

POWERED MIXER  
**EMX 5**  
 Technical Specifications

### General Specifications

0 dBu = 0.775 Vrms, Output impedance of signal generator (Rs) = 150 Ω  
 All level controls are at their maximum position if not specified.

Output Power	1 kHz THD+N < 10% (CEA2006)	630 W + 630 W (4 Ω) 460 W + 460 W (8 Ω)
	1 kHz THD+N < 1% (CEA2006)	500 W + 500 W (4 Ω) 370 W + 370 W (8 Ω)
		<b>Input to SPEAKERS</b>
		<b>Input to STEREO OUT, AUX1 SEND, AUX2 SEND</b>
Frequency Response	Refer to the nominal output level @ 1 kHz	+1 dB/-3 dB (40 Hz to 20 kHz)
Total Harmonic Distortion *1 (THD+N)	MIC/LINE = LINE (CH1-4)	0.1% @ 10 W (40 Hz to 20 kHz) 0.05% @ 50 W (1 kHz)
Hum & Noise *2 (20 Hz to 20 kHz)	Equivalent Input Noise	-117 dBu
	Residual Output Noise	-70 dBu (40 Hz to 20 kHz, STEREO MASTER LEVEL: min) -82 dBu (20 Hz to 20 kHz, STEREO MASTER LEVEL: min)
Crosstalk (1 kHz) *3		-85 dB
Input channels	TOTAL: 12 channels	Mono (MIC/LINE): 8, Stereo (LINE): 4
Output channels		SPEAKERS [A, B], AUX1 SEND, AUX2 SEND, STEREO OUT [L, R], REC OUT [L, R]
Bus		Stereo: 1, AUX: 2 (Including FX)
Input Channel Function	MIC/LINE (CH1-4)	30 dB PAD
	Hi-Z (CH4)	Supported
	HPF (CH1-3)	80 Hz, -12 dB/oct.
	Equalizer (EQ)	HIGH: 10 kHz +15 dB / -15 dB (Shelving) MID: 2.5 kHz +15 dB / -15 dB (Peaking) LOW: 100 Hz +15 dB / -15 dB (Shelving)
	COMP (CH1-4)	1-knob COMP
Level Meter		2 x 7 points LED meter (-20, -10, -6, 0, +6, +10, PEAK)
Built-in Effect	SPX Algorithm	24 programs
Output Channel Function		Feedback suppressor, Master EQ, Monitor EQ
Phantom Power Voltage		+48 V
FOOT SW		Effect mute on/off
Protection		Load Protection: DC-fault Amplifier Protection: Over heat protection, Over current protection, Integral power protection Power Supply Protection: Over heat protection, Over current protection
Power Requirements		AC 100-240 V, 50 Hz/60 Hz
Power Consumption		42 W (Idle) / 210 W (1/8 Power)
Dimensions (W x H x D)		465 mm x 308 mm x 325 mm (18.3" x 12.1" x 12.8")
Net Weight		9.5 kg (20.9 lb)
Included Accessory		AC Power Cord (2.5 m), Owner's Manual, Technical Specifications
Optional Accessory		Rack-mount brackets: RK-EMX7, Foot switch: FC5
Operating Temperature		0 to +40°C

\*1 THD+N is measured with 22 kHz LPF  
 \*2 Noise is measured with A-weighting filter.  
 \*3 Crosstalk is measured with 1 kHz band pass filter.

The contents of this manual apply to the latest specifications as of the publishing date. To obtain the latest manual, access the Yamaha website then download the manual file.

### Analog Input Characteristics

0 dBu = 0.775 Vrms

Input Jack	MIC/LINE	Hi-Z	Actual Load Impedance	For Use with Nominal	Input Level			Connector
					Sensitivity *1	Nominal Level (▼ Position) *2	Max. Before Clip	
CH 1-4	XLR	MIC	3 kΩ	50-600 Ω Mics	-60 dBu (0.775 mV)	-43 dBu (5.48 mV)	-15 dBu (138 mV)	Combo jack *3 (Balanced)
		LINE			-30 dBu (24.5 mV)	-13 dBu (173 mV)	+15 dBu (4.36 V)	
	Phone	MIC	8 kΩ	600 Ω Lines	-50 dBu (2.45 mV)	-33 dBu (17.3 mV)	-5 dBu (436 mV)	
		LINE			-20 dBu (77.5 mV)	-3 dBu (548 mV)	+25 dBu (13.8 V)	
CH 4 (Hi-Z)	Phone	MIC	1 MΩ	10 kΩ Lines	-50 dBu (2.45 mV)	-33 dBu (17.3 mV)	-5 dBu (436 mV)	Phone jack *4 (Unbalanced)
		LINE			-20 dBu (77.5 mV)	-3 dBu (548 mV)	+20 dBu (7.75 V)	
CH 5/6, 7/8	XLR	—	3 kΩ	50-600 Ω Mics	-60 dBu (0.775 mV)	-43 dBu (5.48 mV)	-15 dBu (138 mV)	XLR-3-31 *5 (Balanced)
	Phone	—	10 kΩ	600 Ω Lines	-20 dBu (77.5 mV)	-3 dBu (548 mV)	+25 dBu (13.8 V)	Phone jack *4 (Unbalanced)
CH 9/10, 11/12	XLR	—	3 kΩ	50-600 Ω Mics	-60 dBu (0.775 mV)	-43 dBu (5.48 mV)	-15 dBu (138 mV)	XLR-3-31 *5 (Balanced)
	Pin	—	10 kΩ	600 Ω Lines	-8 dBu (316 mV)	+10 dBu (2.45 V)	+25 dBu (13.8 V)	RCA pin (Unbalanced)
CH 11/12	Mini jack	—	10 kΩ	600 Ω Lines	-8 dBu (316 mV)	+10 dBu (2.45 V)	+25 dBu (13.8 V)	Stereo mini jack *6 (Unbalanced)

\*1 Sensitivity is the lowest level that will produce an output of +4 dBu (1.228 V) or the nominal output level when the unit is set to maximum gain. (All level controls are at their maximum position.)  
 \*2 Level controls setting : Channel level controls are at their ▼ position. Master level controls are at their maximum position.  
 \*3 1&Sleeve = GND, 2&Tip = HOT, 3&Ring = COLD  
 \*4 Tip = Signal, Sleeve = GND  
 \*5 1 = GND, 2 = HOT, 3 = COLD  
 \*6 Tip = LEFT, Ring = RIGHT, Sleeve = GND

### Analog Output Characteristics

0 dBu = 0.775 Vrms  
 0 dBV = 1.00 Vrms

Output Jack	Actual Source Impedance	For Use with Nominal	Output level		Connector
			Nominal	Max. Before Clip	
STEREO OUT L, R	600 Ω	10 kΩ Lines	+4 dBu (1.228 V)	+20 dBu (7.75 V)	Phone jack *1 (Impedance balanced)
AUX SEND 1, 2	600 Ω	10 kΩ Lines	+4 dBu (1.228 V)	+20 dBu (7.75 V)	Phone jack *1 (Impedance balanced)
REC OUT L, R	600 Ω	10 kΩ Lines	-10 dBV (0.308 V)	+18 dBV (7.75 V)	RCA pin (Unbalanced)

\*1 Tip = HOT, Ring = COLD, Sleeve = GND

### Speaker Output Characteristics

Output Jack	Actual Source Impedance	For Use with Nominal	Output level		Connector
			1 kHz THD+N < 1% (CEA2006)	1 kHz THD+N < 10% (CEA2006)	
SPEAKERS A, B	< 0.1 Ω	4 Ω Speakers	500 W	630 W	Neutrik speakON® NL4 *1 Phone jack *2
		8 Ω Speakers	370 W	460 W	

\*1 1+ = Positive, 1- = Negative  
 \*2 Tip = Positive, Sleeve = Negative

# Block and Level Diagrams

