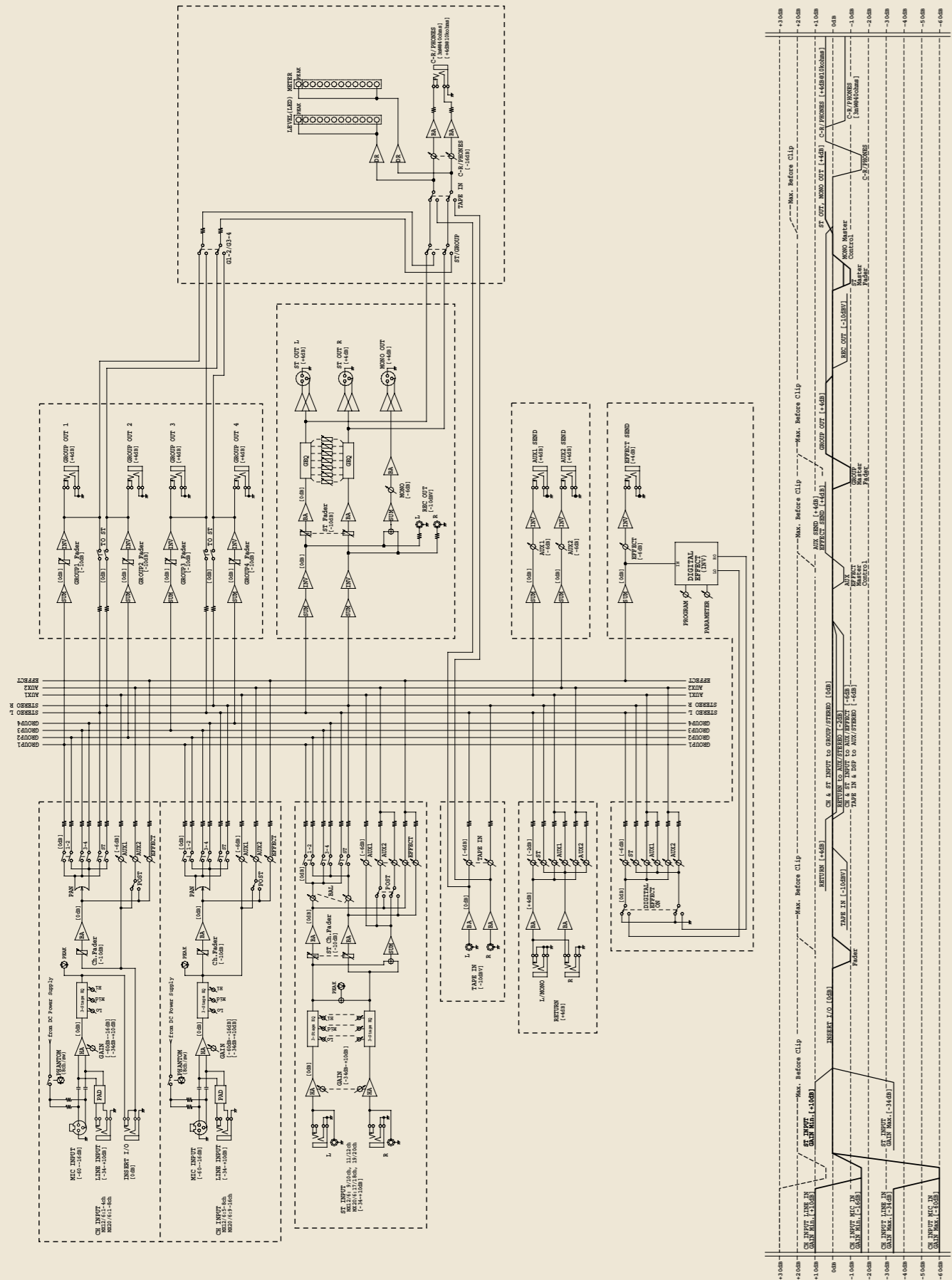


# BLOCK DIAGRAM



MX20/6 Rear Panel

## GENERAL SPECIFICATIONS

<b>Frequency response</b> (CH MIC INPUT to ST, GROUP OUT/AUX, EFFECT SEND)	20Hz—20kHz +1dB, -3dB @ +4dB, 600Ω (Input Gain control at minimum level)
<b>Total harmonic distortion</b> (CH MIC INPUT to ST, GROUP OUT/AUX, EFFECT SEND)	<0.1% (THD+N) @ +14dB, 20Hz—20kHz, 600Ω
<b>Hum &amp; Noise</b> (Rs=150Ω, 20Hz—20kHz, INPUT GAIN=Max., Input Sensitivity=60dB)	-128dB Equivalent input noise -95dB Residual output noise -64dB (68dB S/N) ST OUT: Master fader and one channel fader at nominal level, channel assign switch ON. -88dB (92dB S/N) ST OUT: Master fader at nominal level, all channel assign switches OFF, all GROUP to ST switches OFF. -89dB (93dB S/N) GROUP OUT: Master fader at nominal level, all channel assign switches OFF. -82dB (86dB S/N) AUX SEND, EFFECT SEND: Master level control at nominal level, all channel send controls at minimum level.
<b>Maximum voltage gain</b>	60dB CH MIC INPUT to CH INSERT OUT 84dB CH MIC INPUT to GROUP OUT 84dB CH MIC INPUT to ST OUT (CH to ST) 94dB CH MIC INPUT to ST OUT (GROUP to ST) 76dB CH MIC INPUT to AUX1 SEND, AUX2 SEND (PRE) 86dB CH MIC INPUT to AUX2 SEND (POST), EFFECT SEND 58dB CH LINE INPUT to ST OUT (CH to ST) 58dB ST INPUT to ST OUT (CH to ST)
<b>Monaural INPUT Gain control</b>	44dB variable

<b>Stereo INPUT Gain control</b>	44dB variable
<b>Crosstalk at 1kHz</b>	-70dB adjacent input -70dB input to output (CH INPUT)
<b>Input channel equalization</b>	±15dB Maximum HIGH 10kHz shelving MID 2.5kHz peaking LOW 100Hz shelving * Turn over/Roll off frequency of shelving: 3dB below maximum variable level.
<b>Monaural and Stereo INPUT Peak Indicators</b>	Red: Each channel, when the level of the post EQ signal for each channel exceeds +17dB the indicator will light.
<b>Meters</b>	12 points LED × 2
<b>Graphic equalizer</b>	7 bands (125, 250, 500, 1k, 2k, 4k, 8kHz) ±12 dB Maximum
<b>Internal digital effect</b>	16 types
<b>Phantom power</b>	+48V (balanced) : Supplied when the PHANTOM +48V switch is ON.
<b>Lamp Connector</b>	BNC type (12V, 0.5A)
<b>Option</b>	Rack Mount Kit RK124 (for MX12/6)
<b>Power requirement</b>	USA and Canadian: 120V AC 60Hz General: 230V AC 50Hz
<b>Power consumption</b>	MX12/6: 45W      MX20/6: 55W
<b>Dimensions (W × H × D)</b>	MX12/6: 438 × 85 × 384 mm (17-1/4" × 3-3/8" × 15-1/8") MX20/6: 658 × 85 × 384 mm (25-7/8" × 3-3/8" × 15-1/8")
<b>Weight</b>	MX12/6: 7.0kg (15.4lbs.)      MX20/6: 9.5kg (20.9lbs.) 0dB=0.775Vrms

## INPUT SPECIFICATIONS

Input connectors	Gain Control	Input impedance	Nominal impedance	Input level			Connector type
				Sensitivity *1	Nominal	Max. before clipping	
MIC INPUT (1-n *5)	-60	5kΩ	50-600Ω mics	-80 dB (0.078mV)	-60 dB (0.775mV)	-40 dB (7.75mV)	XLR-3-31 type *2
	-16			-36 dB (12.3mV)	+4 dB (1.23V)		
LINE INPUT (1-n *5)	-34	50kΩ	600Ω lines	-54 dB (1.55mV)	-34 dB (15.5mV)	-14 dB (155mV)	Phone jack (TRS) *2
	+10			-10 dB (245mV)	+10 dB (2.45V)	+30 dB (24.5V)	
ST INPUT (*7)	-34	10kΩ	600Ω lines	-54 dB (1.55mV)	-34 dB (15.5mV)	-14 dB (155mV)	RCA phono jack Phone jack *3
	+10			-10 dB (245mV)	+10 dB (2.45V)	+30 dB (24.5V)	
RETURN (L, R)		10kΩ	600Ω lines	-12 dB (195mV)	+4 dB (1.23V)	+20 dB (7.75V)	Phone jack *3
TAPE IN (L, R)		10kΩ	600Ω lines	-26 dBV (50.1mV)	-10 dBV (316mV)	+10 dBV (3.16V)	RCA phono jack
CH INSERT IN (1-n *6)		10kΩ	600Ω lines	-20 dB (77.5mV)	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (I/O) *4

\*1 Input sensitivity: the lowest level that will produce the nominal output level when the unit is set to maximum gain.  
 \*2 XLR type connector, phone jack (TRS) (T=Hot, R=Cold, S=Gnd): balanced type.  
 \*3 Phone jack: unbalanced type.  
 \*4 Phone jack (I/O) (T=Out, R=In, S=Gnd): unbalanced type.  
 \*5 n=8 (MX12/6), n=16 (MX20/6)  
 \*6 n=4 (MX12/6), n=8 (MX20/6)  
 \*7 9/10, 11/12 (MX12/6), 17/18, 19/20 (MX20/6)  
 • 0dB=0.775Vrms, 0dBV=1Vrms

## OUTPUT SPECIFICATIONS

Output connectors	Output impedance	Nominal impedance	Output level		Connector type
			Nominal	Max. before clipping	
ST OUT (L, R), MONO OUT	150Ω	600Ω lines	+4 dB (1.23V)	+24 dB (12.3V)	XLR-3-32 type *1
GROUP OUT (1-4) AUX SEND (1, 2) EFFECT SEND	75Ω	600Ω lines	+4 dB (1.23V)	+20 dB (7.75V)	Phone jack (TRS) *2
C-R/PHONES (L, R)	100Ω	10kΩ lines	+4 dB (1.23V)	+20 dB (7.75V)	ST phone jack (TRS) *3
		40Ω phones	3mW	75mW	
REC OUT (L, R)	600Ω	10kΩ lines	-10 dBV (316mV)	+10 dBV (3.16V)	RCA phono jack
CH INSERT OUT (1-n *5)	600Ω	10kΩ lines	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (TRS) *4

\*1 XLR type connector: balanced type.  
 \*2 Phone jack (TRS) (T=Hot, R=Cold, S=Gnd): impedance balanced type.  
 \*3 ST phone jack (TRS) (T=L, R=R, S=Gnd): unbalanced type.  
 \*4 Phone jack (I/O) (T=Out, R=In, S=Gnd): unbalanced type.  
 \*5 n=4 (MX12/6), n=8 (MX20/6)  
 • 0dB=0.775Vrms, 0dBV=1Vrms

YAMAHA Web Site  
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# MX12/6 MX20/6

MIXER



# We've Increased Our Performance. Now It's Your Turn

After the success of our MX12/4 mixer, our engineers returned to their drawing boards to see how they could improve on the solid performance and features that made the 12/4 so popular. What they came up with we think you'll like.

The new MX series features two models. First is the MX12/6, a 12-channel mixer with 8 mono and 2 stereo input channels. Second is the MX20/6, a compact, 20-channel mixing console with 16 mono and 2 stereo input channels. Both units feature independent 6 bus outputs (4-Group and ST), three AUX buses (AUX 1, AUX 2, EFFECT) and an upgraded and expanded Digital Effects section for greater flexibility and performance. We've added extensive grounding and protection to further reduced noise caused from static electricity. Finally, to ensure the utmost in reliability and performance, the MX series utilizes the highest grade of quality parts with strict screening of all parts, especially in parts directly related to sound quality.

With the MX12/6 and MX20/6, Yamaha again delivers the superior performance, versatility that professionals demand features hard to find, at such an affordable price.

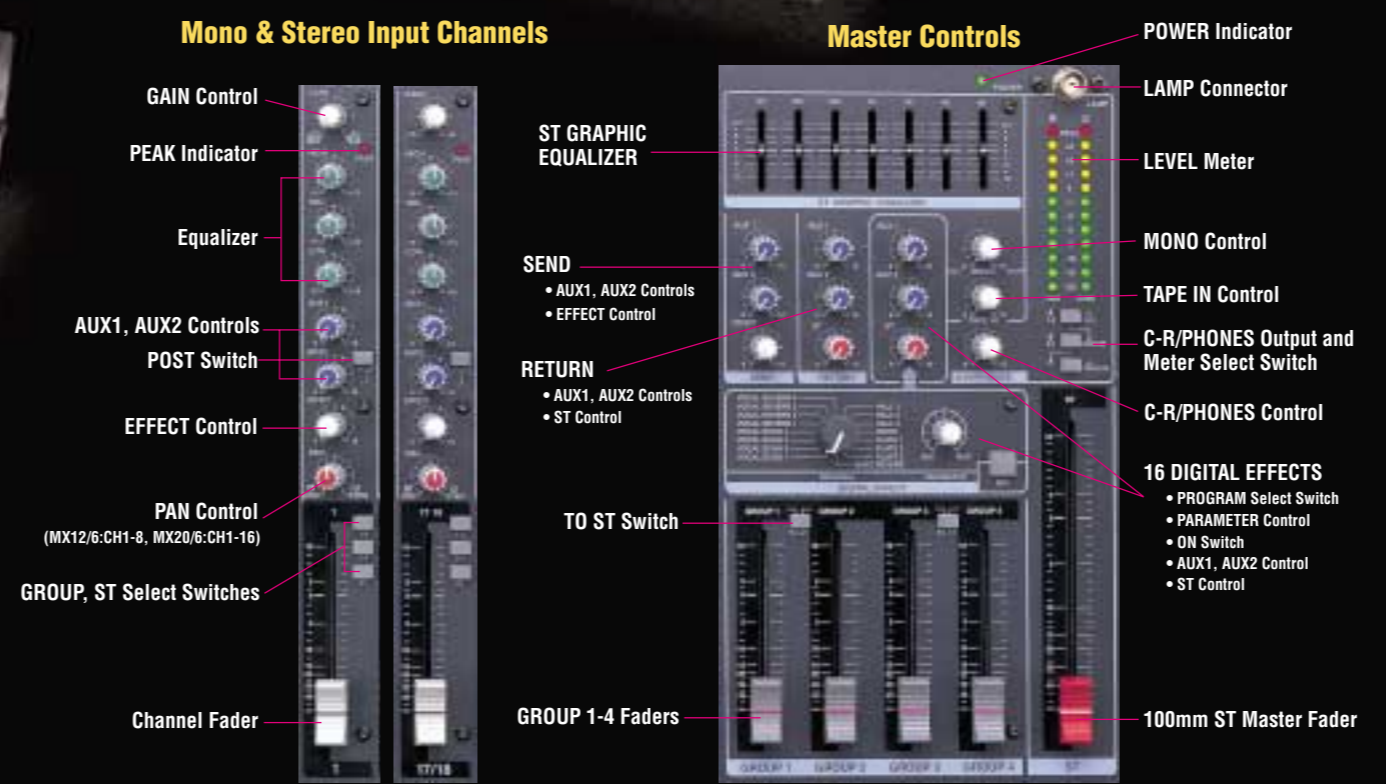
MIXER *MX12/6*  
*MX20/6*



MX20/6



MX12/6



## Mono & Stereo Input Channels

### Inputs

Both mixers offer mono input channels with both balanced XLR-type microphone inputs and balanced TRS phone jack line inputs. For compatibility with condenser microphones both units feature switchable phantom power is supplied to mono channels and controlled with a single switch (CH1-8) on the MX12/6 and two switches (CH1-8 & 9-16) on the MX20/6.

Direct connection of stereo line sources is provided with channels 9/10 & 11/12 on the 12/6 and channels 17/18 & 19/20 on the 20/6. Both RCA and TRS phone type jacks are provided.

### Gain Trim

All mono and stereo channels are equipped with gain trim controls with LED peak indicators to facilitate level matching with a wide variety of sources.

### 3-band Channel EQ

Each channel is equipped with 3-band equalization that provides +/-15dB of control over high, mid and low frequencies centered at 10kHz (shelving), 2.5kHz (peaking) and 100Hz (shelving) respectively.

### Two AUX Buses

Two separate AUX buses can be used as sends for external effectors or a monitor system to offer signal routing flexibility.

AUX 1 is pre-fader while AUX 2 allows the selection of either pre- or post-fader signals.

### Effect Send

Further signal routing is provided with the EFFECT send which can be used to send the signal to the on-board digital effects section or to an external effector.

### 4-Group Plus Stereo Assignment & Channel Faders

Linear faders offer noise free operation that is both smooth and precise. Both mixers offer exceptional routing flexibility with three bus assign switches that allow routing of each channel's signal to Group 1/2, 3/4 and/or ST outputs.

## Master Controls

### 7-Band Graphic Equalizer

Supplying additional processing on the stereo outputs the 7-band graphic equalizer provides overall response shaping and effective feedback control.

able pre/post fader AUX 2 Send. The EFFECT send can be used for routing the signal to the on-board digital effects section or to an external effector.

### Built-in 16 Digital Effects

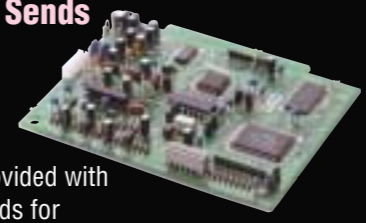
To add a professional touch to your mix, the MX12/6 and 20/6 feature an expanded digital effects section that includes Vocal Reverb, Vocal Echo, Hall, Plate and their variations plus Room and Gate Reverb for a total of 16 digital effects. The selected effect can be applied to the ST, AUX1 and/or AUX2 signals. The Digital Effects section is supplied with an ON switch and a parameter control for adjusting parameters such as effect level, speed, etc. of the selected effect.

### Flexible Monitoring & Metering

A C-R (control-room monitor)/PHONES jack with an independent level control can be switched to monitor the signal from the ST, Group 1/2, Group 3/4 outputs or Tape Inputs. The 12-segment peak-reading level meters offer accurate visual monitoring of the signal that is currently selected for monitoring. Controlled with the C-R/PHONES control, the C-R/PHONES jack delivers a high quality signal providing use as an output jack for additional monitoring or monitoring via a pair of headphones.

### Three AUX Sends

A feature hard to find in this price range, both mixers are provided with three AUX sends for extended signal routing. Auxiliary sends include a pre-fader AUX1 Send and select-



### Stereo Fader

A new 100mm stereo fader provides easier use and greater control over the stereo out level.

### MONO Control & Output

Independent of the ST control, the MONO control delivers a monaural rendition of the Stereo signal to the XLR MONO output.

### Tape In/Rec Out Jacks

These RCA type jacks provide easy connection of a tape deck for playback and recording. The Tape In signal has its own level control on the panel.

### Channel Insertion

Channels 1-4 on the 12/6 and channels 1-8 on the 20/6 are equipped with insert send/return patch points for convenient insertion of outboard equipment such as compressor/limiters, effectors, etc. These jacks can also be conveniently used as direct out jacks for recording.

### Control Knobs

Even small details like the mixer's control knobs were given attention. The new control knobs offer a better feel and operation.