



DESIGNED & DEVELOPED IN ITALY

USER MANUAL

ES 503

TRI-AMP STEREO SYSTEM

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Description

ES503 is a portable 3-amped stereo sound system composed by two passive tops and one 12" subwoofer. The sub hosts a 1000W peak power amp module with auto-range PSU and a 3-channels mixer with Bluetooth® connection. A powerful DSP – controlled through an advanced user-interface with an OLED display – manages both the coverage of the entire system and all functions of the mixer, making the ES503 a real gem in terms of sound performance and versatility.

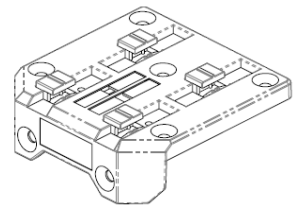
The ES Series is the result of experience gained from dBTechnologies in the acoustic design of vertical array systems like DVA T Series and MINI. The components of the top are aligned mechanically (Logarithmic Curved Column Array) so as to increase the coverage of the vertical beam. Furthermore, there is a special "double-ringed phase plug" that increases the horizontal coverage and gives a rich and crystal clear sound to the system.

The bass-reflex subwoofer houses a generous 12" woofer and the amplifier module. In addition to the input connectors and controls of the user-interface, there are two Speakon outputs and a VDE Mains connector. The enclosure, sturdy and stylish, is made of plywood coated with a durable scratch-resistant black coat, which makes it truly road-ready. Two recessed handles (one per side) help easy transport. Finally the metal grid with foam, in addition to protecting the woofer and give a very elegant and professional look, helps the reflex effect. The lower part of the grid, placed right on the reflex ports, have in fact holes with a larger diameter to enhance air flow.

ES 503 System Configurations

Fast Speaker Connection

The enclosure of the two satellites embeds a slide connection system, which assures perfect top-to-top matching without the risk of incorrect assembly. It also includes the electrical connection between the two tops. The letters A and B marks these two speakers respectively, making them easily identifiable. The "A" satellite receives the powered signal from the subwoofer through a 4-poles male Speakon™ connector and relaunch the audio through the quick connection system on top of its cabinet. The "B" satellite is both equipped with the Speakon™ connector and the quick connection system, but in case of stacked use its position must be over the "A" speaker. In other words, both tops can be used on speaker stands or poles, but in case of vertical array the default setup must be respected.



The ES503 bundle is composed by subwoofer, two tops, a D25mm pole and a Speakon/Speakon cable to connect the sub to the first top. The speaker pole is splittable in two segments for easy transport. The system also provides a large group of accessories, such as D25mm speaker stands, two 25mm tripod stands with transport bag, speakon-speakon cable kit, wheel trolley, a bag for the ES tops and the D25mm pole, and a bag for the 12" subwoofer.

Wizard (system configuration)

Es 503 is programmed to help the user to setup quickly his own system.

Please go to Menu → System configuration

Here a simple wizard suggest you how to setup every parameters of the ES 503 to reach the configuration desired, to enable Bluetooth, to manage the mixout etc.

The ES503 can works in three different modes. Single Column Mode, Stereo Mode, Double column mode).

Single column mode

1x stand pole

In the first option the two satellites are connected top-on-top and are placed on the subwoofer through the supplied D25mm pole. The system is used in mono so all inputs are routed to both outputs in mono. Of course the user can adjust volumes, 3-band EQ and send a second mix with different levels to the AUX/MIX output.

MENU: System settings → Mono Mode and follow the wizard



Stereo mode

2x tripods or 1x stand pole and 1x tripod

This second option implies the use of two tripods and two optional Speakon-Speakon cables to connect the subwoofer to the tops placed on tripods.



The system is in stereo: The Mic/Instrument input is assigned to both channels; CH1/LINE L (and Bluetooth® L) is assigned to Output L; CH2/LINE R (and Bluetooth® R) is assigned to Output R.

He can also prepare a second mix with different levels for the AUX / MIX output.

MENU: System settings → Stereo Mode and follow the wizard

Double Column mode

2x ES 503 in single column mode

The third option uses two ES 503 systems in single column mode: one of the two becomes the master for the second, feeding the signal thanks to the integrated balanced output channel.

Connect the mixout xlr to the second Es 503 (please be sure to connect into the xlr suggested by the wizard).

The system manage the routed signals to have e stereo configuration.

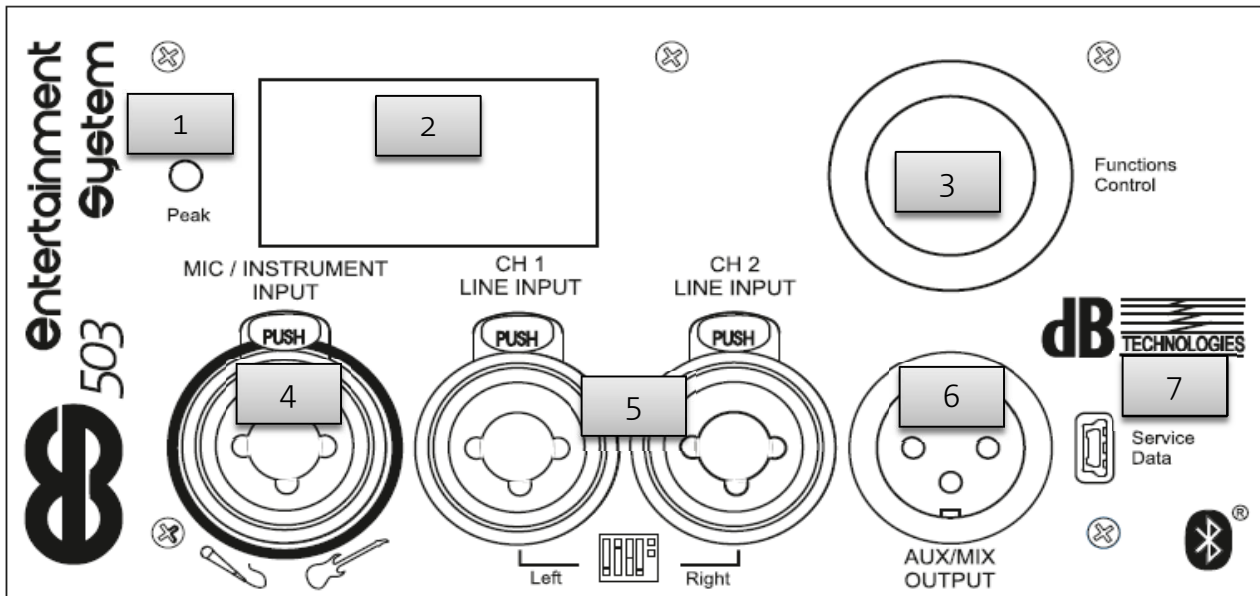
With this setup the mixout /aux is configured to relaunch the signal to the other ES503. This avoid the possibility to use the Mixout/Aux xlr as monitoring.

MENU: System settings → Double Mode and follow the wizard

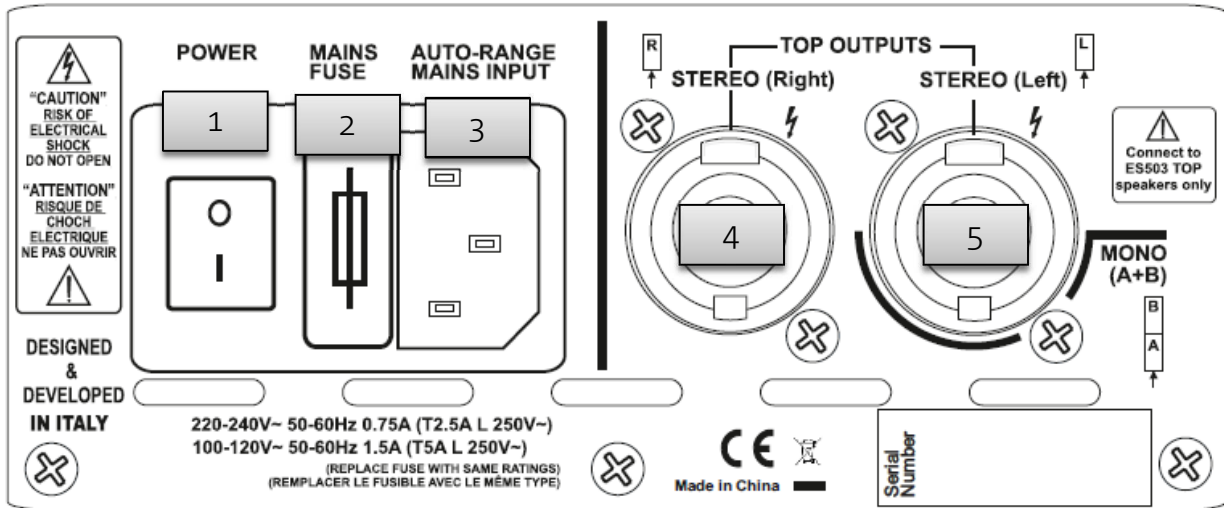


When the ES 503 switch on it recall automatically the last setup.

Hookup



- 1 Peak Led
(it indicates when the limiter works)
- 2 OLED Display
- 3 Rotary Encoder with switch
Use the encoder to navigate between menus and click to confirm/select
- 4 Mic/Instrument input
XLR combo input allows to connect microphone or instrument
- 5 Ch.1/Ch.2 line inputs
XLR combo line input
- 6 Aux/Mix Output
XLR output connector (balanced signal output enabled for monitoring or link to another speaker)
- 7 USB port
Use this port only for upgrade (see Usb Burner Manager)



- 1 ON/OFF Switch
- 2 Mains Fuse holder
- 3 VDE Mains Input
- 4 Speakon connector
(to Right ES Top in stereo mode)
- 5 Speakon connector
(to Left ES Top in stereo mode or to ES Top A in Mono or Double Column mode)

Warning:

Use only ES503 Cables

In single column mode or double column mode connect only the left speakon connector to ES Top A. The ES Top B will be feeded trough the fast connector between Top A and Top B

User-Friendly Interface

The ES503 is incredibly simple to set up and comes with an intuitive wizard that guides the user step-by-step and automatically configures the system according to the application. The advanced graphical interface allows to enter the heart of the system, allowing you to recall the configuration presets, adjust levels, EQ and create a post/post gain mix for different purposes. The OLED display, visible even in the sunlight, is mounted behind an elegant smoked screen and provides all the necessary information to the total system control. All editing operations are carried out through a single rotary encoder with switch, making them extremely easy and error-free.

Main Menu

The ES503 is equipped with a three-channel mixer controlled by a smart DSP. The first channel features a MIC/instrument balanced/unbalanced combo connector with impedance compensation, notch-filter with selectable frequency and adjustable gain with 3 positions (0, +10, +20dB). The second and third channels are LINE inputs with balanced/unbalanced combo connector. There is a 3-band EQ that, depending on the configuration preset, works as an overall EQ or channels EQ. A preset storable by the user is also available.

The first screen when the ES 503 system will be turned on shows the three channels mixer, the mix/out control and the master volume.

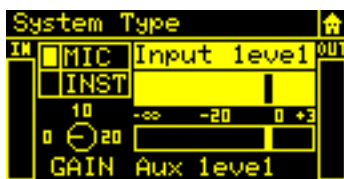
It's possible to select the item on the menu rotating left or right the rotary knob and select pushing it.

The left area of the OLED display is dedicated to show the system configuration. (mono, stereo or double mono setup).



In the ES 503 system the mixer is divided into three complete channel strips:

Microphone / instrument input channel strip:



From this page it's possible to take control of the first channel of the ES 503 three channel mixer.

Here you can select if in this input it's plugged a microphone or an instrument. Changing the selector our firmware will change automatically the input impedance of the first combo XLR input.

The virtual rotary that indicates 3 values (0-10-20) can change the input gain as in a standard mixer and on the left side of the screen the input level will show in real-time mode. The right side will show the output channel level that will be controlled through the Input level slider.

Aux level shows the quantity of signal assigned to AUX output (only if your Mixout/Aux is configured as Aux, see dedicated chapter on this manual)

Line input (CH1 /CH2)

The Line input channel strips allows the user to set the line input, adjust the level and set the level assigned to the aux output (only in single column mode and stereo mode).

Here it's possible decide if the CH1 and CH2 will be managed in double mono mode (selecting Mono item) or L/R Mode. The L/R mode is a simple autolink and routing to set up the system in stereo mode. If the single column mode is chosen as setup and the CH1/CH2 are in L/R mode, the internal DSP will sum both channel.

Aux/Mix Output

The balanced AUX/MIX XLR output can be used as a simple mono link connection, to relaunch part of the stereo mix to another speaker system (e.g.: right output to a second ES503), or to create a new mono mix with independent levels for stage monitoring or recording purposes. This output is also provided with a second notch filter with selectable frequency.

As in the others channel strips on board the left border is dedicated do the input signal and the right border to the output signal.

If this out is on AUX mode we can set:

AUX: Master level of the Aux output.

INST/MIC: Level of mic inst channel

CH1/CH2: Level of CH1/CH2.



This allows to create a different mix (in post fader mode) dedicated to a recorder or stage monitor.

In this channel strips, when LINK is selected will be shown only the Out level.

Tips & Tricks:

Holding pressed the rotary knob the menu will return to the main page.

From the main page, holding pressed the rotary knob will show you the mixer volume page.

The Home Icon it's always displayed in the upper side of the OLED display

Integrated Audio Bluetooth® Module

The ES503 is equipped with built-in Bluetooth® stereo streaming, which allows the connection of any device (such as mobile phones, tablets or audio players) with Bluetooth® connection. We can consider them as 2 more inputs (for a total of 5), even though levels are common to line inputs.

To enable the Bluetooth receiver go to Menu → Bluetooth menu and then switch on/off the Bluetooth connection.



When Bluetooth module will be ready, you can follow these four easy steps:

- 1) Make sure that the device to be associated is on and ready to connect via Bluetooth.
- 2) From the device search for the available Bluetooth devices.
- 3) Select "ES 503" from the list.
- 4) From the device follow the instructions to associate ES 503 to it

Warning:

If your device requires a password, conventionally use "0000" or "1234"

DSP Presets

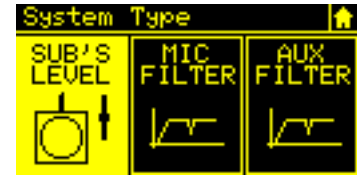
The ES 503 DSP allows to choose between different eq, (6 presets + 1 user eq)
Go to Menu → DSP presets

Flat	For use during live performance
Playback	To listen and use music from MP3 players, CDs, Low and high frequencies are emphasized.
Club	For all those situations where the music is played in the background. In this case the low frequencies are extended and enhanced, so as to create a more warm sound even at low sound level.
Vocal	This preset emphasizes middle and high frequencies, making voices sharper. The feedback is extremely limited for both cardioid and hypercardioid microphones
Monitor	Special Eq. studied for monitoring in keyboard, e. drum, etc.
Antifeedback	Special Eq. to reduce feedback in critical environment
Custom Equalization	User EQ: Low shelving filter: gain (+4 – 6 dB) Semiparametric mid filter: gain (+4 – 6 dB) Freq (150Hz – 4000Hz). High shelving filter: gain (+4 – 6 dB)

Advanced Settings

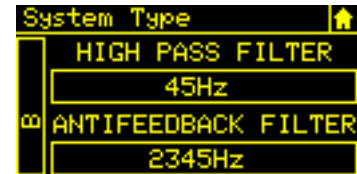
Here are present some useful features of the ES 503 system.
Go to: Menu→Advanced Setting

SUB'S LEVEL: Es 503 is provided of an independent sub's level control. Select this first item and through the rotary knob adjust the level as preferred

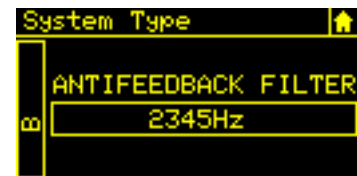


MIC FILTER: This filter avoid specific resonance or feedback. It works on mic input (only in Mic Mode). Works on main output and Aux output.

Clicking on this item it's possible to insert a High pass filter (50Hz to 200 Hz) and a notch filter (500Hz to 12000 Hz)



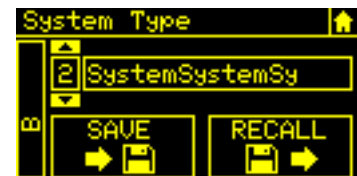
AUX FILTER: If there are some feedback due a too much pressure from the monitor, it's possible set an additional notch filter. It works only in Aux mode. The main output will not be affected by this filter. (500Hz to 12000 Hz)



Save/Recall

Go to: Menu→ Save/Recall

Here is possible to save and load five different setups.



Option Menu

Go to: Menu→ Option:

Password	Enable or Disable the request of the password On-OFF
Password	Show and set the password
Contrast	Change the Oled contrast
Stand-By	This option allows to choose if the OLED display will be turned off after a period of inactivity.
Stand-By	This option allows to choose the delay before the OLED display is turned off. Once the display is turned off, you can restore it by pressing any of the navigation buttons
Info	Show the ES503 info as Dsp and Firmware version
Exit	Back to previous menu

We provide a "Superuser Password" if the inserted password will be lost

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Accessories

Check the site www.dBTechnologies.com for new accessories!

SK-25TT	Kit composed by 2x telescopic tripod speaker stands (D25 mm) + Bag
TC-ES12	Tour cover for ES Entertainment System 12 inch Subwoofer
TC-ESTOP	Tour Cover for 2x ES Entertainment System tops and 1Xd25 mm pole
DT-50	Trolley for transport. Suggested for ES Entertainment System tops. Max 50 kg [112.2 lbs]
RC-M1	Rain Cover

Technical Specifications

Technical Data

Speaker Type:	3-amped Stereo System with two full-range tops and one subwoofer
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Acoustical data

Frequency Response [-10dB]:	37 - 15.000 Hz
Max SPL:	121 dB
MF - HF:	8x 3"
Type MF - HF:	Neodymium
LF:	12"
Directivity:	95x65°

Amplifier

Amp Technology:	Digipro® G3
Amp Class:	Class-D
Power Amp Peak:	1000 W
Power Supply:	SMPS with PSU Auto-range
Power Connection:	VDE socket
Cooling:	Convection
Controls:	1x OLED Display with rotary encoder w/switch 1x Audio signal monitoring LED 1x USB port (service data)
Inrush current:	19,2 A

Processor

Controller:	DSP 24 Bit/48 kHz
System Presets:	Factory presets + User defined
Limiter:	Dual Active, Peak, RMS, Thermal
Crossover Frequency:	206 Hz

Input

Mic/Instrument Channel:	1x Combo (XLR/Jack) balanced/unbalanced input
Line Channels:	2x Combo (XLR/Jack) balanced/unbalanced inputs
Media Channel:	1x Bluetooth® built-in receiver
Mix Output:	1x XLR balanced output

Mechanics

Housing (Subwoofer):	15mm Black Painted Plywood
Housing (Tops):	Polypropylene PP
Handles:	2x lateral side (Subwoofer)
Width (Top):	95 mm (3.74 in)

Height (Top):	360 mm (13.98 in)
Depth (Top):	137 mm (5.39 in)
Width (Subwoofer):	465 mm (18.3 in)
Height (Subwoofer):	400 mm (15.7 in)
Depth (Subwoofer):	430 mm (16.9 in)
Weight (Top):	1.9Kg - 4.19lbs.
Weight (Subwoofer):	16.4Kg - 36.16lbs.

USB Burner Manager

The integrated USB B-type port allows the user upgrade the firmware of the ES503, ensuring that the system is always updated to the latest version (download from www.dbtechnologies.com).

To let users easily update the firmware we have developed a dedicated program. We recommend that you download the free USB Burner Manager software directly from the dBTechnologies site (www.dbtechnologies.com), in the dedicated "Software & Controller" section.



- 1) Download and install the software following the instruction.
- 2) Download the last firmware
- 3) Open the USB Burner manager
- 4) In the right upper side of the windows select File Opening ...
- 5) Select the firmware you have downloaded before
- 6) Click UPDATE

The software will update the ES503 system and will check if the process has successfully upgraded the system.

Warning:

The firmware update does not ensure the maintenance all the saved presets

Quick Troubleshooting

The display does not light up when switched on.

- 1 Check if the power cable is plugged into the Mains Input.
- 2 Check if the mains power supply is providing current.

The display lights up, but there is no sound coming from the cabinets.

- 1 Check the cables connected to the Left and Right inputs.
- 2 Check if the signal sources (mixer, keyboard, CD player) are on.
- 3 Is the Gain knob turned up?
- 4 Check the speaker cables for damage.
- 5 Check if the Speakon[®] connectors are fully engaged in their sockets (rotated to the right). They must be locked in place to establish an electrical connection.

Sound seems distorted.

- 1 Check the LED displays on your mixer. They should not be constantly in the red. If necessary, reduce the volume at the mixer.
- 2 If the LED displays on your mixer are in the green, turn back ES503 channel input volume.

Annoying hum

- 1 Check the cables connecting the source of the audio signal to ES 503. Replace any damaged cords.

Important TIPS

Do not expose electronic circuitry to moisture!

To ensure proper ventilation, make sure the subwoofer is placed a sufficient distance away from walls and isn't covered by curtains

Provide it with optimum input signals!

Avoid distortion!

Avoid ground loops!

Warranty and Support

When requesting any technical support, repairs, etc. please mention the serial number when contacting the support centre. The serial number can be found on the Warranty/Caution sheet or on the speaker.

EMI CLASSIFICATION

According to the standards EN 55103 this equipment is designed and suitable to operate in E3 (or lower E2, E1) Electromagnetic environments.

FCC CLASS B STATEMENT ACCORDING TO TITLE 47, PART 15, SUBPART B, §15.105

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

ES 503 contains transmitter module FCC ID:QOQWT32I (USA) IC:5123A-BGTWT32I (CANADA)

WARNING: Make sure that the loudspeaker is securely installed in a stable position to avoid any injuries or damages to persons or properties. For safety reasons do not place one loudspeaker on top of another without proper fastening systems. Before hanging the loudspeaker check all the components for damages, deformations, missing or damaged parts that may compromise safety during installation. If you use the loudspeakers outdoor avoid spots exposed to bad weather conditions.

Contact dBTechnologies for accessories to be used with speakers. dBTechnologies will not accept any responsibility for damages caused by inappropriate accessories or additional devices.

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