

# USER MANUAL

RevA 12-2013

# IMA-202

INSTALLATION MIXER-AMPLIFIER

## 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	<a href="http://www.hill-audio.com">www.hill-audio.com</a>
FR	Ce guide est écrit en anglais. Pour les autres langues, visitez:	<a href="http://www.hill-audio.com">www.hill-audio.com</a>
DE	Diese Anleitung ist in Englisch verfasst. Für andere Sprachen:	<a href="http://www.hill-audio.com">www.hill-audio.com</a>
ES	Este manual está escrito en Inglés. Para otros idiomas, visite:	<a href="http://www.hill-audio.com">www.hill-audio.com</a>
PT	Este manual está escrito em Inglês. Para outros idiomas, visite:	<a href="http://www.hill-audio.com">www.hill-audio.com</a>
IT	Questo manuale è scritto in inglese. Per altre lingue, visitare:	<a href="http://www.hill-audio.com">www.hill-audio.com</a>

## 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 you 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. Also disconnect from the mains supply if the product is not being used for long periods.
- 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 unauthorized persons.
- Take any precaution required by local law, applicable regulations or good business practice to avoid injury to 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 IMA202 is a combination of a basic mixer for music and a microphone, a media player with FM tuner and IR remote control, and a dual power amplifier which can either work in dual mono or in stereo configuration. Adding its unique shape for mounting on a wall, this comprehensive combination of features makes the IMA202 the ideal all-in-one space-saving solution for single-or dual zone background music systems in shop, bar and restaurant applications where available installation space is limited.

## Health advice

This unit produces and absorbs electromagnetic radiation. The strength of radiation and the sensitivity for disturbing interference matches the CE and FCC requirements. A corresponding sign is printed on the backside of the unit. Any change or modification may affect the behavior of the unit concerning electromagnetic radiation and it may not then meet CE requirements. The manufacturer takes no responsibility in this case.

## Functional advice

This unit is immune to the presence of electromagnetic disturbances – both conducted and radiated - up to a certain level. Under peak conditions, the unit is classified to show a “class C” performance criteria and may encounter temporary degradation or loss of function which may need manual help to recover. In such case, disconnect the AC power from the unit and reconnect it again to recover.

## Environmental advice

This unit is built to conform to the ROHS standards and the WEEE directive 2002/96/EC of the European Parliament and of the Council of the European Union. Under these regulations, the product shall not be discarded into regular garbage at the end of its life, but shall be returned to authorized recycling stations.

## Unpacking

Please check that the box contains the following items:

Main parts:    1 pc. IMA202 main unit  
                  1 pc. Mains cable  
                  1 pc. FM antenna  
                  1 pc. IR remote control  
                  1 pc. Operation manual

If any part is missing, please contact your dealer immediately.

## Warning



After unpacking, and before plugging the AC cord in the wall outlet, check whether the AC mains voltage and frequency is compatible with this product (see rear panel of product). Whenever the specified voltage or your AC plug should not match the local conditions, do NOT plug the AC cord into the wall outlet and contact your dealer immediately.

## Configuration setup

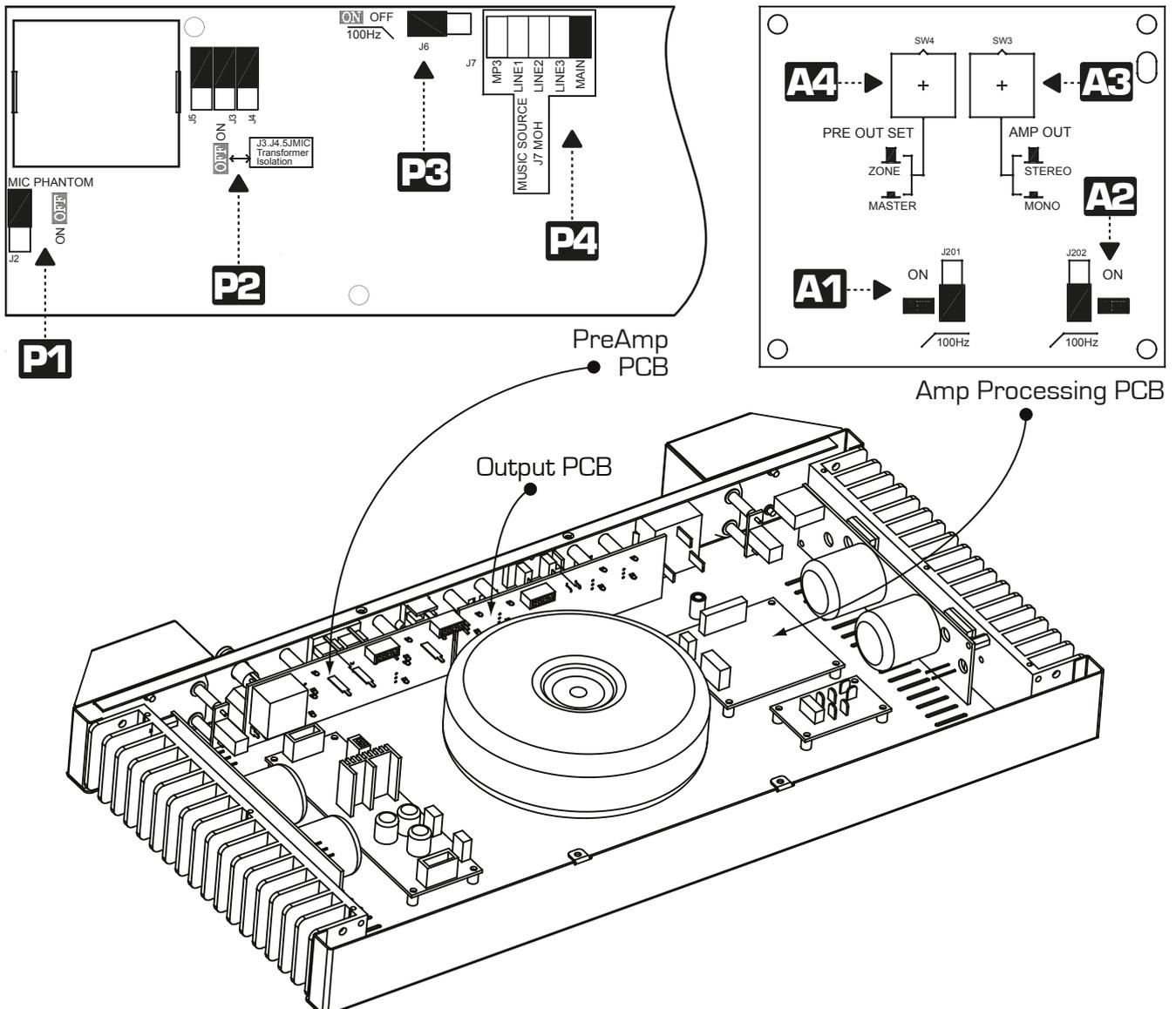
Before using the IMA202, it must be configured to match the application. Make sure the unit is unplugged from AC mains and remove the top cover to gain access to the internal elements, then set switches and jumpers as per following instruction.

## Warning



The following chapter contains work on an open unit, with contacts, wires and parts carrying life voltage exposed. Work must be expedited strictly and only when the unit is disconnected (not only switched off) from the AC supply, and all work must be expedited by a qualified technician familiar with necessary safety precautions. Removing the top cover and expediting this work is not permitted for the end user, as indicated by the outside marking "no user-serviceable parts inside - do not open". Contact your dealer to make these settings for you if you do not have the required qualification. The manufacturer takes no liability for damage to health or goods evolving from disobedience of these instructions.

## Internal elements



## Setup Information

### Pre-Amplifier PCB

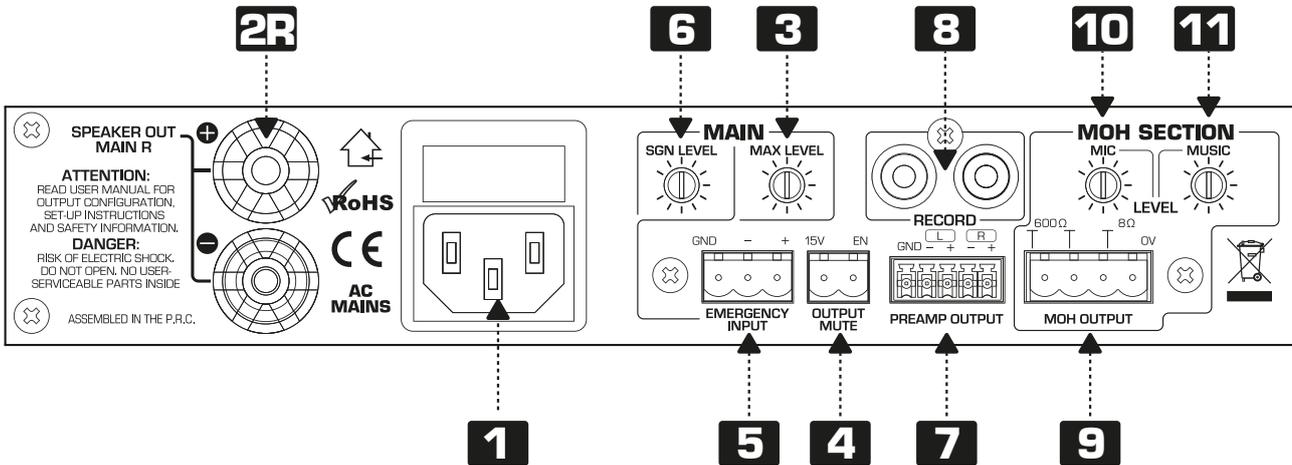
- P1** This jumper determines the phantom power setting for the microphone input (14). Position the jumper in ON position to add +12V DC phantom power to the microphone input for the use of condenser microphones. Leave the jumper in OFF position (factory default) for the use with dynamic microphones.
- P2** These 3 jumpers activate the transformer isolation for the microphone input (14). Position the 3 jumpers all to OFF if no transformer isolation is required (factory default) or to ON if transformer isolation is required; note that all 3 jumpers must be either set to ON or OFF. The purpose of enabling transformer isolation is mainly the use of a telephone system as the feeding announcement signal source. For all other cases, specifically when directly connecting a microphone to the unit, leave these jumpers in OFF position. Note that enabling transformer isolation will decrease the sensitivity of the microphone input by 10 dB.
- P3** This jumper activates a 100Hz High-Pass filter for the microphone input. Setting this to ON can help to reduce low-frequency rumble as may easily occur with table-top microphones. If the full low-frequency response is needed for the microphone input, leave this jumper set to OFF.
- P4** These jumpers allow to assign a specific music input signal to be the feeding source of the MOH output (9). The volume of this signal may later be adjusted by the rear-panel MOH music volume control (11). Every available internal music source has a contact pair on which the jumper can be set for selecting the respective music signal as the MOH source. Note that purposely only one jumper is provided for this position in order to choose only one source. Do not add extra 3rd party jumpers - the circuit is designed to choose one source only.

### Amp Processing PCB

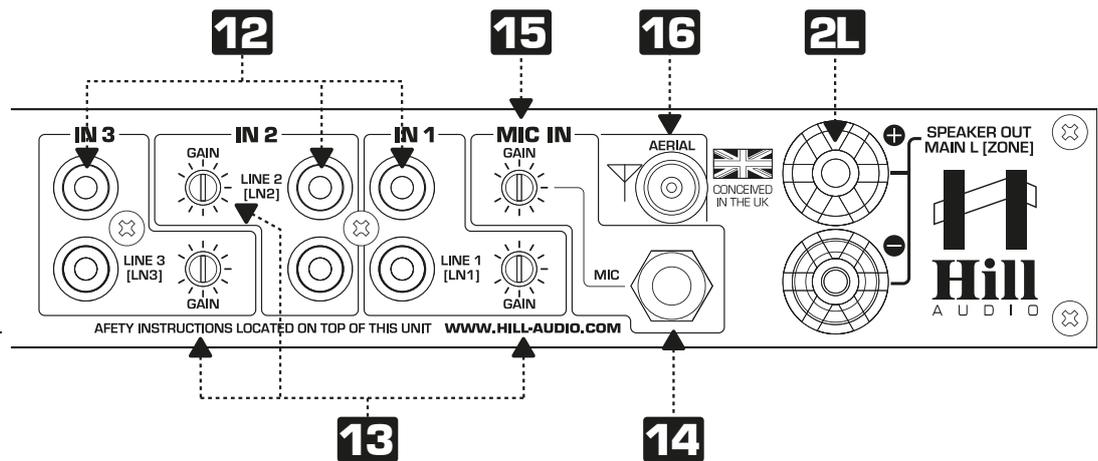
- A1** These two jumpers allow to independently set 100Hz High-Pass filters for the left and right amplifier channel. Main purpose is to limit the low-frequency energy supplied to the speaker system in case that the speaker system may not be capable of reproduction of low frequency content, like e.g. some ceiling speakers. Set the respective jumper to ON to engage the High-Pass-Filter or to OFF to disengage the High-Pass filter and retain the full frequency bandwidth.
- A2**
- A3** Amplifier mode selection switch. This switch decides whether the internal two amplifier blocks work as a stereo amplifier (selection switch in released position) fed from the MAIN signal, or as two mono amplifiers (selection switch in pressed position), one being fed from the MAIN signal (in mono), the other being fed from the ZONE signal (in mono). In STEREO setting (selection switch in pressed position), the stereo signal volume at the speaker outputs (2L+2R) is set by the Main volume control (24), in MONO setting (selection switch in released position), the mono volume at the left speaker Output (2L) is set by the MAIN volume control (24), while the mono volume at the right speaker output (2R) is set by the ZONE volume control (26). See block diagram for more signal routing details.
- A4** PreAmp Output Source selector switch. This switch decides which signal is present at the PreAmp output (7). In pressed position (Master), the preamp output will replicate the same signal which is present at the speaker outputs, but in line level. Hence, the signal present at the PreAmp output (7) depends in this position on the choice made by the Amplifier Mode Selection Switch (A3), and can either be the stereo MAIN signal or the mono MAIN plus mono ZONE signal. In released position (Zone), the signal present at the PreAmp output (7) will be the stereo zone signal. See block diagram for more signal routing details.
-  Switches A3 and A4 will mostly be used in the combination A3-released and A4-released, where the internal amplifier carries the MAIN signal and the PreAmp output carries the ZONE signal (both in stereo); or in A3-pressed and A4-pressed where the internal amplifier carries MAIN and ZONE each on one channel and the PreAmp output (7) replicates this.

## Controls and Connections

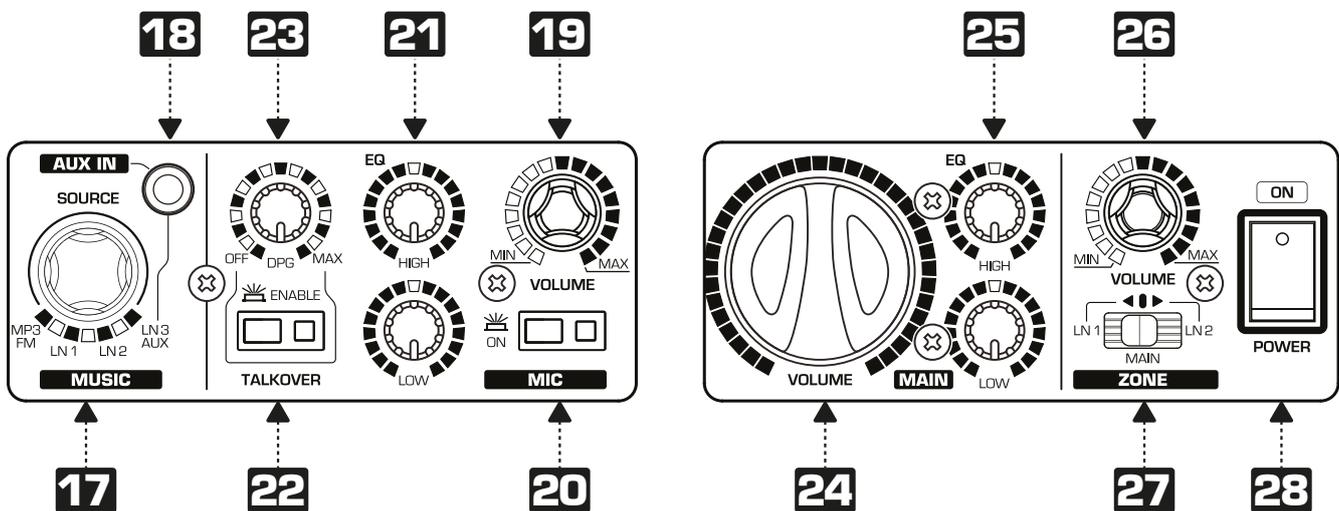
### Connections - Rear (Outputs)



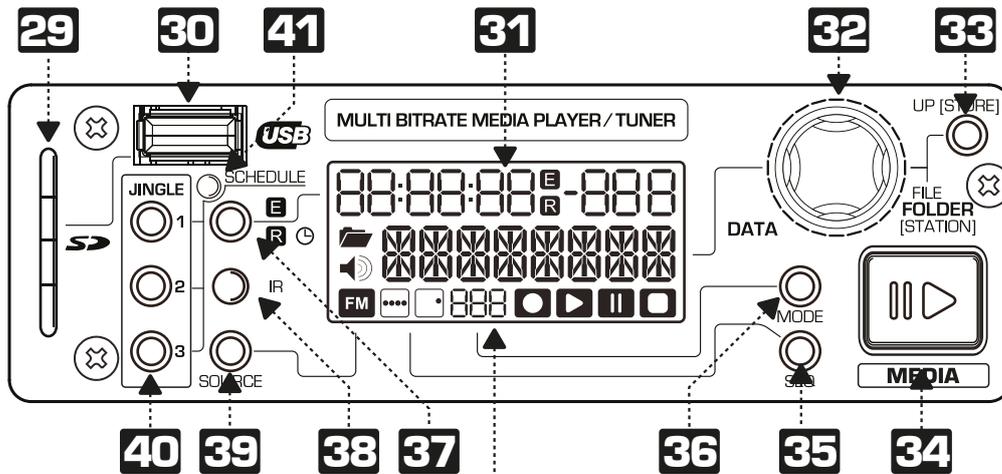
### Connections - Rear (Inputs)



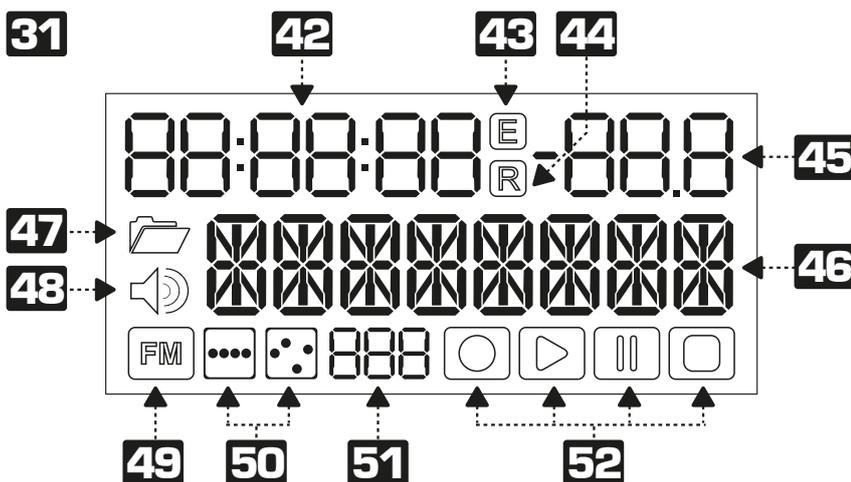
### Controls - Front (Mixer | Outputs)



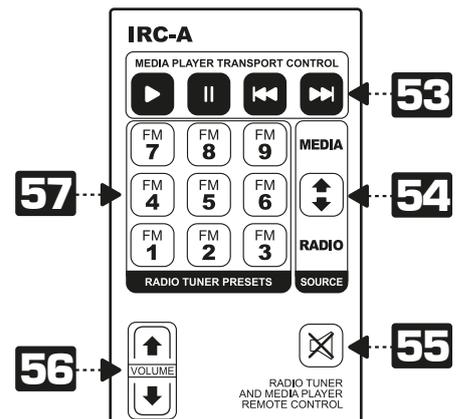
Controls - Front (Media Player | Tuner)



Display - Elements



Remote Control - Elements



Functional Description

The IMA202 is a combination of a single-microphone & music mixer, a media player with FM tuner and jingle player, and a stereo low-impedance power amplifier. Packed in a sleek wall-mount case and fitted with noiseless convection cooling and an infrared remote control for the media player functions, this unit is a perfect combination for commercial sound systems in retail and hospitality.

- 1** AC inlet. Use the supplied AC cord to connect the unit to AC mains. Make sure voltage and frequency stated and set on the unit comply with your local AC supply. Note that this unit does not have an exposed AC mains fuse. Replacement of the internal AC mains fuse requires you to hand over the unit to qualified service personnel.
- 2L** Speaker Outputs. Connect your speakers to these outputs. Note that these are low-impedance outputs, not suitable to connect speaker with built-in 100V line transformers. Make sure that the speakers or any combination of speakers have a minimum nominal impedance of 4 Ohms. Avoid any short circuits between the plus and minus poles of the outputs, and be aware that these outputs may carry voltages which represent a risk of electric shock. Consequently, only connect your speakers when the unit is switched off.
- 2R** Speaker Outputs. Connect your speakers to these outputs. Note that these are low-impedance outputs, not suitable to connect speaker with built-in 100V line transformers. Make sure that the speakers or any combination of speakers have a minimum nominal impedance of 4 Ohms. Avoid any short circuits between the plus and minus poles of the outputs, and be aware that these outputs may carry voltages which represent a risk of electric shock. Consequently, only connect your speakers when the unit is switched off.
- 3** Maximum Volume control for MAIN output. Allows to limit the maximum output volume which the user can set with the front-panel MAIN volume control [24].

- 4** Output Mute connector. This is a terminal block input which allows to remotely mute all output signals (Speakers, PreAmp) by simply shortening the contacts.
- 5** Emergency input. This is an auto-sensing, balanced terminal block input which allows the connection to an emergency evacuation system. Once a signal is present on this input, all output signals (Main, Zone) will be muted and the emergency message/signal from this input will become audible instead. Please note that the internal microphone (14) is included in this muting process and can not be used while an emergency message is broadcasted.
- 6** Emergency volume control. This control allows to set the level with which the signal fed into the emergency input (5) will be replayed on the speakers (2L&2R) and the Preamp output (7).
- 7** Preamp Output. This is terminal block which carries a balanced line level signal. The actual signal depends on the internal setting on the AmpProcessing PCB (see chapter “setup information”, switches A3 and A4). It may be the ZONE signal in stereo, controlled by the ZONE volume control (26); it may be the MAIN signal in stereo, controlled by the MAIN volume control (24), or it may be the ZONE signal in mono on one channel and the MAIN signal in mono on the other channel, each controlled by their respective volume controls (24 | 26).
- 8** Record output. This is an unbalanced stereo output carrying the same signal as the main output, but not influenced by the main volume control (24). This is normally used for recording the output to an external tape, CD or memory device.
- 9** MOH Signal output. This output is designed to feed the music-on-hold (MOH) input of a telephone system, which requires the built-in transformer isolation. The output can however also be used as a monitor speaker output, providing 1W of output power into an 8 Ohm load (do not use loads with lower impedance or higher power requirements). Both of these connection options are consolidated into one 4-pin terminal block connector. For connecting the MOH input of a telephone system, use the two contacts labeled “600 Ohms”, which indicate the transformer isolated output (nominal level 0dBu, with attenuated low frequency response). For connecting to a monitor speaker, use the two contacts labeled “8 Ohm” and “0V”. The signal present at the MOH output can be mixed by the two rear-side controls (10 & 11) from one internally selectable music source and the microphone (for pure MOH purposes, the mic volume shall be set to zero). The music source selection is expedited by internal jumpers (see chapter “setup information”, jumper P4). Note that the front-panel controls of the unit have no influence on the MOH signal, and that the Emergency and Music Mute functions are not affecting the MOH output as well.
- 10** MOH Mic level control. Adjusts the microphone level contribution to the MOH signal (9). Turn this control to zero for pure MOH applications.
- 11** MOH Music level control. Adjusts the music level contribution to the MOH signal (9). The music signal source is selected by internal jumper P4 (see chapter “setup information”).
- 12** Line inputs. These RCA connectors provide inputs for line-level signals.
- 13** GAIN control for input channels. This allows the sensitivity (input gain) for every line input to be adjusted, so that sources of different output level can be played at properly balanced levels.
- 14** Microphone input. This is a balanced ¼” TRS connector, which can be internally set to either carry phantom power (+12V DC) or not, thus this input can be used both with condenser and dynamic microphones (see chapter “setup information, jumper P1).
- 15** GAIN control for microphone input. This allows the sensitivity (input gain) for the input to be adjusted to the microphone in use.

- 16** Aerial socket. Plug in the supplied FM antenna here, or connect any suitable antenna cable of the house installation here (75 Ohms cable).
- 17** MUSIC source selector. This rotary 4-position switch allows to choose any of the 3 rear-side Line inputs (12) to be the music source, or the internal media player/FM tuner. Additionally, a front-side 3.5mm TRS input (18) can be the source, which automatically replaces the Line3 signal if a plug is plugged into the socket (18).
- 18** AUX (Line3) Front-side socket. This 3.5mm TRS jack has an autoswitching function which replaces the rear-side Line3 input signal automatically once a jack is plugged into the socket. This is mainly suitable for MP3 players, smartphones etc. Plug the source into this socket and set the selector switch (17) to AUX | Line3.
- 19** Level control for microphone input.
- 20** Microphone ON/OFF switch.
- 21** Microphone Equalizer. Allows the adjustment of the tonal balance for the microphone input in two voice-specific frequency bands with an adjustment range of  $\pm 12$ dB.
- 22** TALKOVER On/Off switch. Engages or disengages the talkover function, which allows to reduce the music level automatically when the microphone is spoken into (also called priority). The amount of damping applied to the music signal is controlled by the damping control (23).
- 23** Talkover Damping Control. Provided the talkover on/off switch (22) is set to ON, this control determines the amount of damping applied to the program signal when the microphone is spoken into. Fully turned clockwise, maximum attenuation is applied, being turned fully counter-clockwise, the damping is negligible.
- 24** MAIN volume control. Allows to set the level of the MAIN signal, which is composed of the music signal selected by the MUSIC source selector switch (17) and the microphone signal determined by its relative controls (19 | 20 | 21). Depending on the internally chosen configuration (see chapter "setup information", switches A3 and A4), the MAIN signal may be audible in stereo on both speaker outputs (2L & 2R) or in mono on the left speaker output (2L). It may further be available in mono on the PreAmp output (7).
- 25** MAIN Equalizer. Allows the adjustment of the tonal balance for the MAIN signal in two music-specific frequency bands with an adjustment range of  $\pm 12$ dB.
- 26** ZONE volume control. Allows to set the level of the ZONE signal, which is determined by the zone source selector switch (27). Depending on the internally chosen configuration (see chapter "setup information", switches A3 and A4), the ZONE signal may be audible in stereo on the PreAmp output (7) or in mono on the right speaker output (2R) and in mono on the PreAmp output (7).
- 27** ZONE source selector switch. Determines the source for the ZONE signal. Available choice are MAIN, Line1 and Line2.
- 28** Power switch. Switches the unit on and off. Make sure you switch the unit off when not in use.
- 29** SD Card slot. Insert a FAT32-formatted SD card of max 16GB with a one-level folder structure for replay of MP3 files here. If both a USB memory stick is inserted into (30), and an SD card is inserted in (29), the last inserted media will be given priority.

- 30** USB memory socket. Insert a FAT32-formatted USB memory stick of max 16GB with a one-level folder structure for replay of MP3 files here. If both a USB memory stick is inserted into (30), and an SD card is inserted in (29), the last inserted media will be given priority. Note: this socket does NOT support USB hard drives, both for memory size and power requirements.
- 31** Media player display. Shows track/folder information, time information, play status, replay mode settings and play sequence settings. Details are described under items (42...52)
- 32** Data dial. Depending on the chosen source (FM or Media - via control 39), this control has different functionality:  
In Media Play mode (Indicator 49 off) | Turn: choose a song/folder, Press: activate the choice.  
In FM Mode: (Indicator 49 on) Press: choose between frequency scroll or station preset scroll, Turn: choose frequency or station. The choice is immediately active.
- 33** Folder level (Store) button. Depending on the chosen source (FM or Media - via control 39), this control has different functionality:  
In Media Play mode (Indicator 49 off) | Press: go to folder level, then navigate by data dial (32)  
In FM Mode: (Indicator 49 on) | Allows you to store a new station preset. Choose frequency scroll mode by pressing (32) if required. Press the Folder Level (Store) button (33) once to display the station preset you wish to store the frequency at. Choose the preset by turning (32) and confirm by pressing the Folder level (Store) button (33) again, the station is now stored at the chosen preset.
- 34** Media PLAY/PAUSE/STOP button. Press briefly to toggle between PLAY (backlight continuously lit) and PAUSE (backlight flashing) mode. Press for longer than 2 seconds to change into STOP status (backlight off). Restart by pressing the button again, this will commence replay from the last known position when having been in PAUSE mode or from the start of the chosen track when being in STOP mode. This control is inactive in FM mode. The selected status is displayed in the display (52)
- 35** Play sequence selector. Selects between  
Straight play sequence: The next song is determined by alphanumerical sorting. The left sequence mode indicator is lit in the display (50).  
Random play sequence: The next song is determined by random choice. The right sequence mode indicator is lit in the display (50).  
This control is inactive in FM mode.
- 36** Play mode selector. Selects between  
SPL = Single Play. The player stops after playing the current song once. The next song is manually chosen by (32) and determined by the chosen play sequence.  
SLO = Single Loop. The player loops the current song endlessly. The next song is manually chosen by (32) and is determined by the chosen play sequence.  
ACO = All Continuous. The player continues after the playing the current song. The next song is determined by the chosen sequence. The player stops after the sequence is executed once.  
ALO = All Loop. The player continues after the playing the current song. The next song is determined by the chosen sequence. The player repeats the sequence endlessly.  
Those chosen play mode is displayed in the display (51). This control is inactive in FM mode.
- 37** Time Display selector. Selects between elapsed/remaining time display. The time display choice is shown in the display (43) and is always related to track currently playing. This control is inactive in FM mode.
- 38** IR Receiver sensor. If using the included IR remote control, make sure an unobstructed line of sight is available between the remote control and the IR receiver sensor.

- 39** SOURCE button. Toggles the program source between Media play and FM Tuner. If FM Tuner is chosen as the program source, the display's FM Mode indicator (49) is lit while the media replay related indicators (50/51/52) are disabled. Further the media replay related user interface elements (35/36/37) are disabled and the functional assignment of the navigation controls (32/33) is changed.
- 40** JINGLE buttons. Provided that the inserted media contains a folder named "Jingles" in its root directory, and that the files in this folder follow certain naming conventions, up to 3 of these files can be activated by the buttons (40). When a jingle is activated, the current program is muted and the jingle is played instead; however, the program progresses in the background. Jingles can be played both in Media play mode and FM mode. A further scheduled jingle play mode is available by pressing the J1 (jingle 1) button for longer than 2 seconds, the LED (41) will indicate that the scheduled jingle play mode is active. To de-activate the scheduled jingle play mode, press the J1 button again for more than 2 seconds. For more details, please see the "Jingle player" chapter.
- 41** Scheduled Jingle Play Mode Indicator. This LED is lit when the scheduled jingle play mode has been activated by pressing the J1 button for longer than 2 seconds.

## Display Elements

- 42** Time Display. Depending on the chosen source (FM or Media - via control 39), this part of the display shows different content:  
In Media Play mode (Indicator 49 off): Either the remaining or elapsed time are displayed in a hh:mm:ss format, depending on the setting made by (37).  
In FM Mode: (Indicator 49 on): If the unit works in station scroll mode, the currently chosen station preset number is displayed. If the unit works in frequency scroll mode, this part of the display remains unused (blank).
- 43** Time Mode Display (Elapsed): In Media play mode, this part of the display indicates that the elapsed time of the current track is shown in the time display (42). The setting can be altered by (37). This part of the display remains unused in FM mode.
- 44** Time Mode Display (Remaining): In Media play mode, this part of the display indicates that the remaining time of the current track is shown in the time display (42). The setting can be altered by (37). This part of the display remains unused in FM mode.
- 45** Numeric data display. This part of the display is not used in this product. This is NOT a malfunction.
- 46** 8-Digit Clear Text Readout. Depending on the chosen source (FM or Media - via control 39), this part of the display shows different content:  
In Media Play mode (Indicator 49 off): The file name of the currently playing track is shown, with its first 30 digits scrolling through the display. Letters exceeding 30 digits will be discarded. Note that this is NOT an ID3 tag readout, but a file name readout, so files must be named properly to yield a sensible displayed content. The display will show the file name and alternate with the folder name the current file is located in. Whether at a specific time the file or the folder name is displayed, is indicated by the respective symbols (47/48)  
In FM Mode: (Indicator 49 on): The RDS station name (PS section of the RDS signal) is displayed if the received FM signal contains this information. If no RDS station name is available, the currently tuned frequency is displayed. Note that this unit only displays the station name of the RDS signal, no other potentially contained RDS content.
- 47** Folder Name Display Indicator. In Media play mode, this indicator shows that the current content of the Clear text readout (46) is a folder name. This indicator is not used in FM mode.

- 48** File Name Display Indicator. In Media play mode, this indicator shows the current content of the Clear text readout [46] is a file name. This indicator is not used in FM mode.
- 49** Source Mode Indicator. Shows whether unit is in Media play mode (indicator off) or FM mode (indicator on). The mode can be changed via the control [39].
- 50** Play Sequence Indicator. In Media play mode, this indicator shows whether the unit is set to straight sequential or random play sequence. The setting can be altered by control [35]. This indicator is not used in FM mode.
- 51** Play Mode Indicator. Based on the selection made by control [36], this part of the display shows the letters “SPL”, “SLO”, “ACO” or “ALO”. This indicator is not used in FM mode.
- 52** Transport status indicators. In Media play mode, 3 standard symbols indicate whether the unit is in PLAY, PAUSE or STOP status. The 1st (outmost left) indicator is not used in this product; this is NOT a malfunction.

## Remote Control Elements

This unit includes an IR (infrared) remote control. For proper operation, a line of sight between the remote control and the sensor on the unit [38] is required. The IR remote does only control the basic functions of the media player section and as such adds convenience to the operation, but does not replace the front panel control on the unit itself.

- 53** Transport Controls. In Media play mode, the 4 transport control buttons allow you to start and pause a track, and further skip to the next track or back to the beginning of the current track. These controls are inactive in FM mode.
- 54** Source button. Toggles the program source between Media play and FM Tuner. If FM Tuner is chosen as the program source, the display’s FM Mode indicator [49] is lit while the media replay related indicators [50/51/52] are disabled. Further, the media replay related user interface elements [35/36/37] are disabled and the functional assignment of the navigation controls [32/33] is changed.
- 55** Mute button. Toggles between muted and un-muted output of the media player.
- 56** Volume control (up/down). Allows you to set the required audio volume of the media player.
- 57** FM preset station buttons. Allows to remotely activate the stored FM station presets. These buttons only work in FM mode and are disabled in Media play mode. Note that manual tuning via the IR remote control is not possible.

## Notes on files, folders and data conventions

The media player section build into this unit is a hardware player and as such subject to various restrictions, which are useful to be aware of:

- **Media Memory types.** The player only works with SD cards and USB sticks up to 16GB of size which are formatted in FAT32 file system and contain a maximum of 2000 files. The player does NOT support larger memory sizes, external hard disks or any media with NTFS formatting.
- **Media File types.** The player's replay ability from solid state memory media is limited to MP3 files in MPEG 1 Layer 3, MPEG 2 Layer 3, MPEG 2.5 Layer 3 standard, with sample rates of 128/160/192/224/256/320 kbps + VBR. Any other files existing on the solid state memory media will be ignored and are not available for replay.
- **File/Folder Structure.** The player only allows a two-layer folder structure on the solid state media memory, meaning a root layer and a folder layer, but not any cascaded folder-in-folder structures. Such subfolders will be ignored and their content is not available for replay. Playable files located in the root layer are displayed in a folder named "ROOT" although this folder does not physically exist on the solid state memory media.
- **Folder Sorting.** Folders are displayed in the sequence of their creation dates on the solid state memory media. If a specific sequence is needed, then the folder shall be created in this sequence on the memory media before copying any MP3 files into them.
- **File Sorting.** Files are sorted alphanumerically, but due to file system limitations, the sorting is limited to the first 8 digits. This may in some cases - where the first 8 digits are identical - lead to a random-looking, not alphabetical sorting sequence of files.
- **File system cache.** In order to allow relatively quick access to the file directory during navigation, the player loads a copy of the file directory into its own memory upon insertion of the solid state memory media. This loading process requires some time, during which the display shows a count-down. The time required is about 4 seconds per 100 tracks with a maximum of 2000 tracks (meaning Max. 80 seconds loading time).
- **Displayed File/Folder names.** MP3 files are displayed with the first 30 digits of their file names in a scrolling manner; digits exceeding the first 30 will be ignored. Note that the display data is the file name and NOT the ID3 tag of the file. Folders are displayed with the first 10 digits of their names, any exceeding digits will be ignored.

## Jingle Player

This unit contains a Jingle player with a one-shot mode for teasers and a scheduled mode for commercial purposes (like playing advertisements in a certain sequence). To make use of the feature, the user must create a folder named "Jingles" on the solid state memory media. The folder must have exactly this name (with capital J and lower case following letters) and will not be available for choice during normal replay.

The jingle files stored in this folder have to be prepared with specific names as well, and have to follow the structure jx\_yy with x from 1...3 and yy from 00 to 99. In this format, x defines the jingle number (with a maximum of 3 jingles allowed) and yy being the number of minutes of background music the jingle is followed by in scheduled jingle play mode. As an example, three jingles could be named j1\_01.mp3, j2\_04.mp3 and j3\_05.mp3. These three jingles will then be available for direct one-shot play on pressing the jingle buttons [19], with each jingle assigned to the relative button.

A scheduled jingle play mode can be activated by pressing the J1 button for longer than 2 seconds, allowing the jingles to be inserted into the program in an automatic sequence with a certain duration of background music in between. The jingle replay would in the above example start immediately with Jingle 1 followed by 1 minute of background music, then Jingle 2 followed by 4 minutes of background music, then jingle 3 followed by 5 minutes of background music; after this, the sequence would loop. If less jingles are stored in the Jingles folder, the loop runs after the last available jingle. As another example, if only one jingle named j1\_02 is stored in the Jingles folder, then this would mean the jingle would play every 2 minutes in scheduled jingle play mode.

## Operation

### A. Connections

For connecting this unit to AC mains, please note:

- Check whether the AC mains voltage and frequency is the same as this product is specified for (see rear panel of product). Whenever the specified voltage or your AC plug should not match the local conditions, do NOT plug the AC cord into the wall outlet and contact your dealer immediately.
- Do not operate this unit without the line cord earth ground connected. To do so may increase the risk of electric shock and increase line cord conducted emissions.

For making audio signal connections, always remember that good and reliable connections are a basic requirement for good sound and reliable operation. Bad soldering of cables can result in intermittent audio signals or temporarily lost ground connections, hence always use good cables. In case of doubt about making proper connections, please see check the standard pin assignments required for proper operation in the following section of this manual.

### B. Powering up

Following a proper power-up sequence protects your equipment – specifically speakers – and your ears. Follow the below procedure:

- Turn down all output volume controls of any equipment in your audio system.
- Switch on your audio sources first (Tuners, CD Players, PC's with soundcards, Tapedecks, etc.)
- Switch on this unit, and set it to the desired audio source
- Turn up the audio level on your sources if such controls are provided.
- Set the MAIN and ZONE volume controls of this unit to a low level.
- Make adjustments to all volume settings as needed.

For switching off, follow the inverse sequence – always switch off this unit first, then the connected audio sources.

### C. Use

Apart from using good equipment, good sound comes from using it correctly. Level setting mistakes are one of the common reasons why even good equipment may not perform as desired. For setting levels, please be reminded that two guidelines need to be followed:

- Avoid distortion by leaving some headroom. Never overrun any audio-equipment's inputs. Level meters and displays allow you to make sure that signals do not enter critical levels.
- Avoid unnecessary amplification by using as little attenuation as possible. For example, if you turn down the input gain of a mixer to minimum, and then increase the main output of the mixer to maximum to drive your amplifier properly, you will create unnecessary noise, as you first dispose of some already existing signal level, and then later apply amplification (tainted with noise) to make it up.

Obviously, these two requirements are marking a levelling window that the operator must match to achieve a good sound with as little distortion and noise as possible.



#### **WARNING - HEALTH RISK**

Excessive volume levels on headphones or other sound systems may cause hearing damage. Always turn the volume control to minimum when you switch the unit on, and avoid prolonged exposure to sound pressure levels exceeding 90dB.

#### D. Practical use of the Media Player / FM Tuner

To get familiar with the media player / FM tuner part of this unit, prepare a solid state media of 16GB or less memory size, formatted in FAT32, and loaded with the following content:

- A Number of folders which are generated on the media in the sequence they are supposed to be listed on the unit later, with folder names not longer than 10 digits
- MP3 files stored in each folder with file names possibly not longer than 30 digits and sufficient differences in the first 8 digits if concise sorting is required.
- A specific folder named "Jingles" with up to three jingle files inside, named "j1\_01.mp3", "j2\_02.mp3" and "j3\_03.mp3".

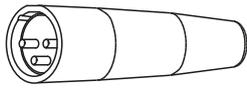
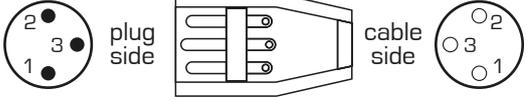
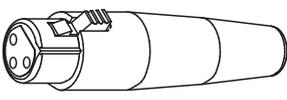
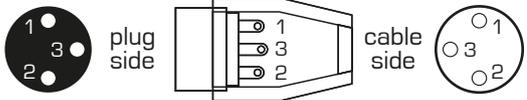
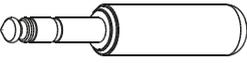
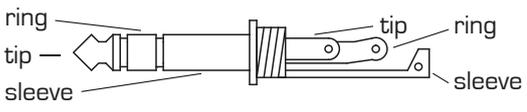
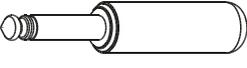
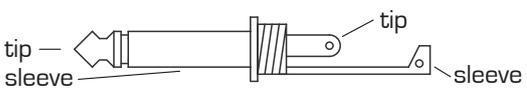
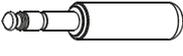
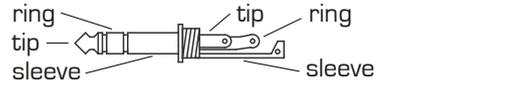
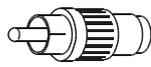
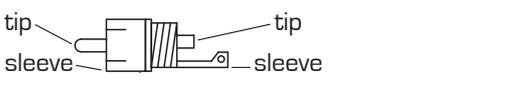
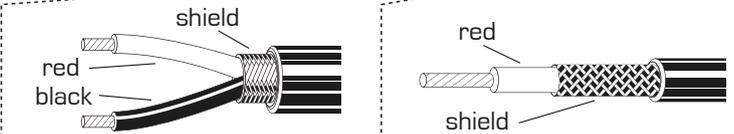
Put the unit into operation by powering it up via the power switch (28), and set the music source to the media player/tuner via switch (17). Turn the MAIN and ZONE outputs to a low output volume (controls 24 and 26 - these can be adjusted later to the desired volume). Choose the desired operation mode for the media player/tuner (FM or Media play) via the button (39). If you select Media play, the unit will show "No Media". Insert the prepared solid state media, and the unit will show "READ" and count down while loading the file directory structure. Once done, the available folders will be shown for selection. Select the desired folder via the dial (32) and confirm by pressing the dial; the unit will now show the MP3 files available in the chosen folder. Scroll with the dial (32) and confirm by pressing the dial and the chosen MP3 track will start to play. Replay can be paused or stopped via the button (34), and the play mode and play sequence can be set by the buttons (35/36). The time display can be set to remaining or elapsed via button (37). You can choose the next song according to the selected play sequence by the dial (32), simply turn for scrolling and press for confirmation. To change the folder, press the folder level button (33) and the unit will show the folder directory; turn the dial (32) to scroll for choices and press the dial to choose a new folder. Inside the folder, the track selection follows the above description.

To change to FM mode, press the source selection button (39). The unit will change to FM reception and you will show either the current tuning frequency or the current station preset. To change between station preset display and tuning frequency display, press the dial (32) once. Turning the dial then either tunes to a new frequency or changes the station preset in a sequential manner. Store a new station preset by selecting the tuning frequency display via pressing (32), then tune to the frequency to be stored, then press the FolderLevel/Store button (33) and select the preset number to be stored by scrolling with the dial (32). Press the FolderLevel/Store button (33) again to confirm storage. The newly stored preset is now available. Note that the FM tuner will show the station name instead of a frequency if the station broadcasts a RDS PS data set; only PS (station name) data will be displayed, all other RDS data will be ignored.

To insert a jingle on-the-spot into the running program material (regardless of whether Media play or FM mode), simply press one of the three Jingle buttons and the corresponding jingle in the JINGLES folder will be played immediately and once, while the program progresses in the background. To activate scheduled jingle replay, press the J1 (jingle 1) button longer than 2 seconds, until the LED (41) is lit. The jingles will now be played in a 1-2-3 sequence and then loop, with every jingle being followed by a number of minutes of background music as determined by the jingle files' name (stated in minutes xx in the jingle files \_xx file name section). If less than 3 jingles are stored in the JINGLES folder on the solid state memory media, the loop is expedited after the last available jingle. If you want to leave scheduled jingle replay, press the J1 button again for more than 2 seconds.

## Connections

This unit uses 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
<b>XLR male</b> 		red = 2 black = 3 shield = 1	red = 2 shield = 1+3
<b>XLR female</b> 		red = 2 black = 3 shield = 1	red = 2 shield = 1+3
<b>6.35mm TRS-stereo</b> 		red = tip black = ring shield = sleeve	red = tip shield = sleeve+ring
<b>6.35mm TRS-mono</b> 		red = tip black = sleeve shield = uncon.	red = tip shield = sleeve
<b>3.5mm TRS-stereo</b> 		red = tip black = ring shield = sleeve	red = tip shield = sleeve+ring
<b>RCA</b> 		red = tip black = sleeve shield = uncon.	red = tip shield = sleeve
<b>CABLE Types</b>			
	2-conductor shielded cable (for balanced connections)		
	1-conductor shielded cable (for unbalanced connections)		

## Technical Specifications

### Preamplifier Section

Signal/Noise.....	>82dB (Line)
Crosstalk Damping.....	>65dB (Line)
THD.....	<0.05% (Line)
Frequency response.....	20Hz – 20 kHz

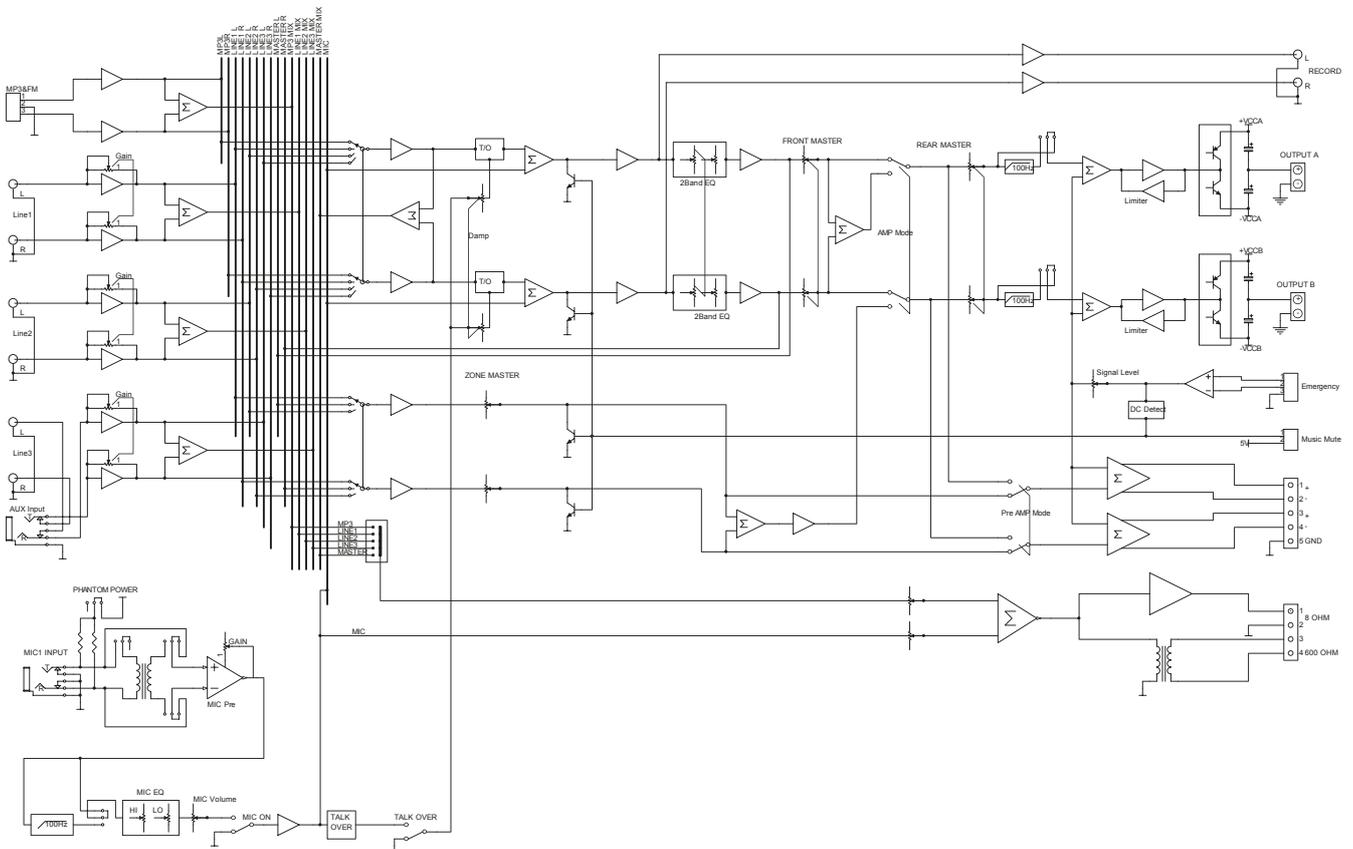
### General Data

AC IN (EU version).....	AC220-250V~ 50Hz
AC IN (US version).....	AC110-120V~ 60Hz
Power consumption.....	max. 200W
Dimensions.....	W450xH260xD46.0mm
Weight.....	4.9kg

### Power Amplifier Section

Power, both channels driven @ 4 Ohms.....	2x80W RMS
Power, both channels driven @ 8 Ohms.....	2x50W RMS
Damping factor.....	>300

## Block Diagram



## Maintenance and warranty

While we have chosen the best components to make this product as rugged and reliable as possible, some parts in audio products (potentiometers, faders, switches) are subject to wear which is a matter of operation cycles, and not of time. While providing a full time-based warranty according to the country's of purchase requirements on the function of the electronic circuitry, we hence have to limit the warranty on such electro-mechanical parts to 90 days from the date of purchase.

In many cases, malfunction of electro-mechanical parts occurs due to dust contamination, which may require cleaning of such parts. As the inside of such parts is not accessible, a common practice is to use cleaning fluids in the shape of sprays. Please be reminded that many of such fluids contain chemicals which may wash away the dust but at the same time corrode or damage contact surface and may cause cosmetic damage to other parts. We hence explicitly exclude any claims for exchange of damaged part due to mechanical or chemical impact.





# 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 IPA200**  
**Hill Audio IPA400**  
**Hill Audio IMA200**  
**Hill Audio IMA202**  
**Hill Audio IMA400**

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:



Shoeburyness, 24. January 2014  
Place and date of issuing

  
Authorized Signature

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