User Manual

iMIX 5
Matrix router

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.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

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.

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Specifications

Before you start

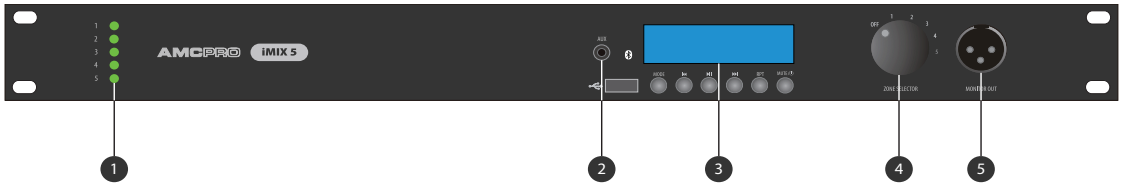
iMIX5 is audio router designed to support 5 audio outputs with option to choose one of 4 audio sources in each output individually. It's stereo device controllable via RS232 interface or wall-mounted touchpads for main functions control. iMIX5 have integrated USB player with Bluetooth and FM receivers.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

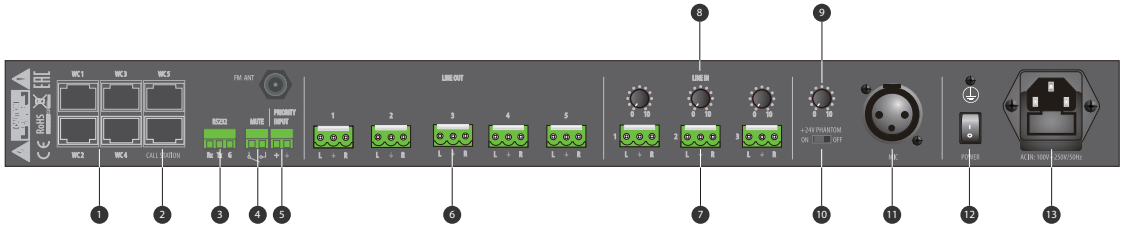
Operation

Front Panel



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

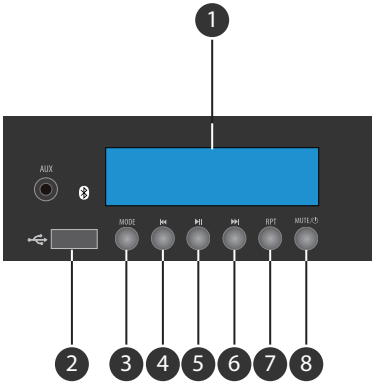
Rear Panel



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-colour LED in order to display audio output status. Green colour LED indicates detected audio signal. Red colour - mute. Audio in the output is muted in order to connect audio from the priority input to all iMIX5 outputs. Yellow colour 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. Audio from Aux input is mixed together with microphone signal and don't have priority over microphone or vice versa. Aux can be enabled in the same way as microphone: select zone and hold or click Talk button.

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

MONITOR OUTPUT
Balanced audio output designed to check audio in any output. Use Monitor source selector to choose audio in monitor output for testing purpose.

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.

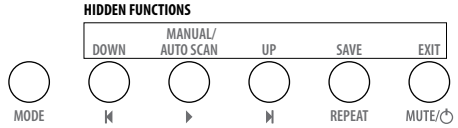
REPEAT
There is choice to select one of three modes:
RTA – Repeat all tracks.
RT1 - Repeat one track.
RND – Random play
Second function of this button is to save FM radio frequency to selected preset.

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 11

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 1byte	Data 1byte		Protocol Tail 1byte
0x43 0x53 0x54	All zones 0x54 Zone one by one 0x55	Zone1 0x01 Zone2 0x02 Zone3 0x03 Zone4 0x04 Zone5 0x05	Channel selected 0x01	01	BGM	0x01	0xaa
					LOCAL	0x02	
			Channel Volume 0x02		mute0x08		
					Mute ALL ON 0xa1	Mute ALL OFF 0xa0	
					Increase one step 0x01	Reduce one step 0x02	
			BGM Channel selected 0x03		Input select Input1 0x01 Input2 0x02 Input3 0x03 Input4 0x04		
					next CH 0x05	previously CH 0x06	
			channel volume set 0x04		volume range from 0x00 to 0x3f 63 steps in total;		
			Bass 0x05		Increase one step 0x01	Reduce one step 0x02	
			Treble 0x06		Increase one step 0x01	Reduce one step 0x02	
			Bass set 0x07		Bass range 0x00 - 0x0e 14 steps in total; 2dB - 1 step		
			Treble set 0x08		Treble range 0x00 - 0x0e 14 steps in total; 2dB - 1 step		
			Loudness 0x09		ON 0x01	OFF 0x00	
	0x55	0x0d	Stand By 0x10		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	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	0x05Enter LOCAL	
				Channel Volume 0x02	current volume range 0x00-0x3f 63 grades in total		
				BGM Channel selected 0x03	Value of current channel0x01-0x04		
				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	
		0x0d		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 00000B(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 55 0D 10 01 00 AA

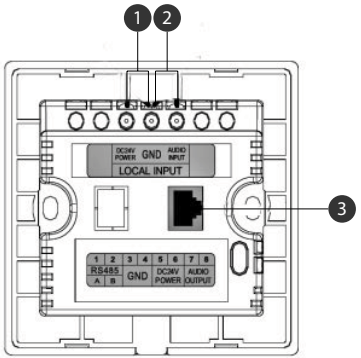
STANDBY ON
43 53 54 55 0D 10 01 01 AA

Operation

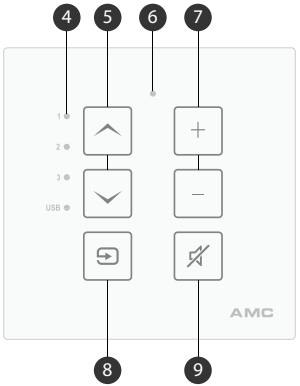
WC iMIX wall control

WWC iMIX simple to use touch control covered with white or black colour 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.

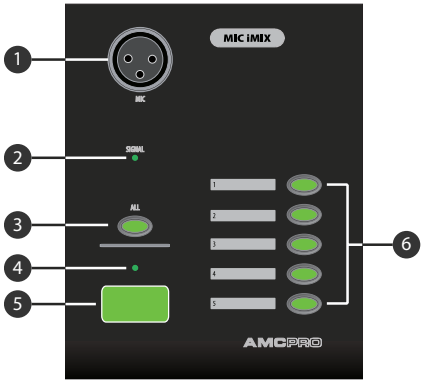
LOCAL INPUT SELECTOR
Button dedicated enable or disable local audio input.

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

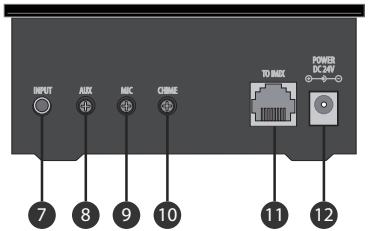
Operation

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 colour - page station is ready to transmit announcement. Red colour - data line busy. Usually it takes 2-3 seconds till systems returns to normal stage and indicator change colour 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 counter-clockwise 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.

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
Max. connection length	500m
Micropone type	Condenser microphone
Polar pattern	Cardioid
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

S/N ratio	-60dB
Interface	RS-485
Dimensions	460 mm x 140 mm x 115mm
Weight	670 g

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.