Hill
A U D I O

ANDANTE SERIES
PRECISION 2-WAY ACTIVE SPEAKER SYSTEM

SMA-1020
SMA-1220
SMA-1520

USER MANUAL

RevA 06-2013

Hill
A U D I O

Welcome

Thank you for choosing Hill Audio for your sound system. To make sure that this product meets your expectations and provides long-term, reliable performance, please read and follow this instruction manual carefully.

Manual Language

UK   This user manual is written in English. For other languages, visit   www.hill-audio.com
FR   Ce guide est écrit en anglais. Pour les autres langues, visitez: www.hill-audio.com
DE   Diese Anleitung ist in Englisch verfasst. Für andere Sprachen: www.hill-audio.com
ES   Este manual está escrito en Inglés. Para otros idiomas, visite: www.hill-audio.com
PT   Este manual está escrito em Inglês. Para outros idiomas, visite: www.hill-audio.com
IT   Questo manuale è scritto in inglese. Per altre lingue, visitare: www.hill-audio.com

Important safety instructions

■ Read these instructions and all markings on the product. Keep these instructions.

■ Heed all warnings and instructions, both in this manual and on the product.

■ Clean only with a dry cloth. Unplug from AC supply before cleaning.

■ Do not use this product near water and avoid any exposure to water.

■ Before connecting this product to any AC supply, make sure to check whether the AC mains voltage and frequency match the indication on the product and its packaging.

■ Only connect this product to an AC supply with sufficient power handling, protective earth connection, ground-fault (earth-fault) protection and overload protection.

■ Disconnect the product from the AC supply during thunderstorms or longer periods of being unused.

■ Make sure any heat sink or other cooling surface, or any air convection slot , is exposed sufficiently to free air circulation and is not blocked.

■ Do not operate this product in environmental temperatures exceeding 35 degrees Celsius and/or 85% relative humidity.

■ Position the product in a safe and stable place for operation, out of reach of unauthorized persons.

■ Make sure any cable connections to and from the product are neither subject to potentially destructive mechanical impact nor present any risk of stumbling or other accident risk to people.

■ Audio equipment may generate sound pressure levels sufficient to cause permanent hearing damage to persons. Always start up at low volume settings and avoid prolonged exposure to sound pressure levels exceeding 90 dB.

■ Do not open this product for service purposes. There are no user-serviceable parts inside. Warranty will be void in any case of unauthorized service by the user or other not authorized persons.

■ Take any precaution required by local law, applicable regulations or good business practice to avoid injury of people or material damage by use of this product.

Explanation of symbols used in this manual and on the product:

ATTENTION!
Read manual
before installation
and operation.

DANGER!
Safety hazard.
Risk of injury or death.

WARNING!
Hazardous voltage.
Risk of severe or fatal
electric shock.

WARNING!
Fire hazard.

Description

The Andante series is a series of lightweight, highly portable bi-amplified active PA speakers with an extremely versatile feature set for a broad range of purposes including bands, mobile DJs, conferences and events. Using impact-resistant Polypropylene (PP) as the cabinet material and a high-headroom hybrid class AB + class D amplifier, these speakers are both robust in their handling and powerful in their performance. Adding precision transducers, they offer great sound with superb dynamics and the flexibility to adapt to any application from speech broadcasting to music replay, whether live or pre-recorded.

The Andante series consists of three different models:

- SMA1020: 10" | 2-way bi-amplified
- SMA1220: 12" | 2-way bi-amplified
- SMA1520: 15" | 2-way bi-amplified

The specifications for each model are available at the end of this user manual.

Setting up

A. Location

When choosing a location for the Andante speakers, keep the following in mind:
- During transport or setup, avoid touching the cones of the loudspeakers with any object or with your hands, as this could cause irreparable damage. Do not remove the protection grille.
- Avoid pointing microphones in the direction of the speakers, as this could result in annoying feedback which can damage the speaker drivers.

B. Position

B1. On the floor

Andante speakers can either be positioned upright (vertical) for general PA use or in a horizontal position for monitor use. Make sure that the floor is flat and even to avoid the speaker to tumble. Avoid resonating floor positions for better sound.

Vertical
(general PA use)

Horizontal, 35° elevated
(monitor use)
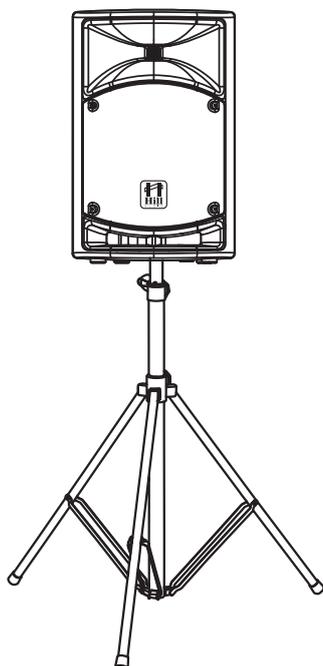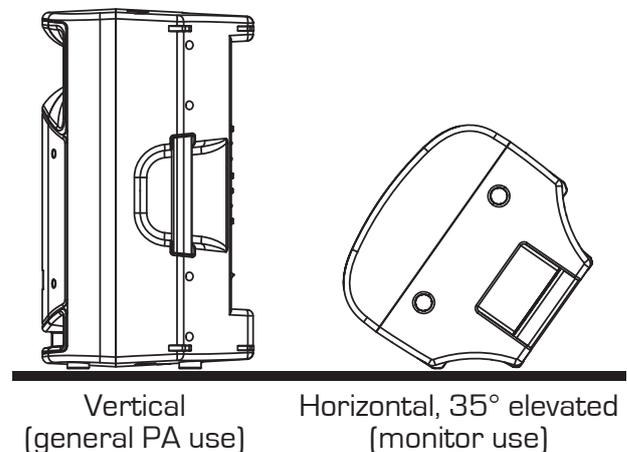
B2. On a tripod.

The Andante speakers are equipped with a 1-3/8 inch (35mm) stand mount, to allow mounting on tripod stands. Make sure that:
- The speaker stand is certified of being capable of supporting the weight of the speaker.
- The speaker stand is placed on a flat, stable surface and the tripod legs are fully extended.
- The speaker stand legs and any cables are out of the way of any persons who may accidently trip over the stand or cables and pull the speaker system over.

Before lifting the speaker onto the stand, be confident that you can handle the weight safely and without injury to yourself, others, or damage to the speaker.

B3. Suspended from ceiling or truss ("Flown" installation).

DANGER - risk of injury: Flown installation requires extensive experience, like calculating working load limits, knowledge of installation materials, and periodic safety inspection of all installation material and the flown product. If you lack such qualifications, do not attempt the installation yourself. Improper installation can result in injury of people.

As a preparation for flown installation, attach eyevbolts to the mounting points in the speaker cabinet as per below drawing. In the further course of the installation, make sure that:

■ The product is installed out of reach of people and outside areas where persons may walk by or be seated.

■ The installation area can hold a minimum point load of 10 times the device's weight.

■ The installation is secured with an appropriate safety cable where necessary. Always use a certified safety cable according to DIN56927 that can hold 12 times the weight of the device when installing the unit. This secondary safety attachment should be installed in a way that no part of the installation can drop more than 20cm if the main attachment fails.

■ The installation place is free from unwanted persons during installation, de-installation or servicing.

■ The safety-relating and machine-technical installations are approved by an expert before using them for the first time.

■ The installation is re-inspected every year.

■ The cooling requirements are met (if any). Note that warm air is ascending, making the area below a rooms' ceiling potentially warmer than lower locations.
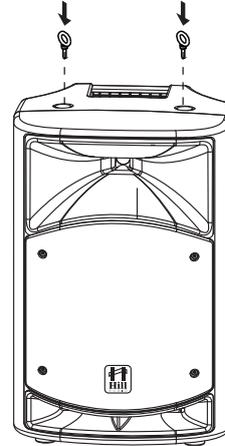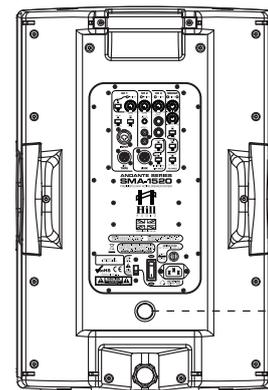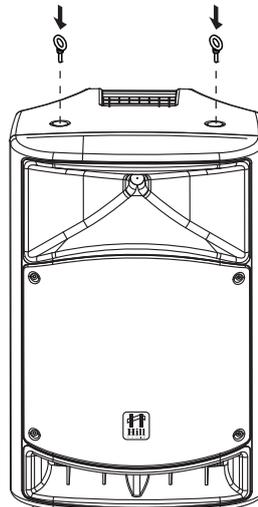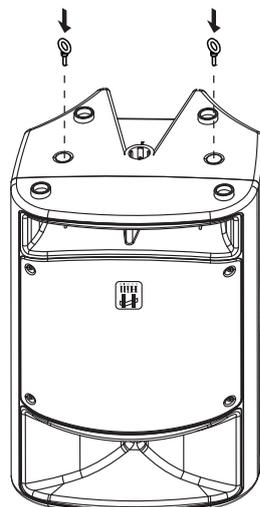
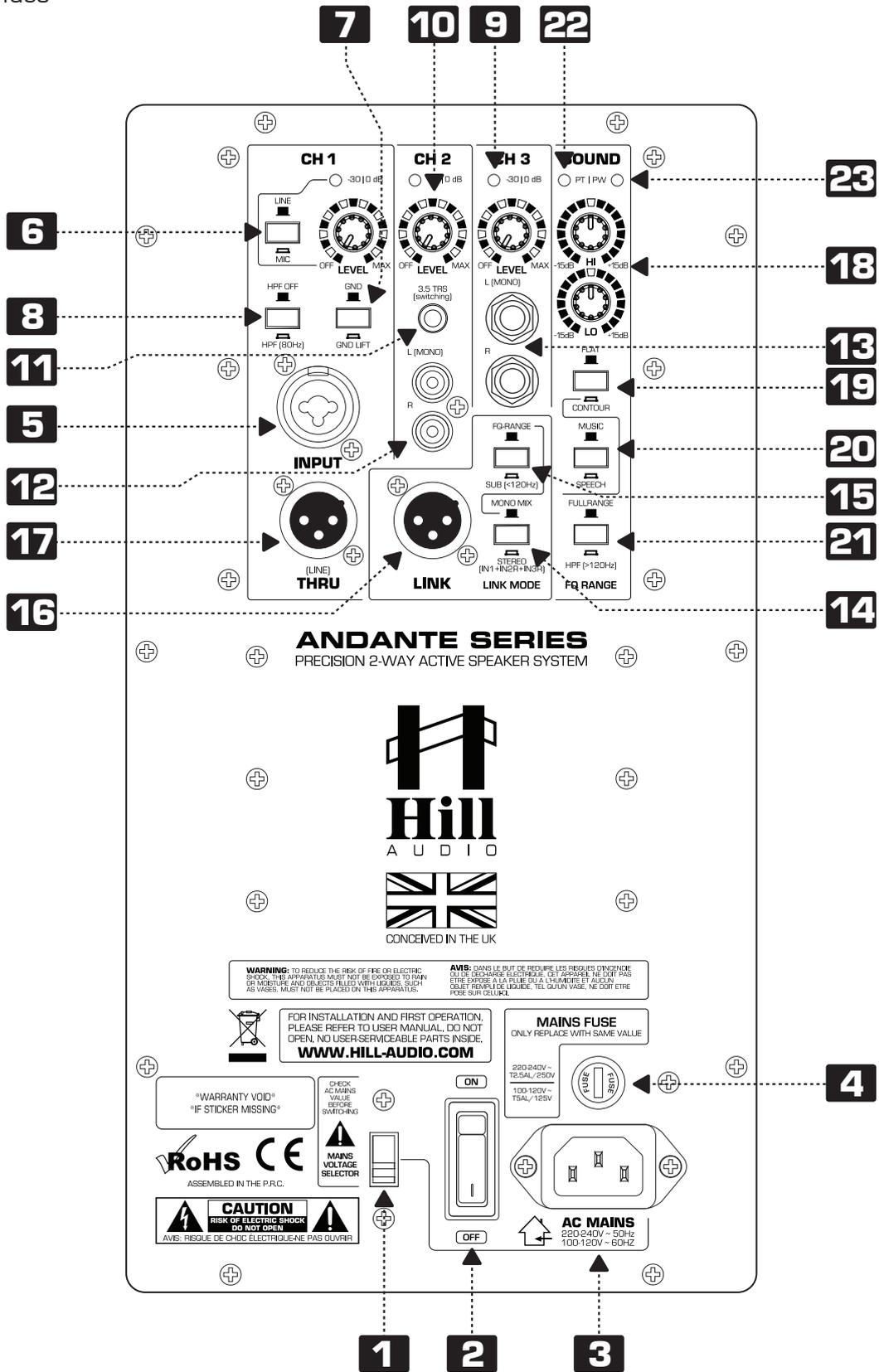**SMA1020**
2xM8
2xBottom
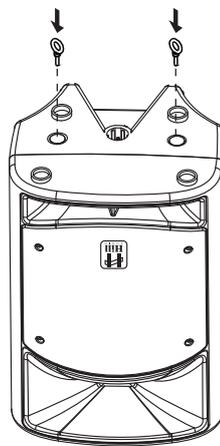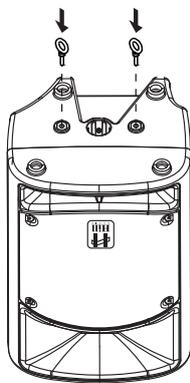
SMA1220
4xM10
2xBottom
2xTop

SMA1520
5xM10
2xBottom
2xTop
1xRear

Operation

User Interface

Functional Description

Andante speakers offer a user interface which resembles a basic 3-channel mixer. While the main input (CH1) is supposed to be a mono signal, the auxiliary inputs (CH2 and CH3) can be stereo signals, of which it can be decided whether they are summed to mono and played by the internal speaker or whether the left channel is played by the internal speaker and the right channel is sent to a 2nd speaker. Various filter options and a possibility to connect a subwoofer are provided.
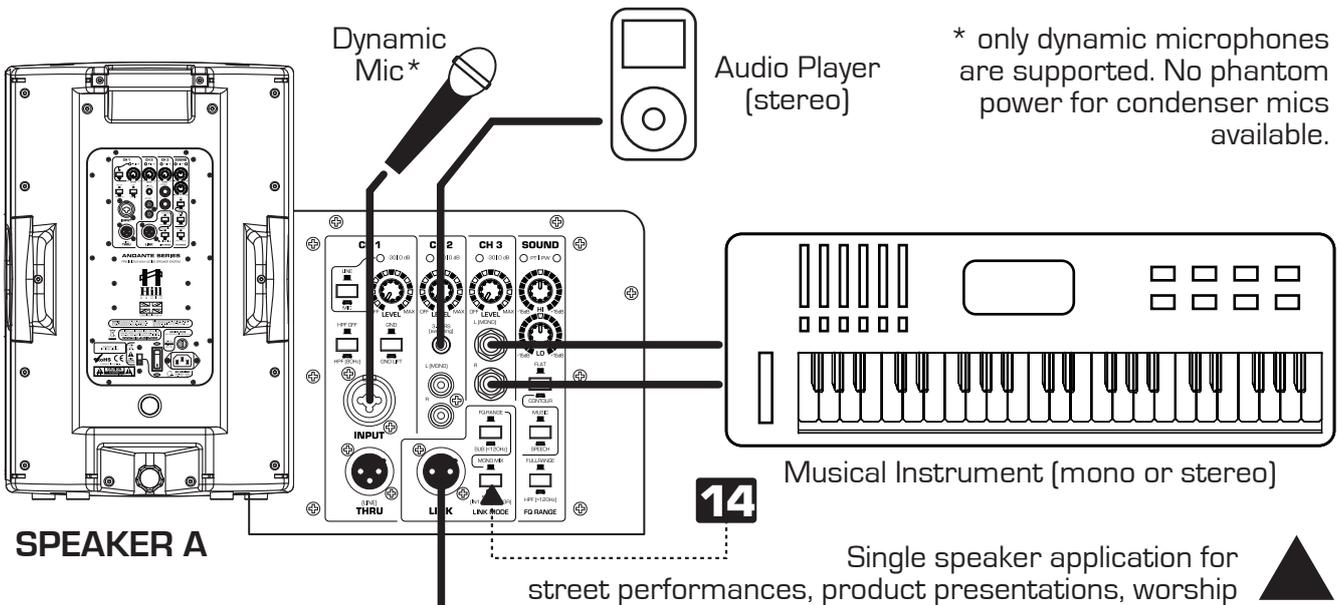
1   Voltage selector switch. The product shall be preset to the voltage of your location, but it is recommended to check this before first operation. Available settings are 230V and 115V.

2   Power switch. Switches the product on and off.

3   AC inlet. Connect the supplied AC cord here.

4   Fuse holder. The fuse can be removed and exchanged by turning the holder and pulling out the holder tray. Switch the unit off and disconnect the AC supply before doing so. Replace fuses only with same value and rating. If the fuse blows a 2nd time, submit product for repair.

5   CH1 Audio input. This is an electronically balanced input which accepts either ¼" TRS plugs or male XLR plugs.

6   Line/Mic sensitivity switch. Depending on the signal level supplied to the audio input (5), the sensitivity can be selected between Line (released position) and Microphone (pressed position) level. If the output of the feeding source is unknown, set the sensitivity to Line first and try whether the audio level is sufficient.

7   Ground lift switch. In case of a mismatch between ground potentials of this product and the feeding source, this switch may help by making the audio signal ground "floating".

8   High pass filter for input. Applies an 80Hz 2nd order high pass filter to the input signal. This filter will most likely be used when the input signal comes from a microphone and the input sensitivity (6) is switched to MIC. It helps to reduce low-frequency rumble which is easily picked up by microphones due to handling noise. Do not use this function with a line signal if you require full-range audio reproduction.

9   Signal level indicator (same for all three input channels). This is a 2-color LED red/white which will illuminate its white element when the signal level is at -30dB. This is a good indication – even when the volume is down – to see whether an input signal is present. The red element will light up at 0dB indication that the recommended nominal internal level is reached. For best dynamic headroom, it is recommended to not exceed this point.

10   Level control (same for all three input channels). Turning this control completely counterclockwise will reduce the respective signal to its minimum, while turning this control clockwise increases the volume of the respective signal. Obey the signal level indicator (9) to not exceed recommended nominal levels.

11   CH2 TRS Audio input. This is a 3.5mm TRS socket with switching contacts, meaning that once any connector is inserted into this socket, the RCA input of CH2 (12) is disabled. The 3.5mm TRS socket is ideal for mobile player sources. Note that depending on the link mode switch (14), the stereo channels are either summed up to a mono signal and played by the internal speaker, or the left channel of the source is played by the internal speaker and the right channel of the source is sent out via the Link connector (16).

12 CH2 RCA Audio Input. This is a pair of RCA sockets to connect regular stereo audio equipment. Note that this input is disabled when a connector is inserted into the CH2 TRS audio input (11). Also note that depending on the link mode switch (14), the stereo channels are either summed up to a mono signal and played by the internal speaker, or the left channel of the source is played by the internal speaker and the right channel of the source is sent out via the Link connector (16).

13 CH3 TRS Audio input. This is a pair of ¼'' TRS sockets, providing a balanced stereo input. The right channel socket is a switching type; as long as no connector is inserted into the right channel, the right channel will automatically carry the left channel signal. If the signal connected to this input is a mono signal, hence always insert this into the left channel socket. Note that depending on the link mode switch (14), the stereo channels are either summed up to a mono signal and played by the internal speaker, or the left channel of the source is played by the internal speaker and the right channel of the source is sent out via the Link connector (16).

14 Link Mode switch. Depending on the setting of this switch, the signal presented on the Link output (16) can either be the same as the mono sum of the internal channels, so that the further speaker connected to the Link output (16) will carry the exact same signal; or it can be set to carry the complementary stereo channel so that an external speaker connected to the Link output (16) carries the right stereo channel while the internal speaker carries the left stereo channel.

15 Link Frequency Range switch. Depending on the setting of this switch, the link output (16) may either carry the same frequency range as the internal speaker or only the range up to 120Hz, which would allow a subwoofer to be connected to the Link output without the need of an active crossover.

16 Link output connector. This is a male XLR connector to supply a line-level balanced audio signal to further Andante series speakers. Note that the signal carried by this output depends on the settings of the Link Mode switch (14) and the Link Frequency Ranges switch (15), and refer to the explanations provided there.

17 Thru output connector. Other than the Link Output (16), this male XLR connector supplies a balanced signal exactly identical to the input signal connector to CH1. The main purpose is to allow daisy-chaining of a number of Andante speakers, with every speaker receiving the same, unprocessed signal.

18 Master Equalizer. This is a 2-band EQ, providing frequency response shaping to the mix of channels 1/2/3.

19 Master Contour on/off switch. This switch determines whether a frequency response contour filter is applied to the master signal or whether the master signal frequency response stays flat. Once enabled, the choice of which contour filter is applied is made by the Music/Speech Contour switch (20).

20 Music/Speech Contour switch. Once the master contour switch (19) is enabled, this switch determines whether either a speech-adapted frequency contour filter (+8 dB 2khz-6kHz) or a music "loudness" contour filter (+9 dB @ 55Hz / +4 dB @ 22.5kHz) is applied. The Speech filter setting improves speech intelligibility but is less applicable to music replay, while the Music filter setting is specifically designed for low-volume music replay where natural perception of low and high frequency presence is reduced. The music filter is not suitable for playing music at medium or high levels; in such case all contour filters shall be disabled by means of the master contour on/off switch (19).

21 Output High Pass filter. This removes all frequencies below 120Hz with an 18dB roll-off from the internal speaker. Main purpose is to remove low-frequency content when operating with an additional subwoofer. This high-pass filter complements the low-pass filter (15) for the Link output (16), so that the internal speaker does not carry content below 120Hz, while a subwoofer connected to the Link output (16) carries all frequencies below 120Hz.

22 Power Amplifier Protection Indicator. This LED will come on when the internal power amplifier limiter is engaged, indicating that the maximum system level is reached. Decrease the signal level until the indicator is off.

23 Power indicator. This LED indicates whether the product is switched on or off.

Application examples

A. Applications using the internal mixer

Dynamic Mic*

Audio Player (stereo)

* only dynamic microphones are supported. No phantom power for condenser mics available.

Musical Instrument (mono or stereo)

SPEAKER A

14

Single speaker application for street performances, product presentations, worship ▲

Multiple speaker application for conferences, entertainers, larger presentations ▼

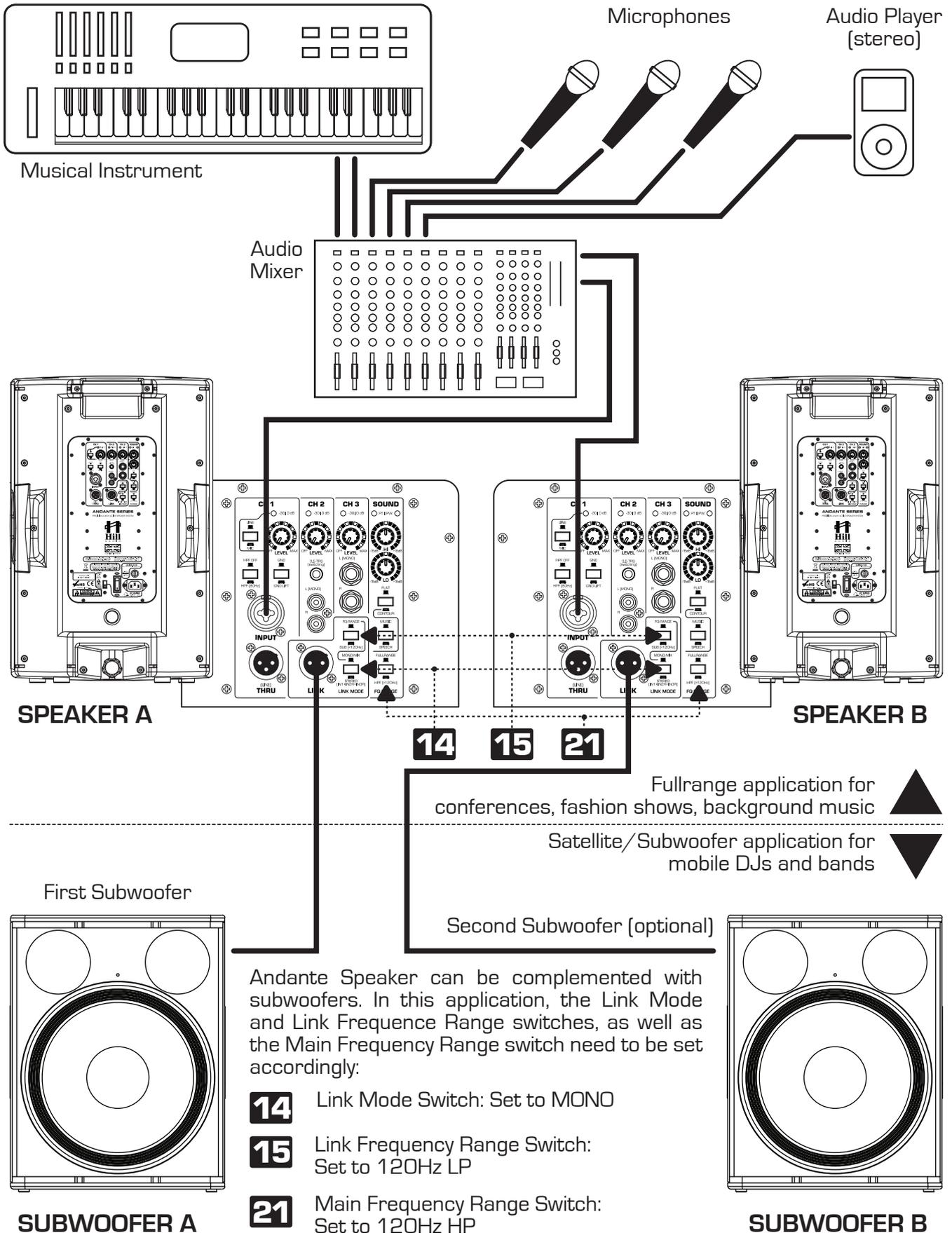The function of SPEAKER B will depend on the setting of the Link Mode switch on SPEAKER A:

14 **Link Mode Switch**

MONO MIX (switch released): both speakers will play the same mono mix signal.

STEREO (switch pressed): Speaker A will play the left channel of the stereo mix and speaker B will play the right channel of the stereo mix.
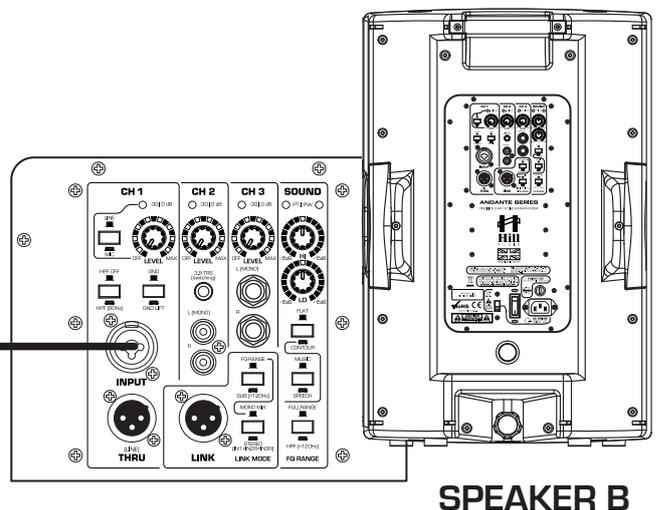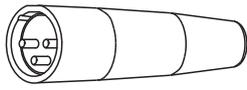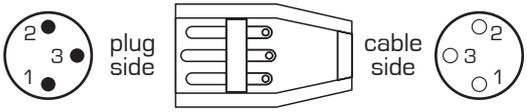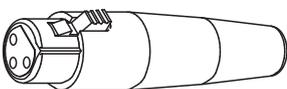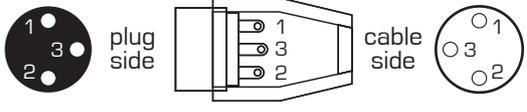
SPEAKER B

B. Applications using an external mixer

Musical Instrument

Microphones

Audio Player (stereo)

Audio Mixer

SPEAKER A

SPEAKER B

14 **15** **21**

Fullrange application for conferences, fashion shows, background music ▲

Satellite/Subwoofer application for mobile DJs and bands ▼

First Subwoofer

Second Subwoofer (optional)

Andante Speaker can be complemented with subwoofers. In this application, the Link Mode and Link Frequence Range switches, as well as the Main Frequency Range switch need to be set accordingly:

14 Link Mode Switch: Set to MONO

15 Link Frequency Range Switch: Set to 120Hz LP

21 Main Frequency Range Switch: Set to 120Hz HP

SUBWOOFER A

SUBWOOFER B
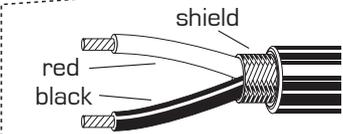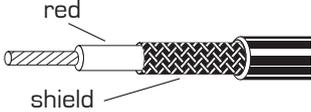
Connections

The Andante series speakers use the below connector types, for which the pin assignment must comply with the following specification. Always make sure to use good connectors and cables to ensure proper operation. Balanced connections are to be preferred over unbalanced connections where applicable and feasible. Avoid unbalanced connections exceeding 2m of cable length.

	Structure	Balanced connection	Unbalanced connection
XLR male		red = 2 black = 3 shield = 1	red = 2 shield = 1+3
XLR female		red = 2 black = 3 shield = 1	red = 2 shield = 1+3
6.35mm TRS-stereo		red = tip black = ring shield = sleeve	red = tip shield = sleeve+ring
6.35mm TRS-mono		red = tip black = sleeve shield = uncon.	red = tip shield = sleeve
3.5mm TRS-stereo		red = tip black = ring shield = sleeve	red = tip shield = sleeve+ring
RCA		red = tip black = sleeve shield = uncon.	red = tip shield = sleeve
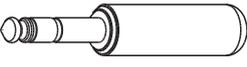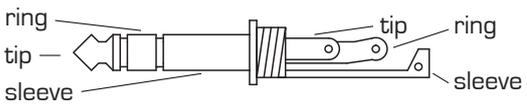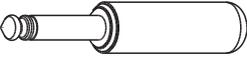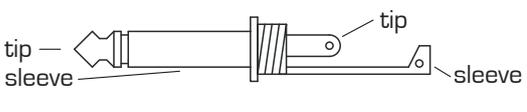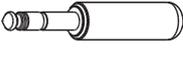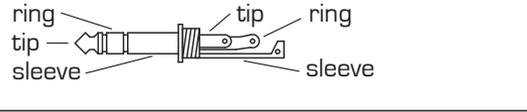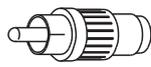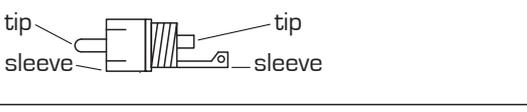
CABLE Types

2-conductor shielded cable
(for balanced connections)

1-conductor shielded cable
(for unbalanced connections)

Technical Specifications

Model	SMA1020	SMA1220	SMA1520
LF driver	10" with 2" VC	12" with 2.5" VC	15" with 2.5" VC
HF driver	1"	1.35"	1.35"
LF amplifier	150W class D	250W class D	250W class D
HF amplifier	40W class AB	50W class AB	50W class AB
Amplifier protection	overtemperature	overtemperature	overtemperature
Power supply	switch mode	switch mode	switch mode
Frequency response	55 Hz-20kHz	50 Hz-20kHz	45 Hz-20kHz
Max. SPL	119dB	122dB	123dB
Dispersion	120° x 60°	120° x 60°	120° x 60°
Mounting points	2xM8	4xM10	5xM10
Dimensions WxHxD	321*503*291	385*596* 348mm	460*702*415mm
Weight	11.5 kg	14.0 kg	22.0 kg

Block Diagram
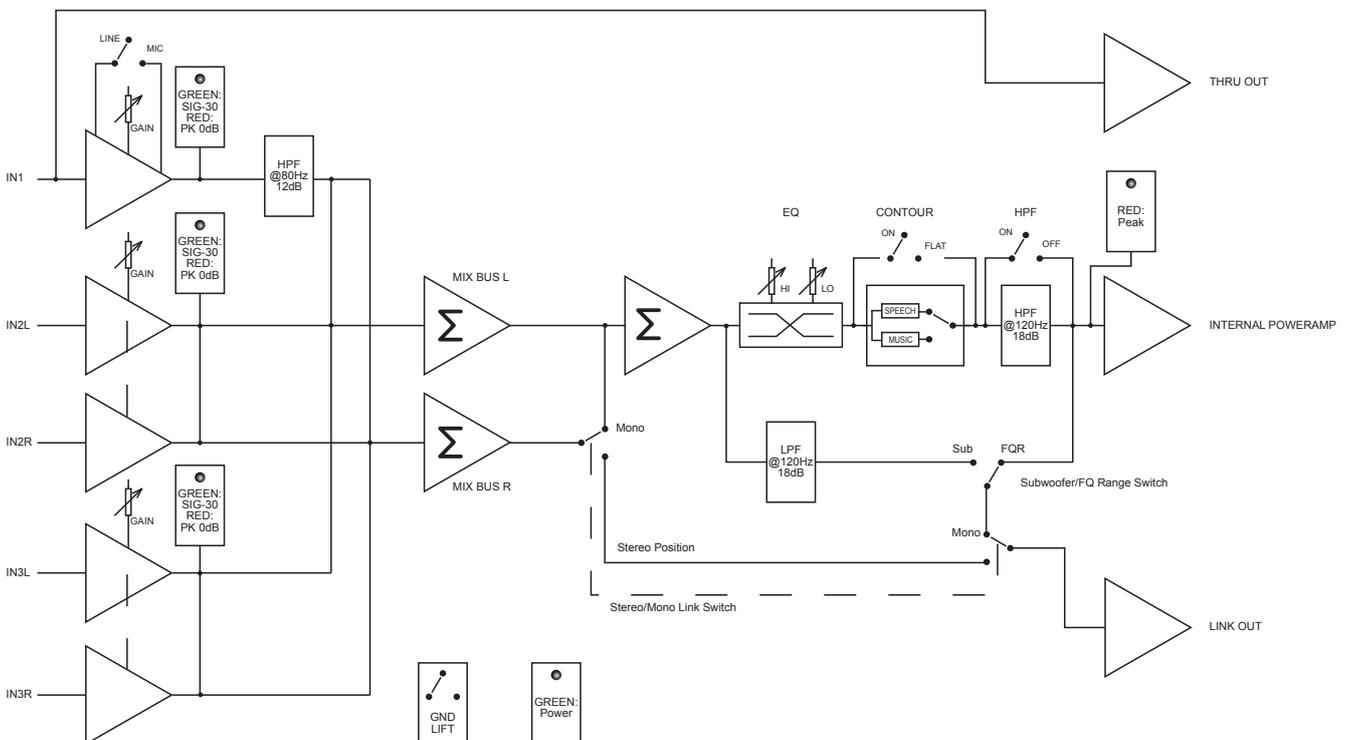
EC Declaration of Conformity

Manufacturer: Adelto Technologies Limited
Address: Vanguard Way, Shoeburyness, Essex SS3 9QY, UK

We declare on our own responsibility, that the equipment

Hill Audio Andante SMA1020
Hill Audio Andante SMA1220
Hill Audio Andante SMA1520

is in conformity with the following directives and standards or regulations:

EMC Directive 2004/108/EC
EN55103-1:2009 (Emissions)
EN55103-2:2009 (Immunity)
EN61000-3-2:2006 + A1:2009 + A2:2009
EN61000-3-3:2008

LVD Directive 2006/95/EC
EN60065:2002 A1:2006 + A11:2008 + A2:2010

ROHS Directive 2002/95/EC

and is marked as follows: C E

Shoeburyness, 28. June 2013
Place and date of issuing

_____
Authorized Signature