

Overview

MG20XU is a versatile mixer suitable for a wide range of users and applications.



Rear Panel

Features

- Input channels: 20 Line Inputs (12 mono, 4 stereo), 16 Mic Inputs with 48V phantom power and HPH per channel.
- Output channels: 2 ST, 1 MONITOR, 4 AUX sends, 4 GROUP, 1 PHONES.
- Bus: 1 ST, 4 GROUP, 4 AUX (incl.FX).
- Robust, impact-resistant, powder-coated metal chassis.
- Internal universal power supply for worry-free operation around the globe, even in unsteady voltage environment.
- Rack Mount Kit included.
- Discrete class A “D-PRE” mic preamps with an inverted darlington circuit.
- Professional “1-knob compressors”.
- Digital effects processors: 24 “SPX” effects.
- 24-bit/192kHz 2IN/2OUT USB Audio Interface function.
- Cubase AI access code included for Download on the Steinberg website.
- Cubasis LE available for free download on the App Store.
- MG REC/PLAY available for free download on the App Store.

Specifications

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General Specifications

INPUT CHANNELS	LINE INPUT	20 (12 MONO + 4 STEREO)
	MIC INPUT	16
	MONO INPUT (MIC/LINE)	12 (CH1-12)
	MONO/STEREO INPUT (MIC/LINE)	4 (CH13-20)
	STEREO INPUT (LINE)	0
OUTPUT CHANNELS	STEREO OUT	2
	MONITOR OUT	1
	AUX SEND	4
	GROUP OUT	4
	PHONES OUT	1
BUS	STEREO	1
	GROUP	4
	AUX	4 (incl.FX)
USB AUDIO - USB IN/OUT		Yes (2 IN / 2 OUT, USB Audio Class 2.0 compliant, Sampling Frequency: Max 192kHz, Bit Depth: 24-bit)
PHANTOM POWER		+48V
POWER REQUIREMENTS		100-240V 50Hz/60Hz
POWER SUPPLY TYPE		Internal Universal Power Supply
POWER CONSUMPTION		36W
DIMENSIONS	W x H x D	444mm x 130mm x 500mm (17.5" x 5.1" x 19.7")
NET WEIGHT		7.1kg (15.7lbs)
INCLUDED ACCESSORIES		AC Power Code, Rack-mount kit, Owner's manual, Technical Specifications, Cubase AI Download Information
SOFTWARE APPLICATION	Steinberg CUBASE AI	Yes (Download access code included. Download on the Steinberg web site)
	Steinberg CUBASIS LE	Yes (Download on the App Store) (Apple iPad Camera Connection Kit/Lightening to USB Camera Adapter required)
	MG REC/PLAY (WAV)	Yes (Download on the App Store) (Apple iPhone/iPad Camera Connection Kit/Lightening to USB Camera Adapter required)
OPTIONAL ACCESSORIES		FC5 Foot Switch
OPERATING TEMPERATURE		0 to 40°C

Featured Functions

D-PRE MIC PREAMP	Yes
1-KNOB COMP	Yes
SPX DIGITAL EFFECTS	Yes (24 programs. REV HALL1 / REV HALL 2 / REV ROOM 1 / REV ROOM 2 / REV STAGE 1 / REV STAGE 2 / REV PLATE / DRUM AMB / EARLY REF / GATE REV / SINGLE DLY / DELAY / VOCAL ECHO / KARAOKE / PHASER / FLANGER / CHORUS 1 / CHORUS 2 / SYMPHONIC / TREMOLO / AUTO WAH / RADIO VOICE / DISTORTION / PITCH CHANGE)

Electrical Specifications

TOTAL HARMONIC DISTORTION	+14dBu (20Hz to 20kHz)	0.03%
	Gain knob: Min	
	+24dBu (1kHz)	0.005%
	Gain knob: Min	
FREQUENCY RESPONSE		+0.5/-1.5dB (20Hz - 48kHz), refer to the nominal output level @1kHz, GAIN knob: Min
HUM & NOISE LEVEL	Equivalent input noise	-128 dBu (20Hz-20 kHz, Rs: 150Ω, Gain knob: Max)
	Residual output noise	-102 dBu (STEREO OUT, STEREO master fader: Min)
CROSSTALK	@ 1kHz	-78dB
INPUT CHANNEL FUNCTION	PAD	26dB
	HPF	80Hz, 12dB/oct (Mono/Stereo: MIC only)
	COMP	1 knob compressor (Gain/Threshold/Ratio)
		Threshold: +22dBu to -8dBu, Ratio: 1:1 to 4:1
		Output level: 0dB to 7dB
INPUT CHANNEL EQ		Attack time: approx. 25msec
		Release time: approx. 300msec
	High	±15dB (10kHz shelving)
	Mid	±15dB (Mono 250Hz-5kHz peaking, Stereo 2.5kHz peaking)
	Low	±15dB (100Hz shelving)
LED LEVEL METER	Pre Monitor Level	2 x 12 points LED meter (PEAK, +10, +6, +3, 0, -3, -6, -10, -15, -20, -25, -30dB)
PEAK LED		LED turns on when post EQ signal reaches 3dB below clipping level

Specifications

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Analog Input Characteristics

INPUT TERMINAL	PAD 26dB	GAIN TRIM POSITION	ACTUAL LOAD IMPEDANCE	FOR USE WITH NOMINAL	INPUT LEVEL			CONNECTOR
					Sensitivity* ¹	Nominal	Max. before clip	
MIC/LINE 1 – 12	OFF	+64 dB	3k Ω	50-600 Ω Mics/Lines	-80 dBu (0.077 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	Combo jack* ² (Balanced)
		+20 dB			-36 dBu (12.3 mV)	-16 dBu (122.8 mV)	+4 dBu (1.228 V)	
	ON	+38 dB			-54 dBu (1.55 mV)	-34 dBu (15.46 mV)	-14 dBu (154.6 mV)	
		-6 dB			-10 dBu (245 mV)	+10 dBu (2.451 V)	+30 dBu (24.51 V)	
MIC 13/14 – 19/20	-	+64 dB	3k Ω	50-600 Ω Mic	-80 dBu (0.077 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-31* ³ (Balanced)
		+20 dB			-36 dBu (12.3 mV)	-16 dBu (122.8 mV)	-6 dBu (388.2mV)	
LINE 13/14 – 15/16	-	+38 dB	10k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.46 mV)	-14 dBu (154.6 mV)	Phone jack* ⁵ (Unbalanced)
		-6 dB			-10 dBu (245 mV)	+10 dBu (2.451 V)	+30 dBu (24.51 V)	
LINE 17/18 – 19/20	-	+38 dB	10k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.46 mV)	-14 dBu (154.6 mV)	RCA Pin (Unbalanced)
		-6 dB			-10 dBu (245 mV)	+10 dBu (2.451 V)	+30 dBu (24.51 V)	

Analog Output Characteristics

OUTPUT TERMINALS	ACTUAL SOURCE IMPEDANCE	FOR USE WITH NOMINAL	OUTPUT LEVEL		CONNECTOR
			Nominal	Max. before clip	
STEREO OUT [L, R]	75 Ω	600 Ω Lines	+4 dBu (1.228 V)	+24 dBu (12.28 V)	XLR-3-32* ³ Phone jack* ⁴ (Balanced)
MONITOR OUT [L, R], AUX SEND [1 - 4], GROUP OUT [1 - 4]	150 Ω	10k Ω Lines	+4 dBu (1.228 V)	+20 dBu (7.750 V)	Phone jack* ⁴ (Impedance Balanced)
PHONES	110 Ω	40 Ω Phones	3mW + 3mW	100mW + 100mW	Stereo phone jack

Digital Input/Output Characteristics

OUTPUT TERMINALS	FORMAT	DATA LENGTH	Fs	CONNECTOR
USB	USB Audio Class 2.0	16 / 24bit	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4kHz, 192 kHz	USB Standard-B

0dBu is referenced to 0.775Vrms.

*¹ Sensitivity is the lowest level that will produce an output of +4dBu (1.228V) or the nominal output level when the unit is set to maximum gain. (All level controls are maximum position.)

*² 1&Sleeve = GND, 2&Tip = HOT, 3&Ring = COLD

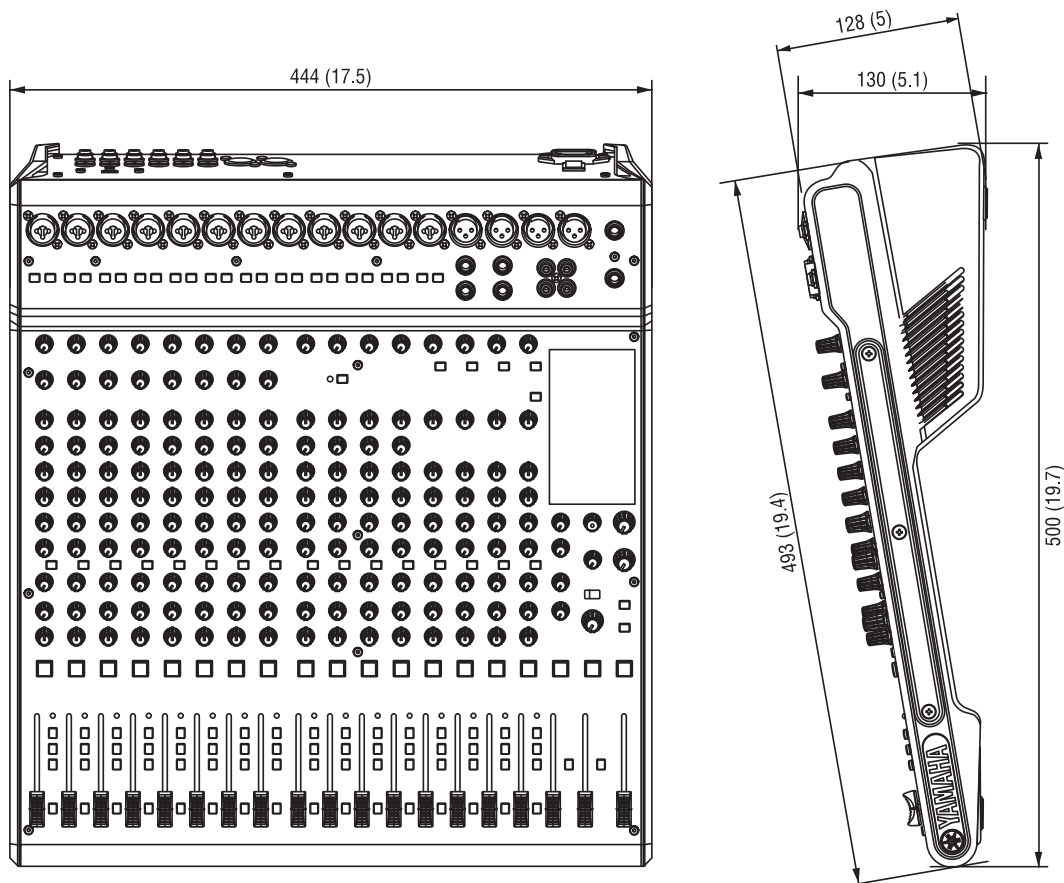
*³ 1 = GND, 2 = HOT, 3 = COLD

*⁴ Tip = HOT, Ring = COLD, Sleeve = GND

*⁵ Tip = Signal, Sleeve = GND

Dimensions

Unit: mm (inch)



Options

- Foot Switch FC5

Software

- MG REC/PLAY
- Steinberg Cubase AI
- Steinberg Cubasis LE

Architectural and Engineering Specifications

The Yamaha MG20XU Mixing Console shall be a versatile 20-channel mixer that is suitable for a wide range of users and applications. The MG20XU shall have 20 line inputs (12 mono, 4 stereo) and 16 microphone inputs with 48-volt phantom power and a high-pass filter for each channel. Two stereo outputs, one monitor output, four auxiliary (effects) sends, four group sends, and one headphone output shall be provided. One stereo bus, four group buses, and four auxiliary (effects) buses shall be provided. The mixing console's microphone preamplifiers shall be discrete class-A "D-PRE" types for high sound quality. Yamaha's 1-knob compressors shall be included for easy compression control. A digital effects processor with 24 high-quality "SPX" effects shall be included to allow creative sound processing. The mixing console shall be equipped with a 24-bit/192-kHz 2-in/2-out USB digital audio interface, and shall be supplied with an access code that will allow Cubase AI music production software to be downloaded from the Steinberg website. Steinberg's Cubasis LE multi-touch sequencer for the iPad and Yamaha's MG Rec&Play recording application for the iPad and iPhone shall be available for download from the App Store at no charge. The mixing console shall be robust and built into an impact-resistant powder-coated metal chassis. The mixing console shall have an internal universal power supply that is capable of powering the unit stably from AC mains voltages around the world. A rack mount kit shall be included. Dimensions shall be 444 (W) x 130 (H) x 500 (D) mm (17.5" x 5.1" x 19.7"). Weight shall be 7.1kg (15.7lbs).

The diagram illustrates the internal circuitry of the Pioneer Hi-Fi Reference Stereo Amplifier. It features a variety of input options, including Mono ST, Stereo, and USB, each with its own gain stage and filter. The signal path is carefully designed to maintain high fidelity, with multiple gain stages and filters (e.g., 100Hz, 10kHz) to shape the sound. A dedicated power supply section at the bottom provides clean power to the amplifier stages. The output stage uses a power MOSFET to drive the speakers, with a power MOSFET and a power MOSFET. The diagram is labeled with various gain levels and component values, providing a comprehensive view of the amplifier's internal architecture.

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