

MIXING CONSOLES

F 12XR

OWNER MANUAL
MANUALE UTENTE

HIGH PERFORMANCE PROFESSIONAL
COMPACT LIVE MIXER

MIXER PROFESSIONALE LIVE
COMPATTO AD ALTE PRESTAZIONI



LANGUAGE

ENGLISH	4
ITALIANO	14

SAFETY PRECAUTIONS

Before connecting and using this product, read the instructions provided in this manual carefully and keep it for future reference.

This manual is an integral part of the product and it must accompany it even in the case of changes of ownership, so that the new owner is aware of the method of installation and use and all safety warnings. Incorrect installation and use of the product shall relieve RCF S.p.A. of any and all liability.

CAUTION: to prevent the risk of flames or electric shock, do not ever expose this product to the rain or humidity.



WARNINGS

1. All warnings, in particular those relating to safety, must be read with special attention, as they contain important information.
2. **MAIN SUPPLY FROM THE MAINS**
 - **The supply voltage of the device is sufficiently high to constitute a risk of electric shock to persons: never install or connect the device with the power supply cable plugged into the mains.**
 - **Before powering this product, make sure that all connections are correct and that the voltage of your mains supply matches the value on the device data plate; if this is not the case, please contact an RCF dealer.**
 - **The metal parts of the device are earthed via the power supply cable.**
 - **A device with CLASS I construction must be connected to the mains socket with a protective earthing connection.**
 - **Make sure that the power supply cable of the device cannot be stepped on or crushed by objects, to make sure it remains intact and in perfect working order.**
 - **To avoid the risk of electric shock, never open the device: there are no parts that can be used by the user inside.**
3. Do not allow objects or liquids to penetrate the product, as this may cause a short circuit. The device must not be exposed to dripping or splashing water; no naked flame sources (e.g. lighted candles) and no objects filled with liquid (e.g. vases) must be placed on top of the device.
4. Do not perform any work / modifications / repairs except for those expressly described in this manual. Contact an authorised service centre or highly qualified personnel when:
 - **the device is not working (or is working abnormally);**
 - **the power supply cable has been seriously damaged;**
 - **objects or liquids have penetrated the device;**
 - **the device has undergone major knocks.**
5. If this product is not used for long periods of time, unplug the power supply cable from the mains.
6. If the product releases abnormal odours or smoke, turn off the power immediately and unplug the power supply cable.
7. Do not connect this product to other devices and accessories not envisaged. Do not try to hang this product using elements that are not designed or suitable for this purpose. To avoid the risk of falling, do not stack multiple units of this product, unless this option is expressly specified in the instruction manual.
8. **RCF S.p.A. strongly recommends that the installation of this product be carried out only by professional qualified installers (or specialised installation companies) able to do it properly and to certify installation in accordance with the applicable regulations in force. The entire audio system must comply with the applicable rules and regulations regarding electrical systems.**
9. **Stands and Carts**
Where envisaged, the product should only be used on carts or stands recommended by the manufacturer. The device-stand / device-cart assembly should be moved with the utmost care. Sudden stops, excessive pushing force and uneven or tilted floors could cause the assembly to overturn.
10. **Hearing loss**
Exposure to high sound levels can cause permanent hearing loss. The sound pressure level dangerous to one's hearing varies greatly from one person to another and depends on the duration of exposure. To avoid potentially dangerous exposure to high sound pressure levels, anyone who is exposed to these levels must use adequate protection; when a transducer capable of producing high sound levels is in use, ear plugs or protective headsets must be worn. See the technical instruction data to find out the maximum sound pressure levels that the speakers are capable of producing.
11. Place the product away from heat sources and ensure adequate air circulation all around.
12. Do not overload this product for extended periods of time.
13. Never force the controls (buttons, knobs, etc.).
14. Do not use solvents, alcohol, petrol or other volatile substances to clean the external parts of the unit; use a dry cloth.
15. Do not point microphones near and in front of the speakers, so as to avoid any feedback ("Larsen effect").



IMPORTANT

NOTE ON CABLES FOR AUDIO SIGNALS

To prevent the occurrence of noise on the cables that carry signals from the microphones or on the line (for example 0 dB), use only screened cables and avoid laying them in the vicinity of:

- **equipment that produces strong electromagnetic fields;**
- **cables from the power mains;**
- **speaker lines.**

INFORMATION ON THE DEVICE

Thank you for purchasing an RCF mixing console.

F 12XR is a versatile audio mixer equipped with all the tools needed for accurately processing multiple audio signals from a variety of sources.

CLEAR SOUND

RCF mixing consoles devices combine RCF's professional "sound culture" heritage with innovative design and dedicated manufacturing. RCF mixing consoles produce clear sound, accurate sound dynamics and extreme versatility of use by passionate audio professionals. RCF mixing consoles are designed to match perfectly with RCF active speakers.

RELIABILITY

All RCF mixing consoles undergo four extensive instrumental quality tests during construction. A listening test is carried out at the end of production followed by a final quality control inspection to locate any visible defects, such as scratches or dents. The process guarantees outstanding reliability making sure that the device you have purchased is of the highest quality.

DESIGN

The unique design of RCF mixing consoles is an example of typically Italian RCF flair and creativity. RCF mixing consoles combine modern, excellent ergonomic design. In addition to their striking appearance, the original side profiles of the mixers makes them easy to grasp securely.

DESCRIPTION AND MAIN CHARACTERISTICS

F 12XR is a versatile analogue audio mixer, equipped with all the tools required for accurate processing of multiple audio signals from different sources. F 12XR provides an internal PRO DSP FX: the DSP unit offers 16 predefined effects presets: 10 reverbs, 3 delays and 3 modulation effects.

F 12XR AUDIO INPUTS

- **CHANNELS 1 to 6: Microphone or Line inputs with separate XLR and TRS jack connectors, three-band EQ.**
- **CHANNELS 5/6 and 7/8: STEREO inputs for LINE level stereo signals (double TRS jack) with three-band equalizer.**
- **CHANNELS 9/10 and 11/12: STEREO inputs for LINE level stereo signals (RCA or double TRS jack) with two-band equalizer.**

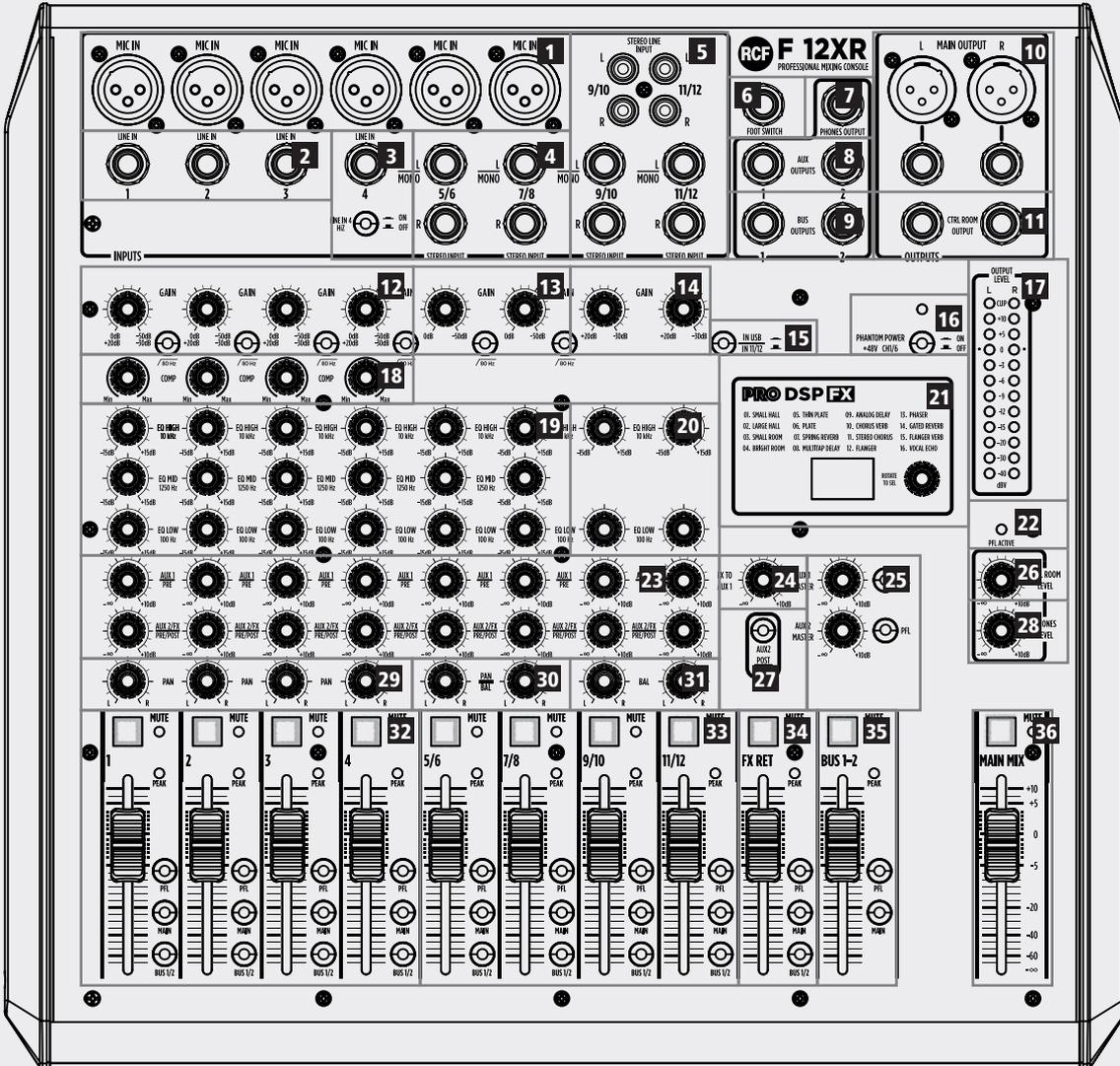
F 12XR AUDIO OUTPUTS

- **MAIN MIX main stereo output with XLR male connectors (balanced) and TRS jack.**
- **CONTROL ROOM OUTPUT with TRS balanced jack out connectors.**
- **2 AUX OUTPUT (Balanced TRS jack).**
- **1 FOOTSWITCH jack socket (TS jack) for foot control for the activation or deactivation of effects.**
- **1 PHONES headphone outputs (1/4" stereo jack)**
- **USB audio port for stereo recording and playback to/from dedicated computer.**
- **Internal PSU 100 V-240 V, 50-60 Hz, 40 W**

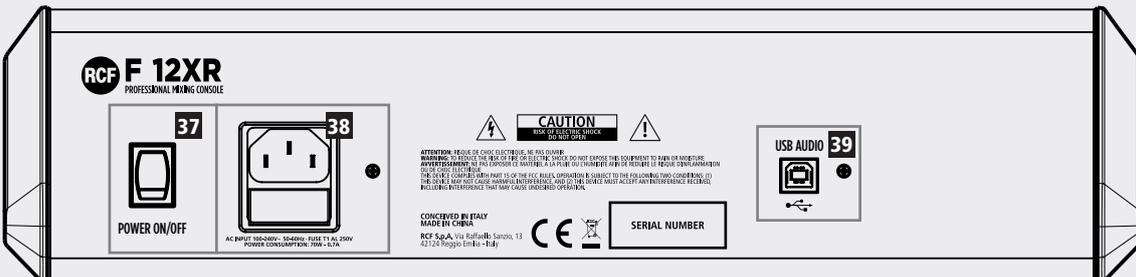
PHYSICAL SPECIFICATIONS

- **Dimensions: L = 372 mm, W = 355 mm, H = 90 mm**
- **Weight: 4,5 Kg**

FRONT PANEL



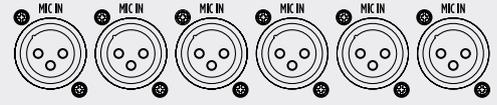
REAR PANEL



FRONT PANEL FUNCTIONS

[1] MIC INPUTS

RCF F 12XR provides 6 mono Mic inputs via XLR connectors. The Balanced XLR Microphone preamp input supports sources with a gain range from 0 dB to -50 dB (see section [12] and [13] of this manual). All the F 12XR's MIC-LINE inputs are supplied with an 80 Hz Hi-pass filter. Enable the 80 Hz Hi-Pass filter when using voice microphone to reduce low frequency pop, bump and rumble noises (see section [12] and [13] of this manual). +48 V Phantom Power is provided for the Mic inputs 1 to 6. Enable the Phantom power in presence of Condenser and Electret Microphones or in the event of D.I. box usage (see section [16] of this manual).



[2] LINE INPUTS

Line inputs TRS jack from 1 to 6 support line signals with a gain of +20 dB to -30 dB.



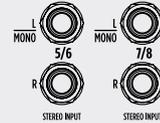
[3] LINE INPUT 4

Line Input 4 adds the selectable Hi-Z input feature. The Hi-Z input is very useful when connecting low level musical instruments like Electric or Acoustic Guitars or Bass Guitars with passive pick-up.



[4] STEREO INPUTS 5/6 AND 7/8

TRS jacks 5/6 and 7/8 provide stereo inputs for line sources. Note that MONO sources can be connected to jack inputs 5 and 7.



[5] STEREO INPUTS 9/10 AND 11/12

RCA and TRS jacks 9/10 and 11/12 provide stereo inputs for line sources. Note that MONO sources can be connected to jack inputs 9 and 10.



[6] FOOTSWITCH

This TS jack connector allows the use of MOMENTARY switches or foot pedals to MUTE and UN-MUTE the audio coming from the internal FX return. When the FX is muted via footswitch the red LED near the MUTE button of FX RET fader lights up (see the section [34] of this manual). In this state, the effect can be unmuted either by pressing the FX RET MUTE button or the FOOTSWITCH again.



[7] PHONES OUTPUT

Connect headphones here to listen to the MAIN MIX or PFL signals. To avoid hearing loss set the PHONES LEVEL control ([28]) to minimum (-∞) before connection, and wear headphones.



[8] AUX OUTPUTS

These TRS jack connectors provide +4 dB balanced audio output coming from auxiliaries sends. Connect your stage monitors or external effect input here.



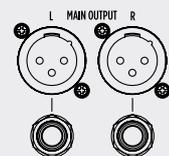
[9] BUS OUTPUTS

These two balanced TRS jacks perform +4 dB audio out coming from BUSSES 1 and 2. The audio level of BUSSES 1 and 2 is controlled by the dedicated BUS 1/2 fader located on the front panel (see section [35] of this manual).



[10] MAIN OUTPUTS

These XLR male connectors provide +4 dB balanced audio output coming from MAIN MIX. Connect your main speaker system to XLRs, named L and R. The audio level of MAIN MIX OUT L and R is controlled by the dedicated MAIN MIX fader (see section [36] of this manual). L and R XLR MAIN MIX outputs are replicated with L and R TRS jack.



FRONT PANEL FUNCTIONS

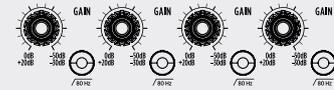
[11] CTRL ROOM OUTPUT

Connect to the Control Room Output Balanced jacks a pair of studio monitors as local listening system. The audio level of the CTRL ROOM output is controlled by the dedicated CONTROL ROOM potentiometer on the front panel (see section [26] of this manual).



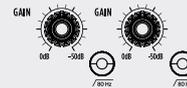
[12] CHANNEL 1 TO 4 GAIN

MIC input (XLR). These controls permit the gain for MIC input to be set with a range from 0 dB to -50 dB; connect your microphones here. If the LINE INPUT (TRS jack) are in use the gain range permitted is from +20 dB to -30 dB. All the F 12XR's MIC-LINE inputs are supplied with an 80 Hz Hi-pass filter. Enable the 80 Hz Hi-Pass filter when using microphone for voice to reduce low frequency pop, bump and rumble noises.



[13] CHANNEL 5/6 AND 7/8 GAIN

MIC input (XLR). These controls permit the gain for MIC input to be set with a range from 0 dB to -50 dB. Corresponding LINE INPUT (TRS jack) have a fixed input level gain.



[14] CHANNEL 9/10 AND 11/12 GAIN

STEREO LINE INPUT (TRS jack). The controls allow a gain range control from +20 dB to -30 dB.



[15] IN USB - IN 11/12 BUTTON

When the button is in upper position (not pressed) the audio coming from LINE INPUT 11/12 is routed to MAIN MIX; when USB IN - IN 11/12 button is pressed, the stereo audio channels played from an external computer connected to the USB port is routed to the stereo channel 11/12. In this instance the USB audio substitutes the analog audio input and takes advantage of all the features provided by the stereo channel such as EQs, AUX send, BAL and fader control.



[16] PHANTOM POWER +48 V CH1/6 SWITCH

Dedicated to the Mic input, this switch allows the +48 V Phantom Power to the Mic input 1 to 6 to be enabled. The enabling of the Phantom power is necessary in presence of Condenser and Electret Microphones or in case of D.I. box usage.



[17] LEVEL METER

This 12 LED elements level meter allows to control the Main Mix output level. Keep the output level below the "CLIP" indication to avoid overloaded signals that can cause distortion.



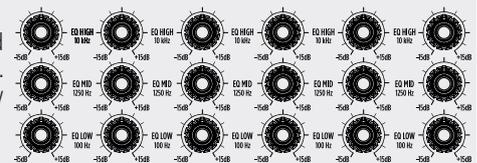
[18] COMPRESSORS

Input channels 1 to 4 are provided with intuitive and powerful single control dynamic compressors. With thresholds and ratio parameters properly designed, the F 12XR's compressors allow even the most dynamically demanding signals to be controlled.



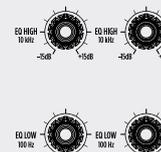
[19] EQ (MONO CHANNELS)

All the F 12XR's mono channels and stereo channel 5/6 and 7/8 are provided with a sophisticated and precise 3-band EQ. Low frequency control sets in at 100 Hz with a gain of +/-15 dB and shelving curve. High frequency control sets in at 10 kHz with a gain of +/-15 dB and shelving curve. Mid frequency control sets in at 1250 Hz with a gain of +/-15 dB and bell curve.



[20] EQ (STEREO CHANNELS)

Stereo channels 9/10 and 11/12 are provided with shelving HIGH and LOW EQ bands. Hi frequency control sets in at 10 kHz with a gain of +/-15 dB and shelving curve. Low frequency control sets in at 100 Hz with a gain of +/-15 dB and shelving curve.

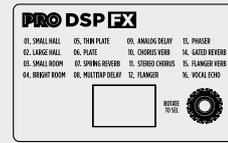


FRONT PANEL FUNCTIONS

[21] PRO DSP FX

F 12XR is equipped with an internal 16 preset PRO DSP FX board. Rotating the encoder allows selection between 16 great sounding effects:

- | | | | |
|-----------------|--------------------|-------------------|--------------------|
| 01. SMALL HALL | 05. THIN PLATE | 09. ANALOG DELAY | 13. PHASER |
| 02. LARGE HALL | 06. PLATE | 10. CHORUS VERB | 14. GATED REVERB |
| 03. SMALL ROOM | 07. SPRING REVERB | 11. STEREO CHORUS | 15. FLANGER REVERB |
| 04. BRIGHT ROOM | 08. MULTITAP DELAY | 12. FLANGER | 16. VOCAL ECHO |



Select one of these effect presets to enrich your sound.

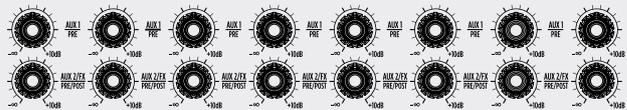
[22] PFL ACTIVE LED

This LED lights up when one or more PFL buttons are pressed.



[23] AUX1- AUX2/FX

Each channel of the F 12XR mixer is provided with 2 auxiliary sends; AUX1 is a PRE fader send. AUX2/FX send feed the internal PRO DSP FX board. AUX2/FX is a POST or PRE fader send depending on the position of the AUX2 PRE/POST button ([27]). When the selection is pre-fader AUX2/FX takes the signal from the channel independently from the fader position; when the selection is post-fader the AUX2/FX takes the signal subjected to the fader position. The signal present in the AUX2/FX send is also routed to the AUX OUTPUT jack present on the top panel (see section [5] of this manual).



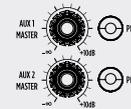
[24] FX TO AUX

This send allow routing the signal present in the FX return channel to the AUX1 sends.



[25] AUX1 AND AUX2/FX MASTER KNOBS

These potentiometers control the master level of the auxiliary sends AUX1 and AUX2/FX. The PFL button when pressed allows listening the signal present in the aux out, through speakers connected to the CTRL ROOM OUTPUT (see section [11] of this manual) or through headphones connected to PHONES OUTPUT (see section [7]).



[26] CTRL ROOM LEVEL KNOB

This is the level control of the signal routed to CTRL ROOM OUTPUT. During the mixer's normal use, the MAIN MIX signal is routed to this output; when one or more PFL buttons are pressed the PFL bus signal is routed to CTRL ROOM OUTPUT and PHONES OUTPUT.



[27] AUX2 PRE/POST BUTTON

This button allows selection of the AUX2/FX position, pre-fader or post-fader. See section [23] of this manual.



[28] PHONES LEVEL

This knob controls the level of the PHONES OUTPUT [7]. Set the PHONES LEVEL control to minimum (-∞) before connect and wear headphones to avoid hearing loss.



[29] PAN

These controls allow positioning of the signal present in the mono channel in the stereo image of the MAIN MIX.



[30] PAN/BAL

The control works as PAN if the channel is used in MONO configuration (XLR MIC INPUT) defining the position of the signal into the stereo image of the MAIN MIX. BAL (Balance) control allows balancing of the position of the stereo channel (TRS jack line stereo input) into the stereo image of the MAIN MIX.



[31] BAL

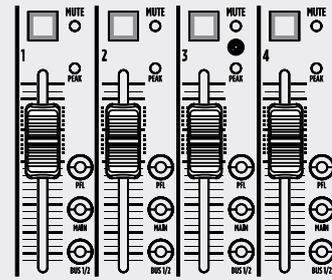
These controls, characteristic of stereo channels, allow balancing of the position of a stereo channel into the stereo image of the MAIN MIX.



FRONT PANEL FUNCTIONS

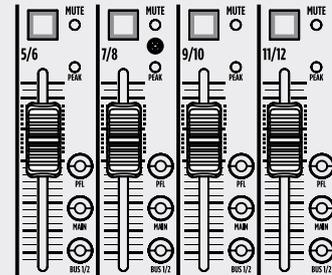
[32] MONO CHANNELS FADERS SECTION

This section allows the levels of the input channels from 1 to 4 to be controlled, and their routing to the output. Each one of the faders has several control buttons. MUTE button, when pressed, inhibits the signal to flow to the output bus or main mix paths. The PFL button allows listening to the signal present on the channel through speakers connected to the CTRL ROOM OUTPUT (see section [11] of this manual) or through headphones connected to HEADPHONES OUTPUT (see section [7]). MAIN and BUS 1/2 buttons positioned on the right side of each fader allow the signal to be routed respectively to MAIN MIX and/or STEREO BUS 1/2.



[33] STEREO CHANNELS FADER SECTION

This section allows the levels of the stereo input channels from 5/6 to 11/12 to be controlled, and their routing to the output. The PFL button allows listening to the signal present on the channel through speakers connected to the CTRL ROOM OUTPUT (see section [11] of the panel description) or through headphones connected to HEADPHONES OUTPUT (see section [7]). MAIN and BUS 1/2 buttons positioned on the right side of the fader allow the signal to be routed respectively to MAIN MIX and/or STEREO BUS 1/2.



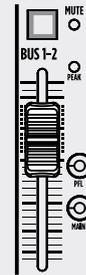
[34] FX RET FADER

This fader controls the level of the signal coming from the internal PRO DSP FX. MUTE button, when pressed, inhibits the signal to flow to the output bus or main mix paths. The PFL button allows listening to the signal present on the channel through speakers connected to the CTRL ROOM OUTPUT (see section [11] of the panel description) or through headphones connected to PHONES OUTPUT (see section [7]). MAIN and BUS 1/2 buttons positioned on the right side of the fader allow the signal to be routed respectively to MAIN MIX and/or STEREO BUS 1/2.



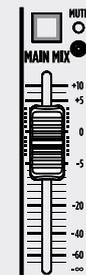
[35] BUS 1-2 FADER

The BUS 1-2 fader controls the level of this stereo bus out. BUS 1-2 can be fed with each one of the input channels to create a stereo audio group routed to the physical BUS OUTPUTS (see section [9]). The MUTE button, when pressed, inhibits the signal flow to the BUS output or MAIN MIX paths if BUS 1-2 is routed to it. The MAIN button positioned near to the BUS fader routes the BUS to the MAIN MIX. The PFL button, when pressed, allows listening to the signal present into BUS through speakers connected to the CTRL ROOM OUTPUT (see section [11] of this manual) or through headphones connected to PHONES OUTPUT (see section [7]).



[36] MAIN MIX FADER

The MAIN MIX Fader controls the level of the MAIN MIX.



REAR PANEL FUNCTIONS

[37] POWER SWITCH

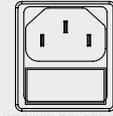
Use this switch to turn on and off your F 12X mixer.



POWER ON/OFF

[38] POWER SUPPLY INLET

Connect here the power cord provided. The internal power supply accepts power from 100 V to 240 V AC 50-60 Hz.



AC INPUT 100-240V - 50-60Hz IUTSE T3 6L 200V
POWER CONSUMPTION 70W ± 0.5A

[39] USB TYPE B PORT

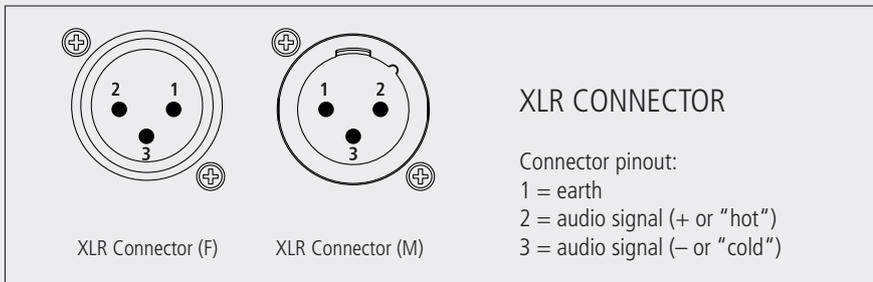
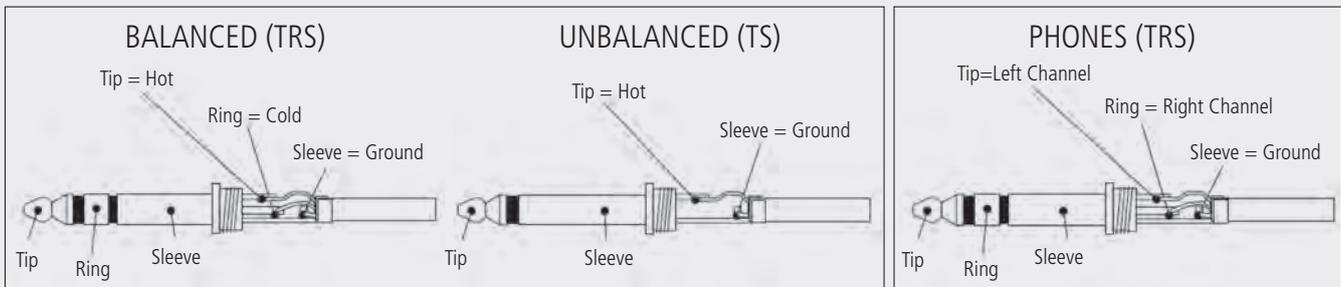
Use this to connect your computer for audio stereo recording of the MAIN MIX signal and audio stereo playback. The computer connection does not require any driver and allows the recording and reproduction of PCM audio at 44.1/48.0 kHz - 16 Bit. The audio signal coming from a computer connected to the USB port could be reproduced through Channel 11/12 audio path (see section [15] of this manual).

USB AUDIO

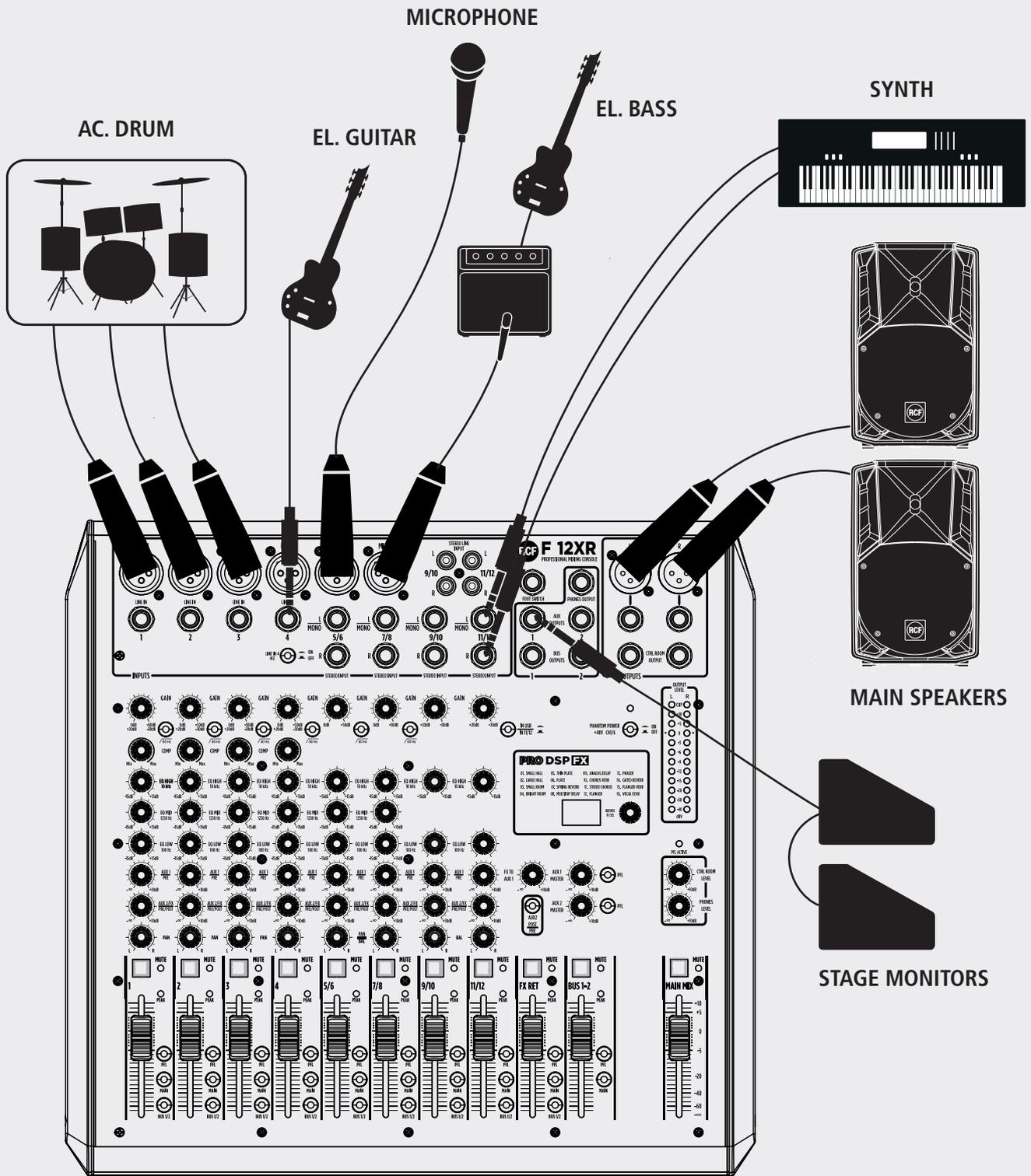


CONNECTORS

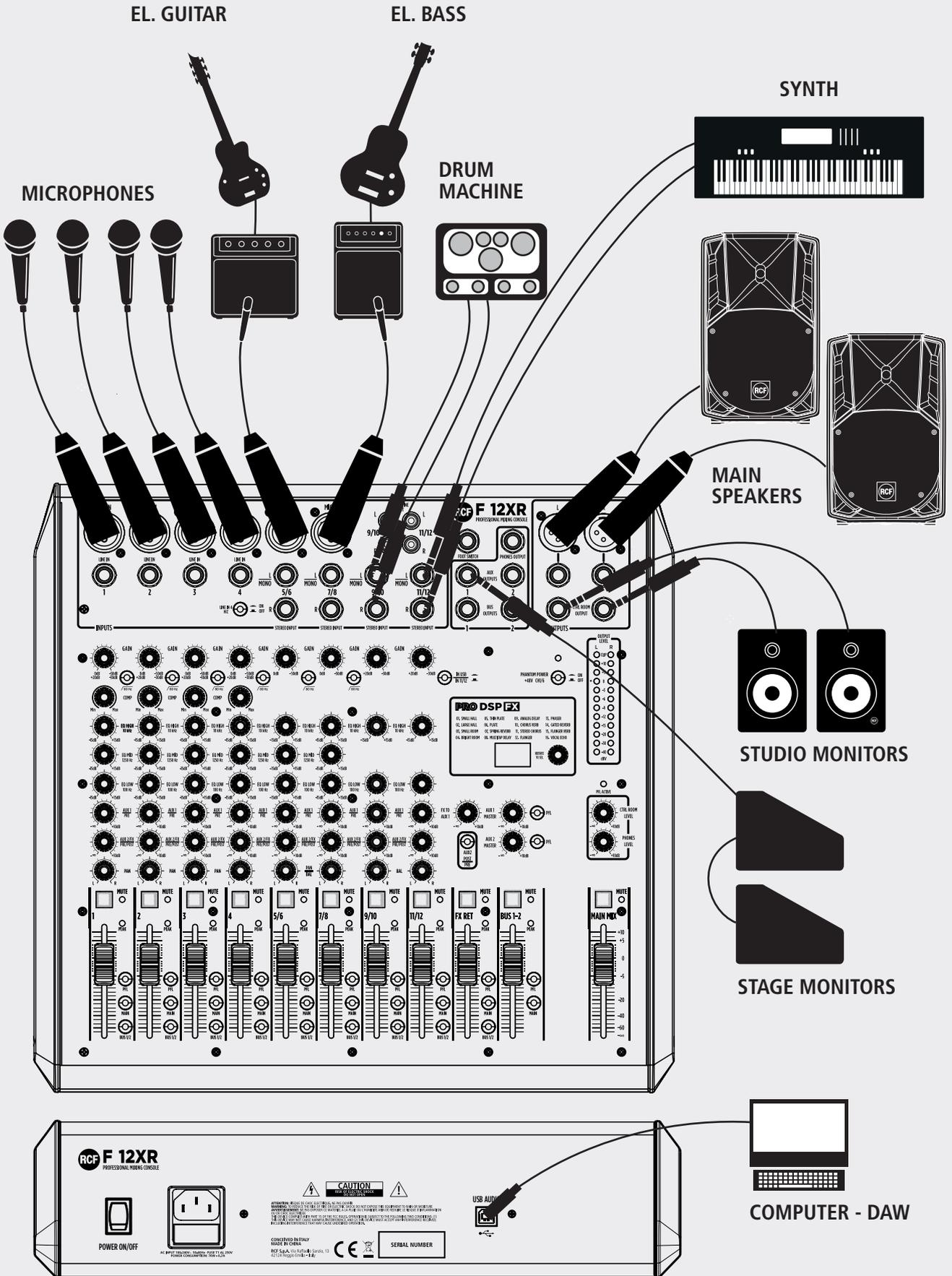
1/4" JACK CONNECTOR



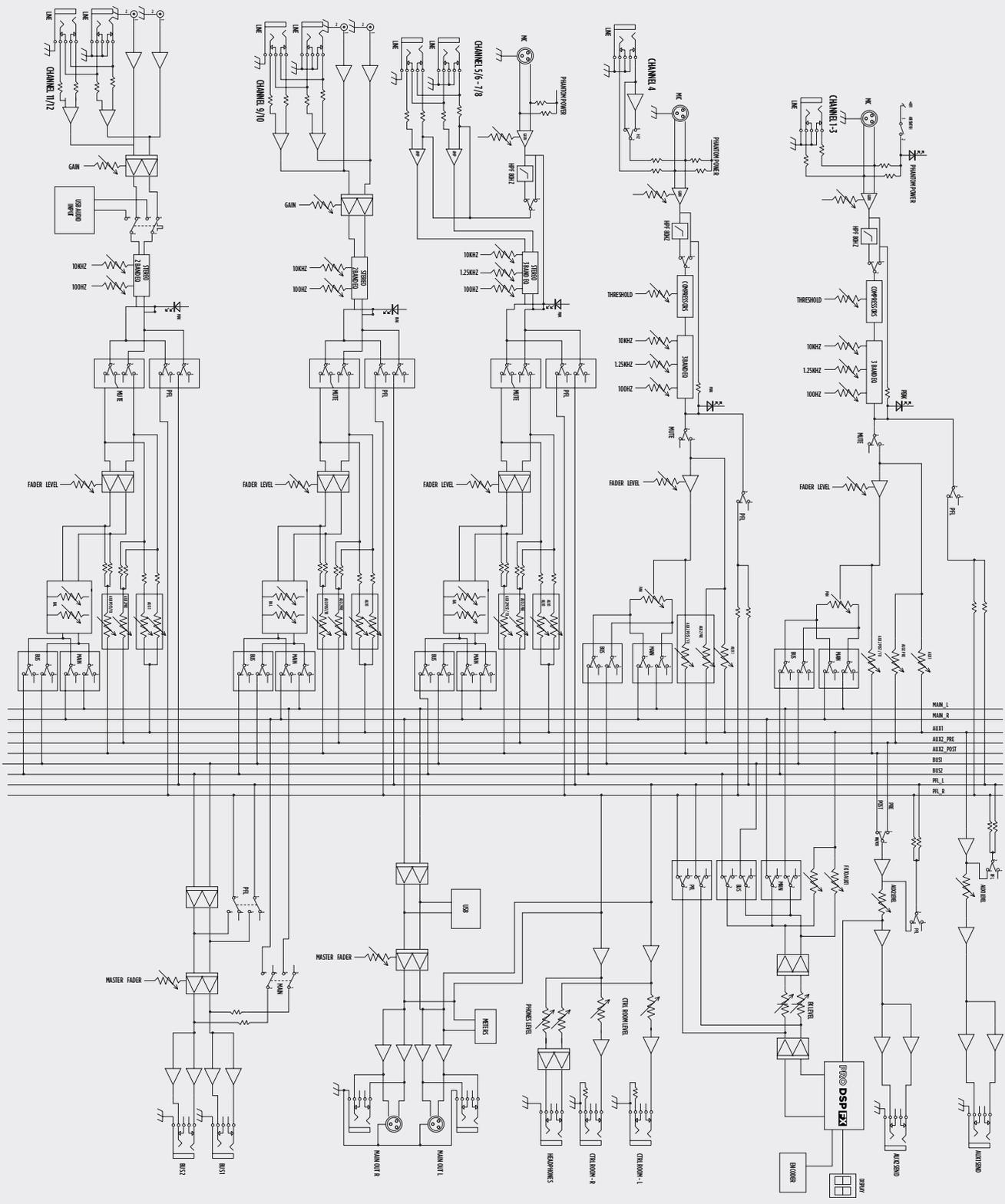
SUGGESTED CONFIGURATION



SUGGESTED CONFIGURATION



F12XR BLOCK DIAGRAM / SCHEMA A BLOCCHI



SPECIFICATIONS / SPECIFICHE

SPECIFICATIONS RCF F 12XR

Mono input Channels

Microphone inputs	6 XLR Balanced
Frequency response	20 Hz - 20 kHz, +/-1 dB
Distortion (THD+N)	<0,003% at +0 dB, 20 Hz-20 kHz
Sensitivity range	0 dB to -50 dB
Max input	+20 dBu
Mic input impedance	14 k Ω unbalanced
Phantom Power	+48 V
Low cut:	80 Hz
Line input	4 TRS jack balanced
Frequency response	20 Hz - 20 kHz, +/- 1dB
Distortion (THD+N)	<0,003% at +0 dB, 20 Hz-20 kHz
Sensitivity range	20 dB to -30 dB
Max input	+40 dBu
Line input impedance	21 k Ω unbalanced

Stereo Input Channels

Line input	4 pairs TRS jack balanced and 2 pairs RCA unbalanced
Frequency response	20 Hz - 20 kHz, +/- 1 dB
Distortion (THD+N)	<0,003% at +0 dB, 20 Hz-20 kHz
Sensitivity range	20 dB to -30 dB
Line input impedance	15 k Ω

Mono Channels EQ

High	+/-15 dB @ 10 kHz Shelving
Mid	+/-15 dB @ 1,250 kHz Bell
Low	+/-15 dB @ 100 Hz Shelving

Stereo Channels EQ

High	+/-15 dB @ 10 kHz Shelving
Low	+/-15 dB @ 100 Hz Shelving

DSP Section

DSP Processing	20/27 bit digital signal
A/D and D/A converters	24 bit
Type of effects	4 algorithms: reverb, chorus, delay, flanger - 16 presets
Footswitch	TS jack (for effect return mute and unmute)

Outputs

Main Output	1 pair of XLR male and 1 pair of TRS jacks
Max Main Mix Output level	+28 dBu
Aux Output	2 TRS jack
Max Aux Output level	+28 dBu
Stereo Bus 1/2 Output	2 TRS jack
Max Bus Output Level	+28 dBu
Ctrl Room	1 pair of TRS jacks
Phones Output	1 Stereo jack

Power Supply

Internal Universal Power	
Main Voltage	100 V - 240 V AC, 50-60 Hz
Power Consumption	24 W

Weight 4.5 kg

Dimensions L 372 mm, W 355 mm, H 90 mm

www.rcf.it



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