

# User Manual

# iMIX 5 Matrix router




Minimum Usage  
Maximum Usage 65mm

# Safety instructions

When using this electronic device, basic precautions should always be taken, including the following:

- 1 Read all instructions before using the product.
- 2 Do not use this product near water also do not install WC iMIX controllers and MIC iMIX call station in the high humidity areas etc. near a bathtub, wash bowl, kitchen sink, in a wet basement or near a swimming pool.
- 3 Use this device when you are sure that iMIX5, WC iMIX controllers and MIC iMIX call station have a stable base and it is fixed securely.
- 4 This product, in combination with amplifier and audio source may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult with otorhinolaryngologists.
- 5 The product should be located away from heat sources such as radiators, heat vents, or other devices that produce heat.
- 6 The product should be connected to a power supply that is described in the operating instructions or are marked on the product.
- 7 The power supply should be undamaged and never share an outlet or extension cord with other devices. Never leave device plugged into the outlet when it is not being used for a long period of time.
- 8 Care should be taken that objects do not fall into liquids and liquids would not be spilled on the device.
- 9 The product should be serviced by qualified service personnel if:
  - The power supply or the plug has been damaged.
  - Objects have fallen into or liquid has been spilled on the product.
  - The product has been exposed to rain.
  - The product has been dropped or the enclosure damaged.
- 10 There are some areas with high voltage inside, iMIX 5 to reduce the risk of electric shock do not remove cover of the microphone receiver or power supply. The cover should be removed by the qualified personnel only.

 <p><b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN</p>	<p>To reduce the risk of electric shock, do not remove screws. No user-serviceable parts inside. Refer servicing to qualified service personnel. To reduce the risk of fire, electric shock or product damage, do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.</p>
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# Before you start

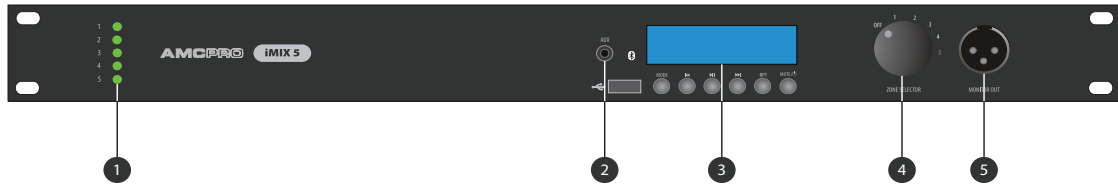
iMIX5 is audio router designed to support 5 audio outputs with option to choose one of 4 audio source in each output individually. It's stereo device controllable via RS232 interface or wall-mounted touchpads for main functions control. iMIX5 have integrated USB player with Bluetooth and FM receivers. Priority input for emergency audio, external mute contact in emergency case.

## FEATURES

- Five stereo output
- Three line level stereo inputs
- Microphone input with phantom power
- RS232 interface
- Integrated USB/FM/Bluetooth player
- Long distance supporting between wall-mounted touchpads, call station and iMIX5
- RJ45 connectors for wall-mounted touchpads
- External mute contacts
- Priority input
- Monitor output
- AUX input
- Status indicator for each output
- Local audio inputs in WC MIX touchpads

# Operation

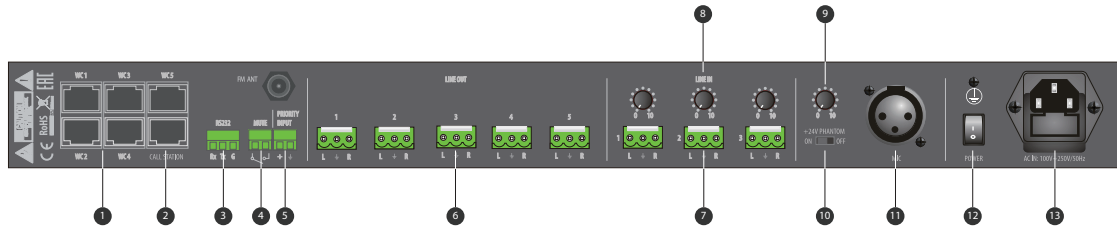
## Front Panel



1. Output status indication | 2. AUX input | 3. Media player | 4. Monitor source selector | 5. Monitor output

# Operation

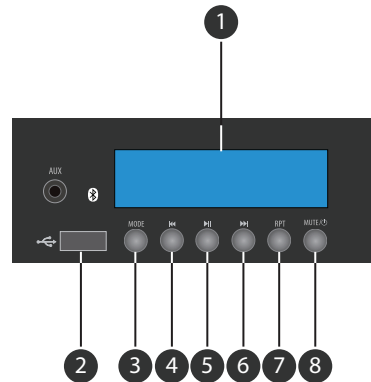
## Rear Panel



1. Connectors for WC iMIX wall control | 2. Connector for MIC iMIX page station | 3. RS232 serial interface | 4. External mute | 5. Priority audio input | 6. Stereo audio outputs | 7. Stereo audio inputs | 8. Inputs gain control | 9. Microphone gain control | 10. Phantom power switch | 11. Microphone input | 12. Power switch | 13. Main power connector

# Operation

## Media Player



1. LCD screen | 2. USB slot | 3. Mode button | 4. Backward / Set FM frequency and preset | 5. Play-pause / Radio frequency scanning mode  
6. Forward / Set FM frequency and preset | 7. Repeat button / Save FM preset | 8. Mute - power button / Exit

# Operation

## Front panel operation

### **OUTPUT STATUS INDICATOR**

All five audio outputs have a separate indication based on a bi-color LED in order to display audio output status. Green color LED indicates detected audio signal. Red color - mute. Audio in the output is muted in order to connect audio from the priority input to all iMIX5 outputs. Yellow color indicates call station activity.

### **AUX INPUT**

Line level stereo input with 3.5mm TRS jack connector. AUX input have a priority over USB, FM and Bluetooth. Audio from listed music source stops at ones media player detects inserted 3.5mm jack connector.

### **MEDIA PLAYER**

Plays audio from Bluetooth devices, USB flash and FM receiver. Device supports up to 32GB USB flash drives.

### **MONITOR SOURCE SELECTOR**

Allows choose audio in monitor output for testing purpose.

### **MONITOR OUTPUT**

Balanced audio output designed to check audio in any output.

## Media player operation

### **LCD SCREEN**

LCD screen displays main information about media player status: track number and time, media player volume level, music source, FM frequency.

### **USB FLASH DRIVE**

Supports up to 32GB USB flash drives formatted in FAT32 file system, also supports compressed audio formats.

### **MODE**

Button switch player between Bluetooth mode, FM mode and Music mode (USB).



# Operation

## Media player operation

### **BACKWARD**

Single short press of this button in music and Bluetooth modes will change currently playing soundtrack to previously track. Button reduces volume level of media player after holding this button for a few seconds. Backward button in FM mode decrease FM frequency by 0.1 MHz steps, also switch radio presets.

### **PLAY/PAUSE**

Switch player mode between play and pause. Hold this button at FM mode in order to start radio station auto scan. Press this button rapidly in order to toggle FM frequency auto/manual scanning mode.

### **FORWARD**

Single short press of this button in music and Bluetooth modes will change currently playing soundtrack to next track. Increase volume level of media player after holding button for a few seconds. Forward button in FM mode increase FM frequency by 0.1 MHz steps, also switch radio presets.

### **REPEAT**

There is choice to select one of three modes:

RTA – Repeat all tracks.

RT1 – Repeat one track.

RND – Random play

Second this button function is save FM radio frequency to selected preset.

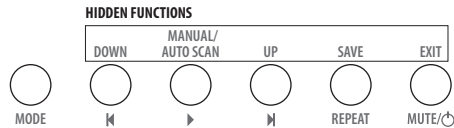
### **MUTE AND POWER ON/OFF**

Press this button rapidly to mute audio. Hold this button longer in order to turn off/on media player. FM mode enables second function, it allows exit from frequency adjusting without saving radio station frequency to preset.

# Operation

## FM radio receiver

FM radio receiver allows save up to 26 presets with selected radio stations. FM control is made with the same buttons like media player. Backward, forward, play/pause, repeat and power buttons have different functions for media player and for FM receiver.



### BACKWARD

Decrease FM frequency by 0.1 MHz step if manual mode is selected. Allows to select radio preset.

### FORWARD

Increase FM frequency by 0.1 MHz step in manual mode. Allows to select radio preset.

### PLAY/PAUSE

Press this button rapidly in order to toggle FM frequency auto/manual scanning mode.

### REPEAT

Designed to save FM radio frequency to selected preset.

### MUTE AND POWER ON/OFF

Allows exit from frequency adjusting without saving radio station frequency to preset.

## Manual radio frequency setting guide

1. Hold Play/pause button in order enter manual scanning mode.
2. Set frequency by using backward and forward buttons by 0.1 MHz steps.
3. Press repeat button to start save procedure.
4. Select preset number by using backward and forward buttons.
5. Save radio station to selected preset by pressing repeat button. Screen displays "OK" in order confirm successfully recording to memory.
6. Press Mute button to exit manual frequency scanning.

Please use backward and forward buttons in auto scan mode to switch saved radio stations.

# Operation

## Rear panel operation

### CONNECTORS FOR WC iMIX WALL CONTROL

These RJ45 ports are designed to connect WC iMIX wall controls by using standard CAT 5 cable. WC1 control audio in output 1, WC2 control audio in output 2 and etc. ... WC iMIX controls must be connected directly to iMIX5, do not use any computer network equipment. WC1 - WC5 ports incorporate RS485 interface, analogue audio line and +24V power. Maximum distance between iMix5 and WC iMix is 500m.

### CONNECTOR FOR MIC iMIX PAGE STATION

Connector dedicated for MIC iMIX page station. Do not connect to any computer network equipment! MIC iMIX page station incorporate RS485 interface, analogue audio line and +24V power. Maximum distance between MIC iMIX and iMIX is 500m.

### RS232 INTERFACE

Designed to control main function of iMIX5 by using serial interface. RS232 protocol is listed in page 12

### EXTERNAL MUTE

Dry contact designed to MUTE all iMIX5 inputs and link audio from priority input to all outputs. Audio signal from page station will not be muted.

### PRIORITY INPUT

Priority input unbalanced audio input designed for emergency and other

high priority audio messages. Input became active after closed external mute contact.

### STEREO AUDIO OUTPUTS

Unbalanced line level stereo outputs. Audio in output 1 is controlled by WC iMIX wall control connected to WC1 port. Audio in output 2 controls WC2 and etc...

### INPUTS GAIN CONTROL

This control allows precisely adjust inputs gain in order to have the same audio level in all inputs.

### STEREO AUDIO INPUT

Designed to audio source which will be selectable by using WC iMIX wall controls.

### PHANTOM POWER SWITCH

Set phantom power switch to "ON" position to activate phantom power to microphone input. Maximum phantom power voltage is +24V. To disable phantom power set switch to "off" position.

### POWER SWITCH

Use this switch to power on/off iMIX5 is audio router.

### MAIN POWER CONNECTOR

Connector is combined with fuse holder and 1 A 250V fuse.

# Control protocol

## RS 232 protocol

Baud rate of 9600  
 8 data bits  
 no parity  
 1 stop bit  
 no flow control

Protocol header 3byte	All/Zone 1byte	Zone of device 1byte	Function Code 1byte	Device Address s 1byte	Data 1byte		Protocol Tail 1byte	
0x43 0x53 0x54	All zones 0x54	Zone1 0x01	Channel selected 0x01	01	BGM	0x01	0xaa	
					LOCAL	0x02		
		Zone2 0x02	Channel Volume 0x02		mute0x08			
					Mute ALL ON 0xa1	Mute ALL OFF 0xa0		
		Zone3 0x03	BGM Channel selected 0x03		Increase one step 0x01	Reduce one step 0x02		
					Input select Input1 0x01 Input2 0x02 Input3 0x03 Input4 0x04			
		Zone4 0x04	channel volume set 0x04		next CH 0x05	previously CH 0x06		
					volume range from 0x00 to 0x3f 63 steps in total;			
		Zone5 0x05	Bass set 0x07		Increase one step 0x01	Reduce one step 0x02		
					Bass range 0x00 - 0x0e 14 steps in total; 2dB - 1 step			
	0x55	0x0d	Stand By 0x10		Increase one step 0x01	Reduce one step 0x02		
					Treble range 0x00 - 0x0e 14 steps in total; 2dB - 1 step			
					Loudness 0x09	ON 0x01		OFF 0x00
						ON 0x01		OFF 0x00

# Feedback protocol

Feedback protocol of iMIX5 mixer										
Protocol header 3byte	Zone 1byte	Zone of device (1byte)	Feedback status of main unit	Function Code 1byte	Data 1byte		Protocol Tail 1byte			
0x55	0x55	Zone1 0x01 Zone2 0x02 Zone3 0x03 Zone4 0x04 Zone5 0x05	Feedback status of main unit 0x5D	Channel selected 0x01	BGM	0x06 Esc LOCAL	0xaa			
					LOCAL	0x05 Enter LOCAL				
				Channel Volume 0x02	current volume range 0x00-0x3f 63 grades in total					
				BGM Channel selected 0x03	Value of current channel 0x01-0x04					
				channel volume set 0x04	current volume range 0x00-0x3f 63 grades in total					
					current bass range 0x00-0x0e 14 grades in total; 2dB as 1 grade					
				Bass 0x05	current treble range 0x00-0x0e 14 grades in total; 2dB as 1 grade					
				Treble 0x06	current treble range 0x00-0x0e 14 grades in total; 2dB as 1 grade					
				Bass set 0x07	current bass range 0x00-0x0e 14 grades in total; 2dB as 1 grade					
				Treble set 0x08	current treble range (0x00~0x0e) 14 grades in total; 2dB as 1 grade					
				Loudness 0x09	ON 0x01	OFF 0x00				
				Stand By 0x10	ON 0x01	OFF (0x00)				
				0x05	0x47	EMG status 0x4D		0x00	ON 0x20	OFF 0x40
				0x05	0x47	Status of call station 0x4D		0x01	00 000008 (From low to high, indicate status of the 5 zones. Accordingly 1 to be off, 0 to be off.)	
0x05	0x47	0x01								

# Controls

## RS 232 code examples for Zone 1

CH1 VOL+

43 53 54 55 01 02 01 01 AA

CH1 VOL-

43 53 54 55 01 02 01 02 AA

CH1- select

43 53 54 55 01 03 01 05 AA

CH1+ select

43 53 54 55 01 03 01 06 AA

CH1 Bass+

43 53 54 55 01 05 01 01 AA

CH1 Bass-

43 53 54 55 01 05 01 02 AA

CH1 Treble -

43 53 54 55 01 06 01 02 AA

CH1 treble+

43 53 54 55 01 06 01 01 AA

EQ Loud ON

43 53 54 55 01 09 01 01 AA

EQ Loud OFF

43 53 54 55 01 09 01 00 AA

Local ON

43 53 54 55 01 01 01 01 AA

Local OFF

43 53 54 55 01 01 01 02 AA

MUTE CH1

43 53 54 55 01 02 01 08 AA

MUTE ALL ON

43 53 54 54 01 02 01 A1 AA

MUTE ALL OFF

43 53 54 54 01 02 00 A0 AA

STANDBY OFF

43 53 54 54 01 02 01 A1 AA

STANDBY ON

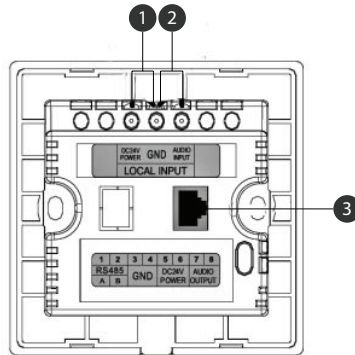
43 53 54 55 0D 10 01 01 AA

# Operation

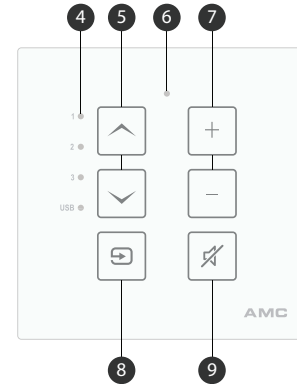
## WC iMIX wall control

WWC iMIX simple to use touch control covered with white or black color glass. Wall controller allow adjust volume, select music, mute audio and send local audio to public address sound system. Local audio input can be connected directly to wall control by using additional connector. iMIX5 can support 5 units of WC iMIX, one unit per zone.

### Rear panel



### Front panel



- 1. DC 24V output | 2. Local audio input | 3. RJ45 connector | 4. Audio channel indication | 5. Audio channel selector
- 6. System busy indicator | 7. Volume | 8. Local input selector | 9. Mute


# Operation

## Front/Rear panel operation

### DC 24V OUTPUT

DC24V power supply designed to supply compatible device.

### LOCAL AUDIO INPUT

Designed to connect audio from local music source. This input can be enabled by button  located on front panel also by using RS232 interface. After local input activation audio from imix5 inputs will be muted till local input disable.

### RJ45 CONNECTOR

RJ45 port is designed to connect WC iMIX wall control to iMIX5 by using standard CAT 5 cable. WC iMIX controls must be connected directly to iMIX5, do not use any computer network equipment. This RJ45 connector incorporate RS485 interface, analogue audio line and +24V power. Maximum distance between iMIX5 and WC iMIX is 500m.

### AUDIO CHANNEL INDICATION

LED indicates which one of four iMIX5 audio inputs play in WC iMIX operating zone. Input USB is audio from iMIX5 media player.

### SYSTEM BUSY INDICATOR

In case if device control lines is occupied and iMIX5 can't send new data string to external device, system busy indicator becomes red. Usually it takes 3-5 second till systems return to normal stage.

### VOLUME

Capacitive touch buttons to control audio volume.

### AUDIO CHANNEL SELECTOR

Capacitive touch buttons to select audio source. Source named 1, 2 and 3 is iMIX5 stereo inputs, source USB is audio from iMIX5 media player.

### LOCAL INPUT SELECTOR

Button dedicated enable or disable local audio input.

### MUTE

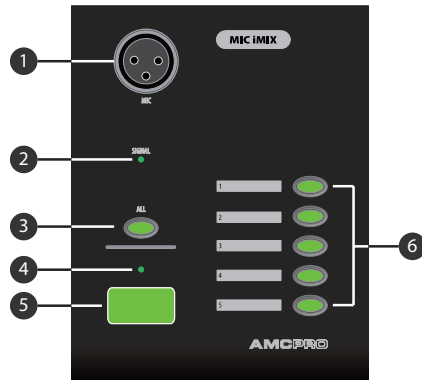
Mute turn off or turn on audio in WC iMIX operating zone.



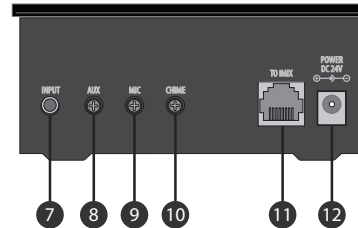
# Operation

## MIC iMIX page station

### Front panel



### Rear panel



1. Microphone connector | 2. Signal LED | 3. All button | 4. Talk indication | 5. Talk button | 6. Zone selector  
 7. AUX input | 8. AUX level control | 9. Microphone level control | 10. Chime volume | 11. RJ45 port | 12. Power connector

# Operation

## Front/Rear panel operation

### **MICROPHONE CONNECTOR**

Designed to connect gooseneck microphone to the page station. Supports condensed microphone.

### **SIGNAL LED**

Indicates audio signal in the page station output.

### **ALL BUTTON**

This switch activates all zones for broadcasting announcement. There are three way how to use this button:

Quick - hold button till Talk LED became green. This method plays chime sound before enabling microphone. Page station turns off microphone automatically after button release.

Lock mode - click All button in order to select all iMX5 zones. After selection click talk button. This method also play chime sound before enabling microphone and lock talk button in order to make announcement without holding button all the time.

No chime mode - click All button in order to select all iMX5 zones. After selection click and hold talk button. This mode mute's chime for current announcement. Page station turns off microphone automatically after button release.

### **TALK INDICATION**

LED for showing page station status. Green color - page station is ready to transmit announcement. Red color - data line busy. Usually it takes 2-3 seconds till systems returns to normal stage and indicator change color to green.

### **TALK BUTTON**

Talk button - activates microphone. Every time before talk button zone for receiving announcement must be selected.

### **ZONE SELECTOR**

These switches controls output in order to broadcast announcement to the desired zone.

### **AUX INPUT**

AUX input Designed to connect external audio signal.

# Operation

## Front/Rear panel operation

### AUX LEVEL CONTROL

External audio volume control.

### MICROPHONE GAIN CONTROL

Turn clockwise to increase or counterclockwise to decrease the gain station microphone gain.

### CHIME VOLUME

Potentiometer for adjusting Chime loudness.

### RJ45 PORT


RJ45 port is designed to connect WC iMIX page station to iMIX5 by using standard LAN cable.

### POWER CONNECTOR

Power connector designed to connect additional power supply. If distance between call station and iMIX5 is more than 100m, external power supply is recommended.

## Chime

MIC iMIX page station supports several chime options. All chime settings can be adjusted by using DIP switch located in the call station the bottom.

CHIME	DIP CODE	CHIME FUNCTION
	0 0 0	NC / NC
	1 0 0	Ascending 4 / Descending 4
	0 1 0	Ascending 4 (slow) / Descending 4 (slow)
	1 1 0	Ascending 4 / NC
	0 0 1	Ascending 4 (slow) / NC
	1 0 1	Dong / NC
	0 1 1	Dingdong / NC
	1 1 1	Ascending 3 / NC

Mode 000 means all DIP switch are set to position OFF.

Mode 010 means that only middle DIP switch is set to position ON.

# General Specifications

## iMIX 5

Power supply	100-240Vac, 50/60Hz
Fuse	T1AL
Media payer	USB/Bluetooth
Bluetooth version	v2.0
Mic input sensitivity	-41dBV
Line input sensitivity	-12.5dBV
Call station input sensitivity	+4dBV
EMG input: SN ratio to microphone input SN ratio to line input	sensitivity -10dBV 65dB 73dB
Outputs	5 stereo zones
Output impedance	600 ohm
THD +N	<0.1% @ 1kHz
Phantom power	+24V DC
Frequency response	±3dB 20Hz - 20kHz

Dimensions	483 x 177 x 44mm
Weight	1.76kg

## WC iMIX

Power supply	24VDC
Max. connection length	500m
Connection	RJ45
Mounting depth	38mm
Dimensions	86 mm x 86 mm x 38 mm
Weight	128g

# General Specifications

## MIC iMIX page station

Power supply	24Vdc, 500mA	S/N ratio	-60dB
Max. connection length	500m	Interface	RS-485
Microphone type	Condenser microphone	Dimensions	460 mm x 140 mm x 115mm
Polar pattern	Cardioid	Weight	670 g
Connectors	RJ45, 24VDC power jack, 3.5mm stereo RCA		
Frequency response	-3dB 150Hz - 22kHz		
Input level Mic	-46dBV, Aux: -10dBV		
Output impedance :	balanced 600 Ohms		
Input impedance Mic	600 Ohms, Aux: 50k Ohms		
Output level	10dBV		

The specifications are correct at the time of printing this manual. For improvement purposes, all specifications for this unit, including design and appearance, are subject to change without prior notice.

# Notes

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