



Blue Box BB35

Self Powered Loudspeaker Cabinet
User Manual
Version 1.0





BB35 USER MANUAL

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Training & Documentation

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1 Quick Introduction to the BB35

Thank you for choosing a Stage Accompany Blue Box. Making this choice has guaranteed you many years of troublefree high quality sound reproduction. If you have to start using the BB35 straight away and do not have the time to read the complete manual, make sure that you at least read the following:

- Ensure that you have a reliable, well earthed power source. The required current for the BB35 can be found in the table in paragraph 3.1.
- Connect the BB35 to your signal sources via the <INPUT> connectors. Connect this Blue Box to other units via the <LINK> outputs using short signal leads.
- Connect if desired all the Blue Boxes to each other and a Stage Control PC by the <switched 10/100 Base -TX> connectors.
- Never make connections to the Blue Box to any preceding equipment with the amplifier switched on!
- Switch the BB35 on using the <POWER ON/OFF> switch.
- Select the desired preset and input sensitivity by means of the <SELECT ROTATOR >.

The Blue Box is now ready for use.



2 Introduction

The Stage Accompany Blue Box (type BB35) is a two way, self-powered loudspeakersystem and comprises the following components:

- Cabinet
- PMS6000 Programmable Monitor System
- SA1513 low frequency loudspeaker
- SA8535C High frequency Ribbon Compact Driver including waveguide
- Optional flyer eyebolts (3pcs./unit)

The audio inputs and link outputs are connected internally without electronics. This is done to prevent any loss of sound quality. With an input impedance of 25 kohms, it is possible to connect a maximum of 30 BB35 units to a 600 ohms source like a mixing console. If more than 30 units need to be connected to a single source, a seperate signal driver must be used.

The Programmable Monitor System (PMS6000) has a number of features, including:

- 64-bit 96kHz signature quality DSP controller
- Dual channel Class D operating amplifier.
- Single channel analog input + link
- Two channel AES/EBU input + buffered link.
- Dual auto-negotiation RJ45 ports.
- Switched mode power supply.
- Soft start to reduce power on inrush current.
- Temperature, DC, HF and short circuit protection.

The functioning of the Blue Box is controlled and monitored by the built-in DSP. Via the ethernet interface, the system can be controlled by a Windows or MAC OS supported PC.



DSP processing

The built in DSP module is a high quality four input, two output DSP processor with all the necessary features for a professional amplifier. The unit features two analogue and one two channel AES/EBU inputs with full configuration and real-time monitoring via PC controlled by Ethernet and USB interface. Please note that input channel 2 has no function in the Blue Box.

Two channel AES/EBU input

Two XLR-3 AES/EBU connectors are supported for input and buffered output.

Dual auto-negotiation RJ45 ports

An internal high performance 10/100Mbps Ethernet switch module provides a simple network connection to your workgroup or a server.

Switched mode power supply

The amplifier stages are powered by a low weight high efficiency high power audio SMPS, optimized from the first phase of design to final impletation to realize the low EMI signature required of the most demanding audio applications.

Soft Start

The soft start circuit is active when the BB35 is turned on. The mains inrush current, which normally is in excess of 60 A is limited to a safe value. However, take care not to switch on too many DS20 amplifiers at the same time, or you risk that the main fuses of your distribution may trip.

Class D operation

The high performance class D output stages features a flat frequency response irrespective of load impedance, nearly frequency-independent distortion behaviour and very low radiated and conducted EMI.

Temperature, DC, HF and Short Circuit Protection

The amplifier and the loudspeakers are protected against all possible damages.

3 Connections of the BB35

Because all the components of a Blue Box are contained in a single cabinet, connection is extremely simple. Only two connections need to be made; mains power and audio signal. A Stage Control connection is not necessary for the functioning of the Blue box

3.1 Mains Power Connection

The BB35 is internally selectable for 110-120/220-240V 50/60Hz mains voltage. The mains voltage is configured at the factory according to standard used in the country of destination. The exact voltages are stated at the frontpanel of the PMS6000. Switching between mains voltages needs to be done by selecting a jumper between position X1 and X3 on PCB BB3501.

Connecting to the wrong voltage is dangerous and may damage the PMS6000. Always ensure that you use a correctly grounded power supply.

It is advisable to connect each unit separately to the nearest main power supply socket.

The maximum advice for linked Blue Boxes using the AC out link on a 16A mains supply is 2 units.

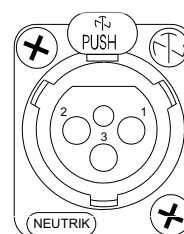
3.2 Audio Connections

The XLR connectors (analog audio, AES/EBU in and link) of the BB35 are wired as follows:

Pin 1 = shield

Pin 2 = normal phase (signal+ or "hot")

Pin 3 = inverted phase (signal- or "cold")



Always use high quality XLR connectors and shielded signal cables. Using the signal link connectors, up to 30 BB35s can be linked without a problem. If more than 30 BB35s need to be interconnected, a separate signal driver should be used.

The input stages are electronically balanced. To make optimum use of the balanced input stages even in unbalanced situations, use balanced signal cables and connect pin 3 to pin 1 at the output of the preceding equipment. If this is not possible, connect pin 3 to pin 1 at the input of the BB35.

The digital input of the BB35 offers two input channels on one electronically balanced XLR-connector and will accept AES/EBU and S/PDIF input signals of 16 to 24 bit 44.1, 48, 88.2 or 96kHz. Use the control panel or Stage Control to select reproducing left or right channel.

4 Operation

The DSP (loudspeaker management) part of the BB35 offers a wide range of tools for sound system design and setup. These tools can make your system more efficient and better sounding, but to get the best possible sound it is important to use these tools properly. The following section explains the various functions of the BB35.

Please note that if your Blue Box is incorrectly setup you will not be using your system to its fullest potential and could be harming your speakers.

Always select the right Stage Accompany preset for your SA-system! (see 4.4)

We encourage you to configure the device via PC or MAC program for maximum ease. Working from the device is possible though.

4.1 System check

Before plugging the BB35 in, always make sure that the power supply matches the product specification voltage. Install this device on a flat, stable surface, not bend or curved.

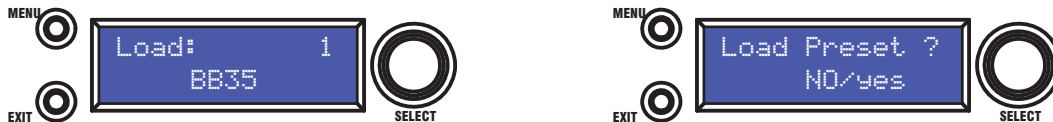
Do not supply power before all components of the system are set up and connected properly. After connection to the correct mains voltage, the BB35 can be switched on using the <POWER ON/OFF> switch.

After a start-up period of a few seconds the LCD display will show the last used preset.



To enable operation of the control panel you first need to unlock the BB35. To unlock or lock the BB35 please refer to chapter 4.4.3 (page 4-9).

Press the MENU button to load the dedicated preset of the currently used loudspeaker system. Rotate the encoder (SELECT button) to search for the desired preset and push the encoder to select. Load preset by rotating the encoder to YES and pushing the encoder.



Now the right preset has been loaded you are free to make your own settings.

You are free to save your presets to the next available location after the factory presets.

Factory presets are not rewritable.

4.2 Input setup

Press the SELECT button to select the input channel you wish to edit. To toggle through the different items, press the SELECT button and rotate the encoder.

4.2.1 Gain

Adjust the gain by dialing the rotary encoder. The gain is adjusted in steps of 0.25dB. Smaller steps (0.01dB) can be set via the PC or MAC interface.



4.2.2 Input Selection

The BB35 inputs are fixed. Input 1 is routed from the analog XLR-input / link at the PMS6000 front. Analog input channel 2 is not connected, channel 3 and 4 are routed from the digital AES/EBU XLR-input at the front of the PMS6000.

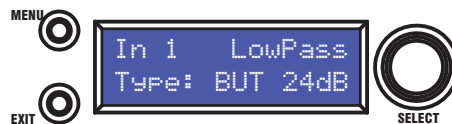
4.2.3 Delay

Set the delay time by turning the encoder. The delay time on the front will be shown in ms, by controlling the BB35 with Stage Control the displayed unit can be changed between ms or s, mm or m, feet, inches, or mils.



4.2.4 Low Pass Filter

Adjust the Low Pass Filter frequency by turning the rotary encoder. You can switch the low pass filter off by turning the rotary encoder up (clockwise) until the frequency passes 20kHz. Press the rotary encoder to change the filter type. Select the type by turning the rotary encoder. You can choose from: Butterworth 6dB, Bessel 6dB, Butterworth 12dB, Bessel 12dB, Linkwitz Riley 12dB, Butterworth 18dB, Bessel 18dB, Butterworth 24dB, Bessel 24dB. Higher order filters may be set by adding filter sections in the PEQ blocks (see below). Enable or disable the Low Pass filter by rotating the encoder between on and off.



4.2.5 High Pass Filter

Adjust the High Pass Filter frequency by turning the rotary encoder. You can switch the high pass filter off by turning the rotary encoder down (counterclockwise) until the frequency passes 20Hz. Press the rotary encoder to change the filter type. Select the type by turning the rotary encoder. You can choose from: Butterworth 6dB, Bessel 6dB, Butterworth 12dB, Bessel 12dB, Linkwitz Riley 12dB, Butterworth 18dB, Bessel 18dB, Butterworth 24dB, Bessel 24dB. Higher order filters may be set by adding filter sections in the PEQ blocks (see below).

Enable or disable the High Pass filter by rotating the encoder between on and off.



4.2.6 Parametric Equalizer (PEQ)

There are 10 bands of parametric equalization. Each band can be adjusted freely over the complete frequency range of 20Hz to 20kHz. Adjust the frequency by dialing the rotary encoder. Press the rotary encoder to select the parameters. The available parameters are: Frequency (20Hz to 20kHz), Gain (-12dB to +12dB), Q (0.2 to 25), Enabled (on or Off), Type (Bell, High Shelf, Low Shelf, Notch, All Pass, Band Pass, High Pass, Low Pass). For the Shelving filters, the Q value sets the steepness of the filter in dB/Oct.



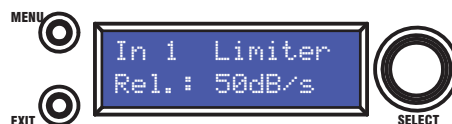
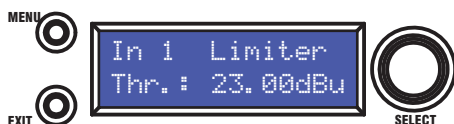
4.2.7 Compressor

The Compressor is a true RMS compressor. Turn the rotary encoder to set the threshold. Press the rotary encoder to select the parameters. The available parameters are: Threshold, Attack, Hold, Release, Ratio and Makeup Gain.



4.2.8 Limiter

The limiter is a zero-attack peak limiter. Only the threshold and release can be set. Press the rotary encoder to select the parameters. The release value is displayed in dB per second.



4.2.9 Channel Link

By linking 2 channels, the settings are guaranteed to be identical for both channels, except for mixer and mute. Turn the encoder to set the Channel link on or off.



4.3 Output Setup

Press the SELECT button to select the output channel you wish to edit. To toggle through the different items, press the SELECT button and rotate the encoder.

4.3.1 Gain

Adjust the gain by dialing the rotary encoder. The gain is adjusted in steps of 0.25dB. Smaller steps (0.01dB) can be set via the PC or MAC interface.



4.3.2 Delay

Set the delay time by turning the encoder. The delay time on the front will be shown in ms, by controlling the BB35 with Stage Control the displayed unit can be changed between ms or s, mm or m, feet, inches, or mils.



4.3.3 Low Pass Filter

Adjust the Low Pass Filter frequency by turning the rotary encoder. You can switch the low pass filter off by turning the rotary encoder up (clockwise) until the frequency passes 20kHz. Press the rotary encoder to change the filter type. Select the type by turning the rotary encoder. You can choose from: Butterworth 6dB, Bessel 6dB, Butterworth 12dB, Bessel 12dB, Linkwitz Riley12dB, Butterworth 18dB, Bessel 18dB, Butterworth 24dB, Bessel 24dB. Higher order filters may be set by adding filter sections in the PEQ blocks (see below). Enable or disable the Low Pass filter by rotating the encoder between on and off.



4.3.4 High Pass Filter

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Enable or disable the High Pass filter by rotating the encoder between on and off.



4.3.5 Parametric Equalizer (PEQ)

There are 10 bands of parametric equalization. Each band can be adjusted freely over the complete frequency range of 20Hz to 20kHz. Adjust the frequency by dialing the rotary encoder. Press the rotary encoder to select the parameters. The available parameters are: Frequency (20Hz to 20kHz), Gain (-12dB to +12dB), Q (0.2 to 25), Enabled (on or Off), Type (Bell, High Shelf, Low Shelf, Notch, All Pass, Band Pass, High Pass, Low Pass). For the Shelving filters, the Q value sets the steepness of the filter in dB/Oct.



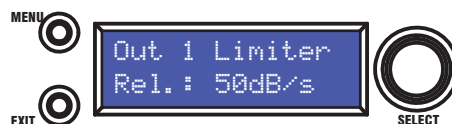
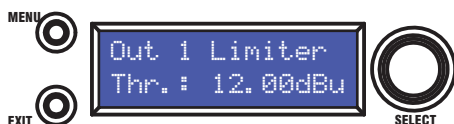
4.3.6 Compressor

The Compressor is a true RMS compressor. Turn the rotary encoder to set the threshold. Press the rotary encoder to select the parameters. The available parameters are: Threshold, Attack, Hold, Release, Ratio and Makeup Gain.



4.3.7 Limiter

The limiter is a zero-attack peak limiter. Only the threshold and release can be set. Press the rotary encoder to select the parameters. The release value is displayed in dB per second.



4.3.8 Phase Inversion

Turn the rotary encoder to switch phase inversion on or off.



4.3.9 Channel Link

By linking 2 channels, the settings are guaranteed to be identical for both channels, except for mixer and mute. Turn the encoder to set the Channel link on or off.



4.4 System Menu

Push the Menu button to enter the system menu. Push the Menu button again to toggle through the menu items. The available menu items are:

4.4.1 Load Preset

Turn the rotary encoder to select the preset you wish to load. Push the rotary encoder to select it, then turn it again to select "YES" and confirm again by pushing the rotary encoder knob. The preset is loaded and all settings are applied immediately. All settings that were in the unit prior to loading the preset will be erased. **This action can not be undone!!** The presets contain all filter, dynamics, gain settings etc; in other words, everything that makes out a loudspeaker configuration. Presets do NOT contain the name of the unit, network configuration, automatic standby delay, user access rights and passwords.

4.4.2 Save Preset

Turn the rotary encoder to select the location of the preset. If that location is not empty, the preset in that location will be overwritten. **This action can not be undone!!**

The system will ask you to give a name to the preset name. Select a character in the cursor position by turning the rotary encoder; pushing the rotary encoder confirms the character selected and moves the cursor to the next character to edit. Pushing the exit/ESC button erases the last confirmed character. Once the name is set up, push the menu button again. If you want to continue storing the preset, select Yes by turning the rotary encoder and confirm by pushing it. To cancel, push the exit button. Now your preset is saved in the selected location. The presets contain all filter, dynamics, gain settings etc; in other words, everything that makes out a loudspeaker configuration. Presets do NOT contain the name of the unit, network configuration, automatic standby delay, user access rights and passwords. You are free to save your presets to the next available location after the factory presets.

Factory presets are not rewritable.



4.4.3 Access Level

The BB35 has the option of locking away the front panel controls to avoid tampering of settings by unauthorized persons. When switching on the BB35 for the first time the user level functions are unlocked.

To lock the BB35 control panel Press the MENU button for 3 times, and the display will show Acces level: Unlocked. Rotate the SELECT button (encoder) clockwise to Locked and press the SELECT button. The system will show you the last used password. (default "SA") You are free to use this or change it to another password by rotating and pressing the SELECT button. Press MENU twice to confirm and set the password.

ATTENTION: Make sure to remember the password! When the unit is locked and you forgot the password, it is not possible to unlock it without contacting your local service representative.

To enable operation of the control panel when locked you need to unlock the BB35. To unlock the BB35 control panel Press the MENU button, rotate the SELECT button counterclockwise until the display shows Unlocked. Press the SELECT button and the system will ask you to enter a password. Select a character in the cursor position by the rotary encoder: pushing the rotary encoder confirms the character selected and moves the cursor to the next character to edit. Pushing the exit/ESC button erases the last confirmed character. The Password is automatically checked after each entered character, and will exit the system menu when the right password has been entered. The default password is "SA".

4.4.4 Version Information


Press the MENU button four times to enter the version information menu. By pushing the rotary encoder, the display toggles through some version information about the unit as well as some parameters like IP address, MAC address etc.

4.5 Indicators

The PMS6000 is equipped with the following indicators:

- PEAK : Input stage DSP detects peak level.
- LIMIT : Input stage DSP limits input signal.
- SIGNAL : Input stage DSP detects signal present.
- IO : Input board detects input overload.
- LIM : Input board limits signal.
- SP : Input board detects signal present.
- NA : Network activity.
- AL : AES/EBU lock
- ON : Power On

5 Stage Control



Getting started
Supported operating systems
Installation instructions
Start communication
Quick configuration

5.1 Getting started

This document describes how to install and use the Stage Control software on your computer for the Stage Accompany Digital Series amps. Installing Stage Control gives you the possibility to remotely setup, monitor and update (firmware) your SA amp(s) from the Digital Series through USB or internet.

Supported operating systems

The following operating systems are supported:

- Microsoft Windows XP with Service Pack 2 (32-bit and 64-bit)
- Microsoft Windows Vista (32-bit and 64-bit)
- Microsoft Windows 7 (32-bit and 64-bit)
- Microsoft Windows 8 (32-bit and 64-bit)
- Microsoft Windows 10 (32-bit and 64-bit)
- MAC OS X 10.5.8 or higher

5.2 Installation instructions

Microsoft Windows:

Download the installation package from our website and open it.

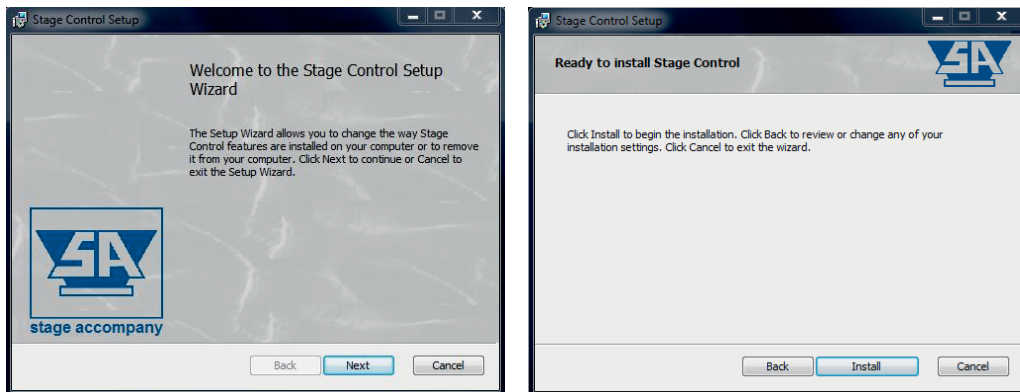
Microsoft Windows 32-bit:

http://www.stageaccompany.com/support/downloadnew/stage_control_32bit.msi

Microsoft Windows 64-bit:

http://www.stageaccompany.com/support/downloadnew/stage_control_64bit.msi

The installer will guide you through the installation procedure. It is not necessary to remove any older version; it will be removed automatically, unless the previous version is older than 1.9.93. In this case, you must uninstall the previous version manually.



Apart from the main application, also the binary firmware files for all supported SA Digital Series amps will be installed, as well as factory preset files (if applicable).

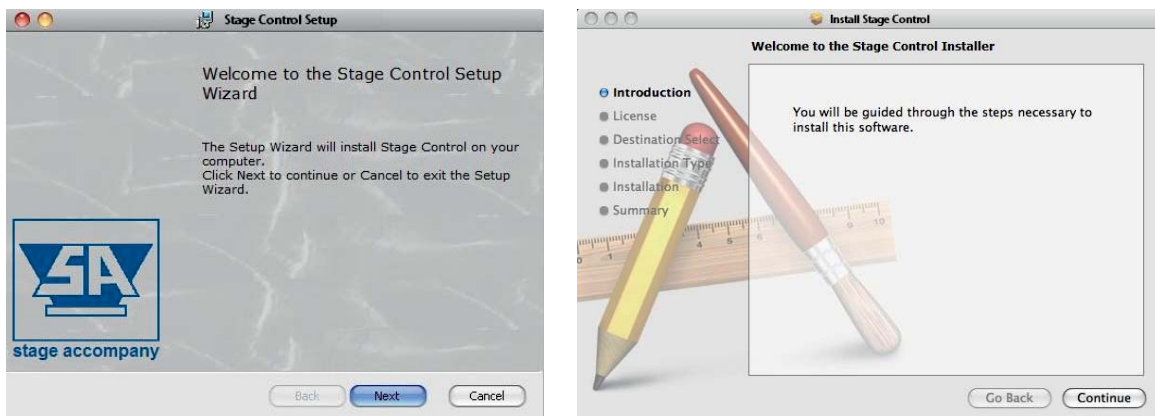
After installation start the software by double-clicking the desktop icon, or by selecting: *Start – Programs – Stage Accompany – Stage Control*.

MAC OS X:

Download the installation package from our website and open it.

http://www.stageaccompany.com/support/downloadnew/stage_control.mpkg.zip

The installer will guide you through the installation procedure. It is not necessary to remove any older version; it will be removed automatically.



After installation start the application by double-clicking *Stage Control.app* in your *Applications* folder.

Note:

It's not possible to upgrade the firmware of your SA Digital Series amp(s) if you are using MAC OS X, this is by design. Upgrading the Digital Series amps hardware can only be done from a PC with the Windows version of Stage Control.

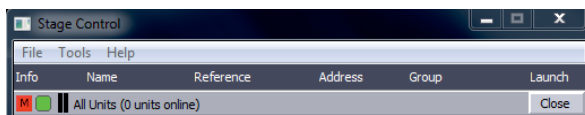
5.3 Start communication

2. Connect Ethernet (LAN), using one of the two Neutrik etherCON connectors located right at the front of the PMS6000 amplifier module.



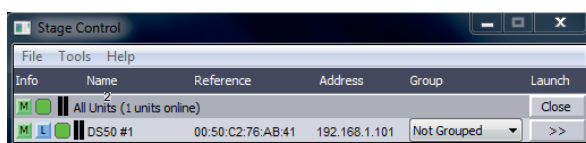
To configure or monitor your Blue Box(es) you do the following;
Double-click the *Stage Accompany Stage Control* configuration icon on your desktop to start the software.

If no Blue boxes are discovered during start-up the screen looks like the figure below.



To let the program discover your Blue boxes you do the following;
Connect your Blue Box(es) again to one of the two switched 10/100Base-TX Ethernet ports on front of the PMS600 module like stated at the top of this page.

Because the Stage Control software is constantly polling for new devices newly connected devices will automatically be discovered and added to the device list (see figure below).



After discovering each device can be given a user defined name and can be placed in a user defined group.

Note:

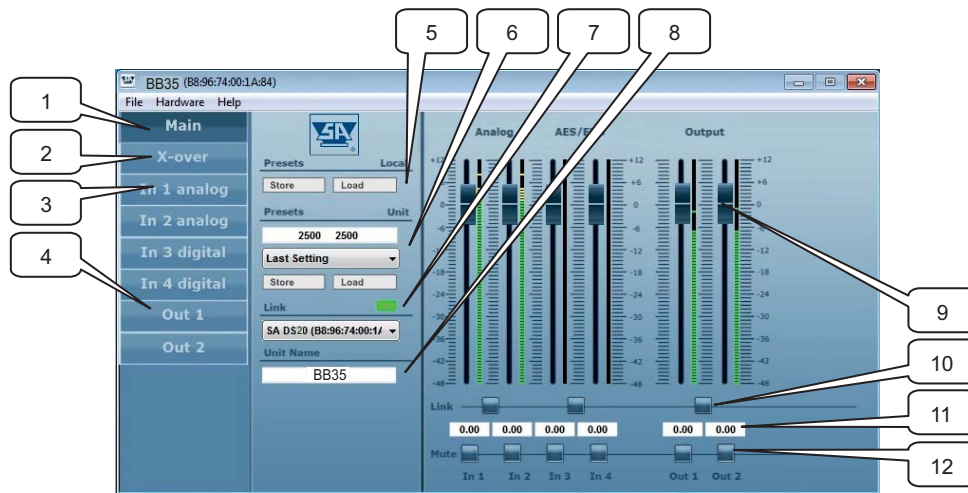
The amps IP-address can be manually entered (through the configuration screen; *Hardware – Configure – Network Settings*) or automatically provided by a DHCP server. If no DHCP server is available on the network the Digital Series can also communicate through an APIPA address. (Automatic Private IP Addressing) The software will only discover devices which are connected to the same network and in the same subnet.

5.4 Quick configuration

If you have to start configuring your Blue Box(es) straight away and do not have time to read the complete manual, make sure that you at least read the following;

When you have connected the Blue Box(es) to your network and successfully discovered the via the software, you can open the configuration on the amp by *Launch* (>>) the appropriate Blue box on your device list. Your opening screen will look similar to the screen below:

5.5 Main Window

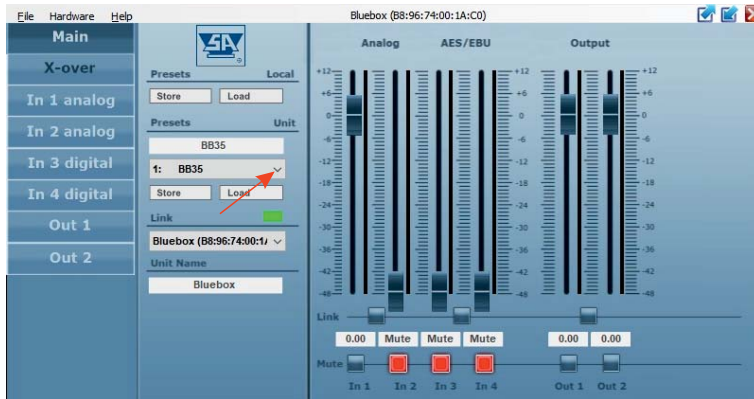


1. Main window tab: pressing this tab will show the above window.
2. X-over tab: clicking on this tab will open the cross-over window.
3. Input tabs: clicking on these tabs will open the corresponding input window.
4. Output tabs: clicking on these tabs will open the corresponding output window.
5. Preset: choose load or store to manage presets.
6. Choose a preset or name a preset in these fields.
7. In the link fields you can check the connection to your Blue Box and the device name.
8. You can rename the linked amp by entering a new name in this field.
9. Input/output faders: you can set the input and output levels by sliding these faders with your pointing device.
10. You can link adjacent inputs/outputs by engaging this radio button. When engaged the faders can then be moved simultaneously.
11. The corresponding levels can be read or entered directly in these fields.
12. Finally each in/out can be muted here individually.

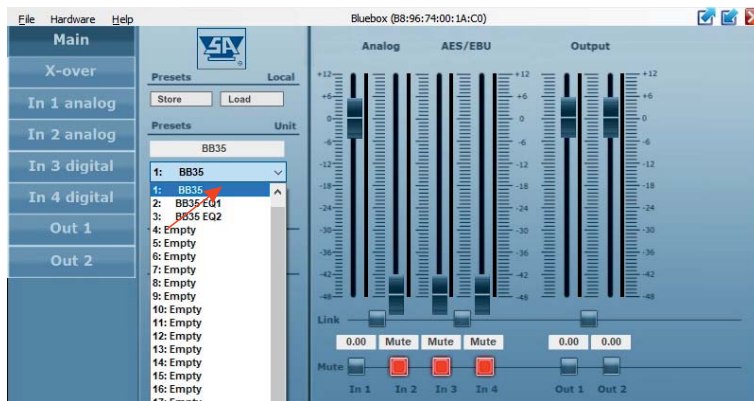
① You are free to save your presets to the next available location after the factory presets.
Factory presets are not rewritable.

5.5.1 Preset selection

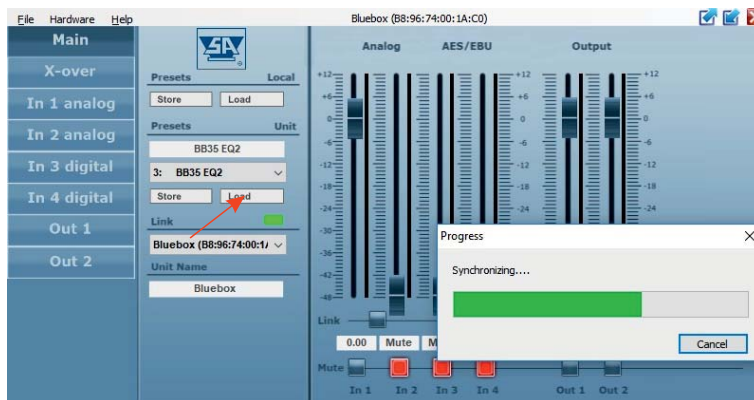
The Bluebox is standard loaded with 3 default factory presets. Select one of them as basic setup depending to your application.
 Select the preset as follows:



Select the arrow beside the active preset and the list of available presets will show up.



Choose the desired preset.

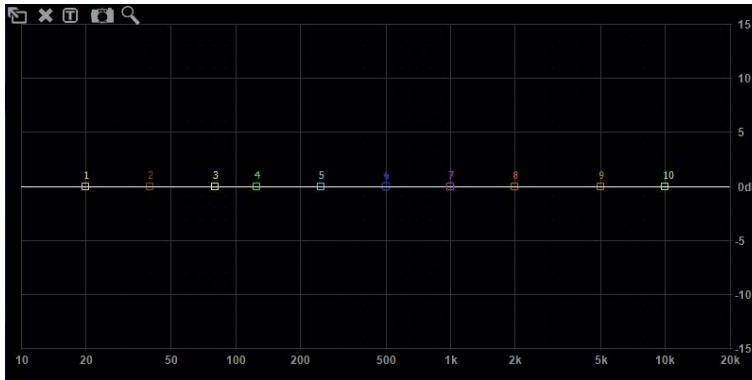


Select "Load" and your selected preset will be loaded

5.5.2 Preset information

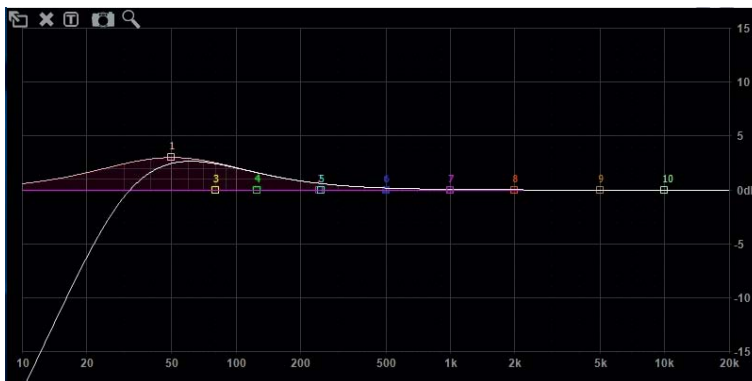
The Bluebox is standard loaded with 3 default factory presets.

Preset 1: BB35



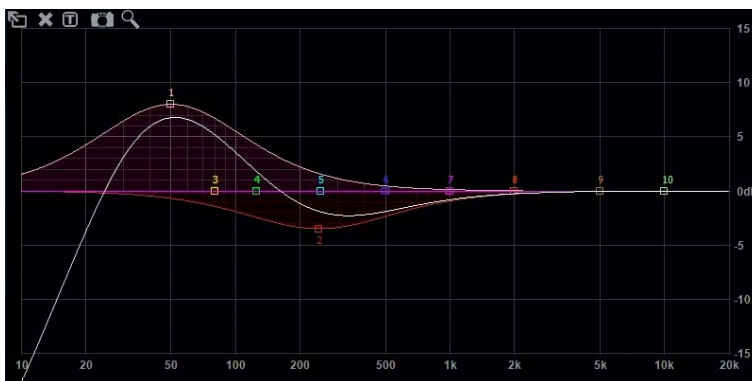
Preset 1, no EQ advised for high power applications.

Preset 2: BB35 EQ1



Preset 2: Low level loudness advised for medium power applications.

Preset 3: BB35 EQ2

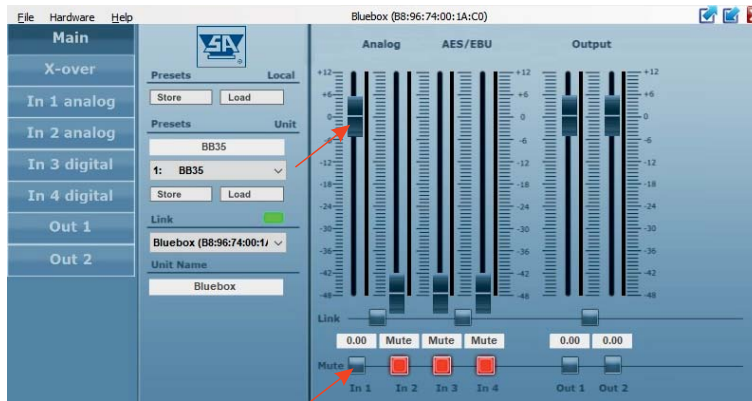


Preset 3: High level loudness advised for low power applications.

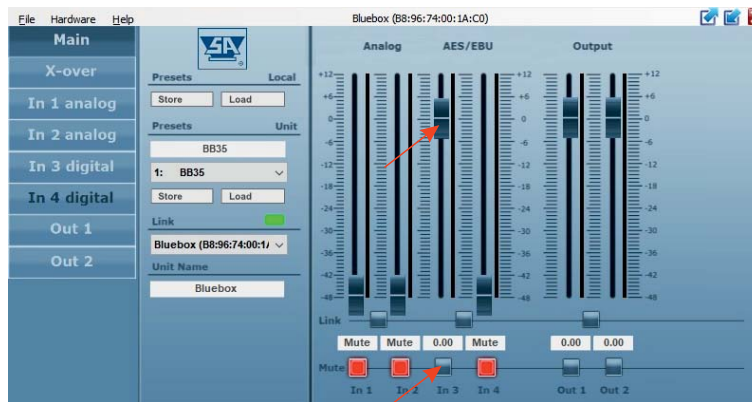


5.5.3 Input selection

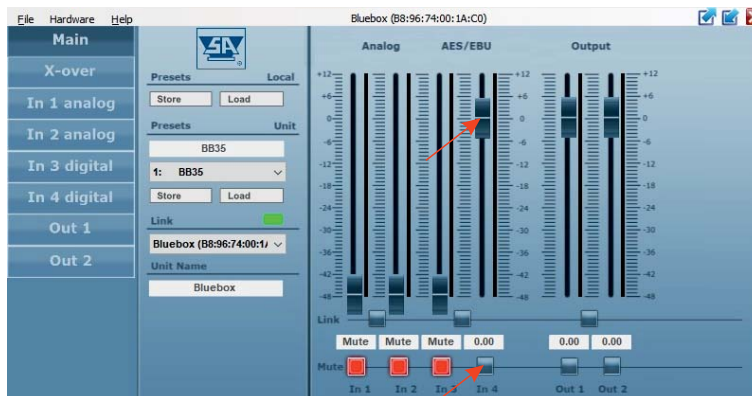
Depending to the desired input that will be used selection of the input channel is needed. Selecting a BB35 factory preset results in a default analog input (ch.1) Channel 2 is not used, If using digital input channel 3 or 4 (AES/EBU Left or right) is desired it needs to be selected and saved in a seperate user preset. Overwriting factory presets is not allowed.



Analog input selection



Digital (AES/EBU) input selection channel 1 / Left

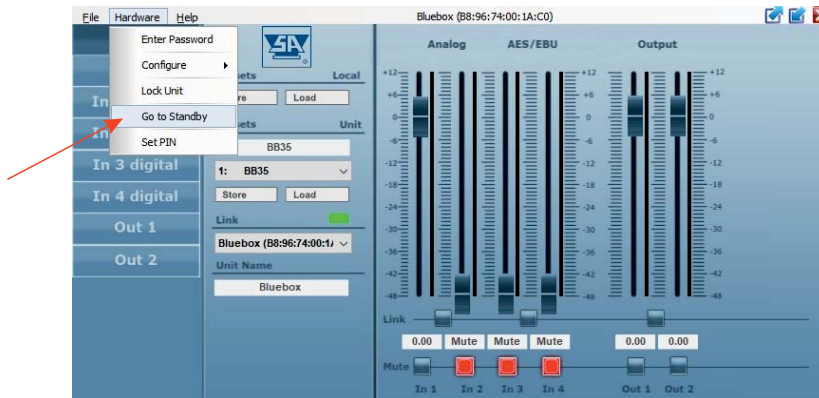


Digital (AES/EBU) input selection channel 2 / Right

5.5.4 Power amp standby

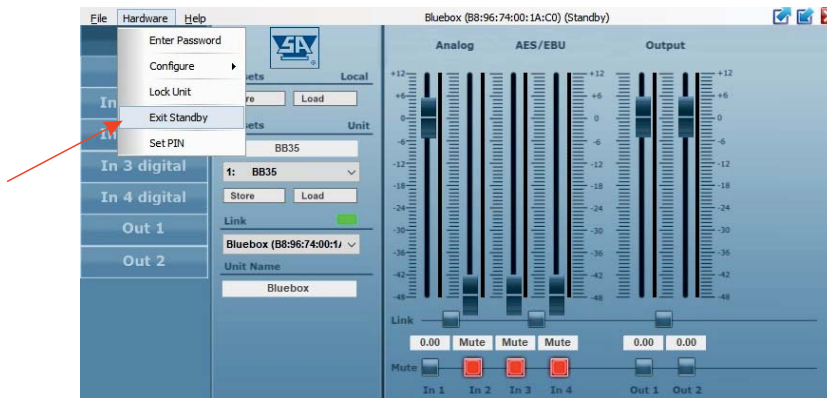
The power amplifier of the PMS6000 module can be switched to standby by selecting <Hardware> <Go to Standby> in the Stage Control software.

The amplifier will shut down and the blue “power amp on” sign at the front panel of the Blue box will switch over to the red “Standby” sign.



Go to “Standby“

The power amplifier of the PMS6000 module can be switched to “power amp on“ by selecting <Hardware> <Exit Standby> in the Stage Control software or by pressing “Exit“ at the PMS6000 display panel.



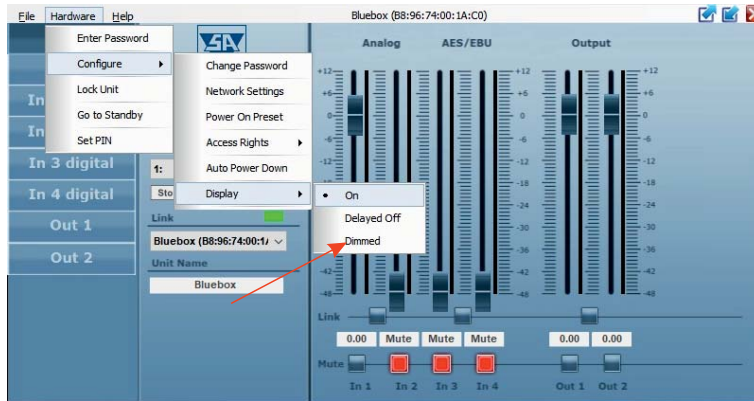
Exit “Standby“

5.5.5 Dimming “ power amp On“ front LED-sign and LCD display.

For some applications dimming the blue “power amp on“ LED-sign at the front and the backlight of the LCD-panel at the back of the Blue box is desirable.

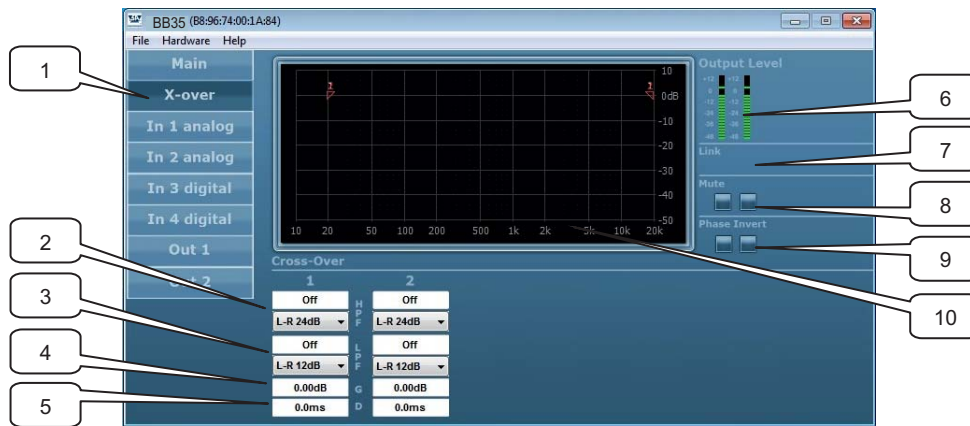
Selection between “On“, “Delayed off“, and “Dimmed“ can be done as follows:

In the main menu select <configure> <Display> and choose between On, Delayed Off and Dimmed.



Intensity selection power amp on LED-sign and LCD-display.

5.6 X-over Window



1. X-over tab: clicking on this tab will open the cross-over window.
2. High Pass Filter slope and frequency fields: you can enter the desired high pass filter frequency here and choose the slope. The filter types that can be chosen are Butterworth, Bessel and Linkwitz Riley. The filter slopes that can be chosen are 6, 12, 18 and 24 dB/octave.
3. Low Pass Filter slope and frequency fields: you can enter the desired low pass filter frequency here and choose the slope.
4. Gain: the output level of each output can be set here. This way you can adjust the output to match the driver/enclosure sensitivity and amplifier gain.
5. Delay: each output has its own delay setting to adjust the relative driver/enclosure positions.
6. Output level meters: you can monitor the outputs here.
7. Link buttons and indicators: clicking on these buttons will link channels, all settings of both channels are then synchronized. When two adjacent channels are linked, the buttons lights up.
8. Mute buttons: clicking these buttons mute the corresponding channel. When a channel is muted the corresponding button lights up.
9. Phase invert: to compensate for phase behavior of the chosen filter slope, loudspeaker or loudspeaker positioning, the phase of each output can be inverted individually.
10. Frequency response window: this window gives you a graphical representation of the cross-over settings.

Note:

A full discussion on the merits of various filter slopes goes beyond the scope of this manual, but in a nutshell it is as follows:

Butterworth slopes have the highest Q or sharpest knee without an overshoot. They are generally advisable for low cut of stage monitors etc..

Bessel slopes are chosen because of their phase characteristics.

Linkwitz-Riley crossover are chosen for the flat energy balance between drivers.

Linkwitz-Riley crossover are chosen for the flat energy balance between drivers.

Steeper slopes have smaller crossover regions, smaller crossover regions have less directivity problems, less lobing. But steeper slopes have more phase variation.

Butterworth, Bessel, Linkwitz-Riley have each their own response characteristics and 6 dB to 24 dB slopes. You can use them depending on what you value in your system, and what aspect is most important to you.

5.7 Input Window



1. Input tab: clicking on this tab will open the input processing window
2. PEQ on/off button: clicking these buttons enable the corresponding parametric equalizer (PEQ). When a PEQ is enabled the corresponding button lights up.
3. EQ type: here you can choose Bell, Notch, high shelving, low shelving All Pass, Band Pass, High Pass or Low Pass equalizers.
4. Center or shelving frequency: here you can set the equalizer frequency.
5. Q-factor: the Q factor is a value of how sharp the equalizer-curve is. A high value means a sharp curved EQ. This is either a narrow band or a sharp increase or decrease with shelving equalizers. Use your ears to judge and check with the frequency response windows of the software.
6. Gain: set the amount of boost or cut in this field.
7. High pass and low pass filter: also known as low-cut (sub-sonic) and high-cut respectively, these filters remove frequencies below or above the chosen frequency.
8. Slope: this determines the steepness of the filter. The same types and slopes are available at the cross-over settings.
9. Delay: the maximum delay permitted is 1000ms, in steps of 0.1ms. It can be displayed in feet, inch, m, mil, mm, ms and s.
10. Limiter threshold: this is the level above which the limiter becomes active. Set this level to the maximum desired output.
11. Limiter release: this is the setting to determine how fast the limiter function (gain reduction) is returned to normal (no limiting). This value is time-dependent.
12. Input Gain: this is the field to set the absolute value of the gain setting.
13. Compressor tab: clicking on this tab will open the compressor processing window..
14. Mute button: input channel mute button.
15. Input Gain: this is the input channel gain setting fader and input level meter.
16. Frequency response window: this window gives a graphical representation of the cross-settings.

Note:

When using EQ; use narrow EQ mostly to cut and not to boost.

Use narrow EQ (high Q) for correction and low Q (wide EQ) for getting the desired sound.

5.8 Output Window

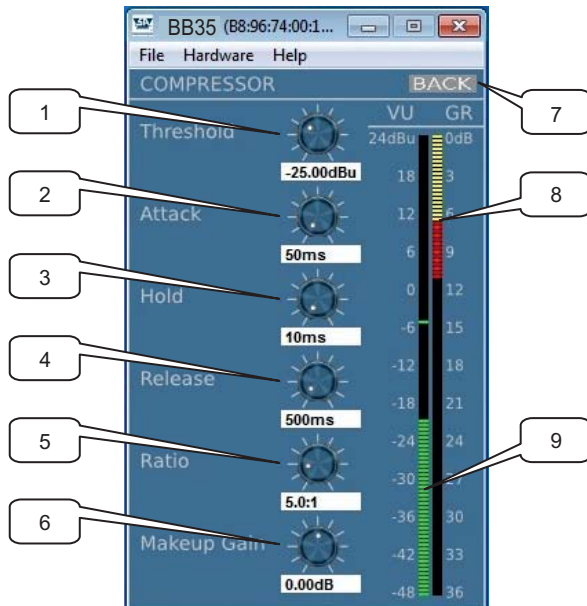


1. Output tab: clicking on this tab will open the output processing window.
2. Mixer: the ratio of each available input that is routed to the output.
3. Invert button: clicking this buttons inverts the signal to the output.
4. Compressor tab: clicking on this tab will open the compressor processing window.

The output window gives access to an independent set of EQ's, high pass / low pass filters, delay, compressor and output limiter.

The buttons and functions of the limiter and EQ, HPF and LPF are the same as at the input menu. Having independent input and output processing is very powerful. It gives the user the the output EQ to the used driver/enclosure, and the input EQ of the source. Different sources may need different equalizer settings.

5.9 Compressor Window



1. Threshold: Used to set the minimum signal level at which the compressor circuit begins to function.
2. Attack: Adjust the amount of time the compressor takes to reach full gain reduction.
3. Hold: Adjust the minimum time that the compressor will process the signal for.
4. Release: Adjust the length of time the compressor takes to return the signal to it's original level.
5. Ratio: Controls the amount Gain reduction in proportion to the amount of signal over the selected threshold level.
6. Makeup Gain: Controls the amount of output level.
7. Back: Clicking on this tab returns you to the selected output channel.
8. Output level meter: Shows the output level.
9. Gain reduction meter: Indicates the amount of attenuation.

The Compressor window gives access to several ways of protecting your loudspeaker system depending on type and power handling.

Notes:

- The Stage Control configuration software can be used in offline mode (Demo mode) to learn and prepare configurations, without the need to be connected to a Digital Series amp or Blue Box. To use Stage Control in demo-mode go to; *Tools-Enter Demo Mode* (password: Demo).
- An .iso CD image is also available at our website, the CD image contains all latest versions (Windows and Mac) of Stage Control, as well supporting documentation and an *Autostart* feature with automatic 32/64-bit system detection.
http://www.stageaccompany.com/support/downloadnew/stage_control.iso
- Please visit our website for more detailed information about the Stage Accompany Digital Series amplifiers.
<http://www.stageaccompany.com/products/electronics/electronics.html>

6 Recommendations for Optimum Use

- Ensure that the quality of the mains supply is good enough and that it can supply the required peak currents. In addition, good earthing is necessary to prevent noise, hum and safety problems.
- Be sure that the BB35 is installed into a space with sufficient circulation of fresh air. A temperature that is constantly too high leads to switching on and off of the thermal protection and considerably reducing the lifetime of the amplifier.
- Do not make connections to Blue Box or to any proceeding equipment with the unit switched on
- A faulty fuse must **ALWAYS** be replaced by a new one of the same type and value! A different fuse can cause permanent damage to the amplifier. Always disconnect the BB35 from the power supply before operating on the fuse holder! When a replaced fuse immediately blows again, the unit is defect and should be repaired by an authorised Stage Accompany service centre. Do not try to replace the fuse again because you may risk further damage to the BB35.
- Repairs to the BB35 should only be carried out by any autorised Stage Accompany service centre. Never dismantle the BB35 yourself, you may risk damaging vital components: moreover, the guarantee becomes irrevocably invalidated.
- Read this manual carefully. Tryout various functions described in this manual. In this way you will soon become familiar with the many possibilities that the BB35 offers. It is just as important that your colleagues who will use the BB35 also read the manual! With a good knowledge of the working of the BB35, it is possible to fully utilize its superior sound quality in every situation.

GOOD LUCK!



7 Technical Specifications

Frequency response	: 30Hz - 32kHz (+/- 3dB)
Transducers	: 1x SA1513 LF driver 1x SA8535C Ribbon Compact Driver with waveguide
Cross-over frequency	: 1000Hz
Max. output level (SPL, 1m)	: 120dB cont. 132dB peak
Nominal dispersion (@ 2kHz H x V)	: 70 x 40
Input sensitivity	: 1,55V in 20k ohms
Max. input level	: +20 dBV
Max. output power amplifier	: 2 x 500W
THD	: <0,01%
DSP section	: up to 10 parametric filters on in- and output Butterworth, Bessel, L-R filters up to 24dB/oct. limiter and compressor on each input and each output
Audio and data connections	: 1 x XLR-3 female connector for analog input signal 1 x XLR-3 male connector for analog signal link 1 x XLR - 3 female connector for AES/EBU input signal 1 x XLR - 3 male connector for AES/EBU buffered output 1 x 16A PowerCON true in-outlet combi for mains power 2 x EtherCON connector (switched)
Mains supply voltage	: stated at the rear of the amplifier
Power consumption	: 1500VA
Enclosure construction	: 30mm thick baffle, 15mm walls Birch plywood
Color	: SA Blue, others on request
Physical dimensions (H x W x D)	: 908 x 592 x 420 mm. (35.8" x 23.3" x 16.6")
Weight	: 53kg (117lb)
Warranty	: 3 years (1 year on 'moving parts')

SPECIFICATIONS

8 Warranty

Stage Accompany warrants to the initial purchaser of each new Stage Accompany product, from the date of purchase by the original purchaser until the end of the warranty period that the product is free of defects in materials or workmanship.

The warranty period on all Stage Accompany products is five years from the date of the first consumer purchase, with the exception of:

- all electrical products: three years from the date of the first consumer purchase;
- cone assemblies in the loudspeaker and diaphragms of the Ribbon Compact Drivers: one year from the date of the first consumer purchase;
- movable parts, such as castors, locks, handles, hinges, fans etc. one year from the date of the first consumer purchase;

To validate warranty, the purchaser must always keep the original receipt of purchase to establish the date of purchase.

Appeal on warranty will be voided in case:

- of defects caused by influence from the outside, accident, misuse, neglect or influence of water;
- the serial number on the product has been defaced, altered or removed;
- of damage due to shipment;
- of damage resulting from neglecting instructions listed in the user manual;
- of damage caused by incorrect, abnormal handling or abuse during delivery;
- the unit has been repaired (or shows signs of repair) by someone not authorised by Stage Accompany
- the original receipt of purchase cannot be presented whenever warranty service is required;
- the cause of damage is unknown.



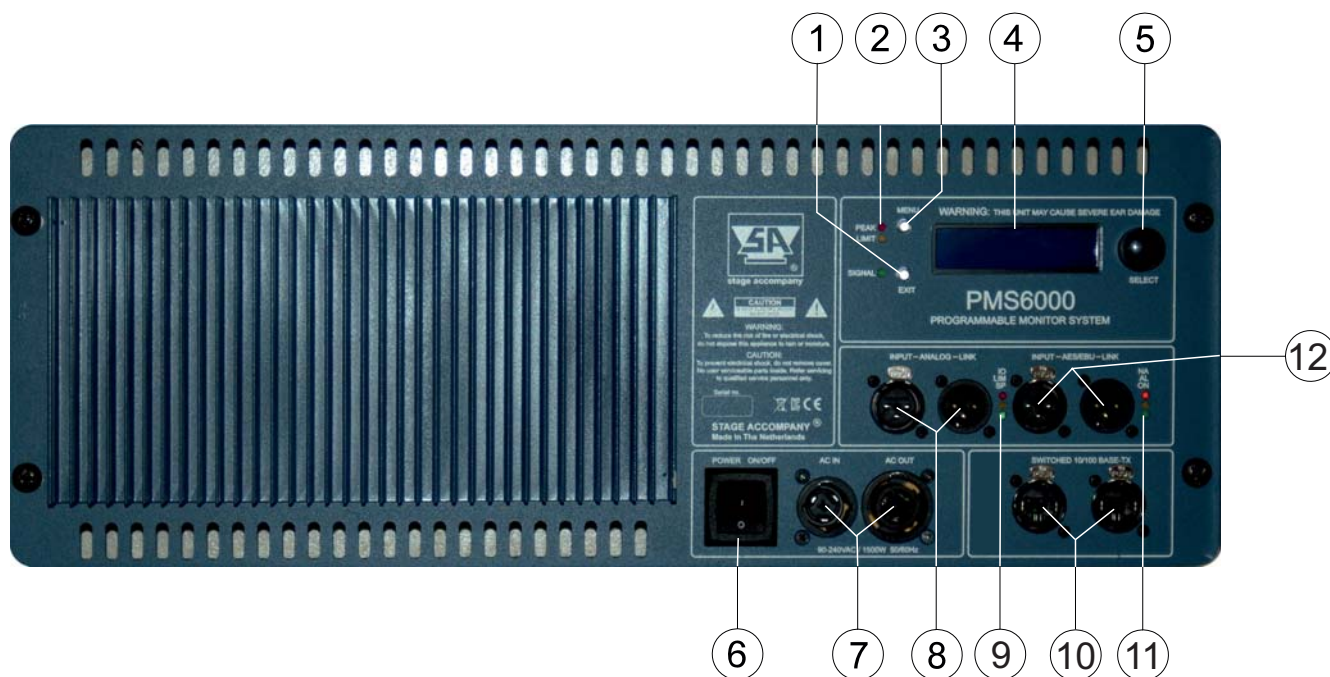
Shipment of the product to an authorised Stage Accompany service centre is at the risk and responsibility of the customer. Stage Accompany will pay for all labour and material expenses for all repairs covered by the warranty. Stage accompany will not pay for the costs of shipment to the service centre or factory. However, Stage Accompany will pay for the costs of return shipment to the customer if repairs are covered by warranty.

Caution:

Warranty work can only be performed at authorised Stage Accompany service centres or at the Stage Accompany factory. Every repair or attempted repair by a non-authorised party will void the warranty.

Stage Accompany reserves the right to alter specifications without prior notice.

9 Overview



- ① Function Button "EXIT"
- ② Signal, Limit and Peak LEDs (DSP)
- ③ Function Button "MENU"
- ④ LCD Display
- ⑤ Rotary Encoder / Function "Button Select"
- ⑥ Power Switch
- ⑦ AC mains connection
- ⑧ Analog input + link
- ⑨ Signal, Limit and input overload LEDs (Input board)
- ⑩ Switched Ethernet connection
- ⑪ Power On, AES/EBU lock and Network activity LEDs
- ⑫ AES/EBU digital input + buffered link