GMega LX

GM SOUND MODULE

USER'S MANUAL

KAWAI

■ Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a different electrical circuit from the receiver.
— Consult the dealer or an experienced radio/TV technician for help.

■ This instrument complies with the limits for a class B digital apparatus, pursuant to the Radio Interference Regulations, C.R.C., c. 1374.

Welcome

We'd like to take this opportunity to thank you for purchasing the KAWAI GMega LX GM-compatible Sound Source Module.

The half-rack size GMega LX features 160 sounds and 7 drum kits, delivering high-quality sound at an affordable price. And because it is GM-compatible, it also demonstrates solid power as a sound source for computer music and other applications — even as an expansion sound source for MIDI keyboards such as the KC20. You can use the GMega LX in a wide range of applications, from desktop music to live performances.

We hope you'll read this manual thoroughly before using your GMega LX. It will help you get the most out of its outstanding features for many years to come.

Macintosh is a registered trademark of Apple Computer, Inc.
GM is an abbreviation for General MIDI, a recommended standard format to be followed by all manufacturers, which specifies how MIDI functions are to be implemented in tone generators.

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■ Chapter 3 GMega LX Reference

Chapter 1 Introduction

1.1 Before You Try Out the GMega LX — Some Precautions for Use

To get years of service from your GMega LX, please read and follow the following important instructions.

Location

Avoid

- Direct sunlight, such as near a window,
- Temperature extremes, such as directly in front of a heater or out of doors,
- High humidity,
- Sandy or dusty locations, and
- Places that are subject to high vibration levels.

Power Supply

- Make sure you are using the GMega LX with the proper power supply, and with the AC adapter that came with it. Do not even think of using it with other adapters or at other voltages.
- Make sure that everything is properly hooked up before turning on the power. Also, make sure that the power is turned off before hooking new things into the system.
- Try to plug into an outlet that is not also being used by devices that draw a lot of current or generate electrical noise.
- Unplug the GMega LX if you are not going to be using it for an extended period of time.
- Unplug the GMega LX when there's danger of lightning strikes or other electrical disturbance.

Proper Procedure for Turning On the Power

When connected to a computer or a MIDI sequencer, turn on the that device first, then turn on the GMega LX, and then any audio devices (instrument amp, stereo system, etc.) turn the power off in the reverse order.

Hooking Up

When hooking external devices to the GMega LX, first turn off the power on both sides to prevent damage to speakers or amps in the devices.

Effects from Other Devices

The GMega LX is a high-speed, precision microprocessor device. As such it is highly susceptible to malfunctions due to line noise or voltage spikes and fluctuations. If such problems should occur, try turning off the GMega LX, waiting a few seconds, then turning it on again.

MIDI Cables

- Be sure to use only standard MIDI cables.
- MIDI cables are limited to 15 m in length. Using cables that are longer than this can induce errors in data transmission and cause faulty operation.

Handling and Transporting

- Make sure that all cables are disconnected during transport.
- Be sure to pull on the end of the plug and not the cable itself when unplugging.
- Use only as much force as is needed with switches and plugs.

Keeping the GMega LX in Good Shape

- For regular cleaning, use a soft, dry cloth.
- If the GMega LX gets especially dirty, clean it with a mild neutral detergent and wipe it down with a soft cloth immediately after.
- Whatever you do, don't use benzine-based cleaning solutions or paint thinners.

Data Backup Battery

The GMega LX is equipped with a special lithium backup battery to maintain data in memory even when the power is turned off. This battery has a lifetime of five years or more, although this can vary somewhat depending on operating conditions. We recommend that you replace it at about the five-year mark as a precaution.

When it comes time to do this, ask at the store where you made your purchase about the nearest KAWAI Service Center.

Protecting Your Data During Servicing

If you have to send your GMega LX out for servicing, we recommend that you dump all your most important data into another MIDI device ahead of time.

Try as we might, there is always the chance that this data could be lost during the repair process.

Modifications

Don't open up the case or internals, or otherwise try to modify your GMega LX; you might end up hurting either yourself or the machine. And you'll void the warranty.

1.2 Features of the GMega LX

The GMega LX is compatible with the GM (General MIDI) System, the new international standard for electronic musical instruments, and is a new generation of multi-timbre GM sound source module.

The GMega LX contains a high-quality sound source and such top-class specifications as digital reverb within its half-rack size case, which means that it can meet the needs of a wide range of players, from beginners to professionals.

Performances of 16 Sections (Parts)

The GMega LX can use a maximum 28-voice polyphony, including drum Sections (20 instrument tones and eight drum Sections). A variable multi-timbre system is used to allow independent play of up to 16 Parts, allowing you to make full use of the GMega LX without having to worry about the number of voices used by each Part.

Dedicated Computer Interface

The GMega LX is equipped with a serial interface that allows it to be connected directly to a Macintosh, IBM, or PC-98 without the need for any external MIDI interface or even MIDI cables! With just the GMega LX, you have a state-of-the-art DTM (desktop music) system.

Rich Tones and High Sound Quality

The GMega LX has 160 high-quality tones and seven drum kits built in. The use of a 18-bit digital/analog converter also assures clear sound reproduction.

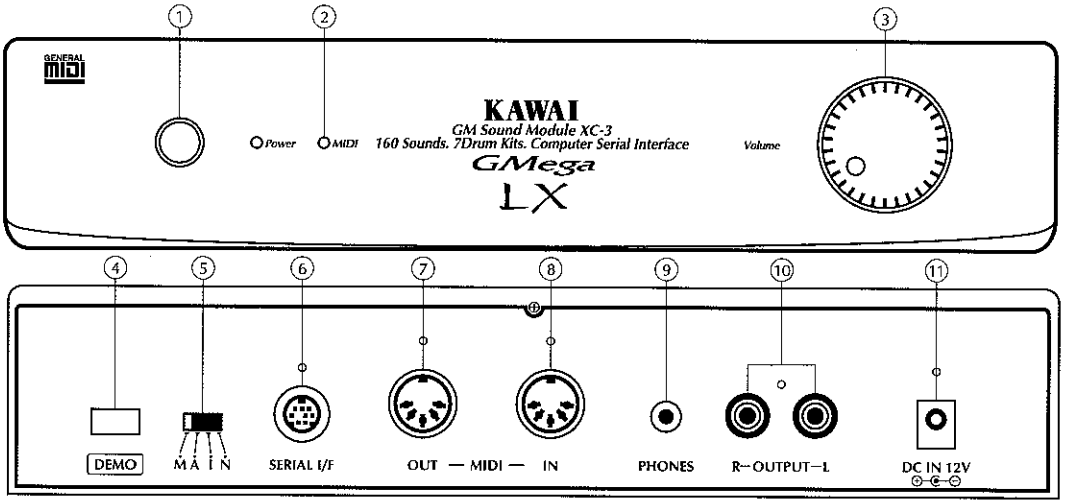
Create Natural Broadening of Sound

The GMega LX comes with six kinds of digital reverb. With this you can re-create the presence and reverberation and natural spaciousness of a live venue like a concert hall.

Performance Data Compatibility

Because 128 single patches and drum tones (seven drum kits) according with GM standards are built in, you can use virtually any commercially available General MIDI compatible computer performance data for play as-is.

1.3 Part Names



① POWER Switch

This switch turns the power to the GMega LX on and off.

② MIDI Indicator

This lights up when receiving MIDI signals from an external device.

③ VOLUME

This adjusts the volume of the headphone jack and the output jacks.

④ DEMO

Press this when you want to hear the built-in demo songs. When the demo song has ended, the tones and other internal settings are reset to the basic GM settings. This means you can also use the DEMO button as a GM Reset button.

⑤ Serial Selector

This switch is for selecting the type of computer to which the serial interface (6) is to be connected.

M (MIDI)	For when the serial interface is not in use
A	For connection to an Apple Macintosh series computer
I	For connection to an IBM PC/AT series computer
N	For connection to an NEC PC-9800 series computer

A dedicated serial cable is required for connection to a computer.

The flow of MIDI signals changes depending on whether the serial interface is in use, or whether the GMega LX is connected directly to the MIDI instrument.

⑥ SERIAL INTERFACE

This jack is for connection to a computer.

⑦ MIDI OUT

The GMega LX's internal signals (when the Serial Selector is set to "MIDI") or signals sent from the computer to the SERIAL INTERFACE (when the Serial Selector is set to "A," "I," or "N") are output here.

⑧ MIDI IN

This jack is for receiving signals from other MIDI instruments.

⑨ PHONES

This jack is for plugging in headphones. Use the VOLUME knob to adjust the sound volume.

⑩ OUTPUT R/L

These jacks are for the connecting the audio output of the GMega LX to speakers with built-in amplifiers, or other audio equipment. Output is monaural when the audio device is connected to either R or L alone.

⑪ DC-IN

This jack is for connecting the AC adapter included with the GMega LX.

1.4 Glossary of Terms

MIDI

MIDI is an abbreviation of "Musical Instrument Digital Interface," a set of standards that enables electronic instruments to exchange performance information. Instruments that accord with MIDI standards can be connected via MIDI cables to send data or play each other, regardless of the instrument's manufacturer.

MIDI Interface

This is an expansion device for connecting a MIDI jack to a personal computer. Various types include those that are installed in an expansion slot as well as those that connect to an RS-232C port (IBM and NEC) or RS-422 port (Macintosh).

MIDI Keyboard

This is a keyboard instrument that conforms to MIDI standards, such as a digital piano, synthesizer, or master keyboard.

MIDI Cable

This is the type of cable used for linking MIDI instruments to each other.

MIDI Channel

A MIDI instrument uses channels to determine whether incoming data is destined for itself. In other words, if the channel assigned to the instrument is the same as the MIDI channel for the data being sent, the data is accepted; otherwise it is ignored. The concept is the same as for TV channels.

GM (General MIDI)

Because each manufacturer previously sold its own independent type of sound sources, it used to require tremendous effort to convert data made with one type to a format for use with another type. GM standards were created to resolve this kind of problem. Data made with a sound source conforming to GM standards can be used to re-create the same tones on GM-compatible sources of other makes.

SMF (Standard MIDI File)

SMF is the abbreviation for "Standard MIDI File," which is a set of standards devised to ensure song data compatibility among equipment from different makers. There are three types: 0, 1, and 2.

System Exclusive Data

Various types of signals are defined in MIDI, but there is no MIDI standardization for detailed functions such as tone editing. To handle functions like this, each manufacturer uses MIDI signals for supporting its own original functions, and these signals are called system exclusive data, or SysEx messages. Because SysEx messages are unique to each manufacturer, there is no compatibility from one maker to another.

MIDI Control Change

MIDI data includes a wide variety of data in addition to information on when a key is played or released, such as volume, vibrato, panning, hold, and other operations during performances. These are collectively referred to as MIDI control changes, with functions defined for each assigned number.

Program Change

Most MIDI instruments can be programmed with a multiple settings and tones. These programs can be switched by messages from the controlling device, and these messages are called program changes.

Reverb

This is the resonating effect that you can hear in places like tunnels. An echo-like effect, on the other hand, is generally called a delay effect.

Chapter 2 Setting Up the GMega LX

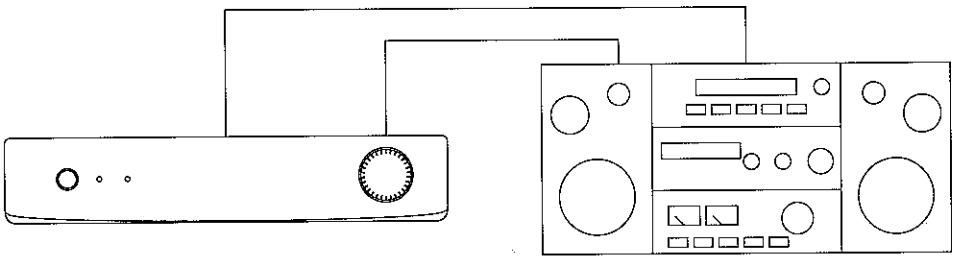
Here's how to set up your GMega LX.

2.1 Connections to an Audio System

The GMega LX has no built-in amp or speakers, so you need to hook it up to your audio equipment or something like the KAWAI PM-102 Personal Monitor Speaker.

1) Connecting the GMega LX to a Stereo or Radio-cassette Player

Use pin cables to hook up the GMega LX to the LINE IN or AUX jacks on your stereo or radio-cassette player. There are different jacks for the left and right (marked "L" and "R"), so be sure you hook these up to the correct jacks on the GMega LX.



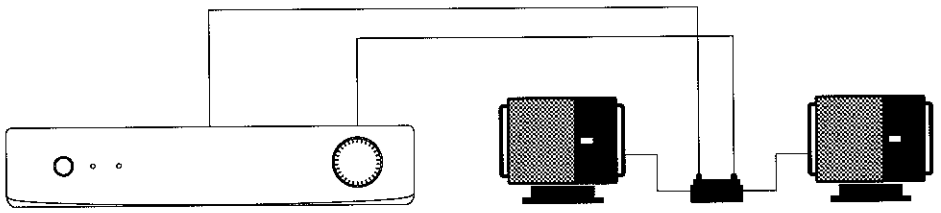
Ordinary stereo sets are less resistant to excessive input than devices such as musical amplifiers, so be careful not to set the sound level too high during playback.

2) Connecting the GMega LX to a PM-102

Use pin cables to connect the INPUT B jacks on the PM-102 to the OUTPUT jacks on the GMega LX.

Be sure to hook up the "L" and "R" jacks correctly.

If you want to use the INPUT A jacks on the PM-102, you'll need to use a conversion plug.

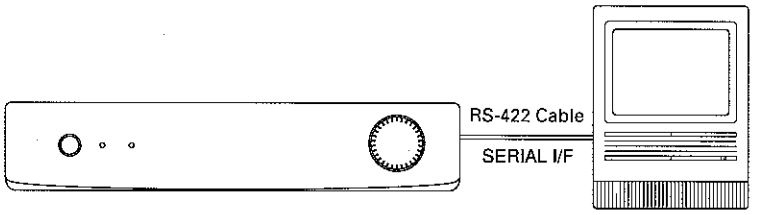


2.2 Connections to a Computer or Sequencer

1) Serial Interface Connection with an Apple Macintosh Series Computer

Use an RS-422 cable to connect the SERIAL INTERFACE port on the GMega LX to the modem or printer port on a Macintosh series computer.

Set the Serial Selector switch on the GMega LX to "A."

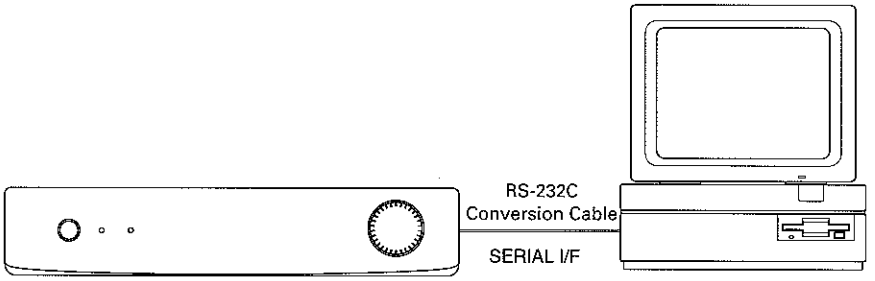


2) Serial Interface Connection with an IBM PC/AT Series Computer

Because the RS-232C ports for the IBM PC/AT series are different, an IBM PC/AT serial connector cable is necessary for connecting the computer to the GMega LX.

Connect the SERIAL INTERFACE port on the GMega LX to the RS-232C port on the IBM PC/AT series computer.

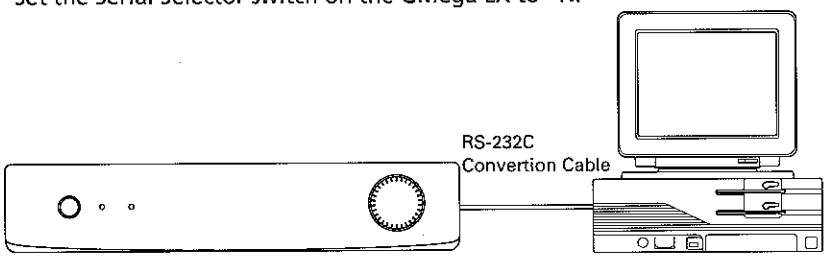
Set the Serial Selector switch on the GMega LX to "I."



3) Serial Interface Connection with an NEC PC-9800 Series Computer

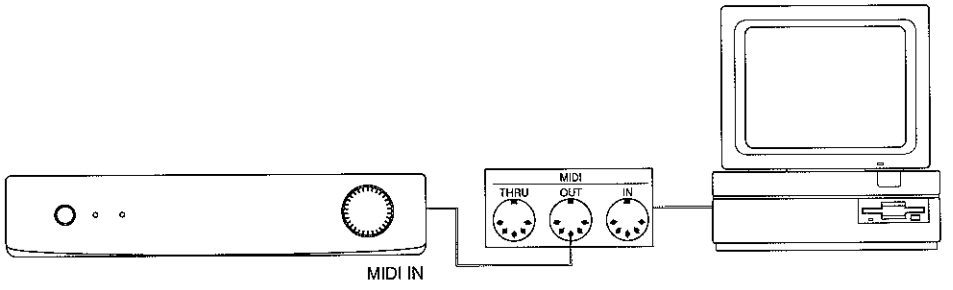
Use the serial interface cable to connect the SERIAL INTERFACE port on the GMega LX to the RS-232C port on the NEC PC-9800 series computer.

Set the Serial Selector switch on the GMega LX to "N."



4) Computer Connection with a MIDI Interface

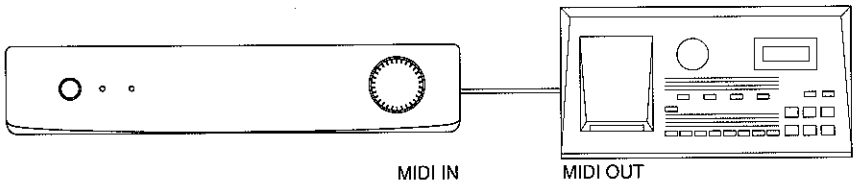
- Connect the MIDI interface to the computer. (Refer to the manual for the particular MIDI interface you buy to find out how to install it and hook it up.)
- Use a MIDI cable (sold separately) to connect the MIDI OUT jack on the MIDI interface to the MIDI IN jack on the GMega LX.
  Set the Serial Selector switch on the GMega LX to "M."



5) Hookup with a Digital Sequencer

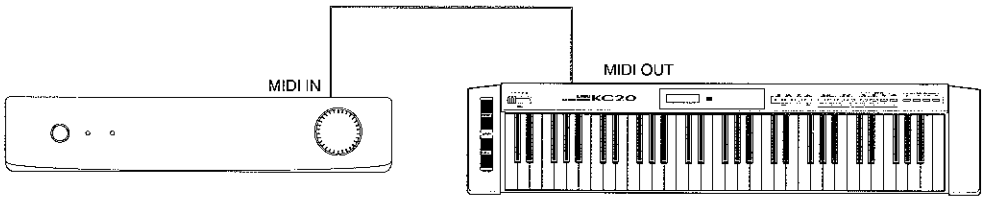
To connect the GMega LX to a sequencer, just run a MIDI cable (sold separately) from the MIDI OUT jack on the sequencer to the MIDI IN on the GMega LX.

Set the Serial Selector switch on the GMega LX to "M."



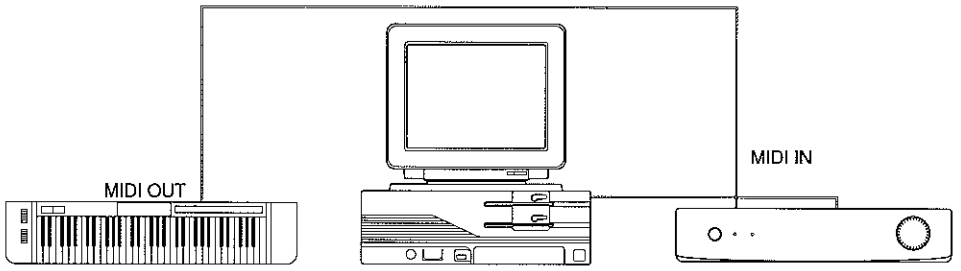
2.3 Connections to a MIDI Keyboard

By connecting the GMega LX to a digital synthesizer such as the KAWAI K Series, a digital piano, or another MIDI keyboard instrument, you can play the GMega LX directly or input data directly into a personal computer.



1) Hookup with a Computer Added to the MIDI Keyboard

Connect the MIDI IN jacks on the GMega LX with the MIDI OUT jacks on the MIDI keyboard using MIDI cables.



Chapter 3 GMega LX Reference

3.1 Play the Demo Songs

The GMega LX comes programmed with three demo songs that show off the sparking features that this sound source module has to offer.

After switching on the power, press the DEMO button on the back of the GMega LX to start playing the demo songs. Once you've started the demo performance, the GMega LX repeats playing the three songs. To stop demo play, press the DEMO button again. When the demo performance is stopped, the sound source is reset to the GM settings (see page 16).

The performance data for the demo songs is output from the MIDI OUT jacks or the serial interface, depending on the setting of the Serial Selector switch.

3.2 About the GMega LX's Built-in Functions

The GMega LX has the functions listed below built into it, and all of the parameters for these can be changed only by external MIDI control change or SysEx messages.

By sending MIDI control change or SysEx messages from your sequencing software, you can effect program changes, control volume levels, and so on. For details, check out the manual for your software.

1) Section

The GMega has 16 Sections (parts) numbered from 01 to 16. These numbers correspond to MIDI channels from 1 to 16.

- Single Select (001 to 160 and DR1 to DR7)

  This function lets you select the tone you want from the 160 tones (singles) and seven drum kits that the GMega LX has to offer.

About the GMega LX's Program Numbers

By sending tones and numbers with signals called program changes, MIDI is able to change the tones for the MIDI instrument on the MIDI channel.
The numbers indicated by these signals are called program numbers.
When the GMega LX receives program change signals for the Sections, it makes changes to the single patch numbers indicated by the program numbers.

The GMega LX has 160 tones, but ordinary MIDI program change messages can only send program numbers from 0 to 127.

For this reason, tones from 1 to 128 in the GMega LX are stored under Bank No. 0, and the numbers from 129 to 160 are stored under Bank No. 7.

The tone number assignments are as follows.

Tone No.	1	2	3	4	5	----	127	128
MIDI program change No.	0	1	2	3	4	----	126	127

Bank No. 0

Tone No.	129	130	131	----	159	160
MIDI program change No.	28	29	30	----	58	59

Bank No. 7

To switch between the Bank 0 and 7, use the MIDI control No. 0 and No. 32.

(Example 1) when the GMega LX receives MIDI control No. 0 (value 0), control No. 32 (value 7), and then program change No. 28, the Tone No. 129 will be selected.

(Example 2) When the GMega LX receives MIDI control No. 0 (value 0), control No. 32 (value 0), and then program change No. 0, the Tone No. 1 will be selected.

On a channel to which a drum kit have been assigned, however, the drum kit for that channel changes as is shown in the following chart.

Drum Kit No.	DR1	DR2	DR3	DR4	DR5	DR6	DR7
MIDI program change No.	0	1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
	21	22	23	24	25	26	27
	28	29	30	31	–	–	–
	32	–	–	–	–	33	34
	35	36	37	38	39	40	41
	–	–	–	–	–	–	–

To switch between the single and drum kit, use the MIDI System Exclusive message. See "GMega LX Exclusive Format" on page 21 if you want to use external MIDI device to switch between 160 Single tones and 7 Drum Kits.

- Setting Select (01 to 16)

  This function lets you select the settings assigned to each of the 16 Sections.

2) Setting

A "setting" is a set of eight parameters assigned to each Section, such as level, panning, and reverb level.

If a "Setting" is assigned to two (or more) Sections, changing Setting parameters for one Section affects other sections using the same Setting.
For example, if Sections 1, 2, and 3 are all using the Setting #01 and you change the Setting parameters of the Section 1, the same changes will be applied to the Sections 2 and 3.

- Section Status (ON, OFF, or SOLO — SysEx Messages)

  This lets you choose whether the tones set for each Section are played when MIDI signals are received. When set to "SOLO", all sounds of the other Settings are stopped, resulting in solo play. More than two "Settings" cannot be set to "SOLO".

- Section Level (000 to 127 — Control Change No. 7)
  This lets you set the level (volume) for each of the Sections.
- Section Pan (L64 to L01, 00, R01 to R63, and RND – Control change No. 10, RND (random) – System Exclusive Messages)
  This lets you set the panning (the position of the sound) for each of the Sections. When set to "RND" (random), the position of sound changes randomly.

The pan setting does not function when a drum kit is assigned to the Section.

- Section Reverb (Lo and Hi, Lo:0-63, Hi:64-127 – Control Change No. 91)
  This lets you adjust the depth of the reverb for each Section.
- Section Transpose (-24 to 00 to 24, RPN #2 Coarse Tuning)
  This lets you adjust the key for each Section in half-step increments.
- Section Tuning (-64 to 00 to 63, RPN #1 Fine Tuning)
  This lets you adjust the pitch (tuning) for each Section.
- Section Bend Range (00 to 12, RPN #0 Pitch Bend Sensitivity)
  This lets you set the range of the pitch that changes according to the pitch bend for each Section.
- Section Modulation Depth (00 to 63) (SysEx Message)
  This lets you set the depth of vibrato that changes according to the modulation for each Section.

3) System

The assignments that affect the GMega LX in its entirety are explained in this section.

All system parameters are made via MIDI SysEx messages. Check out "GMega LX SysEx Message Format" on page 21 of this manual for a description of the contents of SysEx messages.

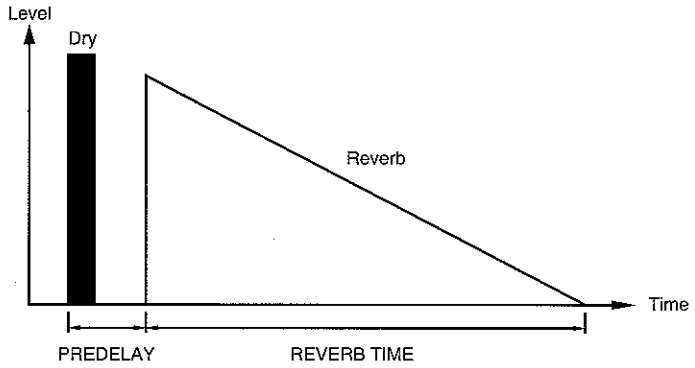
- GM Reset
  This returns the assignments for the Sections and Settings of the GMega LX to their GM reset values, which are listed on page 26 of this manual.

When a GM reset is executed, the assignments in effect up to that time are deleted. You can use the Dump All or Dump Section functions (described in a later section) to store this data in an external device.

- Effect Type
  This function chooses the type of reverb from among the selections REV1 to REV6.
- Reverb Time
  This function is used to adjust the reverberation time for Reverb.

◆ Predelay

This adjusts the predelay (the interval from the start of the sound until reverb starts — the initial reaction time).



◆ Depth Lo

This assigns the depth of the reverb when the parameter "Lo" is selected for the "Reverb" Setting.

◆ Depth Hi

This assigns the depth of the reverb when the parameter "Hi" is selected for the "Reverb" Setting.

◆ Tune

This is used for fine-tuning the overall pitch for all Sections of the GMega LX.
The tuning can be adjusted up or down within a range of approximately one quarter-tone (+/-50 cents).

◆ Receive Program

This makes the assignments for receiving MIDI Program Change signals.
When set to "ON," switching between Single and Patch can be accomplished according to the Program Change signals.
When set to "OFF," any Program Change signals received from an external sequencer or other device are ignored.

◆ Dump All

This outputs all the assigment values of the GMega LX from MIDI OUT to an external MIDI sequencer or data filer for storage.

◆ Dump Section

This outputs all the Section and Setting assignments of the GMega LX from MIDI OUT to an external MIDI instrument for storage.

◆ Dump System

This outputs all the system-related assignments of the GMega LX from MIDI OUT to an external MIDI instrument for storage.

3.3 Parameter Reset

To reset all of the parameters for the GMega LX to their factory default values, take the following steps.

(1) Turn the power on by pressing the POWER switch while holding down the DEMO button.

(2) Press the DEMO button several times until the MIDI indicator begins to blink.

(3) Turn the power off, and then on.

3.4 GMega LX Tone Chart

No.	Voice	No.	Voice	No.	Voice	No.	Voice
1	GrPiano	41	Violin	81	SquareLd	121	FretNoiz
2	BrPiano	42	Viola	82	Saw Ld	122	BrthNoiz
3	ElGrand	43	Cello	83	CaliopLd	123	Seashore
4	HnkyTonk	44	Contra	84	Chiff Ld	124	BrdTweet
5	ElPiano 1	45	TremStrg	85	CharanLd	125	Telphone
6	ElPiano 2	46	Pizzicto	86	Voice Ld	126	Helicptr
7	Hrpschrd	47	Harp	87	Fifth Ld	127	Applause
8	Clavi	48	Timpani	88	Bass &Ld	128	Gunshot
9	Celesta	49	StrgEns1	89	NewAgePd	129	AtkStrig
10	Glocken	50	StrgEns2	90	Warm Pd	130	ProgLd1
11	MusicBox	51	SynStrg1	91	PolySyPd	131	FunkSE1
12	Vibes	52	SynStrg2	92	Choir Pd	132	FunkSE1d
13	Marimba	53	AahChoir	93	Bowed Pd	133	SawPad
14	Xylophon	54	OohChoir	94	Metal Pd	134	SqrPad
15	TubulBel	55	SynChoir	95	Halo Pd	135	12stGtr
16	Dulcimer	56	Orch Hit	96	Sweep Pd	136	HousBass
17	DrawOrgn	57	Trumpet	97	Rain	137	EP&Bass
18	PercOrgn	58	Trombone	98	SoundTrk	138	Bass&Ld2
19	RockOrgn	59	Tuba	99	Crystal	139	83Organ1
20	ChrcOrgn	60	Mute Trmp	100	Atmosphr	140	83Organ2
21	ReedOrgn	61	FrenchHr	101	Bright	141	SexyVoic
22	Acordion	62	BrasSect	102	Goblin	142	ProgLd2
23	Harmnica	63	SynBras1	103	Echoes	143	SynPizz
24	TangoAcd	64	SynBras2	104	SciFi	144	PchBD&SD
25	NylonGtr	65	SprnoSax	105	Sitar	145	RolDrSet
26	SteelGtr	66	Alto Sax	106	Banjo	146	DstGtSet
27	JazzGtr	67	TenorSax	107	Shamisen	147	DreamPd
28	CleanGtr	68	Bari Sax	108	Koto	148	GtFeedBk
29	Mute Gtr	69	Oboe	109	Kalimba	149	ChorsGtr
30	Ovrdrive	70	EnglHorn	110	Bagpipe	150	BaroqStr
31	Distortd	71	Bassoon	111	Fiddle	151	HyprSnic
32	Harmnics	72	Clarinet	112	Shanai	152	WowSynt1
33	WoodBass	73	Piccolo	113	TnklBell	153	AtckBass
34	FngrBass	74	Flute	114	Agogo	154	BrassPad
35	PickBass	75	Recorder	115	Stl Drum	155	DeepPad
36	Fretless	76	PanFlute	116	WoodBlok	156	MariVibe
37	SlapBas1	77	Bottle	117	TaikoDrm	157	MegaBeat
38	SlapBas2	78	Shakhach	118	MelodTom	158	Hrmnica2
39	SynBass1	79	Whistle	119	SynthTom	159	WowSynt2
40	SynBass2	80	Ocarina	120	RevCymbl	160	Pia&WBas

3.5 Drum Key Assign

No.	Key Name	STANDARD	ROOM	POWER	ELECTRO	BOB	JAZZ	ORCHSTR
0	C-2	BOB BD	X	X	X	X	X	X
1	C#-2	BOB Rim	X	X	X	X	X	X
2	D-2	BOB SD	X	X	X	X	X	X
3	D#-2	BOB LoTom2	X	X	X	X	X	X
4	E-2	BOB CloseHH.	X	X	X	X	X	X
5	F-2	BOB LoTom1	X	X	X	X	X	X
6	F#-2	BOB MidTom2	X	X	X	X	X	X
7	G-2	BOB OpenHH	X	X	X	X	X	X
8	G#-2	BOB MidTom1	X	X	X	X	X	X
9	A-2	BOB HiTom2	X	X	X	X	X	X
10	A#-2	BOB Cym.	X	X	X	X	X	X
11	B-2	BOB HiTom1	X	X	X	X	X	X
12	C-1	BOB Cowbell	X	X	X	X	X	X
13	C#-1	BOB HiConga	X	X	X	X	X	X
14	D-1	BOB Midconga	X	X	X	X	X	X
15	D#-1	BOB LowConga	X	X	X	X	X	X
16	E-1	BOB Maracas	X	X	X	X	X	X
17	F-1	BOB Clabes	X	X	X	X	X	X
18	F#-1	MONDO BD	X	X	X	X	X	X
19	G-1	Gate SD	X	X	X	X	X	X
20	G#-1	PowerTomLow2	X	X	X	X	X	X
21	A-1	PowerTomLow1	X	X	X	X	X	X
22	A#-1	PowerTomMid2	X	X	X	X	X	X
23	B-1	PowerTomMid1	X	X	X	X	X	X
24	C0	PowerTomHi2	X	X	X	X	X	X
25	C#0	PowerTomHi1	X	X	X	X	X	X
26	D0	X	X	X	X	X	X	X
27	D#0	HighQ						CloseHH
28	E0	Slap						Pedal HH
29	F0	Scratch Push						Open HH
30	F#0	Scratch Pull						SidCym1
31	G0	Sticks						
32	G#0	Square Click						
33	A0	Metronome Click						
34	A#0	Metronome Bell						
35	B0	Acoustic BD 2						Orch. BD2
36	C1	Acoustic BD 1		MONDO BD	Elec.BD	BOB BD	Jazz BD	Orch. BD1
37	C#1	Side Stick				BOB Rim		
38	D1	Acoustic SD 1		Gate SD	Elec.SD	BOB SD	Brush Tap	Orch. SD
39	D#1	HandClap			EFF Clap		Brush Slap	Castanets
40	E1	Acoustic SD 2			Gated SD		Brush Swirl	Orch. SD
41	F1	Low F Tom	Room Tom Low2	PowerTomLow2	Elec.Lo Tom2	BOB LoTom2		Timpani F
42	F#1	CloseHH				BOB CloseHH		Timpani F#
43	G1	Hi F Tom	Room Tom Low1	PowerTomLow1	Elec.Lo Tom1	BOB LoTom1		Timpani G
44	G#1	Pedal HH				BOB CloseHH		Timpani G#
45	A1	Lo Tom	Room Tom Mid2	PowerTomMid2	Elec.Mid Tom2	BOB MidTom2		Timpani A
46	A#1	Open HH				BOB OpenHH		Timpani A#
47	B1	Lo-Mid-Tom	Room Tom Mid1	PowerTomMid1	Elec.Mid Tom1	BOB MidTom1		Timpani B
48	C2	Hi-Mid-Tom	Room Tom Hi2	PowerTomHi2	Elec.Hi Tom2	BOB HiTom2		Timpani c
49	C#2	TopCym.				BOB Cym.		Timpani c#
50	D2	High Tom	Room Tom Hi1	PowerTomHi1	Elec.Hi Tom1	BOB HiTom1		Timpani d
51	D#2	SidCym						Timpani d#
52	E2	ChinaCym.			ReverseCym.			Timpani e
53	F2	RideBell						Timpani f
54	F#2	Tambourine						
55	G2	SplashCym.						
56	G#2	Cowbell				BOB Cowbell		
57	A2	TopCym2						Orch. Cym2
58	A#2	Vibraslap						
59	B2	SidCym2						Orch. Cym1
60	C3	Hi Bongo						
61	C#3	Lo Bongo						
62	D3	Mute Hi conga				BOB HiConga		
63	D#3	Open Hi Conga				BOB Midconga		
64	E3	Lo Conga				BOB LowConga		
65	F3	Hi Timbale						
66	F#3	Lo Timbale						
67	G3	Hi Agogo						
68	G#3	Lo Agogo						
69	A3	Cabasa						
70	A#3	Maracas				BOB Maracas		
71	B3	Short Whistle						

No.	Key Name	STANDARD	ROOM	POWER	ELECTRO	BOB	JAZZ	ORCHSTR
72	C4	Long Whistle						
73	C#4	Short Guiro						
74	D4	Long Guiro						
75	D#4	Clabes				BOB Clabes		
76	E4	Hi Wood Block						
77	F4	Lo Wood Block						
78	F#4	Mute Cuica						
79	G4	Open Cuica						
80	G#4	Mute Triangle						
81	A4	Open Triangle						
82	A#4	Shaker						
83	B4	Jingle Bell						
84	C5	Belltree			Echo Gras			
85	C#5	Castanets						
86	D5	MuteSurdo						
87	D#5	OpenSurdo						
88	E5	Elec.BD	X	X	X	X	X	Applause
89	F5	Elec.SD	X	X	X	X	X	X
90	F#5	Elec.Lo Tom2	X	X	X	X	X	X
91	G5	Elec.Lo Tom1	X	X	X	X	X	X
92	G#5	Elec.Mid Tom2	X	X	X	X	X	X
93	A5	Elec.Mid Tom1	X	X	X	X	X	X
94	A#5	Elec.Hi Tom2	X	X	X	X	X	X
95	B5	Elec.Hi Tom1	X	X	X	X	X	X
96	C6	ReverseCym.	X	X	X	X	X	X
97	C#6	Brush Tap	X	X	X	X	X	X
98	D6	Brush Slap	X	X	X	X	X	X
99	D#6	Brush Swir	X	X	X	X	X	X
100	E6	Jazz BD	X	X	X	X	X	X
101	F6	Orch. BD2	X	X	X	X	X	X
102	F#6	Orch. BD1	X	X	X	X	X	X
103	G6	Orch. SD	X	X	X	X	X	X
104	G#6	Timpani F	X	X	X	X	X	X
105	A6	Timpani F#	X	X	X	X	X	X
106	A#6	Timpani G	X	X	X	X	X	X
107	B6	Timpani G#	X	X	X	X	X	X
108	C7	Timpani A	X	X	X	X	X	X
109	C#7	Timpani A#	X	X	X	X	X	X
110	D7	Timpani B	X	X	X	X	X	X
111	D#7	Timpani c	X	X	X	X	X	X
112	E7	Timpani c#	X	X	X	X	X	X
113	F7	Timpani d	X	X	X	X	X	X
114	F#7	Timpani d#	X	X	X	X	X	X
115	G7	Timpani e	X	X	X	X	X	X
116	G#7	Timpani f	X	X	X	X	X	X
117	A7	Orch. Cym2	X	X	X	X	X	X
118	A#7	Orch. Cym1	X	X	X	X	X	X
119	B7	Applause	X	X	X	X	X	X
120	C8	Room Tom Low2	X	X	X	X	X	X
121	C#8	Room Tom Low1	X	X	X	X	X	X
122	D8	Room Tom Mid2	X	X	X	X	X	X
123	D#8	Room Tom Mid1	X	X	X	X	X	X
124	E8	Room Tom Hi2	X	X	X	X	X	X
125	F8	Room Tom Hi1	X	X	X	X	X	X
126	F#8	Eff Clap	X	X	X	X	X	X
127	G8	Echo Gras	X	X	X	X	X	X

3.6 GMega LX System Exclusive Data Format

No.	Description	Value
1	Exclusive	F0H
2	Kawai ID	40H
3	Channel no.	0nH (n=0~FH)
4	Function no.	0~7FH
5	Group no.	00H
6	Machine no.	09H
*	data	0~7FH
*	data	0~7FH
*	EOX	F7H

Group [A] Parameter Send

[A-1] System Functions

Format:F0 40 00 10 00 09 00 <NO.> 00 <DH> <DL> F7

Data(8bit)=16X<DH>+<DL>

PARAMETER		No.	DATA
EFtype	(EFFECT TYPE)	00	[00H=REV1]~[05H=REV6]
RVtime	(REVERB TIME)	01	[00H=1]~[09H=10]
PREdly	(REVERB PRE DELAY)	02	[00H=0]~[0AH=10]
DpthLo	(REVERB DEPTH LO)	03	[00H=1]~[7FH=128]
DpthHi	(REVERB DEPTH HI)	04	[00H=1]~[7FH=128]
Tune	(UNIT TUNE)	08	[00H=-64] ~ [40H=0]~[7FH=+63]
RcvPrg	(UNIT RCV PGM)	09	00H=OFF/01H=ON

ex) Send System Functions EFtype(REV1)

→ F0 40 00 10 00 09 00 00 00 00 00 F7

Ch1 EFtype REV1

[A-2] Compose Mode Section Functions

Format:F0 40 00 10 00 09 03 <No.> <Sec> <DH> <DL> F7

Sec = Section No.(00H~0FH)

Data(8bit)=16X<DH>+<DL>

PARAMETER	No.	DATA
Single(SNGL No.)	00	[00H=1]~[9FH=160](SNGL)/ [A0H=DR1]~[A6H=DR7](DRUMS)
Seting(SETTING)	01	[00H=1]~[0FH=16]

ex) Send Compose Mode Section Functions Single(160)

→ F0 40 00 10 00 09 03 00 00 09 0F F7

Ch1 Single 160

[A-3] Compose Mode Setting Functions

Format:F0 40 00 10 00 09 04 <No.> <Set> <DH> <DL> F7

<Set>=Setting No.(00H~0FH)

Data(8bit)=16X<DH>+<DL>

PARAMETER	No.	DATA
Status(STATUS)	00	00H=OFF/01H=ON/02H=SOLO
Level(LEVEL)	01	[00H=0]~[7FH=127]
Pan(PAN)	02	[00H=L64]~[40H=0]~[7FH=R63]/80H=RND
Rev(REVERB)	03	00H=LO/01H=HI
Trans(TRANSPOSE)	04	[00H=-24]~[30H=+24]
Tune(TUNE)	05	[00H=-64]~[7FH=+63]
BndRng(BEND RANGE)	06	[00H=0]~[0CH=12]
ModDep(MODULATION DEPTH)	07	[00H=0]~[3FH=63]

ex) Send Compose Mode setting Functions Status(SOLO)
→ F0 40 00 10 00 09 04 00 00 00 02 F7
Ch1 Status SOLO

Group [B] Data Dump

[B-1] Dump System Functions

Format:F0 40 00 20 00 09 00
<Data(00)H> <Data(00)L> <Data(01)H> <Data(01)L>
<Data(02)H> <Data(02)L> <Data(03)H> <Data(03)L>
---------- <Data(0E)H> <Data(0E)L> F7
Data(8bit)=16X<DH>+<DL>
(Data:System Data)
Data(05)~Data(07), Data(0A)~Data(0E)→Dummy Data

[B-2] Dump Compose Mode Section Functions

Format:F0 40 00 20 00 09 03
<Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L>
<Data2(00)H> <Data2(00)L> <Data2(01)H> <Data2(01)L>
:
:
<Data16(00)H> <Data16(00)L> <Data16(01)H> <Data16(01)L> F7
Section No.(00H~0FH)
Data(8bit)=16X<DH>+<DL>
(Data:Compose Mode Section Data)

[B-3] Dump Compose Mode Setting Functions

Format:F0 40 0n 20 00 09 04
<Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L>
<Data1(02)H> <Data1(02)L> <Data1(03)H> <Data1(03)L>
---------- <Data1(07)H> <Dala1(07)L>
<Data2(00)H> <Data2(00)L> <Data2(01)H> <Data2(01)L>
<Data2(02)H> <Data2(02)L> <Data2(03)H> <Data2(03)L>
---------- <Data2(07)H> <Data2(07)L>
:
:
<Data16(00)H> <Data16(00)L> <Data16(01)H> <Data16(01)L>
<Data16(02)H> <Data16(02)L> <Data16(03)H> <Data16(03)L>
---------- <Data16(07)H> <Data16(07)L> F7

Setting No.(00H~0FH)
Data(8bit)=16X<DH>+<DL>
(Data:Compose Mode Setting Data)

[B-4] Dump All

Format:F0 40 00 21 00 09 00
[B-1]#1 + [B-2]#2 + [B-3]' + F7
#1 : Without "F0 40 00 20 00 09 00" and "F7"
#2 : Without "F0 40 00 20 00 09 03" and "F7"

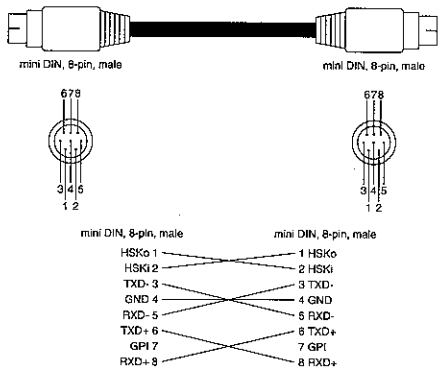
```
   [B-3]' Dump Compose Mode Setting Functions for Dump All
          Format:<Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L>
                 <Data1(02)H> <Data1(02)L> <Data1(03)H> <Data1(03)L>
                 ------------------------- <Data1(07)H> <Data1(07)L>
                 00 00 00 00 00 00 00 00 (8Byte Dummy Data)
                 <Data2(00)H> <Data2(00)L> <Data2(01)H> <Data2(01)L>
                 <Data2(02)H> <Data2(02)L> <Data2(03)H> <Data2(03)L>
                 ------------------------- <Data2(07)H> <Data2(07)L>
                 00 00 00 00 00 00 00 00 (8Byte Dummy Data)
                                         :
                                         :
                 <Data16(00)H> <Data16(00)L> <Data16(01)H> <Data16(01)L>
                 <Data16(02)H> <Data16(02)L> <Data16(03)H> <Data16(03)L>
                 ------------------------- <Data16(07)H> <Data16(07)L>
                 00 00 00 00 00 00 00 00 (8Byte Dummy Data)
          Data(8bit)=16X<DH>+<DL>
          (Data:Compose Mode Setting Data)

Group [C] Receive only Special Information
   [C-1]  K11/GMega Bank Select
          Format:F0 40 00 10 00 08 00 00 00 00 00 F7 Receive as GM System On
                 (GM bank select of K11/GMega)

   [C-2]  GM System On
          Format:F0 7E 7F 09 01 F7

Group [D] Data Request
   [D-1]  System Functions Data([B-1]) Request
          Format:F0 40 00 00 00 09 00 F7

   [D-2]  Compose Mode Data([B-2]+[B-3]) Request
          Format:F0 40 00 00 00 09 02 F7

   [D-4]  All Data([B-4]) Request
          Format:F0 40 00 01 00 09 F7

Group[E] Machine ID Request
   [E-1]  Machine ID Request
          Format:F0 40 00 60 F7

Group[F] Machine ID Acknowledge
   [F-1]  Machine ID Acknowledge
          Format:F0 40 00 61 00 09 F7
```

3.7 GMega LX Specifications

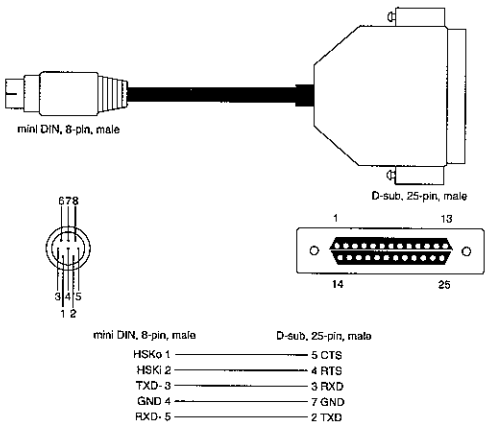
- **Maximum Polyphony**
  28 (20 + 8/drums & percussion)
- **Number of Tones**
  160 tones + 7 Drum Kits, GM-compatible
- **Multi-timbrality**
  16 Sections
- **Program Memory**
  16 Sections and 16 Settings
- **Demo Play**
  3 songs
- **External Jacks**
  LINE OUT (R and L, pin type)
  HEADPHONES (stereo mini)
  MIDI (IN and OUT)
  SERIAL INTERFACE (A, I, and N settings)
- **External Dimensions (mm)**
  219 (W) x 203 (D) x 46 (H)
- **Weight (kg)**
  0.9
- **Power Consumption**
  4.5 W

3.8 Serial interface connection cable specification

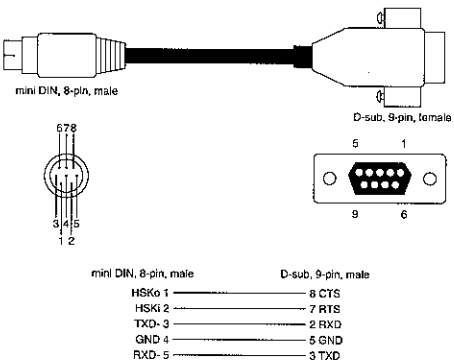
Connection cable for Apple Macintosh series



Connection cable for NEC PC98 series



Connection cable for IBM PC/AT series



3.9 GMega LX GM Reset Values

SECTION	
Single	001 (Channel10=DR1)
Seting	Channel01=01, Channel02=02, ... , Channel16=16
SETTING	
Status	ON
Level	100
Pan	00
Rev	Hi
Trans	00
Tune	00
Bnd Rng	02
Mod Dep	35

● If the GMega LX Doesn't Play...

Has the power been switched on for the GMega LX, computer, sequencer, keyboard, and other equipment?

Are the audio cables hooked up correctly?

→ NO: Turn on the power.

Check the connections of the audio cables.

↓ YES

Are the volume settings for the GMega LX and the audio amp at the proper levels?

→ NO: Adjust the volume knobs for the GMega LX and audio amp to the correct levels.

↓ YES

Is the MIDI Indicator on the GMega LX's front panel illuminated?

→ NO:

1) If the GMega LX and the computer are connected directly, check the connections of the serial cable.
2) If connection is through a MIDI interface, check the connections of the MIDI cable.
3) If a keyboard is hooked up to the GMega LX, make sure that the keyboard's MIDI OUT jack is connected to the MIDI IN jack on the GMega LX.
4) If the Serial Selector switch on the GMega LX is set properly.

↓ YES

The GMega LX is a high-precision microprocessor device, and is highly susceptible to malfunctions due to line noise or excessive voltage spikes and fluctuations. If such problems should occur, try turning off the GMega LX, waiting a few seconds, then turning it on again.

If you have made all the checks described here and the GMega LX still doesn't play, read through this manual again to make sure that you are operating the GMega LX correctly. If you still can't get any sound to play, stop using the GMega LX and contact your nearest KAWAI Service Center or the store where you purchased the GMega LX.

■ Index

GM Sound Modle
Model: XC-3/GMega LX

MIDI Implementation Chart

Date: Sep. 9 1993
Version: 1.0

Function		Transmission	Reception	Remarks
Basic	Default	X	1~16	Data is stored even
Channel	Changed	X	1~16	after power is OFF.
Mode	Default	X	mode 3	
	Messages	X	X	
	Altered	********	********	
Note		X	0~127	
Number	Sound range	********		
Velocity	Note ON	X	○	
	Note OFF	X	X 8n, 9n. V=0	
After	For key	X	X	
Touch	For channel	X	○	Modulation Depth
Pitch bender		X	○ (7bit)	
Control	0, 32	X	○	Bank select
Changes	1	X	○	Modulation
	6	X	○	Data entry
	7	X	○	Main volume
	10	X	○	Panpot
	11	X	○	Expression
	64	X	○	Hold 1 (Damper)
	67	X	○	Soft pedal
	69	X	○	Hold 2 (=Hold 1)
	91	X	○ (Lo/Hi)	Effect
	120	X	○	All Sound OFF
	121	X	○	Reset All Controllers
	100, 101	X	○	RPN
Program		X	○ *1)	
Change		********	0~127	
System exclusive		○	○	
System	: Songe position	X	X	
Common	: Song Select	X	X	
	: Tune	X	X	
System	: Clock	X	X	
Real time	: Commnads	○	X	
	: Local ON/OFF	X	X	
Others	: All notes OFF	X	○ (123~127)	
	: Active Sensing	X	○	
	: Reset	X	X	
Notes		RPN #0:Pitch Bender sensitivity #1:Fine tuning #2:Coarse tuning. Values are given by data entry *1) Can be enabled or disabled by SysEx settings		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : ONMI OFF, MONO

○ : Yes
X : No

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OW615EN-9401
Printed in Japan