low sound level (20%) and then reaching a higher level (80%) after 2 minutes (automatic switching off). The alarm clock is switched off by touching the TOUCH SCREEN or the "OFF" pushbutton of an amplifier. The TOUCH SCREEN is easily installed on the wall using box Item 506E and is completed with cover plates Item L/N/NT4826... (Item L/N/NT4683) or with cover plates AXOLUTE Item HA/HB4826... (Item H4684).

Technical data

Supply voltage from BUS:	18 to 27 Vd.c. (from BUS)
Size:	installation on box 506E
Absorption:	20mA
Operating temperature:	0°C to 40°C

Legend

1. terminal to connect the cable to the PC which is used to program the device
2. pull-out terminal for connection to the BUS



TECHNICAL FEATURES

Stereo amplifier Item L4562 and Item H4562

This device amplifies the stereo signal on the BUS and controls up to two loudspeakers with impedance between 8Ω and 16Ω . On the front the amplifier has two pushbuttons which can: switch the loudspeakers ON/OFF, adjust the volume in output, change the audio source and cycle the saved stations (for the radio) or save the CD tracks.

Correctly configured the amplifier can have two modes:

- "FOLLOW ME" mode: function which allows the same music in another room after the amplifier of the room previously occupied has been switched off and switching on the amplifier on the room you are now in.
- "NO FOLLOW ME" mode: when another amplifier is switched on, on changing room, the source configured the same as the configurator (inserted on M2) inserted on the amplifier switches ON, not necessarily the source which was being listened to before.

The device is completed with 1-module button covers item L/N/NT4911... (Item L4562) or Item HC/HS4911... (Item H4562).

Technical data

Supply voltage from BUS: 18 to 27 Vd.c.

Size: 2 modules

Absorption:

- In stand-by: 6mA max
- When working: see table in the absorption calculation section

Operating temperature: 5°C to 45°C

Stereo audio features:

- Power (on 8Ω): 2Wrms (1Wrms + 1Wrms)
16Wpmpo (8Wpmpo + 8Wpmpo)

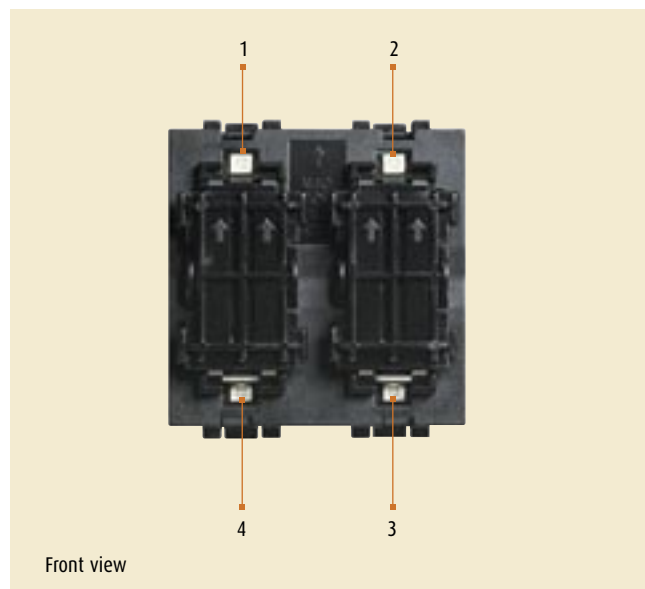
• TYP channel balancing: $\pm 0.5\text{dB}$

• MIN channel balancing: $\pm 1.5\text{dB}$

Frequency range @ -3dB: 20Hz to 20Khz

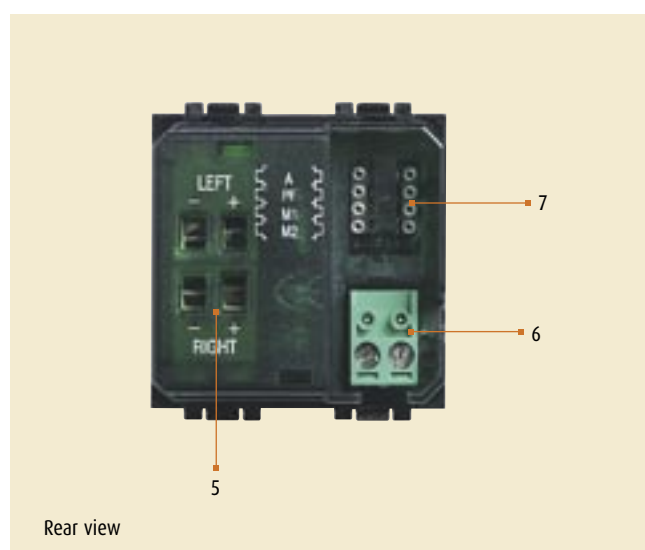
TYPs distortion: 0.1%

Noise signal ratio: 68dB



Legend

1. control to switch on the amplifier (simple touch) and increase the volume (long press)
2. control to cycle and activate the available stereo sources
3. control to scan the emitters saved (for the radio) or the CD tracks
4. control to switch off the amplifier (simple touch) and decrease the volume (long press)
5. screw terminals for connection of the loudspeakers
6. pull-out terminal for connection to the BUS
7. configurator housing:



TECHNICAL FEATURES

Amplifier for DIN35 rail Item F502

This device, with hook for installation on DIN rail, allows installations mainly in rooms of the service sector. Supplied directly at 230Va.c. it allows multiple installations (maximum 40 amplifiers and 80 loudspeakers), thanks to the low current absorption on the BUS (5mA).

Correctly configured you can have both a stereo and a mono signal in output from the device to the loudspeakers. This type of amplifier can be connected to 8Ω and 16Ω loudspeakers.

The amplifier can have two modes:

- "FOLLOW ME" mode: function which allows the same music in another room after the amplifier of the room previously occupied has been switched off and switching on the amplifier on the room you are now in.
- "NO FOLLOW ME" mode: when another amplifier is switched on, on changing room, the source configured the same as the configurator (inserted on M2) inserted on the amplifier switches ON, not necessarily the source which was being listened to before.

The device can be controlled either directly by means of the buttons on the front, or by the TOUCH SCREEN or by special controls item L4651/2 and Item H4651/2.

Technical data

BUS voltage: 18 to 27Vd.c.

Supply voltage: 110 to 230Va.c. (50-60Hz)

Size: 4 DIN modules

Absorption:

- On the Power terminal: 110mA (a 110Va.c.) - 56mA (at 230Va.c.)

- On the BUS: 5mA

Operating temperature: 5 to 45° C

Stereo audio features:

- Power (on 8Ω) = 2Wrms (1Wrms + 1Wrms)
16Wpmpp (8Wpmpp + 8Wpmpp)

- TYP channel balancing: ± 0.5dB

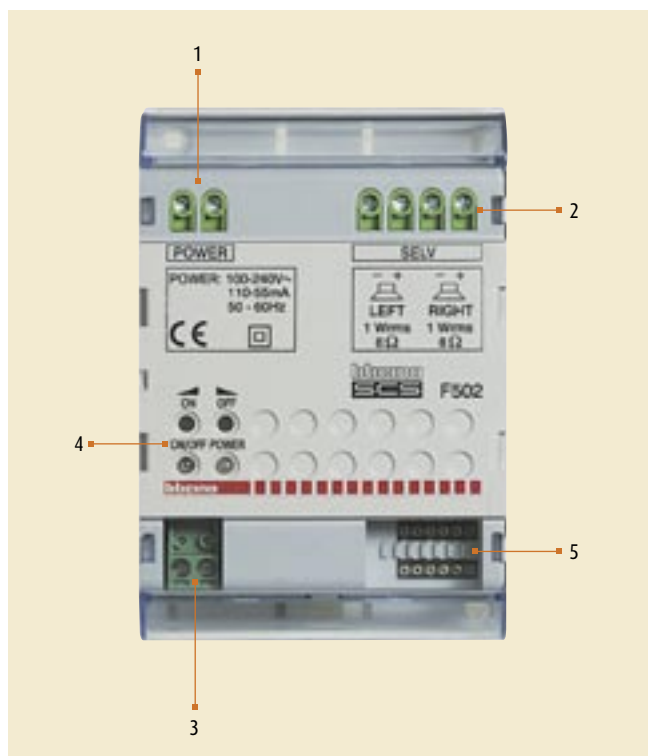
- MIN channel balancing: ± 1.5dB

- Frequency range @ -3dB: 20Hz to 20KHz (on 8Ω)

Dissipated power: 2W

Legend

1. terminal for connection of the power supply
2. terminals for connection of the loudspeakers
3. pull-out terminal for connection to the BUS
4. The pushbuttons under "ON" and "OFF" are used:
 - the "ON" pushbutton to switch on the amplifier (simple touch) and to increase the volume (long press)
 - the "OFF" pushbutton to switch off the amplifier (simple touch) and to decrease the volume (long press). The LED positioned under the pushbuttons indicate:
 - the LED under "ON/OFF" indicates the amplifier state: if it is OFF there is no BUS, if it is GREEN the device is in Stand-By, if it is ORANGE the amplifier is ON
 - the LED under "POWER" indicates: if it is OFF there is no voltage on the POWER terminal, if it is RED the amplifier is switched on.
5. configurator housing



TECHNICAL FEATURES

Loudspeakers

FLUSH-MOUNTED ITEM L/N/NT4565



Technical data

Type: broadband
 Power: 6Wrms/12W musical
 Impedance: 16Ω
 Frequency range: 160 to 16kHz
 Sensitivity: 80dB (1W/1m)
 Feature: loudspeaker to be installed in flush-mounted boxes item 506E

WALL-MOUNTED ITEM L4567



Technical data

Type: 2 way
 Power: 20Wrms/40W musical
 Impedance: 8Ω
 Frequency range: 75 to 20kHz
 Sensitivity: 88dB (1W/1m)
 Weight: 1 Kg
 Feature: shallow loudspeaker to be installed on the wall (complete with fastening screw and 4 m of cable)
 Dimensions: 271 x 184 x 37 mm

FOR INSTALLATION ON THE CEILING ITEM L4566



Technical data

Type: 2 way coaxial
 Power: 50Wrms/100W musical
 Impedance: 8Ω
 Frequency range: 50 to 20kHz
 Sensitivity: 88dB (1W/1m)
 Weight: 1.7Kg
 Feature: loudspeaker to be installed on the ceiling
 Diameter mounting hole: 210 mm
 External diameter: 240 mm
 Depth: 140 mm

TECHNICAL FEATURES


Power supply and cable

POWER SUPPLY ITEM 346000

Power supply for the video door entry system and the sound system components: audio/video node, flush-mounted amplifier, special controls, radio tuner and interfaces for external stereo sources.



Technical data

Device with double insulation 
 Maximum current which can be supplied: 1200mA
 Size: 8 DIN modules
 Input voltage: 230Va.c. 50Hz
 Output voltage:
 • BUS terminal: 27 V
 • Terminals 1 and 2: 27 Vd.c.
 Dissipated power: 9W

CABLE ITEM 336904

Cable with 2 twisted conductors which can be buried in piping – corresponds to the standards (IEC 20-13 and IEC 20-14), 200 metre coil.



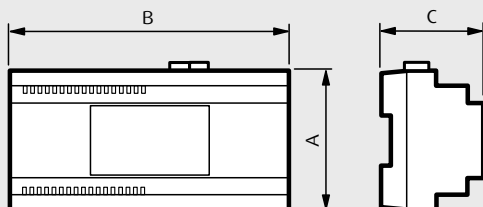
Technical data

Outer sheath:
 - white RAL 9010
 - external diameter max 5 mm
 - on the sheath there is a measurement indicator with metric progression as well as the indication of the year of production
 Cross-section of the single conductors: 0.50 mm²
 Electrical resistance: < 45Ω / km a 20° C
 Operating temperature: -15°C to +70°C

DIMENSIONAL DATA

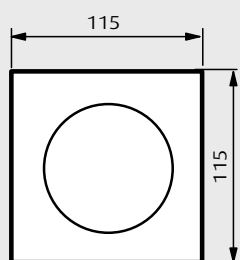
DEVICES ON DIN GUIDE

DIN modular

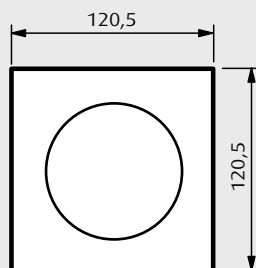


Item	Dimensions (mm)			No. of DIN modules
	A	B	C	
346000	90	140	61	8
F411	90	105	30	6
F500	90	72	30	4
L4561	90	72	30	4
F502	90	72	30	4

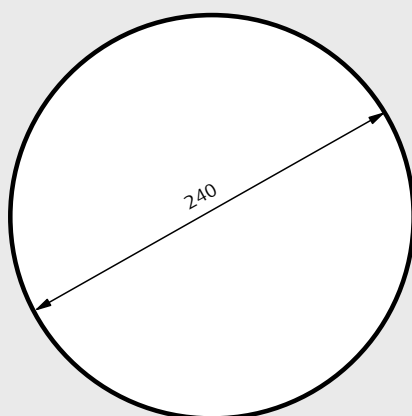
NON MODULAR DEVICES



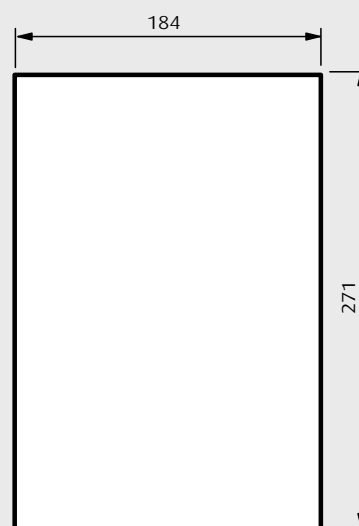
L/N/NT4565



HC-HS4565
HC-HS4070



L4566



L4567



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