



MIXING CONSOLE

MG206C-USB MG166CX-USB MG166C-USB

Owner's Manual
Bedienungsanleitung
Mode d'emploi
Manual de instrucciones

Features

Input Channels.....page 16

With up to 16 (MG166CX-USB/MG166C-USB: 10) mic/line inputs or up to four stereo inputs, the MG mixer can simultaneously connect to a wide range of devices: microphones, line-level devices, stereo synthesizers, and more.

Compression.....page 9

Compression increases the overall level without introducing distortion by compressing excessive peaks in the signals from microphones and guitars.

Cubase AI 4 DAW Software Supplied.....page 10

By connecting the MG mixer to the computer via a USB cable an audio data mixed by the MG mixer can be recorded on Cubase AI 4.

High-quality digital effects (MG166CX-USB).....pages 19, 23

With digital effects built in, the MG166CX-USB can deliver a wide range of sound variations all by itself.

Funktionen

Eingangskanäle.....Seite 40

Mit bis zu 16 Mikrofon-/Line-Eingängen (MG166CX-USB/MG166C-USB: 10) oder bis zu vier Stereoeingängen können viele Geräte gleichzeitig am MG-Mischpult angeschlossen werden: Mikrofone, Geräte mit Leitungspegel, Stereo-Synthesizer uvm.

Kompression.....Seite 33

Kompression erhöht den Durchschnittspegel, ohne Verzerrung hinzuzufügen, indem übermäßige Pegelspitzen der Signale von Mikrofonen oder Gitarren komprimiert werden.

DAW-Software Cubase AI 4 mitgeliefert.....Seite 34

Wenn Sie Ihr MG-Mischpult über ein USB-Kabel am Computer anschließen, können durch das MG-Mischpult gemischte Audiodaten in Cubase AI 4 aufgenommen werden.

Hochwertige Digitaleffekte (MG166CX-USB).....Seiten 43, 47

Mit den eingebauten digitalen Effekten kann das MG166CX-USB aus sich heraus eine Reihe von Klangvariationen liefern.

Caractéristiques

Canaux d'entrée.....page 64

Avec 16 entrées micro/ligne (MG166CX-USB/MG166C-USB: 10) ou quatre entrées stéréo maximum, la console de mixage MG peut connecter simultanément une grande variété d'appareils : micros, appareils de ligne, synthétiseurs stéréo, etc.

Compression.....page 57

La compression augmente le niveau général sans engendrer de distorsion en comprimant les pics excessifs des signaux des micros et des guitares.

Le logiciel DAW Cubase AI 4 fournit.....page 58

En connectant la console de mixage MG à un ordinateur via un câble USB, des données audio créées par la console de mixage MG peuvent être enregistrées sur Cubase AI 4.

Effets numériques de qualité supérieure (MG166CX-USB).....pages 67, 71

Grâce aux effets numériques intégrés, la console MG166CX-USB peut proposer de nombreuses variations de sons.

Características

Canales de entrada.....página 88

Con un máximo de 16 entradas de micrófono/línea (MG166CX-USB/MG166C-USB: 10) o cuatro entradas estereofónicas, la mezcladora MG puede conectarse simultáneamente con una gran variedad de dispositivos: micrófonos, dispositivos de nivel de línea, sintetizadores estereofónicos, etc.

Compresión.....página 81

La compresión aumenta el nivel general sin causar distorsión, mediante la compresión del exceso de picos en las señales de los micrófonos y guitarras.

El software DAW Cubase AI 4 suministrado.....página 82

Al conectar la mezcladora MG con un ordenador por medio de un cable USB, se puede grabar en Cubase AI 4 datos de audio creados por la mezcladora MG.

Efectos digitales de alta calidad (MG166CX-USB)...páginas 91, 95

Gracias a sus efectos digitales incorporados, la mezcladora MG166CX-USB puede producir por sí misma una amplia gama de variaciones de sonido.

English

Deutsch

Français

Español



EN
DE
FR
ES

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

Making sure that neither core is connected to the earth terminal of the three pin plug.

* This applies only to products distributed by Yamaha-Kemble Music (U.K.) Ltd.

(2 wires)

COMPLIANCE INFORMATION STATEMENT (DECLARATION OF CONFORMITY PROCEDURE)

Responsible Party : Yamaha Corporation of America

Address : 6600 Orangethorpe Ave., Buena Park, Calif. 90620

Telephone : 714-522-9011

Type of Equipment : Mixing Console

Model Name : MG206C-USB/MG166CX-USB/MG166C-USB

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- 1) this device may not cause harmful interference, and
- 2) this device must accept any interference received including interference that may cause undesired operation.

See user manual instructions if interference to radio reception is suspected.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

(FCC DoC)

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT:

When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. NOTE:

This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regula-

tions does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

(class B)

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

* Please keep this manual in a safe place for future reference.



WARNING

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

Power supply/Power cord

- Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device.
- Use only the included power adaptor (PA-30 or an equivalent recommended by Yamaha).
- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.

Do not open

- Do not open the device or attempt to disassemble the internal parts or modify them in any way. The device contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.

Water warning

- Do not expose the device to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- Never insert or remove an electric plug with wet hands.

If you notice any abnormality

- If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the device, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha service personnel.
- If this device or the AC power adaptor should be dropped or damaged, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha service personnel.



CAUTION

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to, the following:

Power supply/Power cord

- Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical storms.
- When removing the electric plug from the device or an outlet, always hold the plug itself and not the cord. Pulling by the cord can damage it.
- To avoid generating unwanted noise, make sure there is adequate distance (50 cm or more) between the AC power adaptor and the device.
- Do not cover or wrap the AC power adaptor with a cloth or blanket.

Location

- Before moving the device, remove all connected cables.
- When setting up the device, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. Even when the power switch is turned off, electricity is still flowing to the product all the minimum level. When you are not using the product for a long time, make sure to unplug the power cord from the wall AC outlet.
- If this device is to be mounted in an EIA-standard rack, leave the back of the rack open and make sure that it is at least 10 cm away from walls or surfaces. Also, if this device is to be mounted with devices that tend to generate heat, such as power amplifiers, be sure to keep an adequate gap between this device and the heat-generating devices or install ventilation panels to prevent high temperatures from developing inside this device. Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire.
- Avoid setting all equalizer controls and faders to their maximum. Depending on the condition of the connected devices, doing so may cause feedback and may damage the speakers.
- Do not expose the device to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel discoloration or damage to the internal components.

- Do not place the device in an unstable position where it might accidentally fall over.
- Do not block the vents. This device has ventilation holes at the bottom/rear to prevent the internal temperature from becoming too high. In particular, do not place the device on its side or upside down. Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire.
- Do not use the device in the vicinity of a TV, radio, stereo equipment, mobile phone, or other electric devices. Doing so may result in noise, both in the device itself and in the TV or radio next to it.

Connections

- Before connecting the device to other devices, turn off the power for all devices. Before turning the power on or off for all devices, set all volume levels to minimum.

Handling caution

- When turning on the AC power in your audio system, always turn on the power amplifier LAST, to avoid speaker damage. When turning the power off, the power amplifier should be turned off FIRST for the same reason.
- Do not insert your fingers or hands in any gaps or openings on the device (vents, etc.).
- Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.) into any gaps or openings on the device (vents, etc.) If this happens, turn off the power immediately and unplug the power cord from the AC outlet. Then have the device inspected by qualified Yamaha service personnel.
- Do not use the device or headphones for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.
- Do not rest your weight on the device or place heavy objects on it, and avoid use excessive force on the buttons, switches or connectors.

XLR-type connectors are wired as follows (IEC60268 standard): pin 1: ground, pin 2: hot (+), and pin 3: cold (-).
Insert TRS phone jacks are wired as follows: sleeve: ground, tip: send, and ring: return.

Yamaha cannot be held responsible for damage caused by improper use or modifications to the device, or data that is lost or destroyed.

Always turn the power off when the device is not in use.

Even when the power switch is in the "STANDBY" position, electricity is still flowing to the device at the minimum level. When you are not using the device for a long time, make sure you unplug the power cord from the wall AC outlet.

The performance of components with moving contacts, such as switches, volume controls, and connectors, deteriorates over time. Consult qualified Yamaha service personnel about replacing defective components.

The MG mixer may heat up by as much as 15 to 20°C while the power is on. This is normal. Please note that the panel temperature may exceed 50°C in ambient temperatures higher than 30°C, and use caution to prevent burns.

* This Owner's Manual applies to the MG206C-USB/MG166CX-USB/MG166C-USB. The main differences between the three models are the number of input channels and whether the internal effects are included. The MG206C-USB has 20 input channels while the MG166CX-USB/MG166C-USB have 16 channels. And only the MG166CX-USB has internal effects.

* In this manual the term "MG mixers" refers to the MG206C-USB/MG166CX-USB/MG166C-USB.

Copying of commercially available music or other audio data for purposes other than personal use is strictly prohibited by copyright law. Please respect all copyrights, and consult with a copyright specialist if you are in doubt about permissible use.

Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

SPECIAL NOTICES

- The owner's manual is the exclusive copyright of Yamaha Corporation.
- The included software is the exclusive copyright of Steinberg Media Technologies GmbH.
- Use of the software and this manual is governed by the license agreement which the purchaser fully agrees to upon breaking the seal of the software packaging. (Please read carefully the Software Licensing Agreement at the end of this manual before installing the application.)
- Copying of the software or reproduction of this manual in whole or in part by any means is expressly forbidden without the written consent of the manufacturer.
- Yamaha makes no representations or warranties with regard to the use of the software and documentation and cannot be held responsible for the results of the use of this manual and the software.
- This disk is a DVD-ROM. Do not attempt to play the disk on a DVD player. Doing so may result in irreparable damage to your DVD player.
- Visit the web address below for the latest information on supplied software and operating system requirements.
<<http://www.yamahasynt.com/>>

The illustrations and LCD screens as shown in this owner's manual are for instructional purposes only, and may appear somewhat different from those on your instrument.

This product incorporates and bundles computer programs and contents in which Yamaha owns copyrights or with respect to which it has license to use others' copyrights. Such copyrighted materials include, without limitation, all computer software, style files, MIDI files, WAVE data, musical scores and sound recordings. Any unauthorized use of such programs and contents outside of personal use is not permitted under relevant laws. Any violation of copyright has legal consequences. **DON'T MAKE, DISTRIBUTE OR USE ILLEGAL COPIES.**

Copying of the commercially available musical data including but not limited to MIDI data and/or audio data is strictly prohibited except for your personal use.

- Windows is the registered trademarks of Microsoft® Corporation.
- Apple and Macintosh are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.
- Steinberg and Cubase are the registered trademarks of Steinberg Media Technologies GmbH.
- The company names and product names in this Owner's Manual are the trademarks or registered trademarks of their respective companies.

Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

Introduction

Thank you for your purchase of the Yamaha MG206C-USB/MG166CX-USB/MG166C-USB mixing console. The MG206C-USB/MG166CX-USB/MG166C-USB feature input channels suitable for a wide range of usage environments. Furthermore, the mixer has the USB connector that enables you to record an audio data mixed with the mixer on the included Cubase AI 4 DAW software.

Please read through this manual carefully before beginning use, so that you will be able to take full advantage of this mixer's superlative features and enjoy trouble-free operation for years to come.

Contents

Introduction	5	■ Reference	15
Contents.....	5	Setup.....	15
Before Turning on the Mixer	6	Front & Rear Panels	16
Turning the Power On/OFF.....	6	Channel Control Section	16
Computer System Requirements.....	6	Digital Effects	19
Cubase AI 4 System Requirements.....	6	Master Control Section	20
■ Mixer Basics.....	7	Digital Effect Program List (Only MG166CX-USB).....	23
Quick Guide.....	7	Jack List.....	23
1. Installing Cubase AI 4.....	7	Troubleshooting	24
2. Connecting to the MG mixer	7	Specifications	99
3. Powering Up the System	8	About the accessory disk.....	106
4. Adjusting Level and Tone	9	SOFTWARE LICENSE AGREEMENT... 106	
5. Recording with Cubase AI 4	10		
6. Mixing with Cubase AI 4	13		

Accessories

- Cubase AI 4 DVD-ROM
- USB cable
- Owner's Manual
- AC power adaptor (PA-30)*

* May not be included depending on your particular area. Please check with your Yamaha dealer.

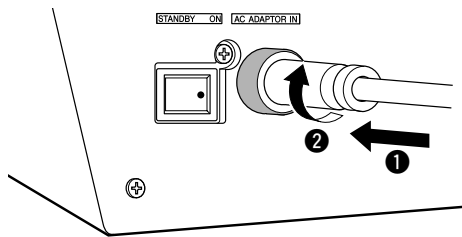
Before Turning on the Mixer

- 1** Be sure that the mixer's power switch is in the **STANDBY** position.



Use only the included power adaptor (PA-30) or an equivalent recommended by Yamaha. Use of a different adaptor may result in equipment damage, overheating, or fire.

- 2** Connect the power adaptor to the **AC ADAPTOR IN** connector (1) on the rear of the mixer, and then turn the fastening ring clockwise (2) to secure the connection.



- 3** Plug the power adaptor into a standard household power outlet.



- Be sure to unplug the adaptor from the outlet when not using the mixer, or when there are lightning storms in the area.
- To avoid generating unwanted noise, make sure there is 50 cm or more between the power adaptor and the mixer.

Turning the Power On/OFF

Press the mixer's power switch to the **ON** position. When you are ready to turn the power off, press the power switch to the **STANDBY** position.



Note that trace current continues to flow while the switch is in the **STANDBY** position. If you do not plan to use the mixer again for a long while, please be sure to unplug the adaptor from the wall outlet.

Computer System Requirements

Windows Vista

Computer	Windows-based computer with built-in USB interface
OS	Windows Vista
CPU	1 GHz or higher Intel Core/Pentium/Celeron processor
Memory	1 GB or more

Windows XP

Computer	Windows-based computer with built-in USB interface
OS	Windows XP Professional/XP Home Edition
CPU	750 MHz or higher Intel Core/Pentium/Celeron processor
Memory	96 MB or more (128 MB or more recommended)

Macintosh

Computer	Macintosh computer with built-in USB interface
OS	MacOS X 10.3.3 or higher
CPU	Macintosh G3 300 MHz or higher/Intel processor
Memory	128 MB or more

Cubase AI 4 System Requirements

Windows

OS	Windows XP Professional/XP Home Edition
CPU	1.4 GHz or higher Intel Pentium processor
Memory	512 MB or more
Audio Interface	Windows DirectX compatible
Hard Disk	400 MB or more

Macintosh

OS	MacOS X 10.4 or higher
CPU	Power Mac G4 1 GHz/Core Solo 1.5 GHz or higher
Memory	512 MB or more
Hard Disk	400 MB or more

- NOTE**
- A DVD driver is required for installation.
 - To activate your software license, install the application while the computer is connected to the internet.

Quick Guide

This quick setup and operation guide covers everything from installing the Cubase AI 4 software to using Cubase AI 4 for recording and mixdown. While going through this section you might find it useful to also refer to the “Front and Rear Panels” section on page 16, as well as the pdf manual supplied with the Cubase AI 4 software.

Step 1 Installing Cubase AI 4

IMPORTANT ! Since the End-User Software License Agreement (EUSLA) shown on your PC-display in your installing the “DAW” software is replaced by the agreement at the end of this manual, you should disregard the EUSLA. Read the Software License Agreement at the end of this manual carefully, and install the software if you agree to it.

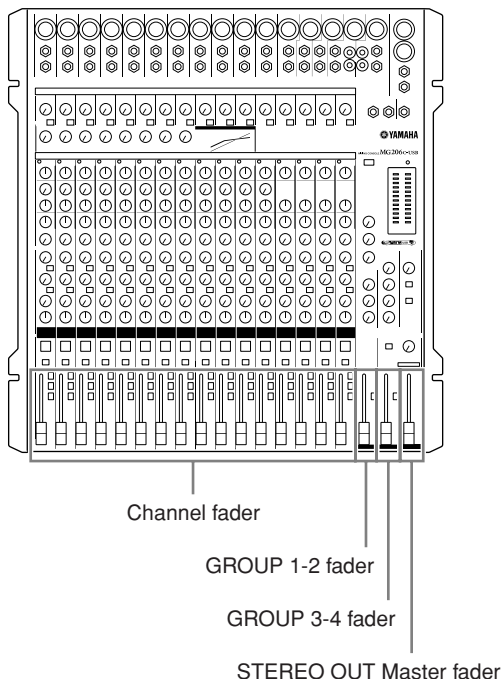
- 1** Start the computer and log on to the Administrator account.
- 2** Insert the included DVD-ROM into the computer’s DVD-ROM drive.
- 3** Open the “Cubase AI 4 for Windows” folder and double-click on the “CubaseAI4.msi”.

Follow the on-screen instructions to install the Cubase AI 4 software.

- NOTE**
- When installing Cubase AI 4, you will need a working internet connection to register your Cubase AI 4. Make sure to fill in all required fields for user registration. If you do not register the product, you will be unable to use the application after a limited period of time expires.
 - For a Macintosh computer, double-click the “CubaseAI4.mkpg” icon for installation.

Step 2 Connecting to the MG mixer

- 1** Turn the power to the MG mixer and all gear that is to be connected to the MG mixer off/standby (except the computer), and set the channel faders, STEREO OUT Master fader, GROUP 1-2 fader and GROUP 3-4 fader to their minimum settings.



- 2** Connect the MG mixer to your computer using the supplied USB cable.

USB Connection Precautions

Be sure to observe the following points when connecting to the computer’s USB interface.

Failure to observe these rules can result in computer freezes/hang-ups and possibly data loss or corruption. If the MG mixer or computer does hang up, turn the power to both devices off and then on again, and restart the computer.



- Be sure to wake the computer from sleep/suspended/standby mode before making a connection to the computer’s USB connector.
- Connect the MG mixer to the computer before turning the MG mixer power on.
- Always quit all applications running on the computer before turning the MG mixer’s power on or off, or connecting or disconnecting the USB cable.
- Wait at least 6 seconds between turning the MG mixer on or off, and between connecting or disconnecting the USB cable.



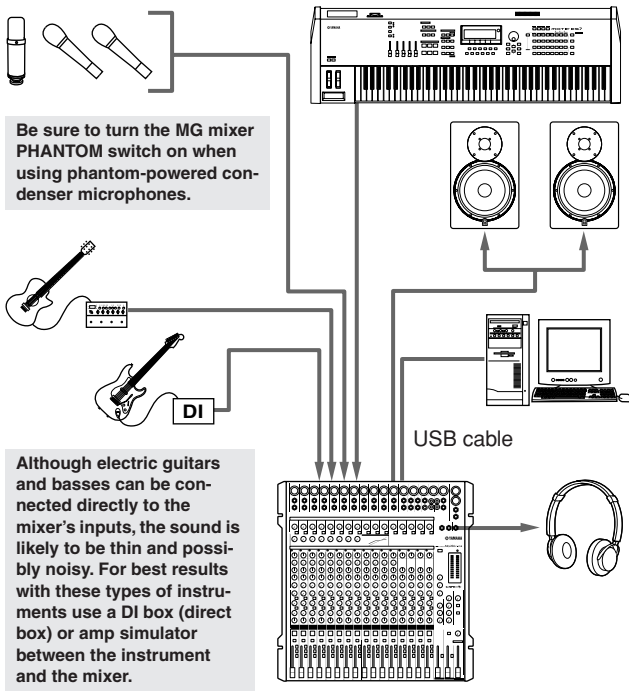
When connecting or disconnecting the USB cable be sure to turn the 2TR IN/USB control all the way down.

NOTE

Disconnect the USB cable when using the MG mixer without the computer.

3 Connecting Microphones and/or Instruments.

For details on making connections refer to the “Setup” section on page 15 and the “Front & Rear Panels” section on page 16.



Step 3 Powering Up the System

To prevent loud pops and noises, turn on the power to your sound gear starting with the sources (instruments, CD players, etc.) and ending with the power amplifier or powered speakers.

Example : Instruments, microphones, and CD players first, then the mixer, and finally the power amplifier or powered speakers.



Observe the following precautions when turning on phantom power.

- Make sure that the PHANTOM switch is off when phantom power is not needed.
- When turning the switch on, be sure that only condenser microphones are connected to the XLR input jacks. Other devices may be damaged if connected to phantom power. This precaution does not apply to balanced dynamic microphones, however, as these will not be affected by phantom power.
- To minimize the possibility of speaker damage, turn phantom power on ONLY while your power amplifier or powered speakers are switched off. It's also a good idea to turn the mixer's output controls—STEREO OUT Master fader, GROUP 1-2 fader and GROUP 3-4 fader—all the way down.

NOTE

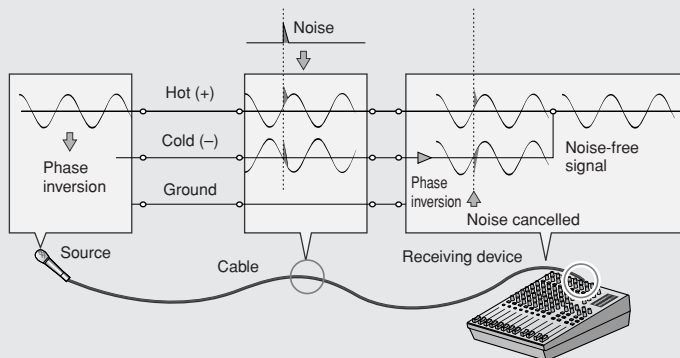
- We recommend that you set the computer output to the maximum level and mute the computer's internal speaker. For details on how to make the setting refer to the “The recorded sound is too low in level.” in the “Troubleshooting” on page 24.
- The first time you connect to the computer's USB connector, or change the connection to a different USB port, a driver installation display may appear after turning the power to the MG mixer on. If this occurs, wait until the installation is complete before proceeding.

Balanced, Unbalanced—What's the Difference?

In a word: “noise.” The whole point of balanced lines is noise rejection, and it's something they're very good at. Any length of wire will act as an antenna to pick up the random electromagnetic radiation we're constantly surrounded by: radio and TV signals as well as spurious electromagnetic noise generated by power lines, motors, electric appliances, computer monitors, and a variety of other sources. The longer the wire, the more noise it is likely to pick up.

That's why balanced lines are the best choice for long cable runs. If your “studio” is basically confined to your desktop and all connections are no more than a meter or two in length, then unbalanced lines are fine—unless you're surrounded by extremely high levels of electromagnetic noise. Another place balanced lines are almost always used is in microphone cables. The reason for this is that the output signal from most microphones is very small, so even a tiny amount of noise will be relatively large, and will be amplified to an alarming degree in the mixer's high-gain head amplifier.

Balanced noise cancellation



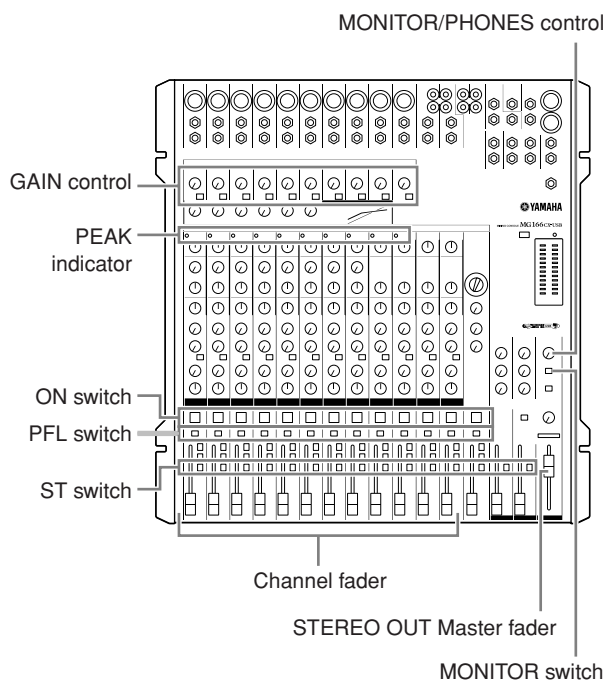
Cable Guidelines

Microphone cable	Balanced is best.
Short line-level cables	Unbalanced cable is fine in a relatively noise-free environment.
Long line-level cables	Balanced is best.

Step 4 Adjusting Level and Tone

Level Adjustment

- 1** The first step is to set the level controls on all instruments and other sources appropriately.
- 2** Adjust the channel GAIN controls so that the corresponding PEAK indicators flash briefly on the highest peak levels.
- 3** Engage the ON and ST switches of the input channels that you would like to record.
- 4** Make sure that the PFL switch is off (■), and that the MONITOR switch is set to STEREO (■).
- 5** Raise the STEREO OUT Master fader to the 0 dB position.
- 6** Set the channel faders to create the desired initial balance while monitoring via headphones or monitor speakers. The overall headphone level is adjusted by the MONITOR/PHONES control.



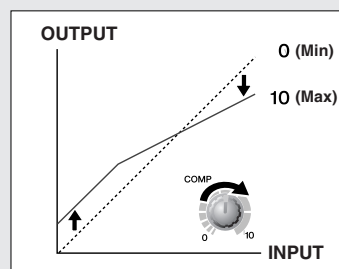
Tone Adjustment

The MG mixer's compressors, 3-band equalizers and digital effects make it easy to shape the tone of independent channels to achieve the best possible mix.

NOTE The MG166CX-USB has built-in digital effects. Refer to "Use the Built-in Digital Effects to Refine Your Mixes" on page 14 and "Digital Effect Program List" on page 23 for details.

Compression

One form of compression known as "limiting" can, when properly used, produce a smooth, unified sound with no excessive peaks or distortion. A common example of the use of compression is to "tame" a vocal that has a wide dynamic range in order to tighten up the mix. Compression can also be applied to guitar tracks to add extra sustain. Too much compression can be a cause of feedback, however, so use it sparingly.



Equalizer Tips

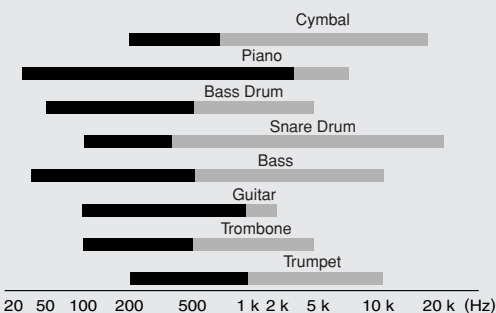
The best advice that can be given regarding equalization while recording is simply to use as little equalization as possible. If you want a little more presence you can turn the HIGH end up a bit. Or you can boost the bass a little if you feel the low end is lacking. During recording it's better to use EQ sparingly for compensation only.

• Cut for a Cleaner Mix

For example: pianos have a lot of energy in the mid and low frequency ranges that you don't really perceive as musical sound, but which can interfere with the clarity of other instruments in these ranges. You can basically turn the low EQ on piano channels all the way down without changing the way they sound in the mix. You'll hear the difference, however, in the way the mix sounds more "spacious," and instruments in the lower ranges will have better definition. Naturally you won't want to do this if the piano is playing solo.

The reverse applies to kick drums and bass guitars: you can often roll off the high end to create more space in the mix without compromising the character of the instruments. You'll have to use your ears, though, because each instrument is different and sometimes you'll want the "snap" of a bass guitar, for example, to come through.

The fundamental ■ and harmonic ■ frequency ranges of some musical instruments.



■ Fundamental: The frequency that determines the basic musical pitch.
 ■ Harmonics: Multiples of the fundamental frequency that play a role in determining the timbre of the instrument.

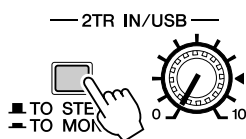
Step 5 Recording with Cubase AI 4

This section describes the procedure for recording to the Cubase AI 4 software we installed earlier via the MG mixer.

NOTE For details on operation of the Cubase AI 4 software refer to the pdf-format manual provided with the software.

Cubase AI 4 Setup

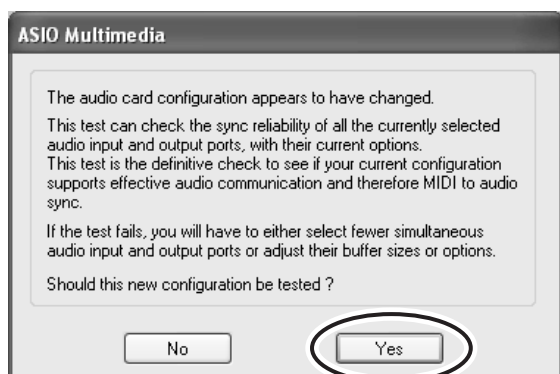
- To prevent the playback sound from Cubase AI 4 from being directly rerecorded, set the MG mixer's 2TR IN/USB switch to TO MONITOR ().



2 Launch Cubase AI 4.

Windows:

Click [Start] → [All Program] → [Steinberg Cubase AI 4] → [Cubase AI 4] to launch the program. If the ASIO Multimedia dialog window appears, click [Yes].



Macintosh:

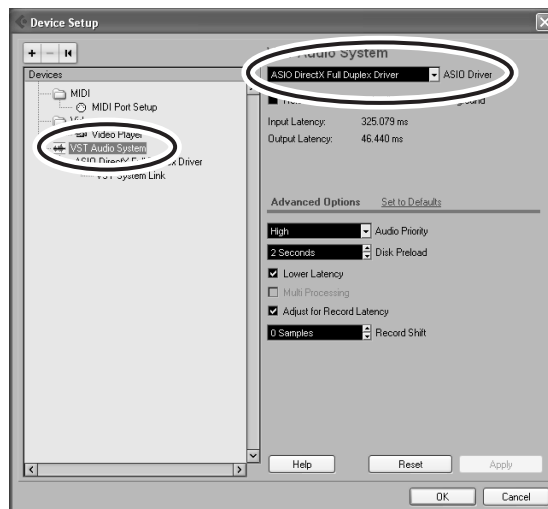
Double-click the [Application] → [Cubase AI 4].

- NOTE**
- If you specified a file destination when installing the Cubase AI 4 software, launch the application from that location.
 - Create a Cubase AI 4 shortcut or alias on your desktop so you can easily launch the program when required.

3 Select [Device Setup] from the [Device] menu to open the Device Setup window.

Windows:

Select [VST Audio System] in the [Device] field on the left side of the window. Select [ASIO DirectX Full Duplex Driver] in the [ASIO Driver] field on the right side of the window. A dialog window will appear asking "Do you want to switch the ASIO driver?". Click [Switch].

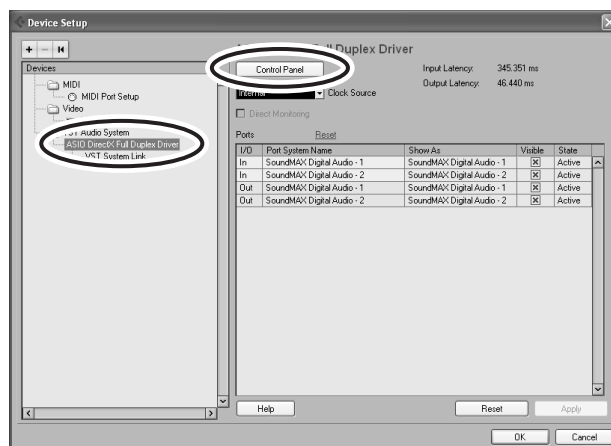


Macintosh:

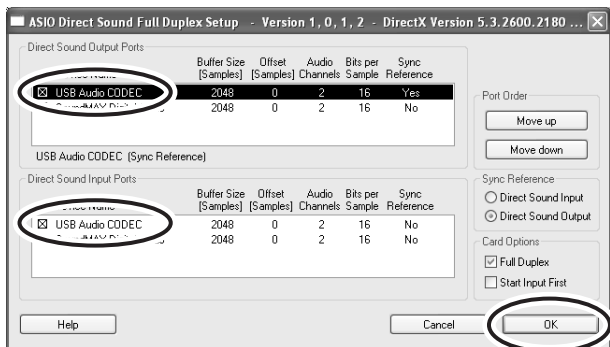
Select [VST Audio System] in the [Device] field on the left side of the window. Select [USB Audio CODEC (2)] in the [ASIO Driver] field on the right side of the window, and click [OK]. Skip ahead to step 6, below.

- NOTE** Under Mac OS X you can select either [USB Audio CODEC (1)] or [USB Audio CODEC (2)] in the [ASIO Driver] field. Normally you should select [USB Audio CODEC (2)], but if you will only be playing back and mixing previously recorded data you can select [USB Audio CODEC (1)] to lighten the load on the computer's CPU.

4 On a Windows computer select [ASIO DirectX Full Duplex Driver] in the [Devices] field on the left side of the Device Setup window, and click [Control Panel] on the right side of the window.

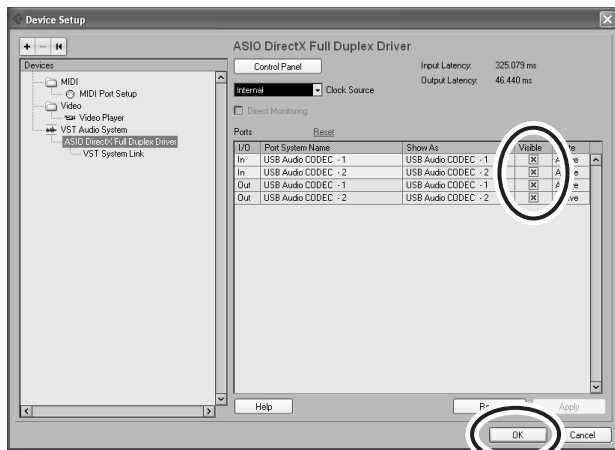


- 5** The ASIO Direct Sound Full Duplex Setup dialog window will be displayed. Check only the input port and output port [USB Audio CODEC] checkbox.



- 6** Make sure that “USB Audio CODEC 1/2” are shown in the [Port System Name] field, and check the [Visible] column in the Device Setup window. Click [OK] to close the window.

NOTE If the [Port System Name] field does not change, close and restart the Cubase AI 4, then open the Device Setup window.



- 7** Select [New Project] from the [File] menu to create a new project file.

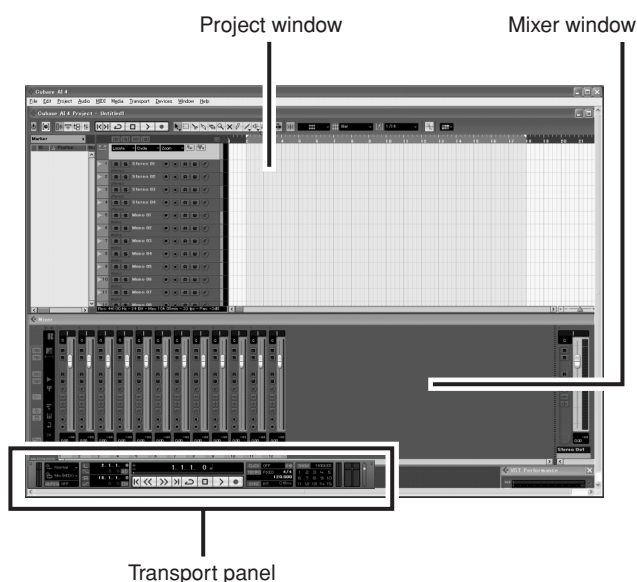
The new project dialog window will open. For this example select [CAI4 - 4 Stereo 8 Mono Audio Track Recorder] and click [OK].

NOTE Recorded Cubase AI 4 data is stored as a “project file”.



- 8** When the directory selection dialog window appears, select the folder to which the project and audio files for the project are to be stored, and click [OK].

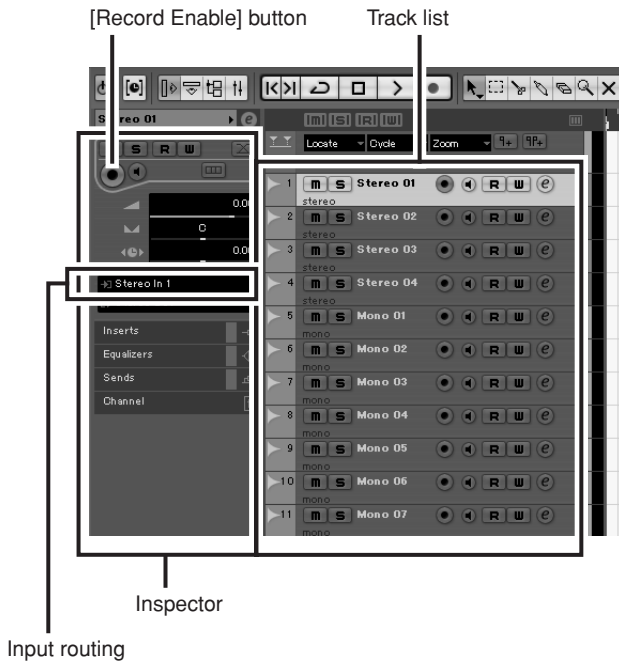
An empty project window with 4 stereo and 8 monaural tracks will appear.



Preparing to Record

- 1 Click in the track list (the area in which the track names are displayed) to select a track to record on.

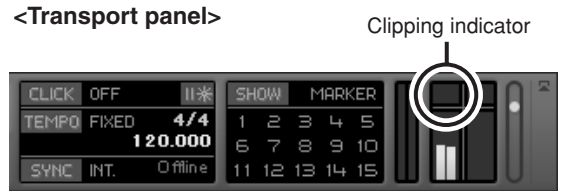
The various settings for the selected track are available in the Inspector on the left side of the display.



NOTE You will normally use a stereo track when recording synthesizers, and a monaural track when recording vocals or guitar.

- 2 Click the Input Routing field in the Inspector to select the audio input source. Select “Stereo In 1” for a stereo track and “Left (Right)-Stereo In 1” for a monaural track.
- 3 Make sure the [Record Enable] button for the track to be recorded is turned on.
If the [Record Enable] button is off, click it to turn it on.

- 4 Play the instrument to be recorded, and adjust the MG mixer’s GAIN controls, channel faders and STEREO OUT Master fader so that the Clipping indicator never light.



- 5 Specify the point at which you want to start recording via the ruler at the top of the project window.

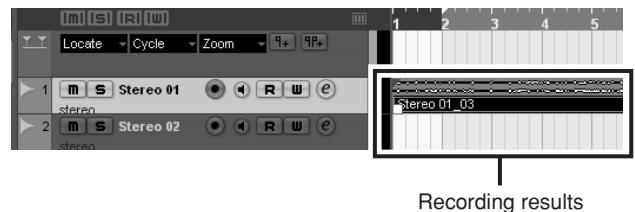
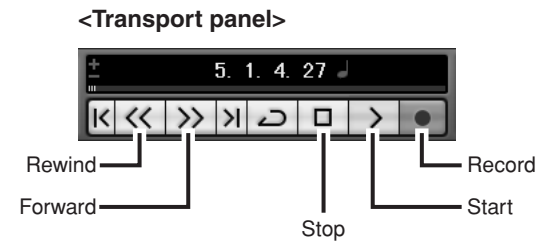
Click the black area of the ruler to move the project cursor (the vertical black line) to that position.



Recording and Playback

- 1 Click the Transport panel [Record] button to begin recording.

When recording is started the project cursor will begin moving to the right and a box that displays the recording results will be created.

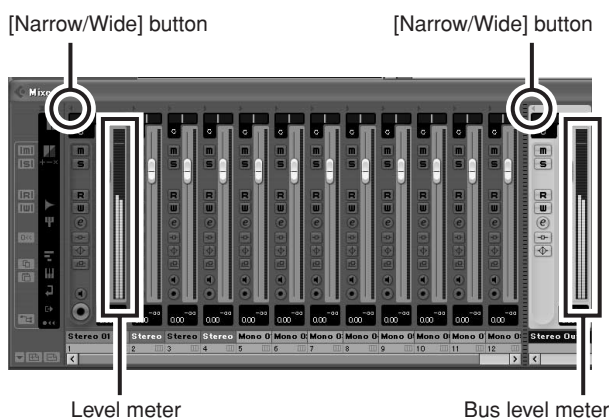


- 2 Play the part.
- 3 When you finish recording the track, click the Transport panel [Stop] button.

- 4** To hear playback of the track you have just recorded, use either the Transport panel [Rewind] button or the ruler to rewind to the beginning of the recorded section, then click the Transport panel [Start] button.

The overall playback level will be displayed via the master section bus level meter on the right side of the mixer window, and the channel level will be displayed via the channel strip level meter.

- NOTE**
- Click the [Narrow/Wide] button in the upper left corner of the mixer window to increase the width of the mixer's channel strips.
 - The output signal from Cubase AI 4 is routed to the MG mixer's 2TR IN inputs. To hear the playback sound via a pair of headphones plugged into the MG mixer, set the bus select switch to TO MONITOR (—) and adjust the volume with the 2TR IN/USB control and the MONITOR/PHONES control.



- 5** To save the project file select [Save] from the [File] menu and enter a file name before actually saving the file.

Save your project file frequently to insure against losing large amounts of data if a problem occurs.

- 6** Repeat steps 1 through 5 to record further material on the same track.

- 7** To record additional material on a different track, select a new track and repeat the record procedure.

- NOTE** You can monitor the sound being recorded and a previously recorded sound simultaneously while recording (MONITOR MIX). Refer to "16 2TR IN/USB" on page 22 for details.

Step 6 Mixing with Cubase AI 4


In this section we'll try mixing down multiple recorded audio tracks to stereo, and creating a wav file. Mixes can be stored as WAV or AIFF files, which can then be recorded to audio CDs.

- 1** Launch Cubase AI 4 and open a project file.
- 2** Click the [Start] button on the Transport Panel.
- 3** While listening to playback, drag the channel strip level faders up and down to create the desired initial balance, then adjust the overall volume using the bus volume fader.

- 4** Drag the pan controls on the top of the channel strips left and right to set the stereo position of each track.



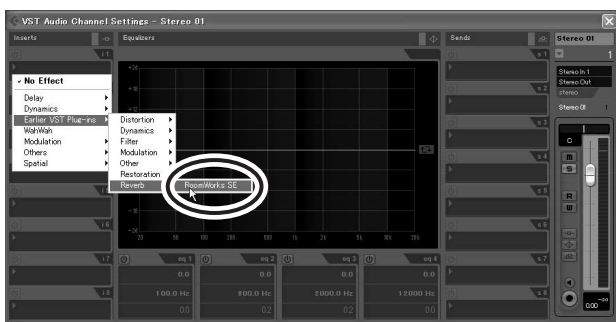
5 At this point you can begin to use EQ to refine your mix, and add effects.

As an example let's try adding reverb. Click the [Edit] button () on the left side of the channel strip to open the VST audio channel settings window. Click Insert 1 and select Earlier VST Plug-ins → Reverb → RoomWorks SE.

NOTE For further details refer to the pdf manual provided with the Cubase AI 4 software.



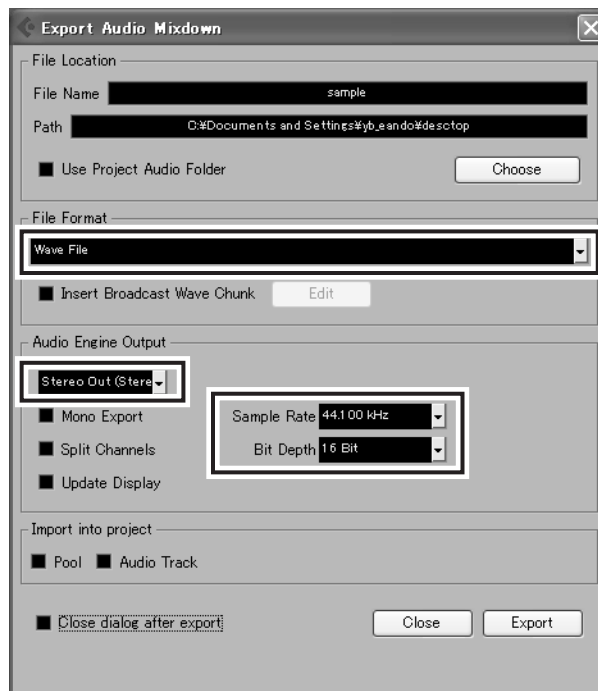
It's a good idea to lower the channel fader a bit before adding an effect, since the effect can cause an increase in the overall channel level.



6 When the final mix adjustments have been made, go to the [File] menu and select [Export] → [Audio Mixdown].

7 Enter a file name and select a destination for the file as well as a file type.

If you intend to use the file to create an audio CD, select the WAV file type (AIFF on Macintosh OS X), Stereo Out (stereo), 16 bit, and 44.1 kHz.



8 Click [Export].

Progress of the mixdown operation will be shown in a progress window. When the progress window closes the mixdown is complete.

NOTE Wave files created by mixdown can be directly played back using the Windows Media Player, or iTunes on a Macintosh computer.

Use the Built-in Digital Effects to Refine Your Mixes (Only MG166CX-USB)

● Reverb and Delay Time

The optimum reverb time for a piece of music will depend on the music's tempo and density, but as a general rule longer reverb times are good for ballads, while shorter reverb times are more suited to uptempo tunes. Delay times can be adjusted to create a wide variety of "grooves". When adding delay to a vocal, for example, try setting the delay time to dotted eighth notes corresponding to the tune's tempo.

● Reverb Tone

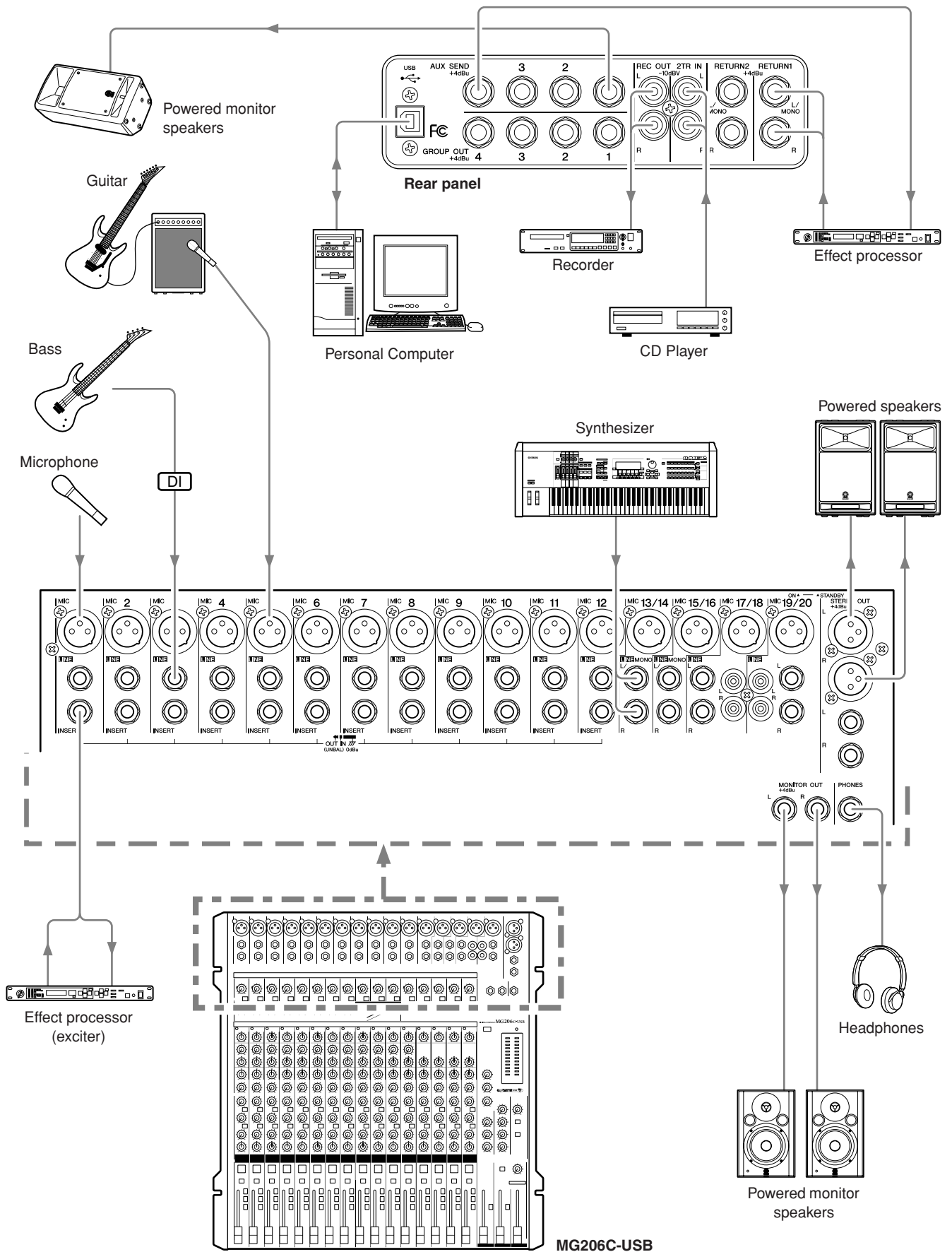
Different reverb programs will have different "reverb tone" due to differences in the reverb time of the high or low frequencies. Too much reverb, particularly in the high frequencies, can result in unnatural sound and interfere with the high frequencies in other parts of the mix. It's always a good idea to choose a reverb program that gives you the depth you want without detracting from the clarity of the mix.

● Reverb Level

It's amazing how quickly your ears can lose perspective and fool you into believing that a totally washed-out mix sounds perfectly fine. To avoid falling into this trap start with reverb level all the way down, then gradually bring the reverb into the mix until you can just hear the difference. Any more than this normally becomes a "special effect."

NOTE For details on the modulation effects, refer to "Digital Effect Program List (Only MG166CX-USB)" on page 23.

Setup

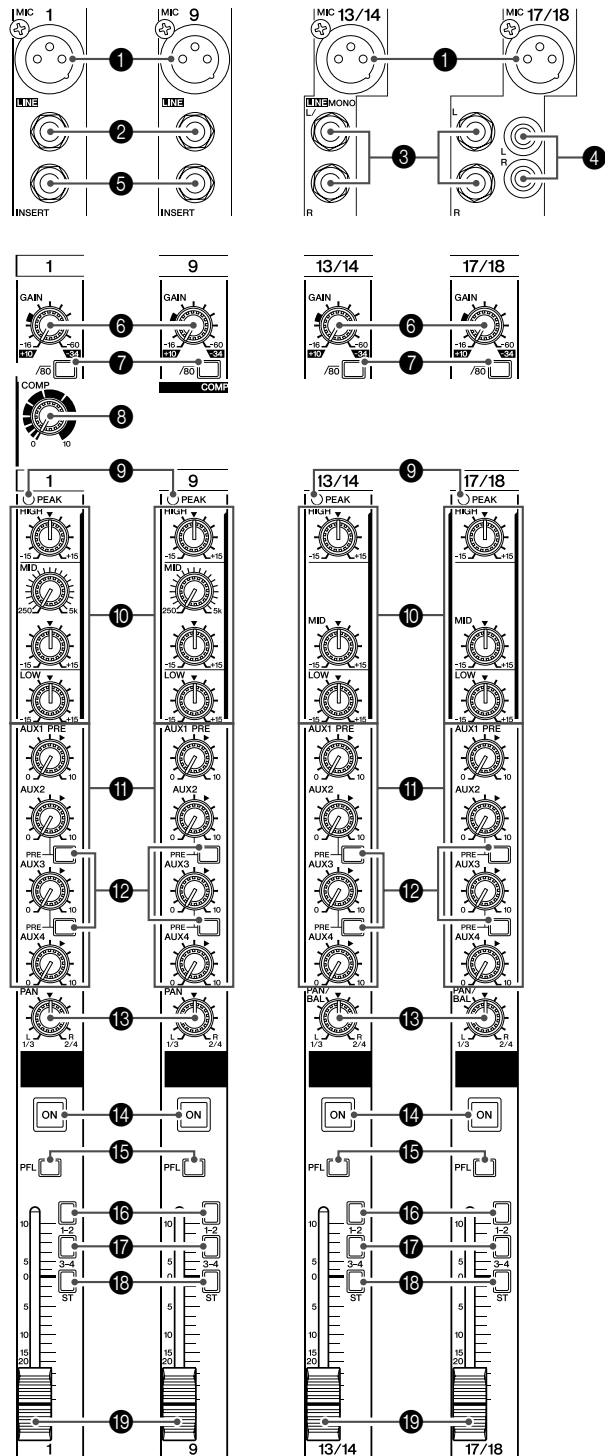


Front & Rear Panels

Channel Control Section

● MG206C-USB

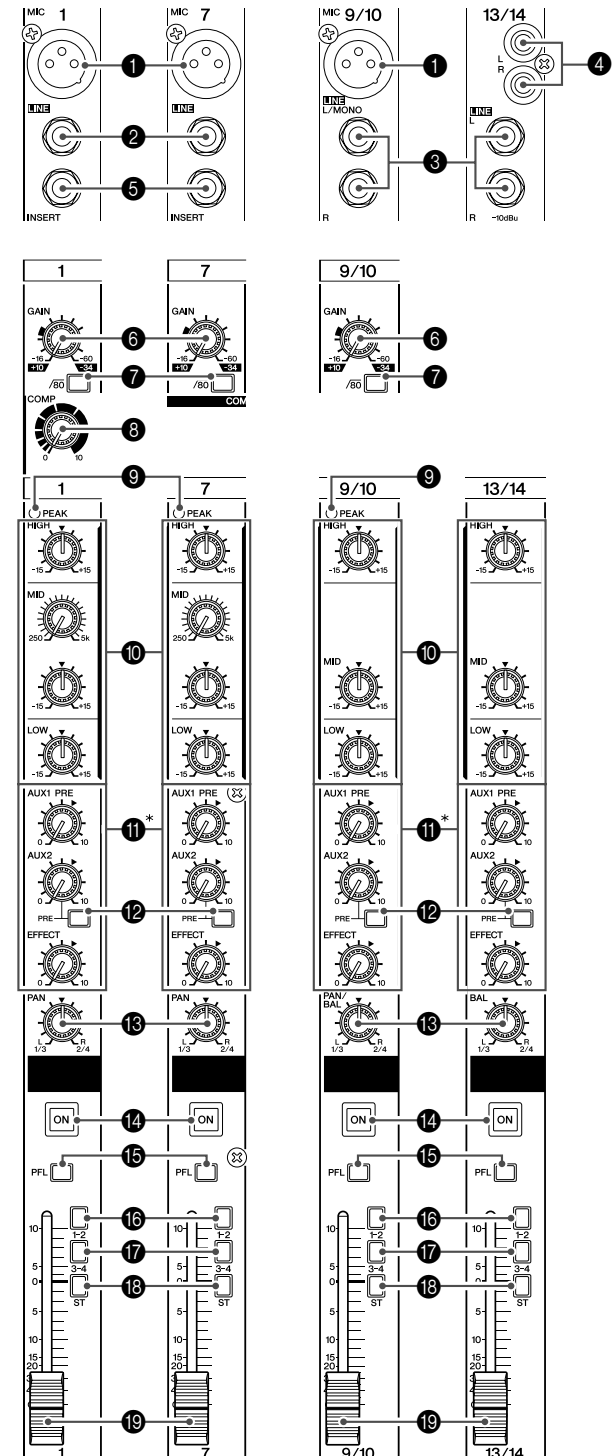
Channels 1 to 8 (Monaural) Channels 9 to 12 (Monaural)
 Channels 13/14 and 15/16 (Stereo) Channels 17/18 and 19/20 (Stereo)



● MG166CX-USB/MG166C-USB

* ⑪ MG166C-USB : EFFECT → AUX3

Channels 1 to 6 (Monaural) Channels 7 and 8 (Monaural)
 Channels 9/10 and 11/12 (Stereo) Channels 13/14 and 15/16 (Stereo)



1 MIC Input jacks

These are balanced XLR-type microphone input jacks. (1: Ground; 2: Hot; 3: Cold)

2 LINE Input Jacks (monaural channels)

These are balanced TRS phone-jack line inputs. (T: Hot; R: Cold; S: Ground). You can connect either balanced or unbalanced phone plugs to these jacks.

3 LINE Input Jacks (stereo channels)

These are unbalanced phone-jack stereo line inputs.

4 LINE Input Jacks (stereo channels)

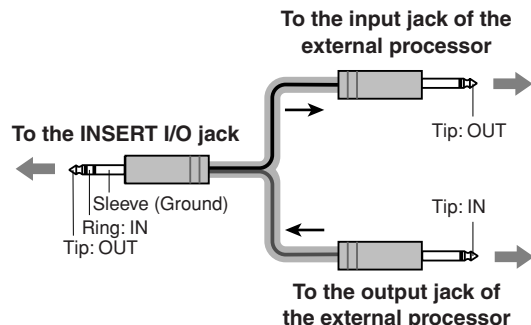
These are unbalanced stereo RCA pin jacks.

NOTE On channels that provide multiple input jack options only one type of jack can be used at a time.

5 INSERT Jacks

These jacks can be used to insert an external signal-processing device between the equalizer and fader of the corresponding monaural input channel. The INSERT jacks are ideal for connecting devices such as graphic equalizers, compressors, or noise filters into the corresponding channels.

NOTE These are TRS (tip, ring, sleeve) phone jacks that carry both the send and return signal (tip = send/out; ring = return/in; sleeve = ground). Patching external devices via an INSERT jack requires a special cable such as illustrated below (insert cable sold separately).



The signal output from the INSERT jacks is reverse-phased. This should not be a problem when connecting to an effect unit, but please be aware of the possibility of phase conflict when connecting to other types of device. A reversed-phased signal may result in degraded sound quality or even complete sound cancellation.

6 GAIN Control

Adjusts the input signal level. To get the best balance between the S/N ratio and the dynamic range, adjust the gain so that the PEAK indicator 9 lights only occasionally and briefly on the highest input transients. The -60 to -16 scale is the MIC input adjustment range. The -34 to +10 scale is the LINE input adjustment range.

7 $\sqrt{80}$ Switch (High-Pass Filter)

This switch toggles the HPF on or off. To turn the HPF on, press the switch in (—). The HPF cuts frequencies below 80 Hz (the HPF does not apply to the line inputs of stereo input channels 3, 4).

8 COMP Control

Adjusts the amount of compression applied to the channel. As the knob is turned to the right the compression ratio increases while the output gain is automatically adjusted accordingly. The result is smoother, more even dynamics because louder signals are attenuated while the overall level is boosted.

NOTE Avoid setting the compression too high, as the higher average output level that results may lead to feedback.

9 PEAK indicator

The peak level of the post-EQ signal is detected, and the PEAK indicator lights red when the level reaches 3 dB below clipping.

For XLR-equipped stereo input channels, both the post-EQ and post-mic-amp peak levels are detected, and the indicator lights red if either of these levels reaches 3 dB below clipping.

10 Equalizer (HIGH, MID and LOW)

This three-band equalizer adjusts the channel's high, mid, and low frequency bands. Setting the knob to the "▼" position produces a flat response in the corresponding band.

Turning the knob to the right boosts the corresponding frequency band, while turning to the left attenuates the band. The monaural channels have MID frequency controls to adjust the midrange frequency band.

The following table shows the EQ type, frequency, and maximum cut/boost for each of the three bands.

Band	Type	Frequency	Maximum Cut/Boost
HIGH	Shelving	10 kHz	±15 dB
MID	Peaking	2.5 kHz*	
LOW	Shelving	100 Hz	

* The monaural channel MID frequency can be adjusted from 250 Hz to 5 kHz. The MID frequency is 2.5 kHz when the MID frequency control is set at the center position.

11 AUX, EFFECT Control

Adjusts the level of the signal sent from the channel to the AUX and EFFECT buses. These knobs should generally be set close to the “▼” position. These controls send either the signal from immediately prior to the channel fader (pre-fader signal) or the signal after the channel fader (post-fader signal) to the corresponding buses. The types of signals sent by the AUX and EFFECT controls on each mixer model are as follows:

• MG206C-USB

AUX1: Pre-fader
 AUX2, 3: Pre-fader/post-fader (determined by the AUX PRE switch 12)
 AUX4: Post-fader

• MG166CX-USB

AUX1: Pre-fader
 AUX2: Pre-fader/post-fader (determined by the AUX PRE switch 12)
 EFFECT: Post-fader

• MG166C-USB

AUX1: Pre-fader
 AUX2: Pre-fader/post-fader (determines by the AUX PRE switch 12)
 AUX3: Post-fader

- NOTE**
- To send the signal to the STEREO bus engage the ON switch (▲).
 - On stereo channels, the L (odd) and R (even) input signals are mixed and sent to the AUX and EFFECT buses.

12 AUX PRE Switch

Selects whether the pre-fader or the post-fader signal is fed to the AUX buses. If the switch is on (▲), the mixer sends the pre-fader signal to the AUX buses, so that AUX outputs are not affected by the channel fader 19. If the switch is off (■) the mixer sends the post-fader signal to the AUX buses.

13 PAN Control PAN/BAL Control BAL Control

The PAN control determines the stereo positioning of the channel signal on the GROUP 1/2 and GROUP 3/4 buses or on the STEREO L/R bus. The BAL control knob sets the balance between left and right channels. Signals input to the L input (odd channel) go to the GROUP 1 or 3 buses or to the STEREO L bus; signals input to the R input (even channel) go to the GROUP 2 or 4 buses or the STEREO R bus.

- NOTE** On channels where this knob provides both PAN and BAL control, the knob operates as a PAN control when input is received via the MIC jack or L (MONO) input only, and as a BAL control when input is received via both L and R inputs.

14 ON Switch

Turn this switch on to send the signal to the buses. The switch lights orange when on.

15 PFL (Pre-Fader Listen) Switch

This switch lets you monitor the channel's pre-fader signal. Press the switch in (▲) so that it lights to turn it on. When the switch is on the channel pre-fader signal is output to the PHONES and MONITOR OUT jacks for monitoring.

16 1-2 Switch

This switch assigns the channel's signal to the GROUP 1/2 bus.

- NOTE** To send the signal to the GROUP 1/2 bus turn the ON switch on (▲).

17 3-4 Switch

This switch assigns the channel's signal to the GROUP 3/4 bus.

- NOTE** To send the signal to the GROUP 3/4 bus turn the ON switch on (▲).

18 ST Switch

This switch assigns the channel's signal to the STEREO L/R bus.

- NOTE** To send the signal to the STEREO bus turn the ON switch on (▲).

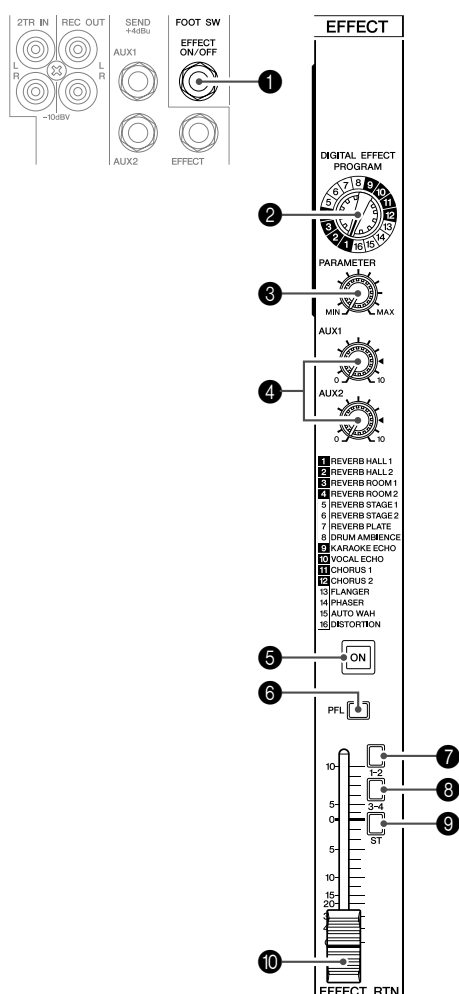
19 Channel Fader

Adjusts the level of the channel signal. Use these faders to adjust the balance between the various channels.

- NOTE** Set the fader sliders for unused channels all the way down to minimize noise.

Digital Effects

* Only the MG166CX-USB has digital effects.



1 FOOT SWITCH Jack

A Yamaha FC5 foot switch (sold separately) can be connected to this jack and used to toggle the digital effects ON and OFF.

2 PROGRAM Dial

Selects one of the 16 internal effects. See page 23 for details about the internal effects.

3 PARAMETER Control

Adjusts the parameter (depth, speed, etc.) for the selected effect. The last value used with each effect type is saved.

NOTE When you change to a different effect type, the mixer automatically restores the value that was previously used with that type (regardless of the current position of the PARAMETER knob). These parameter values are reset when the power is turned off.

4 AUX Control

Adjusts the level of the signal sent from the internal digital effect unit to the AUX buses.

NOTE The signal level sent to the AUX buses is not affected by the EFFECT RTN fader.

5 ON Switch

Switches the internal effect on or off. The internal effect is applied only if this switch is turned on. The switch lights orange when on.

An optional Yamaha FC5 foot switch (sold separately) can be used to toggle the digital effects ON and OFF.

NOTE The ON switch lights and the internal effect unit is active when the power is initially turned on.

6 PFL Switch

Turn this switch on to send the effect signal to the PFL bus.

7 1-2 Switch

This switch assigns the effect signal to the GROUP 1/2 bus.

8 3-4 Switch

This switch assigns the effect signal to the GROUP 3/4 bus.

9 ST Switch

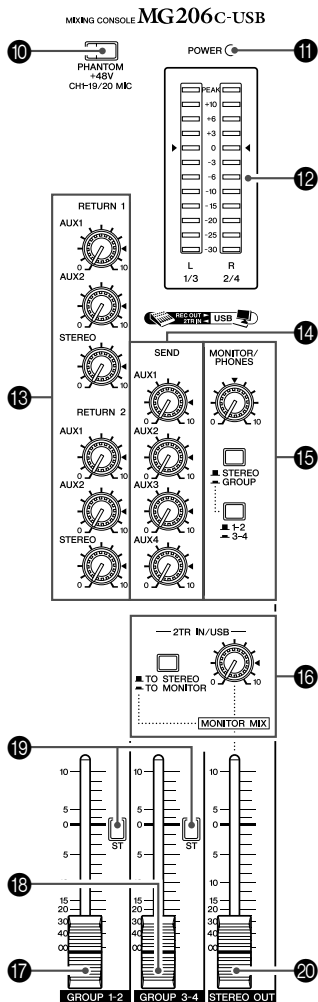
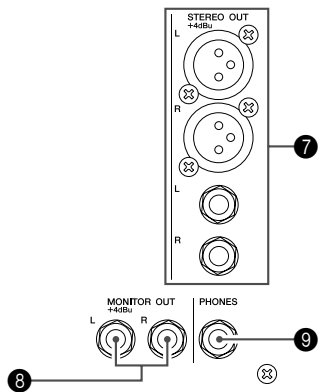
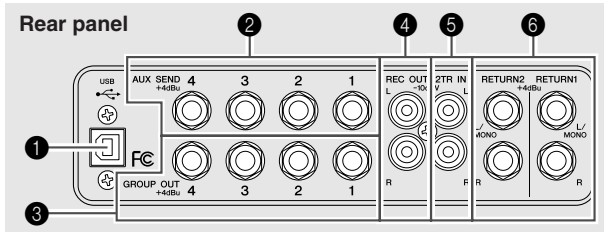
This switch assigns the effect signal to the STEREO L/R bus.

10 EFFECT RTN Fader

Adjusts the signal level sent from the internal digital effect unit to the STEREO L/R bus.

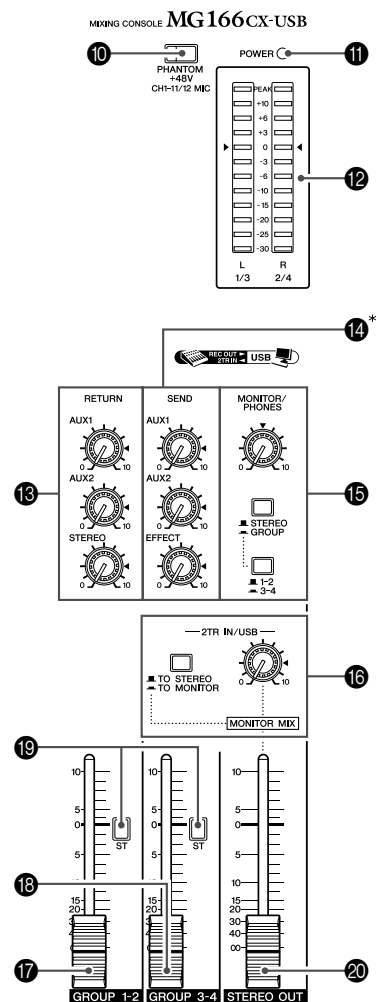
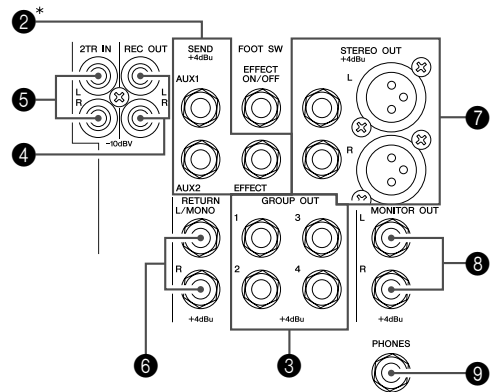
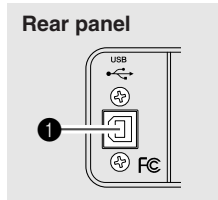
Master Control Section

● MG206C-USB



● MG166CX-USB/MG166C-USB

* ②, ⑭ MG166C-USB :
EFFECT → AUX3



1 USB Connector

Connects to the computer via the included cable. The USB connector outputs the same signal as the REC OUT jacks.



When connecting or disconnecting the USB cable be sure to turn the 2TR IN/USB control all the way down.

2 SEND Jacks (AUX, EFFECT)

These impedance balanced* TRS phone jacks output the signals from the AUX/EFFECT buses. The pre-fader send option should be selected if you are connecting to a monitor system, while the post-fader send option is the best choice when connecting to external signal processors (e.g. effects units).

See “AUX, EFFECT Control” on page 18 for information on the types of signals sent by the AUX and EFFECT controls on each mixer model.

3 GROUP OUT (1 to 4) Jacks

These impedance-balanced* TRS phone jacks output the GROUP 1/2 and 3/4 signals. Use these jacks to connect to the input jacks of an multi-track recorder, external mixer, or other such device.

4 REC OUT (L, R) Jacks

These RCA pin jacks can be connected to an external recorder such as an MD recorder in order to record the same signal that is being output via the STEREO OUT jacks.

NOTE The mixer’s STEREO OUT Master fader has no affect on the signal output via these jacks. Be sure to make appropriate level adjustments at the recording device.

5 2TR IN Jacks

These RCA pin jacks input a stereo sound source. Use these jacks when you want to connect a CD player directly to the mixer.

NOTE

- Select where you want to send the signal using the 2TR IN/USB switch, and adjust the signal level using the 2TR IN/USB control in the Master Control section.
- If signals are input via both the 2TR IN jacks and the USB connector, the signals are mixed.

6 RETURN L (MONO), R Jacks

These are unbalanced phone-jack type line inputs. The signal received by these jacks can be sent to the STEREO L/R bus as well as the AUX1 and AUX2 buses. When a stereo signal is returned a mono mix of the signal is sent to the AUX1 and AUX2 buses. These jacks are typically used to receive the signal returned from an external effect device (reverb, delay, etc.).

NOTE

- These jacks can also be used as an auxiliary stereo input.
- If you connect to the L (MONO) jack only, the mixer will recognize the signal as monaural and will send the identical signal to both the L and R jacks.

7 STEREO OUT (L, R) Jacks

These jacks deliver the mixer’s stereo output. You use these jacks, for example, to connect to the power amplifier driving your main speakers. You can also connect these jacks to a recording device when you wish to record mixer’s stereo output while using the STEREO OUT Master fader 20 for level control.

• XLR jacks

XLR-type balanced output jacks.

• LINE jacks

TRS phone-type balanced output jacks.

8 MONITOR OUT jacks

These are impedance-balanced* TRS phone-type output jacks.

NOTE The signal output by these jacks is determined by the MONITOR switch, the 2TR IN/USB switch, and the PFL switches on the input channels.

9 PHONES Jack

Connect a pair of headphones to this TRS phone-type output jack. The PHONES jack outputs the same signal as the MONITOR OUT jacks.

10 PHANTOM +48 V Switch

This switch toggles phantom power on and off. When the switch is on the mixer supplies +48V phantom power to all channels that have XLR mic input jacks. Turn this switch on when using one or more phantom-powered condenser microphones.

NOTE When this switch is on the mixer supplies DC +48 V power to pins 2 and 3 of all XLR-type MIC INPUT jacks.



• **Be sure to leave this switch off if you do not need phantom power.**

• **When turning the switch on, be sure that only condenser microphones are connected to the XLR input jacks. Devices other than condenser mics may be damaged if connected to the phantom power supply. Note, however, that the switch may be left on when connecting to balanced dynamic microphones.**

• **To prevent damage to speakers, be sure to turn off power amplifiers (or powered speakers) before turning this switch on or off. We also recommend that you turn all output controls (STEREO OUT Master fader, GROUP 1-2 fader, GROUP 3-4 fader, etc.) to their minimum settings before operating the switch to avoid the risk of loud noises that could cause hearing loss or device damage.**

11 POWER Indicator

This indicator lights when the mixer’s power is ON.

* impedance balanced

Since the hot and cold terminals of impedance balanced output jacks have the same impedance, these output jacks are less affected by induced noise.

12 Level Meter

This LED meter displays the level of the signal selected by the MONITOR switch (15), 2TR IN/USB switch (16) and PFL switch. The “0” segment corresponds to the nominal output level. The PEAK indicator lights red when the output reaches the clipping level.

13 RETURN

• AUX1, AUX2 Control

Adjusts the level at which the L/R signal received at the RETURN jacks (L (MONO) and R) is sent to the AUX1 and AUX2 buses.

• STEREO Control

Adjusts the level at which the signal received at the RETURN jacks (L (MONO) and R) is sent to the STEREO L/R bus.

- NOTE**
- If you supply a signal to the RETURN L (MONO) jack only, the mixer sends the same signal to both the L and R STEREO buses.
 - (MG206C-USB) Signals input via the RETURN1 jacks are adjusted using the RETURN1 AUX1, AUX2 and the STEREO controls, and signals input via the RETURN2 jacks are adjusted using the RETURN2 AUX1, AUX2 and the STEREO controls.

14 Master SEND Controls (AUX, EFFECT)

Adjusts the signal level sent to the SEND (AUX, EFFECT) jacks.

- NOTE** If you are using the MG166CX-USB, the Master SEND control (EFFECT) does not affect the level of the signal sent from the EFFECT bus to the internal digital effect processor.

15 MONITOR/PHONES

• MONITOR switches

These switches select the signal sent to the MONITOR OUT jacks, PHONES jack and the level meter from STEREO L/R bus, GROUP 1/2 bus or GROUP 3/4 bus.

- STEREO L/R bus: STEREO (■)
- GROUP 1/2 bus: GROUP (■), 1-2 (■)
- GROUP 3/4 bus: GROUP (■), 3-4 (■)

• MONITOR Control

Controls the level of the signal output to the PHONES jack and the MONITOR OUT jacks.

16 2TR IN/USB

• 2TR IN/USB Switch

If this switch is set to TO MONITOR (■), the signals input via the 2TR IN jacks and the USB connector are sent to the MONITOR OUT jacks, the PHONES jack, and the level meter. If it is set to TO STEREO (■), the signals are sent to the STEREO L/R bus.

• 2TR IN/USB Control

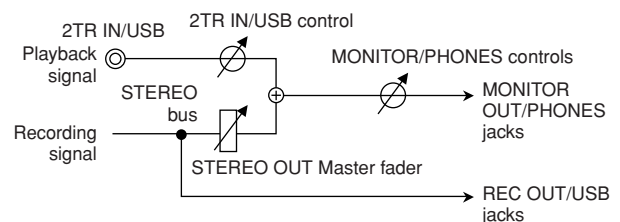
Adjusts the level of the signal sent from the 2TR IN jacks and the USB connector.

The following illustration shows how the switch settings correspond to the signal selection.

Switches			Signals output via the MONITOR/PHONES jacks	
PFL	MONITOR/PHONES	2TR IN/USB		
ON (■)	—	—	PFL	
OFF (■)	STEREO (■)	TO STEREO (■)	STEREO (+ 2TR IN/USB)	
		TO MONITOR (■)	STEREO + 2TR IN/USB [MONITOR MIX] *	
	GROUP (■)	1-2 (■)	TO STEREO (■)	GROUP 1-2
			TO MONITOR (■)	GROUP 1-2 (+ 2TR IN/USB)
		3-4 (■)	TO STEREO (■)	GROUP 3-4
			TO MONITOR (■)	GROUP 3-4 (+ 2TR IN/USB)

* **MONITOR MIX** : When overdubbing, you can adjust the levels of the monitor playback signal and the signal being recorded separately.

MONITOR MIX Signal Flow



- NOTE** If the input channel PFL switch is on (■), then only the PFL output from that channel is sent to the MONITOR OUT jacks, PHONES jack, and level meter.

17 GROUP 1-2 Fader

Adjusts the signal level sent to the GROUP OUT 1/2 jacks.

18 GROUP 3-4 Fader

Adjust the signal level to the GROUP OUT 3/4 jacks.

19 ST Switch

If this switch is on, the signals are sent to the STEREO L/R bus via the GROUP 1-2 fader or GROUP 3-4 fader. The GROUP 1 and 3 signals go to STEREO L and the GROUP 2 and 4 signals go to STEREO R.

20 STEREO OUT Master Fader



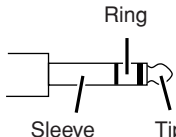
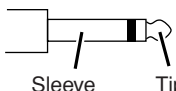
Adjusts the signal level sent to the STEREO OUT jacks.

Digital Effect Program List (Only MG166CX-USB)

No	Program	Parameter	Description
1	REVERB HALL 1	REVERB TIME	Reverb simulating a large space such as a concert hall.
2	REVERB HALL 2	REVERB TIME	
3	REVERB ROOM 1	REVERB TIME	Reverb simulating the acoustics of a small space (room).
4	REVERB ROOM 2	REVERB TIME	
5	REVERB STAGE 1	REVERB TIME	Reverb simulating a large stage.
6	REVERB STAGE 2	REVERB TIME	
7	REVERB PLATE	REVERB TIME	Simulation of a metal-plate reverb unit, producing a more hard-edged sound.
8	DRUM AMBIENCE	REVERB TIME	A short reverb that is ideal for use with kick drum.
9	KARAOKE ECHO	DELAY TIME	Echo designed for karaoke (sing-along) applications.
10	VOCAL ECHO	DELAY TIME	Echo suitable for vocals.
11	CHORUS 1	LFO Frequency	Creates a thick sound by modulating the delay time. The PARAMETER control adjusts the frequency of the LFO* that modulates the delay time.
12	CHORUS 2	LFO Frequency	
13	FLANGER	LFO Frequency	A sweeping pitched effect. The PARAMETER control adjusts the frequency of the LFO* that modulates the delay time.
14	PHASER	LFO Frequency	Phase modulation produces a cyclical phasing effect. The PARAMETER control adjusts the frequency of the LFO* that modulates the delay time.
15	AUTO WAH	LFO Frequency	A wah-wah effect with cyclical filter modulation. The PARAMETER control adjusts the frequency of the LFO* that modulates the delay time.
16	DISTORTION	DRIVE	Adds a sharp-edged distortion to the sound.

* "LFO" stands for Low Frequency Oscillator. An LFO is normally used to modulate another signal, determining the modulation speed and waveform shape.

Jack List

Input and Output Jacks	Polarities	Configurations
MIC INPUT, STEREO OUT	Pin 1: Ground Pin 2: Hot (+) Pin 3: Cold (-)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>INPUT</p>  </div> <div style="text-align: center;"> <p>OUTPUT</p>  </div> </div> <p style="text-align: right;">XLR Jack</p>
LINE INPUT (monaural channels) GROUP OUT, STEREO OUT, MONITOR OUT, AUX SEND, EFFECT SEND (Only MG166CX-USB)*	Tip: Hot (+) Ring: Cold (-) Sleeve: Ground	 <p style="text-align: right;">TRS Phone Jack</p>
INSERT	Tip: Output Ring: Input Sleeve: Ground	
PHONES	Tip: L Ring: R Sleeve: Ground	 <p style="text-align: right;">Phone Jack</p>
RETURN LINE INPUT (stereo channels)	Tip: Hot Sleeve: Ground	

* These jacks will also accept connection to phone plugs. If you use monaural plugs, the connection will be unbalanced.

Troubleshooting

■ While using the MG mixer

Power doesn't come on.	<ul style="list-style-type: none"> <input type="checkbox"/> Is the supplied power adaptor properly plugged into an appropriate AC wall outlet? <input type="checkbox"/> Is the supplied power adaptor properly plugged into the mixer?
No sound.	<ul style="list-style-type: none"> <input type="checkbox"/> Are microphones, external devices, and speakers connected correctly? <input type="checkbox"/> Are the ON switch and ST switch of the channels you are using turned ON? <input type="checkbox"/> Are the channel GAIN controls, Channel fader, STEREO OUT Master fader and GROUP 1-2/3-4 fader set to appropriate levels? <input type="checkbox"/> Are the MONITOR switch and 2TR IN/USB switch set properly? <input type="checkbox"/> Are your speaker cables connected properly, or are they shorted? <input type="checkbox"/> If the above checks do not identify the problem, call Yamaha for service. (Refer to the page 71 for a list of service centers.)
Sound is faint, distorted, or noisy.	<ul style="list-style-type: none"> <input type="checkbox"/> Are the channel GAIN controls, Channel fader, STEREO OUT Master fader and GROUP 1-2/3-4 fader set to appropriate levels? <input type="checkbox"/> Are two different instruments connected to the XLR-type and phone jacks, or to the phone and RCA pin jacks on one channel? Please connect to only one of these jacks on each channel. <input type="checkbox"/> Is the input signal from the connected device set to an appropriate level? <input type="checkbox"/> Are you applying the effects at an appropriate level? <input type="checkbox"/> Are microphones connected to the MIC input jacks? <input type="checkbox"/> If you are using condenser microphones, is the PHANTOM +48 V switch turned ON?
No effect is applied. (If you are using MG166CX-USB)	<ul style="list-style-type: none"> <input type="checkbox"/> Check that the EFFECT control on each channel is correctly adjusted. <input type="checkbox"/> Be sure that the internal effect unit's ON switch is turned ON. <input type="checkbox"/> Be sure that the EFFECT PARAMETER control and EFFECT RTN fader are correctly adjusted.
I want spoken words to be heard more clearly.	<ul style="list-style-type: none"> <input type="checkbox"/> Be sure that the $\sqrt{80}$ switches are ON. <input type="checkbox"/> Adjust the equalizers (HIGH, MID and LOW) on each channel.
I want to output a monitor signal through speakers.	<ul style="list-style-type: none"> <input type="checkbox"/> Connect a powered speaker to the AUX 1, 2 or 3 jack (MG206C-USB), or to the AUX1 or 2 jack (MG166CX-USB/MG166C-USB) and turn the PRE switch on each channel on. Then adjust the output signal by using the AUX controls on each channel and the Master SEND control.
The level meter doesn't show the output signal level.	<ul style="list-style-type: none"> <input type="checkbox"/> Are the PFL switches for the channels that you are not using turned on?

■ While using the MG mixer with Cubase AI 4

<p>The system doesn't work properly.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Are the USB cable and all necessary audio cables properly connected? <input type="checkbox"/> Are you using a USB hub? USB hubs can interfere with proper operation, so try connecting the MG mixer directly to a USB port on the computer. If the computer has multiple USB ports, try a different USB port. <input type="checkbox"/> Are you using other USB devices at the same time? If so, try removing the other device(s) and connecting only the Yamaha USB device.
<p>No sound.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Is the output of your computer operating system muted? <input type="checkbox"/> Do you have several applications running at the same time? Be sure to quit all applications you are not using. <input type="checkbox"/> Is the sound output of your computer operating system assigned properly? <p>Windows:</p> <ol style="list-style-type: none"> 1. From the [START] menu click [Control Panel], then double-click the "Sounds and Audio Devices" icon to open the "Sounds and Audio Devices Properties" dialog window. 2. Click the "Audio" tab. 3. Set "Sound playback: Default device" and "Sound recording: Default device" to "USB Audio CODEC." 4. Click [OK]. <p>Macintosh:</p> <ol style="list-style-type: none"> 1. Select "System Preferences ..." from the Apple menu and then select "Sound" to open the "Sound" dialog window. 2. Click the "Input" tab and under "Choose a device for sound input" select "USB Audio CODEC". 3. Click the "Output" tab and under "Choose a device for sound output" select "USB Audio CODEC". <ul style="list-style-type: none"> <input type="checkbox"/> Is the sound output of the Cubase AI 4 application assigned properly? For setup details refer to page 7 of the Quick Guide.
<p>The recorded sound is too low in level.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Is the computer's output level setting too low? We recommend that you set the computer output to the maximum level and mute the computer's internal speaker. <p>Windows:</p> <ol style="list-style-type: none"> 1. From the [START] menu click [Control Panel], then double-click the "Sounds and Audio Devices" icon to open the "Sounds and Audio Devices Properties" dialog window. 2. Click the "Volume" tab. 3. Set "Device volume" to "High." 4. Click the "Sound" tab. 5. Select "No sound" in the "Sound scheme." <p>Macintosh:</p> <ol style="list-style-type: none"> 1. Select [System Preferences ...] from the Apple menu and then select "Sound" to open the "Sound" dialog window. 2. Click the "Output" tab and set the volume slider at the bottom of the window to its maximum level. 3. Click the "Sound Effect" tab and set the volume slider of the "Alert volume" slider to its minimum level. <ul style="list-style-type: none"> <input type="checkbox"/> Have you connected or disconnected the USB cable while Cubase AI 4 is running? Doing so can sometimes cause the Windows output level to be reset to its default level. Check and raise the output level if necessary.

<p>The sound is intermittent or distorted.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Does the computer you are using meet the listed system requirements? Refer to “Computer System Requirements” on page 6 for details. <input type="checkbox"/> Are any other applications, device drivers, or USB devices (scanners, printers, etc.) running at the same time? Be sure to quit all applications you are not using. <input type="checkbox"/> Are you playing back a large number of audio tracks? The number of tracks you can play at the same time will depend on the performance of the computer you are using. You may experience intermittent playback if you exceed your computer’s capabilities. <input type="checkbox"/> Are you recording or playing long continuous sections of audio? The audio data processing capabilities of your computer will depend on a number of factors including CPU speed and access to external devices. <p>On Windows computers, changing some settings as outlined below can improve performance.</p> <ol style="list-style-type: none"> 1. Click [Control Panel] from the [START] menu, and double-click the “Sounds and Audio Devices” icon to open the “Sounds and Audio Devices Properties” dialog window. 2. Click the “Volume” tab and click “Advanced” in “Speaker settings.” The “Advanced Audio Properties” dialog window will open. 3. Click the “Performance” tab. Set “Hardware acceleration” to “Full”, and “Sample rate conversion quality” to “Good.” <p>Don’t change these settings if you are not familiar with your computer’s operating system.</p> <p>Check that the file system is set properly, and make sure that you have a plenty of free memory (more than 128 megabytes). If the wave files you are recording or playing are not too large, changing the virtual memory settings can sometimes improve audio performance.</p> <p>In some cases it might be necessary to update your hard disk controller, device drivers, or BIOS. Refer to your computer’s support center or support page on the web for more information.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Try adding memory. Adding more RAM memory can significantly increase your computer’s audio performance. Refer to your computer’s owner’s manual for information on installing and setting up extra memory.
<p>There is a delay when playing a software synthesizer via a MIDI keyboard (latency).</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Check the URL listed below for the latest information. <http://www.yamahaproaudio.com/>

Specifications

MG206C-USB

Electrical Specifications

		MIN	TYP	MAX	UNIT	
Frequency Response	STEREO OUT	GAIN: min (CHs 1–19/20) 20 Hz–20 kHz Nominal output level @1 kHz Input: CHs 1 to 19/20, RETURN, 2TR IN	-3.0	0.0	1.0	dB
	GROUP OUT					
	AUX SEND					
	MONITOR OUT, REC OUT					
Total Harmonic Distortion (THD + N)	STEREO OUT	+14 dBu @ 20 Hz–20 kHz, Input GAIN Control at minimum			0.1	%
Hum & Noise	CH INPUT 1–12 MIC	EIN (Equivalent Input Noise): $R_s = 150 \Omega$, GAIN: maximum				-128
	STEREO OUT	STEREO OUT, GROUP 1-2 fader and GROUP 3-4 fader at nominal level and all channels' ST and 1-2, 3-4 switches off.				-88
	GROUP OUT					-81
	AUX SEND	Master/AUX control at nominal level and all CH AUX controls at minimum.				-64
	STEREO OUT	STEREO OUT, GROUP 1-2, GROUP 3-4 faders and one CH fader at nominal level.				-98
Crosstalk (1 kHz)	STEREO OUT	Residual Output Noise				-70
	GROUP OUT					-70
Maximum voltage gain (1 kHz)	$R_s = 150 \Omega$ INPUT GAIN: maximum All faders and controls are maximum when measured. PAN/BAL: panned hard left or hard right	Adjacent Input	CHs 1–12			-70
		Input to Output	STEREO L/R, CHs 1–12, PAN: panned hard left or right			-70
		MIC to CH INSERT OUT		60		
		MIC to STEREO OUT		84		
		MIC to GROUP OUT		94		
		MIC to GROUP to ST		62.2		
		MIC to REC OUT		94		
		MIC to MONITOR OUT, ST TO MONITOR		83		
		MIC to PHONES OUT		76		
		MIC to AUX SEND PRE		86		
		MIC to AUX SEND POST		58		
		CH 17/18, 19/20 LINE to STEREO OUT		47		
		CH 17/18, 19/20 LINE to GROUP OUT		57		
		CH 17/18, 19/20 LINE to AUX SEND PRE		16		
CH 17/18, 19/20 LINE to AUX SEND POST		9				
Phantom Voltage	MIC	$R_s = 150 \Omega$	RETURN to STEREO OUT			27.8
		$R_s = 600 \Omega$	RETURN to AUX SEND			48
			2TR IN to STEREO OUT			V

General Specifications

USB Audio		Input/Output: 44.1/48 kHz
Input HPF		80 Hz, 12 dB/oct
Input equalization	CHs 1–12	HIGH: 10 kHz (shelving) MID: 250 Hz–5 kHz (peaking) LOW: 100 Hz (shelving)
	CH 13/14–19/20	HIGH: 10 kHz (shelving) MID: 2.5 kHz (peaking) LOW: 100 Hz (shelving)
PEAK Indicator		Red LED turns on when post EQ signal (either post MIC HA or post EQ signal for CHs 13/14–19/20) reaches -3 dB below clipping (+17 dBu).
LED Level Meter	Pre MONITOR Level STEREO/GROUP/PFL bus	2x12 points LED meter (PEAK, +10, +6, +3, 0, -3, -6, -10, -15, -20, -25, -30 dB) PEAK lights if the signal level reaches 3 dB below the clipping level.
Power Supply Adaptor	PA-30	AC 35 VCT, 1.4 A, Cable Length = 3.6 m
Power Consumption		40 W
Dimensions (W x H x D)		478 mm x 102 mm x 496 mm
Net Weight		6.0 kg

All faders are nominal if not specified.
Output impedance of signal generator: 150 ohms

■ Analog Input Specifications

Input Connectors	Gain	Input Impedance	Appropriate Impedance	Sensitivity *	Nominal Level	Max. before Clipping	Connector Specifications
CH INPUT MIC (CHs 1–12)	-60 dB	3kΩ	50–600Ω Mics	-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-31 type (balanced [1 = GND, 2 = HOT, 3 = COLD])
	-16 dB			-36 dBu (12.3 mV)	-16 dBu (123 mV)	+4 dBu (1.23 V)	
CH INPUT LINE (CHs 1–12)	-34 dB	10kΩ	600Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	TRS phone jack (balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
	+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH MIC INPUT (CHs 13/14–19/20)	-60 dB	3kΩ	50–600Ω Mics	-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-31 type (balanced [1 = GND, 2 = HOT, 3 = COLD])
	-16 dB			-36 dBu (12.3 mV)	-16 dBu (123 mV)	-6 dBu (389 mV)	
ST CH LINE INPUT (CHs 13/14, 15/16)	-34 dB	10kΩ	600Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	Phone jack (unbalanced)
	+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH INPUT (CHs 17/18, 19/20)	-34 dB	10kΩ	600Ω Lines	-54 dB (1.55 mV)	-34 dB (15.5 mV)	-14 dB (155 mV)	Phone jack (unbalanced) RCA pin jack
	+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
CH INSERT IN (CHs 1–12)	—	10kΩ	600Ω Lines	-20 dBu (77.5 mV)	0 dBu (0.775 V)	+20 dBu (7.75 V)	TRS phone Jack (unbalanced [Tip = Out, Ring = In, Sleeve = GND])
RETURN (L, R)	—	10kΩ	600Ω Lines	-12 dBu (195 mV)	+4 dBu (1.23 V)	+24 dBu (12.3 V)	Phone jack (unbalanced)
2TR IN (L, R)	—	10kΩ	600Ω Lines	-26 dBV (50.1 mV)	-10dBV (0.316V)	+10dBV (3.16 V)	RCA pin jack

Where 0 dBu = 0.775 Vrms and 0 dBV = 1 Vrms

* Sensitivity : 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 the maximum level. (All faders and level controls are at their maximum position.)

■ Analog Output Specifications

Output Connectors	Output Impedance	Appropriate Impedance	Nominal Level	Max. before clipping	Connector Specifications
STEREO OUT (L, R)	75Ω	600Ω Lines	+4dBu (1.23 V)	+24 dBu (12.3 V)	XLR-3-32 type (balanced [1 = GND, 2 = HOT, 3 = COLD]) TRS phone jack (balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
GROUP OUT (1–4)	150Ω	10kΩ Lines	+4dBu (1.23 V)	+20 dBu (7.75 V)	TRS phone jack (impedance balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
AUX SEND (1–4)	150Ω	10kΩ Lines	+4dBu (1.23 V)	+20 dBu (7.75 V)	TRS phone jack (impedance balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
CH INSERT OUT (CHs 1–12)	75Ω	10kΩ Lines	0 dBu (0.775 V)	+20 dBu (7.75 V)	TRS phone jack (unbalanced [Tip = Out, Ring = In, Sleeve = GND])
REC OUT (L, R)	600Ω	10kΩ Lines	-10 dBV (0.316 V)	+10 dBV (3.16 V)	RCA pin jack
MONITOR OUT (L, R)	150Ω	10kΩ Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	TRS phone jack (impedance balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
PHONES OUT	100Ω	40Ω Phones	3 mW	75 mW	TRS phone jack

Where 0 dBu = 0.775 Vrms and 0 dBV = 1 Vrms

■ Digital Input/Output Specifications

Connector	Format	Data Length	Connector Specification
USB	USB Audio 1.1	16 bit	USB B type

MG166CX-USB/MG166C-USB

Electrical Specifications

		MIN	TYP	MAX	UNIT		
Frequency Response	STEREO OUT	GAIN: min (CHs 1–11/12) 20 Hz–20 kHz Nominal output level @1 kHz Input: CHs 1 to 15/16, RETURN, 2TR IN	-3.0	0.0	1.0	dB	
	GROUP OUT						
	EFFECT/AUX* SEND						
	MONITOR OUT, REC OUT						
Total Harmonic Distortion (THD + N)	STEREO OUT	+14 dBu @ 20 Hz–20 kHz, Input GAIN Control at minimum			0.1	%	
Hum & Noise	CH INPUT 1–8 MIC	EIN (Equivalent Input Noise): $R_s = 150 \Omega$, GAIN: maximum				-128	
	STEREO OUT	STEREO OUT, GROUP 1-2 fader and GROUP 3-4 fader at nominal level and all channels' ST and 1-2, 3-4 switches off.				-88	
	GROUP OUT						
	EFFECT/AUX* SEND	Master EFFECT/AUX* control at nominal level and all CH EFFECT/AUX* controls at minimum.				-81	
	STEREO OUT	STEREO OUT, GROUP 1-2, GROUP 3-4 faders and one CH fader at nominal level.				-64	
Crosstalk (1 kHz)	GROUP OUT	Residual Output Noise				-98	
	Adjacent Input	CHs 1–8				-70	
Maximum voltage gain (1 kHz)	$R_s = 150 \Omega$ INPUT GAIN: maximum All faders and controls are maximum when measured. PAN/BAL: panned hard left or hard right	STEREO L/R, CHs 1–8, PAN: panned hard left or right				-70	
		MIC to CH INSERT OUT				60	
		MIC to STEREO OUT					84
		MIC to GROUP OUT					94
		MIC to GROUP to ST					62.2
		MIC to REC OUT					94
		MIC to MONITOR OUT, ST TO MONITOR					83
		MIC to PHONES OUT					76
		MIC to AUX SEND PRE					86
		MIC to AUX SEND POST, EFFECT* SEND					58
		CH 9/10, 11/12 LINE to STEREO OUT					47
		CH 9/10, 11/12 LINE to GROUP OUT					57
		CH 9/10, 11/12 LINE to AUX SEND POST, EFFECT* SEND					34
		CH 13/14, 15/16 to STEREO OUT					16
CH 13/14, 15/16 to GROUP OUT					9		
Phantom Voltage	MIC	RETURN to STEREO OUT				27.8	
		RETURN to EFFECT/AUX* SEND				48	
		2TR IN to STEREO OUT				27.8	
		no load				V	

General Specifications

USB Audio		Input/Output: 44.1/48 kHz
Input HPF	CHs 1–11/12	80 Hz, 12 dB/oct
Input equalization	CHs 1–8	HIGH: 10 kHz (shelving) MID: 250 Hz–5 kHz (peaking) LOW: 100 Hz (shelving)
	CH 9/10–15/16	HIGH: 10 kHz (shelving) MID: 2.5 kHz (peaking) LOW: 100 Hz (shelving)
PEAK Indicator		Red LED turns on when post EQ signal (either post MIC HA or post EQ signal for CHs 9/10–15/16) reaches -3 dB below clipping (+17 dBu).
Internal Digital Effect (Only MG166CX-USB)		16 PROGRAM, PARAMETER control Foot Switch (Digital Effect On/Off)
LED Level Meter	Pre MONITOR Level STEREO/GROUP/PFL bus	2x12 points LED meter (PEAK, +10, +6, +3, 0, -3, -6, -10, -15, -20, -25, -30 dB) PEAK lights if the signal level reaches 3 dB below the clipping level.
Power Supply Adaptor	PA-30	AC 35 VCT, 1.4 A, Cable Length = 3.6 m
Power Consumption		35 W (MG166CX-USB), 30 W (MG166C-USB)
Dimensions (W x H x D)		478 mm x 102 mm x 496 mm
Net Weight		5.5 kg (MG166CX-USB), 5.3 kg (MG166C-USB)

All faders are nominal if not specified.
Output impedance of signal generator: 150 ohms

* MG166CX-USB: AUX1, 2, EFFECT
MG166C-USB: AUX1, 2, 3

■ Analog Input Specifications

Input Connectors	Gain	Input Impedance	Appropriate Impedance	Sensitivity *	Nominal Level	Max. before Clipping	Connector Specifications
CH INPUT MIC (CHs 1–8)	-60 dB	3k Ω	50–600 Ω Mics	-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-31 type (balanced [1 = GND, 2 = HOT, 3 = COLD])
	-16 dB			-36 dBu (12.3 mV)	-16 dBu (123 mV)	+4 dBu (1.23 V)	
CH INPUT LINE (CHs 1–8)	-34 dB	10k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	TRS phone jack (balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
	+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH MIC INPUT (CHs 9/10, 11/12)	-60 dB	3k Ω	50–600 Ω Mics	-80 dBu (0.078 mV)	-60 dBu (0.775 mV)	-40 dBu (7.75 mV)	XLR-3-31 type (balanced [1 = GND, 2 = HOT, 3 = COLD])
	-16 dB			-36 dBu (12.3 mV)	-16 dBu (123 mV)	-6 dBu (389 mV)	
ST CH LINE INPUT (CHs 9/10, 11/12)	-34 dB	10k Ω	600 Ω Lines	-54 dBu (1.55 mV)	-34 dBu (15.5 mV)	-14 dBu (155 mV)	Phone jack (unbalanced)
	+10 dB			-10 dBu (245 mV)	+10 dBu (2.45 V)	+30 dBu (24.5 V)	
ST CH INPUT (CHs 13/14, 15/16)	—	10k Ω	600 Ω Lines	-30 dBu (24.5 mV)	-10 dBu (245 mV)	+10 dBu (2.45 V)	Phone jack (unbalanced) RCA pin jack
CH INSERT IN (CHs 1–8)	—	10k Ω	600 Ω Lines	-20 dBu (77.5 mV)	0 dBu (0.775 V)	+20 dBu (7.75 V)	TRS phone Jack (unbalanced [Tip = Out, Ring = In, Sleeve = GND])
RETURN (L, R)	—	10k Ω	600 Ω Lines	-12 dBu (195 mV)	+4 dBu (1.23 V)	+24 dBu (12.3 V)	Phone jack (unbalanced)
2TR IN (L, R)	—	10k Ω	600 Ω Lines	-26 dBV (50.1 mV)	-10dBV (0.316V)	+10dBV (3.16 V)	RCA pin jack

Where 0 dBu = 0.775 Vrms and 0 dBV = 1 Vrms

* Sensitivity : 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 the maximum level. (All faders and level controls are at their maximum position.)

■ Analog Output Specifications

Output Connectors	Output Impedance	Appropriate Impedance	Nominal Level	Max. before clipping	Connector Specifications
STEREO OUT (L, R)	75 Ω	600 Ω Lines	+4dBu (1.23 V)	+24 dBu (12.3 V)	XLR-3-32 type (balanced [1 = GND, 2 = HOT, 3 = COLD]) TRS phone jack (balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
GROUP OUT (1–4)	150 Ω	10k Ω Lines	+4dBu (1.23 V)	+20 dBu (7.75 V)	TRS phone jack (impedance balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
EFFECT/AUX* SEND	150 Ω	10k Ω Lines	+4dBu (1.23 V)	+20 dBu (7.75 V)	TRS phone jack (impedance balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
CH INSERT OUT (CHs 1–8)	75 Ω	10k Ω Lines	0 dBu (0.775 V)	+20 dBu (7.75 V)	TRS phone jack (unbalanced [Tip = Out, Ring = In, Sleeve = GND])
REC OUT (L, R)	600 Ω	10k Ω Lines	-10 dBV (0.316 V)	+10 dBV (3.16 V)	RCA pin jack
MONITOR OUT (L, R)	150 Ω	10k Ω Lines	+4 dBu (1.23 V)	+20 dBu (7.75 V)	TRS phone jack (impedance balanced [Tip = HOT, Ring = COLD, Sleeve = GND])
PHONES OUT	100 Ω	40 Ω Phones	3 mW	75 mW	TRS phone jack

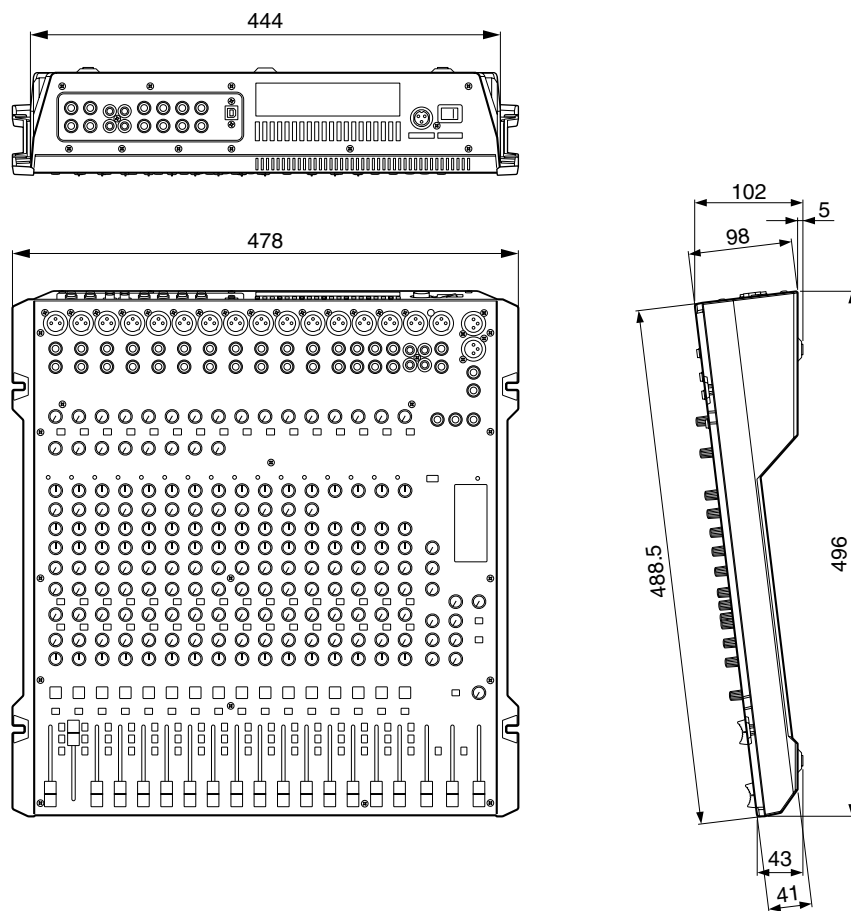
Where 0 dBu = 0.775 Vrms and 0 dBV = 1 Vrms

* MG166CX-USB: AUX1, 2, EFFECT
MG166C-USB: AUX1, 2, 3

■ Digital Input/Output Specifications

Connector	Format	Data Length	Connector Specification
USB	USB Audio 1.1	16 bit	USB B type

■ Dimensional Diagrams (MG206C-USB/MG166CX-USB/MG166C-USB)



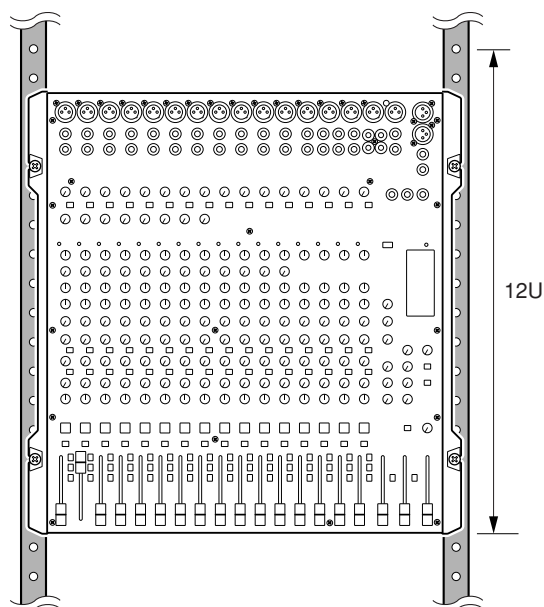
Unit: mm

■ Rack Mounting

To mount the MG mixer, it requires 12U of rack space.



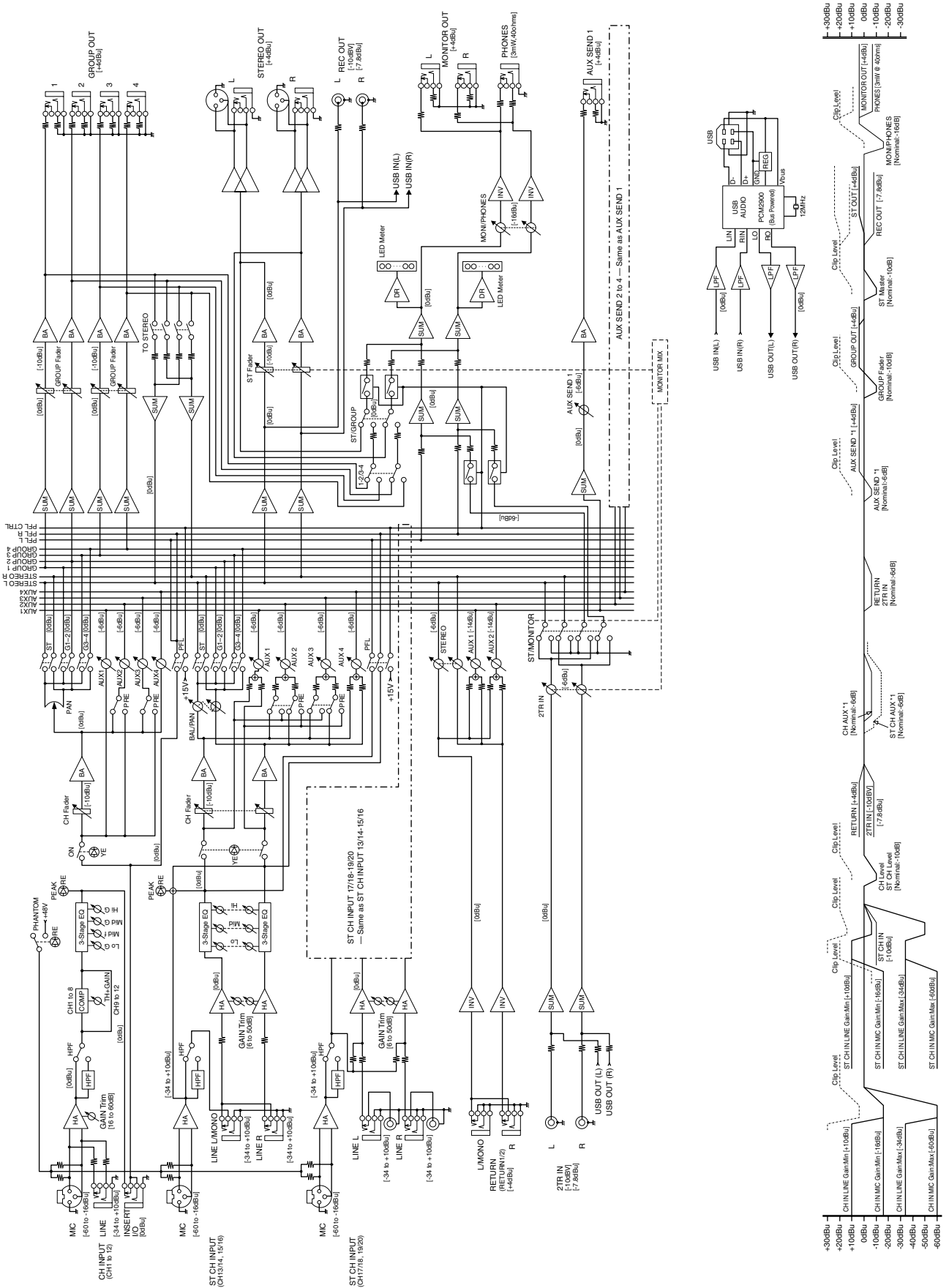
If the MG mixer is to be mounted with devices that tend to generate heat, such as power amplifiers, be sure to install ventilation panels to prevent high temperatures from developing inside the mixer.



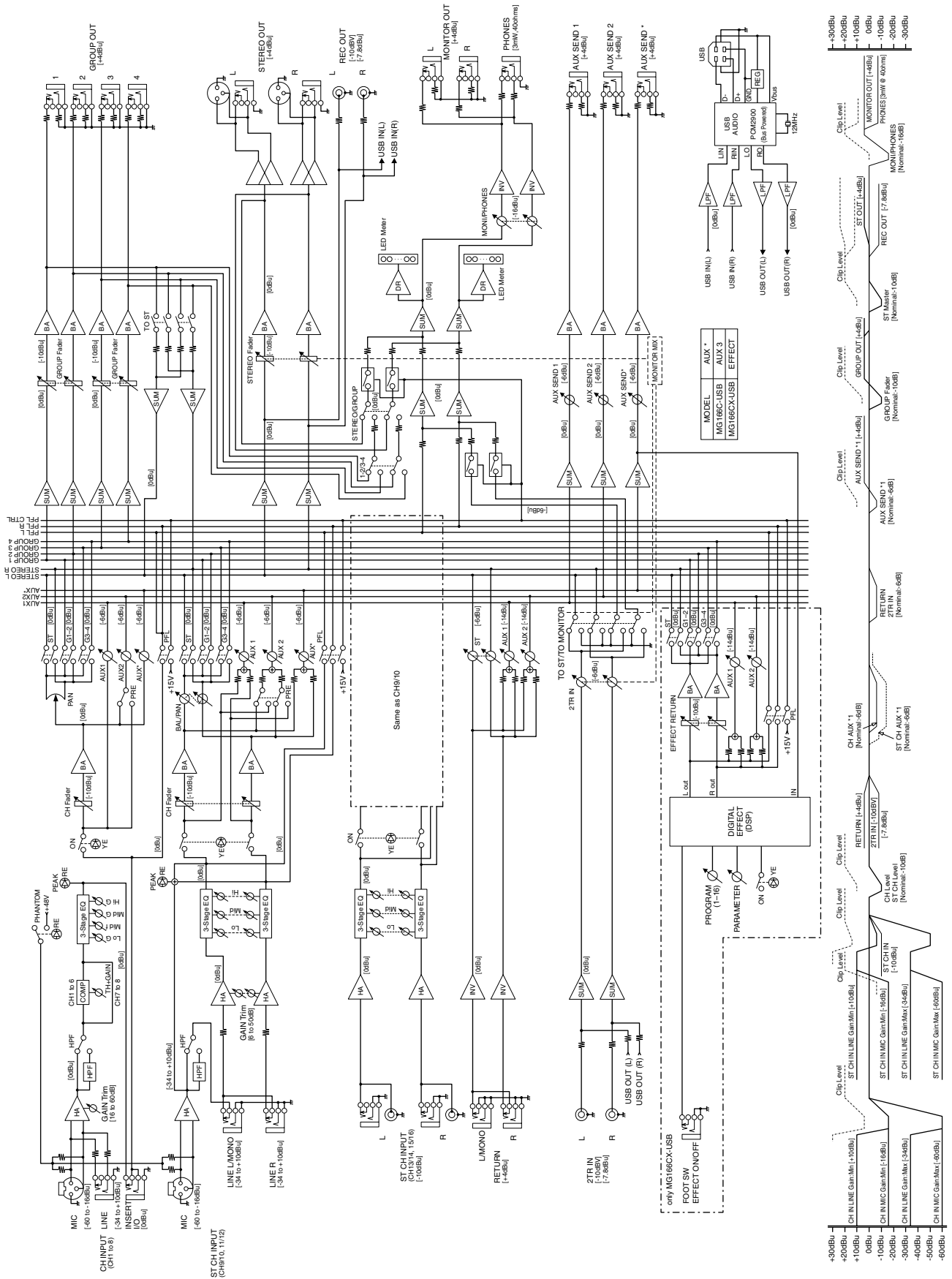
* 12U (Approx. 534mm)

* Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

■ Block Diagram and Level Diagram (MG206C-USB)



■ Block Diagram and Level Diagram (MG166CX-USB/MG166C-USB)



About the accessory disk

SPECIAL NOTICE

- The software included in the accessory disk and the copyrights thereof are under exclusive ownership by Steinberg Media Technologies GmbH.
- Use of the software and this manual is governed by the license agreement which the purchaser fully agrees to upon breaking the seal of the software packaging. (Please read carefully the Software Licensing Agreement at the end of this manual before installing the application.)
- Copying of the software or reproduction of this manual in whole or in part by any means is expressly forbidden without the written consent of the manufacturer.
- Yamaha makes no representations or warranties with regard to the use of the software and documentation and cannot be held responsible for the results of the use of this manual and the software.
- This disk is NOT for audio/visual purpose. Do not attempt to play the disk on an audio/visual CD/DVD player. Doing so may result in irreparable damage to your player.
- For information about the minimum system requirements and latest information of the software in the disk, check the web site below.
<<http://www.yamahasyth.com/>>
- Note that Yamaha does not offer technical support for the DAW software in the accessory disk.

About the DAW software in the accessory disk

The accessory disk contains DAW software both for Windows and Macintosh.

- NOTE**
- In order to install the software in the accessory disk, you'll need a working Internet connection. Make sure to fill in all required fields when installing.
 - If you are using a Macintosh computer, double-click the "****.mpkg" file to start installation.

For information about the minimum system requirements and latest information on the software in the disk, check the web site below.

<<http://www.yamahasyth.com/>>

About software support

Support for the DAW software in the accessory disk is provided by Steinberg on its website at the following address. <http://www.steinberg.net>

You can visit the Steinberg site also via the Help menu of the included DAW software. (The Help menu also includes the PDF manual and other information on the software.)

ATTENTION

SOFTWARE LICENSE AGREEMENT

PLEASE READ THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT") CAREFULLY BEFORE USING THIS SOFTWARE. YOU ARE ONLY PERMITTED TO USE THIS SOFTWARE PURSUANT TO THE TERMS AND CONDITIONS OF THIS AGREEMENT. THIS AGREEMENT IS BETWEEN YOU (AS AN INDIVIDUAL OR LEGAL ENTITY) AND YAMAHA CORPORATION ("YAMAHA").

BY BREAKING THE SEAL OF THIS PACKAGE YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE. IF YOU DO NOT AGREE WITH THE TERMS, DO NOT INSTALL, COPY, OR OTHERWISE USE THIS SOFTWARE.

THIS AGREEMENT PROVIDES YOUR USE-CONDITIONS ABOUT THE "DAW" SOFTWARE OF STEINBERG MEDIA TECHNOLOGIES GMBH("STEINBERG") WHICH IS BUNDLED WITH THIS PRODUCT. SINCE THE END-USER SOFTWARE LICENSE AGREEMENT (EUSLA) SHOWED ON YOUR PC-DISPLAY IN YOUR INSTALLING THE "DAW" SOFTWARE IS REPLACED BY THIS AGREEMENT, YOU SHOULD DISREGARD THE EUSLA. THAT IS, IN THE INSTALLING PROCESS, YOU SHOULD SELECT "AGREE" WITH THE EUSLA, WITHOUT YOUR JUDGMENT THERETO, SO AS TO PROCEED TO THE NEXT PAGE.

1. GRANT OF LICENSE AND COPYRIGHT

Yamaha hereby grants you the right to use one copy of the software program(s) and data ("SOFTWARE") accompanying this Agreement. The term SOFTWARE shall encompass any updates to the accompanying software and data. The SOFTWARE is owned by STEINBERG, and is protected by relevant copyright laws and all applicable treaty provisions. Yamaha has acquired the sublicense right to license you to use the SOFTWARE. While you are entitled to claim ownership of the data created with the use of SOFTWARE, the SOFTWARE will continue to be protected under relevant copyrights.

- **You may** use the SOFTWARE on a **single computer**.
- **You may** make one copy of the SOFTWARE in machine-readable form for backup purposes only, if the SOFTWARE is on media where such backup copy is permitted. On the backup copy, you must reproduce Yamaha's copyright notice and any other proprietary legends that were on the original copy of the SOFTWARE.
- **You may** permanently transfer to a third party all your rights in the SOFTWARE, provided that you do not retain any copies and the recipient reads and agrees to the terms of this Agreement.

2. RESTRICTIONS

- **You may not** engage in reverse engineering, disassembly, decompilation or otherwise deriving a source code form of the SOFTWARE by any method whatsoever.
- **You may not** reproduce, modify, change, rent, lease, or distribute the SOFTWARE in whole or in part, or create derivative works of the SOFTWARE.
- **You may not** electronically transmit the SOFTWARE from one computer to another or share the SOFTWARE in a network with other computers.
- **You may not** use the SOFTWARE to distribute illegal data or data that violates public policy.
- **You may not** initiate services based on the use of the SOFTWARE without permission by Yamaha Corporation.

Copyrighted data, including but not limited to MIDI data for songs, obtained by means of the SOFTWARE, are subject to the following restrictions which you must observe.

- Data received by means of the SOFTWARE may not be used for any commercial purposes without permission of the copyright owner.
- Data received by means of the SOFTWARE may not be duplicated, transferred, or distributed, or played back or performed for listeners in public without permission of the copyright owner.
- The encryption of data received by means of the SOFTWARE may not be removed nor may the electronic watermark be modified without permission of the copyright owner.

3. TERMINATION

This Agreement becomes effective on the day that you receive the SOFTWARE and remains effective until terminated. If any copyright law or provisions of this Agreement is violated, the Agreement shall terminate automatically and immediately without notice from Yamaha. Upon such termination, you must immediately destroy the licensed SOFTWARE, any accompanying written documents and all copies thereof.

4. LIMITED WARRANTY ON MEDIA

As to SOFTWARE sold on tangible media, Yamaha warrants that the tangible media on which the SOFTWARE is recorded will be free from defects in materials and workmanship under normal use for a period of fourteen (14) days from the date of receipt, as evidenced by a copy of the receipt. Yamaha's entire liability and your exclusive remedy will be replacement of the defective media if it is returned to Yamaha or an authorized Yamaha dealer within fourteen days with a copy of the receipt. Yamaha is not responsible for replacing media damaged by accident, abuse or misapplication. TO THE FULLEST EXTENT PERMITTED BY LAW, YAMAHA EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES ON THE TANGIBLE MEDIA, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

5. DISCLAIMER OF WARRANTY ON SOFTWARE

You expressly acknowledge and agree that use of the SOFTWARE is at your sole risk. The SOFTWARE and related documentation are provided "AS IS" and without warranty of any kind. NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, YAMAHA EXPRESSLY DISCLAIMS ALL WARRANTIES AS TO THE SOFTWARE, EXPRESS, AND IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS. SPECIFICALLY, BUT WITHOUT LIMITING THE FOREGOING, YAMAHA DOES NOT WARRANT THAT THE SOFTWARE WILL MEET YOUR REQUIREMENTS, THAT THE OPERATION OF THE SOFTWARE WILL BE UNINTERRUPTED OR ERROR-FREE, OR THAT DEFECTS IN THE SOFTWARE WILL BE CORRECTED.

6. LIMITATION OF LIABILITY

YAMAHA'S ENTIRE OBLIGATION HEREUNDER SHALL BE TO PERMIT USE OF THE SOFTWARE UNDER THE TERMS HEREOF. IN NO EVENT SHALL YAMAHA BE LIABLE TO YOU OR ANY OTHER PERSON FOR ANY DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES, LOST PROFITS, LOST DATA OR OTHER DAMAGES ARISING OUT OF THE USE, MISUSE OR INABILITY TO USE THE SOFTWARE, EVEN IF YAMAHA OR AN AUTHORIZED DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In no event shall Yamaha's total liability to you for all damages, losses and causes of action (whether in contract, tort or otherwise) exceed the amount paid for the SOFTWARE.

7. GENERAL

This Agreement shall be interpreted according to and governed by Japanese law without reference to principles of conflict of laws. Any dispute or procedure shall be heard before the Tokyo District Court in Japan. If for any reason a court of competent jurisdiction finds any portion of this Agreement to be unenforceable, the remainder of this Agreement shall continue in full force and effect.

8. COMPLETE AGREEMENT

This Agreement constitutes the entire agreement between the parties with respect to use of the SOFTWARE and any accompanying written materials and supersedes all prior or contemporaneous understandings or agreements, written or oral, regarding the subject matter of this Agreement. No amendment or revision of this Agreement will be binding unless in writing and signed by a fully authorized representative of Yamaha.

For details of products, please contact your nearest Yamaha representative or the authorized distributor listed below.

Pour plus de détails sur les produits, veuillez-vous adresser à Yamaha ou au distributeur le plus proche de vous figurant dans la liste suivante.

Die Einzelheiten zu Produkten sind bei Ihrer unten aufgeführten Niederlassung und bei Yamaha Vertragshändlern in den jeweiligen Bestimmungsländern erhältlich.

Para detalles sobre productos, contacte su tienda Yamaha más cercana o el distribuidor autorizado que se lista debajo.

NORTH AMERICA

CANADA

Yamaha Canada Music Ltd.
135 Milner Avenue, Scarborough, Ontario,
M1S 3R1, Canada
Tel: 416-298-1311

U.S.A.

Yamaha Corporation of America
6600 Orangethorpe Ave., Buena Park, Calif. 90620,
U.S.A.
Tel: 714-522-9011

CENTRAL & SOUTH AMERICA

MEXICO

Yamaha de México S.A. de C.V.
Calz. Javier Rojo Gómez #1149,
Col. Guadalupe del Moral
C.P. 09300, México, D.F., México
Tel: 55-5804-0600

BRAZIL

Yamaha Musical do Brasil Ltda.
Rua Joaquim Floriano, 913 - 4º andar, Itaim Bibi,
CEP 04534-013 Sao Paulo, SP. BRAZIL
Tel: 011-3704-1377

ARGENTINA

Yamaha Music Latin America, S.A.
Sucursal de Argentina
Viamonte 1145 Piso2-B 1053,
Buenos Aires, Argentina
Tel: 1-4371-7021

PANAMA AND OTHER LATIN AMERICAN COUNTRIES/ CARIBBEAN COUNTRIES

Yamaha Music Latin America, S.A.
Torre Banco General, Piso 7, Urbanización Marbella,
Calle 47 y Aquilino de la Guardia,
Ciudad de Panamá, Panamá
Tel: +507-269-5311

EUROPE

THE UNITED KINGDOM

Yamaha-Kemble Music (U.K.) Ltd.
Sherbourne Drive, Tilbrook, Milton Keynes,
MK7 8BL, England
Tel: 01908-366700

GERMANY

Yamaha Music Central Europe GmbH
Siemensstraße 22-34, 25462 Rellingen, Germany
Tel: 04101-3030

SWITZERLAND/LIECHTENSTEIN

Yamaha Music Central Europe GmbH,
Branch Switzerland
Seefeldstrasse 94, 8008 Zürich, Switzerland
Tel: 01-383 3990

AUSTRIA

Yamaha Music Central Europe GmbH,
Branch Austria
Schleiergasse 20, A-1100 Wien, Austria
Tel: 01-60203900

CZECH REPUBLIC/SLOVAKIA/ HUNGARY/SLOVENIA

Yamaha Music Central Europe GmbH,
Branch Austria, CEE Department
Schleiergasse 20, A-1100 Wien, Austria
Tel: 01-602039025

POLAND

Yamaha Music Central Europe GmbH
Sp.z o.o. Oddział w Polsce
ul. 17 Stycznia 56, PL-02-146 Warszawa, Poland
Tel: 022-868-07-57

THE NETHERLANDS/ BELGIUM/LUXEMBOURG

Yamaha Music Central Europe GmbH,
Branch Benelux
Clarissenhof 5-b, 4133 AB Vianen, The Netherlands
Tel: 0347-358 040

FRANCE

Yamaha Musique France
BP 70-77312 Marne-la-Vallée Cedex 2, France
Tel: 01-64-61-4000

ITALY

Yamaha Musica Italia S.P.A.
Combo Division
Viale Italia 88, 20020 Lainate (Milano), Italy
Tel: 02-935-771

SPAIN/PORTUGAL

Yamaha-Hazen Música, S.A.
Ctra. de la Coruna km. 17, 200, 28230
Las Rozas (Madrid), Spain
Tel: 91-639-8888

SWEDEN

Yamaha Scandinavia AB
J. A. Wettergrens Gata 1
Box 30053
S-400 43 Göteborg, Sweden
Tel: 031 89 34 00

DENMARK

YS Copenhagen Liaison Office
Generatorvej 6A
DK-2730 Herlev, Denmark
Tel: 44 92 49 00

NORWAY

Norsk filial av Yamaha Scandinavia AB
Grini Næringspark 1
N-1345 Østerås, Norway
Tel: 67 16 77 70

OTHER EUROPEAN COUNTRIES

Yamaha Music Central Europe GmbH
Siemensstraße 22-34, 25462 Rellingen, Germany
Tel: +49-4101-3030

AFRICA

Yamaha Corporation,
Asia-Pacific Music Marketing Group
Nakazawa-cho 10-1, Naka-ku, Hamamatsu,
Japan 430-8650
Tel: +81-53-460-2313

MIDDLE EAST

TURKEY/CYPRUS

Yamaha Music Central Europe GmbH
Siemensstraße 22-34, 25462 Rellingen, Germany
Tel: 04101-3030

OTHER COUNTRIES

Yamaha Music Gulf FZE
LOB 16-513, P.O.Box 17328, Jubel Ali,
Dubai, United Arab Emirates
Tel: +971-4-881-5868

ASIA

THE PEOPLE'S REPUBLIC OF CHINA

Yamaha Music & Electronics (China) Co.,Ltd.
25/F., United Plaza, 1468 Nanjing Road (West),
Jingan, Shanghai, China
Tel: 021-6247-2211

INDONESIA

PT. Yamaha Music Indonesia (Distributor)
PT. Nusantik
Gedung Yamaha Music Center, Jalan Jend. Gatot
Subroto Kav. 4, Jakarta 12930, Indonesia
Tel: 21-520-2577

KOREA

Yamaha Music Korea Ltd.
8F, 9F, Dongsung Bldg. 158-9 Samsung-Dong,
Kangnam-Gu, Seoul, Korea
Tel: 080-004-0022

MALAYSIA

Yamaha Music Malaysia, Sdn., Bhd.
Lot 8, Jalan Perbandaran, 47301 Kelana Jaya,
Petaling Jaya, Selangor, Malaysia
Tel: 3-78030900

SINGAPORE

Yamaha Music Asia Pte., Ltd.
#03-11 A-Z Building
140 Paya Lebar Road, Singapore 409015
Tel: 747-4374

TAIWAN

Yamaha KHS Music Co., Ltd.
3F, #6, Sec.2, Nan Jing E. Rd. Taipei.
Taiwan 104, R.O.C.
Tel: 02-2511-8688

THAILAND

Siam Music Yamaha Co., Ltd.
891/1 Siam Motors Building, 15-16 floor
Rama 1 road, Wangmai, Pathumwan
Bangkok 10330, Thailand
Tel: 02-215-2626

OTHER ASIAN COUNTRIES

Yamaha Corporation,
Asia-Pacific Music Marketing Group
Nakazawa-cho 10-1, Naka-ku, Hamamatsu,
Japan 430-8650
Tel: +81-53-460-2317

OCEANIA

AUSTRALIA

Yamaha Music Australia Pty. Ltd.
Level 1, 99 Queensbridge Street, Southbank,
Victoria 3006, Australia
Tel: 3-9693-5111

COUNTRIES AND TRUST TERRITORIES IN PACIFIC OCEAN

Yamaha Corporation,
Asia-Pacific Music Marketing Group
Nakazawa-cho 10-1, Naka-ku, Hamamatsu,
Japan 430-8650
Tel: +81-53-460-2313

HEAD OFFICE Yamaha Corporation, Pro Audio & Digital Musical Instrument Division
Nakazawa-cho 10-1, Naka-ku, Hamamatsu, Japan 430-8650
Tel: +81-53-460-2441



Yamaha Pro Audio global web site:
<http://www.yamahaproaudio.com/>

Yamaha Manual Library
<http://www.yamaha.co.jp/manual/>

U.R.G., Pro Audio & Digital Musical Instrument Division, Yamaha Corporation
© 2007 Yamaha Corporation

WJ56020 703POCR?.?-01A0
Printed in Indonesia