# User Manual

**VERSIO**

**VSS 18**

**SD 7**                    **SD 8**

**K.M.E.**

# 1. Introduction

Thank you for choosing a K.M.E. product!
VERSIO has been consequently developed to portable requirements. With these compact and ergonomic loudspeaker systems you will be able to master your reinforcement situations in a very flexible manner (main-PA, monitoring, fill-system).

In this User Manual you will find some hints and warning notes for your new product with which a save use of the VSS 18 is allowed. Please read this instructions *before* you switch on the VSS 18 for the first time, to get in touch with particular features of your new product. If you have questions about this product please contact the K.M.E. support.

Within our extensive production processes we only use exclusive materials and components of best quality. Share with us the enthusiasm for good sound. The K.M.E. team wishes you fun and success with your new PA-system!

# 2. Contents

## 3. The digital system unit VSS 18

The fully digital system unit VSS 18 with integrated 18" subwoofer has been consequently developed to portable requirements. With a powerful bass base and very compact dimensions as well as the lightweight of 34 kg, the VSS 18 is also the core and control center within the self-powered PA-systems SD 7, SD 8 and also in directional radiating active bass arrays.

Inside work a digital 24 Bit signal processor and three powerful class D amplifiers with an unsophisticated, crystal-clear sound quality (without conversion losses due to full digital preamping). The analogue input signal is digitalized directly inside the input amplifier using an intelligent 24 Bit AD-converter and remains consequently digital to the class D amplifiers` output. The audio-DSP enables an optimal processing and controlling of the audio signal through adjustable parameters like gain, digital cross-over, subsonic filter, parametric EQs, peak/RMS-limiter, phase (180°) and delays. It serves also for a flexible signal routing of the loudspeaker outputs (e.g. for top units / monitors / subwoofer).

Factory presets and user presets can be choosen, loaded and adjusted through a navigation pad with a clear controlling sheme.

The integrated 18" subwoofer provides a low-frequent radiation starting from 40 Hz to 160 Hz. The special tunnel geometry enables a high sound pressure with extra low power compression and a low flow noise. The digital controlling enables a directional (cardioid) dispersion (depending on preset) with a front-to-back damping of more than 20 dB in a wide frequency range. The subwoofer can be used in bigger production surroundings (e.g. big indoor events) and also smaller installations.

The high-quality scratch- and impact-resistant black polyurethane coating offers optimal road suitability. As an option you can choose a detachable and lockable roller base or protective cover for protection. An additional protection of the loudspeaker offers the comb-grid with acoustic foam and the special impregnation of the loudspeaker membrane against moisture impacts.

## 4. The delivery status

The scope of delivery includes: 1x VSS 18, 1x PowerCon-mains cable & user manual

When you power up the VSS 18 for the very first time the following default parameters in the main menu are pre-set:

- preset 1 „SD 7 OMNI" is loaded
- Sig. LED threshold is adjusted to -50 dB
- User LED threshold is adjusted to 0 dB (0 dB = deactivated)
- output levels are shown on the LCD display
- inputs switched to analogue
- a password is not entered

**This User Manual corresponds to the software version V1.0 r87.**
**It is obvious in the menu item „Diagnostics"!**

# 5. The connection panel
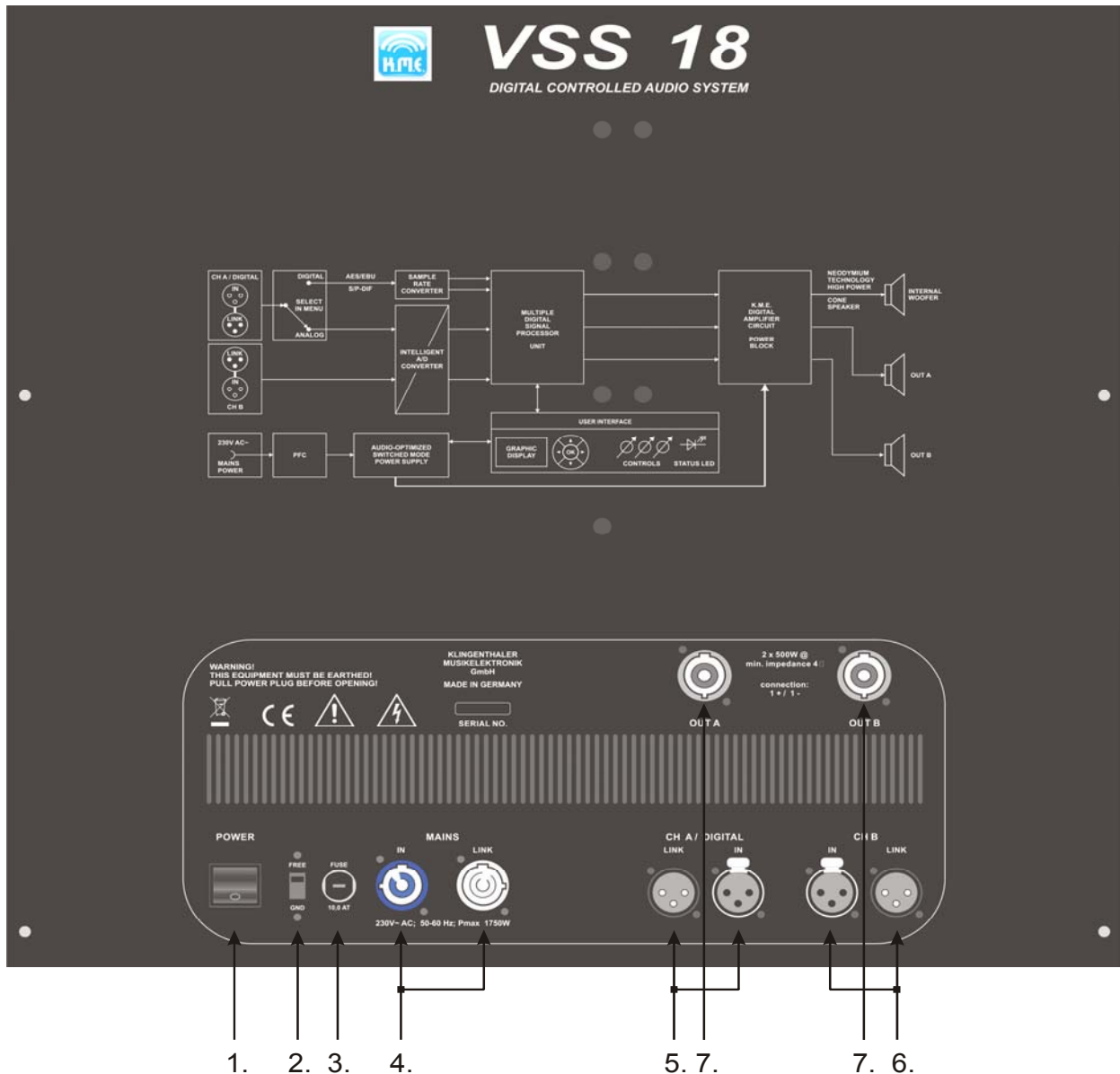


## Power

1. Power switch, **Attention:** please turn down all volume controls before switching on the VSS 18 to avoid an undesirable sound reproduction.

2. GROUND/FREE switch (disconnects the ground of the input channels from chassis to avoid ground loops)

3. Fuse holder (replace fuse only by type 10A slow blowing fuse 5x20 mm)

4. Mains connector - PowerCon in / link,
**Attention:** use the correct mains voltage of 90 - 250 V AC / 50 - 60 Hz

## Connections

5. Line in & link out - XLR balanced, analogue/digital switchable (see navigation structure);
link out is only active when the VSS 18 is powered on

6. Line in & link out - XLR balanced, always analogue;
link out is only active when the VSS 18 is powered on

7. Speaker output - 2x Speakon NL 4 (2x 500 W @ 4 Ohm (min. impedance), depending on preset), **Attention:** Please mind nominal load and impedance of the passive loudspeaker(s) you connect.

4

# 6. The control panel
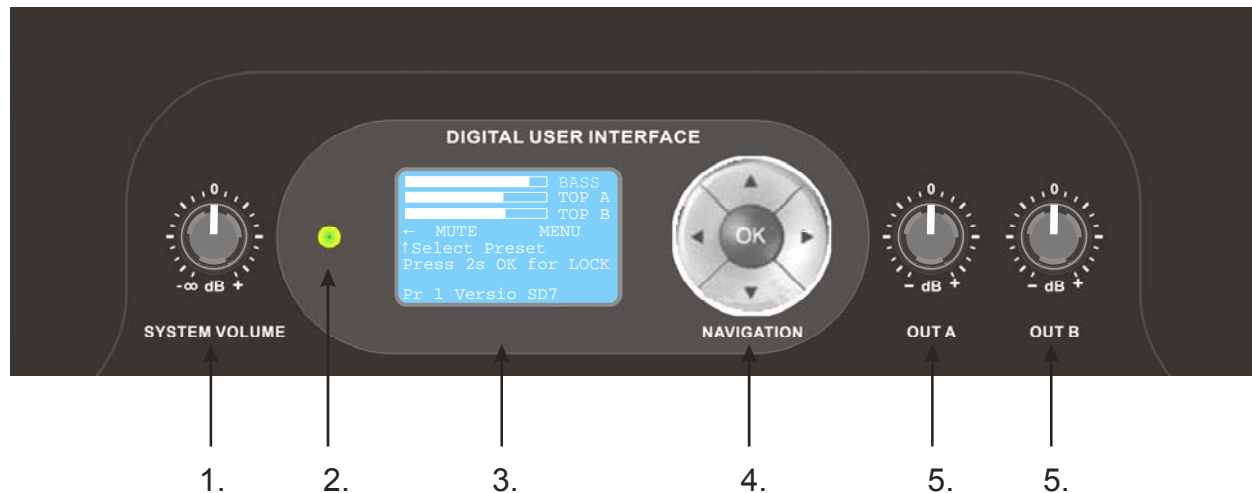


## Operation

1. System Volume (the "Level Control Mode" is pre-set in factory presets, see page 11) and volume control for the internal loudspeaker (adjustable from -∞ to +6 dB)

2. Multicolour LED signalising different parameters:

    LED does not light up -  there is no input signal
    LED lights up green   -  there is an input signal
    LED lights up blue     -  the adjusted user threshold value is exceeded
    LED lights up yellow  -  max. input level, the limiter is working
    LED lights up red      -  there is a malfunction, you must power cycle the VSS 18

3. The LCD display is used as operation mode display of the VSS 18. The arrows in the LCD display show the directions to navigate through the submenus (see navigation structure). All software parameters must be set on the unit itself. Press the 'OK' button to select a parameter if you are asked by the unit.

4. Navigation pad - The navigation pad is to be used for accessing and changing parameters on the display of the hardware unit. Press the OK button if you are asked by the software (see navigation structure).

5. Volume control for each output channel (adjustable from -∞ to +6 dB)

# 7. The navigation structure (menu navigation)

*by means of the information on the LCD display*

```
              Bass
              Top A
              Top B
LOAD A NEW PRESET?
←BACK  'OK'  to load
↕BROWSE PRESET LIST

PR 02 SD8 omni
```

```
        In A
        In B
35°C AMP    33°C PSU

USER MUTE ACTIVE
Press '←' to re-
activate system!
```

```
              Bass
              Top A
              Top B
←  MUTE *OK* MENU  →
↑  UP--PRESET--DN  ↓
Press 2s OK for LOCK

PR 01 SD7 omni
```

```
              Bass
              Top A
              Top B
   UNIT LOCKED!
   UNLOCK 2s 'OK'

PR 01 SD7 omni
```

```
Main Menu
Pot Lock Mode


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
Sig LED Threshold


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
User LED Threshold


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
USER PRESETS


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
DISPLAY MODE


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
DIAGNOSTICS


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
FACTORY RESET


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
SYSTEM MENU


↕ SELECT MENU ITEM
← BACK   'OK' Select
```

```
Main Menu
USER PRESETS
NAMES


↕ SELECT MENU ITEM
← BACK    'OK' Select
```

```
Main Menu                              Main Menu
USER PRESETS                           USER PRESETS
BASS                                   BASS
                                       ROUTING

↕ SELECT MENU ITEM                     ↕ SELECT MENU ITEM
← BACK    'OK' Select                  ← BACK    'OK' Select
```

```
Main Menu                              Main Menu
USER PRESETS                           USER PRESETS
Out A                                  BASS
                                       DELAY

↕ SELECT MENU ITEM                     ↕ SELECT MENU ITEM
← BACK    'OK' Select                  ← BACK    'OK' Select
```

```
Main Menu                              Main Menu
USER PRESETS                           USER PRESETS
Out B                                  BASS
                                       CROSSOVER LOW CUT

↕ SELECT MENU ITEM                     ↕ SELECT MENU ITEM
← BACK    'OK' Select                  ← BACK    'OK' Select
```

```
Main Menu                              Main Menu
USER PRESETS                           USER PRESETS
LEVEL CONTROL MODE                     BASS
                                       CROSSOVER HIGH CUT

↕ SELECT MENU ITEM                     ↕ SELECT MENU ITEM
← BACK    'OK' Select                  ← BACK    'OK' Select
```

```
Main Menu                              Main Menu
USER PRESETS                           USER PRESETS
RESET PRESET                           BASS
                                       EQUALIZER 1

↕ SELECT MENU ITEM                     ↕ SELECT MENU ITEM
← BACK    'OK' Select                  ← BACK    'OK' Select
```

```
                                       Main Menu
                                       USER PRESETS
                                       BASS
                                       EQUALIZER 5

                                       ↕ SELECT MENU ITEM
                                       ← BACK    'OK' Select
```

```
                                       Main Menu
                                       USER PRESETS
                                       BASS
                                       Output Phase

                                       ↕ SELECT MENU ITEM
                                       ← BACK    'OK' Select
```

```
                                       Main Menu
                                       USER PRESETS
                                       BASS
                                       Output Level

                                       ↕ SELECT MENU ITEM
                                       ← BACK    'OK' Select
```
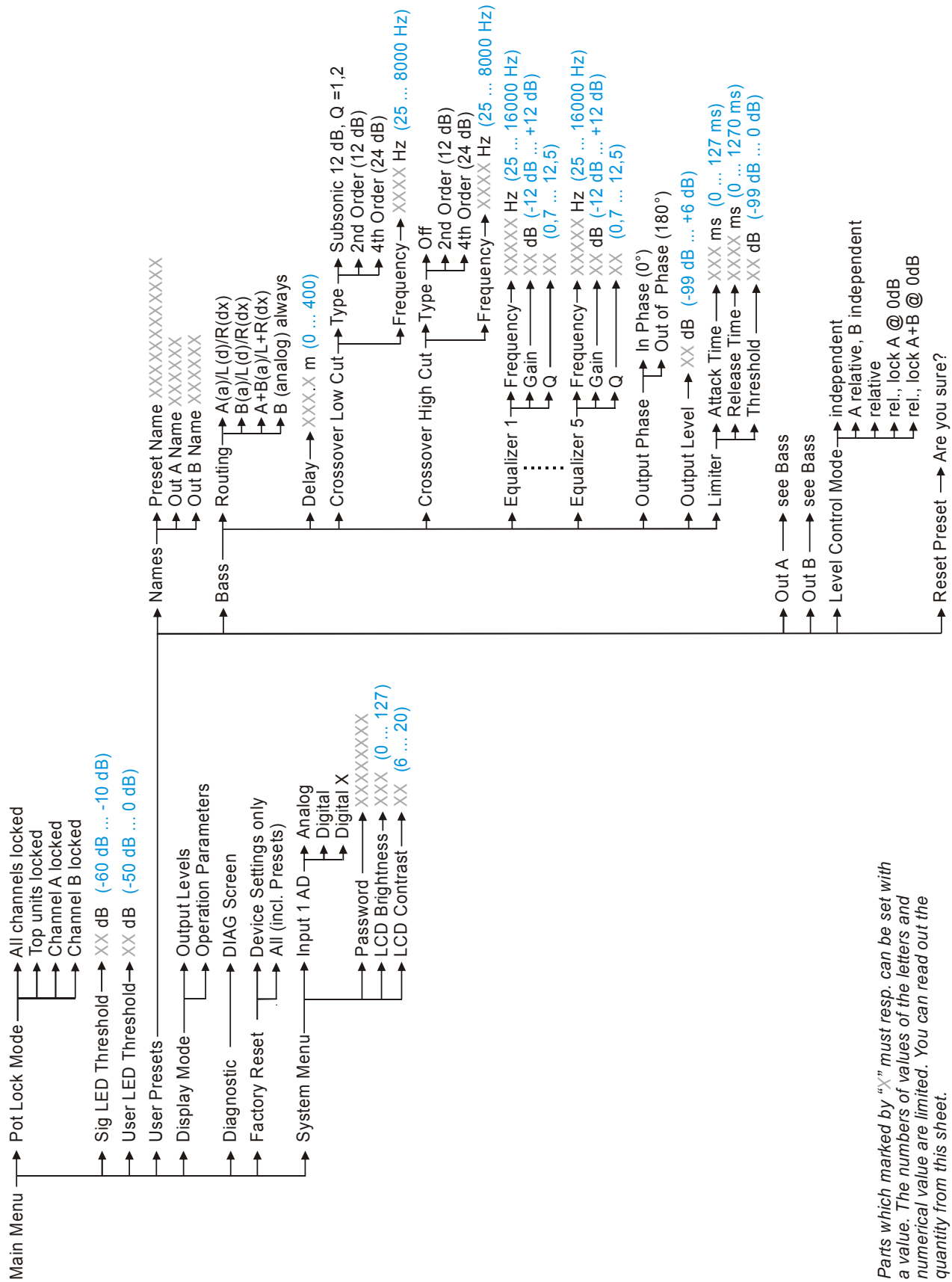
```
                                       Main Menu
                                       USER PRESETS
                                       BASS
                                       Limiter

                                       ↕ SELECT MENU ITEM
                                       ← BACK    'OK' Select
```

8

Main Menu

Pot Lock Mode → All channels locked / Top units locked / Channel A locked / Channel B locked

Sig LED Threshold → XX dB (-60 dB ... -10 dB)

User LED Threshold → XX dB (-50 dB ... 0 dB)

User Presets

Display Mode → Output Levels / Operation Parameters

Diagnostic → DIAG Screen

Factory Reset → Device Settings only / All (incl. Presets)

System Menu → Input 1 AD → Analog / Digital / Digital X
  Password → XXXXXXXXXX
  LCD Brightness → XXX (0 ... 127)
  LCD Contrast → XX (6 ... 20)

Names → Preset Name XXXXXXXXXXXXXX
  Out A Name XXXXXXX
  Out B Name XXXXXXX

Bass → Routing → A(a)/L(d)/R(dx)
  B(a)/L(d)/R(dx)
  A+B(a)/L+R(dx)
  B (analog) always

Delay → XXX.X m (0 ... 400)

Crossover Low Cut → Type → Subsonic 12 dB, Q =1,2
  2nd Order (12 dB)
  4th Order (24 dB)
  → Frequency → XXXX Hz (25 ... 8000 Hz)

Crossover High Cut → Type → Off
  2nd Order (12 dB)
  4th Order (24 dB)
  → Frequency → XXXX Hz (25 ... 8000 Hz)

Equalizer 1 → Frequency → XXXXX Hz (25 ... 16000 Hz)
  Gain → XX dB (-12 dB ... +12 dB)
  Q → XX (0,7 ... 12,5)

Equalizer 5 → Frequency → XXXXX Hz (25 ... 16000 Hz)
  Gain → XX dB (-12 dB ... +12 dB)
  Q → XX (0,7 ... 12,5)

Output Phase → In Phase (0°) / Out of Phase (180°)

Output Level → XX dB (-99 dB ... +6 dB)

Limiter → Attack Time → XXX ms (0 ... 127 ms)
  Release Time → XXXX ms (0 ... 1270 ms)
  Threshold → XX dB (-99 dB ... 0 dB)

Out A → see Bass

Out B → see Bass

Level Control Mode → independent
  A relative, B independent
  relative
  rel., lock A @ 0dB
  rel., lock A+B @ 0dB

Reset Preset → Are you sure?

*Parts which marked by "X" must resp. can be set with a value. The numbers of values of the letters and numerical value are limited. You can read out the quantity from this sheet.*

# 8. Operation

All these components must be set directly on the hardware device.
The adjustable parameters in the submenu "user presets" for Bass / Out A / Out B are identical.
The names of the menu points refer to the user navigation on the device.

## Main Menu

- **Pot Lock Mode** *[to be activated by using  "lock function", see page 15]*
  **All Channels locked** *[all volume pots locked]*
  **Tops only** *[just lock the volume pots for  Out A and Out B]*
  **Channel A** *[just lock volume pot for out A]*
  **Channel B** *[just lock volume pot for out B]*
  In this menu you can set four different „lock - functions" for the three volume pots of the VSS 18.

- **Sig LED Threshold**
  Here you set the Threshold value where the LED starts to light green when the set value is reached by the audio signal.

- **User LED Threshold**
  Here you set the Threshold value where the LED starts to light blue when the set value is reached by the audio signal.

- **Display Mode**
  **Output Levels** *[output level display]*
  **Operation Parameters** *[input level display and operation display]*
  You can chose between two layouts of the LCD graphic display. The first one shows the output levels and the other one gives an overview about input levels and temperature of the amplifier and PSU (PowerSupplyUnit). If the unit is muted, the operation parameter screen is displayed automatically.

- **Diagnostics**
  In this menu you can read out the current software version.

- **Factory Reset**
  **Device Settings only** *[Restore all adjustable parameters in the main menu]*
  **All (incl.Presets)** *[Reset all changes made, incl. all user presets]*
  To reset the unit to the programmed initial state there are two "levels", just to restore only the parameters adjustable in the main menu or all menu items (incl. all user presets). After resetting all changed settings are turned to the programmed initial state!

- **System Menu**
  **Input 1 AD** (see page 13)
  **Analog** *[switch input of channel A to analogue]*
  **Digital** *[switch input of  channel A to digital]*
  **Digital X** *[switch input of channel A to digital X]*
  In this menu item you switch the input of channel A to analogue or digital or digital X. Digital X causes a swaping of the left resp. right "audio-channel" of the digital signal on the input of VSS 18, e.g. for the digital controlling of SD 7 and SD 8 (for the left and right side).

  **Password** (see page 14)
  In this menu item you can enter an 8-digit password. If you have enterd a password and activate the "lock function" you must enter the password again to unlock the unit.

  **LCD Brightness** *[adjust brightness of the LCD graphic display]*

  **LCD Contrast** *[adjust contrast of the LCD graphic display]*

- **User Presets** *[appears only from preset no. 9 to 12]*
  - **Names**
    - **Preset Name** *[enter preset name, max. 12 digits]*
    - **Out A Name** *[enter name of output A, max. 6 digits]*
    - **Out B Name** *[enter name of output A, max. 6 digits]*
  - **Bass**
    - **Routing** *[routing of the input channels]*
      - **A(a)/L(d)/R(dx)**
      - **B(a)/R(d)/L(dx)**
      - **A+B(a)/L+R(dx)**
      - **B (analog) always**

The routing of channel A and B offers four possibilities:
1. analogue (left) or digital (left) or digital crossed (right)
2. analogue (right) or digital (right) or digital crossed (left)
3. analogue (left + right) or digital (left + right)
4. input B always analogue

- **Delay** *[adjust delay, in 10 cm steps]*

- **Crossover Low Cut** (high pass) *[crossover function]*
  - **Type** (Subsonic-Filter 12 dB Q=1,2 or 12 dB/Oktave or 24 dB/Oktave)
  - **Frequency**

This digital filter (crossover) limits the frequency range above the adjustable crossover frequency with a selectable slope of 12db/octave or 24 dB/octave. You can not deactivate this digital filter. When you need a full-range audio signal on the outputs A + B you should set the frequency to 25 Hz and choose a type of the low cut filter.

- **Crossover High Cut** (low-pass) *[crossover function]*
  - **Type** (Off or 12 dB/Oktave or 24 dB/Oktave)
  - **Frequency**

This digital filter (crossover) limits the frequency range below the adjustable crossover frequency with a selectable slope of 12db/octave or 24 dB/octave.
This filter can be deactivated (Off).

- **Equalizer 1** *[adjust equalizer]*
  - **Frequency**
  - **Gain**
  - **Q** (bandwidth)

With this digital filter (parametr. EQ) you can affect the frequency range by making adjustments of filter frequency (center frequency), the Gain (boost resp. cut) and the Q-factor (bandwidth). If you adjust the sensitivity (Gain) to 0 dB you deactivate this filter.

- **Equalizer 5** *[adjust equalizer]*
  - **Frequency**
  - **Gain**
  - **Q** (bandwidth)

See adjustable parameters Equalizer 1.

- **Output Phase** *[adjust output phase, you can choose between „in phase" or „out of phase 180°"]*

- **Output Level** *[adjust output level, it is independent to the adjustment of the volume pots]*

**Limiter** *[adjust limiter]*
**Attack Time**
**Release Time**
**Threshold**

This dynamic processor is working when the audio signal exceeds the entered threshold-value. The two time constants attack and release time draw the speed of the gain regulation mechanism and are dependent to the program material.

**Out A** (see adjustable parameter bass)

**Out B** (see adjustable parameter bass)

**Level Control Mode** *[adjustment resp. control of output level]*
**independent**
**A relative, B independent**
**relative**
**rel., lock A @ 0dB**
**rel., lock A+B @ 0dB**

In level control mode you define the pre-settings (dependence) of the single potentiometers (volume controls) in relation to the output level of the different channels (Bass / Out A / Out B). Consequently you have three possibilities:

1. All volume controls are independently adjustable from each other. *(independent)*
2. The volume control for Out A depends on system volume control (master), Out A is adjustable from -∞ to +6 dB; the adjustment of Out B is independent. *(A relative, B indep.)*
3. The volume controls for Out A and Out B are depending on the system volume control (master), they are adjustable from -∞ to +6 dB. *(relative)*
4. The volume control for Out A is pre-set by 0 dB and depends on system volume control (master), but it is not adjustable. The volume control for Out B depends on system volume control (master), it is adjustable from -∞ to +6 dB. *(rel., lock A @ 0dB)*
5. The volume control for Out A and Out B is pre-set by 0 dB and depends on system volume control (master), but they are not adjustable. *(rel., lock A+B @ 0dB)*

**Reset Preset**
**Are you sure?**

Here you can reset the preset to the programmed initial state, that means you re-activate the factory-made user preset on this memory cell and delete your preset. If you want to change one or more menu items in a user preset, choose this topic and overwrite it with a new value and press the OK button. Hence the new value is saved in the preset without entering all set parameters again.

## 9. Choose your factory preset - play!

In this part of the user manual you will find a structured digest about the procedure for the necessary settings with the main menu and its functions. If you pay attention to that a riskless use of the VSS 18 is ensured.

## 10. The most important menu functions

### 10.1 Powering up

Switch on the VSS 18 when all volume pots are are turned  fully anti-clockwise / left stop and all connected components are switched on and muted previously to avoid an unwanted sound reproduction.
Because the VSS 18 can be in „lock-function" for rental purposes that means the VSS 18 may not (depending on adjustment) react on changes on the control panel and this can cause an immediate reproduction when switching it on. Therefore it is necessary to mute all connected devices previously.
After switching on the VSS 18 all volume pots should be turned to 0 dB (center click) with deactivated „lock-function" to keep a defined signal level and an optimal controlling (this adjustment is a recommendation)
***Note!*** *During power on for the very first time Preset 1 „SD 7 OMNI" is loaded!  More information about the initial state you can find on page 3.*

### 10.2 Choosing presets

To control the respective system optimally the valid preset has to be load. You must select it and load your latest PA-setup as preset on the control panel of the VSS 18. Follow the instructions (e.g. select SD 8)!
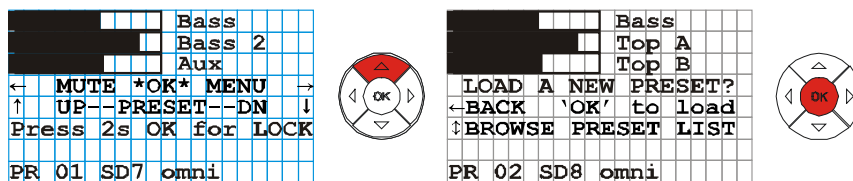


After power on the VSS 18 for the very first time the left graphic appears on the LCD display. You have to press the marked arrow key of the navigation pad once to select preset 2 „SD8 OMNI" and confirm with the OK-key. In this case this procedure has to be done once again on the second VSS 18 of the SD8.
If you control your PA system with an analogue audio signal, **you can start now!**

## 10.3 Switching input of channel A between analog / digital / digital X

If you want to control your PA system with a digital signal you have to switch the input of channel A to „digital" resp. "digital X" (see page 9). In the programmed initial state all inputs are switched to „analogue".



Press the marked arrow keys of the navigation-pad one after another (like shown in the scheme), to switch the input of channel A to „analogue" / „digital" resp. „digital X" (the selection can be looked up from the LCD display from the respective direction of arrow). After the correct selection of the input of channel A press the OK-button and leave the menu with the left arrow key.

## 10.4 The „Mute- function"

This function enables to mute the PA system with just one touch of a button.



Press for 1 second the marked arrow key of the navigation pad to mute the PA system. A repeated pressing of this arrow key causes the deactivation of the mute-function (see display).

## 10.5 Entering password

You can lock the VSS 18 with or without a password. To lock the VSS 18 with a password (max. 8 digits) you have to enter it first. This password can be changed every time.

***Note!*** Keep in mind resp. note down the entered password because if you want to „unlock" your VSS 18 you have to enter the password again (see next page). Should you have forgotten the password, you have no possibility to re-activate the VSS 18. Please contact the K.M.E. support! Should the entered password had been cleared, e.g. after a rental, you have to assume a manipulation. Follow now the instructions to activate the menu point!

1.
```
████  ████   Bass
 ████  ███    Bass 2
              Aux
←    MUTE  *OK*  MENU    →
↑    UP--PRESET--DN      ↓
Press 2s OK for LOCK

PR  01  SD7  omni
```

2.
```
Main Menu
Pot Lock Mode



↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

3.
```
Main Menu
Sig LED Threshold



↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

4.
```
Main Menu
User LED Threshold



↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

5.
```
Main Menu
DISPLAY MODE



↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

6.
```
Main Menu
DIAGNOSTICS



↕  SELECT  MENU  ITEM
‹  BACK      'OK'  Select
```

7.
```
Main Menu
FACTORY RESET



↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

8.
```
Main Menu
SYSTEM MENU



↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

9.
```
Main Menu
SYSTEM MENU
Input 1 A/D


↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

10.
```
Main Menu
SYSTEM MENU
Password


↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

11.
```
Main Menu
SYSTEM MENU
Password
XXXXXXXX

↕  SELECT  MENU  ITEM
←  BACK      'OK'  Select
```

Press the marked arrow keys of the navigation pad one after another (like shown in the scheme) to open the sub menu „password". Now you can enter your password with the arrow keys and confirm with OK. You can leave the menu by pressing the left arrow key.

## 10.6 The „Lock-function"

To lock your VSS 18 (with or without password) please do the following instructions:
Set all required parameters (also the volume controls) and press, like shown in the graphics, the OK button for 2 seconds and your system is locked (now your VSS 18 is ready for a rental, for example). When switching it off and on again the "lock-function" is re-activated. That means you can not change any settings (depending on settings before) while the "lock-function" is activated. To deactivate the "lock-function" you have to press the OK button again for 2 seconds and, if entered before, enter your password by using the arrow keys and confirm with OK.

***Attention!*** If you have changed the position of the volume controls during the VSS 18 was locked you will be informed on the LCD display. Now you have two possibilities to unlock the VSS 18: after entering your password (if entered before) you can press the OK button for two times and the VSS 18 is playing in the current adjustment of the volume controls or you press the OK button only once and turn the volume control(s) to the previous position(s).
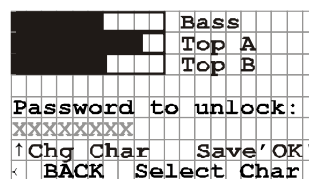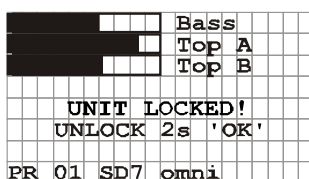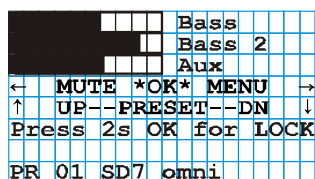
# 11. Specifications VSS 18

| | |
|---|---|
| *Speaker:* | |
|     Components | 18" Neodymium |
|     Dispersion | omnidirectional / directional, depending on preset |
|     Frequency range | 38 Hz – 160 Hz (fx), depending on preset |
|     SPL nominal | 102 dB |
|     SPL maximal | 129 dB |
| *Electronic:* | |
|     Amplifiers | three fully digital amplifiers with high efficiency, about 90 % |
|     Power output RMS | 750 W bass + 2 x 500 @ 4 Ohm |
|     Features | ground-free, navigation pad, LCD- display, adjustable digital crossovers (80 Hz - 160 Hz), subsonic- filter, parametrical EQ's, peak/RMS- limiter, phase (180°), delays (0 - 1000 ms), signal-router |
|     Protective circuits | short circuit, overload, temperature, DC on output |
|     Connectors | analogue: line-in 2 x XLR, line-out 2 x XLR, digital: AES/EBU input & output (XLR), speaker out 2 x Speakon NL 4 Neutrik |
|     Power requirements | 90 - 250 Volt / 50 - 60 Hz PowerCon in /-link |
|     Power consumption | max. 1750 W |
|     Control panel | navigation pad, LCD display, multicolor LED, 3 potentiometer |
| *Processor:* | |
|     DSP | 24 bit, 48 MHz clock |
|     Unit delay | < 1,5 ms |
|     Sampling | 24 bit |
|     Digital input & -output | AES/EBU / S/PDIF with format/sample rate converter (max. 192 KHz) |
|     Preset memory | 8 factory presets, 4 user presets |
| Finish | PU coating black |
| Special features | 2 side-mounted handles, M20 fixing plate, stacking elements |
| Dimensions in mm (B x H x T) | 520 x 610 x 615 |
| Weight | 34 kg |
| Recommended units | top units / monitors: VL 8, VL 12, VL 15, passive subwoofer: VB 18 |
| Optional accessory | protective cover (no. 2-311-058), roller base (no. 1-915-004) |

## 12. General view about presets

Currently the VSS 18 includes eight factory presets and four useful adjusted user presets. When switching on for the first time preset 1 "SD 7 OMNI" is loaded (a factory preset). You can load factory presets and change them. How it can be made you will find on page 9 – 11 in this manual. The menu item „Userpresets" appears only from preset no. 9 to 12, where you can set and adjust the parameters like limiter, EQs, delays for the outputs.

The names of the presets (listed below) refer to the menu navigation of the device.

| | |
|---|---|
| *Factorypresets:* | Preset 01 „SD7 OMNI" |
| | Preset 02 „SD8 OMNI" |
| | Preset 03 „CARDIOID 1" |
| | Preset 04 „CARDIOID 2" |
| | Preset 05 „CARDIOID 3" |
| | Preset 06 „SINGLE BASS" |
| | Preset 07 „TOPS ONLY" |
| | Preset 08 „BASS ARRAY" |
| *Userpresets:* | Preset 09 „USER SMALLPA" |
| | Preset 10 „USER PA+DLY" |
| | Preset 11 „USER BSM 1" |
| | Preset 12 „USER BSM 2" |

### *12.1 Factory presets -* *are not adjustable and erasable*

Preset 1: SD7 OMNI



omnidirectional
dispersion of
the subwoofers:

for passive top units
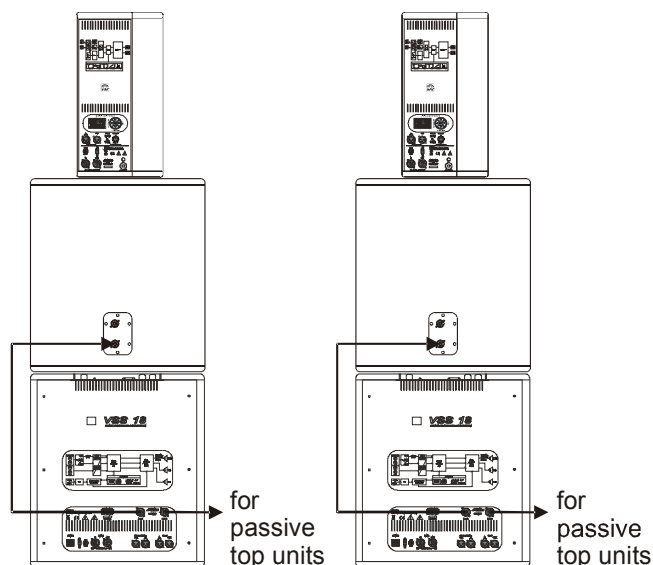
for passive top units
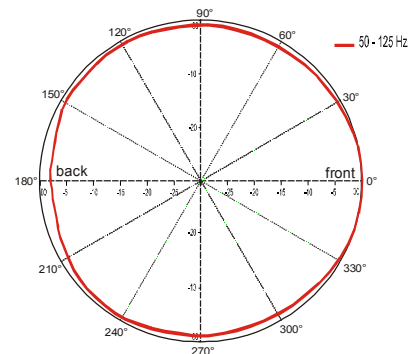
2x VSS 18 + 2x VB 18 + 2x VL 750:
analogue or digital audio signal each to input A of the VSS 18 & link it through the top units (e.g. with a dual-cable from K.M.E., includes audio signal & power supply);
Out A is the speaker output for the passive subwoofer VB 18, Out B can be chosen as speaker output for a passive top unit (crossover frequency 120 Hz)

## Preset 2: SD8 OMNI
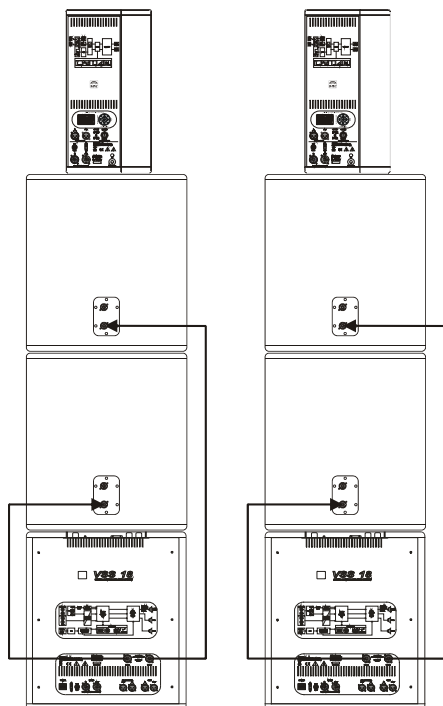


omnidirectional
dispersion of
the subwoofers:
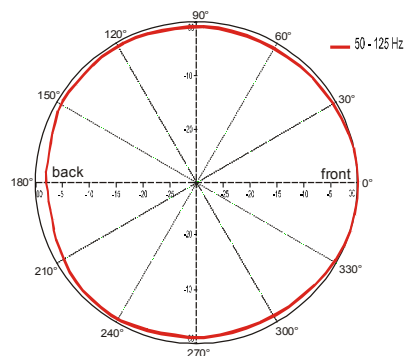
2x VSS 18 + 4x VB 18 + 2x VL 760:
analogue or digital audio signal each to input A of the VSS 18 & link it through the top units
(e.g. with a dual-cable from K.M.E., includes audio signal & power supply);
Out A + Out B are the speaker outputs for the passive subwoofers VB 18

## Preset 3: CARDIOID 1



directional
dispersion of
the subwoofers:

for
passive
top unit

for
passive
top unit

2x VSS 18 + 2x VB 18 + 2x VL 750 or VL 760:
analogue or digital audio signal each to input A of the VSS 18 & link it through the top units
(e.g. with a dual-cable from K.M.E., includes audio signal & power supply);
Out A is the speaker output for the rear channel (passive subwoofer VB 18), Out B can be chosen
as speaker output for a passive top unit (crossover frequency 120 Hz)

18

## Preset 4: CARDIOID 2



directional
dispersion of
the subwoofers:
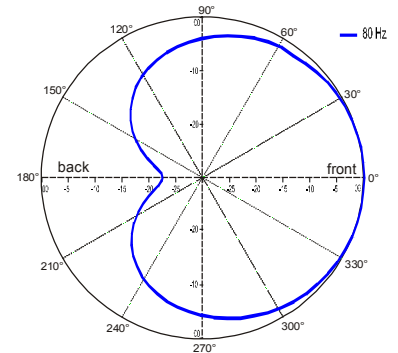


2x VSS 18 + 4x VB 18 + 2x VL 750 or VL 760:
analogue or digital audio signal each to input A of the VSS 18 & link it through the top units
(e.g. with a dual-cable from K.M.E., includes audio signal & power supply);
Out A is the speaker output for the rear channel (passive subwoofer VB 18), Out B is the speaker
output for the front channel (passive subwoofer VB 18)

## Preset 5: CARDIOID 3
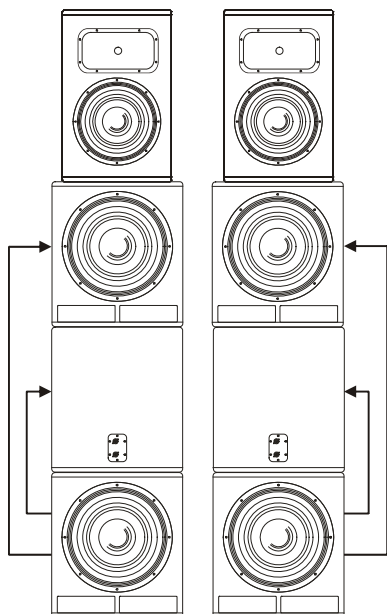


directional
dispersion of
the subwoofers:
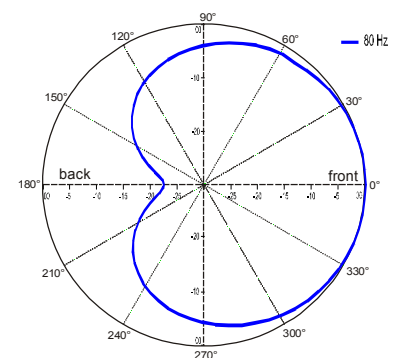


2x VSS 18 + 4x VB 18 + 2x VL 750 or VL 760:
analogue or digital audio signal each to input A of the VSS 18 & link it through the top units
(e.g. with a dual-cable from K.M.E., includes audio signal & power supply);
Out A is the speaker output for the rear channel (passive subwoofer VB 18), Out B is the speaker
output for the front channel (passive subwoofer VB 18)

## Preset 6: SINGLE BASS
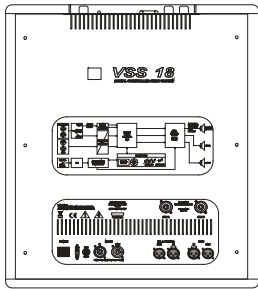


1x VSS 18 (speaker outputs are inactive):
analogue audio signal to input A + B or digital audio signal to input A, only the system volume control is active

## Preset 7: TOPS ONLY
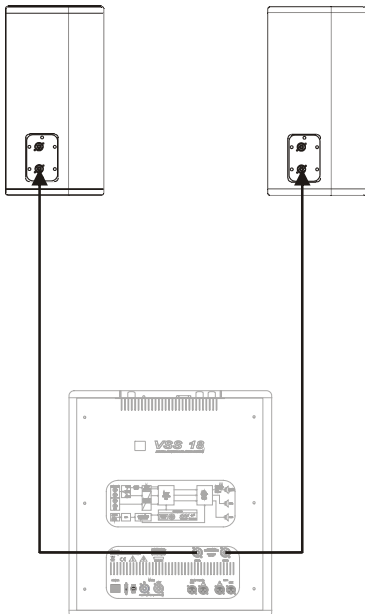


2x top units full-range (bass is inactive):
analogue audio signal to input A + B or digital audio signal to input A, the volume control for „Out A" + „Out B" depending on system volume control, speaker outputs „Out A" + „Out B" are for passive top units (min. 4 ohm @ 500 Watt)

## Preset 8: BASS ARRAY
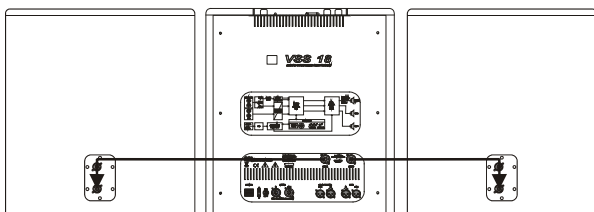


1x VSS 18 + 2x VB 18:
analogue audio signal to input A + B or digital audio signal to input A, the volume control for „Out A" + „Out B" depending on system volume control, speaker outputs „Out A" + „Out B" are for passive subwoofers VB 18 (min. 4 ohm @ 500 Watt)

## 12.2 User presets - *are adjustable and programmable*

These user presets are always saved in the background. So you can set your own presets or adjust the presets 9 -12 and save in the respective presets. Your presets you can delete separately (by the command "Reset Preset", see menu navigation) to restore the initial state resp. to overwrite it. When you will use those presets like shown the graphics, please make sure that the presets are not changed! Otherwise choose the command "Reset Preset".

Preset 9: USER SMALLPA
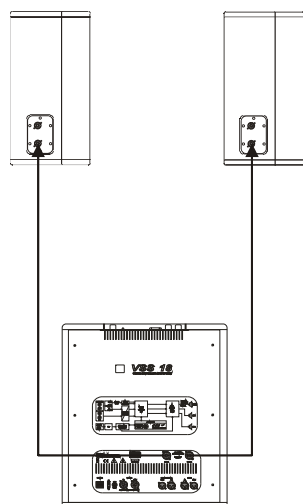


1x VSS 18 + 2x VL 12
you can set-up your audio inputs &
speaker outputs

Preset 10: USER PA+DLY



e.g.
monitor,
delay line,
bass

e.g.
monitor,
delay line,
bass
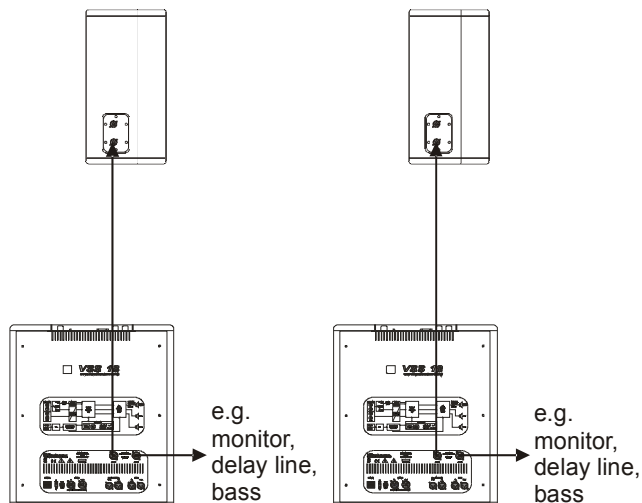
2x VSS 18 + 2x VL 12
you can set-up your audio inputs &
speaker outputs

Preset 11: USER BMS 1



LS  L          C  LFE          R  RS

21
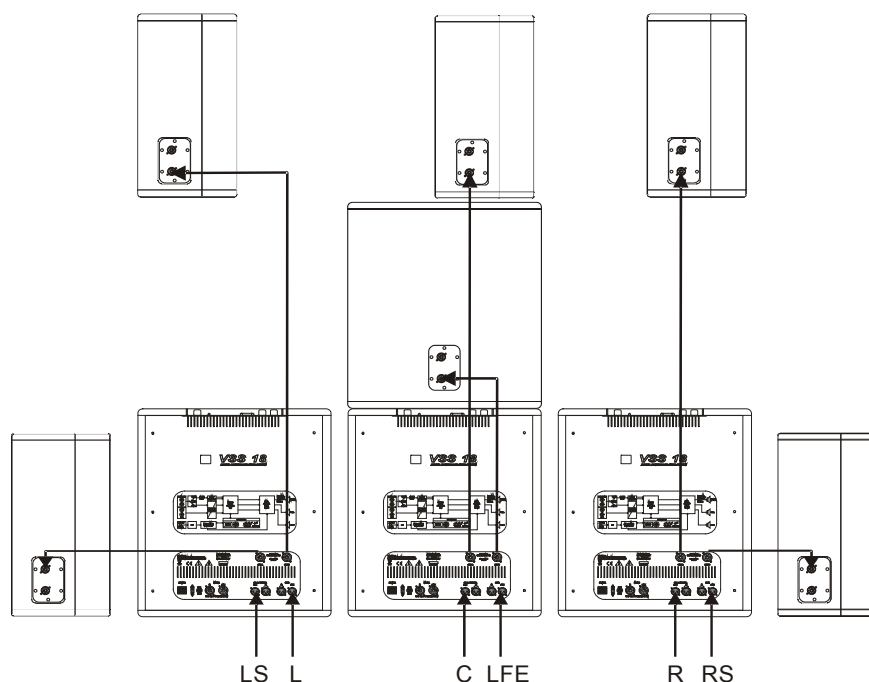
3x VSS 18 + 1x VB 18 + 5x top units (audio inputs & speaker outputs are free configurable). Bass management system for smaller surround systems (5.1). The VSS 18 for the center channel and LFE-channel (low frequency enhancement) is used with this preset. You can connect an additional bass VB 18 on the speaker output B. The VSS 18 for the L/LS and R/RS are used with the presets no. 9.

Preset 12: USER BMS 2



L          C          R

LS LFE                    RS
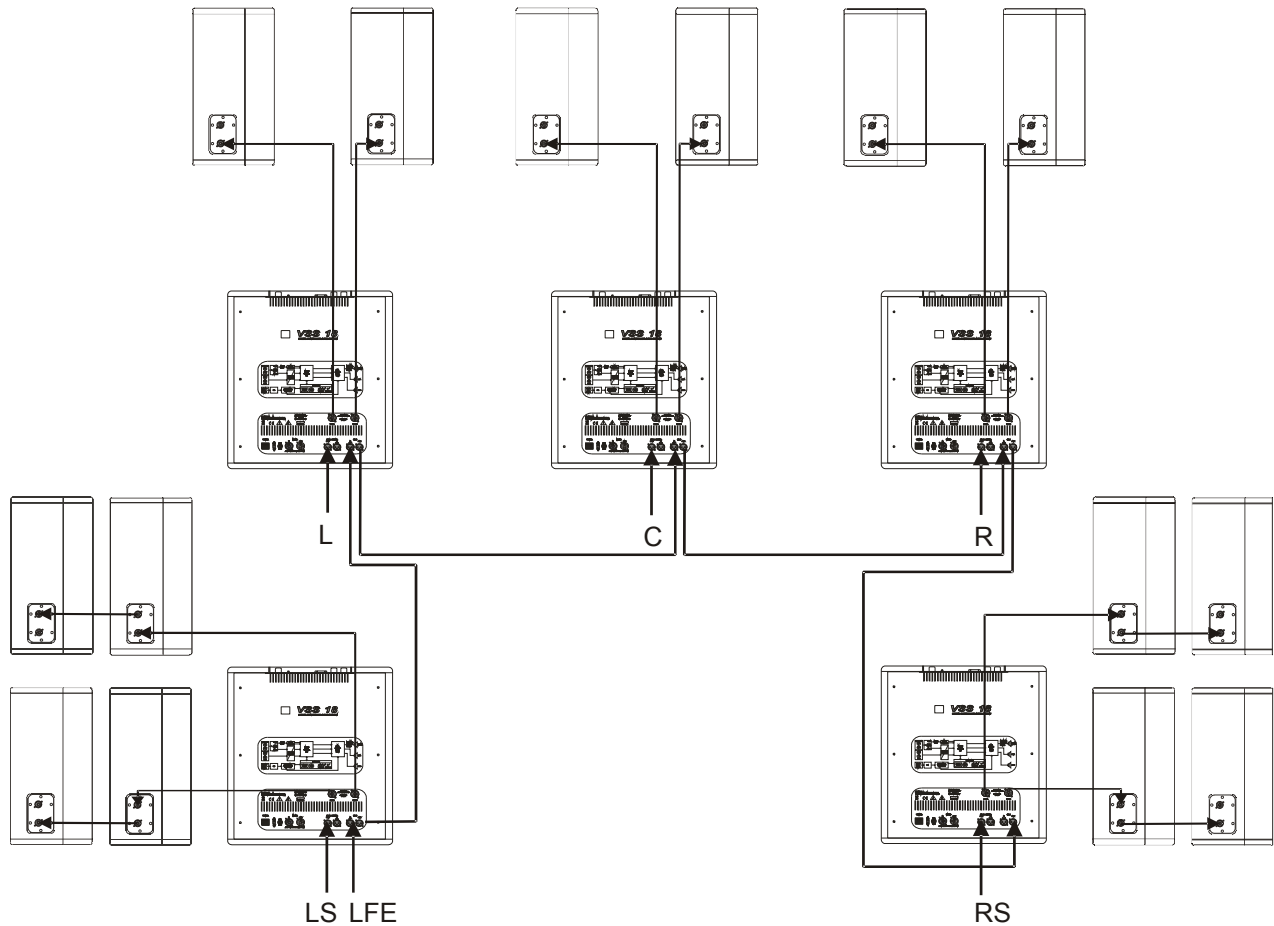
5 x VSS 18 + max. 14x top units (audio inputs & speaker outputs are free configurable). Bass management system for larger surround systems (5.1, extendable) using several loudspeakers for all channels, for example like cinemas and multimedia installations. All VSS 18 are used with this preset.

## 13. Specifications SD 7 and SD 8

The active 3-way full-range PA-systems SD 7 and SD 8 are professional and powerful PA-systems with extraordinarily compact design and a brilliant sound. The different formats / combinations of the VERSIO PA systems are the functional answer to a multiplicity of tasks in mobile use as well as in the area of installation. Simple speech reproduction, fill or delay-systems, presentations, music reinforcement with or without subwoofers as main PA, supported by a versatile accessory assortment enable an accurately to the respective requirements adapted solution. Due to the audio-DSP extensive solutions are available for various using possibilities. The extension of these PA-systems is always possible.

|  | **SD 7** | **SD 8** |
|---|---|---|
| Components | 2 x VL 750 (12"+1"),<br>2 x VSS 18 (18"),<br>2 x VB 18 (18") 4 Ohm | 2 x VL 760 (15"+1"),<br>2 x VSS 18 (18"),<br>4 x VB 18 (18") 4 Ohm |
| Power output | total: 4000 W RMS<br>(2 x 500 W RMS @<br>4 Ohm free configurable) | total: 5000 W RMS |
| Frequency range | 38 Hz – 19 KHz | 38 Hz – 19 KHz |
| Connectors | audio signal:<br>2x line-in XLR & line-out XLR<br>(analogue and / or digital),<br>power requirements:<br>PowerCon 90 - 250 Volt / 50 - 60 Hz,<br>speaker outputs on VSS 18:<br>each 2x Speakon NL 4  (1+/1-) | audio signal:<br>2x line-in XLR & line-out XLR<br>(analogue or digital),<br>power requirements:<br>PowerCon 90 - 250 Volt / 50 - 60 Hz,<br>speaker outputs on VSS 18:<br>each 2x Speakon NL 4  (1+/1-) |
| Weight of components | top active:     2x 21,5 kg<br>bass active:   2x 34 kg<br>bass passive: 2x 27 kg | top active:     2x 25,5 kg<br>bass active:   2x 34 kg<br>bass passive: 2x 27 kg |
| Recommended for | professional bands, DJs, renters | professional bands, DJs, renters |
| Optional accessories | Plug & Play Pack<br>(no. 2-521-011),<br>Cover Pack<br>(no. 2-312-019) | Plug & Play Pack<br>(no.2-521-012),<br>Cover Pack<br>(no.2-312-020) |

# 14. PA systems active: Set-up, connection shemes & system versatility

## 14.1 Set-up PA systems

***Note!***
Please note specific and useful set-up of a first-class loudspeaker system. A universal statement about the correct (standard)-adjustment and set-up of PA systems is impossible, because each reinforcement is bound to a different place and has always different features.

When using high stands or distance rods for top parts the user has to guarantee the stability. Please use just certified mounting material when installing the systems to guarantee the safety. Depending on the features of the area/room to be reinforced the top unit(s) can also be swiveled a bit horizontally and tilted vertically to reduce reflections (on walls + ceilings) and interferences and therefore achieving a better utilization of the sound energy.

If covers are opened or sections of casing are removed, except where this can be done manually, live parts can become exposed. If it is necessary to open the unit this must be insulated from all power sources.

Please mind that it is not coming to a ground loop during cabling of the system. If it comes to deep-frequent hum switch the Ground-Free to „Free". Always use balanced signal cables if possible. Do not mask or detach the conducter connection on the mains plug! *Danger!*

High loudspeaker levels can cause permanent hearing damage. You should therefore avoid the direct vicinity of loudspeakers operating at high levels. Wear hearing protection if continuously exposed to high levels.

***When should I choose a directional or omnidirectional dispersion in the low-frequency range?***

Each direct radiating subwoofer has a omnidirectional dispersion in the low-frequency range.
Depending on local conditions it can comes to spatial interferences. The cardioid dispersion pattern resulting from this approach avoids unwanted energy behind the system that greatly reduces the reverberant field at low frequencies and provides the greatest accuracy of low frequency reproduction.

The directional (cardioid) dispersion offers a lot of significant advantages in the all-day reinforcement work. The highest sound energy will be radiated just in the front very homogeneously, on the side the damping increases and achieves on the rear side a very wide-range excellent damping quality at all frequency range of more than 20 dB. For the first time the whole frequency band from bass to mid/high can be adjusted to the audiences' area. Especially in an acoustical different location like marquees, glas buildings, open airs with level restriction or in halls with large reverberation time the cardioid technology is an advantage. Even at very high volume levels develop considerably less wall- and ceiling-reflection. The complete bass reproduction explicitly gains in pressure and precision.

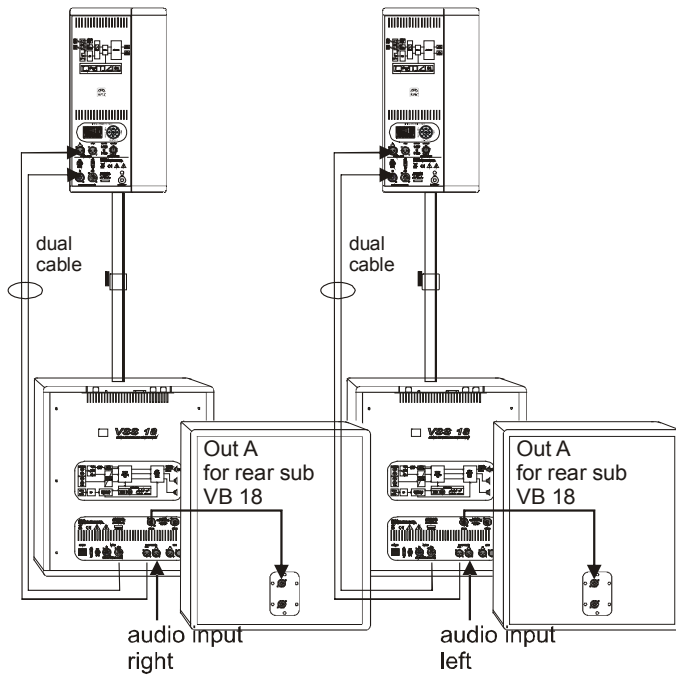## 14.2 Connection shemes

### SD7 OMNI  *(VSS 18 preset no. 1 & VL 750 preset no. 1)*
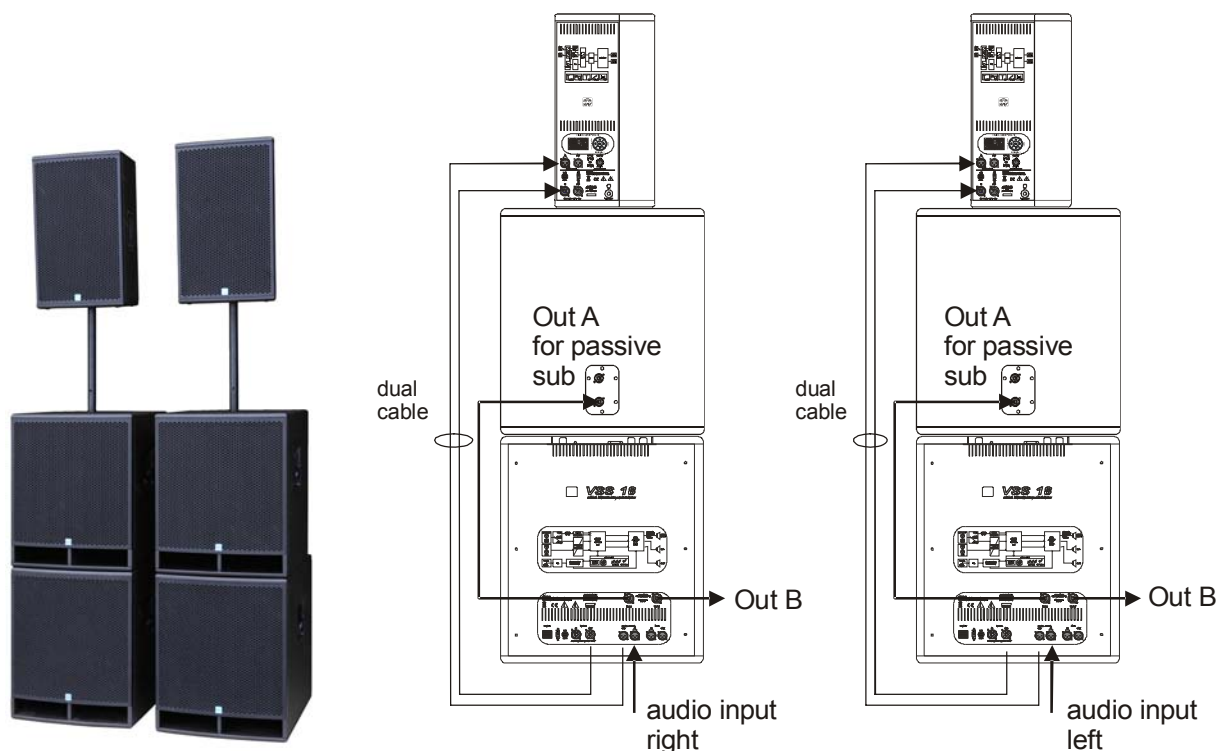


SD 7 consists of: 2x VSS 18 + 2x VB 18 + 2x VL 750

1. Set-up PA:  - place a VSS 18 to the left and right side in front of the audience
          (on solid underground)
      - place a VB 18 each on a VSS 18 or directly next to a VSS 18 (front in line)
      - place the top units each on a distance rod on the VSS 18 or each on a high
       stand (front in line)

2. Connection: - apply power supply connection always with the supplied PowerCon cable on
         VSS 18 + VL 750 on one 16A fused electric circuit
      - plug in the left + right audio signal (XLR cable) each on channel A on the
       VSS 18, after this you have to link each audio signal with a XLR cable to the
       top units (e.g. with a dual-cable from K.M.E., which includes the audio signal
       and the power supply)
      - connect the speaker output „Out A" of VSS 18 each with a passive subwoofer
       VB 18 with a Speakon cable (in this preset the speaker output „Out B" is
       configured for a passive top unit – crossover frequency 120 Hz)
      - switch on the system components successively, *Note!* please turn down all
       volume controls before switching on the system components to avoid an
       undesirable sound reproduction, because the system components can start
       in the "lock-function" (depending on adjustment), that means it may not react on
       changes on the control panel
      - after switching on the system components it is advisable to set the volume knobs
       to „central click" (=0dB) to have a defined volume level
      - the volume controls for „Out A" and „Out B" are depending on the system volume
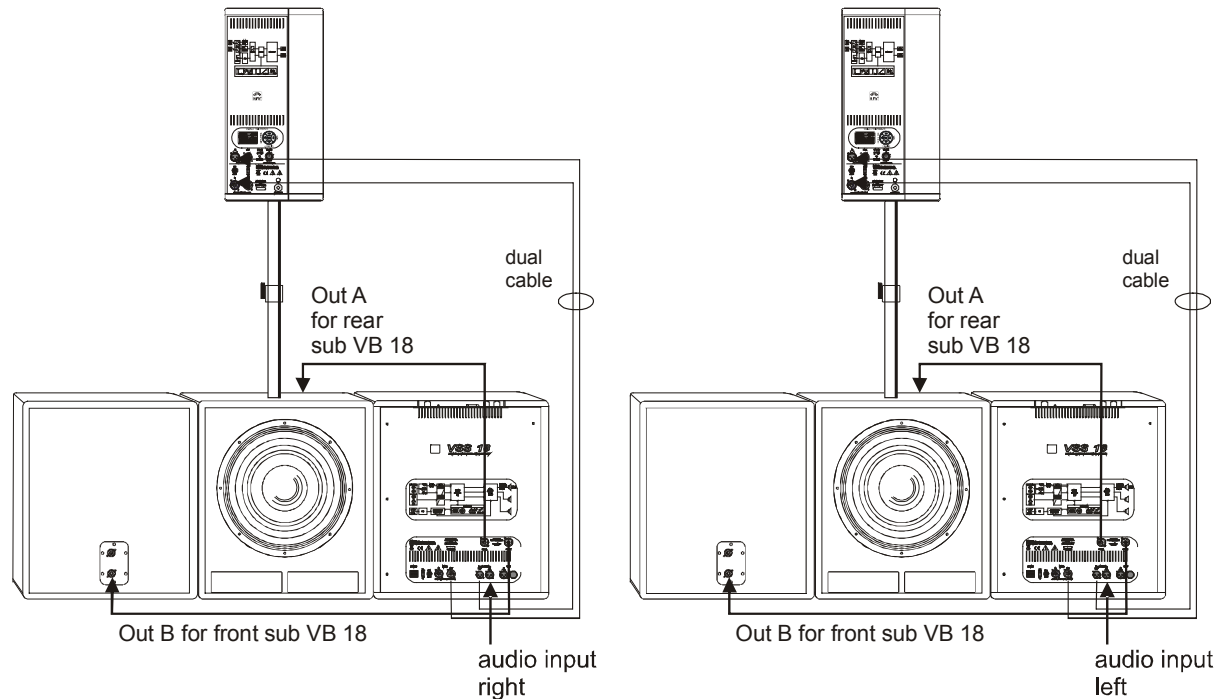       control (master), they are adjustable from -∞ to +6 dB

### SD8 OMNI   *(VSS 18 preset no. 2 & VL 760 preset no. 1)*
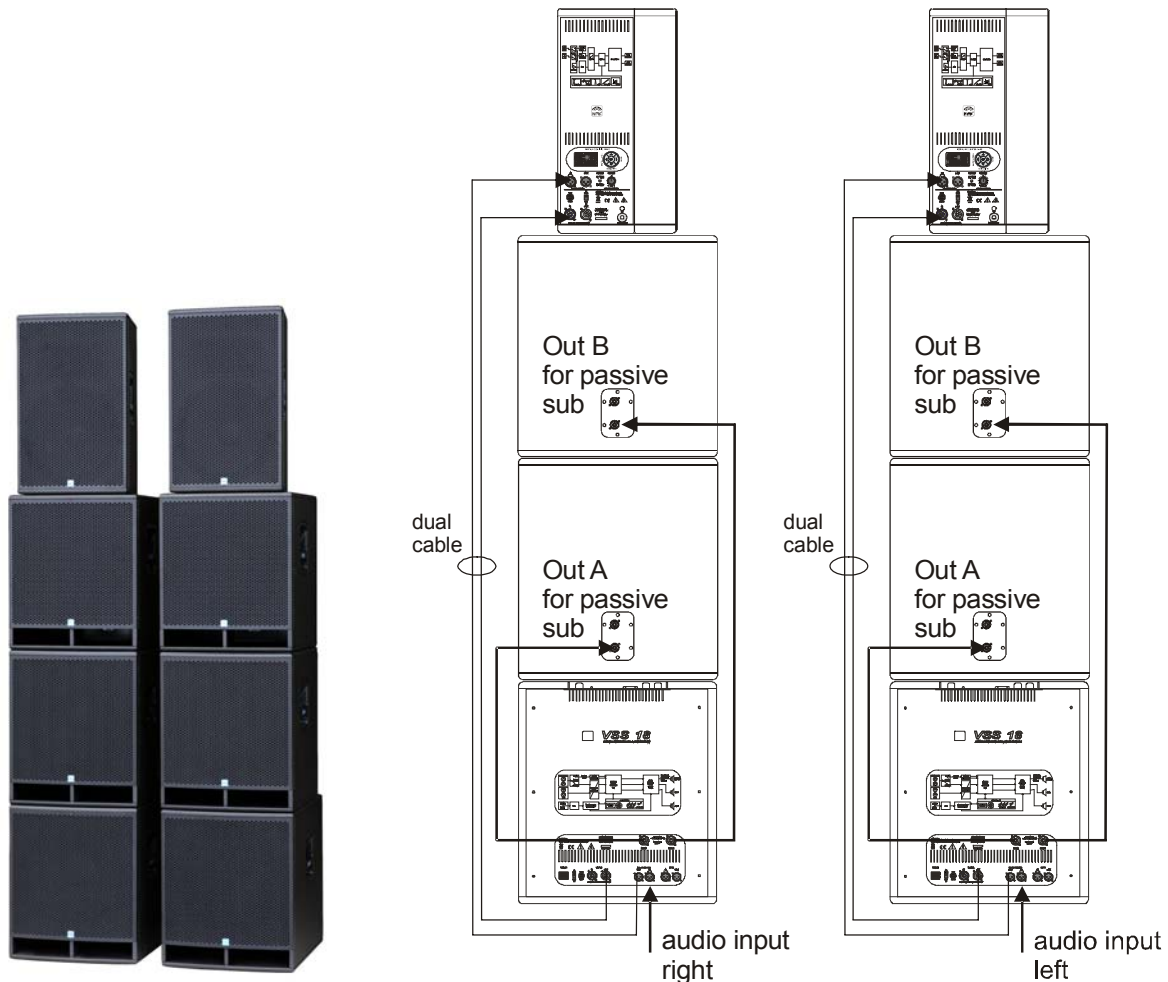


SD 8 consists of: 2x VSS 18 + 4x VB 18 + 2x VL 760

1. Set-up PA:  - place a VSS 18 to the left and right side in front of the audience
  (on solid underground)
  - place two VB 18 each on a VSS 18 or place all subwoofers in front of the
  audience in a constantly distance (front in line)
  - place the top units each on a distance rod on the VSS 18 or each on a high
  stand (front in line)

2. Connection: - apply power supply connection always with the supplied PowerCon cable on
  VSS 18 + VL 760 on one 16A fused electric circuit
  - plug in the left + right audio signal (XLR cable) each on channel A on the
  VSS 18, after this you have to link each audio signal with a XLR cable to the
  top units (e.g. with a dual-cable from K.M.E., which includes the audio signal
  and the power supply)
  - connect the speaker outputs „Out A & Out B" of VSS 18 each with a passive
  subwoofer VB 18 with a Speakon cable
  - switch on the system components successively, *Note!* please turn down all
  volume controls before switching on the system components to avoid an
  undesirable sound reproduction, because the system components can start
  in the "lock-function" (depending on adjustment), that means it may not react on
  changes on the control panel
  - after switching on the system components it is advisable to set the volume knobs
  to „central click" (=0dB) to have a defined volume level
  - the volume controls for „Out A" and „Out B" are depending on the system volume
  control (master), they are adjustable from -∞ to +6 dB
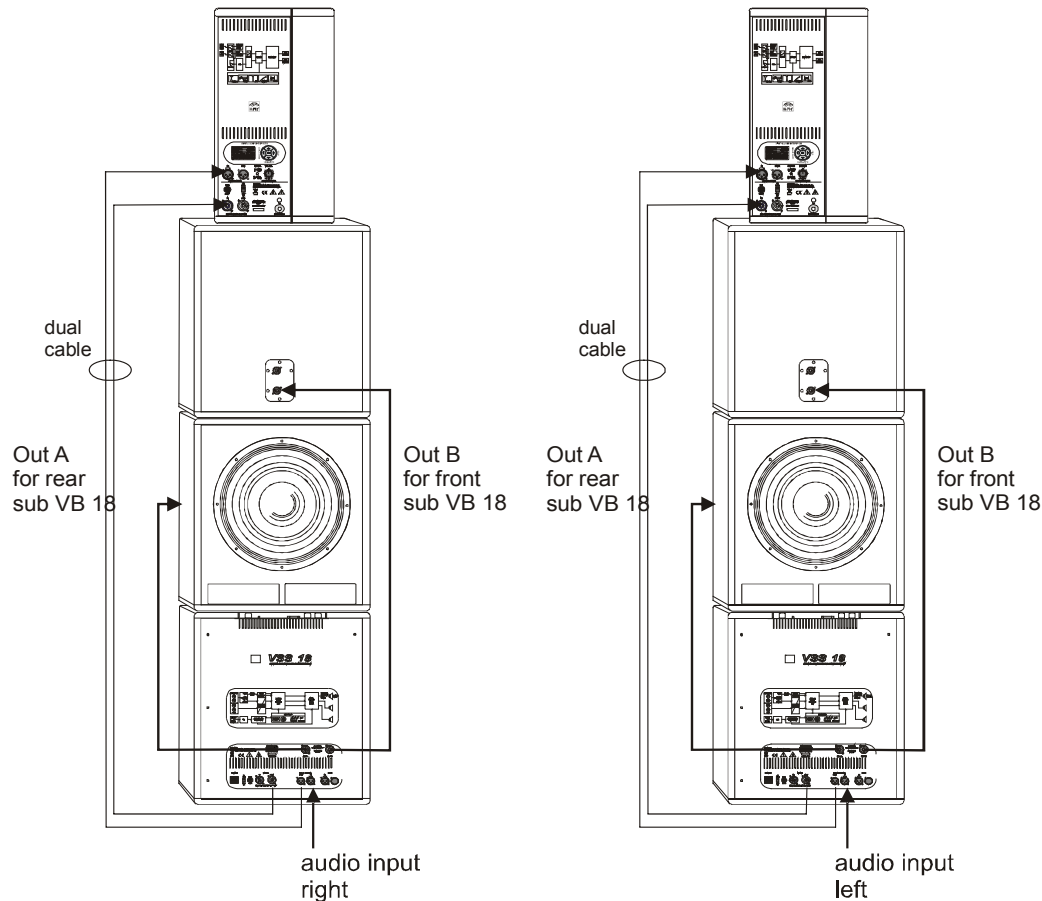
## CARDIOID 1  *(VSS 18 preset no. 3 & VL 750 / VL 760 preset no. 1)*



Setup consists of: 2x VSS 18 + 2x VB 18 + 2x VL 750 or VL 760

1. Set-up PA: - place a VSS 18 to the left and right side in front of the audience
(on solid underground)
   - place a VB 18 each behind of the VSS 18 in a distance of 24 cm; **Note!** please
     mind the distance of 60 cm to the systems among each other and the distance to
     the periphery (e.g. front of stage, walls)
   - place the top units each on a distance rod on the VSS 18 or each on a high
     stand (front in line)

2. Connection: - apply power supply connection always with the supplied PowerCon cable on
VSS 18 + VL 750 or VL 760 on one 16A fused electric circuit
   - plug in the left + right audio signal (XLR cable) each on channel A on the
     VSS 18, after this you have to link each audio signal with a XLR cable to the
     top units (e.g. with a dual-cable from K.M.E., which includes the audio signal
     and the power supply)
   - connect the speaker output „Out A" of VSS 18 each with a passive subwoofer
     VB 18 with a Speakon cable (in this preset the speaker output „Out B" is
     configured for a passive top unit – crossover frequency 120 Hz)
   - switch on the system components successively, **Note!** please turn down all
     volume controls before switching on the system components to avoid an
     undesirable sound reproduction, because the system components can start
     in the "lock-function" (depending on adjustment), that means it may not react on
     changes on the control panel
   - after switching on the system components it is advisable to set the volume knobs
     to „central click" (=0dB) to have a defined volume level
   - the volume control for „Out A" is pre-set by 0 dB and and depends on system
     volume control (master), but it is not adjustable; the volume control for „Out B"
     depends on system volume control (master), it is adjustable from -∞ to +6 dB

## CARDIOID 2  *(VSS 18 preset no. 4 & VL 750 / VL 760 preset no. 1)*



dual
cable

Out A
for rear
sub VB 18

Out B for front sub VB 18

audio input
right

dual
cable

Out A
for rear
sub VB 18

Out B for front sub VB 18

audio input
left

Setup consists of: 2x VSS 18 + 4x VB 18 + 2x VL 750 or VL 760

1. Set-up PA: - place a VSS 18 to the left and right side in front of the audience
             (on solid underground)
           - place one VB 18 to the front and one backwards next to VSS 18 (side by side
             and front in line, see drawing); *Note!* Please mind the distance of 60 cm to the
             systems among each other and the distance to the periphery (e.g. front of stage,
             walls)
           - place the top units each on a distance rod on the VB 18 in the mid-position or
             each on a high stand (front in line)

2. Connection: - apply power supply connection always with the supplied PowerCon cable on
               VSS 18 + VL 750 or VL 760 on one 16A fused electric circuit
             - plug in the left + right audio signal (XLR cable) each on channel A on the
               VSS 18, after this you have to link each audio signal with a XLR cable to the
               top units (e.g. with a dual-cable from K.M.E., which includes the audio signal
               and the power supply)
             - connect the speaker output „Out A" of VSS 18 each with a passive subwoofer
               VB 18 with a Speakon cable for the rear channel and speaker output „Out B"
               each with a passive subwoofer VB 18 for the front channel
             - switch on the system components successively, *Note!* please turn down all
               volume controls before switching on the system components to avoid an
               undesirable sound reproduction, because the system components can start
               in the "lock-function" (depending on adjustment), that means it may not react on
               changes on the control panel
             - after switching on the system components it is advisable to set the volume knobs
               to „central click" (=0dB) to have a defined volume level
             - The volume control for „Out A" and „Out B" is pre-set by 0 dB and depends on
               system volume control (master), but they are not adjustable

## CARDIOID 3  *(VSS 18 preset no. 5 & VL 750 / VL 760 preset no. 1)*



dual cable

Out A for rear sub VB 18

Out B for front sub VB 18

dual cable

Out A for rear sub VB 18

Out B for front sub VB 18

□ VSS 18

□ VSS 18

audio input right

audio input left

Setup consists of: 2x VSS 18 + 4x VB 18 + 2x VL 750 or VL 760

1. Set-up PA: - place a VSS 18 to the left and right side in front of the audience
        (on solid underground)
     - place one VB 18 to the front and one backwards on each VSS 18 (see drawing);
       **Note!** Please mind the distance of 60 cm to the systems among each other and
       the distance to the periphery (e.g. front of stage, walls)
     - place the top units each on top on VB 18 or on a high stand (front in line)

2. Connection: - apply power supply connection always with the supplied PowerCon cable on
        VSS 18 + VL 750 or VL 760 on one 16A fused electric circuit
     - plug in the left + right audio signal (XLR cable) each on channel A on the
       VSS 18, after this you have to link each audio signal with a XLR cable to the
       top units (e.g. with a dual-cable from K.M.E., which includes the audio signal
       and the power supply)
     - connect the speaker output „Out A" of VSS 18 each with a passive subwoofer
       VB 18 with a Speakon cable for the rear channel and speaker output „Out B"
       each with a passive subwoofer VB 18 for the front channel
     - switch on the system components successively, **Note!** please turn down all
       volume controls before switching on the system components to avoid an
       undesirable sound reproduction, because the system components can start
       in the "lock-function" (depending on adjustment), that means it may not react on
       changes on the control panel
     - after switching on the system components it is advisable to set the volume knobs
       to „central click" (=0dB) to have a defined volume level
     - The volume control for „Out A" and „Out B" is pre-set by 0 dB and depends on
       system volume control (master), but they are not adjustable

## 14.3 System versatility

This overview shows you examples of using, combination and extension of the active system components (with passive system components) to adapt your reinforcement optimally on your audience.

full-range setup
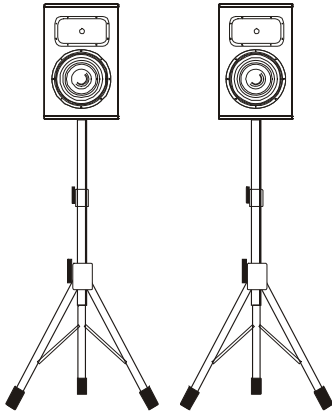
basis setup
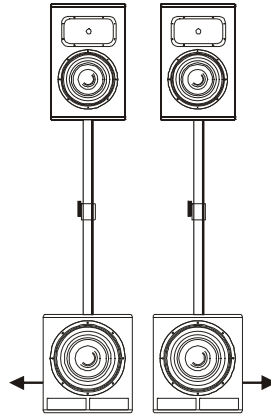


2x VL 750 or VL 760

2x VL 750 or VL 760 + 2x VSS 18 + 4x 500 watts speaker outputs (e.g. free routable as top extension, delay line, monitoring, subwoofer)
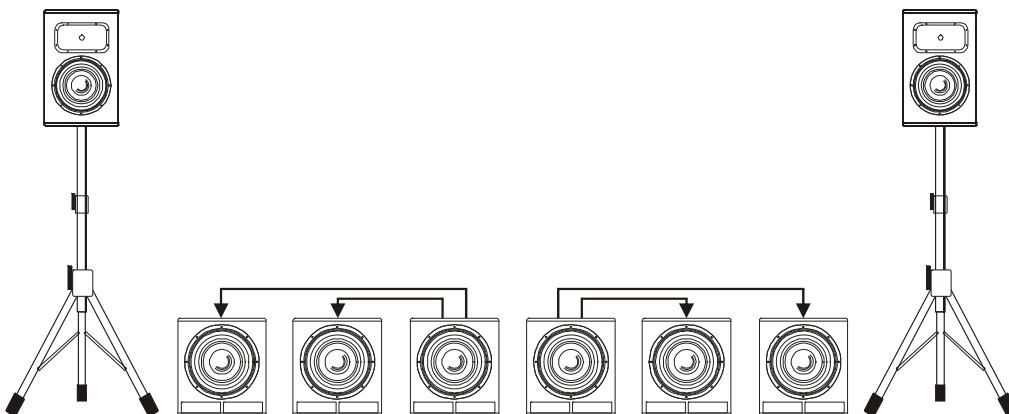
monitor Setup
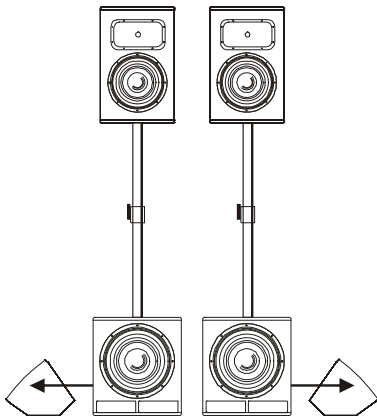
standard setup



2x VL 750 or VL 760 + 2x VSS 18 + max. 8 monitors (VL 8 / VL 12 / VL 15)
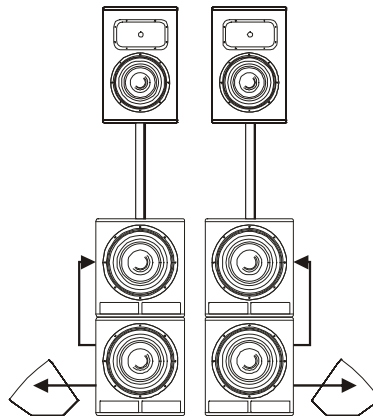
2x VL 750 or VL 760 + 2x VSS 18 + 2x VB 18 + max. 4 monitors (VL 8 / VL 12 / VL 15)

extended setup



2x VL 750 or VL 760 + 2x VSS 18 + 4x VB 18

cardioid setup 1
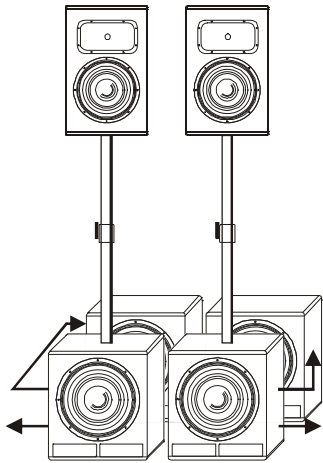


2x VL 750 or VL 760 + 2x VSS 18 +
2x VB 18 + 2x 500 watts speaker
outputs ((e.g. free routable as top
extension, delay line, monitoring,
subwoofer)

cardioid setup 2
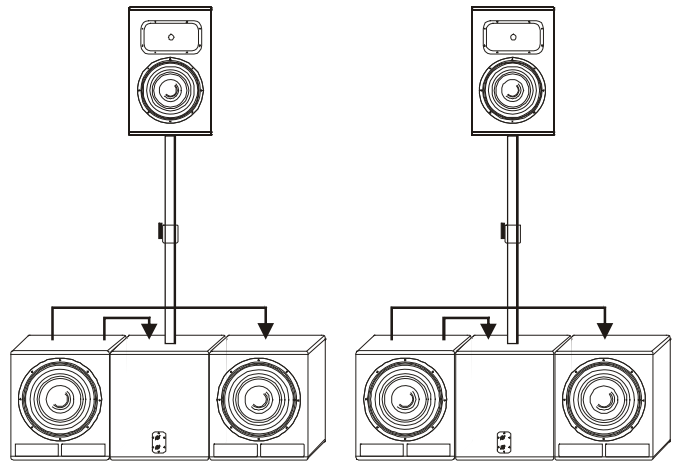


2x VL 750 or VL 760 + 2x VSS 18 + 4x VB 18

cardioid setup 3
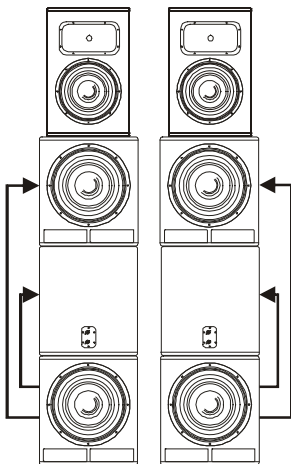


2x VL 750 or VL 760 + 2x VSS 18 + 4x VB 18

**For your notes**

# EC declaration of conformity

This is to certify that the following products:

| Article | Product | | | Series | Group |
|---------|---------|---|---|--------|-------|
| 1-120-023 | **VSS 18** | PU, black | 2x 500 W + 750 W | Versio Series | Subwoofer digital active |
| 1-154-025 | **Versio SD7** 2x VL 750 + 2x VSS 18 + 2x VB 18 | PU, black | 4000 W | Versio Series | PA systems active digital |
| 1-154-026 | **Versio SD8** 2x VL 760 + 2x VSS 18 + 4x VB 18 | PU, black | 5000 W | Versio Series | PA systems active digital |

comply with the provisions of the Directive of the Council of the European Communities on the approximation of laws of the Member States relating to electromagnetic compatibility (EMC Directive 89/336/EEC).

This declaration of conformity of the European Communities is the result of an examination carried out by the Quality Assurance Department of Klingenthaler Musikelektronik GmbH in accordance with European Standards:

| | | |
|---|---|---|
| VDE | 0839-6-1:2007-10 | DIN EN 610000-6-1 |
| VDE | 0839-6-3 Berichtigung 1:2012-11 | DIN EN 610000-6-3 |
| VDE | 0839-2 Berichtigung 1:2011-06 | DIN EN 610000-3-2 |
| VDE | 0838-3:2009-06 | DIN EN 610000-3-3 |
| VDE | 0860:2011-10 | DIN EN 60065 |
| VDE | 0875-103-1:2010-07 | DIN EN 55103-1 |
| VDE | 0875-103-2:2010-70 | DIN EN 55103-2 |

This declaration is given by

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Klingenthal, September 2013

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