

## Overview

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MGP24X is a hybrid mixer matching professional analog mixing engine with superior digital functions.



Rear Panel

## Features

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- Input channels: 24 Line Inputs (16 mono, 4 stereo), 16 Mic Inputs with 48V phantom power and HPH per channel.
- Output channels: 1 ST out, 1 Mono out, 1 Monitor out, 6 AUX sends, 4 Group out, 1 Phones out, 2 Matrix out, 1 Stereo CH insert out, 16 Mono CH insert out.
- Buses: 1 Stereo bus, 4 Group buses, 6 AUX Sends (AUX5 and AUX6 are switchable to FX1 and FX2).
- Robust, impact-resistant, powder-coated metal chassis.
- Internal universal power supply for worry-free operation around the globe, even in unsteady voltage environment.
- Discrete class A “D-PRE” mic preamps with an inverted darlington circuit.
- “X-pressive EQ” based on Yamaha’s VCM (Virtual Circuit Modeling) technology.
- Professional “1-knob compressors” with LED indicators.
- Dual digital effects processors: advanced “REV-X” reverb and 16 “SPX” effects
- Stereo Hybrid Channel with DSP offers following unique functions:
  - +“Priority Ducker” allows a microphone to take priority over another sound source automatically.
  - +“Leveler” to adjust volume levels of different tracks automatically.
  - +“Stereo Image” to optimize the pan balance to MONO/BLEND, useful for installed sound.
- Digital connectivity for iPhone/iPod with a dedicated terminal.
  - +“MGP Editor” App for detailed control of the console’s DSP settings with iPhone/iPod.
  - +High quality digital playback from iPhone/iPod.
- USB device recording and playback. (WAV/MP3)
- Graphic EQ with selectable 9 flex-band or 14 fixed band mode.
- Multi-band compressor.

## Specifications

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### General Specifications

INPUT CHANNELS	LINE INPUT	24 (16 MONO + 4 STEREO)
	MIC INPUT	16
	MONO INPUT (MIC/LINE)	16 (CH1-16)
	STEREO INPUT (LINE)	4 (CH17-24)
	MONO CH INSERT INPUT	16
	STEREO CH INSERT INPUT	2
	RETURN	1 STEREO
	2TR IN	-
	TALKBACK IN	1
	OUTPUT CHANNELS	STEREO OUT
MONO OUT		1
MONITOR OUT [L, R]		1
AUX SEND		6
GROUP OUT		4
PHONES OUT		1
MATRIX OUT		2
STEREO CH INSERT OUT [L, R]		1
MONO CH INSERT OUT		16
REC OUT [L, R]		-
BUS	STEREO	1
	GROUP	4
	AUX	6 AUX Sends (AUX5 and AUX6 are switchable to FX1 and FX2)
USB AUDIO - USB IN/OUT		USB Device, iPod / iPhone
PHANTOM POWER		+48V per channel
POWER REQUIREMENTS		100-240V 50Hz/60Hz
POWER SUPPLY TYPE		Internal Universal Power Supply
POWER CONSUMPTION		86W max
DIMENSIONS	W x D x H	819mm x 565mm x 169mm (32.2" x 22.2" x 6.7")
NET WEIGHT		15.5kg (34.2lbs)
INCLUDED ACCESSORIES		AC Power Code, Owner's manual
SOFTWARE APPLICATION	MGP EDITOR	Yes (Download on the App Store)
OPTIONAL ACCESSORIES		LA1L
OPERATING TEMPERATURE		0 to 40°C

## Specifications

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### Featured Functions

D-PRE MIC PREAMP	Yes
XPRESSIVE EQ	Yes
1-KNOB COMP	Yes
REV-X	Yes (8 programs. HALL / WARM HALL / BRIGHT HALL / PLATE 1 / PLATE 2 / ROOM / WARM ROOM / SLAP ROOM)
SPX	Yes (16 programs. HALL / ROOM / PLATE / LARGE PLATE / SMALL STAGE / VOCAL ECHO / KARAOKE ECHO / DELAY / SINGLE DELAY / EARLY REF. / CHORUS / PHASER / FLANGER / SYMPHONIC / DOUBLER / RADIO VOICE)
PRIORITY DUCKER	Yes (CH 21/22, 23/24. Ducker Source: CH16 or GROUP1)
LEVELER	Yes (CH 21/22, 23/24)
STEREO IMAGE	Yes (CH 21/22, 23/24)
MGP EDITOR	Yes (Available on the App Store)
GRAPHIC EQ	Yes (STEREO)
MULTI-BAND COMPRESSOR	Yes (STEREO)
USB REC/PLAY (WAV)	Yes
USB REC/PLAY (MP3)	Yes

### Electrical Specifications

TOTAL HARMONIC DISTORTION	20Hz-20kHz@ +14dBu	0.02%
FREQUENCY RESPONSE		+0.5/-1.0dB 20Hz - 20kHz, refer to the nominal output level @1kHz
HUM & NOISE LEVEL	Equivalent input noise	-128 dBu Equivalent Input Noise
	Residual output noise	-94 dBu Residual Output Noise
CROSSTALK	@ 1kHz	-74dB
INPUT HPF		MIC INPUT (100Hz 12dB/oct)
COMPRESSOR		CH9-24: control x 1 (Gain/Threshold/Ratio)
INPUT CHANNEL EQ	High	±15dB (8kHz shelving)
	Mid	±15dB (250Hz~5kHz peaking: CH1-16,21-24) ±15dB (2.5kHz peaking: CH17-20)
	Low	±15dB (125Hz shelving)
INTERNAL DIGITAL EFFECT	FX1: REV-X FX2: SPX	8 PROGRAM, PARAMETER control 16 PROGRAM, PARAMETER control
LED LEVEL METER PRE MONITOR LEVEL		4 x 12 points LED meter (PEAK, +10, +6, +3, 0, -3, -6, -10, -15, -20, -25, -30dB) PEAK lights if the signal comes within 3dB of the clipping level.
SIGNAL INDICATOR		PEAK indicator (red), SIG indicator (green) Peak lights if the signal comes within 3dB of the clipping level.

## Specifications

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### Analog Input Characteristics

INPUT TERMINAL	PAD [26dB]	GAIN	ACTUAL LOAD IMPEDANCE	FOR USE WITH NOMINAL	INPUT LEVEL			CONNECTOR
					Sensitivity* <sup>1</sup>	Nominal	Max. before clip	
MONO CH IN 1 – 16	OFF	-60 dB	3k $\Omega$	50-600 $\Omega$ Mics	-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-32* <sup>2</sup> Phone jack* <sup>4</sup>
		-16 dB			-36 dBu (12.3 mV)	-16 dBu (123 mV)	+4 dBu (1.23 V)	
	ON	-34 dB		600 $\Omega$ Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	Phone jack* <sup>3</sup>
		+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
STEREO CH IN 17 – 24	-	-34 dB	10k $\Omega$	600 $\Omega$ Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	Phone jack* <sup>4</sup> RCA Pin jack
		+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
MONO CH INSERT IN 1-16	-	-	10k $\Omega$	600 $\Omega$ Lines	-20 dBu (77.5 mV)	0 dBu (0.775 V)	+20 dBu (7.75 V)	Phone jack* <sup>5</sup>
STEREO CH INSERT IN [L, R]	-	-	10k $\Omega$	600 $\Omega$ Lines	-20 dBu (77.5 mV)	0 dBu (0.775 V)	+20 dBu (7.75 V)	Phone jack* <sup>5</sup>
TALKBACK IN	-	-	10k $\Omega$	600 $\Omega$ Lines	-66 dBu (0.389 mV)	-50 dBu (2.45 mV)	-30 dBu (24.5 mV)	XLR-3-31 type* <sup>6</sup>

0 dBu is referenced to 0.775 Vrms. 0 dBV is referenced to 1 Vrms.

\*1 Sensitivity is the lowest level that will produce an output of +4 dB (1.23 V), or the nominal output level when the unit is set to maximum level. (all faders and level controls are at maximum position.)

\*2 XLR-3-31 type connectors are balanced. (1=GND, 2=HOT, 3=COLD)

\*3 Phone Jacks are balanced. (Tip=HOT, Ring=COLD, Sleeve=GND)

\*4 Phone Jacks are unbalanced.

\*5 Phone Jacks are unbalanced. (Tip=Out, Ring=In, Sleeve=GND)

\*6 XLR-3-31 type connectors is unbalanced.

### Analog Output Characteristics

OUTPUT TERMINALS	ACTUAL SOURCE IMPEDANCE	FOR USE WITH NOMINAL	OUTPUT LEVEL		CONNECTOR
			Nominal	Max. before clip	
STEREO OUT [L, R]	75 $\Omega$	600 $\Omega$ Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)	XLR-3-32* <sup>1</sup> Phone jack* <sup>4</sup>
MONO OUT	75 $\Omega$	600 $\Omega$ Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)	XLR-3-32* <sup>1</sup>
GROUP OUT (1-4)	150 $\Omega$	10k $\Omega$ Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	Phone jack* <sup>2</sup>
AUX SEND (1-6)	75 $\Omega$	600 $\Omega$ Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)	XLR-3-32* <sup>1</sup>
MATRIX OUT (1, 2)	150 $\Omega$	10k $\Omega$ Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	Phone jack* <sup>2</sup>
MONO CH INSERT OUT (1-16)	75 $\Omega$	10k $\Omega$ Lines	0 dBu (0.775 V)	+20 dBu (7.75 V)	Phone jack* <sup>3</sup>
STEREO CH INSERT OUT [L, R]	75 $\Omega$	10k $\Omega$ Lines	0 dBu (0.775 V)	+20 dBu (7.75 V)	Phone jack* <sup>3</sup>
MONITOR OUT [L, R]	150 $\Omega$	10k $\Omega$ Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	Phone jack* <sup>2</sup>
PHONES OUT	150 $\Omega$	40 $\Omega$ Phones	3mW	75mW	Stereo phone jack

0 dBu is referenced to 0.775 Vrms. 0 dBV is referenced to 1 Vrms.

\*1 XLR-3-32 type connectors are balanced. (1=GND, 2=HOT, 3=COLD)

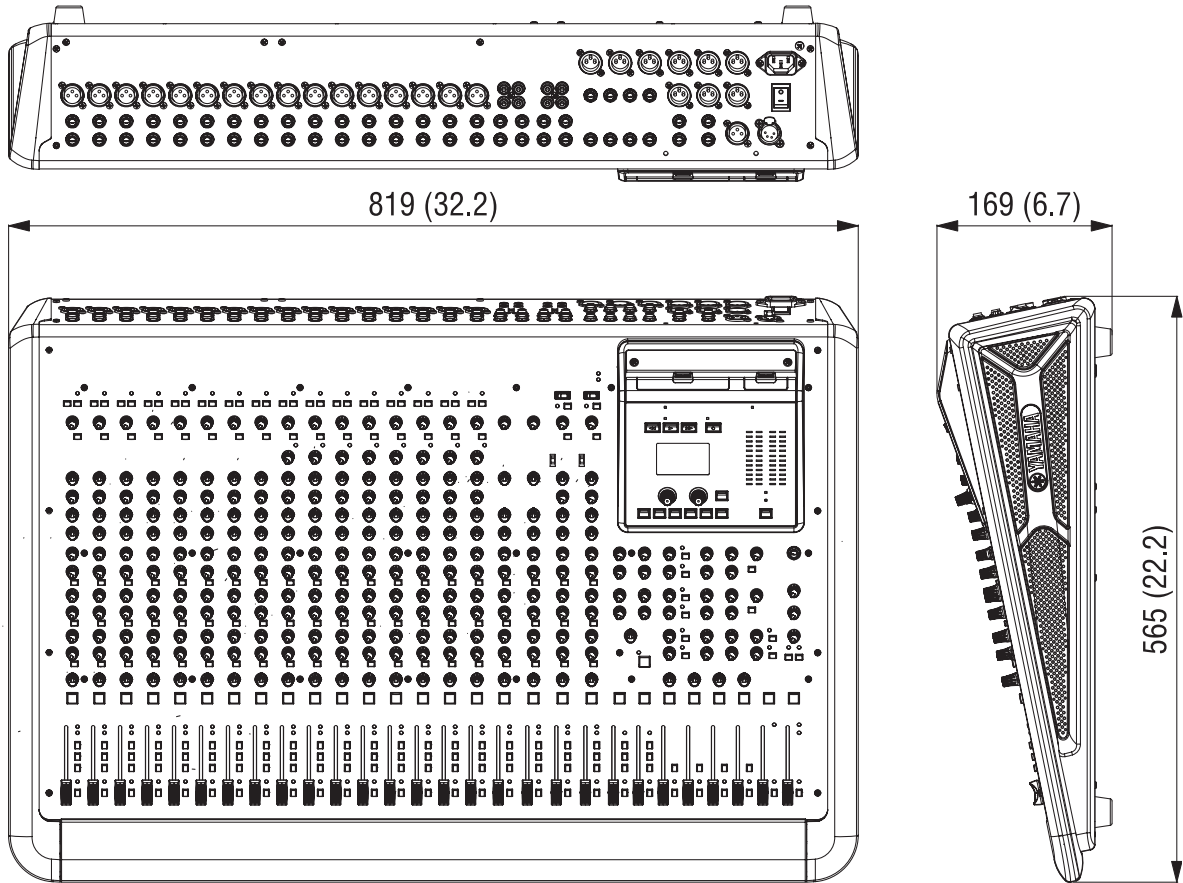
\*2 Phone jacks are impedance balanced. (Tip=HOT, Ring=COLD, Sleeve=GND)

\*3 Phone jacks are unbalanced. (Tip=Out, Ring=In, Sleeve=GND)

\*4 Phone jacks are balanced. (Tip=HOT, Ring=COLD, Sleeve=GND)

## Dimensions

Unit: mm (inch)



## Options

- Gooseneck Lamp LA1L

## Software

- MGP Editor

## Architectural and Engineering Specifications

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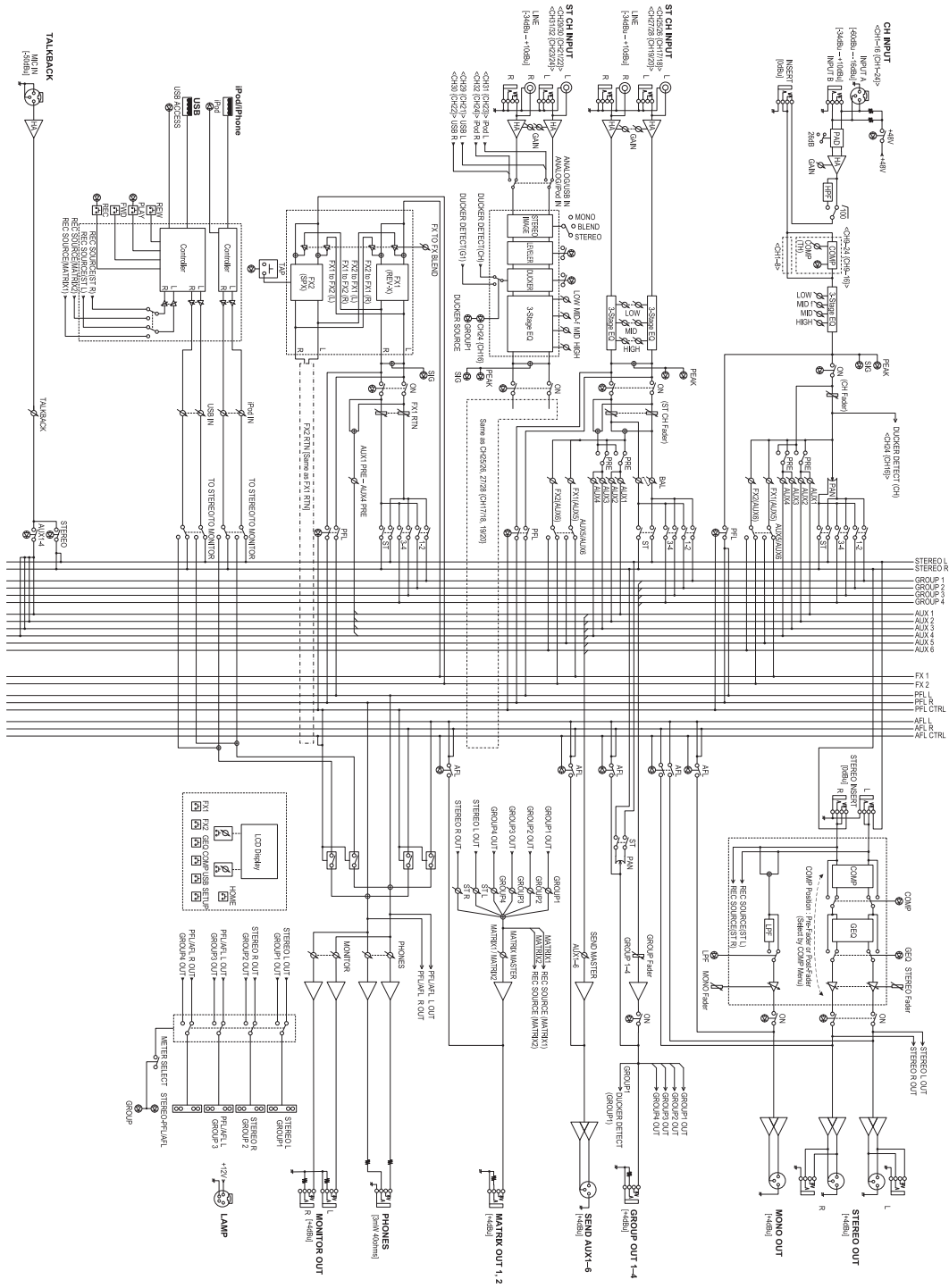
The Yamaha MGP24X Mixing Console shall be a hybrid mixer that combines analog mixing with digital functionality. The MGP24X shall have 24 line inputs (16 mono and 4 stereo), and 16 microphone inputs with 48V phantom power and a high-pass filter for each. Output channels shall be 1 stereo output, 1 mono output, 1 monitor output, 6 auxiliary sends, 4 group outputs, 1 phones output, 2 matrix output, 1 stereo channel insert output and 16 mono channel insert outputs. Buses are 4 group buses, 6 auxiliary sends and a stereo bus.

The mixer's microphone preamplifiers shall be discrete class-A Yamaha "D-PRE" types for high sound quality. "X-pressive EQ" based on original Yamaha VCM (Virtual Circuit Modeling) technology shall be included for warm, musical equalization. Yamaha "1-Knob Compressors" with LED indicators shall provide high-quality compression that is also easy to use. The mixer shall be equipped with dual digital effects processors that include "REV-X" reverb and 16 "SPX" effects. A Stereo Hybrid Channel with built-in digital signal processing shall provide the following functions: (a) "Priority Ducker" shall automatically reduce the level of background music when a speech or announcement begins, (b) "Leveler" shall maintain a constant level by automatically adjusting the volume of individual tracks, and (c) "Stereo Image" shall allow modification of the stereo image to provide optimum balance for listeners at any position in an installed sound environment.

Digital input connectors shall enable high quality digital playback from digital devices such as an iPhone or iPod. An "MGP Editor" app that runs on an iPhone or iPod shall be provided to allow detailed control of the mixer's digital signal processing functions. Other features shall include WAV/MP3 recording and playback to and from a USB memory device, graphic equalization with selectable 9-band Flex EQ and fixed 14-band modes, and a multi-band compressor.

The mixer shall be built into a durable impact-resistant, powder-coated metal chassis. An internal universal power supply shall provide stable, trouble free operation with AC power anywhere in the world. Dimensions shall be 819 (W) x 565 (D) x 169 (H) mm. Weight shall be 15.5 kg.

# Block Diagrams



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