

EMX5016CF**EMX5016CF**
POWERED MIXER**16-input, 500W per channel** [Enlarge Picture](#)**Serious Live Sound Capability Plus Innovative Digital Features**

The EMX5016CF delivers the convenience of an integrated powered mixer with input capacity, flexible features, and solid sound that critical live applications demand. It is remarkably compact and portable for a live sound system with this much capability. And thanks to leading Yamaha digital technology, the EMX5016CF also includes a number of innovations that make it easier than ever to achieve top-class sound in just about any venue. An impressive power output of 500 watts per channel means it can handle fairly large audiences, indoors or out. The EMX5016CF goes considerably beyond the standard definition of "powered mixer," entering the realm of serious sound reinforcement.

Versatile 16-Input Configuration Adapts to Varied Source Requirements

The EMX5016CF has a total of 16 input channels – eight for monaural microphone or line input plus four stereo pairs. The stereo channel pairs can function either as monaural microphone inputs or stereo line inputs. This system gives you extra microphone inputs if your sources are mostly microphones, or if you need to handle more stereo sources, the EMX5016CF will comfortably handle four pairs in addition to eight mono mic or line inputs.

Advanced Channel EQ

3-band EQ is available on all input channels, but extra versatility is provided on the eight mono channels with mid-frequency sweep controls. The mid EQ center frequency can be continuously swept from 250 Hz through 5 kHz so you can precisely pinpoint frequencies in the critical midrange.

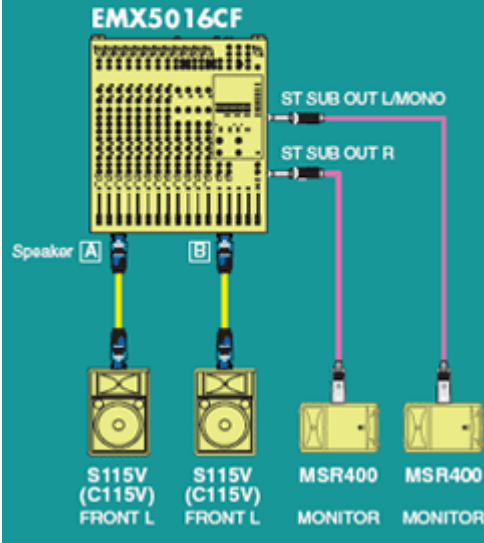
Ample I/O for Expansion and Integration

All you need to create a powerful, high-performance live sound system is the EMX5016CF, a pair of speakers or two, and your sources. But it does feature a range of inputs and outputs that allow it to be

System Example

500-watt Mains and Dual Monitors

In this basic system the EMX5016CF speaker outputs drive S115V speakers for solid front-of-house sound, while the sub-stereo outputs are connected to MSR400 powered speakers for stage monitoring.



expanded with external gear or integrated into larger systems. Insert patch points on the mono input channels, for example, let you add outboard signal processing to individual input channels. And although you have all the monitor power and effects you're likely to need built in, external AUX and EFFECT sends allow you to route the mixer's signals to external signal processing and/or monitor systems as required. Stereo out, stereo sub-out, and record outputs are also provided.

One-knob Compression On Mono Channels

The EMX5016CF features compressors on all monaural microphone/line channels that can help to make vocals ride the mix better, give you that smooth compressed guitar sound, deliver more punchy bass, and generally refine your mixes in a multitude of ways. These unique one-knob

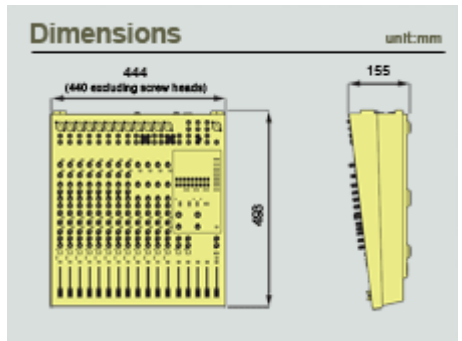
compressors are surprisingly simple to use. There are no multiple attack, threshold, makeup gain, and other controls – just set the COMP control to the amount of compression you need.

9-band Digital Graphic EQ with Presets & Memory

This advanced digital 9-band stereo graphic equalizer goes way beyond conventional analog types with a refined control interface, instant-recall presets, and user memory locations. It also works with the console's innovative Frequency Response Correction system (see below) for unprecedented response-shaping control. Of course you can manually adjust each band as required from scratch, but you can also use one of the presets – VOCAL, DANCE, or SPEECH – as a starting point and edit from there. You also have three user memories into which you can store your own EQ curves for instant recall whenever needed.

FRC (Frequency Response Correction) System

Setting a live sound system's output equalizer to optimally match room response is normally a complicated process requiring noise generators, calibrated microphones, real-time analyzers, and a great deal of time and experience. The EMX5016CF handles the entire process automatically, using either pink noise or a recorded music source you supply. To precisely match the system's response to the room you're in all you need to do is set up a microphone in an appropriate location, connect it to channel 1, and press the MEASURE/CORRECT once to make the measurement, and then again to automatically set the graphic equalizer for optimized response. The EQ setting can then be stored in one of the user memories for later recall if needed.



(Click to enlarge)

Automatic Feedback Suppression

Although the graphic equalizer can be used for feedback control, the EMX5016CF provides a Feedback Suppressor system that is dedicated to the job. The Feedback Suppressor works by detecting feedback frequencies on the stereo bus and applying precise notch filters to eliminate the feedback. The Feedback Suppressor has an automatic mode that automatically keeps track of and attenuates feedback frequencies for you, and a sensitive manual mode that lets you pinpoint and attenuate feedback points one by one.

Multi-band "Maximizer"

The EMX5016CF "Maximizer" is an advanced 3-band compressor that can be applied to the stereo bus for a more punchy "up-front" overall sound. Simply press the MAXIMIZE switch to instantly give the mix more presence and impact without sacrificing musical subtlety.

Dual Yamaha SPX Effect Processors

The EMX5016CF includes not one but two top-performance Yamaha SPX digital effect processors built in! You might only need ambience effects such as reverb and delay for live sound applications – and the EMX5016CF includes some of the finest reverb and delay effects available – but if you need other effects as well they're right at your fingertips, and you can use two different effects simultaneously. Each effect processor offers a selection of 16 top-quality effects including reverb, echo, chorus, flanger, phaser, and even distortion, with editable parameters that allow you to customize each effect.



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For example, use the channel EFFECT controls to control send level to the internal SPX effect processor while using AUX 2 to feed an external effects unit, and AUX 1 to feed a stage monitor system.

Dual AUX Sends

AUX 1 and AUX 2 send controls with pre/post fader switching adjust the level of the channel signal sent to the auxiliary buses for monitoring or external effects send. The availability of two AUX sends provides considerable flexibility for effect and monitor routing. You could, for

Pro-class Features

- Up To 12 Mics, 16 Inputs Total
- 84 Stereo inputs
- Dual AUX Sends
- 500 W + 500 W (4Ω)
- Maximum Power Switch
- Standby Mode
- Power Amp Mode Switch
- YAMAHA Speaker Processing
- Lightweight Design
- Dual SPX Processors
- Input Gain Trim and Pads
- 3-band Mid-sweep Channel EQ
- LPF
- FRC System
- PFL and AFL Monitoring
- One-knob Compression
- 9-band Digital Graphic EQ
- Multi-band Maximizer
- Lightweight Design (11kg)
- Lamp Connector
- Feedback Suppressor
- Rack Mountable

Specifications:

GENERAL SPECIFICATIONS

Maximum Output Power @ 0.5 % THD
at 1 kHz

500 W/4 Ω
350 W/8 Ω (UA)
320 W/8 Ω (H)

Frequency Response	-3, 0, 1 dB 20Hz-20kHz, ref to the 1kHz output level, GAIN=MIN, PAD=OFF
Total Harmonic Distortion	Less than 0.3 % (THD+N) +14dBu output into 600 Ω @ 20 Hz-20 kHz
Hum & Noise	Equivalent Input Noise, -128 dBu, GAIN=MAX, 20 Hz-20 kHz, CH1-8 MIC
Crosstalk @ 1 kHz	-68 dB
Input Connectors	CH 1-8: XLR and Phone CH 9/10-15/16: XLR, Phone and Pin
Channel EQ	CH 1-8: HIGH (10 k, Shelving), MID (mono: 250-5 k, st: 2.5 k, Peaking), LOW (100, Shelving) CH 9/10-15/16: HIGH (10 k, Shelving), MID (st: 2.5 k, Peaking), LOW (100, Shelving)
Phantom Voltage	48 V
Digital Graphic Equalizer	9 Band (63, 125, 250, 500, 1 k, 2 k, 4 k, 8 k, 16 kHz), Preset x 3, User preset x 3
Digital Effects	SPX Digital Multi Effector (24 bit AD/DA, 32 bit Internal Processing): 16 Programs x 2
Power Amp. Mode	L/R, AUX1/MONO, AUX1/2
Foot Switch	Effect On/Off
Dimensions (W x D x H)	444 x 493 x 155 mm (17-3/8" x 19-3/8" x 6-1/8")
Weight	11 kg (24.2 lbs.)
Power Requirements/Consumption	120 V 60 Hz, 500W 220-240 V 50 Hz, 500W

*All level controls are nominal, when measured. Output impedance of signal generator: 150 Ω

INPUT CHARACTERISTICS

Input Terminals	PAD	GAIN	Actual Load Impedance	For Use With Nominal	Input level			Connector
					Sensitivity *2	Position	Max. Before Clip	
CH INPUT A 1-8	0dB	-60 dB	3 kΩ	50-600 Ω Mics	-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-31 type *3
		-16 dB			-36 dBu (12.3 mV)	-16 dBu (123 mV)	+4 dBu (1.23 V)	
		-34 dB			-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	
CH INPUT B 1-8	26dB	+10 dB	10 kΩ	600 Ω Lines	-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	Phone Jack *4
		-60 dB			-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	
		-16 dB			-36 dBu (12.3mV)	-16 dBu (123mV)	+4 dBu (1.23V)	
ST CH MIC INPUT 9/10-15/16	—	-34 dB	3 kΩ	50-600 Ω Mics	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155mV)	XLR-3-31 type *3
		+10 dB			-10 dBu (245 mV)	+10 dBu (2.45V)	+30 dBu (24.5 V)	
		-60 dB			-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	
		-16 dB			-36 dBu (12.3 mV)	-16 dBu (123 mV)	-10 dBu (245	

						mV)		
ST CH LINE INPUT	—	-34 dB	10 kΩ	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155mV)	Phone Jack *5
9/10-15/16		+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	RCA Pin Jack*5
CH INSERT IN (1-8)	—	—	10 kΩ	600 Ω Lines	-20 dBu (77.5 mV)	0 dBu (0.775 V)	+20 dBu (7.7.5 V)	Phone Jack *5

*1 0 dBu is referenced to 0.775 Vrms.

*2 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 level controls are at maximum position.)

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

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

*5 Phone Jacks are unbalanced.

OUTPUT CHARACTERISTICS

Output Terminals	Actual Source Impedance	For Use With Nominal	Output level		Connector
			Nominal	Max. before clip	
ST OUT [L, R]	150 Ω	600 Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	Phone Jack *2
ST SUB OUT [L, R]	150 Ω	600 Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	Phone Jack *2
AUX SEND 1, 2	150 Ω	600 Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	Phone Jack *2
EFFECT SEND 1,2	150 Ω	600 Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	Phone Jack *2
CH INSERT OUT 1-8	600 Ω	10 kΩ Lines	0 dBu (0.775 V)	+20 dBu (7.75 V)	Phone Jack *2
REC OUT [L, R]	600 Ω	10 kΩ Lines	-10 dBV (316 mV)	+10 dBV (3.16 V)	RCA Pin Jack
PHONES [L, R]	100 Ω	40 Ω Lines	3mW	75mW	Phone Jack (TRS)
SPEAKERS	0.1 Ω	4 Ω Speakers	125W	500W	SPEAKON Phone Jack *2

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

*2 Phone Jacks are unbalanced.

Accessories:

Optional:

[RK5014 kit](#)

Rack Mount kit for EMX5016CF and EMX5014C