







**OWNER'S MANUAL** 

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# 1 Overview

# 1.1 About this manual

### Last revision, March 2021

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# 1.2 Unboxing

When unpacking the unit; make a visual inspection in order to check that the packaging did not receive any blows that could have damaged the equipment. Along with the console you receive the following items:

- 1 external power source, switching 90-240V
- 1 guaranty agreement
- 1 USB cable
- self-adhesive rubber pads.
- This user's manual

Optional:

- Wiring kit Solidyne MNG- Mini
- SmartCam USB interface

# 1.3 Main features

Solidyne MiniMixer is a compact, solid and elegant unit. Despite its small size, it has great interconnection flexibility, including USB audio and Bluetooth link for mobile phones.

MiniMlxer is intended for integrated studios; where the driver and operator work from a single room or studio. Or when it is the announcer himself who operates the console.

It is marketed as a standalone unit, or as part of the following integrated solutions.

## MiniMixer MX

Includes Audicom-MX air automation and management software and three months free subscription to audio streaming provider Alsolnet.

## MiniMixer AV

Includes Audicom Video; and the "Close RadioTV" software service for managing cameras, video graphics and streaming.

#### MiniMixer Avcam

Includes Audicom Video, Close RadioTV and the SmartCam hardware module to automate the switching of the cameras.

# **1.3.1 INPUT CHANNELS**

#### Microphones

Three 100mm faders controlls 4 dynamic microphones. The Fader#3 manages the inputs MIC-3 and MIC-4. When using these inputs, use two microphones of the same make and model. The possible difference in level between different voices is compensated by an internal compressor, which acts on the MIC inputs.

#### Lines

Solidyne MiniMixer has **two stereo inputs for line** signals: an analog line input (TRS) and a USB port for direct connection to a computer.

#### Phone lines

Up to two phone lines can be handled. A conventional land line (2 wires) and a mobile phone, which is linked to the console via Bluetooth. Managing the phone lines is easy as many functions are automated.

# 1.3.2 MONITORING and CUEs

Up to **4 headphones** can be connected to the rear panel. If headphones with built-in volume control are used, the use of a headphone distributor can be avoided.

**Tally light:** When the on-air light is connected, the HEADPHONES # 1 output becomes an output for monitor speakers, as it is muted when the microphones are activated on the air, to avoid coupling.

**Preview** (CUE) allows the operator to dialogue with the lines and listen to signals before they go on the air.

A **talk-back** microphone allows you to speak privately to each phone line, or speak to the headset.

# 1.3.3 OUTPUTS

The MiniMixer generates **two mixes**. The main mix, PROGRAM (PGM) is sent to the PGM outputs and USB (for streaming). USB sends digital audio to the computer, freeing up its onboard line input for other uses.

A special output sends the **microphone mix**, allowing microphone recording while the console is still on the air.

An **insert point** allows you to connect an external processor to process the program signal that is sent over USB. **BLANK PAGE** 

# 2 Rear panel. Connections.



Figure 1: Back view of the MiniMIxer

#### POWER SUPPLY

1 Minimixer works with an external power source, using a tubular connector (pin + / 2mm). The power supply is a switching 90/240V 50/60Hz - 12V/1A.



USE ONLY THE ORIGINAL POWER SOURCE SUPPLIED BY SOLIDYNE.

MiniMixer do not have ON/OFF switch. It remains turned on if the power supply is plugged (and feeding from AC outlet).

#### TALLY LIGHT

2 It is a tubular connector (pin + / 2.5mm) for the ON-AIR signaling light. Delivers 12VDC and supports a maximum load of 200mA. When the tally light is plugged, the headphone output # 1 is muted each time the light is turned on.

#### AUDIO USB

**3 USB connection** gives one stereo digital audio input/output on the computer. Uses a standard USB A/B cable.

Be sure to place the CPU as close to the console as possible to use the USB cable supplied with the console. If necessary, longer or extension cables can be used; but it is recommended not to exceed 4 meters. Always use good quality cables.

To connect USB port proceed:

- 1. Connect the power supply.
- 2. Plug the USB cable to the MiniMlxer.
- 3. Plug the USB cable to the computer.

Make sure the computer has an effective ground before connecting the USB

If the equipment is not properly grounded, the USB input on the console or computer could be damaged.

The computer must run Windows<sup>®</sup> 7/10 or newer. The OS will detect a new USB device and automatically will install one **"USB playback device"** (at the console's side is the USB stereo input) and one **"USB recording device"** (at the console's side is the USB stereo output). The recording device receives the PGM signal.

## MICROPHONES

4 The MiniMixer has four balanced inputs for dynamic microphones, using XLR connectors.

MIC 3 and MIC 4 inputs share the same fader. When using both inputs, it is a good idea to use microphones of the same make and model.

## HEADPHONES

5 There are 4 headphone outputs, using 1/8" TRS (minijack). The level for all outputs is controlled with one knob located on the section CUE MONI-TOR.

The headphone output **#1** can be used to connect powered loudspeakers. If a tally light is connected to MiniMixer, headphone output **#1** is muted when the tally light turns on (mics on air).

# POTS

6 RJ11 connector to land lines (2 wires). The preset NULL allows to adjust the hybrid's rejection. To connect an associated telephone set, you must have a parallel connection on the telephone jack socket.

The line can be connected directly to the public telephone exchange or to a private exchange (PBX). The private centrals sometimes deteriorate somewhat the rejection of the hybrid, so it is advisable to connect the console directly to the public central lines.

Telephone lines are internally protected against high voltage discharges (flash or non-direct lightning) by metal oxide varistors. However, it is recommended to **install external protections** based on gaseous arresters and fuses, especially if you are in a storm zone.



Although the console has internal protection for distant lightning strikes, it is recommended to install a protector against voltage spikes on the telephone line, which can be generated by accidents or lightning strikes or flashes. Remember that lightning damage is NOT covered under warranty.

## Rejection factor (Null)

This setting applies only to the land line. It is done when the console is installed and does not need to be readjusted later, except if a different phone line is connected.

The rejection factor expresses the ability of the hybrid to prevent the transmitted signal from returning with the signal from the caller. The higher the rejection factor, the "cleaner" the voice quality of the local speaker.

To adjust the rejection proceed (see the next chapter for full details):

- 1. Send spoken content on the air from the computer. If no spoken content is available, you can speak live using the microphones. Music can be used as a last resort, but it will make adjustment more difficult.
- 2. Make a call using the POTS line (PHONE).
- 3. Who answer the call, will keep in silence.
- 4. Quit the PGM signal from headphones (the PGM button on the zone CUE MOITOR).
- 5. Listen to the telephone line in CUE and carefully turn the NULL control, back and forth, until you find the point where the level in headphones of the signal sent to the air is minimum.

6. End the calling.

### Stereo line

7 Unbalanced stereo line in (Jack TRS ¼").

#### Program INSERT

Stream-In is a stereo input that uses a ¼ "TRS Jack. When plugged in, it disconnects the PGM send to USB and replaces it with the external Stream-In signal. This allows using an external processor, connected to the program output, and reentering the processed signal to the MiniMixer, which sends it via USB to the computer for streaming transmission.

#### Program output

**9** Stereo PGM Out is a stereo output over ¼" Jack connector. Sends the mix of microphones; USB; aux line and phone lines.

## REC output

**10** MIC REC OUT is a stereo output with a ½ "mini jack, which delivers the mix from the microphones.

It allows to record the microphone mix while the console continues to stream content from the computer. To record, you can use the line input of the computer, or any portable recorder. A connection scheme is shown below, which takes advantage of the line input on board the computer.

## SmartCam (only models MiniMixer/AVcam)

**11** Smartcam is an interface included only in MiniMixer AVcam models; which also include the Audicom Video (audiovisual management system) and the Close RadioTV camera and streaming management service. Smartcam transmits information on the status of the microphones via USB, allowing the system to automatically switch the studio cameras according to the dynamics of the conversation.

Use a USB-miniUSB cable. Its connection and operation is explained in the Close RadioTV software documentation. Check our website for more details.

# **3 Using the MiniMixer**

# **3.1 OVERVIEW**

The various audio sources, such as microphones, the computer, and telephone lines, enter the console through the input channels. The console mixes all the signals to generate a single main signal, called the "Program Signal" (PGM). The level of each audio source is controlled by the main faders.

There are different areas that group the functions:



Ilustración 2: Zonas de controles

**1 TELECOMUNICATIONS**: Contents the controls to manage the land line and the Bluetooth mobile phone.

**2 INTERCOM:** It allows to talk to phone lines and to headphones.

**3 DTMF KEY PAD:** Allows to dial using the land line, to make calls from the console.

**4** FADERS: The main faders allows to mix the microphones and the line signals.

**5 LEVEL METERS:** It shows the PGM level and the mic compressor action.

**6 CONNECTIONS:** This indications shows the position of the connectors on the rear panel.

# **3.2 PHONE LINES**

The use of telephone lines is simple and errorproof due to their safety logic and automatic control circuits. The controls are described below.



Figure 3: Hybrid channel

The PHONE/LINE IN button switches the stereo line and auxiliary line inputs. In this way, when the Hybrid is not used, the 4 MICS and the two LINs can be used simultaneously. If an incoming call is received while the button is in the LINE-IN position, HOLD also flashes to notify the operator, who can switch to PHONE mode and answer the line (see below).

**2** The knob set the level for the phone line and for the auxiliary input. This level takes effect on CUE and the on-air signal (see item 4).

**3** TALK is a push button that enables to the builtin mic allowing to talk off-air with a phone line.

**4 CUE/PGM** switch the signal (phone line or line input) between previous listening on **headphones** (CUE) or the on-air output (PGM).

**5** HOLD indicates the incoming calls flashing with the ring. It answer a call when pressed to leave it at HOLD or send it on the air.

**6** The knob set the level for the **Bluetooth** mobile phone.

**7** MiniMixer's Bluetooth on/off. This button also enables the "pairing" mode to link a mobile phone.

**8** It switches the Bluetooth signal between the private monitoring on headphones (CUE) and the main output (PGM).

**9** This push button allows to talk privately with the Bluetooth, using the built-in microphone.

**10** Main level control for the headphones.



**12** Push button to talk to headphones.

# 3.2.1 Using the phone line

- 1. When a call incomes, the HOLD button flashes with the ring cadence. The position of the PHONE/LINE-IN button does not affect this action.
- Before to take the line, check the position of button PGM/CUE. It must be in CUE (released).

## WARNING!

If the PGM/CUE button is assigned to PGM at the time of answering, **the call will go directly ON THE AIR**, with the level set by the LEVEL knob.

- 3. The **PHONE/LINE-IN** button must be in the position PHONE (released) in order to hear the audio from the phone line and send it the return signal.
- 4. To answer press **HOLD**. The caller will hear the PGM signal.
- 5. The level in the headphones is adjusted using the "LEVEL" knob. Of course, the main level setting "CUE MONITOR" also has an effect.
- 6. To speak to the line, press the corresponding TALK button (see Illustration 3). When TALK is pressed, who is on the other end of the line stops hearing the program signal. To converse with the caller, press and hold the TALK button. When released, the line remains on hold with PGM return.
- 7. The button PGM on the zone CUE MONITOR allows to mute the PGM signal on head-phones, to only listen to the phone lines.
- 8. To put the call on air, press PGM/CUE. The level of the signal on-air is set with the knob. The caller will be able to dialogue with the four people who use the microphones on the console.
- To take the call off the air and put it on hold again, reduce its volume to zero by turning the LEVEL knob and press CUE/PGM to switch to CUE. The line will be on hold, listening for the program signal.
- 10. To end the calling and release the line, press HOLD.

## Make a call from the MiniMixer

- 1. Check the position of **PGM/CUE** button. It must be **CUE** (released).
- Take the line by pressing HOLD. In headphones you will hear the dial tone. The volume of the tone is adjusted with the corre-

sponding LEVEL knob. The CUE MONITOR main level setting also plays a role.

- 3. Dial using the console keypad. When hanging required to redial, release the HOLD button and press it again to re-take the line.
- 4. Once the calling is done, proceed from the point 6 explained above.

# 3.2.2 Pairing a cell phone via Bluetooth

It requires a phone with Bluetooth connectivity. Any phone with Bluetooth can be linked to Solidyne MiniMIxer. The cell phone can be up to 3 meters away from the console, leave it near but not over the console. The procedure to link the phone to the console is similar to that used for other Bluetooth devices (speakers, hands-free headset).

By linking your cell phone to the console creates a link between the two devices, and allows the phone to store the ID of the console. This operation is performed only once (for each linked mobile). Once the mixer console and mobile phone are paired, the console automatically connects to the mobile when the Bluetooth link is enabled on both devices (sometimes the user needs to choose the bluetooth device on the cell phone).

Procedure:

- 1. **On MiniMixer:** Make sure that Bluetooth is turned off (LED of **BLT** button off). When Bluetooth is on, the button BLT flash in blue slowly (one flash every 2 seconds). If Bluetooth in on, turn it off by pressing and holding the button BLT until the flashing ends.
- 2. **On MiniMixer:** enter to *Bluetooth's discovery mode* (this mode can be started only when Bluettoth is turned off). Press and hold by 10 seconds the button BLT, until the LED fast blinks with alternated colors indicating that the "Discovery" mode is active, and the MiniMIxer can be discover in the cell phone.
- 3. **On the mobile phone:** Turn on the Bluetooth and make a search of new Bluetooth devices. This procedure has some differences according to the brand and model of cell phone. Please refers to the cellphone documentation.
- 4. MiniMixer Bluetooth device will appear as **Solidyne BTM641**. If the cell phone ask for a password, enter 0000 and confirm (see the user's manual of the cell phone).
- 5. The ID of the Solidyne MiniMIxer is now stored in the cell phone.

#### **DEVICE NAME**

The user can edit the default name "Solidyne BTM641" in the cell phone Bluetooth settings.

Once paired, BLT LED switches to slow flashing (each 2 seconds aprox) indicating "Bluetooth is active".

Is no necessary to repeat this procedure for this mobile phone. To pair another cell phone, repeat the whole procedure.

Can not have two cell phones linked with the console at the same time.

#### **RE-CONNECT A PAIRED DEVICE**

- Turn on the Bluetooth in MiniMlxer by pressing "BLT" until the LED lights (5 secs aprox). The button will flash slowly.
- Enable the Bluetooth in the cell phone. When the cell phone notice that the connection has been made the operator are ready to operate. When the operator make or receive a call, the audio is routed to the console.

### RECONNECTION

In some mobiles the re-connection is not automatic to the last used device. The user needs to choose the Bluetooth device from a list to connect it (the default name is Solidyne BTM641).

#### SET THE VOLUME

#### **VERY IMPORTANT**

At the cell phone, Bluetooth volume must be set at maximum level in order to obtain a good reception and to sure the best signal to noise ratio.

#### **BLUETOOTH LEVEL**

This value must be set with a real calling using the Bluetooth. The volume of the phone's speaker is independent of the Bluetooth device.

If you change the phone's level during a call but the Bluetooth is disconnected, you will only be changing the volume for the phone's speaker, not the Bluetooth level.

The Bluetooth level is stored into the cell phone's memory. If you use another cell phone with the console, repeat this adjustment to set the volume to maximum.

#### TURN OFF BLUETOOTH

To turn off the Bluetooth in MiniMlxer, press and hold the button **BLT** until it ends to flash.

# 3.2.3 Use the Bluetooth link

- 1. Make sure that in the "CELL Phone" zone the LEVEL control is set to zero and the CUE/ PGM button is in the position CUE (released).
- Turn on Bluetooth on the console, pressing and holding BLT (2 seconds approx) and releasing as soon as it lights up. The button keeps flashing slowly indicating that Bluetooth is active.
- 3. Enable Bluetooth on the cell phone. If the cell phone has already been paired with the console, the link is reestablished and in a few seconds the cell phone is linked to the console.

#### **INCOMING CALL**

- Always check that the CUE/PGM button is in CUE (released) mode. Otherwise, if the button is on PGM, answering the call could accidentally go on the air.
- 2. When a call incomes: If Bluetooth is off on the phone, you can answer and talk on the mobile, and then activate Bluetooth to transfer the call to the console.

But if Bluetooth is active on the phone, the call can be answered from the console with a short touch on the BLT button. In this condition, you can only speak through the Talkback circuit of the console.

- 3. Once the calling is transferred to the MiniMixer, the line receives return of PGM signal.
- 4. The operator can **talk with the caller by pressing the button TALK** on CELL Phone area, and will hear the line on headphones.
- 5. To air the call, press the button CUE/PGM to switch the line to PGM and set the level.
- 6. The call can be ended with a short touch on the button BLT, or from the mobile phone.
- 7. It is also possible to resume the call on the mobile, changing it from Headset mode to Speaker mode.

Below shows a screenshot of a cell phone with Android, in the case of Bluetooth enabled.

The example shows the "Headset" icon, which transfers the call to the Bluetooth device when it is turned on; and returns to the phone when it is off. Other phone models can display two buttons; a button with dropdown options; or other combinations. Refer to the cell phone user manual.



Figure 4: Mobile linked by Bluetooth

## MAKE A CALL FROM CELL PHONE

Para generar la llamada desde el móvil:

- 1. In the cell phone, change the "Bluetooth" mode to "Headset", to talk from the cell phone.
- 2. Make a calling (SEND).
- 3. To transfer the call to the console, on the cell phone return to the Bluetooth mode (Headset).
- 4. Before transferring the call check that the CUE/PGM button is in the CUE position (released). Otherwise, if the button is in PGM, transferring the call could accidentally go on the air.
- 5. To air the calling, change the position of **CUE/PGM** to PGM and set the level.
- 6. To end the communication, short press the BLT button on the console (it can also be ended from the mobile).

#### WARNING CONFERENCES ARE NOT SUPPORTED

**Conference** between telephone line and Bluetooth is **not supported**. It is possible to air both lines, but the lines do not hear each other, and they will not be able to dialogue with each other.

# **3.3 MONITORING**

The headphone control in CUE MONITOR sets the level for the four headphone outputs.

In order to have an individual volume control for each headphone, headphones with a built-in level control must be used; or a headphone distributor connected to one of the headphone outputs.

When a signal is sent to CUE, it is sent to all the headphone outputs.



The **PGM** button in the **CUE MONITOR** zone mutes the program signal in the headphones, so you can only hear the signals in CUE.

# 3.3.1 Output for powered loudspeakers

Headphone output # 1 acts as an auto-muted monitor speaker output when the Tally Light output is connected.

When enabling the microphones, activating the Air Light silences headphone output #1, to avoid a feedback loop between the speakers and the microphones. Audio is kept in the other headphones.

# 3.3.2 Talk

The TALK button cuts the signal in headphones and sends the signal from the talkback microphone built into the console.

It allows to the operator to talk to the headsets using the CUE circuit. So that if team members are far apart, the console operator can talk to them without having to sign and without anyone having to remove the headphones (which are with program signal) to dialogue.

# **3.4 ON AIR**

# 3.4.1 Microphones



Figure 5: Main faders

MiniMixer supports direct connection of **up to 4 dynamic microphones**. MIC 3 and MIC 4 inputs share the same fader.

The **MASTER MIC** button enables all microphones to air, and activates the Air Light output.

The microphone mix is internally compressed. The **compressor** works when the signal reaches OVU. When microphones are connected to the MIC 3 and MIC 4 inputs, it is important that the MIC 3+4 channel signal reaches OVU, so that the compressor works and compensate differences in the level that may occur between the different voices.

The action of the compressor is shown on the MIC COMP indicator.

# 3.4.2 LINES

The USB/LINE IN fader manages the USB digital input when the computer is connected. But if USB is not connected, this fader manages the signal from the LINE IN input.

When USB is connected, the **LINE IN** input can also be used as an alternative input, from the telephone line controls (PHONE) that allow switching between PHONE and LINE IN, to take advantage of this channel when the hybrid is not used. In this way the 4 microphones, the 2 stereo lines and the Bluetooth can be on air.

To send **USB/LINE IN** to air, lift up the fader directly. The correct level of work is obtained when the peaks reach 0VU.

USB/LINE IN can also be prelistened, with the fader closed, by pressing the CUE button located above the fader.

## **USB SEND**

Remember that the USB connection generates a program signal sending to the computer, which is used to generate streaming for the Internet.

# 3.5 Recording the mics

MiniMixer has an additional feature that allows to record the microphone mix on the computer at the same time as audio is broadcast on the air from that same computer.

The MIC REC output provides the microphone mix (post compressor) that is available even when the mic channels are turned off.

Below is the connection diagram:



The computer must have an analog line input, for example the onboard input that is standard on desktop computers (towers or mini-towers).

The "Y" splitter cable connects the three TRSs in parallel. It can be purchased together with the Solidyne MNG-Mini cable kit (more information in the <u>Cables and Accessories</u> section at www.solidyne.ar).

Any standard "Y" type TRS 1/8 "splitter to two TRS 1/8" minijacks (female) can be used, with TRS to TRS cables to connect the LINE IN of the console and the computer.

The recording software must be configured to work with the internal line input and output of the computer (or other interface that has been connected for recording microphones).

The speakers illustrated in the diagram are connected directly to the computer's output.

#### ALTERNATIVE CONNECTION

If an audio interface with ASIO support is available, the output of the ASIO interface can be connected directly to the LINE IN input of the MiniMixer. A software with ASIO support should be used for recording (Ex: Reaper, Vegas, Audition).

During recording, internal monitoring of the input is activated on the software channel, and the microphones are monitored in MiniMixer via LINE IN.

In playback, the recording is played directly to the console.

This connection is not possible when using the boards integrated in the computers, since they usually do not support ASIO, so they present delays (latencies) of approximately 0.5 seconds, which makes it impossible to hear the return of the voice itself. In these cases, the connection must be resolved as explained in the previous diagram.

#### STEPS FOR THE RECORDING

The computer plays the **Audicom-MX** playlist, which arrives via USB to the MiniMixer (fader # 4). The console's VU meter must be peaking at 0 VU to keep streaming at the correct level.

The Master MIC button must be off, as the microphones will not go on the air. The tally light remains off.

To monitor streaming transmission (PGM) on headphones, press the PGM button located in the CUE MONITOR area. But for recording microphones this button must be released so as not to hear the transmission. The microphones are sent to the recording output by opening the MIC-1, MIC-2 and MIC 3 + 4 faders. The level is adjusted by looking at the **MIC COMP** indicator which should show two LEDs on.

Headphones connected to the console are used to monitor while recording. If there are speakers connected to Headphone-1, they must be muted so as not to engage with the microphones (as the tally light is not turned on, the auto-mute of the output is not activated).

To listen to the microphone mix on the headphones, in the blue area PHONE, set: the PHONE/LINE IN button to the LINE IN position; the CUE/PGM button to the CUE position and the level control to maximum. The headphone level will be adjusted from the level control located in the CUE MONITOR area.

To listen to the recording, play the file on the computer listening through speakers or headphones connected to the computer.

## MONITORING ON PLAYBACK

If the computer monitors with loudspeakers, for convenience it is advisable to completely mute the monitoring level in the PHONE zone, or the microphone faders, to avoid hearing in the headphones the mic bleed caused by the loudspeakers.

To record content that you want to edit later, Audicom-MX installs AUDACITY; a simple open source multitrack editor (www.audacityteam.org). With this tool you can record your microphone on one track and then add music and effects on other tracks.

For recording and simple editing Audicom-MX also includes its own editor called HDCorder.

See Audicom documentation for details.

# **4** TECHNICAL SPECIFICATIONS

#### TECHNOLOGY

Digital stereo line input to Mixer using USB and Digital Program Out USB to PC for streaming

Analog MIC input using high performance EMI protected Opamps with analog stereo PGM Out

Feedback controlled gain preamps: It never clips the audio signal at any fader position

#### INPUTS

4 x MIC dynamic IN. Fader #3 has dual input preamp for MIC 3 + Mic 4 // Level = -75 to -25 dBu

USB digital input from PC at fader # 4 (when not using USB it autoswitches to Stereo Line)

Telephone Line to Hybrid – SIP internet lines can be used with external FXS adapter, non-included

Cellular Smartphone input using Bluetooth 4.0 (30-8.000 Hz full range voice quality)

Stereo Line, switched between Telephone/Line or Fader #4  $\,$  // Level -10 / + 20 dBu

Insert In/Out for audio processor or external stereo devices //Level + 4 dBu

#### OUTPUTS

Stereo Program Output: Analog; unbal; +4dBu; Max. level +14dBu; Z >5 KOhms

USB Digital Stereo Program Out to PC

MIC mixer Out for Recording at PC// -10 dBu /10k

4 x Headphones Out (16-32-600 ohms) // Level + 5 dBu/50 ohms

Muted speakers out (replaces Headphone #1)

12 V / 120ma LED Tally Light

Optional SmartCam USB out for Audicom & Close camera switching

#### INTERCOM

Internal MIC at MiniMixer. Communication with Studio, Headphones, Telephone and Cellphone for private phone attention. Telephone keyboard for calling to phone lines without external phone sets.

#### AUDIO PERFORMANCE

Frequency response MIC to PGM Out: 20 - 20.000 Hz +/-1 dBPlus anti-pop -3 dB @ 30 Hz Frequency response USB to PGM out: 20 - 20.000 Hz +/-1 dBNOISE: MIC Equivalent input noise: -120 dBA // Line input S/N = 90 dBA MIC COMPRESSOR: Compression range 0 - 20 dB // Attac time = 5 mS // Release = 200 mS DISTORTION : USB Line Input to USB PGM Out < 0,02 % THD at 1 KHz Microphone at -50 dBu to analog PGM out < 0,1 % THD

#### PHONE HYBRID

Frequency response 300 – 3400 Hz +/- 1dB Rejection: > 40 dB at 1 kHz with Null set at rear panel Noise > 60 dBA S/N

#### POWER SUPPLY

External Switching 90-240 V 50/60 HZ 12V / 1A

#### **INSERT EXTERNAL DEVICES**

Rear connector for insertion at PGM out of audio processors or external devices at + 4 dBu level. This insertion allows connecting an external ASIO audio card USB for using at PC a VST plug-ins for effects or multi band processing

#### DIMENSIONS AND WEIGHT

Wide= 274 mm Deep= 270 mm Front high= 25 mm Rear High: = 71 mm Weight = 1,6 Kg