Digital Piano
Model:FP-2

MIDI Implementation

Date:Nov. 1, 2003
Version:1.00

1. Receive data

■Channel Voice Messages

●Note off

Status	2nd byte	3rd byte
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number : 0H - FH (ch.1 - 16)
kk = note number : 00H - 7FH (0 - 127)
vv = note off velocity : 00H - 7FH (0 - 127)

* Some instruments are not received in Rhythm set.
* The velocity values of Note Off messages are ignored.

●Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
kk = note number : 00H - 7FH (0 - 127)
vv = note on velocity : 01H - 7FH (1 - 127)

●Control Change

❍Bank Select (Controller number 0, 32)

Status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number : 0H - FH (ch.1 - 16)
mm, ll = Bank number : 00 00H - 7F 7FH (bank.1 - bank.16384)

* The Rhythms and Tones corresponding to each Bank Select are as follows.

BANK SELECT MSB	LSB	PROGRAM NUMBER	GROUP	VARIATION NUMBER
000		001 - 128	GM Tone	
:				
032		001 - 128	GM Tone	
080	000	001 - 008	Tone (Piano)	1 - 8
	001	001 - 010	Tone (E.Piano)	1 - 10
	002	001 - 010	Tone (Organ)	1 - 10
	003	001 - 010	Tone (Guitar / Bass)	1 - 10
	004	001 - 009	Tone (Strings / Pad)	1 - 9
	005	001 - 007	Tone (Voice)	1 - 7
	:		:	
120	000	001 - 057	GM2 Rhythm	12 - 20
	003	004 - 063	FP-2 Rhythm	8 - 11
121	000 -	001 - 128	GM2 Tone	21 - 276

❍Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Modulation depth : 00H - 7FH (0 - 127)

❍Portamento Time (Controller number 5)

Status	2nd byte	3rd byte
BnH	05H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Portamento Time : 00H - 7FH (0 - 127)

❍Data Entry (Controller number 6, 38)

Status	2nd byte	3rd byte
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number : 0H - FH (ch.1 - 16)
mm, ll = the value of the parameter specified by RPN / NRPN
mm = MSB, ll = LSB

❍Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Volume : 00H - 7FH (0 - 127)

❍Panpot (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Panpot : 00H - 40H - 7FH (Left - Center - Right),

❍Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Expression : 00H - 7FH (0 - 127)

❍Hold 1 (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127)

❍Portamento (Controller number 65)

Status	2nd byte	3rd byte
BnH	41H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127) 0 - 63 = OFF, 64 - 127 = ON

❍Sostenuto (Controller number 66)

Status	2nd byte	3rd byte
BnH	42H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127) 0 - 63 = OFF, 64 - 127 = ON

❍Soft (Controller number 67)

Status	2nd byte	3rd byte
BnH	43H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127)

* With certain tones, the function may not work.

❍Resonance (Controller number 71)

Status	2nd byte	3rd byte
BnH	47H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv= Resonance value (relative change) : 00H - 7FH (-64 - 0 - +63),

* With certain tones, the function may not work.

❍Release Time (Controller number 72)

Status	2nd byte	3rd byte
BnH	48H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Release Time value (relative change) : 00H - 7FH (-64 - 0 - +63),

* With certain tones, the function may not work.

❍Attack time (Controller number 73)

Status	2nd byte	3rd byte
BnH	49H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Attack time value (relative change) : 00H - 7FH (-64 - 0 - +63),

* With certain tones, the function may not work.

❍Cutoff (Controller number 74)

Status	2nd byte	3rd byte
BnH	4AH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Cutoff value (relative change) : 00H - 7FH (-64 - 0 - +63)

* With certain tones, the function may not work.

❍Decay Time (Controller number 75)

Status	2nd byte	3rd byte
BnH	4BH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Decay Time value (relative change) : 00H - 7FH (-64 - 0 - +63)

* This MIDI message will change on GM2 Tones only.
* With certain tones, the function may not work.

❍Vibrato Rate (Controller number 76)

Status	2nd byte	3rd byte
BnH	4CH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Vibrato Rate value (relative change) : 00H - 7FH (-64 - 0 - +63)

* This MIDI message will change on GM2 Tones only.
* With certain tones, the function may not work.

❍Vibrato Depth (Controller number 77)

Status	2nd byte	3rd byte
BnH	4DH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Vibrato Depth Value (relative change) : 00H - 7FH (-64 - 0 - +63)

* This MIDI message will change on GM2 Tones only.
* With certain tones, the function may not work.

❍Vibrato Delay (Controller number 78)

Status	2nd byte	3rd byte
BnH	4EH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Vibrato Delay value (relative change) : 00H - 7FH (-64 - 0 - +63)

* This MIDI message will change on GM2 Tones only.
* With certain tones, the function may not work.

❍Portamento Control (Controller number 84)

Status	2nd byte	3rd byte
BnH	54H	kkH

n = MIDI channel number : 0H - FH (ch.1 - 16)
kk = source note number : 00H - 7FH (0 - 127)

* A Note-on received immediately after a Portamento Control message will change continuously in pitch, starting from the pitch of the Source Note Number.
* If a voice is already sounding for a note number identical to the Source Note Number, this voice will continue sounding (i.e., legato) and will, when the next Note-on is received, smoothly change to the pitch of that Note-on.
* The rate of the pitch change caused by Portamento Control is determined by the Portamento Time value.

❍Effect 1 (Reverb Send Level) (Controller number 91)

Status	2nd byte	3rd byte
BnH	5BH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Reverb Send Level : 00H - 7FH (0 - 127)

❍Effect 3 (Chorus Send Level) (Controller number 93)

Status	2nd byte	3rd byte
BnH	5DH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Chorus Send Level : 00H - 7FH (0 - 127)

❍RPN MSB/LSB (Controller number 100, 101)

Status	2nd byte	3rd byte
BnH	65H	mmH
BnH	64H	llH

n = MIDI channel number : 0H - FH (ch.1 - 16)
mm = upper byte (MSB) of parameter number specified by RPN
ll = lower byte (LSB) of parameter number specified by RPN

<<< RPN >>>
Control Changes include RPN (Registered Parameter Numbers), which are extended.
When using RPNs, first RPN (Controller numbers 100 and 101; they can be sent in any order) should be sent in order to select the parameter, then
Data Entry (Controller numbers 6 and 38) should be sent to set the value. Once RPN messages are received, Data Entry messages that is received at the same MIDI channel after that are recognized as changing toward the value of the RPN messages. In order not to make any mistakes, transmitting RPN Null is recommended after setting parameters you need.

This device receives the following RPNs.

RPN MSB, LSB	Data entry MSB, LSB	Notes
00H, 00H	mmH, llH	Pitch Bend Sensitivity mm: 00H - 18H (0 - 24 semitones) ll: ignored (processed as 00H) Up to 2 octave can be specified in semitone steps.
00H, 01H	mmH, llH	Channel Fine Tuning mm, ll: 20 00H - 40 00H - 60 00H (-4096 x 100 / 8192 - 0 - +4096 x 100 / 8192 cent)
00H, 02H	mmH, llH	Channel Coarse Tuning mm: 10H - 40H - 70H (-48 - 0 - +48 semitones) ll: ignored (processed as 00H)
7FH, 7FH	---, ---	RPN null RPN and NRPN will be set as “unspecified.” Once this setting has been made, subsequent Parameter values that were previously set will not change. mm, ll: ignored

●Program Change

Status	2nd byte
CnH	ppH

n = MIDI channel number : 0H - FH (ch.1 - 16)
pp = Program number : 00H - 7FH (prog.1 - prog.128)

●Channel Pressure

Status	2nd byte
DnH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Channel Pressure : 00H - 7FH (0 - 127)

* The resulting effect is determined by System Exclusive messages. With the initial settings there will be no effect.

●Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n = MIDI channel number : 0H - FH (ch.1 - 16)
mm, ll = Pitch Bend value : 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

■Channel Mode Messages

●All Sounds Off (Controller number 120)

Status	2nd byte	3rd byte
BnH	78H	00H

n = MIDI channel number : 0H - FH (ch.1 - 16)

* This MIDI message will change on GM2 Tones only.
* When this message is received, all notes currently sounding on the corresponding channel will be turned off.

●Reset All Controllers (Controller number 121)

Status	2nd byte	3rd byte
BnH	79H	00H

n = MIDI channel number: 0H - FH (ch.1 - 16)

When this message is received, the following controllers will be set to their reset values.

Controller	Reset value
Pitch Bend Change	±0 (center)
Channel Pressure	0 (off)
Modulation	0 (off)
Breath Type	0 (min)
Expression	127 (max)
Hold 1	0 (off)
Sostenuto	0 (off)
Soft	0 (off)
Hold 2	0 (off)
RPN	unset; previously set data will not change
NRPN	unset; previously set data will not change

●All Notes Off (Controller number 123)

Status	2nd byte	3rd byte
BnH	7BH	00H

n = MIDI channel number: 0H - FH (ch.1 - 16)

* This MIDI message will change on GM2 Tones only.
When All Notes Off is received, all notes on the corresponding channel will be turned off. However, if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

●OMNI OFF (Controller number 124)

Status	2nd byte	3rd byte
BnH	7CH	00H

n = MIDI channel number: 0H - FH (ch.1 - 16)

The same processing will be carried out as when All Notes Off is received.

●OMNI ON (Controller number 125)

Status	2nd byte	3rd byte
BnH	7DH	00H

n = MIDI channel number: 0H - FH (ch.1 - 16)

The same processing will be carried out as when All Notes Off is received. OMNI ON will not be turned on.

●MONO (Controller number 126)

Status	2nd byte	3rd byte
BnH	7EH	mmH

n = MIDI channel number : 0H - FH (ch.1 - 16)
mm = mono number : 00H - 10H (0 - 16)

* This MIDI message will change on GM2 Tones only.
* The same processing will be carried out as when All Notes Off is received.

●POLY (Controller number 127)

Status	2nd byte	3rd byte
BnH	7FH	00H

n = MIDI channel number: 0H - FH (ch.1 - 16)

* The same processing will be carried out as when All Notes Off is received.

■System Realtime Message

●Active Sensing

Status
FEH

* When Active Sensing is received, the unit will begin monitoring the intervals of all further messages. While monitoring, if the interval between messages exceeds 420 ms, the same processing will be carried out as when All Sounds Off, All Notes Off and Reset All Controllers are received, and message interval monitoring will be halted.

■System Exclusive Message

Status	Data byte	Status
F0H	iiH, ddH, ...,eeH	F7H

F0H: System Exclusive Message status

ii = ID number: an ID number (manufacturer ID) to indicate the manufacturer whose Exclusive message this is. Roland's manufacturer ID is 41H.
ID numbers 7EH and 7FH are extensions of the MIDI standard; Universal Non-realtime Messages (7EH) and Universal Realtime Messages (7FH).
dd,...,ee = data: 00H - 7FH (0 - 127)
F7H: EOX (End Of Exclusive)

Of the System Exclusive messages received by this device, the Universal Non-realtime messages and the Universal Realtime messages and the Data Set (DT1) messages will be set automatically.

●Universal Non-realtime System Exclusive Messages

❍Identity Request Message

Status	Data byte	Status
F0H	7EH, 10H, 06H, 01H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
10H	Device ID (10H or 7FH)
06H	Sub ID#1 (General Information)
01H	Sub ID#2 (Identity Request)
F7H	EOX (End Of Exclusive)

When this message is received, Identity Reply message (p. 6) will be transmitted.

❍GM1 System On

Status	Data byte	Status
F0H	7EH, 7FH, 09H, 01H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (General MIDI Message)
01H	Sub ID#2 (General MIDI 1 On)
F7H	EOX (End Of Exclusive)

* There must be an interval of at least 50 ms between this message and the next message.

❍GM2 System On

Status	Data byte	Status
F0H	7EH 7FH 09H 03H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (General MIDI Message)
03H	Sub ID#2 (General MIDI 2 On)
F7H	EOX (End Of Exclusive)

* There must be an interval of at least 50 ms between this message and the next message.

●Universal Realtime System Exclusive Messages

❍Master Volume

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 01H, llH, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control messages)
01H	Sub ID#2 (Master Volume)
llH	Master Volume lower byte
mmH	Master Volume upper byte
F7H	EOX (End Of Exclusive)

The lower byte (llH) of Master Volume will be handled as 00H.

❍Master Fine Tuning

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 03H, llH, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
03H	Sub ID#2 (Master Fine Tuning)
llH	Master Fine Tuning LSB
mmH	Master Fine Tuning MSB
F7H	EOX (End Of Exclusive)

mm, ll: 00 00H - 40 00H - 7F 7FH (-100 - 0 - +99.9 [cents])

❍Master Coarse Tuning

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 04H, llH, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
04H	Sub ID#2 (Master Coarse Tuning)
llH	Master Coarse Tuning LSB
mmH	Master Coarse Tuning MSB
F7H	EOX (End Of Exclusive)

llH:	ignored (processed as 00H)
mmH:	28H - 40H - 58H (-24 - 0 - +24 [semitones])

●Global Parameter Control

❍Reverb Parameters

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 05H, 01H, 01H, 01H, 01H, 01H, ppH, vvH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
05H	Sub ID#2 (Global Parameter Control)
01H	Slot path length
01H	Parameter ID width
01H	Value width
01H	Slot path MSB
01H	Slot path LSB (Effect 0101: Reverb)
ppH	Parameter to be controlled.
vvH	Value for the parameter.
	pp=0 Reverb Type
	vv = 00H Small Room
	vv = 01H Medium Room
	vv = 02H Large Room
	vv = 03H Medium Hall
	vv = 04H Large Hall
	vv = 08H Plate
	pp=1 Reverb Time
	vv = 00H - 7FH 0 - 127
F7H	EOX (End Of Exclusive)

❍Chorus Parameters

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 05H, 01H, 01H, 01H, 01H, 02H, ppH, vvH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control)
05H	Sub ID#2 (Global Parameter Control)
01H	Slot path length
01H	Parameter width
01H	Value width
01H	Slot path MSB
02H	Slot path LSB (Effect 0102: Chorus)
ppH	Parameter to be controlled.
vvH	Value for the parameter.
	pp=0 Chorus Type
	vv=0 Chorus1
	vv=1 Chorus2
	vv=2 Chorus3
	vv=3 Chorus4
	vv=4 FB Chorus
	vv=5 Flanger
	pp=1 Mod Rate
	vv= 00H - 7FH 0 - 127
	pp=2 Mod Depth
	vv = 00H - 7FH 0 - 127
	pp=3 Feedback
	vv = 00H - 7FH 0 - 127
	pp=4 Send To Reverb
	vv = 00H - 7FH 0 - 127
F7H	EOX (End Of Exclusive)

❍Channel Pressure

Status	Data byte	Status
F0H	7FH, 7FH, 09H, 01H, 0nH, ppH, rrH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (Controller Destination Setting)
01H	Sub ID#2 (Channel Pressure)
0nH	MIDI Channel (00 - 0F)
ppH	Controlled parameter
rrH	Controlled range
	pp=0 Pitch Control
	rr = 28H - 58H -24 - +24 [semitones]
	pp=1 Filter Cutoff Control
	rr = 00H - 7FH -9600 - +9450 [cents]
	pp=2 Amplitude Control
	rr = 00H - 7FH 0 - 200%
	pp=3 LFO Pitch Depth
	rr = 00H - 7FH 0 - 600 [cents]
	pp=4 LFO Filter Depth
	rr = 00H - 7FH 0 - 2400 [cents]
	pp=5 LFO Amplitude Depth
	rr = 00H - 7FH 0 - 100%
F7H	EOX (End Of Exclusive)

* This MIDI message will change on GM2 Tones only.

❍Controller

Status	Data byte	Status
F0H	7FH, 7FH, 09H, 03H, 0nH, ccH, ppH, rrH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (Controller Destination Setting)
03H	Sub ID#2 (Control Change)
0nH	MIDI Channel (00 - 0F)
ccH	Controller number (01 - 1F, 40 - 5F)
ppH	Controlled parameter
rrH	Controlled range
	pp=0 Pitch Control
	rr = 28H - 58H -24 - +24 [semitones]
	pp=1 Filter Cutoff Control
	rr = 00H - 7FH -9600 - +9450 [cents]
	pp=2 Amplitude Control
	rr = 00H - 7FH 0 - 200%
	pp=3 LFO Pitch Depth
	rr = 00H - 7FH 0 - 600 [cents]
	pp=4 LFO Filter Depth
	rr = 00H - 7FH 0 - 2400 [cents]
	pp=5 LFO Amplitude Depth
	rr = 00H - 7FH 0 - 100%
F7H	EOX (End Of Exclusive)

* This MIDI message will change on GM2 Tones only.

❍Scale/Octave Tuning Adjust

Status	Data byte	Status
F0H	7EH, 7FH, 08H, 08H, ffH, ggH, hhH, ssH...	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
08H	Sub ID#1 (MIDI Tuning Standard)
08H	Sub ID#2 (scale / octave tuning 1-byte form)
ffH	Channel / Option byte 1
	bits 0 to 1 = channel 15 to 16
	bit 2 to 6 = Undefined
ggH	Channel byte 2
	bits 0 to 6 = channel 8 to 14
hhH	Channel byte 3
	bits 0 to 6 = channel 1 to 7
ssH	12 byte tuning offset of 12 semitones from C to B
	00H = -64 [cents]
	40H = 0 [cents] (equal temperament)
	7FH = +63 [cents]
F7H	EOX (End Of Exclusive)

* This MIDI message will change on GM2 Tones only.

❍Key-based Instrument Controllers

Status	Data byte	Status
F0H	7FH, 7FH, 0AH, 01H, 0nH, kkH, nnH, vvH	F7H

Byte	Explanation	
F0H	Exclusive status	
7FH	ID number (universal realtime message)	
7FH	Device ID (Broadcast)	
0AH	Sub ID#1 (Key-Based Instrument Control)	
01H	Sub ID#2 (Controller)	
0nH	MIDI Channel (00 - 0F)	
kkH	Key Number	
nnH	Control Number	
vvH	Value	
	nn=07H Level	
	vv = 00H - 7FH	0 - 200% (Relative)
	nn=0AH	Pan
	vv = 00H - 7FH	Left - Right (Absolute)
	nn=5BH	Reverb Send
	vv = 00H - 7FH	0 - 127 (Absolute)
	nn=5D	Chorus Send
	vv = 00H - 7FH	0 - 127 (Absolute)
:	:	
F7	EOX (End Of Exclusive)	

This parameter affects drum instruments only.

●Data Transmission

This instrument can use exclusive messages to exchange many varieties of internal settings with other devices.
The model ID of the exclusive messages used by this instrument is 00H 6FH.

❍Data set 1 (DT1)

This is the message that actually performs data transmission, and is used when you wish to transmit the data.

Status	Data byte	Status
F0H	41H, dev, 00H, 6FH, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 00H - 1FH, 7FH, Initial value is 10H)
00H	Model ID #1 (FP-2)
6FH	Model ID #2 (FP-2)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the data to be sent
bbH	Address: upper middle byte of the starting address of the data to be sent
ccH	Address: lower middle byte of the starting address of the data to be sent
ddH	Address LSB: lower byte of the starting address of the data to be sent.
eeH	Data: the actual data to be sent. Multiple bytes of data are transmitted in order starting from the address.
:	:
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

The amount of data that can be transmitted at one time depends on the type of data, and data will be transmitted from the specified starting address and size. Refer to the address and size given in “Parameter Address Map” (p. 7).
Data larger than 256 bytes will be divided into packets of 256 bytes or less, and each packet will be sent at an interval of about 20 ms.
Regarding the checksum, please refer to (p. 8)
Not Received when the GM Mode is ON.

2. Transmit Data

■Channel Voice Messages

●Note off

Status	2nd byte	3rd byte
8nH	kkH	40H

n = MIDI channel number : 0H - FH (ch.1 - 16)
kk = note number : 00H - 7FH (0 - 127)

Note off message is sent out with the velocity of 40H.

●Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
kk = note number : 0FH - 71H (15 - 113)
vv = note on velocity : 01H - 7FH (1 - 127)

●Control Change

❍Bank Select (Controller number 0, 32)

Status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number : 0H - FH (ch.1 - 16)
mm, ll = Bank number : 00 00H - 7F 7FH (bank.1 - bank.16384)

❍Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Modulation depth : 00H - 7FH (0 - 127)

❍**Portamento Time (Controller number 5)**

Status	2nd byte	3rd byte
BnH	05H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Portamento Time : 00H - 7FH (0 - 127)

❍**Volume (Controller number 7)**

Status	2nd byte	3rd byte
BnH	07H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Volume : 00H - 7FH (0 - 127)

❍**Panpot (Controller number 10)**

Status	2nd byte	3rd byte
BnH	0AH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Panpot : 00H - 40H - 7FH (Left - Center - Right)

❍**Expression (Controller number 11)**

Status	2nd byte	3rd byte
BnH	0BH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Expression : 00H - 7FH (0 - 127)

❍**Hold 1 (Controller number 64)**

Status	2nd byte	3rd byte
BnH	40H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127)

❍**Portamento (Controller number 65)**

Status	2nd byte	3rd byte
BnH	41H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127) 0 - 63 = OFF, 64 - 127 = ON

❍**Sostenuto (Controller number 66)**

Status	2nd byte	3rd byte
BnH	42H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127) 0 - 63 = OFF, 64 - 127 = ON

❍**Soft (Controller number 67)**

Status	2nd byte	3rd byte
BnH	43H	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Control value : 00H - 7FH (0 - 127)

❍**Effect 1 (Reverb Send Level) (Controller number 91)**

Status	2nd byte	3rd byte
BnH	5BH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Reverb Send Level : 00H - 7FH (0 - 127)

❍**Effect 3 (Chorus Send Level) (Controller number 93)**

Status	2nd byte	3rd byte
BnH	5DH	vvH

n = MIDI channel number : 0H - FH (ch.1 - 16)
vv = Chorus Send Level : 00H - 7FH (0 - 127)

●Program Change

Status	2nd byte
CnH	ppH

n = MIDI channel number : 0H - FH (ch.1 - 16)
pp = Program number : 00H - 7FH (prog.1 - prog.128)

●Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n = MIDI channel number : 0H - FH (ch.1 - 16)
mm, ll = Pitch Bend value : 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

■System Realtime Messages

●Timing Clock

Status
F8H

●Start

Status
FAH

●Stop

Status
FCH

●Active Sensing

Status
FEH

■System Exclusive Messages

Universal Non-realtime System Exclusive Message" and Data Set 1 (DT1) are the only System Exclusive messages transmitted by the FP-2.

●Universal Non-realtime System Exclusive Message

❍**Identity Reply Message**

Receiving Identity Request Message, the FP-2 send this message.

Status	Data byte	Status
F0H	7EH, dev, 06H, 02H, 41H, 6FH, 01H, 00H, 00H, 00H, 01H, 00H, 00H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
dev	Device ID (use the same as the device ID of Roland)
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
6FH 01H	Device family code (FP-2)
00H 00H	Device family number code (FP-2)
00H 01H 00H 00H	Software revision level
F7H	EOX (End of Exclusive)

●Data Transmission

❍**Data set 1 DT1 (12H)**

Status	Data byte	Status
F0H	41H, dev, 00H, 6FH, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 00H - 1FH, Initial value is 10H)
00H	Model ID #1 (FP-2)
6FH	Model ID #2 (FP-2)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the data to be sent
bbH	Address: upper middle byte of the starting address of the data to be sent
ccH	Address: lower middle byte of the starting address of the data to be sent
ddH	Address LSB: lower byte of the starting address of the data to be sent.
eeH	Data: the actual data to be sent. Multiple bytes of data are transmitted in order starting from the address.
:	:
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

The amount of data that can be transmitted at one time depends on the type of data, and data will be transmitted from the specified starting address and size. Refer to the address and size given in "Parameter Address Map" (p. 7).
Data larger than 256 bytes will be divided into packets of 256 bytes or less, and each packet will be sent at an interval of about 20 ms.

3. Parameter Address Map

Transmission of "#" marked address is divided to some packets. For example, ABH in hexadecimal notation will be divided to 0AH and 0BH, and is sent/received in this order.

1 FP-2 (Model ID = 00H 6FH)

●Indivisual Parameters

Please don't use a parameter or a address marked <Reserved>.

Start Address	Description
00 00 00	System
20 00 00	Part
40 00 00	Setup

System

Offset Address		Description
00 00 00	0000 aaaa	System Effect Type (00H – 0AH)
00 00 01	0aaa aaaa	System Effect Depth (00H – 7FH)
00 02 00	0aaa aaaa	System Effect Send to Reverb (00H – 7FH)

* This Effect type is current Effect type of this system, When part Effect type is same to this Effect type, that part connect to effect.

Part

Offset Address		Description
20 00 00	0000 aaaa	Part1 Effect Type (00H – 0AH)
20 01 00	0000 aaaa	Part2 Effect Type (00H – 0AH)
20 02 00	0000 aaaa	Part3 Effect Type (00H – 0AH)
20 03 00	0000 aaaa	Part4 Effect Type (00H – 0AH)
20 04 00	0000 aaaa	Part5 Effect Type (00H – 0AH)
20 05 00	0000 aaaa	Part6 Effect Type (00H – 0AH)
20 06 00	0000 aaaa	Part7 Effect Type (00H – 0AH)
20 07 00	0000 aaaa	Part8 Effect Type (00H – 0AH)
20 08 00	0000 aaaa	Part9 Effect Type (00H – 0AH)
20 09 00	0000 aaaa	Part10 Effect Type (00H – 0AH)
20 0a 00	0000 aaaa	Part11 Effect Type (00H – 0AH)
20 0b 00	0000 aaaa	Part12 Effect Type (00H – 0AH)
20 0c 00	0000 aaaa	Part13 Effect Type (00H – 0AH)
20 0d 00	0000 aaaa	Part14 Effect Type (00H – 0AH)
20 0e 00	0000 aaaa	Part15 Effect Type (00H – 0AH)
20 0f 00	0000 aaaa	Part16 Effect Type (00H – 0AH)

●Bulk Dump Parameters

Setup

These messages are transmitted when Bulk Dump SETUP function is executed.

Offset Address	Description
40 00 00	Setup 1
40 01 00	Setup 2
40 02 00	Setup 3
40 03 00	Setup 4
40 04 00	Setup 5
40 05 00	Setup 6

●Effect Type Table

00H Thru
01H Sympathetic Resonance
02H Enhancer
03H Delay
04H Chorus
05H Tremolo Chorus
06H Rotary
07H Phaser
08H Flanger
09H Overdrive
0AH Distortion

●Decimal and Hexadecimal Table

(An "H" is appended to the end of numbers in hexadecimal notation.)
In MIDI documentation, data values and addresses/sizes of Exclusive messages, etc. are expressed as hexadecimal values for each 7 bits.
The following table shows how these correspond to decimal numbers.

D	H	D	H	D	H	D	H
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	59	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

D: decimal
H: hexadecimal

Decimal values such as MIDI channel and program change are listed as one greater than the values given in the above table.
A 7-bit byte can express data in the range of 128 steps. For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of aa x 128+bb.
In the case of values which have a ? sign, 00H = -64, 40H = ?0, and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = ?0, and 7F 7FH = +8191. For example, if aa bbH were expressed as decimal, this would be aa bbH - 40 00H = aa x 128+bb - 64 x 128.
Data marked "Use nibbled data" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of a x 16+b.

<Example1> What is the decimal expression of 5AH?

From the preceding table, 5AH = 90

<Example2> What is the decimal expression of the value 12 34H given as hexadecimal for each 7 bits?

From the preceding table, since 12H = 18 and 34H = 52
18 x 128+52 = 2356

<Example3> What is the decimal expression of the nibbled value 0A 03 09 0D?

From the preceding table, since 0AH = 10, 03H = 3, 09H = 9, 0DH = 13
((10 x 16+3) x 16+9) x 16+13 = 41885

<Example4> What is the nibbled expression of the decimal value 1258?

16) 1258
16) 78 ...10
16) 4 ...14
0 ... 4

Since from the preceding table, 0 = 00H, 4 = 04H, 14 = 0EH, 10 = 0AH, the result is: 00 04 0E 0AH.

●Examples of Actual MIDI Messages

<Example1> 92 3E 5F

9n is the Note-on status, and n is the MIDI channel number. Since 2H = 2, 3EH = 62, and 5FH = 95, this is a Note-on message with MIDI CH = 3, note number 62 (note name is D4), and velocity 95.

<Example2> CE 49

CnH is the Program Change status, and n is the MIDI channel number. Since EH = 14 and 49H = 73, this is a Program Change message with MIDI CH = 15, program number 74 (Flute in GM).

<Example3> EA 00 28

EnH is the Pitch Bend Change status, and n is the MIDI channel number. The 2nd byte (00H = 0) is the LSB and the 3rd byte (28H = 40) is the MSB, but Pitch Bend Value is a signed number in which 40 00H (= 64 x 12+80 = 8192) is 0, so this Pitch Bend Value is
28 00H - 40 00H = 40 x 12+80 - (64 x 12+80) = 5120 - 8192 = -3072
If the Pitch Bend Sensitivity is set to 2 semitones, -8192 (00 00H) will cause the pitch to change -200 cents, so in this case -200 x (-3072) ? (-8192) = -75 cents of Pitch Bend is being applied to MIDI channel 11.

<Example4> B3 64 00 65 00 06 0C 26 00 64 7F 65 7F

BnH is the Control Change status, and n is the MIDI channel number. For Control Changes, the 2nd byte is the control number, and the 3rd byte is the value. In a case in which two or more messages consecutive messages have the same status, MIDI has a provision called "running status" which allows the status byte of the second and following messages to be omitted. Thus, the above messages have the following meaning.

B3	64 00	MIDI ch.4, lower byte of RPN parameter number:	00H
(B3)	65 00	(MIDI ch.4) upper byte of RPN parameter number:	00H
(B3)	06 0C	(MIDI ch.4) upper byte of parameter value:	0CH
(B3)	26 00	(MIDI ch.4) lower byte of parameter value:	00H
(B3)	64 7F	(MIDI ch.4) lower byte of RPN parameter number:	7FH
(B3)	65 7F	(MIDI ch.4) upper byte of RPN parameter number:	7FH

In other words, the above messages specify a value of 0C 00H for RPN parameter number 00 00H on MIDI channel 4, and then set the RPN parameter number to 7F 7FH.

RPN parameter number 00 00H is Pitch Bend Sensitivity, and the MSB of the value indicates semitone units, so a value of 0CH = 12 sets the maximum pitch bend range to ?12 semitones (1 octave). (On FP-2 the LSB of Pitch Bend Sensitivity is ignored, but the LSB should be transmitted anyway (with a value of 0) so that operation will be correct on any device.)

Once the parameter number has been specified for RPN or NRPN, all Data Entry messages transmitted on that same channel will be valid, so after the desired value has been transmitted, it is a good idea to set the parameter number to 7F 7FH to prevent accidents. This is the reason for the (B3) 64 7F (B3) 65 7F at the end.

It is not desirable for Performance data (such as Standard MIDI File data) to contain many events with running status as given in <Example 4>. This is because if playback is halted during the song and then rewound or fast-forwarded, the sequencer may not be able to transmit the correct status, and the sound generator will then misinterpret the data. Take care to give each event its own status.

It is also necessary that the RPN or NRPN parameter number setting and the value setting be done in the proper order. On some sequencers, events occurring in the same (or consecutive) clock may be transmitted in an order different than the order in which they were received. For this reason it is a good idea to slightly skew the time of each event (about 1 tick for TPQN = 96, and about 5 ticks for TPQN = 480).

TPQN: Ticks Per Quarter Note
Example of an Exclusive Message and Calculating a Checksum
Roland Exclusive messages (RQ1, DT1) are transmitted with a checksum at the end (before F7) to make sure that the message was correctly received. The value of the checksum is determined by the address and data (or size) of the transmitted Exclusive message.

●How to calculate the checksum

(hexadecimal numbers are indicated by "H")
The checksum is a value derived by adding the address, size, and checksum itself and inverting the lower 7 bits.
Here's an example of how the check sum is calculated. We will assume that in the Exclusive message we are transmitting, the address is aa bb ccH and the data or size is dd eeH.

aa + bb + cc + dd + ee = sum
sum ? 128 = quotient ... remainder
128 - remainder = checksum

<Example> Setting System Effect Type to Distortion. (DT1)

According to the "Parameter Address Map" (p. 7), the address of Distortion is 0AH.
Distortion has the value of 0AH.

So the system exclusive message should be sent is;

F0	41	10	00	6F	12	00 00 00	0A	??	F7
(1)	(2)	(3)	(4)		(5)	address	data	checksum	(6)

(1) Exclusive Status (2) ID (Roland) (3) Device ID
(4) Model ID (FP-2) (5) Command ID (DT1) (6) End of Exclusive

Then calculate the checksum.

00H + 00H + 00H + 0AH = 0 + 0 + 0 + 10 = 10 (sum)
10 (sum) ? 128 = 0 (quotient) ... 10 (remainder)
checksum = 128 - 10 (remainder) = 118 = 76H

This means that F0 41 10 00 6F 12 00 00 00 0A 76 F7 is the message should be sent.
When you set the effect type of Part1 to Distorion, you should send following part1 effect type.
F0 41 10 00 6F 12 20 00 00 0A 56 F7

●FP-2 Tone List (Keyboard Tones)

Variation#	MSB	LSB	PC
Piano			
1 Grand Piano 1	80	0	1
2 Piano+Strings	80	0	2
3 Grand Piano 2	80	0	3
4 Piano+Pad	80	0	4
5 Rock Piano	80	0	5
6 Mellow Piano	80	0	6
7 Honky-tonk	80	0	7
8 Harpsichord	80	0	8
E.Piano			
1 Pop Rhodes	80	1	1
2 Stage Rhodes	80	1	2
3 Wurly	80	1	3
4 Suitcase	80	1	4
5 E.Grand	80	1	5
6 FM E.Piano 1	80	1	6
7 FM E.Piano 2	80	1	7
8 Clav.	80	1	8
9 Vibraphone	80	1	9
10 Morning Lite	80	1	10
Organ			
1 Jazz Organ	80	2	1
2 Mellow Bars	80	2	2
3 Rock Organ	80	2	3
4 Purple Spin	80	2	4
5 Lower Organ	80	2	5
6 Ballad Organ	80	2	6
7 60's Organ	80	2	7
8 Church Organ 1	80	2	8
9 Church Organ 2	80	2	9
10 Nason Flute	80	2	10
Guitar / Bass			
1 Steel Gtr	80	3	1
2 Nylon Gtr	80	3	2
3 Jazz Guitar	80	3	3
4 Blusey OD	80	3	4
5 Ac.Bass	80	3	5
6 A.Bass+Ride	80	3	6
7 Finger Bass	80	3	7
8 Slap Bass	80	3	8
9 Synth Bass	80	3	9
10 Vox Bass	80	3	10
Strings / Pad			
1 Rich Strings	80	4	1
2 Velo Strings	80	4	2
3 Fat Strings	80	4	3
4 Synth Strings	80	4	4
5 Synth Pad 1	80	4	5
6 Synth Pad 2	80	4	6
7 Glasswaves	80	4	7
8 Orchestra	80	4	8
9 Voyager Brass	80	4	9
Voice / GM2			
1 Jazz Scat	80	5	1
2 Choir	80	5	2
3 Beauty Vox	80	5	3
4 Voice Oohs	80	5	4
5 Holy Voice	80	5	5
6 Tenor Sax	80	5	6
7 Flute	80	5	7
--Rhythm--			
8 Pop Drum Kit	0	3	4
9 Jazz Drum kit	0	3	44
10 House Drum Kit	0	3	14
11 Voice Drum Kit	0	3	64
12 GM2 STANDARD	120	0	1
13 GM2 ROOM	120	0	9
14 GM2 POWER	120	0	17
15 GM2 ELECTRIC	120	0	25
16 GM2 ANALOG	120	0	26
17 GM2 JAZZ	120	0	33
18 GM2 BRUSH	120	0	41
19 GM2 ORCHESTRA	120	0	49
20 GM2 SFX	120	0	56
--GM2--			
21 Piano 1	121	0	1
22 Piano 1 (wide)	121	1	1
23 Piano 1 (dark)	121	2	1
24 Piano 2	121	0	2
25 Piano 2 (wide)	121	1	2
26 Piano 3	121	0	3
27 Piano 3 (wide)	121	1	3
28 Honky-tonk 1	121	0	4
29 Honky-tonk 2	121	1	4
30 E.Piano 1	121	0	5
31 St.Soft EP	121	1	5
32 FM+SA EP	121	2	5
33 Wurly	121	3	5
34 E.Piano 2	121	0	6
35 Detuned EP 2	121	1	6
36 St.FM EP	121	2	6
37 EP Legend	121	3	6
38 EP Phase	121	4	6
39 Harpsichord	121	0	7
40 Coupled Hps.	121	1	7
41 Harpsi (wide)	121	2	7
42 Harpsi (key Off)	121	3	7
43 Clav.	121	0	8
44 Pulse Clav	121	1	8
45 Celesta	121	0	9
46 Glockenspiel	121	0	10
47 Music Box	121	0	11
48 Vibraphone	121	0	12
49 Vibraphone (wide)	121	1	12
50 Marimba	121	0	13
51 Marimba (wide)	121	1	13
52 Xylophone	121	0	14
53 Tubular-bell	121	0	15
54 Church Bell	121	1	15
55 Carillon	121	2	15
56 Santur	121	0	16
57 Organ 1	121	0	17
58 Trem. Organ	121	1	17
59 60's Organ	121	2	17
60 70's E.Organ	121	3	17
61 Organ 2	121	0	18
62 Chorus Or.2	121	1	18
63 Perc. Organ	121	2	18
64 Organ 3	121	0	19
65 Church Org.1	121	0	20
66 Church Org.2	121	1	20
67 Church Org.3	121	2	20
68 Reed Organ	121	0	21
69 Puff Organ	121	1	21
70 Accordion Fr	121	0	22
71 Accordion It	121	1	22
72 Harmonica	121	0	23
73 Bandoneon	121	0	24
74 Nylon-str.Gt	121	0	25
75 Ukulele	121	1	25
76 Nylon Gt (key Off)	121	2	25
77 Nylon Gt.2	121	3	25
78 Steel-str.Gt	121	0	26
79 12-str.Gt	121	1	26
80 Mandolin	121	2	26
81 Steel + Body	121	3	26
82 Jazz Gt.	121	0	27
83 Pedal Steel	121	1	27
84 Clean Gt.	121	0	28
85 Chorus Gt.	121	1	28
86 Mid Tone GTR	121	2	28
87 Muted Gt.	121	0	29
88 Funk Pop	121	1	29
89 Funk Gt.2	121	2	29
90 Jazz Man	121	3	29
91 Overdrive Gt	121	0	30
92 Guitar Pinch	121	1	30
93 DistortionGt	121	0	31
94 Feedback Gt.	121	1	31
95 Dist Rtm GTR	121	2	31
96 Gt.Harmonics	121	0	32
97 Gt. Feedback	121	1	32
98 Acoustic Bs.	121	0	33
99 Fingered Bs.	121	0	34
100 Finger Slap	121	1	34
101 Picked Bass	121	0	35
102 Fretless Bs.	121	0	36
103 Slap Bass 1	121	0	37
104 Slap Bass 2	121	0	38
105 Synth Bass 1	121	0	39
106 Synth Bass 101	121	1	39
107 Acid Bass	121	2	39
108 Clavi Bass	121	3	39
109 Hammer	121	4	39
110 Synth Bass 2	121	0	40
111 Beef Bass	121	1	40
112 Rubber Bass	121	2	40
113 Attack Pulse	121	3	40
114 Violin	121	0	41
115 Slow Violin	121	1	41
116 Viola	121	0	42
117 Cello	121	0	43
118 Contrabass	121	0	44
119 Tremolo Str	121	0	45
120 Pizzicato Str	121	0	46
121 Harp	121	0	47
122 Yang Qin	121	1	47
123 Timpani	121	0	48
124 Strings	121	0	49
125 Orchestra	121	1	49
126 60s Strings	121	2	49
127 Slow Strings	121	0	50
128 Synth Strings 1	121	0	51
129 Synth Strings 3	121	1	51
130 Synth Strings 2	121	0	52
131 Choir Aahs	121	0	53
132 Chorus Aahs	121	1	53
133 Voice Oohs	121	0	54
134 Humming	121	1	54
135 SynVox	121	0	55
136 Analog Voice	121	1	55
137 OrchestraHit	121	0	56
138 Bass Hit	121	1	56
139 6th Hit	121	2	56
140 Euro Hit	121	3	56
141 Trumpet	121	0	57
142 Dark Trumpet	121	1	57
143 Trombone 1	121	0	58
144 Trombone 2	121	1	58
145 Bright Tb	121	2	58
146 Tuba	121	0	59
147 Muted Trumpet 1	121	0	60
148 Muted Trumpet 2	121	1	60
149 French Horns 1	121	0	61
150 French Horns 2	121	1	61
151 Brass 1	121	0	62
152 Brass 2	121	1	62
153 Synth Brass 1	121	0	63
154 Pro Brass	121	1	63
155 Oct SynBrass	121	2	63
156 Jump Brass	121	3	63
157 Synth Brass 2	121	0	64
158 SynBrass sfz	121	1	64
159 Velo Brass	121	2	64
160 Soprano Sax	121	0	65
161 Alto Sax	121	0	66
162 Tenor Sax	121	0	67
163 Baritone Sax	121	0	68
164 Oboe	121	0	69
165 English Horn	121	0	70
166 Bassoon	121	0	71
167 Clarinet	121	0	72

168 Piccolo	121	0	73
169 Flute	121	0	74
170 Recorder	121	0	75
171 Pan Flute	121	0	76
172 Bottle Blow	121	0	77
173 Shakuhachi	121	0	78
174 Whistle	121	0	79
175 Ocarina	121	0	80
176 Square Wave 1	121	0	81
177 Square Wave 2	121	1	81
178 Sine Wave	121	2	81
179 Saw Wave	121	0	82
180 OB2 Saw	121	1	82
181 Doctor Solo	121	2	82
182 Natural Lead	121	3	82
183 Sequenced Saw	121	4	82
184 Syn.Calliope	121	0	83
185 Chiffer Lead	121	0	84
186 Charang	121	0	85
187 Wire Lead	121	1	85
188 Solo Vox	121	0	86
189 5th Saw Wave	121	0	87
190 Bass & Lead	121	0	88
191 Delayed Lead	121	1	88
192 Fantasia	121	0	89
193 Warm Pad	121	0	90
194 Sine Pad	121	1	90
195 Polysynth	121	0	91
196 Space Voice	121	0	92
197 Itopia	121	1	92
198 Bowed Glass	121	0	93
199 Metal Pad	121	0	94
200 Halo Pad	121	0	95
201 Sweep Pad	121	0	96
202 Ice Rain	121	0	97
203 Soundtrack	121	0	98
204 Crystal	121	0	99
205 Syn Mallet	121	1	99
206 Atmosphere	121	0	100
207 Brightness	121	0	101
208 Goblin	121	0	102
209 Echo Drops	121	0	103
210 Echo Bell	121	1	103
211 Echo Pan	121	2	103
212 Star Theme	121	0	104
213 Sitar 1	121	0	105
214 Sitar 2	121	1	105
215 Banjo	121	0	106
216 Shamisen	121	0	107
217 Koto	121	0	108
218 Taisho Koto	121	1	108
219 Kalimba	121	0	109
220 Bagpipe	121	0	110
221 Fiddle	121	0	111
222 Shanai	121	0	112
223 Tinkle Bell	121	0	113
224 Agogo	121	0	114
225 Steel Drums	121	0	115
226 Woodblock	121	0	116
227 Castanets	121	1	116
228 Taiko	121	0	117
229 Concert BD	121	1	118
230 Melo. Tom 1	121	0	118
231 Melo. Tom 2	121	1	118
232 Synth Drum	121	0	119
233 808 Tom	121	1	119
234 Elec Perc	121	2	119
235 Reverse Cym.	121	0	120
236 Gt.FretNoise	121	0	121
237 Gt.Cut Noise	121	1	121
238 String Slap	121	2	121
239 Breath Noise	121	0	122
240 Fl.Key Click	121	1	122
241 Seashore	121	0	123
242 Rain	121	1	123
243 Thunder	121	2	123
244 Wind	121	3	123
245 Stream	121	4	123
246 Bubble	121	5	123
247 Bird 1	121	0	124
248 Dog	121	1	124
249 Horse-Gallop	121	2	124
250 Bird 2	121	3	124
251 Telephone 1	121	0	125
252 Telephone 2	121	1	125
253 DoorCreaking	121	2	125
254 Door	121	3	125
255 Scratch	121	4	125
256 Wind Chimes	121	5	125
257 Helicopter	121	0	126
258 Car-Engine	121	1	126
259 Car-Stop	121	2	126
260 Car-Pass	121	3	126
261 Car-Crash	121	4	126
262 Siren	121	5	126
263 Train	121	6	126
264 Jetplane	121	7	126
265 Starship	121	8	126
266 Burst Noise	121	9	126
267 Applause	121	0	127
268 Laughing	121	1	127
269 Screaming	121	2	127
270 Punch	121	3	127
271 Heart Beat	121	4	127
272 Footsteps	121	5	127
273 Gun Shot	121	0	128
274 Machine Gun	121	1	128
275 Laser	121	2	128
276 Explosion	121	3	128

●FP-2 Tone List (Session Partner Tones)

---Tone---	MSB	LSB	PC
Piano 1	0	3	1
Piano 1w	1	3	1
European Pf	2	3	1
Piano 2	0	3	2
Piano 2w	1	3	2
Piano 3	0	3	3
Piano 3w	1	3	3
E.Grand	2	3	3
Piano 3w	3	3	3
StackedPiano	4	3	3
Honky-tonk	0	3	4
Honky-tonk 2	1	3	4
E.Piano 1	0	3	5
St.Soft EP	1	3	5
FM+SA EP	2	3	5
Wurly	3	3	5
Tremolo Dyno	4	3	5
Pop Rhodes	5	3	5
Suitcase	6	3	5
Stage Rhodes	7	3	5
SilentRhodes	8	3	5
PhaseRhodes	9	3	5
E.Piano 2	0	3	6
Detuned EP 2	1	3	6
St.FM EP	2	3	6
EP Legend	3	3	6
EP Phase	4	3	6
Harpsichord	0	3	7
Coupled Hps.	1	3	7
Harpsi.w	2	3	7
Harpsi.o	3	3	7
Clav.	0	3	8
Clav. 2	1	3	8
Pulse Clav	2	3	8
Phase Clav	3	3	8
Celesta	0	3	9
Glockenspiel	0	3	10
Music Box	0	3	11
Vibraphone	0	3	12
Vibraphone w	1	3	12
Marimba	0	3	13
Marimba w	1	3	13
Xylophone	0	3	14
Tubular-bell	0	3	15
Church Bell	1	3	15
Carillon	2	3	15
Santur	0	3	16
Santur 2	1	3	16
Organ 1	0	3	17
Trem. Organ	1	3	17
Organ 8'	2	3	17
60's Organ 1	3	3	17
70's E.Organ	4	3	17
Full Organ	5	3	17
Rock Org.1	6	3	17
Rock Org.2	7	3	17
Organ 2	0	3	18
Chorus Or.2	1	3	18
Perc. Organ	2	3	18
Organ 3	0	3	19
Rock Org.3	1	3	19
Church Org.1	0	3	20
Church Org.2	1	3	20
Church Org.3	2	3	20
Church Org.4	3	3	20
Reed Organ	0	3	21
Puff Organ	1	3	21
Accordion Fr	0	3	22
Accordion It	1	3	22
Harmonica	0	3	23
Bandoneon	0	3	24
Nylon-str.Gt	0	3	25
Ukulele	1	3	25
Nylon Gt.o	2	3	25
Nylon Gt.2	3	3	25
NylonStrings	4	3	25
Nylon Harp	5	3	25
Nylon+Rhodes	6	3	25
Steel-str.Gt	0	3	26
13-str.Gt	1	3	26
Mandolin	2	3	26
Steel + Body	3	3	26
Steel Gt 2	4	3	26
Steel Sld	5	3	26
Jazz Gt.	0	3	27
Pedal Steel	1	3	27
Clean Gt.	0	3	28
Open Hard	1	3	28
JC Strat	2	3	28
Chorus Gt.	3	3	28
Mid Tone GTR	4	3	28
Muted Gt.	0	3	29
Funk Pop	1	3	29
Funk Gt.2	2	3	29
Jazz Man	3	3	29
Overdrive Gt	0	3	30
Guitar Pinch	1	3	30
OD Gtr 2	2	3	30
DistortionGt	0	3	31
Feedback Gt.	1	3	31
Dist Rtm GTR	2	3	31
Gt.Harmonics	0	3	32
Gt. Feedback	1	3	32
Acoustic Bs.	0	3	33
Acou.Bass2	1	3	33
Acou.Bass3	2	3	33
A.Bs+Ride	3	3	33
Fingered Bs.	0	3	34
Finger Slap	1	3	34
Fingered Bs2	2	3	34
Picked Bass	0	3	35
Picked Bass2	1	3	35
Fretless Bs.	0	3	36
Fretless Bs2	1	3	36
Slap Bass 1	0	3	37
Slap Bass 3	1	3	37
Slap Bass 2	0	3	38
Synth Bass 1	0	3	39
SynthBass112	1	3	39

Acid Bass	2	3	39
Clavi Bass	3	3	39
Jungle Bass	4	3	39
Hammer	5	3	39
Synth Bass 5	6	3	39
Synth Bass 2	0	3	40
Beef FM Bass	1	3	40
RubberBass 2	2	3	40
Attack Pulse	3	3	40
SH112 Bass 1	4	3	40
DistSynBass	5	3	40
Violin	0	3	41
Slow Violin	1	3	41
Viola	0	3	42
Cello	0	3	43
Contrabass	0	3	44
Tremolo Str	0	3	45
PizzicatoStr	0	3	46
Harp	0	3	47
Yang Qin	1	3	47
Timpani	0	3	48
Orche str	0	3	49
Orchestra	1	3	49
60s Strings	2	3	49
Orche str 2	3	3	49
Velo Strings	4	3	49
Slow Strings	0	3	50
Slow Str.2	1	3	50
Syn.Strings1	0	3	51
Syn.Strings3	1	3	51
Syn.Strings4	2	3	51
Syn.Strings2	0	3	52
Choir Aahs	0	3	53
Choir Aahs2	1	3	53
Voice Oohs	0	3	54
Jazz Scat	1	3	54
Voice Doohs	2	3	54
JzVoice Dat	3	3	54
JzVoice Bap	4	3	54
JzVoice Dow	5	3	54
JzVoice Thum	6	3	54
Humming	7	3	54
Beauty Vox	8	3	54
Jazz Doohs	9	3	54
SynVox	0	3	55
Analog Voice	1	3	55
SynVox 2	2	3	55
OrchestraHit	0	3	56
Bass Hit	1	3	56
6th Hit	2	3	56
Euro Hit	3	3	56
Trumpet	0	3	57
Dark Trumpet	1	3	57
Trumpet 2	2	3	57
Trombone	0	3	58
Trombone 2	1	3	58
Bright Tb	2	3	58
Tuba	0	3	59
MutedTrumpet	0	3	60
MuteTrumpet2	1	3	60
French Horns	0	3	61
Fr.Horn 2	1	3	61
Brass 1	0	3	62
Brass 2	1	3	62
Brass Sect2	2	3	62
Synth Brass1	0	3	63
Pro Brass	1	3	63
Oct SynBrass	2	3	63
Jump Brass	3	3	63
Synth Brass2	0	3	64
SynBrass sfz	1	3	64
Velo Brass 1	2	3	64
Soprano Sax	0	3	65
Alto Sax	0	3	66
AltoSax Exp.	1	3	66
Sax Section	2	3	66
Tenor Sax	0	3	67
Baritone Sax	0	3	68
Oboe	0	3	69
English Horn	0	3	70
Bassoon	0	3	71
Clarinet	0	3	72
Piccolo	0	3	73
Flute	0	3	74
Recorder	0	3	75
Pan Flute	0	3	76
Bottle Blow	0	3	77
Shakuhachi	0	3	78
Whistle	0	3	79
Ocarina	0	3	80
Square Wave	0	3	81
MG Square	1	3	81
2600 Sine	2	3	81
Saw Wave	0	3	82
OB2 Saw	1	3	82
Doctor Solo	2	3	82
Natural Lead	3	3	82
SequencedSaw	4	3	82
Syn.Calliope	0	3	83
Chiffer Lead	0	3	84
Charang	0	3	85
Wire Lead	1	3	85
Solo Vox	0	3	86
5th Saw Wave	0	3	87
Bass & Lead	0	3	88
Delayed Lead	1	3	88
Fantasia	0	3	89
Warm Pad	0	3	90
Sine Pad	1	3	90
Warm Pad 2	2	3	90
Polysynth	0	3	91
Space Voice	0	3	92
Itopia	1	3	92
Holy Voices	2	3	92
Bowed Glass	0	3	93
Glasswaves	1	3	93
Metal Pad	0	3	94
Halo Pad	0	3	95
Sweep Pad	0	3	96
Ice Rain	0	3	97
Soundtrack	0	3	98
Crystal	0	3	99
Syn Mallet	1	3	99
Vibra Bells	2	3	99
Atmosphere	0	3	100
Harpvox	2	3	100
Brightness	0	3	101
Org Bells	1	3	101
Goblin	0	3	102
Echo Drops	0	3	103
Echo Bell	1	3	103
Echo Pan	2	3	103
Star Theme	0	3	104
Sitar	0	3	105
Sitar 2	1	3	105
Banjo	0	3	106
Shamisen	0	3	107
Koto	0	3	108
Taisho Koto	1	3	108
Kalimba	0	3	109
Bagpipe	0	3	110
Fiddle	0	3	111
Shanai	0	3	113
Tinkle Bell	0	3	114
Agogo	0	3	115
Steel Drums	0	3	116
Woodblock	0	3	117
Castanets	1	3	117
Taiko	0	3	118
Concert BD	1	3	118
Melo. Tom 1	0	3	119
Melo. Tom 2	1	3	119
Synth Drum	0	3	120
808 Tom	1	3	120
Elec Perc	2	3	120
ReverseCymbl	0	3	120
Gt.FretNoiz	0	3	121
Gt.CutNoise	1	3	121
String Slap	2	3	121
Bass Slide	3	3	121
Wah Guitar	4	3	121
Breath Noise	0	3	122
Fl.KeyClick	1	3	122
Seashore	0	3	123
Rain	1	3	123
Thunder	2	3	123
Wind	3	3	123
Stream	4	3	123
Bubble	5	3	123
Bird	0	3	124
Dog	1	3	124
HorseGallop	2	3	124
Bird 2	3	3	124
Telephone 1	0	3	125
Telephone 2	1	3	125
Creaking	2	3	125
Door	3	3	125
Scratch	4	3	125
Wind Chimes	5	3	125
Helicopter	0	3	126
Car-Engine	1	3	126
Car-Stop	2	3	126
Car-Pass	3	3	126
Car-Crash	4	3	126
Siren	5	3	126
Train	6	3	126
Jetplane	7	3	126
Starship	8	3	126
Burst Noise	9	3	126
Applause	0	3	127
Laughing	1	3	127
Screaming	2	3	127
Punch	3	3	127
Heart Beat	4	3	127
Footsteps	5	3	127
Gun Shot	0	3	128
Machine Gun	1	3	128
Lasergun	2	3	128
Explosion	3	3	128
---Rhythm---			
Pop Drum Kit	0	3	4
R&B Drum Kit	0	3	5
House Drum Kit	0	3	14
Rock Drum Kit	0	3	18
Jazz Drum kit	0	3	44
Voice Drum Kit	0	3	64
GM2 STANDARD	120	0	1
GM2 ROOM	120	0	9
GM2 POWER	120	0	17
GM2 ELECTRIC	120	0	25
GM2 ANALOG	120	0	26
GM2 JAZZ	120	0	33
GM2 BRUSH	120	0	41
GM2 ORCHESTRA	120	0	49
GM2 SFX	120	0	56