

 YAMAHA

MIXING CONSOLE
MG Series

MG102C MG124C MG166C MG206C
MG82CX MG124CX MG166CX
MG24/14FX MG32/14FX

MG166C-USB MG166CX-USB MG206C-USB



For details please contact:

 **YAMAHA**

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The Genesis of the New MG Mixers



We got the heads of the new MG mixer design, product planning, and marketing divisions together to hear what they had to say about the genesis of this remarkable series.

The Yamaha Advantage

Mr. Tashiro:

For us the new MG series had to be more than just "new." It had to deliver meaningful features and performance that actually meet or exceed the customer's needs and, as always, that turned out to be a difficult process.

Mr. Tanaka (Iggy):

We started by researching the ways that the previous models were being used throughout the world, and ended up with 10 models that comprehensively satisfied the real-world use requirements.

Mr. Nonaka:

This applies to all of our products, but the size of the Yamaha organization contributes to high product quality in a number of ways. There's the direct legacy from the PM series analog mixers, as well as technology developed for our digital products ranging from synthesizers to digital mixing consoles. And there's a healthy atmosphere of competition in each department that contributes to continued technological growth. This is all part of our strength as a general sound-related manufacturer.

Mr. Tashiro:

We maintain the same quality standards from PM-series consoles costing tens or even hundreds of thousands of dollars right down to mixers like the MG series models that cost only a few hundred dollars.



They're all made at the same factory. We built one of the largest and most advanced electromagnetic emission testing facilities in the industry in the same area as the design department, and that has resulted in a huge improvement in our quality control capabilities.

Parts Selection

Mr. Nonaka:

Every operational amplifier, transistor, and capacitor we use is chosen for high sound quality and reliability. In analog mixers like the MG series, we're able to take advantage of the expertise we've acquired through many years as leaders in the field, while applying the most advanced circuit design tools available today.



While other manufacturers use outsourced, general purpose DSP chips, we develop our own DSP chip the most suitable for our needs. That translates into unbeatable cost versus performance.

and that's a tough challenge for models that will sell for just a few hundred dollars. The pressure is on us, designers and hardware engineers. But unless we can overcome the quality issues without compromise, the product cannot be released.

Mr. Nishizawa:

For example, some manufacturers promote the fact that they use a high-quality microphone preamp, but then they use cheap circuitry in the following stages that negates any sonic benefits the preamp might offer. In the MG series we've made sure that parts and circuitry are optimally selected and matched throughout. Just the fact that a design uses high-quality parts doesn't guarantee that the overall performance will be correspondingly high. An appropriate balance must be found through trial and error and actual listening tests.



Mr. Tanaka (Iggy):

Another advantage of being a world-wide organization is that parts can be sourced from the many branches we maintain in various locations around the world, plus the fact that we have access to parts acquired for other products such as electronic musical instruments. This means that for the same cost Yamaha can use parts that are a rank above those available to other manufacturers.

Mr. Nishizawa:

That's very true. Our motto is to make affordable products, but never "cheap" products. And since we have access to such high-quality parts we are able to maintain the same level of quality that the pros expect in our most expensive console in affordable mixers like the new MG models.



Mechanical Engineering Group
Hisashi Nagai

Mechanical Engineering Group
Manager
Kazuhiko "KAZU" Nishizawa

Product Design Laboratory
a-Products Group
Manager
Nobumasa Tanaka

Hardware Group
Engineering Manager
Tatsuya Nonaka

MP Produce Group
Engineering Manager
Takahiro Tashiro

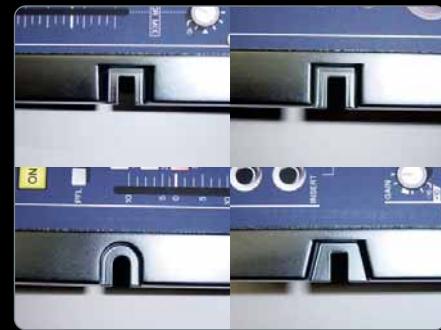
MP Sales & Marketing Group
Super viser
Ikuo "IGGY" Tanaka

We're using Neutrik™ connectors in the new models, and have completely redesigned the faders as well. We used CT scans for non-destructive structural analysis, and as a result have even employed a new type of grease for super-smooth operation.

New Environmentally Safe Finish

Mr. Tashiro:

It looks as though the new models had a different type of finish.



Mr. Nishizawa:

That's right. This time we used a powder finish that significantly cuts VOC usage.

Mr. Tashiro:

"VOC" stands for "Volatile Organic Compounds," right? Come to think of it, we've always tried to be easy on the environment. Of course we've cleared the very strict new European standards.

Mr. Nishizawa:

The special metallic blue finish used on the new MG models was developed in cooperation with specialist powder finish manufacturer. This powder finish is extremely durable compared to standard liquid finishes. It will last for a long time. Whereas with liquid coating equipment about 70 percent of the material evaporates into the air as volatile organic compounds, powder coating equipment produces essentially no VOC pollution. The panel of a mixer is subject to constant handling, and the extra durability of the powder coating prevents wear and damage from sweat, cosmetics, and a range of other common causes of damage.

Control Layout and Feel

Mr. Tashiro:

We also redesigned the knobs, and significantly improved readability and feel.

Mr. Tanaka:

Right. The powder finish made it necessary to increase the size of the lettering, which resulted in better readability.

Mr. Nishizawa:

The meters are brighter, too. We used high-output LEDs that are easy to read even outdoors on a bright day. There are no other mixers in this class that offer separate multi-colored meters for different functions.

Mr. Tanaka (Iggy):

Yes, I remember everyone crowding around one of the new mixers to check out the meters in a bright section of the corridor.

Weight, Strength and Durability

Mr. Tashiro:

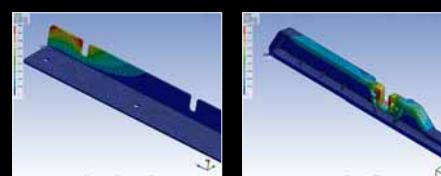
This is just about the right weight for hand carrying.

Mr. Tanaka (Iggy):

That's a very important point in a utility mixer.

Mr. Nagai:

It's easy to achieve sufficient strength if you use steel or other heavy metals, but since the MG mixers were intended for utility use, we had to consider the portability and handling aspects. What's more, if you give priority to rack mounting in the rack-mountable models that have 16 or more channels, you end up with strength problems. But if you add reinforcing ribs you're faced with manufacturing problems. So we went back to the design and repeated structural analysis until we had a body with the ideal combination of design and strength.



Mr. Tashiro:

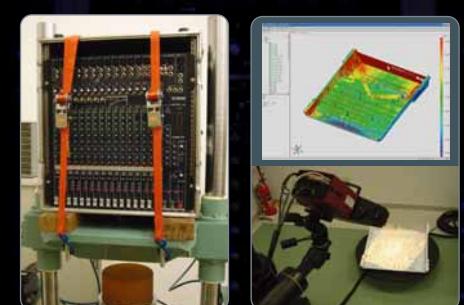
In many cases other manufacturers claim "heavy duty" or "high-reliability" as an excuse for the fact that they went with manufacture-friendly heavy-gauge steel and readily available oversized parts. But here at Yamaha we have access to the latest analysis tools that allow us to achieve superior strength in more refined designs, as well as source smaller parts of higher quality from all over the world. The trend towards smaller and lighter products is obvious in the latest computers and personal music players. This points to a fundamental growth in technology that reflects the needs of the market, and does not require any compromises in sound quality. Our small, lightweight mixers deliver the same sonic quality as our professional PM-series consoles. People want utility mixers to be small and light while sounding great, and that's just what the MG mixers provide.

Mr. Tanaka (Iggy):

So these are products that strike a perfect balance between cost and performance. There's absolutely nothing "cheap" about them in any way. By the way, what kind of durability testing do the mixers undergo?

Mr. Nagai:

We begin with number crunching on the computers, comparing different metals and manufacturing methods, and end up with the inevitable durability testing of the actual product. There are many tests we employ, but the main process involves an impact test, a secondary transportation test, a drop test (we drop the packaged product from a height of 74 centimeters), a vibration test, and finally another impact test. The current one-piece rack-mount chassis design has passed all of these tests, and patents are pending.



Although each member of the MG design team clearly has individual goals within the project, the team is thoroughly united in terms of motivation and "Yamaha Vision." The confidence they convey is a good indication that the new MG-series mixers offer something special to users who are serious about sound and quality.

An Impressive Lineup with a Common Theme—Unmatched Quality and Performance

Whether you have a mixing applications that involves only a few channels, or up to 32 inputs with substantial signal routing versatility, Yamaha's MG-series offers a console that will give you the capacity, control, and performance you deserve. All models are remarkably compact and lightweight for superior handling and portability, but absolutely no compromises have been made in terms of features, performance, or durability. The MG mixers offer an extraordinary blend of technology: some inherited from professional Yamaha mixing consoles you're likely to see in distinguished halls throughout the world, and some developed specifically to deliver optimum performance in the MG-console format. In either case these performance-packed mixers are founded on a world-spanning network of human and technological resources that crystallize to deliver features that really matter, and sound that is undeniably superior.

Lightweight, Portable Designs

Designing a lightweight mixer is not too difficult, but designing a lightweight, compact mixer that delivers serious performance is another matter. The Yamaha design team went to extraordinary lengths in the MG series, including in-depth material and structural analysis, to bring you maximum manageability and maximum performance in the same packages. The result is that you can easily pop the smallest models into your briefcase or shoulder bag and take with you anywhere. Even the larger models can be tucked under an arm and carried around quite easily. But the performance you'll get at the studio, club, hall, or anywhere you choose to use these fine mixers is far from lightweight. Every one of the MG-series mixers provides significant space savings along with huge performance benefits.



Versatile Connectivity and Pro-class Connectors

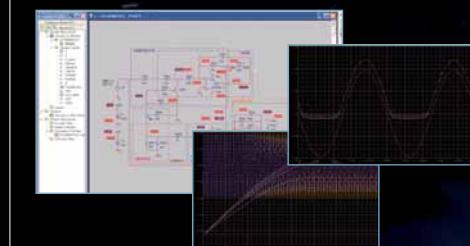
Top-mounted input and output connectors make setting up and re-patching your system quick and easy. All models feature high-quality Neutrik™ balanced XLR connectors on mono microphone/line channels and XLR-equipped stereo channels. These professional-class connectors were subjected to extensive testing by the Yamaha design team, and were chosen for the MG mixers for their superior reliability and sonic qualities. The XLR-equipped stereo channels can accept mono microphone input either via the XLR or phone jack connectors. The remaining stereo channels provide phone jack and pin jack connectors for compatibility with a wide range of sources. Mono input channels also feature insert I/O connectors that let you patch external signal processing gear into those channels as required. Separate pin-jack 2TR inputs are provided to accept the output from a CD player or similar stereo source.



Built-in Channel Compressors



This advanced feature can be a tremendous advantage in achieving great vocal sound, as well as to refine the sound of bass, guitar, and other sources. You won't find built-in channel compression on too many other mixers in this class, but in the new MG mixers you have Yamaha's innovative one-knob compression feature on several of the mono input channels. Conventional audio compressors with their threshold, ratio, knee, makeup gain and other controls can be complex and time-consuming to set appropriately for a given source. Yamaha's one-knob compressor eliminates the need for an engineering degree with a single control that lets you simply dial in the amount of compression you want.



High-performance Microphone Preamplifiers with Switchable Phantom Power

Microphone preamplifiers are critical in any mixer, and a performance bottleneck in many. That's why pros often spend thousands of dollars on just a single channel of microphone pre-amplification. The microphone preamps built into the MG mixers inherit technology from Yamaha's top-line professional consoles, and have been painstakingly designed to deliver superior sonic performance with any dynamic or condenser microphone. Gain trim covers a wide -60dB ~ -16dB range for microphones (-34dB ~ +10dB for line input), so you'll be able to achieve optimum level matching with just about any source. All microphone preamps also feature switchable phantom power so you can take advantage of the natural, extended response of high-quality condenser microphones.



3-band Channel EQ and High-pass Filters

Building a truly useful, musical-sounding channel equalizer is no easy task, but Yamaha has decades of experience in building pro consoles to draw on. You reap the benefits in the MG-series mixers: all mono channels feature 3-band equalizers with LOW, MID, and HIGH controls. Depending on the model some of all of the stereo channels have 2-band EQ for smooth equalization of stereo sources.

Although not directly related to the equalizer circuitry, all inputs also feature 80 Hz low-pass filters that can be used to eliminate subsonic noise that is outside the equalizers' range.

Built-in Digital Effects ("CX" Models)

There's an astonishing amount of signal processing power packed into the compact chassis of the MG "CX" mixers. They incorporate a versatile digital multi-effect processor that provides a range of reverb, delay, modulation, and distortion programs you can use to refine and define your sound. Each of the 16 effect programs has a number of editable parameters as well as effect on/off switching capability and return level control. You can even blend the effects into the aux sends for "wet" monitoring, so the performers can hear the effects too. If you need to keep both hands free to play an instrument or perform other operations, an optional footswitch can be connected to the mixer's effect footswitch jack for convenient on/off switching.



Aux/Effect Sends

All models except the MG82CX have from one to three AUX sends for convenient to processing and monitor systems. Master send controls are also provided, as are RETURN level controls for the AUX and STEREO busses. "CX" models have EFFECT send controls on all channels that adjust the level of the signal sent from the corresponding channel to the mixer's internal multi-effect system. The same signal can also be sent to external effect processors via the mixer's EFFECT SEND jack.

Two, Four or Six Buses (Stereo and Group)

The smallest models in the lineup—the MG82CX and MG102C—have a single stereo bus (i.e. two mono buses). All other models additionally feature one or two stereo group buses and outputs that can be used for convenient channel grouping. Assign switches for the stereo and group buses are located next to each channel fader.

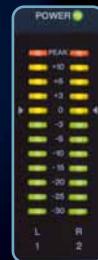


Smooth 60-millimeter Faders & Illuminated Channel ON Switches

While the MG82CX and MG102C feature rotary faders, channel and master level control on all other models is accomplished via reliable, high-performance 60-millimeter linear faders that provide smooth, noise-free operation. When you have more than a few channels the direct visual indication of relative level settings can be an important advantage. Models with linear faders also feature illuminated channel ON switches that can be used to individually add or remove channels from the mix without having to change the positions of the channel faders.

Bright Meters for Visual Level Monitoring

Accurate visual level monitoring can help you achieve maximum signal-to-noise ratio without distortion. The MG mixer's bright, easy-to-read multi-segment LED meters make it easy to control system levels for optimum overall performance.



Optional Mic Stand Mount for the MG82CX and MG102C

Both the MG82CX and MG102C can be mounted on a microphone stand for optimal positioning and easy access using the optional BMS-10A Mic Stand Adaptor. This can be particularly handy when using one of them as a sub-mixer for drums or as a cue box in recording situations.



Easy Operation

All switches, controls, and displays have been designed and laid out for intuitive access and smooth, reliable operation with positive tactile and visual feedback.



P.T. Yamaha Music manufacturing Asia

Manufacturing the electronic instruments and PA products

From the initial design to final manufacturing, all production processes for the Yamaha MG series mixing console are performed entirely inside the company.

Moreover, every product that comes off our production line must pass strict quality controls using the sophisticated test instruments. Thus, all of this enables us to deliver the highest quality products to you.



C models with improved utility



MIXING CONSOLE **MG102C**

Extraordinary sonic quality plus channel compressors in a small-but-powerful utility mixer.

10 Input channels	Input gain trim
4 Mics + 4 Stereo line inputs	High Quality mic preamp
2 Insert I/O	HPF
Phantom power switch (+ 48V)	2 Compressors
3 band EQ (Ch 1-5/6)	Monitor mix
2 band EQ (Ch 7/8-9/10)	Light weight (1.5 kg)
3 busses (Stereo + Aux)	7-seg LED level meter
1 Aux send	
1 Stereo Aux return	
Neutrik™ XLR Connectors	



MIXING CONSOLE **MG124C**

Stunning MG-series sound plus and extra margin of input and signal-routing capacity.

12 Input channels	Input gain trim
6 Mics + 4 Stereo line inputs	High Quality mic preamp
4 Insert I/O	HPF
Phantom power switch (+ 48V)	4 Compressors
3 band EQ (Ch 1-7/8)	Illuminated CH ON switches
2 band EQ (Ch 9/10-11/12)	60 mm Super smooth fader
4 busses (Stereo + 2 groups)	Monitor mix
2 Aux sends	Light weight (3.0 kg)
1 Stereo Aux return	12-seg LED level meter
Neutrik™ XLR Connectors	



MIXING CONSOLE **MG166C**

A six-bus format offers extra options for monitoring and live recording.

16 Input channels	Input gain trim
10 Mics + 4 Stereo line inputs	High Quality mic preamp
8 Insert I/O	HPF
Phantom power switch (+ 48V)	6 Compressors
3 band Mid-sweep EQ (Ch 1-8)	Illuminated CH ON switches
3 band EQ (Ch 9/10-15/16)	60 mm Super smooth fader
6 busses (Stereo + 4 groups)	Monitor mix
3 Aux sends	Light weight (5.3 kg)
1 Stereo Aux return	12-seg LED level meter
Neutrik™ XLR Connectors	Rack Mountable



MIXING CONSOLE **MG206C**

Extended capacity, versatility and control for stage with sixteen microphone inputs.

20 Input channels	Input gain trim
16 Mics + 4 Stereo line inputs	High Quality mic preamp
12 Insert I/O	HPF
Phantom power switch (+ 48V)	8 Compressors
3 band Mid-sweep EQ (Ch 1-12)	Illuminated CH ON switches
3 band EQ (Ch 13/14-19/20)	60 mm Super smooth fader
6 busses (Stereo + 4 groups)	Monitor mix
4 Aux sends	Light weight (6.0 kg)
2 Stereo Aux return	12-seg LED level meter
Neutrik™ XLR Connectors	Rack Mountable

CX models with SPX digital multi effect



MIXING CONSOLE **MG82CX**

Extraordinary sonic quality plus digital effects in a small-but-powerful utility mixer.



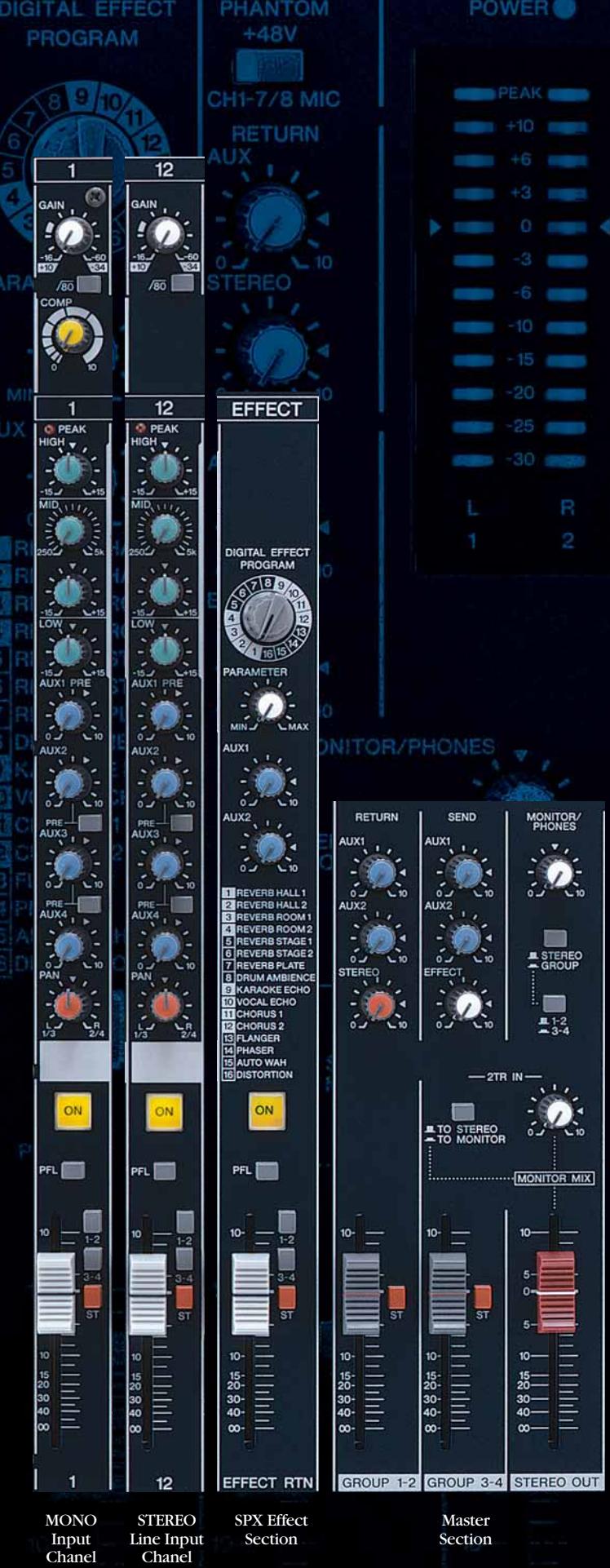
MIXING CONSOLE **MG124CX**

A versatile all-in-one console that can handle up to 12 inputs with internal effects.



MIXING CONSOLE **MG166CX**

16 channels, 6 buses, and all the outstanding digital effects you'll need built in.



MG SERIES

USB models for live recording

LINE UP (MG166C-USB, MG166CX-USB, MG206C-USB)



MIXING CONSOLE MG166C-USB

Direct digital recording capability with the supplied Cubase AI4 software.



MIXING CONSOLE MG166CX-USB

Harness the power of Cubase AI4 as well as an outstanding selection of internal effects.



MIXING CONSOLE MG206C-USB

Advanced digital live recording capacity and capability.

16 Input channels

10 Mics + 4 Stereo line inputs

8 Insert I/O

Phantom power switch (+ 48V)

3 band Mid-sweep EQ (Ch 1-8)

3 band EQ (Ch 9/10-15/16)

6 busses (Stereo + 4 groups)

3 Aux sends

1 Stereo Aux return

Neutrik™ XLR Connectors

Input gain trim

High Quality mic preamp

HPF

6 Compressors

Illuminated CH ON switches

60 mm Super smooth fader

Monitor mix

Light weight (5.3 kg)

12-seg LED level meter

Rack Mountable

USB Connector

CUBASE AI4 Included

16 Input channels

10 Mics + 4 Stereo line inputs

8 Insert I/O

Phantom power switch (+ 48V)

3 band Mid-sweep EQ (Ch 1-8)

3 band EQ (Ch 9/10-15/16)

6 busses (Stereo + 4 groups)

2 Aux sends + 1 Effect send

1 Stereo Aux return

Neutrik™ XLR Connectors

Input gain trim

High Quality mic preamp

HPF

6 Compressors

Illuminated CH ON switches

60 mm Super smooth fader

SPX Digital multi effect

Monitor mix

Light weight (5.5 kg)

12-seg LED level meter

Rack Mountable

USB Connector

CUBASE AI4 Included

20 Input channels

16 Mics + 4 Stereo line inputs

12 Insert I/O

Phantom power switch (+ 48V)

3 band Mid-sweep EQ (Ch 1-12)

3 band EQ (Ch 13/14-19/20)

6 busses (Stereo + 4 groups)

4 Aux sends

2 Stereo Aux return

Neutrik™ XLR Connectors

Input gain trim

High Quality mic preamp

HPF

8 Compressors

Illuminated CH ON switches

60 mm Super smooth fader

Monitor mix

Light weight (6.0 kg)

12-seg LED level meter

Rack Mountable

USB Connector

CUBASE AI4 Included

CUBASE AI4

Cubase AI4 harnesses the power of the Steinberg Cubase 4 digital audio workstation for use with Yamaha MG "USB" mixers, providing a powerful set of advanced software tools that are easy to use while significantly expanding the mixers' recording and production capabilities.

Cubase AI4 offers direct digital connectivity to the stereo buses of MG "USB" models for audio recording and editing. It also features a range of MIDI sequencing capabilities, an entire suite of VST effect plug-ins, and a HALion One sample player featuring selected waves from the famed Yamaha Motif synthesizers.



Cubase AI4 Features

- Cubase 4 audio engine.
- 48 audio tracks and up to 64 MIDI tracks.
- 25 VST effect plug-ins, including 15 new VST3 plug-in effects.
- HALion One software sample player with selected Motif waves.
- Plug and Play VST/MIDI setup.
- Studio Connections Integration.
- File Interchange between Steinberg software and Yamaha hardware.
- 20 MIDI music styles and 480 audio drum loops included.

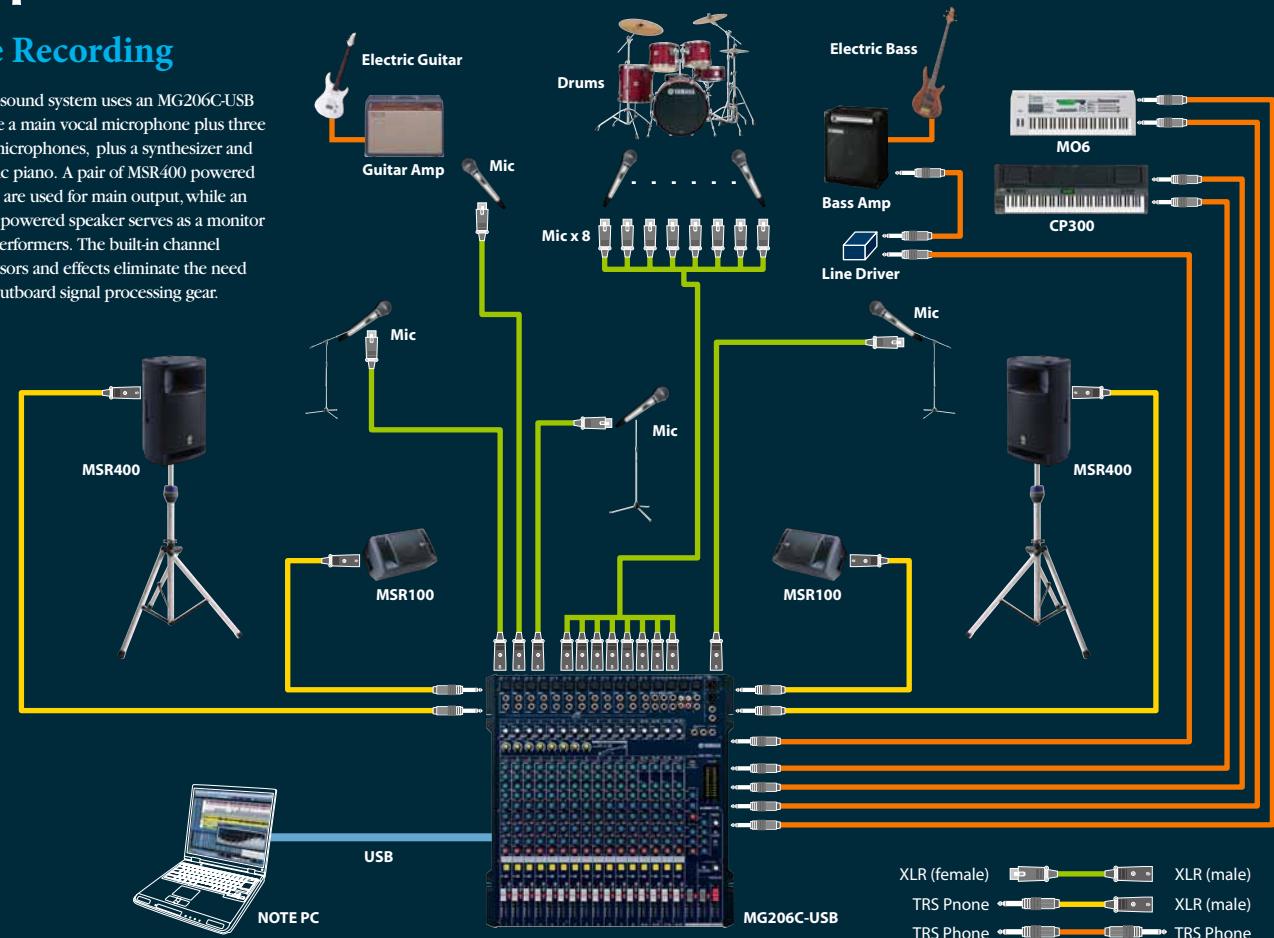
Positioning Chart



Application

Live Recording

This live-sound system uses an MG206C-USB to handle a main vocal microphone plus three chorus microphones, plus a synthesizer and electronic piano. A pair of MSR400 powered speakers are used for main output, while an MSR100 powered speaker serves as a monitor for the performers. The built-in channel compressors and effects eliminate the need for any outboard signal processing gear.



XLR (female) ————— XLR (male)
TRS Phone ————— XLR (male)
TRS Phone ————— TRS Phone

Serious Capacity for Live Sound & Installations

If your application is live sound reinforcement you'll want all the channel capacity you can get—just in case. With 24 and 32 input channels, respectively, the MG24/14FX and MG32/14FX are ready to handle all but the most ambitious sound-reinforcement setups. And with dual SPX digital effect systems on-board you won't need racks of outboard gear to get the sound you need. There's also a comprehensive range of group and auxiliary busses to make even complex mixes easy.



MIXING CONSOLE
MG24/14FX



MIXING CONSOLE
MG32/14FX



- 24 Input channels (MG24/14FX)
- 32 Input channels (MG32/14FX)
- 16 Mic inputs (MG24/14FX)
- 24 Mic inputs (MG32/14FX)
- 4 Stereo line inputs
- 16 Insert I/O (MG24/14FX)
- 24 Insert I/O (MG32/14FX)
- Stereo insert
- 4 Group insert
- Phantom power switch (+ 48V)
- 3 band Mid-sweep EQ
- 14 busses
- 6 Aux sends + 2 Effect sends
- 2 Stereo Aux return
- Input gain trim
- High Quality mic preamp
- HPF (each Mic channels)
- Illuminated CH ON switches
- 60 mm smooth fader
- 2 SPX Digital multi effect
- PFL Switches
- AFL Switches
- Mono out & LPF
- 2 x 12-seg LED level meter
- Lamp Connector (12V)
- Talk Back mic input

MIXING CONSOLE
MG24/14FX



MIXING CONSOLE
MG32/14FX



A Variety of Input Connectors Plus Insert I/O

Balanced XLR and phone-jack connectors are provided on all mono inputs (channels 1 ~ 16 on the MG24/14FX, and channels 1 ~ 24 on the MG32/14FX). The remaining eight channels on both mixers are configured as four stereo channels, two of which feature both pin-jack and phone jack connectors. A separate stereo 2TR input with pin-jack connectors is provided for independent input of signals from CD players or similar sources. All mono input channels feature insert I/O patch points so you can insert compressors, EQ, or other extra signal-processing gear into the channel signal path as required. Insert patch points are also provided on the stereo and group buses for effective output processing.

Low-noise, High-precision Mic Preamps

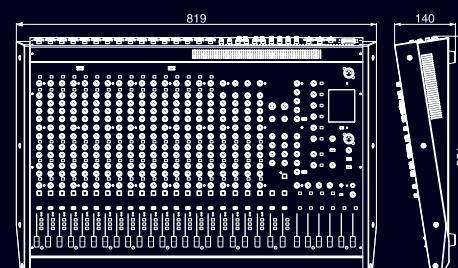
All 16 mic preamps in the MG24/14FX and all 24 mic preamps in the MG32/14FX are of exemplary quality. They offer low-noise, transparent amplification with the widest possible range of dynamic and condenser microphones, which adds up to cleaner, better-sounding mixes. All mic preamps feature switchable +48V phantom power for phantom-powered studio condenser microphones. Phantom power is switchable in 8-channel groups.

Versatile EQ for Effective Sound Shaping

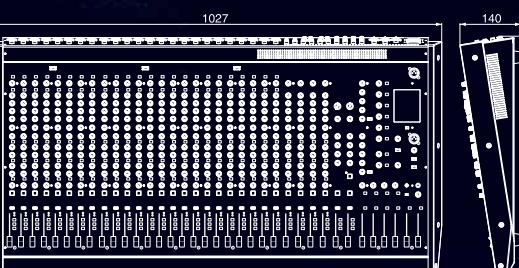
Mono channels feature 3-band equalizers with HIGH (10 kHz), LOW (100 Hz), and MID (250 Hz ~ 5 kHz sweep) bands. High-pass filters are also provided on all microphone inputs. Stereo channels have 4-band equalizers with HIGH (10 kHz shelving), HI MID (3 kHz peaking), LOW MID (800 Hz peaking), and LOW (100 Hz shelving) bands.

Dimensions

MG24/14FX



MG32/14FX



Six Aux Sends & Two Stereo Aux Returns

All input channels feature six AUX send controls. AUX sends 1 through 4 are pre/post switchable while AUX 5 and 6 are post-fader sends. Two effect sends are also provided. You choose you have plenty of flexibility for external signal processing and monitoring in live sound-reinforcement applications. Two stereo auxiliary returns are included, as well as return facilities for the internal effect stages.

Balanced XLR Stereo and Mono Outputs Plus Comprehensive Output Connectors

Professional connectivity is provided by reliable XLR-type balanced stereo and mono outputs. In addition to the main L and R XLR and phone-jack stereo outputs, these versatile mixers also offer L and R phone-jack sub-stereo, pin-jack recording, XLR mono, and stereo phone-jack headphone outputs. Phone-jack group outputs are also provided to allow independent output of the group bus mixes.

Other Important Features

- -60dB ~ -16dB gain trim for microphone input, and -34dB ~ +10dB for line input.
* Peak indicators for accurate input gain setup.
- Reliable 60-millimeter faders and illuminated switches.
- 80 ~ 120 Hz sweepable Mono Out LPF for convenient subwoofer feed.
- 12-segment meters for accurate visual monitoring.
- Talkback input.

MG Series Specifications

General Specifications

	MG102C	MG124C	MG166C	MG206C	MG82CX	MG124CX	MG166CX	MG166C-USB	MG166CX-USB	MG206C-USB
Total Harmonic Distortion	Less than 0.1 % (THD+N) 20 Hz – 20 kHz @ +14 dBu (ST OUT)									
Frequency Response	0, +1, -3 dB 20 Hz – 20 kHz @ +4 dBu (ST OUT)									
Hum & Noise *1	-128 dBu Equivalent Input Noise/ -100 dBu Residual Output Noise 20 Hz – 20 kHz, Rs = 150 Ω, Input Gain = Maximum									
INPUT Connectors	MIC: 4, LINE: 2 mono + 4 stereo, CH INSERT: 2, RETURN: 1 stereo, 2TR IN: 1 stereo	MIC: 6, LINE: 4 mono + 4 stereo, CH INSERT: 4, AUX RTN: 1 stereo, 2TR IN: 1	MIC: 10, LINE: 8 mono + 4 stereo, CH INSERT: 8, AUX RTN: 1 stereo, 2TR IN: 1	MIC: 16, LINE: 12 mono + 4 stereo, CH INSERT: 12, AUX RTN: 2 stereo, 2TR IN: 1	MIC: 4, LINE: 2 mono + 4 stereo, CH INSERT: 2, RETURN: 1 stereo, 2TR IN: 1	MIC: 6, LINE: 4 mono + 4 stereo, CH INSERT: 4, AUX RTN: 1 stereo, 2TR IN: 1	MIC: 10, LINE: 8 mono + 4 stereo, CH INSERT: 8, AUX RTN: 1 stereo, 2TR IN: 1	MIC: 10, LINE: 8 mono + 4 stereo, CH INSERT: 8, AUX RTN: 1 stereo, 2TR IN: 1	MIC: 16, LINE: 12 mono + 4 stereo, CH INSERT: 12, AUX RTN: 2 stereo, 2TR IN: 1	
OUTPUT Connectors	ST: 1, AUX SEND: 1, CH INSERT: 2, REC: 1 stereo, MONITOR: 1 stereo, Phone: 1	ST: 2, AUX SEND: 2, CH INSERT: 4, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 2 Phone: 1	ST: 2, AUX SEND: 3, CH INSERT: 8, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 4 Phone: 1	ST: 2, AUX SEND: 4, CH INSERT: 12, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 4 Phone: 1	ST: 1, EFFECT SEND: 1, CH INSERT: 12, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 4 Phone: 1	ST: 2, AUX SEND: 2, EFFECT SEND: 1, CH INSERT: 8, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 4 Phone: 1	ST: 2, AUX SEND: 3, EFFECT SEND: 1, CH INSERT: 8, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 4 Phone: 1	ST: 2, AUX SEND: 4, EFFECT SEND: 1, CH INSERT: 12, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 4 Phone: 1	ST: 2, AUX SEND: 4, CH INSERT: 12, REC: 1 stereo, MONITOR: 1 stereo, GROUP: 4 Phone: 1	
Crosstalk *2	-70 dB @ 1 kHz									
Phantom Power	+48 V									
Input HPF	CH 1-2 and CH 3/4-5/6, 80Hz, 12dB/oct	CH 1-4, CH 5/6-7/8, 80Hz, 12dB/oct	CH 1-8, CH 9/10-11/12, 80Hz, 12dB/oct	CH 1-12, CH 13/14-19/20, 80Hz, 12dB/oct	CH 1-2 and CH 3/4-5/6, 80Hz, 12dB/oct	CH 1-4, CH 5/6-7/8, 80Hz, 12dB/oct	CH 1-8, CH 9/10-11/12, 80Hz, 12dB/oct	CH 1-8, CH 9/10-11/12, 80Hz, 12dB/oct	CH 1-12, CH 13/14-19/20, 80Hz, 12dB/oct	
CH EQ (MONO) *3 ± 15 dB (Max.)	High 10 kHz: shelving	Mid 2.5 kHz: peaking	Low 100 Hz: shelving	High 10 kHz: shelving	Mid 2.5 kHz: peaking	Low 100 Hz: shelving	High 10 kHz: shelving	Mid 2.5 kHz: peaking	Low 100 Hz: shelving	
CH EQ (STEREO) *3 ± 15 dB (Max.)	High 10 kHz: shelving	Mid 2.5 kHz: peaking	Low 100 Hz: shelving	High 10 kHz: shelving	Mid 2.5 kHz: peaking	Low 100 Hz: shelving	High 10 kHz: shelving	Mid 2.5 kHz: peaking	Low 100 Hz: shelving	
Compressor (COMP)	control x 1 (Gain/Threshold/Ratio), CH 1,2	control x 1 (Gain/Threshold/Ratio), CH 1-4	control x 1 (Gain/Threshold/Ratio), CH 1-6	control x 1 (Gain/Threshold/Ratio), CH 1-8	control x 1 (Gain/Threshold/Ratio), CH 1,2	control x 1 (Gain/Threshold/Ratio), CH 1-4	control x 1 (Gain/Threshold/Ratio), CH 1-6	control x 1 (Gain/Threshold/Ratio), CH 1-6	control x 1 (Gain/Threshold/Ratio), CH 1-8	
Internal Digital Effect	–	–	–	–	16 PROGRAM, PARAMETER control Foot Switch (Digital Effect, on/off)	16 PROGRAM, PARAMETER control Foot Switch (Digital Effect, on/off)	16 PROGRAM, PARAMETER control Foot Switch (Digital Effect, on/off)	16 PROGRAM, PARAMETER control Foot Switch (Digital Effect, on/off)	16 PROGRAM, PARAMETER control Foot Switch (Digital Effect, on/off)	–
LED Level Meter Pre MONITOR Level	2 x 7 points LED meter (PEAK, +6, +3, 0, -5, -10, -20 dB) PEAK lights if the signal comes within 3 dB of the clipping level.	2 x 12 points LED meter (PEAK, +10, +6, +3, 0, -3, -6, -10, -15, -20, -25, -30 dB) PEAK lights if the signal comes within 3 dB of the clipping level.		2 x 7 points LED meter (PEAK, +6, +3, 0, -5, -10, -20 dB) PEAK lights if the signal comes within 3 dB of the clipping level.	2 x 12 points LED meter (PEAK, +10, +6, +3, 0, -3, -6, -10, -15, -20, -25, -30 dB) PEAK lights if the signal comes within 3 dB of the clipping level.					
PEAK Indicator	Red LED turns on when post EQ (ST CH: or post Mic HA) signal reaches -3dB below clipping (17dBu).									
USB Audio USB IN/OUT	–	–	–	–	–	–	–	Sampling Frequency = 44.1kHz or 48kHz (depend on the application of PC)		
Power Supply Adapter	PA-10: AC 38VCT, 0.62A, Cable Length = 3.6m	PA-20: AC 35VCT, 0.94A, Cable Length = 3.6m	PA-30: AC 35VCT, 1.4A, Cable Length = 3.6m	PA-30: AC 35VCT, 1.4A, Cable Length = 3.6m	PA-10: AC 38VCT, 0.62A, Cable Length = 3.6m	PA-20: AC 35VCT, 1.4A, Cable Length = 3.6m	PA-30: AC 35VCT, 1.4A, Cable Length = 3.6m	PA-30: AC 35VCT, 1.4A, Cable Length = 3.6m	PA-30: AC 35VCT, 1.4A, Cable Length = 3.6m	
Power Consumption	21 W	30 W	30 W	40 W	21 W	30 W	35 W	30 W	35 W	40 W
Dimensions (W x H x D)	256.6 mm x 62.2 mm x 302.5 mm	346.2 mm x 86.1 mm x 436.6 mm	478 mm x 105 mm x 496 mm	478 mm x 105 mm x 496 mm	256.6 mm x 62.2 mm x 302.5 mm	346.2 mm x 86.1 mm x 436.6 mm	478 mm x 105 mm x 496 mm	478 mm x 105 mm x 496 mm	478 mm x 105 mm x 496 mm	
Net Weight	1.5 kg	3 kg	5.3 kg	6.0 kg	1.6 kg	3.2 kg	5.5 kg	5.3 kg	5.5 kg	6.0 kg
Options	Microphone Stand Adaptor (BMS-10A)	–	–	–	Microphone Stand Adaptor (BMS-10A), Foot Switch (FC-5)	Foot Switch (FC-5)	Foot Switch (FC-5)	Foot Switch (FC-5)	Foot Switch (FC-5)	–

*1 Hum & Noise are measured with a 6 dB/octave filter @ 12.7 kHz, equivalent to a 20 kHz filter with infinite dB/octave attenuation.

*2 STEREO L/R, CH 1-2, PAN panned Hard left or right @1kHz.

*3 Turn over /roll-off frequency of shelving : 3 dB below maximum variable level.

	MG24/14FX	MG32/14FX
Total Harmonic Distortion	Less than 0.1 % (THD+N) 20 Hz – 20 kHz @ +14 dBu (ST OUT)	
Frequency Response	0, +1, -3 dB 20 Hz – 20 kHz @ +4 dBu (ST OUT)	
Input Hum & Noise *1	-128 dBu Equivalent Input Noise/-98 dBu Residual Output Noise 20 Hz – 20 kHz, Rs = 150 Ω, Input Gain = Maximum	
Crosstalk		-70dB @ 1kHz
Mic	16 + 1 (Input A 1-16, Talk Back: XLR)	24 + 1 (Input A 1-24, Talk Back: XLR)
Line	16 (Input B 1-16: TRS: Phone)	24 (Input B 1-24: TRS: Phone)
CH Input Stereo	2 (Ch 17-18, 19-20: TRS) *2 Ch17, 19: L (MONO) 2 (Ch 21-22, 23-24: TRS: Phone/RCA: Pin)	2 (Ch 25-26, 27-28: TRS) *2 Ch25, 27: L (MONO) 2 (Ch 29-0, 31-32: TRS: Phone/RCA: Pin)
Insert I/O	16 (Ch 1-16: TRS: Phone T: Out, R: In, S: Gnd)	24 (Ch 1-24: TRS: Phone T: Out, R: In, S: Gnd)
AUX Send	6 (1-2/Post-Pre selectable, 3-4/Post-Pre selectable, 5-6/Post: TRS: Phone)	
Return	2 Stereo Sub In (L/MONO, R: TRS: Phone)	
EFFECT Send	2 (1, 2: TRS: Phone)	
2TR In	1 Stereo (L, R: RCA: Pin)	
STEREO Insert	1 Stereo (L, R: TRS: Phone)	
GROUP Insert	4 (1-4: TRS: Phone)	
REC Out	1 Stereo (L, R: RCA: Pin)	
ST Out	1 Stereo (L, R: XLR)	
MONO Out	1 (XLR)	
ST SUB Out	1 Stereo (L, R: TRS: Phone)	
GROUP Out	4 (1-4: TRS: Phone)	
Phones	1 (TRS: Phone Stereo)	
Phantom Power	+ 48 V	
CH & ST Ch Input Gain Control	44 dB variable	
CH & ST High Pass Filter	80 Hz 12 dB/Octave	
CH EQ (MONO) *3 ± 15 dB (Max.)	High 10 kHz (Shelving) Mid 0.25 – 5 kHz (Peaking) Low 100 Hz (Shelving)	
CH EQ (STEREO) *3 ± 15 dB (Max.)	High 10 kHz (Shelving) Mid 3 kHz (Peaking) Hi-Mid 800 Hz (Peaking) Low-Mid 100 Hz (Shelving)	
MONO Out Low Pass Filter	80 – 120 Hz 12dB/octave	
Internal Digital Effect	SPX x 2 (Effect 1: 16 Programs, Effect 2: 16 Programs : Parameter Control)	
Dimensions (W x H x D)	819 mm x 140 mm x 551 mm	1027 mm x 140 mm x 551 mm
Weight	18.5 kg	22 kg
Power Requirements	100 W 120 V/60 Hz 100 W 220 V/50 Hz 100 W 230 V/50 Hz	120 W 120 V/60 Hz 120 W 220 V/50 Hz 120 W 230 V/50 Hz

*1 Hum & Noise are measured with a 6 dB/octave filter @ 12.7 kHz, equivalent to a 20 kHz filter with infinite dB/octave attenuation.

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

*3 Turn over /roll-off frequency of shelving : 3 dB below maximum variable level.

MG82CX, MG102C

ANALOG INPUT CHARACTERISTICS

Connections	Gain Trim	Actual Load Impedance	For Use With Nominal	Input level			Connector
				Sensitivity ^{*2}	Nominal	Max. before clip	
CH INPUT MIC (1, 2)	-60 dB	3 k Ω	50-600 Ω Mics	-80 dBu (0.075 mV)	-60 dBu (0.75 mV)	-40 dBu (7.75 mV)	XLR-3-31 type ^{*3}
	-16 dB			-36 dBu (12.3 mV)	-16 dBu (12.3 mV)	-4 dBu (1.23 mV)	
CH INPUT LINE (1, 2)	-34 dB	10 k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	TRS Phone Jack ^{*4}
ST CH MIC INPUT (3/4, 5/6)	-60 dB	3 k Ω	50-600 Ω Mics	-72 dBu (0.195 mV)	-60 dBu (0.75 mV)	-40 dBu (7.75 mV)	XLR-3-31 type ^{*3}
	+10 dB			-2 dBu (0.615 V)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH LINE INPUT (3/4, 5/6)	-34 dB	10 k Ω	600 Ω Lines	-46 dBu (3.88 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	Phone Jack ^{*5}
	+10 dB			-2 dBu (0.615 V)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH INPUT (7/8, 9/10 ^{*1})	—	10 k Ω	600 Ω Lines	-22 dBu (6.1 mV)	-10 dBu (24.5 mV)	+10 dBu (2.45 V)	Phone Jack ^{*5}
CH INSERT IN (1, 2)	—	10 k Ω	600 Ω Lines	-12 dBu (9.5 mV)	0 dBu (0.75 V)	+20 dBu (7.75 V)	Phone Jack (TRS) ^{*6}
RETURN (L, R)	—	10 k Ω	600 Ω Lines	-8 dBu (308 mV)	+4 dBu (1.23 V)	+24 dBu (12.3 V)	Phone Jack ^{*5}
2TR IN (L, R)	—	10 k Ω	600 Ω Lines	-22 dBV (79.4 mV)	-10 dBV (0.316 V)	+10 dBV (3.16 V)	RCA Pin Jack

ANALOG OUTPUT CHARACTERISTICS

Connections	Actual Source Impedance	For Use With Nominal	Output level			Connector
			Nominal Level	Max. before clip		
STEREO OUT (L, R)	150 Ω	10 k Ω Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)		Phone Jack ^{*8}
AUX SEND (EFFECT SEND ^{*9})	150 Ω	10 k Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)		Phone Jack ^{*8}
CH INSERT IN (1, 2)	75 Ω	10 k Ω Lines	0 dBu (0.75 V)	+20 dBu (7.75 V)		Phone Jack ^{*6}
REC OUT (L, R)	600 Ω	10 k Ω Lines	-10 dBV (0.316 V)	+10 dBV (3.16 V)		RCA Pin Jack
MONITOR OUT (L, R)	150 Ω	10 k Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)		Phone Jack ^{*8}
PHONES OUT	100 Ω	40 Ω Phones	3 mW	75 mW		Stereo Phone Jack

MG124C, MG124CX

ANALOG INPUT CHARACTERISTICS

Connections	Gain Trim	Actual Load Impedance	For Use With Nominal	Input level			Connector
				Sensitivity ^{*2}	Nominal	Max. before clip	
CH INPUT MIC (1, 4)	-60 dB	3 k Ω	50-600 Ω Mics	-80 dBu (0.075 mV)	-60 dBu (0.75 mV)	-40 dBu (7.75 mV)	XLR-3-31 type ^{*3}
	-16 dB			-36 dBu (12.3 mV)	-16 dBu (12.3 mV)	-4 dBu (1.23 mV)	
CH INPUT LINE (1, 4)	-34 dB	10 k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	TRS Phone Jack ^{*4}
ST CH MIC INPUT (5/6, 7/8)	-60 dB	3 k Ω	50-600 Ω Mics	-80 dBu (0.075 mV)	-60 dBu (0.75 mV)	-40 dBu (7.75 mV)	XLR-3-31 type ^{*3}
	+10 dB			-36 dBu (12.3 mV)	-16 dBu (12.3 mV)	-6 dBu (3.88 mV)	
ST CH LINE INPUT (5/6, 7/8)	-34 dB	10 k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	Phone Jack ^{*5}
	+10 dB			-10 dBu (24.5 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH INPUT (9/10, 11/12)	—	10 k Ω	600 Ω Lines	-30 dBu (24.5 mV)	-10 dBu (24.5 mV)	+10 dBu (2.45 V)	Phone Jack ^{*5}
CH INSERT IN (1-4)	—	10 k Ω	600 Ω Lines	-20 dBu (7.75 mV)	0 dBu (0.75 V)	+20 dBu (7.75 V)	Phone Jack (TRS) ^{*6}
RETURN (L, R)	—	10 k Ω	600 Ω Lines	-12 dBu (9.5 mV)	+4 dBu (1.23 V)	+24 dBu (12.3 V)	Phone Jack ^{*5}
2TR IN (L, R)	—	10 k Ω	600 Ω Lines	-26 dBV (50.1 mV)	-10 dBV (0.316 V)	+10 dBV (3.16 V)	RCA Pin Jack

ANALOG OUTPUT CHARACTERISTICS

Connections	Actual Source Impedance	For Use With Nominal	Output level			Connector
			Nominal Level	Max. before clip		
STEREO OUT (L, R)	75 Ω	600 Ω Lines	+4 dBu (1.23 V)	+24 dBu (12.3 V)		XLR-3-32 type ^{*2}
GROUP OUT (1, 2)	150 Ω	10 k Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)		Phone Jack ^{*8}
AUX SEND (1, 2 ^{*10}) (EFFECT SEND ^{*11})	150 Ω	10 k Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)		Phone Jack ^{*8}
CH INSERT OUT (CH1-4)	75 Ω	10 k Ω Lines	0 dBu (0.75 V)	+20 dBu (7.75 V)		Phone Jack ^{*5}
REC OUT (L, R)	600 Ω	10 k Ω Lines	-10 dBV (0.316 V)	+10 dBV (3.16 V)		RCA Pin Jack
MONITOR OUT (L, R)	150 Ω	10 k Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)		Phone Jack ^{*8}
PHONES OUT	100 Ω	40 Ω Phones	3 mW	75 mW		Stereo Phone Jack

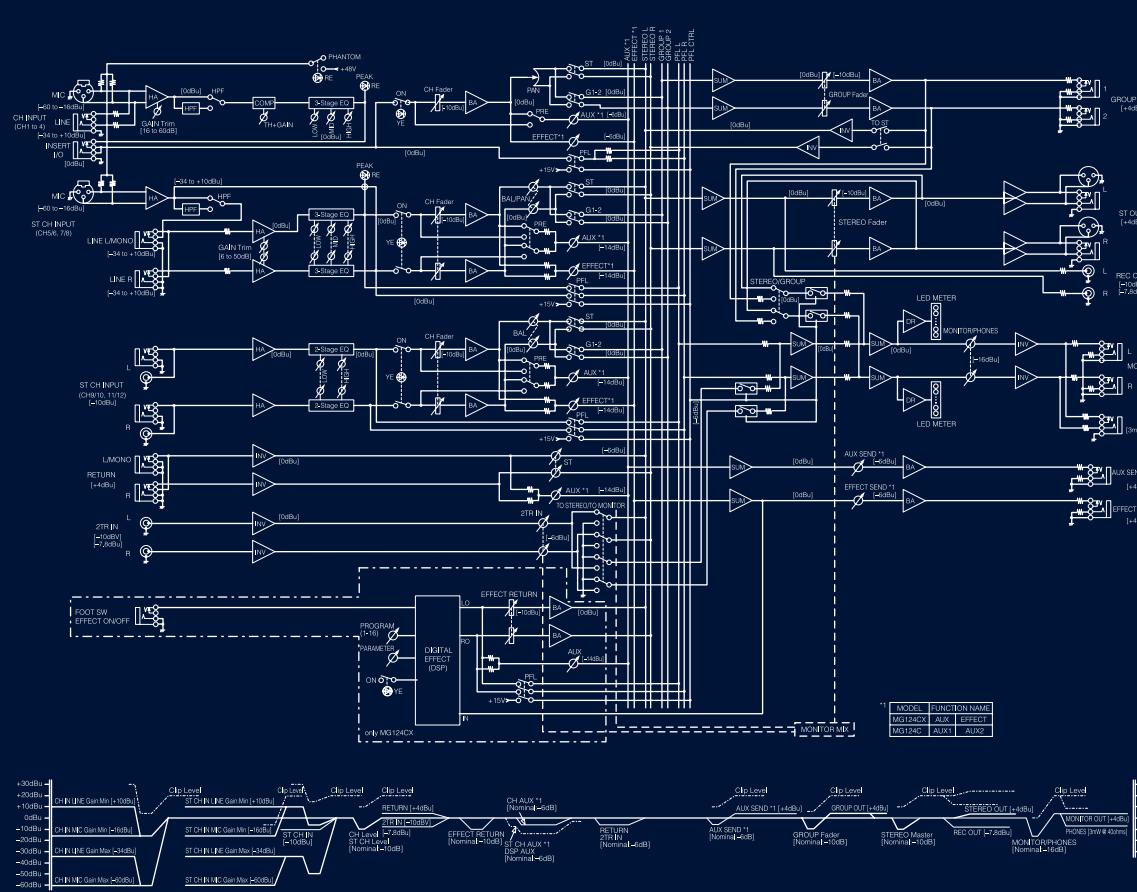
MG166C, MG166CX, MG166C-USB, MG166CX-USB

ANALOG INPUT CHARACTERISTICS

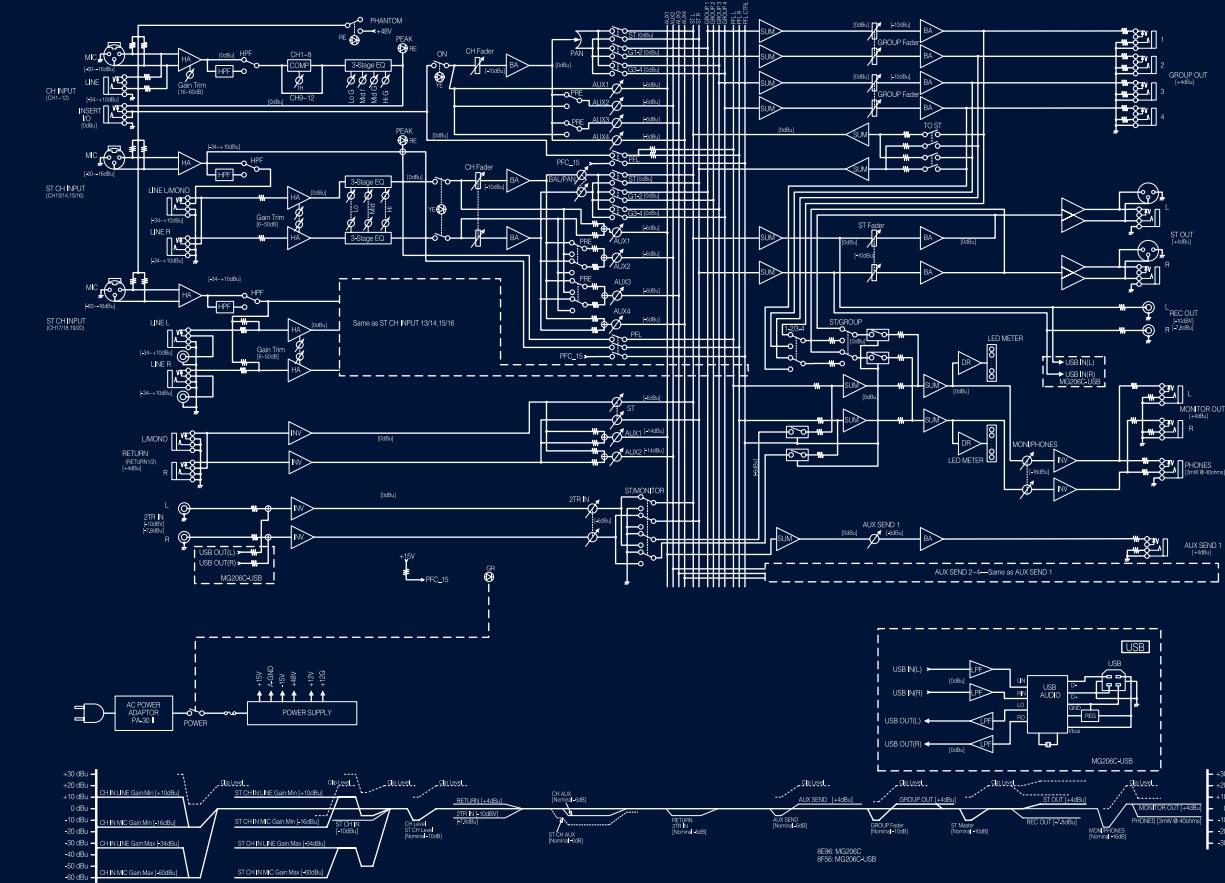
Connections	Gain Trim	Actual Load Impedance	For Use With Nominal	Input level			Connector
				Sensitivity ^{*2}	Nominal	Max. before clip	
CH INPUT MIC (1-8)	-60 dB	3 k Ω	50-600 Ω Mics	-80 dBu (0.075 mV)	-60 dBu (0.75 mV)	-40 dBu (7.75 mV)	XLR-3-31 type ^{*3}
	-16 dB			-36 dBu (12.3 mV)	-16 dBu (12.3 mV)	-4 dBu (1.23 mV)	
CH INPUT LINE (1-8)	-34 dB	10 k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	TRS Phone Jack ^{*4}
ST CH MIC INPUT (9/10, 11/12)	-60 dB	3 k Ω	50-600 Ω Mics	-80 dBu (0.075 mV)	-60 dBu (0.75 mV)	-40 dBu (7.75 mV)	XLR-3-31 type ^{*3}
	+10 dB			-36 dBu (12.3 mV)	-16 dBu (12.3 mV)	-6 dBu (3.88 mV)	
ST CH LINE INPUT (9/10, 11/12)	-34 dB	10 k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	Phone Jack ^{*5}
	+10 dB			-10 dBu (24.5 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH INPUT (13/14, 15/16)	—	10 k Ω	600 Ω Lines	-30 dBu (24.5 mV)	-10 dBu (24.5 mV)	+10 dBu (2.45 V)	Phone Jack ^{*5}
CH INSERT OUT (CH1-8)	—	10 k Ω	600 Ω Lines	-20 dBu (7.75 mV)	0 dBu (0.75 V)	+20 dBu (7.75 V)	Phone Jack (TRS) ^{*6}
RETURN (L, R)	—	10 k Ω	600 Ω Lines	-12 dBu (9.5 mV)	+4 dBu (1.23 V)	+24 dBu (12.3 V)	Phone Jack ^{*5}
2TR IN (L, R)	—	10 k Ω	600 Ω Lines	-26 dBV (50.1 mV)	-10 dBV (0.316 V)	+10 dBV (3.16 V)	RCA Pin Jack

ANALOG OUTPUT CHARACTERISTICS

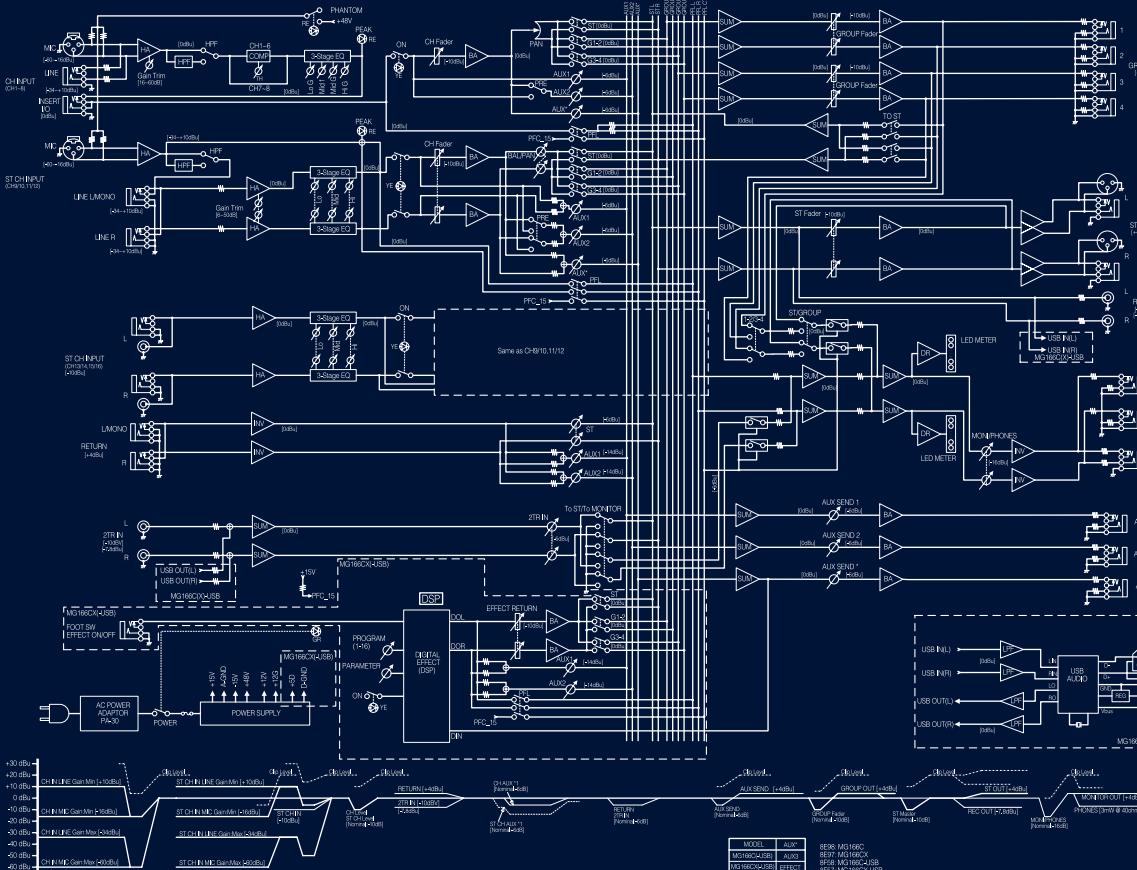
MG124C, MG124CX Block and Level Diagram



MG206C, MG206C-USB Block and Level Diagram



MG166C, MG166CX, MG166C-USB, MG166CX-USB Block and Level Diagram



MG24/14FX, MG32/14FX Block and Level Diagram

