

OWNER MANUAL

ST 12-SMA
ST 15-SMA

PROFESSIONAL AUDIO
STAGE MONITORING



**SAFETY PRECAUTIONS**

1. All the precautions, in particular the safety ones, must be read with special attention, as they provide important information.

2. Power supply from mains

- a. The mains voltage is sufficiently high to involve a risk of electrocution; install and connect this product before plugging it in.
- b. Before powering up, make sure that all the connections have been made correctly and the voltage of your mains corresponds to the voltage shown on the rating plate on the unit, if not, please contact your RCF dealer.
- c. The metallic parts of the unit are earthed through the power cable. An apparatus with CLASS I construction shall be connected to a mains socket outlet with a protective earthing connection.
- d. Protect the power cable from damage; make sure it is positioned in a way that it cannot be stepped on or crushed by objects.
- e. To prevent the risk of electric shock, never open this product: there are no parts inside that the user needs to access.

3. Make sure that no objects or liquids can get into this product, as this may cause a short circuit.

This apparatus shall not be exposed to dripping or splashing. No objects filled with liquid, such as vases, shall be placed on this apparatus. No naked sources (such as lighted candles) should be placed on this apparatus.

4. Never attempt to carry out any operations, modifications or repairs that are not expressly described in this manual.

Contact your authorized service centre or qualified personnel should any of the following occur:

- The product does not function (or functions in an anomalous way).
- The power cable has been damaged.
- Objects or liquids have got in the unit.
- The product has been subject to a heavy impact.

5. If this product is not used for a long period, disconnect the power cable.

6. If this product begins emitting any strange odours or smoke, switch it off immediately and disconnect the power cable.

7. Do not connect this product to any equipment or accessories not foreseen.

For suspended installation, only use the dedicated anchoring points and do not try to hang this product by using elements that are unsuitable or not specific for this purpose. Also check the suitability of the support surface to which the product is anchored (wall, ceiling, structure, etc.), and the components used for attachment (screw anchors, screws, brackets not supplied by RCF etc.), which must guarantee the security of the system / installation over time, also considering, for example, the mechanical vibrations normally generated by transducers.

To prevent the risk of falling equipment, do not stack multiple units of this product unless this possibility is specified in the user manual.

8. RCF S.p.A. strongly recommends this product is only installed by professional qualified installers (or specialised firms) who can ensure correct installation and certify it according to the regulations in force.

The entire audio system must comply with the current standards and regulations regarding electrical systems.

9. Supports and trolleys

The equipment should be only used on trolleys or supports, where necessary, that are recommended by the manufacturer. The equipment / support / trolley assembly must be

WARNING**IMPORTANT**

moved with extreme caution. Sudden stops, excessive pushing force and uneven floors may cause the assembly to overturn.

10. There are numerous mechanical and electrical factors to be considered when installing a professional audio system (in addition to those which are strictly acoustic, such as sound pressure, angles of coverage, frequency response, etc.).

11. Hearing loss Exposure to high sound levels can cause permanent hearing loss. The acoustic pressure level that leads to hearing loss is different from person to person and depends on the duration of exposure. To prevent potentially dangerous exposure to high levels of acoustic pressure, anyone who is exposed to these levels should use adequate protection devices. When a transducer capable of producing high sound levels is being used, it is therefore necessary to wear ear plugs or protective earphones. See the manual technical specifications to know the maximum sound pressure level.

IMPORTANT NOTES

To prevent the occurrence of noise on line signal cables, use screened cables only and avoid putting them close to:

- Equipment that produces high-intensity electromagnetic fields
- Power cables
- Loudspeaker lines.

IMPORTANT NOTES



OPERATING PRECAUTIONS



OPERATING PRECAUTIONS

- Place this product far from any heat sources and always ensure an adequate air circulation around it.
- Do not overload this product for a long time.
- Never force the control elements (keys, knobs, etc.).
- Do not use solvents, alcohol, benzene or other volatile substances for cleaning the external parts of this product.

IMPORTANT NOTES

Before connecting and using this product, please read this instruction manual carefully and keep it on hand for future reference. The manual is to be considered an integral part of this product and must accompany it when it changes ownership as a reference for correct installation and use as well as for the safety precautions. RCF S.p.A. will not assume any responsibility for the incorrect installation and / or use of this product.

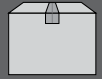
WARNING: To prevent the risk of fire or electric shock, never expose this product to rain or humidity.

IMPORTANT NOTES



WARNING





The ST Series - a new line of active loudspeakers specifically designed to be the everyday monitoring tool for rental companies and professional musicians. With its ultra compact design and choice of formats, together with high output levels, ST Series is the answer to a widevariety of production requirements.

The ST is reliable, easy to use and versatile: for every rental company, musician, venue and audio/visual provider, this high-performance self-powered speaker system offers a degree of simplicity unmatched by traditional amp and speaker PA systems.

ST Series is a practical solution for high intelligibility speech and audio applications, covering infill or delay, production studios, presentations and high power music sound reinforcement with or without subwoofers. A key requirement for everyday audio systems, delivering simple 'plug and play' solutions, without compromising performance and portability. Legendary RCF transducer technology coupled with state of the art digital amplification topology resulting in a perfectly optimised loudspeaker series. The ST Series provides high end audio coverage even at extreme sound pressure levels, unmatched reliability and acoustic compatibility across the whole series.

The ST Series monitoring systems feature professional RCF transducers in order to guarantee a better performance and great vocal reproduction. All Compression drivers and woofers are precision built taking advantage of RCF's superior moulding, assembly technologies and a wealth of professional knowledge and experience dedicated to achieve extremely high standards.

All ST Series two-way speakers are equipped with a new generation Digital Amplifier. The result of this is very high output, extremely low distortion and an incredible natural sound. Each amplifier presents both XLR and jack inputs, XLR output link, volume, EQ Mode (FLAT/BOOST), MIC/LINE sensitivity switch, VDE input connector. The amplifier features a solid mechanical aluminium structure which not only stabilizes the amplifier during transportation but also assists in the heat dissipation.

The new loudspeaker design looks aggressive whilst retaining familiar ergonomics and is the result of extensive combined functional and acoustic research. The ST coaxial system cabinets are manufactured in Baltic birch plywood and they are designed to dampen down vibrations even at maximum volume settings. The reflex porting has been designed to offer a great efficiency in the bass vocal range. The models are equipped with a side handle with rubber handgrip for greater portability; a special side design of the cabinet helps the precise repositioning of the monitor on the stage. A rugged steel pole mount has been installed on a side; in combination with the FREEFIELD equalisation gives the possibility to use the monitor in a pole stand configuration.

The equipments considered in this manual can be used in electromagnetic environment E1 to E3 as specified on EN 55103-1/2: 2009.

ST SERIES PROFESSIONAL AUDIO STAGE MONITORING

COMPONENTS

AMPLIFIERS

CABINETS



1 JACK/FEMALE XLR INPUTS (BAL/UNBAL). The system accept jack or XLR input connectors. These balanced inputs can be used to connect balanced or unbalanced microphones or audio sources at line level. The balanced connector is connected in parallel and can be used to send the audio signal to other amplified speakers, recorders or supplementary amplifiers.

2 LIMITER LED. The amplifier has a built in limiter circuit to prevent clipping of the amplifiers or overdriving the transducers. When the soft clipping circuit is active the LED blinks RED. It is okay if the limit LED blinks occasionally. If the LED blinks frequently or lights continuously, turn down the signal level.

3 SIGNAL LED. The signal indicator lights green if there is signal present on the main input.

4 POWER STATUS LED. This green led is ON when the speaker is connected to the main power supply and the ON/OFF is in ON position.

5 MALE XLR SIGNAL OUTPUT. The output XLR connector provides a loop trough for speakers daisy chaining.

6 VOLUME CONTROL. Adjust the amplifier volume. This control does not affect the "Link" - "Input - Link" output level.

7 FLAT/BOOST SWITCH. Set the flat or boost equalization. "Boost" equalization is a loudness recommended for music applications, when the system plays on a floor stand. For monitoring applications, when the system is on the floor, "Flat" equalisation is recommended.

8 INPUT SENSITIVITY SWITCH. Position the switch in LINE to use a line level source (0 dB) or MIC to use a microphone source.

9 IEC AC SOCKET. The IEC AC socket connect the power cord to the socket.

10 FUSE CARRIER. Mains fuse housing.

11 POWER MAIN SWITCH. The power switch turns the AC power ON and OFF.

WARNING: the VDE Power Connector is used to disconnect the system from the power supply network. It shall be easily accessible after the installation and during the use of the system

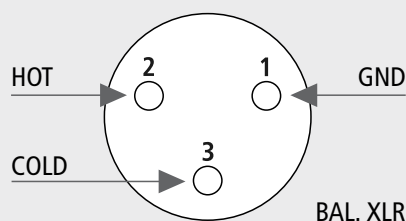


The XLR connectors use the following AES standard:

PIN 1 = GROUND (SHIELD)

PIN 2 = HOT (+)

PIN 3 = COLD (-)



CONNECTIONS

On the back panel you will find all the controls, the signal and current inputs. In case is necessary to change the voltage please call your vendor or authorized RCF SERVICE CENTRE. This operation require the substitution of the fuse value and is reserved to an RCF SERVICE CENTRE.

At this point you can connect the power supply cable and the signal cable, but before turning on the speaker make sure that the volume control is at the minimum level (even on the mixer output). It is important that the mixer is already ON before turning on the speaker. This will avoid damage to the speakers and noisy "bumps" due to turning on parts on the audio chain. It is a good practice to always turn on speakers at last and turn them off immediately after the show. Now you can turn ON the speaker and adjust the volume control to a proper level.

The amplifiers are equipped with a microprocessor to control the DSP and the amplifier. The correct switch on of the amplifier is ensured by an initialisation procedure; during this test stage the LEDs (Limiter, Signal and Power Status), located on the amplifier module, remain off for approx. 2 sec. At the end of the switch on procedure on the amplifier module the Ready green LED only remains steadily on. In case of severe failure of the speaker, the LED on the front panel flashes several times and on the amplifier module, the Limiter red LED flashes. The speaker switches to "mute".

BEFORE CONNECTING THE SPEAKER

BEFORE TURNING ON THE SPEAKER

TURNING ON THE SPEAKER

INSTALLATION



A 35 mm socket for mounting the loudspeaker on a speaker stand is provided in the bottom of the cabinet.

WARNING: Never suspend ST speakers by their handles. Handles are intended for transportation, not for rigging.

WARNING





The microprocessor is able to signal three different kinds of failure by flashing the "Limiter" red LED on the amplifier panel before the lighting up of the "Power status" green LED. The three types of failure are: **WARNING**: a non severe error or auto-ripristinate malfunction is detected and the performance of the speaker is not limited. **LIMITATIONS**: an error is detected and the performance of the speaker is limited (the sound level is reduced by 3 dB). This does not affect the operation of the speaker since it continues to operate. However, it is necessary to call the service centre to solve the issue. **FAILURE**: a severe malfunction is detected. The speaker switches to "mute".

FLASHING INDICATION: 1 or 2 >Warning 3 or 4 >Limitation from 5 to 8 >Failure.
In case of failure, the "Ready" green LED remains off.

Perform the checks listed below:

- check if the speaker is properly connected to the power supply
- make sure that the power supply is of correct voltage
- check that the amplifier is not overheated
- disconnect the speaker from the mains power supply, wait for a few minutes and connect it again. If after these tests the red "LIMITER" LED is still on, please contact an authorised service centre.

ST 12-SMA

200-240 Volt, 50 Hz SETUP: FUSE VALUE T 1.6 A 250 V
100-120 Volt, 60 Hz SETUP: FUSE VALUE T 3.15 A 250 V

ST 15-SMA

200-240 Volt, 50 Hz SETUP: FUSE VALUE T 3.15 A L 250V
100-120 Volt, 60 Hz SETUP: FUSE VALUE T6.3 A L 250V

VOLTAGE SETUP

(RESERVED TO THE RCF SERVICE CENTRE)

SPECIFICATIONS



	ST 12-SMA	ST 15-SMA
ACOUSTICAL		
Frequency response	45 - 20 kHz	45 - 20 kHz
Max SPL	129 dB	131 dB
Horizontal Coverage	90°	90°
Vertical Coverage	60°	60°
Crossover point	1.400	1.400
TRANSDUCERS		
Low frequency	12", 2.5" v.c.	15", 2.5" v.c.
High frequency	1", 1.4" v.c.	1", 1.4" v.c.
AMPLIFIER		
Total power	400 Watt	600 Watt
Low section	300 Watt	400 Watt
High section	100 Watt	200 Watt
CONNECTIONS		
Signal input/output	Jack-XLR male / XLR female	
Power input	VDE AC socket	
DSP and Protection Circuits	2 way equalisation, crossover filtering, Fast limiter, RMS limiter	
PHISICAL SPECIFICATIONS		
Dimensions (w, h, d)	594, 318, 400 mm	673, 362, 473 mm
Weight	18 Kg	20.7 Kg
Colour	Black	Black



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