MIDI Implementation

Model: GT-6 GUITAR EFFECTS PROCESSOR
Date: Jun. 25, 2001
Version: 1.00

1. RECOGNIZED RECEIVE DATA

■CHANNEL VOICE MESSAGE

●Control Change

Status	Second	Third
BnH	ccH	vvH

n = MIDI Channel No.:	0H - FH (ch.1 - ch.16)
cc = Controller No.:	00H, 20H (0, 32)
	01H - 1FH (1 - 31)
	40H - 5FH (64 - 95)
vv = Value:	00H - 7FH (0 - 127)

* Control numbers 00H and 20H are recognized as Bank Select messages.
  00H: For values of 03H or lower, the Program Change Map will be switched according to the value. For values of 04H or higher, the received data will be ignored.
  20H: The received data will be ignored, regardless of the value.
* By specifying this as a source for "realtime parameter control" you can use these messages to control a target.

●Program Change

Status	Second
CnH	ppH

n = MIDI Channel No.:	0H - FH (ch.1 - ch.16)
pp = Program No.:	00H - 7FH (No.1 - No.128)

* Patches will be selected according to the program number that is received.
* There are four Program Change Maps which are referenced when selecting programs, and these are switched by Bank Select messages.

■SYSTEM REALTIME MESSAGE

●Timing Clock

Status
F8H

●Active Sensing

Status
FEH

* When an Active Sensing message is received, the interval of all subsequent messages will begin to be monitored. If an interval greater than 400 misc. between messages, the display will indicate "MIDI Off Line!"

■SYSTEM EXCLUSIVE MESSAGE

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

F0H: System Exclusive
ii = Manufacturer ID: 1H (Roland)
dd,..ee = Data: 00H - 7FH (0 - 127)
F7H = EOX (End of Exclusive / System common)

* For more details, please refer to "Roland Exclusive Message."

2. TRANSMITTED DATA

■CHANNEL VOICE MESSAGE

●Control Change

Status	Second	Third
BnH	ccH	vvH

n = MIDI Channel No.:	0H - FH (ch.1 - ch.16)
cc = Controller Number:	0H, 20H (0, 32)
	01H - 1FH (1 - 31)
	21H - 5FH (33 - 95)
vv = Value:	00H - 7FH (0 - 127)

* If you set up a system parameter "MIDI PC OUT" for "On," Bank Select (00H, 20H) is transmitted when switching patch.
* If you set up a control change number at a system parameter "MIDI EXP Number," control change information is transmitted when operating EXP pedal.
* If you set up a control change number at a system parameter "MIDI CTL Number," control change information is transmitted when operating CTL pedal.
* If you set up a control change number at a system parameter "MIDI SUB CTL1 Number," control change information is transmitted when operating CTL 1 pedal (SUB EXP pedal) of an outside connection.
* If you set up a control change number at a system parameter "MIDI SUB CTL2 Number," control change information is transmitted when operating CTL 2 pedal (SUB EXP pedal) of an outside connection.

●Program Change

Status	Second
CnH	ppH

n = MIDI Channel No.:	0H - FH (ch.1 - ch.16)
pp = Program No.:	00H - 7FH (No.1 - No.128)

* If you set up a system parameter "MIDI PC OUT" for "On," program change information is transmitted when switching patch.

■SYSTEM REALTIME MESSAGE

●Start

Status
FAH

●Stop

Status
FCH

■SYSTEM EXCLUSIVE MESSAGE

Status	Data Byte	Status
F0H	iiH,ddH...ceeH	F7H

F0H = System Exclusive
ii = Manufacturer ID: 41H (Roland)
dd,..ee = Data: 00H - 7FH (0 - 127)
F7H = EOX (End of Exclusive / System common)

* For more details, please refer to "Roland Exclusive Message."

●MIDI Machine Control (MMC)

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

F0H = System Exclusive
7FH = ID Number (Universal Realtime Message)
7FH = Device ID (Broadcast)
06H = Sub ID#1(Machine Control Command)
com = Sub ID#2(MMC Command)
F7H = EOX (End of Exclusive / System common)

* “com” (MMC Command) that I transmit with GT-6 is following.

com

01H Stop

02H Play

3. EXCLUSICE COMMUNICATION

On the GT-6, exclusive messages can be used as follows. — Transmit / receive GT-6 system / patch data
The model ID for GT-6 exclusive messages is 00H 46H, and you can set up the device ID at 00H --1FH.

■ONE WAY COMMUNICATION

●Request Data 1RQ1(11H)

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
Dev	Device ID (Dev=00H-1FH)
00H	Model ID (GT-6) MSB
46H	Model ID (GT-6) LSB
11H	Command ID (RQ1)
aaH	Address MSB
bbH	Address
ccH	Address
ddH	Address LSB
ssH	Size MSB
ttH	Size
uuH	Size
vvH	Size LSB
sum	Checksum
F7H	EOX (End of System Exclusive)

* This message can only be received, and is not transmitted from the GT-6.

●Data Set 1 DT1(12H)

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
Dev	Device ID (Dev=00H-1FH)
00H	Model ID (GT-6) MSB
46H	Model ID (GT-6) LSB
12H	Command ID (DT1)
aaH	Address MSB
bbH	Address
ccH	Address
ddH	Address LSB
eeH	data
:	:
ffH	Data
sum	Checksum
F7H	EOX (End of System Exclusive)

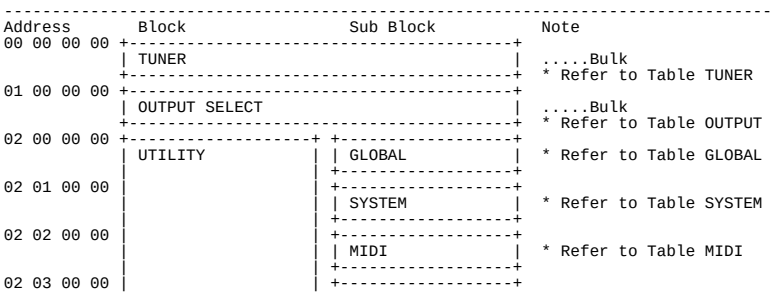
4. PARAMETER ADDRESS MAP

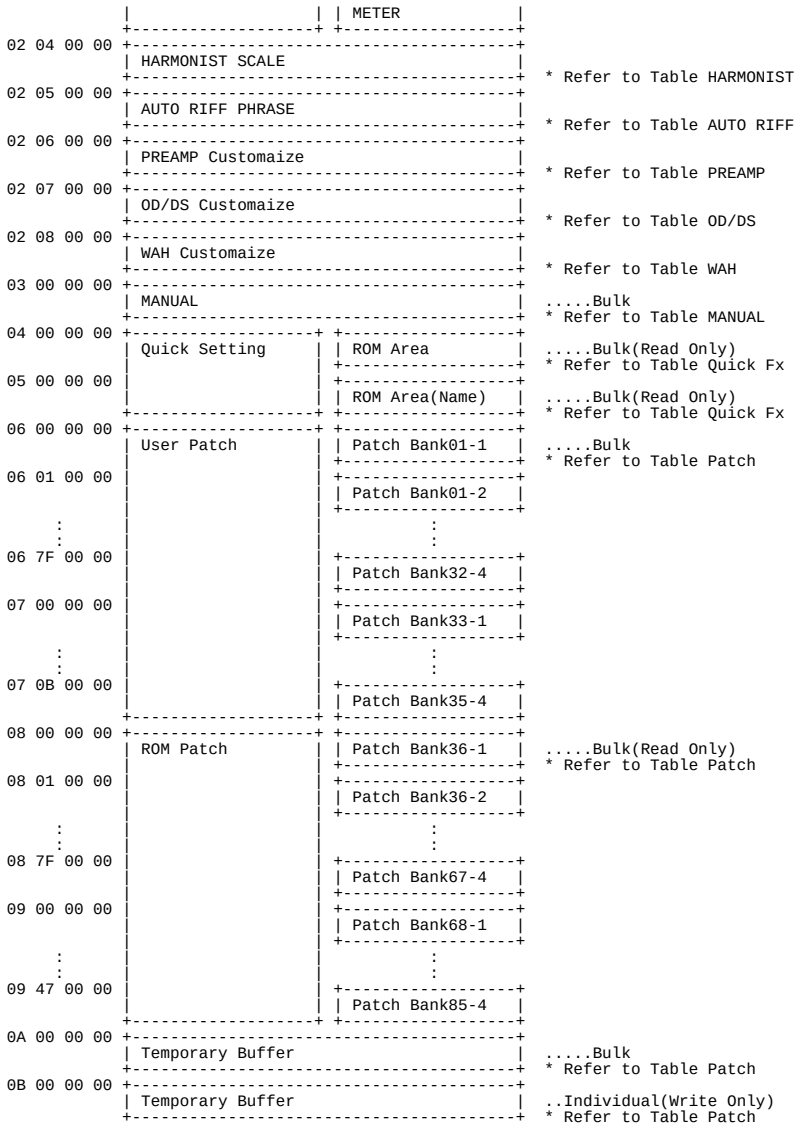
The address and size are displayed under 7-bit hexadecimal notation.

Address	MSB			LSB
Binary	0aaa aaaa	0bbb bbbb	0ccc cccc	0ddd dddd
7-bit Hexadecimal	AA	BB	CC	DD

Size	MSB			LSB
Binary	0sss ssss	0ttt tttt	0uuu uuuu	0vvv vvvv
7-bit Hexadecimal	SS	TT	UU	VV

Address Block Map





* The GT-6 can use two methods of communication; Individual Parameter and Bulk Dump.

* Bulk data can be received when the Bulk Load Ready function is accessed in Utility mode.

* Although individual data can be received at any time, be sure to appropriately describe the value for one parameter in one packet [F0...F7].

* When a data request is to be received, use Bulk Load Ready in the utility.

* Do not use an address appended with "#" as the first address.

* Parameters for which Size is 2 or higher should not be separated; make sure these are sent in the same packet.

Table TUNER <TUNER>

Address(H)	Size(H)	Data(H)	Parameter	Description
00 00 00 00	00 00 00 01	00 - 0A	TUNER Pitch	435Hz - 445Hz
00 00 00 01	00 00 00 01	00 - 01	TUNER Out	00 : Mute 01 : Bypass

Table OUTPUT <OUTPUT Select>

Address(H)	Size(H)	Data(H)	Parameter	Description
01 00 00 00	00 00 00 01	00 - 07	OUTPUT Select	00 : JC-120 01 : SMALL AMP 02 : COMBO AMP 03 : STACK AMP 04 : COMBO Return 05 : STACK Return 06 : LINE/PHONES 07 : LINE(PA)

Table GLOBAL <UTILITY : GLOBAL>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 00 00 00	00 00 00 01	00 - 28	Low EQ	-20dB - +20dB
02 00 00 01	00 00 00 01	00 - 28	High EQ	-20dB - +20dB
02 00 00 02	00 00 00 01	00 - 28	NS Threshold	-20dB - +20dB
02 00 00 03	00 00 00 01	00 - 64	Reverb Level	00 : 0% 01 : 2% 02 : 4% : 64 : 200%

Table SYSTEM <UTILITY : SYSTEM>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 01 00 00	00 00 00 01	00 - 0F	LCD Contrast	1 - 16
02 01 00 01	00 00 00 01	00 - 54	BANK Extent	00 : 1
				01 : 2
				:
				54 : 85
02 01 00 02	00 00 00 01	00 - 01	PatchChange Mode	00 : Immediate
				01 : Wait for a Number
02 01 00 03	00 00 00 01	00 - 01	EXP Pedal Hold	00 : Off
				01 : On
02 01 00 04	00 00 00 01	00 - 01	Dial Function	00 : Patch No.& VALUE
				01 : VALUE Only
02 01 00 05	00 00 00 01	00 - 01	Knob Mode	00 : Immediate
				01 : Current Setting
02 01 00 06	00 00 00 01	00 - 01	Pedal Tuner SW	00 : Off
				01 : On
02 01 00 07	00 00 00 01	00 - 01	Amp Switch Mode	00 : Amp On/Off
				01 : Toggle to Knobs
02 01 00 08	00 00 00 01	00 - 04	Sub CTL1 Function	00 : Assignable
				01 : MANUAL On/Off
				02 : TUNER On/Off
				03 : MIDI Start/Stop
				04 : MMC Play/Stop
02 01 00 09	00 00 00 01	00 - 04	Sub CTL2 Function	00 : Assignable
				01 : MANUAL On/Off
				02 : TUNER On/Off
				03 : MIDI Start/Stop
				04 : MMC Play/Stop

Table MIDI <UTILITY : MIDI>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 02 00 00	00 00 00 01	00 - 0F	MIDI Rx Channel	00 : 1
				:
				0F : 16
02 02 00 01	00 00 00 01	00 - 01	MIDI Omni Mode	00 : Omni Off
				01 : Omni On
02 02 00 02	00 00 00 01	00 - 10	MIDI Tx Channel	00 : 1
				:
				0F : 16
				10 : Rx
02 02 00 03	00 00 00 01	00 - 01	MIDI Sync Clock	00 : Auto
				01 : Internal
02 02 00 04	00 00 00 01	00 - 01	MIDI PC OUT	00 : Off
				01 : On
02 02 00 05	00 00 00 01	00 - 5E	MIDI EXP OUT	
02 02 00 06	00 00 00 01	00 - 5E	MIDI EXP SW OUT	
02 02 00 07	00 00 00 01	00 - 5E	MIDI CTL OUT	
02 02 00 08	00 00 00 01	00 - 5E	MIDI SubCTL1 OUT	
02 02 00 09	00 00 00 01	00 - 5E	MIDI SubCTL2 OUT	
				00 : Off
				01 : 1
				:
				1F : 31
				20 : 33
				:
				5E : 95
02 02 00 0A	00 00 00 01	00 - 01	MIDI Map Select	00 : Fix
				01 : Prog
02 02 10 00	00 00 00 02	00 00	MIDI Program Map	MIDI Map Select = Prog
02 02 10 01#		- 02 53	B#0 P#1	00 00 : #01-1(User)
				:
				00 7F : #32-4(User)
				01 00 : #33-1(User)
				:
				01 7F : #64-4(Preset)
				02 00 : #65-1(Preset)
				:
				02 53 : #85-4(Preset)
02 02 10 02	00 00 00 02	00 00	MIDI Program Map	
02 02 10 03#		- 02 53	B#0 P#2	
:			:	
02 02 11 7E	00 00 00 02	00 00	MIDI Program Map	
02 02 11 7F#		- 02 53	B#0 P#128	
02 02 12 00	00 00 00 02	00 00	MIDI Program Map	
02 02 12 01#		- 02 53	B#1 P#1	
:			:	
02 02 14 00	00 00 00 02	00 00	MIDI Program Map	
02 02 14 01#		- 02 53	B#2 P#1	
:			:	
02 02 16 00	00 00 00 02	00 00	MIDI Program Map	
02 02 16 01#		- 02 53	B#3 P#1	
:			:	
02 02 17 7E	00 00 00 02	00 00	MIDI Program Map	
02 02 17 7F#		- 02 53	B#3 P#128	

Table HARMONIST <HARMONIST SCALE>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 04 00 00	00 00 00 01	00 - 30	Scale 1 C	
02 04 00 01	00 00 00 01	00 - 30	Scale 1 Db	
02 04 00 02	00 00 00 01	00 - 30	Scale 1 D	
02 04 00 03	00 00 00 01	00 - 30	Scale 1 Eb	
02 04 00 04	00 00 00 01	00 - 30	Scale 1 E	
02 04 00 05	00 00 00 01	00 - 30	Scale 1 F	
02 04 00 06	00 00 00 01	00 - 30	Scale 1 F#	
02 04 00 07	00 00 00 01	00 - 30	Scale 1 G	
02 04 00 08	00 00 00 01	00 - 30	Scale 1 Ab	
02 04 00 09	00 00 00 01	00 - 30	Scale 1 A	
02 04 00 0A	00 00 00 01	00 - 30	Scale 1 Bb	
02 04 00 0B	00 00 00 01	00 - 30	Scale 1 B	
02 04 01 00	00 00 00 01	00 - 30	Scale 2 C	
02 04 01 01	00 00 00 01	00 - 30	Scale 2 Db	
02 04 01 02	00 00 00 01	00 - 30	Scale 2 D	
02 04 01 03	00 00 00 01	00 - 30	Scale 2 Eb	
02 04 01 04	00 00 00 01	00 - 30	Scale 2 E	
02 04 01 05	00 00 00 01	00 - 30	Scale 2 F	
02 04 01 06	00 00 00 01	00 - 30	Scale 2 F#	
02 04 01 07	00 00 00 01	00 - 30	Scale 2 G	

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02 04 01 08   00 00 00 01   00 - 30   Scale 2  Ab
02 04 01 09   00 00 00 01   00 - 30   Scale 2  A
02 04 01 0A   00 00 00 01   00 - 30   Scale 2  Bb
02 04 01 0B   00 00 00 01   00 - 30   Scale 2  B
02 04 02 00   00 00 00 01   00 - 30   Scale 3  C
02 04 02 01   00 00 00 01   00 - 30   Scale 3  Db
02 04 02 02   00 00 00 01   00 - 30   Scale 3  D
02 04 02 03   00 00 00 01   00 - 30   Scale 3  Eb
02 04 02 04   00 00 00 01   00 - 30   Scale 3  E
02 04 02 05   00 00 00 01   00 - 30   Scale 3  F
02 04 02 06   00 00 00 01   00 - 30   Scale 3  F#
02 04 02 07   00 00 00 01   00 - 30   Scale 3  G
02 04 02 08   00 00 00 01   00 - 30   Scale 3  Ab
02 04 02 09   00 00 00 01   00 - 30   Scale 3  A
02 04 02 0A   00 00 00 01   00 - 30   Scale 3  Bb
02 04 02 0B   00 00 00 01   00 - 30   Scale 3  B
02 04 03 00   00 00 00 01   00 - 30   Scale 4  C
02 04 03 01   00 00 00 01   00 - 30   Scale 4  Db
02 04 03 02   00 00 00 01   00 - 30   Scale 4  D
02 04 03 03   00 00 00 01   00 - 30   Scale 4  Eb
02 04 03 04   00 00 00 01   00 - 30   Scale 4  E
02 04 03 05   00 00 00 01   00 - 30   Scale 4  F
02 04 03 06   00 00 00 01   00 - 30   Scale 4  F#
02 04 03 07   00 00 00 01   00 - 30   Scale 4  G
02 04 03 08   00 00 00 01   00 - 30   Scale 4  Ab
02 04 03 09   00 00 00 01   00 - 30   Scale 4  A
02 04 03 0A   00 00 00 01   00 - 30   Scale 4  Bb
02 04 03 0B   00 00 00 01   00 - 30   Scale 4  B
02 04 04 00   00 00 00 01   00 - 30   Scale 5  C
02 04 04 01   00 00 00 01   00 - 30   Scale 5  Db
02 04 04 02   00 00 00 01   00 - 30   Scale 5  D
02 04 04 03   00 00 00 01   00 - 30   Scale 5  Eb
02 04 04 04   00 00 00 01   00 - 30   Scale 5  E
02 04 04 05   00 00 00 01   00 - 30   Scale 5  F
02 04 04 06   00 00 00 01   00 - 30   Scale 5  F#
02 04 04 07   00 00 00 01   00 - 30   Scale 5  G
02 04 04 08   00 00 00 01   00 - 30   Scale 5  Ab
02 04 04 09   00 00 00 01   00 - 30   Scale 5  A
02 04 04 0A   00 00 00 01   00 - 30   Scale 5  Bb
02 04 04 0B   00 00 00 01   00 - 30   Scale 5  B
02 04 05 00   00 00 00 01   00 - 30   Scale 6  C
02 04 05 01   00 00 00 01   00 - 30   Scale 6  Db
02 04 05 02   00 00 00 01   00 - 30   Scale 6  D
02 04 05 03   00 00 00 01   00 - 30   Scale 6  Eb
02 04 05 04   00 00 00 01   00 - 30   Scale 6  E
02 04 05 05   00 00 00 01   00 - 30   Scale 6  F
02 04 05 06   00 00 00 01   00 - 30   Scale 6  F#
02 04 05 07   00 00 00 01   00 - 30   Scale 6  G
02 04 05 08   00 00 00 01   00 - 30   Scale 6  Ab
02 04 05 09   00 00 00 01   00 - 30   Scale 6  A
02 04 05 0A   00 00 00 01   00 - 30   Scale 6  Bb
02 04 05 0B   00 00 00 01   00 - 30   Scale 6  B
02 04 06 00   00 00 00 01   00 - 30   Scale 7  C
02 04 06 01   00 00 00 01   00 - 30   Scale 7  Db
02 04 06 02   00 00 00 01   00 - 30   Scale 7  D
02 04 06 03   00 00 00 01   00 - 30   Scale 7  Eb
02 04 06 04   00 00 00 01   00 - 30   Scale 7  E
02 04 06 05   00 00 00 01   00 - 30   Scale 7  F
02 04 06 06   00 00 00 01   00 - 30   Scale 7  F#
02 04 06 07   00 00 00 01   00 - 30   Scale 7  G
02 04 06 08   00 00 00 01   00 - 30   Scale 7  Ab
02 04 06 09   00 00 00 01   00 - 30   Scale 7  A
02 04 06 0A   00 00 00 01   00 - 30   Scale 7  Bb
02 04 06 0B   00 00 00 01   00 - 30   Scale 7  B
02 04 07 00   00 00 00 01   00 - 30   Scale 8  C
02 04 07 01   00 00 00 01   00 - 30   Scale 8  Db
02 04 07 02   00 00 00 01   00 - 30   Scale 8  D
02 04 07 03   00 00 00 01   00 - 30   Scale 8  Eb
02 04 07 04   00 00 00 01   00 - 30   Scale 8  E
02 04 07 05   00 00 00 01   00 - 30   Scale 8  F
02 04 07 06   00 00 00 01   00 - 30   Scale 8  F#
02 04 07 07   00 00 00 01   00 - 30   Scale 8  G
02 04 07 08   00 00 00 01   00 - 30   Scale 8  Ab
02 04 07 09   00 00 00 01   00 - 30   Scale 8  A
02 04 07 0A   00 00 00 01   00 - 30   Scale 8  Bb
02 04 07 0B   00 00 00 01   00 - 30   Scale 8  B
02 04 08 00   00 00 00 01   00 - 30   Scale 9  C
02 04 08 01   00 00 00 01   00 - 30   Scale 9  Db
02 04 08 02   00 00 00 01   00 - 30   Scale 9  D
02 04 08 03   00 00 00 01   00 - 30   Scale 9  Eb
02 04 08 04   00 00 00 01   00 - 30   Scale 9  E
02 04 08 05   00 00 00 01   00 - 30   Scale 9  F
02 04 08 06   00 00 00 01   00 - 30   Scale 9  F#
02 04 08 07   00 00 00 01   00 - 30   Scale 9  G
02 04 08 08   00 00 00 01   00 - 30   Scale 9  Ab
02 04 08 09   00 00 00 01   00 - 30   Scale 9  A
02 04 08 0A   00 00 00 01   00 - 30   Scale 9  Bb
02 04 08 0B   00 00 00 01   00 - 30   Scale 9  B
02 04 09 00   00 00 00 01   00 - 30   Scale 10 C
02 04 09 01   00 00 00 01   00 - 30   Scale 10 Db
02 04 09 02   00 00 00 01   00 - 30   Scale 10 D
02 04 09 03   00 00 00 01   00 - 30   Scale 10 Eb
02 04 09 04   00 00 00 01   00 - 30   Scale 10 E
02 04 09 05   00 00 00 01   00 - 30   Scale 10 F
02 04 09 06   00 00 00 01   00 - 30   Scale 10 F#
02 04 09 07   00 00 00 01   00 - 30   Scale 10 G
02 04 09 08   00 00 00 01   00 - 30   Scale 10 Ab
02 04 09 09   00 00 00 01   00 - 30   Scale 10 A
02 04 09 0A   00 00 00 01   00 - 30   Scale 10 Bb
02 04 09 0B   00 00 00 01   00 - 30   Scale 10 B
02 04 0A 00   00 00 00 01   00 - 30   Scale 11 C
02 04 0A 01   00 00 00 01   00 - 30   Scale 11 Db
02 04 0A 02   00 00 00 01   00 - 30   Scale 11 D
02 04 0A 03   00 00 00 01   00 - 30   Scale 11 Eb
02 04 0A 04   00 00 00 01   00 - 30   Scale 11 E
02 04 0A 05   00 00 00 01   00 - 30   Scale 11 F
02 04 0A 06   00 00 00 01   00 - 30   Scale 11 F#
02 04 0A 07   00 00 00 01   00 - 30   Scale 11 G
02 04 0A 08   00 00 00 01   00 - 30   Scale 11 Ab
02 04 0A 09   00 00 00 01   00 - 30   Scale 11 A
02 04 0A 0A   00 00 00 01   00 - 30   Scale 11 Bb
02 04 0A 0B   00 00 00 01   00 - 30   Scale 11 B
02 04 0B 00   00 00 00 01   00 - 30   Scale 12 C
02 04 0B 01   00 00 00 01   00 - 30   Scale 12 Db
02 04 0B 02   00 00 00 01   00 - 30   Scale 12 D
02 04 0B 03   00 00 00 01   00 - 30   Scale 12 Eb
02 04 0B 04   00 00 00 01   00 - 30   Scale 12 E
02 04 0B 05   00 00 00 01   00 - 30   Scale 12 F
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02 04 0B 06   00 00 00 01   00 - 30   Scale 12 F#
02 04 0B 07   00 00 00 01   00 - 30   Scale 12 G
02 04 0B 08   00 00 00 01   00 - 30   Scale 12 Ab
02 04 0B 09   00 00 00 01   00 - 30   Scale 12 A
02 04 0B 0A   00 00 00 01   00 - 30   Scale 12 Bb
02 04 0B 0B   00 00 00 01   00 - 30   Scale 12 B
02 04 0C 00   00 00 00 01   00 - 30   Scale 13 C
02 04 0C 01   00 00 00 01   00 - 30   Scale 13 Db
02 04 0C 02   00 00 00 01   00 - 30   Scale 13 D
02 04 0C 03   00 00 00 01   00 - 30   Scale 13 Eb
02 04 0C 04   00 00 00 01   00 - 30   Scale 13 E
02 04 0C 05   00 00 00 01   00 - 30   Scale 13 F
02 04 0C 06   00 00 00 01   00 - 30   Scale 13 F#
02 04 0C 07   00 00 00 01   00 - 30   Scale 13 G
02 04 0C 08   00 00 00 01   00 - 30   Scale 13 Ab
02 04 0C 09   00 00 00 01   00 - 30   Scale 13 A
02 04 0C 0A   00 00 00 01   00 - 30   Scale 13 Bb
02 04 0C 0B   00 00 00 01   00 - 30   Scale 13 B
02 04 0D 00   00 00 00 01   00 - 30   Scale 14 C
02 04 0D 01   00 00 00 01   00 - 30   Scale 14 Db
02 04 0D 02   00 00 00 01   00 - 30   Scale 14 D
02 04 0D 03   00 00 00 01   00 - 30   Scale 14 Eb
02 04 0D 04   00 00 00 01   00 - 30   Scale 14 E
02 04 0D 05   00 00 00 01   00 - 30   Scale 14 F
02 04 0D 06   00 00 00 01   00 - 30   Scale 14 F#
02 04 0D 07   00 00 00 01   00 - 30   Scale 14 G
02 04 0D 08   00 00 00 01   00 - 30   Scale 14 Ab
02 04 0D 09   00 00 00 01   00 - 30   Scale 14 A
02 04 0D 0A   00 00 00 01   00 - 30   Scale 14 Bb
02 04 0D 0B   00 00 00 01   00 - 30   Scale 14 B
02 04 0E 00   00 00 00 01   00 - 30   Scale 15 C
02 04 0E 01   00 00 00 01   00 - 30   Scale 15 Db
02 04 0E 02   00 00 00 01   00 - 30   Scale 15 D
02 04 0E 03   00 00 00 01   00 - 30   Scale 15 Eb
02 04 0E 04   00 00 00 01   00 - 30   Scale 15 E
02 04 0E 05   00 00 00 01   00 - 30   Scale 15 F
02 04 0E 06   00 00 00 01   00 - 30   Scale 15 F#
02 04 0E 07   00 00 00 01   00 - 30   Scale 15 G
02 04 0E 08   00 00 00 01   00 - 30   Scale 15 Ab
02 04 0E 09   00 00 00 01   00 - 30   Scale 15 A
02 04 0E 0A   00 00 00 01   00 - 30   Scale 15 Bb
02 04 0E 0B   00 00 00 01   00 - 30   Scale 15 B
02 04 0F 00   00 00 00 01   00 - 30   Scale 16 C
02 04 0F 01   00 00 00 01   00 - 30   Scale 16 Db
02 04 0F 02   00 00 00 01   00 - 30   Scale 16 D
02 04 0F 03   00 00 00 01   00 - 30   Scale 16 Eb
02 04 0F 04   00 00 00 01   00 - 30   Scale 16 E
02 04 0F 05   00 00 00 01   00 - 30   Scale 16 F
02 04 0F 06   00 00 00 01   00 - 30   Scale 16 F#
02 04 0F 07   00 00 00 01   00 - 30   Scale 16 G
02 04 0F 08   00 00 00 01   00 - 30   Scale 16 Ab
02 04 0F 09   00 00 00 01   00 - 30   Scale 16 A
02 04 0F 0A   00 00 00 01   00 - 30   Scale 16 Bb
02 04 0F 0B   00 00 00 01   00 - 30   Scale 16 B
02 04 10 00   00 00 00 01   00 - 30   Scale 17 C
02 04 10 01   00 00 00 01   00 - 30   Scale 17 Db
02 04 10 02   00 00 00 01   00 - 30   Scale 17 D
02 04 10 03   00 00 00 01   00 - 30   Scale 17 Eb
02 04 10 04   00 00 00 01   00 - 30   Scale 17 E
02 04 10 05   00 00 00 01   00 - 30   Scale 17 F
02 04 10 06   00 00 00 01   00 - 30   Scale 17 F#
02 04 10 07   00 00 00 01   00 - 30   Scale 17 G
02 04 10 08   00 00 00 01   00 - 30   Scale 17 Ab
02 04 10 09   00 00 00 01   00 - 30   Scale 17 A
02 04 10 0A   00 00 00 01   00 - 30   Scale 17 Bb
02 04 10 0B   00 00 00 01   00 - 30   Scale 17 B
02 04 11 00   00 00 00 01   00 - 30   Scale 18 C
02 04 11 01   00 00 00 01   00 - 30   Scale 18 Db
02 04 11 02   00 00 00 01   00 - 30   Scale 18 D
02 04 11 03   00 00 00 01   00 - 30   Scale 18 Eb
02 04 11 04   00 00 00 01   00 - 30   Scale 18 E
02 04 11 05   00 00 00 01   00 - 30   Scale 18 F
02 04 11 06   00 00 00 01   00 - 30   Scale 18 F#
02 04 11 07   00 00 00 01   00 - 30   Scale 18 G
02 04 11 08   00 00 00 01   00 - 30   Scale 18 Ab
02 04 11 09   00 00 00 01   00 - 30   Scale 18 A
02 04 11 0A   00 00 00 01   00 - 30   Scale 18 Bb
02 04 11 0B   00 00 00 01   00 - 30   Scale 18 B
02 04 12 00   00 00 00 01   00 - 30   Scale 19 C
02 04 12 01   00 00 00 01   00 - 30   Scale 19 Db
02 04 12 02   00 00 00 01   00 - 30   Scale 19 D
02 04 12 03   00 00 00 01   00 - 30   Scale 19 Eb
02 04 12 04   00 00 00 01   00 - 30   Scale 19 E
02 04 12 05   00 00 00 01   00 - 30   Scale 19 F
02 04 12 06   00 00 00 01   00 - 30   Scale 19 F#
02 04 12 07   00 00 00 01   00 - 30   Scale 19 G
02 04 12 08   00 00 00 01   00 - 30   Scale 19 Ab
02 04 12 09   00 00 00 01   00 - 30   Scale 19 A
02 04 12 0A   00 00 00 01   00 - 30   Scale 19 Bb
02 04 12 0B   00 00 00 01   00 - 30   Scale 19 B
02 04 13 00   00 00 00 01   00 - 30   Scale 20 C
02 04 13 01   00 00 00 01   00 - 30   Scale 20 Db
02 04 13 02   00 00 00 01   00 - 30   Scale 20 D
02 04 13 03   00 00 00 01   00 - 30   Scale 20 Eb
02 04 13 04   00 00 00 01   00 - 30   Scale 20 E
02 04 13 05   00 00 00 01   00 - 30   Scale 20 F
02 04 13 06   00 00 00 01   00 - 30   Scale 20 F#
02 04 13 07   00 00 00 01   00 - 30   Scale 20 G
02 04 13 08   00 00 00 01   00 - 30   Scale 20 Ab
02 04 13 09   00 00 00 01   00 - 30   Scale 20 A
02 04 13 0A   00 00 00 01   00 - 30   Scale 20 Bb
02 04 13 0B   00 00 00 01   00 - 30   Scale 20 B
02 04 14 00   00 00 00 01   00 - 30   Scale 21 C
02 04 14 01   00 00 00 01   00 - 30   Scale 21 Db
02 04 14 02   00 00 00 01   00 - 30   Scale 21 D
02 04 14 03   00 00 00 01   00 - 30   Scale 21 Eb
02 04 14 04   00 00 00 01   00 - 30   Scale 21 E
02 04 14 05   00 00 00 01   00 - 30   Scale 21 F
02 04 14 06   00 00 00 01   00 - 30   Scale 21 F#
02 04 14 07   00 00 00 01   00 - 30   Scale 21 G
02 04 14 08   00 00 00 01   00 - 30   Scale 21 Ab
02 04 14 09   00 00 00 01   00 - 30   Scale 21 A
02 04 14 0A   00 00 00 01   00 - 30   Scale 21 Bb
02 04 14 0B   00 00 00 01   00 - 30   Scale 21 B
02 04 15 00   00 00 00 01   00 - 30   Scale 22 C
02 04 15 01   00 00 00 01   00 - 30   Scale 22 Db
02 04 15 02   00 00 00 01   00 - 30   Scale 22 D
02 04 15 03   00 00 00 01   00 - 30   Scale 22 Eb
```

```
02 04 15 04   00 00 00 01   00 - 30   Scale 22 E
02 04 15 05   00 00 00 01   00 - 30   Scale 22 F
02 04 15 06   00 00 00 01   00 - 30   Scale 22 F#
02 04 15 07   00 00 00 01   00 - 30   Scale 22 G
02 04 15 08   00 00 00 01   00 - 30   Scale 22 Ab
02 04 15 09   00 00 00 01   00 - 30   Scale 22 A
02 04 15 0A   00 00 00 01   00 - 30   Scale 22 Bb
02 04 15 0B   00 00 00 01   00 - 30   Scale 22 B
02 04 16 00   00 00 00 01   00 - 30   Scale 23 C
02 04 16 01   00 00 00 01   00 - 30   Scale 23 Db
02 04 16 02   00 00 00 01   00 - 30   Scale 23 D
02 04 16 03   00 00 00 01   00 - 30   Scale 23 Eb
02 04 16 04   00 00 00 01   00 - 30   Scale 23 E
02 04 16 05   00 00 00 01   00 - 30   Scale 23 F
02 04 16 06   00 00 00 01   00 - 30   Scale 23 F#
02 04 16 07   00 00 00 01   00 - 30   Scale 23 G
02 04 16 08   00 00 00 01   00 - 30   Scale 23 Ab
02 04 16 09   00 00 00 01   00 - 30   Scale 23 A
02 04 16 0A   00 00 00 01   00 - 30   Scale 23 Bb
02 04 16 0B   00 00 00 01   00 - 30   Scale 23 B
02 04 17 00   00 00 00 01   00 - 30   Scale 24 C
02 04 17 01   00 00 00 01   00 - 30   Scale 24 Db
02 04 17 02   00 00 00 01   00 - 30   Scale 24 D
02 04 17 03   00 00 00 01   00 - 30   Scale 24 Eb
02 04 17 04   00 00 00 01   00 - 30   Scale 24 E
02 04 17 05   00 00 00 01   00 - 30   Scale 24 F
02 04 17 06   00 00 00 01   00 - 30   Scale 24 F#
02 04 17 07   00 00 00 01   00 - 30   Scale 24 G
02 04 17 08   00 00 00 01   00 - 30   Scale 24 Ab
02 04 17 09   00 00 00 01   00 - 30   Scale 24 A
02 04 17 0A   00 00 00 01   00 - 30   Scale 24 Bb
02 04 17 0B   00 00 00 01   00 - 30   Scale 24 B
02 04 18 00   00 00 00 01   00 - 30   Scale 25 C
02 04 18 01   00 00 00 01   00 - 30   Scale 25 Db
02 04 18 02   00 00 00 01   00 - 30   Scale 25 D
02 04 18 03   00 00 00 01   00 - 30   Scale 25 Eb
02 04 18 04   00 00 00 01   00 - 30   Scale 25 E
02 04 18 05   00 00 00 01   00 - 30   Scale 25 F
02 04 18 06   00 00 00 01   00 - 30   Scale 25 F#
02 04 18 07   00 00 00 01   00 - 30   Scale 25 G
02 04 18 08   00 00 00 01   00 - 30   Scale 25 Ab
02 04 18 09   00 00 00 01   00 - 30   Scale 25 A
02 04 18 0A   00 00 00 01   00 - 30   Scale 25 Bb
02 04 18 0B   00 00 00 01   00 - 30   Scale 25 B
02 04 19 00   00 00 00 01   00 - 30   Scale 26 C
02 04 19 01   00 00 00 01   00 - 30   Scale 26 Db
02 04 19 02   00 00 00 01   00 - 30   Scale 26 D
02 04 19 03   00 00 00 01   00 - 30   Scale 26 Eb
02 04 19 04   00 00 00 01   00 - 30   Scale 26 E
02 04 19 05   00 00 00 01   00 - 30   Scale 26 F
02 04 19 06   00 00 00 01   00 - 30   Scale 26 F#
02 04 19 07   00 00 00 01   00 - 30   Scale 26 G
02 04 19 08   00 00 00 01   00 - 30   Scale 26 Ab
02 04 19 09   00 00 00 01   00 - 30   Scale 26 A
02 04 19 0A   00 00 00 01   00 - 30   Scale 26 Bb
02 04 19 0B   00 00 00 01   00 - 30   Scale 26 B
02 04 1A 00   00 00 00 01   00 - 30   Scale 27 C
02 04 1A 01   00 00 00 01   00 - 30   Scale 27 Db
02 04 1A 02   00 00 00 01   00 - 30   Scale 27 D
02 04 1A 03   00 00 00 01   00 - 30   Scale 27 Eb
02 04 1A 04   00 00 00 01   00 - 30   Scale 27 E
02 04 1A 05   00 00 00 01   00 - 30   Scale 27 F
02 04 1A 06   00 00 00 01   00 - 30   Scale 27 F#
02 04 1A 07   00 00 00 01   00 - 30   Scale 27 G
02 04 1A 08   00 00 00 01   00 - 30   Scale 27 Ab
02 04 1A 09   00 00 00 01   00 - 30   Scale 27 A
02 04 1A 0A   00 00 00 01   00 - 30   Scale 27 Bb
02 04 1A 0B   00 00 00 01   00 - 30   Scale 27 B
02 04 1B 00   00 00 00 01   00 - 30   Scale 28 C
02 04 1B 01   00 00 00 01   00 - 30   Scale 28 Db
02 04 1B 02   00 00 00 01   00 - 30   Scale 28 D
02 04 1B 03   00 00 00 01   00 - 30   Scale 28 Eb
02 04 1B 04   00 00 00 01   00 - 30   Scale 28 E
02 04 1B 05   00 00 00 01   00 - 30   Scale 28 F
02 04 1B 06   00 00 00 01   00 - 30   Scale 28 F#
02 04 1B 07   00 00 00 01   00 - 30   Scale 28 G
02 04 1B 08   00 00 00 01   00 - 30   Scale 28 Ab
02 04 1B 09   00 00 00 01   00 - 30   Scale 28 A
02 04 1B 0A   00 00 00 01   00 - 30   Scale 28 Bb
02 04 1B 0B   00 00 00 01   00 - 30   Scale 28 B
02 04 1C 00   00 00 00 01   00 - 30   Scale 29 C
02 04 1C 01   00 00 00 01   00 - 30   Scale 29 Db
02 04 1C 02   00 00 00 01   00 - 30   Scale 29 D
02 04 1C 03   00 00 00 01   00 - 30   Scale 29 Eb
02 04 1C 04   00 00 00 01   00 - 30   Scale 29 E
02 04 1C 05   00 00 00 01   00 - 30   Scale 29 F
02 04 1C 06   00 00 00 01   00 - 30   Scale 29 F#
02 04 1C 07   00 00 00 01   00 - 30   Scale 29 G
02 04 1C 08   00 00 00 01   00 - 30   Scale 29 Ab
02 04 1C 09   00 00 00 01   00 - 30   Scale 29 A
02 04 1C 0A   00 00 00 01   00 - 30   Scale 29 Bb
02 04 1C 0B   00 00 00 01   00 - 30   Scale 29 B
```

Below is an explanation of the Description value when DIR (Direct) is C. Replace each of the values when DIR is something other than C.

```
00 : Pitch = -C ↓↓
01 : Pitch = -Db ↓
02 : Pitch = -D ↓
03 : Pitch = -Eb ↓
04 : Pitch = -E ↓
05 : Pitch = -F ↓
06 : Pitch = -F# ↓
07 : Pitch = -G ↓
08 : Pitch = -Ab ↓
09 : Pitch = -A ↓
0A : Pitch = -Bb ↓
0B : Pitch = -B ↓
0C : Pitch = -C ↓
0D : Pitch = -Db
0E : Pitch = -D
0F : Pitch = -Eb
10 : Pitch = -E
11 : Pitch = -F
12 : Pitch = -F#
13 : Pitch = -G
14 : Pitch = -Ab
15 : Pitch = -A
16 : Pitch = -Bb
```

```
17 : Pitch = -B
18 : Pitch =  C
19 : Pitch = +Db
1A : Pitch = +D
1B : Pitch = +Eb
1C : Pitch = +E
1D : Pitch = +F
1E : Pitch = +F#
1F : Pitch = +G
20 : Pitch = +Ab
21 : Pitch = +A
22 : Pitch = +Bb
23 : Pitch = +B
24 : Pitch = +C ↑
25 : Pitch = +Db ↑
26 : Pitch = +D ↑
27 : Pitch = +Eb ↑
28 : Pitch = +E ↑
29 : Pitch = +F ↑
2A : Pitch = +F# ↑
2B : Pitch = +G ↑
2C : Pitch = +Ab ↑
2D : Pitch = +A ↑
2E : Pitch = +Bb ↑
2F : Pitch = +B ↑
30 : Pitch = +C ↑↑
```

Table AUTO RIFF <AUTO RIFF PHRASE>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 05 00 00	00 00 00 01	00 - 32	User 1 C Step1	
02 05 00 01	00 00 00 01	00 - 32	User 1 C Step2	
02 05 00 02	00 00 00 01	00 - 32	User 1 C Step3	
02 05 00 03	00 00 00 01	00 - 32	User 1 C Step4	
02 05 00 04	00 00 00 01	00 - 32	User 1 C Step5	
02 05 00 05	00 00 00 01	00 - 32	User 1 C Step6	
02 05 00 06	00 00 00 01	00 - 32	User 1 C Step7	
02 05 00 07	00 00 00 01	00 - 32	User 1 C Step8	
02 05 00 08	00 00 00 01	00 - 32	User 1 C Step9	
02 05 00 09	00 00 00 01	00 - 32	User 1 C Step10	
02 05 00 0A	00 00 00 01	00 - 32	User 1 C Step11	
02 05 00 0B	00 00 00 01	00 - 32	User 1 C Step12	
02 05 00 0C	00 00 00 01	00 - 32	User 1 C Step13	
02 05 00 0D	00 00 00 01	00 - 32	User 1 C Step14	
02 05 00 0E	00 00 00 01	00 - 32	User 1 C Step15	
02 05 00 0F	00 00 00 01	00 - 32	User 1 C Step16	
02 05 00 10	00 00 00 01	00 - 32	User 1 Db Step1	
02 05 00 11	00 00 00 01	00 - 32	User 1 Db Step2	
02 05 00 12	00 00 00 01	00 - 32	User 1 Db Step3	
02 05 00 13	00 00 00 01	00 - 32	User 1 Db Step4	
02 05 00 14	00 00 00 01	00 - 32	User 1 Db Step5	
02 05 00 15	00 00 00 01	00 - 32	User 1 Db Step6	
02 05 00 16	00 00 00 01	00 - 32	User 1 Db Step7	
02 05 00 17	00 00 00 01	00 - 32	User 1 Db Step8	
02 05 00 18	00 00 00 01	00 - 32	User 1 Db Step9	
02 05 00 19	00 00 00 01	00 - 32	User 1 Db Step10	
02 05 00 1A	00 00 00 01	00 - 32	User 1 Db Step11	
02 05 00 1B	00 00 00 01	00 - 32	User 1 Db Step12	
02 05 00 1C	00 00 00 01	00 - 32	User 1 Db Step13	
02 05 00 1D	00 00 00 01	00 - 32	User 1 Db Step14	
02 05 00 1E	00 00 00 01	00 - 32	User 1 Db Step15	
02 05 00 1F	00 00 00 01	00 - 32	User 1 Db Step16	
02 05 00 20	00 00 00 01	00 - 32	User 1 D Step1	
02 05 00 21	00 00 00 01	00 - 32	User 1 D Step2	
02 05 00 22	00 00 00 01	00 - 32	User 1 D Step3	
02 05 00 23	00 00 00 01	00 - 32	User 1 D Step4	
02 05 00 24	00 00 00 01	00 - 32	User 1 D Step5	
02 05 00 25	00 00 00 01	00 - 32	User 1 D Step6	
02 05 00 26	00 00 00 01	00 - 32	User 1 D Step7	
02 05 00 27	00 00 00 01	00 - 32	User 1 D Step8	
02 05 00 28	00 00 00 01	00 - 32	User 1 D Step9	
02 05 00 29	00 00 00 01	00 - 32	User 1 D Step10	
02 05 00 2A	00 00 00 01	00 - 32	User 1 D Step11	
02 05 00 2B	00 00 00 01	00 - 32	User 1 D Step12	
02 05 00 2C	00 00 00 01	00 - 32	User 1 D Step13	
02 05 00 2D	00 00 00 01	00 - 32	User 1 D Step14	
02 05 00 2E	00 00 00 01	00 - 32	User 1 D Step15	
02 05 00 2F	00 00 00 01	00 - 32	User 1 D Step16	
02 05 00 30	00 00 00 01	00 - 32	User 1 Eb Step1	
02 05 00 31	00 00 00 01	00 - 32	User 1 Eb Step2	
02 05 00 32	00 00 00 01	00 - 32	User 1 Eb Step3	
02 05 00 33	00 00 00 01	00 - 32	User 1 Eb Step4	
02 05 00 34	00 00 00 01	00 - 32	User 1 Eb Step5	
02 05 00 35	00 00 00 01	00 - 32	User 1 Eb Step6	
02 05 00 36	00 00 00 01	00 - 32	User 1 Eb Step7	
02 05 00 37	00 00 00 01	00 - 32	User 1 Eb Step8	
02 05 00 38	00 00 00 01	00 - 32	User 1 Eb Step9	
02 05 00 39	00 00 00 01	00 - 32	User 1 Eb Step10	
02 05 00 3A	00 00 00 01	00 - 32	User 1 Eb Step11	
02 05 00 3B	00 00 00 01	00 - 32	User 1 Eb Step12	
02 05 00 3C	00 00 00 01	00 - 32	User 1 Eb Step13	
02 05 00 3D	00 00 00 01	00 - 32	User 1 Eb Step14	
02 05 00 3E	00 00 00 01	00 - 32	User 1 Eb Step15	
02 05 00 3F	00 00 00 01	00 - 32	User 1 Eb Step16	
02 05 00 40	00 00 00 01	00 - 32	User 1 E Step1	
02 05 00 41	00 00 00 01	00 - 32	User 1 E Step2	
02 05 00 42	00 00 00 01	00 - 32	User 1 E Step3	
02 05 00 43	00 00 00 01	00 - 32	User 1 E Step4	
02 05 00 44	00 00 00 01	00 - 32	User 1 E Step5	
02 05 00 45	00 00 00 01	00 - 32	User 1 E Step6	
02 05 00 46	00 00 00 01	00 - 32	User 1 E Step7	
02 05 00 47	00 00 00 01	00 - 32	User 1 E Step8	
02 05 00 48	00 00 00 01	00 - 32	User 1 E Step9	
02 05 00 49	00 00 00 01	00 - 32	User 1 E Step10	
02 05 00 4A	00 00 00 01	00 - 32	User 1 E Step11	
02 05 00 4B	00 00 00 01	00 - 32	User 1 E Step12	
02 05 00 4C	00 00 00 01	00 - 32	User 1 E Step13	
02 05 00 4D	00 00 00 01	00 - 32	User 1 E Step14	
02 05 00 4E	00 00 00 01	00 - 32	User 1 E Step15	
02 05 00 4F	00 00 00 01	00 - 32	User 1 E Step16	
02 05 00 50	00 00 00 01	00 - 32	User 1 F Step1	
02 05 00 51	00 00 00 01	00 - 32	User 1 F Step2	
02 05 00 52	00 00 00 01	00 - 32	User 1 F Step3	
02 05 00 53	00 00 00 01	00 - 32	User 1 F Step4	
02 05 00 54	00 00 00 01	00 - 32	User 1 F Step5	
02 05 00 55	00 00 00 01	00 - 32	User 1 F Step6	

```
02 05 00 56   00 00 00 01   00 - 32   User 1  F  Step7
02 05 00 57   00 00 00 01   00 - 32   User 1  F  Step8
02 05 00 58   00 00 00 01   00 - 32   User 1  F  Step9
02 05 00 59   00 00 00 01   00 - 32   User 1  F  Step10
02 05 00 5A   00 00 00 01   00 - 32   User 1  F  Step11
02 05 00 5B   00 00 00 01   00 - 32   User 1  F  Step12
02 05 00 5C   00 00 00 01   00 - 32   User 1  F  Step13
02 05 00 5D   00 00 00 01   00 - 32   User 1  F  Step14
02 05 00 5E   00 00 00 01   00 - 32   User 1  F  Step15
02 05 00 5F   00 00 00 01   00 - 32   User 1  F  Step16
02 05 00 60   00 00 00 01   00 - 32   User 1  F# Step1
02 05 00 61   00 00 00 01   00 - 32   User 1  F# Step2
02 05 00 62   00 00 00 01   00 - 32   User 1  F# Step3
02 05 00 63   00 00 00 01   00 - 32   User 1  F# Step4
02 05 00 64   00 00 00 01   00 - 32   User 1  F# Step5
02 05 00 65   00 00 00 01   00 - 32   User 1  F# Step6
02 05 00 66   00 00 00 01   00 - 32   User 1  F# Step7
02 05 00 67   00 00 00 01   00 - 32   User 1  F# Step8
02 05 00 68   00 00 00 01   00 - 32   User 1  F# Step9
02 05 00 69   00 00 00 01   00 - 32   User 1  F# Step10
02 05 00 6A   00 00 00 01   00 - 32   User 1  F# Step11
02 05 00 6B   00 00 00 01   00 - 32   User 1  F# Step12
02 05 00 6C   00 00 00 01   00 - 32   User 1  F# Step13
02 05 00 6D   00 00 00 01   00 - 32   User 1  F# Step14
02 05 00 6E   00 00 00 01   00 - 32   User 1  F# Step15
02 05 00 6F   00 00 00 01   00 - 32   User 1  F# Step16
02 05 00 70   00 00 00 01   00 - 32   User 1  G  Step1
02 05 00 71   00 00 00 01   00 - 32   User 1  G  Step2
02 05 00 72   00 00 00 01   00 - 32   User 1  G  Step3
02 05 00 73   00 00 00 01   00 - 32   User 1  G  Step4
02 05 00 74   00 00 00 01   00 - 32   User 1  G  Step5
02 05 00 75   00 00 00 01   00 - 32   User 1  G  Step6
02 05 00 76   00 00 00 01   00 - 32   User 1  G  Step7
02 05 00 77   00 00 00 01   00 - 32   User 1  G  Step8
02 05 00 78   00 00 00 01   00 - 32   User 1  G  Step9
02 05 00 79   00 00 00 01   00 - 32   User 1  G  Step10
02 05 00 7A   00 00 00 01   00 - 32   User 1  G  Step11
02 05 00 7B   00 00 00 01   00 - 32   User 1  G  Step12
02 05 00 7C   00 00 00 01   00 - 32   User 1  G  Step13
02 05 00 7D   00 00 00 01   00 - 32   User 1  G  Step14
02 05 00 7E   00 00 00 01   00 - 32   User 1  G  Step15
02 05 00 7F   00 00 00 01   00 - 32   User 1  G  Step16
02 05 01 00   00 00 00 01   00 - 32   User 1  Ab Step1
02 05 01 01   00 00 00 01   00 - 32   User 1  Ab Step2
02 05 01 02   00 00 00 01   00 - 32   User 1  Ab Step3
02 05 01 03   00 00 00 01   00 - 32   User 1  Ab Step4
02 05 01 04   00 00 00 01   00 - 32   User 1  Ab Step5
02 05 01 05   00 00 00 01   00 - 32   User 1  Ab Step6
02 05 01 06   00 00 00 01   00 - 32   User 1  Ab Step7
02 05 01 07   00 00 00 01   00 - 32   User 1  Ab Step8
02 05 01 08   00 00 00 01   00 - 32   User 1  Ab Step9
02 05 01 09   00 00 00 01   00 - 32   User 1  Ab Step10
02 05 01 0A   00 00 00 01   00 - 32   User 1  Ab Step11
02 05 01 0B   00 00 00 01   00 - 32   User 1  Ab Step12
02 05 01 0C   00 00 00 01   00 - 32   User 1  Ab Step13
02 05 01 0D   00 00 00 01   00 - 32   User 1  Ab Step14
02 05 01 0E   00 00 00 01   00 - 32   User 1  Ab Step15
02 05 01 0F   00 00 00 01   00 - 32   User 1  Ab Step16
02 05 01 10   00 00 00 01   00 - 32   User 1  A  Step1
02 05 01 11   00 00 00 01   00 - 32   User 1  A  Step2
02 05 01 12   00 00 00 01   00 - 32   User 1  A  Step3
02 05 01 13   00 00 00 01   00 - 32   User 1  A  Step4
02 05 01 14   00 00 00 01   00 - 32   User 1  A  Step5
02 05 01 15   00 00 00 01   00 - 32   User 1  A  Step6
02 05 01 16   00 00 00 01   00 - 32   User 1  A  Step7
02 05 01 17   00 00 00 01   00 - 32   User 1  A  Step8
02 05 01 18   00 00 00 01   00 - 32   User 1  A  Step9
02 05 01 19   00 00 00 01   00 - 32   User 1  A  Step10
02 05 01 1A   00 00 00 01   00 - 32   User 1  A  Step11
02 05 01 1B   00 00 00 01   00 - 32   User 1  A  Step12
02 05 01 1C   00 00 00 01   00 - 32   User 1  A  Step13
02 05 01 1D   00 00 00 01   00 - 32   User 1  A  Step14
02 05 01 1E   00 00 00 01   00 - 32   User 1  A  Step15
02 05 01 1F   00 00 00 01   00 - 32   User 1  A  Step16
02 05 01 20   00 00 00 01   00 - 32   User 1  Bb Step1
02 05 01 21   00 00 00 01   00 - 32   User 1  Bb Step2
02 05 01 22   00 00 00 01   00 - 32   User 1  Bb Step3
02 05 01 23   00 00 00 01   00 - 32   User 1  Bb Step4
02 05 01 24   00 00 00 01   00 - 32   User 1  Bb Step5
02 05 01 25   00 00 00 01   00 - 32   User 1  Bb Step6
02 05 01 26   00 00 00 01   00 - 32   User 1  Bb Step7
02 05 01 27   00 00 00 01   00 - 32   User 1  Bb Step8
02 05 01 28   00 00 00 01   00 - 32   User 1  Bb Step9
02 05 01 29   00 00 00 01   00 - 32   User 1  Bb Step10
02 05 01 2A   00 00 00 01   00 - 32   User 1  Bb Step11
02 05 01 2B   00 00 00 01   00 - 32   User 1  Bb Step12
02 05 01 2C   00 00 00 01   00 - 32   User 1  Bb Step13
02 05 01 2D   00 00 00 01   00 - 32   User 1  Bb Step14
02 05 01 2E   00 00 00 01   00 - 32   User 1  Bb Step15
02 05 01 2F   00 00 00 01   00 - 32   User 1  Bb Step16
02 05 01 30   00 00 00 01   00 - 32   User 1  B  Step1
02 05 01 31   00 00 00 01   00 - 32   User 1  B  Step2
02 05 01 32   00 00 00 01   00 - 32   User 1  B  Step3
02 05 01 33   00 00 00 01   00 - 32   User 1  B  Step4
02 05 01 34   00 00 00 01   00 - 32   User 1  B  Step5
02 05 01 35   00 00 00 01   00 - 32   User 1  B  Step6
02 05 01 36   00 00 00 01   00 - 32   User 1  B  Step7
02 05 01 37   00 00 00 01   00 - 32   User 1  B  Step8
02 05 01 38   00 00 00 01   00 - 32   User 1  B  Step9
02 05 01 39   00 00 00 01   00 - 32   User 1  B  Step10
02 05 01 3A   00 00 00 01   00 - 32   User 1  B  Step11
02 05 01 3B   00 00 00 01   00 - 32   User 1  B  Step12
02 05 01 3C   00 00 00 01   00 - 32   User 1  B  Step13
02 05 01 3D   00 00 00 01   00 - 32   User 1  B  Step14
02 05 01 3E   00 00 00 01   00 - 32   User 1  B  Step15
02 05 01 3F   00 00 00 01   00 - 32   User 1  B  Step16
02 05 02 00   00 00 00 01   00 - 32   User 2  C  Step1
   :                 :
02 05 04 00   00 00 00 01   00 - 32   User 3  C  Step1
   :                 :
02 05 06 00   00 00 00 01   00 - 32   User 4  C  Step1
   :                 :
02 05 08 00   00 00 00 01   00 - 32   User 5  C  Step1
   :                 :
02 05 0A 00   00 00 00 01   00 - 32   User 6  C  Step1
   :                 :
02 05 0C 00   00 00 00 01   00 - 32   User 7  C  Step1
   :                 :
```

```
02 05 0E 00   00 00 00 01   00 - 32   User 8  C  Step1
   :                :
02 05 10 00   00 00 00 01   00 - 32   User 9  C  Step1
   :                :
02 05 12 00   00 00 00 01   00 - 32   User 10 C  Step1
   :                :
02 05 12 3F   00 00 00 01   00 - 32   User 10 B  Step16
```

Below is an explanation of the Description value when IN is C. Replace each of the values when IN is something other than C.

```
00 : Pitch = -C ↓↓
01 : Pitch = -Db ↓
02 : Pitch = -D ↓
03 : Pitch = -Eb ↓
04 : Pitch = -E ↓
05 : Pitch = -F ↓
06 : Pitch = -F# ↓
07 : Pitch = -G ↓
08 : Pitch = -Ab ↓
09 : Pitch = -A ↓
0A : Pitch = -Bb ↓
0B : Pitch = -B ↓
0C : Pitch = -C ↓
0D : Pitch = -Db
0E : Pitch = -D
0F : Pitch = -Eb
10 : Pitch = -E
11 : Pitch = -F
12 : Pitch = -F#
13 : Pitch = -G
14 : Pitch = -Ab
15 : Pitch = -A
16 : Pitch = -Bb
17 : Pitch = -B
18 : Pitch =  C
19 : Pitch = +Db
1A : Pitch = +D
1B : Pitch = +Eb
1C : Pitch = +E
1D : Pitch = +F
1E : Pitch = +F#
1F : Pitch = +G
20 : Pitch = +Ab
21 : Pitch = +A
22 : Pitch = +Bb
23 : Pitch = +B
24 : Pitch = +C ↑
25 : Pitch = +Db ↑
26 : Pitch = +D ↑
27 : Pitch = +Eb ↑
28 : Pitch = +E ↑
29 : Pitch = +F ↑
2A : Pitch = +F# ↑
2B : Pitch = +G ↑
2C : Pitch = +Ab ↑
2D : Pitch = +A ↑
2E : Pitch = +Bb ↑
2F : Pitch = +B ↑
30 : Pitch = +C ↑↑
31 : Pitch =  -
32 : Pitch = end
```

Table PREAMP <PREAMP Customaize>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 06 00 00	00 00 00 01	00 - 06	Custom1 Basic Type	00 : JC Clean 01 : TW Clean 02 : Crunch 03 : VO Lead 04 : BG Lead 05 : MS1959 Stk 06 : Modern Stk
02 06 00 01	00 00 00 01	00 - 0A	Custom1 Bottom	
02 06 00 02	00 00 00 01	00 - 0A	Custom1 Edge	
02 06 00 03	00 00 00 01	00 - 0A	Custom1 Bass Frequency	
02 06 00 04	00 00 00 01	00 - 0A	Custom1 Treble Frequency	
02 06 00 05	00 00 00 01	00 - 0A	Custom1 Preamp Low	
02 06 00 06	00 00 00 01	00 - 0A	Custom1 Preamp High	
02 06 00 07	00 00 00 01	00 - 0A	Custom1 Speaker Low	
02 06 00 08	00 00 00 01	00 - 0A	Custom1 Speaker High	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
02 06 01 00	00 00 00 01	00 - 06	Custom2 Basic Type	
02 06 01 01	00 00 00 01	00 - 0A	Custom2 Bottom	
02 06 01 02	00 00 00 01	00 - 0A	Custom2 Edge	
02 06 01 03	00 00 00 01	00 - 0A	Custom2 Bass Frequency	
02 06 01 04	00 00 00 01	00 - 0A	Custom2 Treble Frequency	
02 06 01 05	00 00 00 01	00 - 0A	Custom2 Preamp Low	
02 06 01 06	00 00 00 01	00 - 0A	Custom2 Preamp High	
02 06 01 07	00 00 00 01	00 - 0A	Custom2 Speaker Low	
02 06 01 08	00 00 00 01	00 - 0A	Custom2 Speaker High	
02 06 02 00	00 00 00 01	00 - 06	Custom3 Basic Type	
02 06 02 01	00 00 00 01	00 - 0A	Custom3 Bottom	
02 06 02 02	00 00 00 01	00 - 0A	Custom3 Edge	
02 06 02 03	00 00 00 01	00 - 0A	Custom3 Bass Frequency	
02 06 02 04	00 00 00 01	00 - 0A	Custom3 Treble Frequency	
02 06 02 05	00 00 00 01	00 - 0A	Custom3 Preamp Low	
02 06 02 06	00 00 00 01	00 - 0A	Custom3 Preamp High	
02 06 02 07	00 00 00 01	00 - 0A	Custom3 Speaker Low	
02 06 02 08	00 00 00 01	00 - 0A	Custom3 Speaker High	

Table OD / DS <OD / DS Customaize>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 07 00 00	00 00 00 01	00 - 07	Custom1 Type	00 : OD-1 01 : OD-2 02 : CRUNCH 03 : DS-1 04 : DS-2 05 : METAL-1 06 : METAL-2

				07 : FUZZ
02 07 00 01	00 00 00 01	00 - 0A	Custom1 Bottom	
02 07 00 02	00 00 00 01	00 - 0A	Custom1 Top	
02 07 00 03	00 00 00 01	00 - 0A	Custom1 Low	
02 07 00 04	00 00 00 01	00 - 0A	Custom1 High	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
02 07 01 00	00 00 00 01	00 - 07	Custom2 Type	
02 07 01 01	00 00 00 01	00 - 0A	Custom2 Bottom	
02 07 01 02	00 00 00 01	00 - 0A	Custom2 Top	
02 07 01 03	00 00 00 01	00 - 0A	Custom2 Low	
02 07 01 04	00 00 00 01	00 - 0A	Custom2 High	

Table WAH <WAH Customaize>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 08 00 00	00 00 00 01	00 - 04	Custom1 Basic Type	00 : CRY WAH
				01 : VO WAH
				02 : Fat WAH
				03 : Light WAH
				04 : 7String WAH
02 08 00 01	00 00 00 01	00 - 0A	Custom1 Q	
02 08 00 02	00 00 00 01	00 - 0A	Custom1 Range Low	
02 08 00 03	00 00 00 01	00 - 0A	Custom1 Range High	
02 08 00 04	00 00 00 01	00 - 0A	Custom1 Presence	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
02 08 01 00	00 00 00 01	00 - 04	Custom2 Basic Type	
02 08 01 01	00 00 00 01	00 - 0A	Custom2 Q	
02 08 01 02	00 00 00 01	00 - 0A	Custom2 Range Low	
02 08 01 03	00 00 00 01	00 - 0A	Custom2 Range High	
02 08 00 04	00 00 00 01	00 - 0A	Custom2 Presence	
02 08 02 00	00 00 00 01	00 - 04	Custom3 Basic Type	
02 08 02 01	00 00 00 01	00 - 0A	Custom3 Q	
02 08 02 02	00 00 00 01	00 - 0A	Custom3 Range Low	
02 08 02 03	00 00 00 01	00 - 0A	Custom3 Range High	
02 08 00 04	00 00 00 01	00 - 0A	Custom3 Presence	

Table MANUAL <MANUAL>

Address(H)	Size(H)	Data(H)	Parameter	Description
03 00 00 00	00 00 00 01	00 - 0A	Pedal 1	
03 00 00 01	00 00 00 01	00 - 0A	Pedal 2	
03 00 00 02	00 00 00 01	00 - 0A	Pedal 3	
03 00 00 03	00 00 00 01	00 - 0A	Pedal 4	
03 00 00 04	00 00 00 01	00 - 0A	Bank Down	
03 00 00 05	00 00 00 01	00 - 0A	Bank Up	00 : FX1
				01 : WAH
				02 : OD/DS
				03 : PREAMP/SP SIM
				04 : EQ
				05 : FX2
				06 : DD
				07 : CE
				08 : RV
				09 : NS
				0A : TUNER

Table Quick Fx <Quick Setting>

Address(H)	Size(H)	Data(H)	Parameter	Description
04 00				P1(Read Only)
04 01				P2(Read Only)
04 02				P3(Read Only)
04 03				P4(Read Only)
•• ••				••
↑ ↑				
↑ ↑				Separate the upper four and lower four bits, assigning them to different bytes, and process them in sequence, beginning with the upper bits.
↑ ↑				↓↓ Example) Processing 64H
↑ ↑				↓↓ 06H: Odd address
↑ ↑				↓↓ 04H: Even address

--- FX 1 ---

** ** 00 00	00 00 00 02	00 - 08	FX1:FX Select	
** ** 00 02#	00 00 00 02	00 - 64	CS :Sustain	
	00 00 00 02	00 - 64	LM :Threshold	
	00 00 00 02	00 - 64	AC :Top	
	00 00 00 02	00 - 02	PIC:Type	
	00 00 00 02	00 - 64	TR :Wave Shape	
	00 00 00 02	00 - 64	SG :Sensitivity	
	00 00 00 02	00 - 01	FB :Mode	
	00 00 00 02	00 - 64	AFB:Freq1	
	00 00 00 02	00 - 64	FRT:Tone	
** ** 00 04#	00 00 00 02	00 - 64	CS :Attack	
	00 00 00 02	00 - 64	LM :Release	
	00 00 00 02	00 - 64	AC :Body	
	00 00 00 02	00 - 64	PIC:Tone	
	00 00 00 02	00 - 71	TR :Rate	
	00 00 00 02	00 - 64	SG :Rise Time	
	00 00 00 02	00 - 64	FB :Rise Time	
	00 00 00 02	00 - 64	AFB:Depth1	
	00 00 00 02	00 - 64	FRT:Sensitivity	
** ** 00 06#	00 00 00 02	00 - 64	CS :Tone	
	00 00 00 02	00 - 64	LM :Tone	
	00 00 00 02	00 - 64	AC :Level	
	00 00 00 02	00 - 64	PIC:Level	
	00 00 00 02	00 - 64	TR :Depth	
			SG :---	
	00 00 00 02	00 - 64	FB :Rise Time(▲)	
	00 00 00 02	00 - 64	AFB:Freq2	
	00 00 00 02	00 - 64	FRT:Attack	
** ** 00 08#	00 00 00 02	00 - 64	CS :Level	
	00 00 00 02	00 - 64	LM :Level	
			AC :---	
			PIC:---	

```
                                        TR :---
                                        SG :---
             00 00 00 02  00 - 64       FB :F.B.Level
             00 00 00 02  00 - 64       AFB:Depth2
             00 00 00 02  00 - 64       FRT:Depth
** ** 00 0A#                            CS :---
                                        LM :---
                                        AC :---
                                        PIC:---
                                        TR :---
                                        SG :---
             00 00 00 02  00 - 64       FB :F.B.Level(▲)
             00 00 00 02  00 - 64       AFB:Freq3
             00 00 00 02  00 - 64       FRT:Reso
** ** 00 0C#                            CS :---
                                        LM :---
                                        AC :---
                                        PIC:---
                                        TR :---
                                        SG :---
             00 00 00 02  00 - 64       FB :Vibrato Rate
             00 00 00 02  00 - 64       AFB:Depth3
             00 00 00 02  00 - 64       FRT:Effect Level
** ** 00 0E#                            CS :---
                                        LM :---
                                        AC :---
                                        PIC:---
                                        TR :---
                                        SG :---
             00 00 00 02  00 - 64       FB :Vibrato Depth
                                        AFB:---
             00 00 00 02  00 - 64       FRT:Direct Level
```

--- WAH ---

```
** ** 01 00   00 00 00 02  00 - 01   WAH:FX Select
** ** 01 02#  00 00 00 02  00 - 07   WAH:Type
** ** 01 04#  00 00 00 02  00 - 64   WAH:Pdl Position
** ** 01 06#  00 00 00 02  00 - 64   WAH:Level
** ** 01 08#  00 00 00 02  00 - 01   AW :Mode
** ** 01 0A#  00 00 00 02  00 - 01   AW :Polarity
** ** 01 0C#  00 00 00 02  00 - 64   AW :Sensitivity
** ** 01 0E#  00 00 00 02  00 - 64   AW :Frequency
** ** 01 10#  00 00 00 02  00 - 64   AW :Peak
** ** 01 12#  00 00 00 02  00 - 71   AW :Rate
** ** 01 14#  00 00 00 02  00 - 64   AW :Depth
** ** 01 16#  00 00 00 02  00 - 64   AW :Level
** ** 01 18#  00 00 00 02  00 - 07   FW :Type
** ** 01 1A#  00 00 00 02  00 - 64   FW :Pdl Position
** ** 01 1C#  00 00 00 02  00 - 64   FW :Level
```

--- OD / DS ---

```
** ** 02 00   00 00 00 02  00 - 11   OD :Type
** ** 02 02#  00 00 00 02  00 - 64   OD :Drive
** ** 02 04#  00 00 00 02  00 - 64   OD :Bass
** ** 02 06#  00 00 00 02  00 - 64   OD :Treble
** ** 02 08#  00 00 00 02  00 - 64   OD :Level
```

--- PREAMP / SP SIM ---

```
** ** 03 00   00 00 00 02  00 - 20   PRE/SP:Type
** ** 03 02#  00 00 00 02  00 - 64   PRE/SP:Gain
** ** 03 04#  00 00 00 02  00 - 64   PRE/SP:Bass
** ** 03 06#  00 00 00 02  00 - 64   PRE/SP:Middle
** ** 03 08#  00 00 00 02  00 - 64   PRE/SP:Treble
** ** 03 0A#  00 00 00 02  00 - 64   PRE/SP:Presence
** ** 03 0C#  00 00 00 02  00 - 64   PRE/SP:Amp Level
** ** 03 0E#  00 00 00 02  00 - 01   PRE/SP:Bright
** ** 03 10#  00 00 00 02  00 - 02   PRE/SP:Gain SW
** ** 03 12#  00 00 00 02  00 - 01   PRE/SP:Speaker SW
** ** 03 14#  00 00 00 02  00 - 06   PRE/SP:Speaker Type
** ** 03 16#  00 00 00 02  00 - 0A   PRE/SP:Mic Setting
** ** 03 18#  00 00 00 02  00 - 64   PRE/SP:Mic Level
** ** 03 1A#  00 00 00 02  00 - 64   PRE/SP:Direct Level
```

--- EQ ---

```
** ** 04 00   00 00 00 02  00 - 28   EQ :Low EQ
** ** 04 02#  00 00 00 02  00 - 14   EQ :Low-Middle Frequency
** ** 04 02#  00 00 00 02  00 - 05   EQ :Low-Middle Q
** ** 04 06#  00 00 00 02  00 - 28   EQ :Low-Middle EQ
** ** 04 08#  00 00 00 02  00 - 14   EQ :High-Middle Frequency
** ** 04 0A#  00 00 00 02  00 - 05   EQ :High-Middle Q
** ** 04 0C#  00 00 00 02  00 - 28   EQ :High-Middle EQ
** ** 04 0E#  00 00 00 02  00 - 28   EQ :High EQ
** ** 04 10#  00 00 00 02  00 - 28   EQ :Level
```

--- FX 2 ---

```
** ** 05 00   00 00 00 02  00 - 0F   FX2:FX Select
** ** 05 02#  00 00 00 02  00 - 03   PH :Type
             00 00 00 02  00 - 71   FL :Rate
             00 00 00 02  00 - 02   HR :Voice
             00 00 00 02  00 - 02   PS :Voice
             00 00 00 02  00 - 30   PB :Pitch Min
             00 00 00 02  00 - 64   2CE:Xover Frequency
             00 00 00 02  00 - 64   PAN:Wave Shape
             00 00 00 02  00 - 71   VB :Rate
             00 00 00 02  00 - 71   UV :Rate
             00 00 00 04  00 00 -   SDD:Delay Time
                          - 03 17
             00 00 00 02  00 - 02   HU :Mode
             00 00 00 02  00 - 01   RM :Mode
             00 00 00 02  00 - 13   SL :Pattern
             00 00 00 02  00 - 27   AR :Phrase
             00 00 00 02  00 - 64   SYN:Sensitivity
             00 00 00 02  00 - 28   SEQ:Low EQ
** ** 05 04#  00 00 00 02  00 - 71   PH :Rate
             00 00 00 02  00 - 64   FL :Depth
             00 00 00 02  00 - 39   HR1:Harmony
             00 00 00 02  00 - 02   PS1:Mode
             00 00 00 02  00 - 30   PB :Pitch Max
             00 00 00 02  00 - 71   2CE:Low Rate
             00 00 00 02  00 - 71   PAN:Rate
             00 00 00 02  00 - 64   VB :Depth
             00 00 00 02  00 - 64   UV :Depth
                                    SDD:(LSB)
```

```
                00 00 00 02   00 - 04   HU :Vowel 1
                00 00 00 02   00 - 64   RM :Freq
                00 00 00 02   00 - 71   SL :Rate
                00 00 00 02   00 - 01   AR :Loop
                00 00 00 02   00 - 03   SYN:Wave
                00 00 00 02   00 - 14   SEQ:Low-Middle Frequency
** ** 05 06#     00 00 00 02   00 - 64   PH :Depth
                00 00 00 02   00 - 64   FL :Manual
                00 00 00 04   00 00 -   HR1:Pre Delay
                              - 02 33
                00 00 00 02   00 - 30   PS1:Pitch
                00 00 00 02   00 - 64   PB :Pdl Position
                00 00 00 02   00 - 64   2CE:Low Depth
                00 00 00 02   00 - 64   PAN:Depth
                00 00 00 02   00 - 01   VB :Trigger
                00 00 00 02   00 - 64   UV :Level
                00 00 00 02   00 - 64   SDD:Feedback
                00 00 00 02   00 - 04   HU :Vowel 2
                00 00 00 02   00 - 64   RM :Effect Level
                00 00 00 02   00 - 64   SL :Trigger Sens
                00 00 00 02   00 - 71   AR :Tempo
                00 00 00 02   00 - 01   SYN:Chromatic
                00 00 00 02   00 - 05   SEQ:Low-Middle Q
** ** 05 08#     00 00 00 02   00 - 64   PH :Manual
                00 00 00 02   00 - 64   FL :Resonance
                                        HR1:(LSB)
                00 00 00 02   00 - 64   PS1:Fine
                00 00 00 02   00 - 64   PB :Effect Level
                00 00 00 02   00 - 50   2CE:Low Pre Delay
                                        PAN:---
                00 00 00 02   00 - 64   VB :Rise Time
                                        UV :---
                00 00 00 02   00 - 78   SDD:Effect Level
                00 00 00 02   00 - 64   HU :Sensitivity
                00 00 00 02   00 - 64   RM :Direct Level
                                        SL :---
                00 00 00 02   00 - 64   AR :Sensitivity
                00 00 00 02   00 - 02   SYN:Octave Shift
                00 00 00 02   00 - 28   SEQ:Low-Middle EQ
** ** 05 0A#     00 00 00 02   00 - 64   PH :Resonance
                00 00 00 02   00 - 64   FL :Separation
                00 00 00 02   00 - 64   HR1:Feedback
                00 00 00 04   00 00 -   PS1:Pre Delay
                              - 02 33
                00 00 00 02   00 - 64   PB :Direct Level
                00 00 00 02   00 - 64   2CE:Low Level
                                        PAN:---
                                        VB :---
                                        UV :---
                                        SDD:---
                00 00 00 02   00 - 64   HU :Rate
                                        RM :---
                                        SL :---
                00 00 00 02   00 - 0B   AR :Key
                00 00 00 02   00 - 64   SYN:PWM Rate
                00 00 00 02   00 - 14   SEQ:High-Middle Frequency
** ** 05 0C#     00 00 00 02   00 - 01   PH :Step
                00 00 00 02   00 - 64   FL :Effect Level
                00 00 00 02   00 - 64   HR1:Level
                                        PS1:(LSB)
                                        PB :---
                00 00 00 02   00 - 71   2CE:High Rate
                                        PAN:---
                                        VB :---
                                        UV :---
                                        SDD:---
                00 00 00 02   00 - 64   HU :Depth
                                        RM :---
                                        SL :---
                00 00 00 02   00 - 64   AR :Attack
                00 00 00 02   00 - 64   SYN:PWM Depth
                00 00 00 02   00 - 05   SEQ:High-Middle Q
** ** 05 0E#     00 00 00 02   00 - 71   PH :Step Rate
                00 00 00 02   00 - 64   FL :Direct Level
                00 00 00 02   00 - 39   HR2:Harmony
                00 00 00 02   00 - 64   PS1:Feedback
                                        PB :---
                00 00 00 02   00 - 64   2CE:High Depth
                                        PAN:---
                                        VB :---
                                        UV :---
                                        SDD:---
                00 00 00 02   00 - 64   HU :Manual
                                        RM :---
                                        SL :---
                00 00 00 02   00 - 01   AR :Hold
                00 00 00 02   00 - 64   SYN:Cutoff Frequency
                00 00 00 02   00 - 28   SEQ:High-Middle EQ
**  **  05 10#00 00 00 02   00 - 64   PH :Effect Level
                                        FL :---
                00 00 00 04   00 00 -   HR2:Pre Delay
                              - 02 33
                00 00 00 02   00 - 64   PS1:Level
                                        PB :---
                00 00 00 02   00 - 50   2CE:High Pre Delay
                                        PAN:---
                                        VB :---
                                        UV :---
                                        SDD:---
                00 00 00 02   00 - 64   HU :Level
                                        RM :---
                                        SL :---
                00 00 00 02   00 - 64   AR :Effect Level
                00 00 00 02   00 - 64   SYN:Resonance
                00 00 00 02   00 - 28   SEQ:High EQ
** ** 05 12#     00 00 00 02   00 - 64   PH :Direct Level
                                        FL :---
                                        HR2:(LSB)
                00 00 00 02   00 - 64   PS2:Mode
                                        PB :---
                00 00 00 02   00 - 64   2CE:High Level
                                        PAN:---
                                        VB :---
                                        UV :---
                                        SDD:---
                                        HU :---
                                        RM :---
                                        SL :---
```

```
             00 00 00 02  00 - 64   AR :Direct Level
             00 00 00 02  00 - 64   SYN:FLT.Sens
             00 00 00 02  00 - 28   SEQ:Level
** ** 05 14#                        PH :---
                                    FL :---
             00 00 00 02  00 - 64   HR2:Level
             00 00 00 02  00 - 30   PS2:Pitch
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 64   SYN:FLT.Decay
                                    SEQ:---
** ** 05 16#                        PH :---
                                    FL :---
             00 00 00 02  00 - 0B   HR :Key
             00 00 00 02  00 - 64   PS2:Fine
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 64   SYN:FLT.Depth
                                    SEQ:---
** ** 05 18#                        PH :---
                                    FL :---
             00 00 00 02  00 - 64   HR :Direct Level
             00 00 00 04  00 00 -   PS2:Pre Delay
                          - 02 33
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 65   SYN:Attack
                                    SEQ:---
** ** 05 1A#                        PH :---
                                    FL :---
                                    HR :---
                                    PS2:(LSB)
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 64   SYN:Release
                                    SEQ:---
** ** 05 1C#                        PH :---
                                    FL :---
                                    HR :---
             00 00 00 02  00 - 64   PS2:Level
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 64   SYN:Velocity
                                    SEQ:---
** ** 05 1E#                        PH :---
                                    FL :---
                                    HR :---
             00 00 00 02  00 - 64   PS :Direct Level
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 01   SYN:Hold
                                    SEQ:---
** ** 05 20#                        PH :---
                                    FL :---
                                    HR :---
                                    PS :---
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 64   SYN:Synth Level
                                    SEQ:---
** ** 05 22#                        PH :---
                                    FL :---
```

```
                                    HR :---
                                    PS :---
                                    PB :---
                                    2CE:---
                                    PAN:---
                                    VB :---
                                    UV :---
                                    SDD:---
                                    HU :---
                                    RM :---
                                    SL :---
                                    AR :---
             00 00 00 02  00 - 64   SYN:Direct Level
                                    SEQ:---
```

--- DELAY ---

```
** ** 06 00   00 00 00 02   00 - 01   DD :Type
** ** 06 02#  00 00 00 02   00 - 67   DD :DlyTime
** ** 06 04#  00 00 00 02   00 - 14   DD :DlyTime(Fine)
** ** 06 06#  00 00 00 02   00 - 64   DD :Tap Time
** ** 06 08#  00 00 00 02   00 - 64   DD :Feedback
** ** 06 0A#  00 00 00 02   00 - 09   DD :High Cut Filter
** ** 06 0C#  00 00 00 02   00 - 78   DD :Effect Level
```

--- CHORUS ---

```
** ** 07 00   00 00 00 02   00 - 01   CE :Mode
** ** 07 02#  00 00 00 02   00 - 71   CE :Rate
** ** 07 04#  00 00 00 02   00 - 64   CE :Depth
** ** 07 06#  00 00 00 02   00 - 50   CE :Pre Delay
** ** 07 08#  00 00 00 02   00 - 09   CE :High Cut Filter
** ** 07 0A#  00 00 00 02   00 - 64   CE :Effect Level
```

--- REVERB ---

```
** ** 08 00   00 00 00 02   00 - 04   RV :Type
** ** 08 02#  00 00 00 02   00 - 63   RV :Reverb Time
** ** 08 04#  00 00 00 02   00 - 64   RV :Pre Delay
** ** 08 06#  00 00 00 02   00 - 09   RV :Low Cut Filter
** ** 08 08#  00 00 00 02   00 - 09   RV :High Cut Filter
** ** 08 0A#  00 00 00 02   00 - 0A   RV :Density
** ** 08 0C#  00 00 00 02   00 - 64   RV :Effect Level
```

--- EXP PEDAL ---

No parameters.

--- EXP PEDAL SW ---

```
** ** 09 00   00 00 00 04   00 00 -   PEDAL:Target
** ** 09 02#                - 01 6C   *Refer to Table QuickFx:Target
** ** 09 04#  00 00 00 04   00 00 -   PEDAL:Target Min
** ** 09 06#                - $$ $$
** ** 09 08#  00 00 00 04   00 00 -   PEDAL:Target Max
** ** 09 0A#                - $$ $$
** ** 09 0C#  00 00 00 02   00 - 01   PEDAL:Target Mode
```

--- CTL PEDAL ---

```
** ** 0A 00   00 00 00 04    00 00 -  PEDAL:Target
** ** 0A 02#                - 01 6C   *Refer to Table QuickFx:Target
** ** 0A 04#  00 00 00 04   00 00 -   PEDAL:Target Min
** ** 0A 06#                - $$ $$
** ** 0A 08#  00 00 00 04   00 00 -   PEDAL:Target Max
** ** 0A 0A#                - $$ $$
** ** 0A 0C#  00 00 00 02   00 - 01   PEDAL:Target Mode
```

--- ASSIGN ---

```
** ** 0B 00   00 00 00 04   00 00 -   Assign:Target
** ** 0B 02#                - 01 6C   *Refer to Table QuickFx:Target
** ** 0B 04#  00 00 00 04   00 00 -   Assign:Target Min
** ** 0B 06#                - $$ $$
** ** 0B 08#  00 00 00 04   00 00 -   Assign:Target Max
** ** 0B 0A#                - $$ $$
** ** 0B 0C#  00 00 00 02   00 - 45   Assign:Source
** ** 0B 0E#  00 00 00 02   00 - 01   Assign:Source Mode
** ** 0B 10#  00 00 00 02   00 - 7F   Assign:Source Act.Range Low
** ** 0B 12#  00 00 00 02   00 - 7F   Assign:Source Act.Range High
```

Table Patch <Patch>

```
-------------------------------------------------------------------------------
Address(H)    Size(H)      Data(H)  Parameter                     Description
-------------------------------------------------------------------------------
--- FX 1 ---
** ** 00 00   00 00 00 01   00 - 01   FX1:On/Off                   00 : Off
                                                                  01 : On
** ** 00 01   00 00 00 01   00 - 23   FX1:Quick Setting
** ** 00 02   00 00 00 01   00 - 08   FX1:FX Select               00 : CS
                                                                  01 : LM
                                                                  02 : AC
                                                                  03 : PIC
                                                                  04 : TR
                                                                  05 : SG
                                                                  06 : FB
                                                                  07 : AFB
                                                                  08 : FRT
** ** 00 03   00 00 00 01   00 - 64   CS :Sustain                 0 - 100
** ** 00 04   00 00 00 01   00 - 64   CS :Attack                  0 - 100
** ** 00 05   00 00 00 01   00 - 64   CS :Tone                    -50 - +50
** ** 00 06   00 00 00 01   00 - 64   CS :Level                   0 - 100
** ** 00 07   00 00 00 01   00 - 64   LM :Threshold               0 - 100
** ** 00 08   00 00 00 01   00 - 64   LM :Release                 0 - 100
** ** 00 09   00 00 00 01   00 - 64   LM :Tone                    -50 - +50
** ** 00 0A   00 00 00 01   00 - 64   LM :Level                   0 - 100
** ** 00 0B   00 00 00 01   00 - 64   AC :Top                     0 - 100
** ** 00 0C   00 00 00 01   00 - 64   AC :Body                    0 - 100
** ** 00 0D   00 00 00 01   00 - 64   AC :Level                   0 - 100
** ** 00 0E   00 00 00 01   00 - 02   PIC:Type                    00 : S'to'H''
                                                                  01 : H'to'S''
                                                                  02 : H'to'HF''
** ** 00 0F   00 00 00 01   00 - 64   PIC:Tone                    -50 - +50
** ** 00 10   00 00 00 01   00 - 64   PIC:Level                   0 - 100
** ** 00 11   00 00 00 01   00 - 64   TR :Wave Shape              0 - 100
** ** 00 12   00 00 00 01   00 - 71   TR :Rate                    *Refer to Table Rate
```

** ** 00 13	00 00 00 01	00 - 64	TR :Depth	0 - 100
** ** 00 14	00 00 00 01	00 - 64	SG :Sensitivity	0 - 100
** ** 00 15	00 00 00 01	00 - 64	SG :Rise Time	0 - 100
** ** 00 16	00 00 00 01	00 - 01	FB :Mode	00 : OSC 01 : Natural
** ** 00 17	00 00 00 01	00 - 64	FB :Rise Time	0 - 100 Mode=OSC
** ** 00 18	00 00 00 01	00 - 64	FB :Rise Time(▲)	0 - 100 Mode=OSC
** ** 00 19	00 00 00 01	00 - 64	FB :F.B.Level	0 - 100
** ** 00 1A	00 00 00 01	00 - 64	FB :F.B.Level(▲)	0 - 100 Mode=OSC
** ** 00 1B	00 00 00 01	00 - 64	FB :Vibrato Rate	0 - 100 Mode=OSC
** ** 00 1C	00 00 00 01	00 - 64	FB :Vibrato Depth	0 - 100 Mode=OSC
** ** 00 1D	00 00 00 01	00 - 64	AFB:Freq1	0 - 100
** ** 00 1E	00 00 00 01	00 - 64	AFB:Depth1	0 - 100
** ** 00 1F	00 00 00 01	00 - 64	AFB:Freq2	0 - 100
** ** 00 20	00 00 00 01	00 - 64	AFB:Depth2	0 - 100
** ** 00 21	00 00 00 01	00 - 64	AFB:Freq3	0 - 100
** ** 00 22	00 00 00 01	00 - 64	AFB:Depth3	0 - 100
** ** 00 23	00 00 00 01	00 - 64	FRT:Tone	0 - 100
** ** 00 24	00 00 00 01	00 - 64	FRT:Sensitivity	0 - 100
** ** 00 25	00 00 00 01	00 - 64	FRT:Attack	0 - 100
** ** 00 26	00 00 00 01	00 - 64	FRT:Depth	0 - 100
** ** 00 27	00 00 00 01	00 - 64	FRT:Resonance	0 - 100
** ** 00 28	00 00 00 01	00 - 64	FRT:Effect Level	0 - 100
** ** 00 29	00 00 00 01	00 - 64	FRT:Direct Level	0 - 100

--- WAH ---

** ** 01 00	00 00 00 01	00 - 01	WAH:On/Off	00 : Off 01 : On
** ** 01 01	00 00 00 01	00 - 0F	WAH:Quick Setting	
** ** 01 02	00 00 00 01	00 - 02	WAH:FX Select	00 : WAH 01 : AW 02 : FW
** ** 01 03	00 00 00 01	00 - 07	WAH:Type	00 : CRY WAH 01 : VO WAH 02 : Fat WAH 03 : Light WAH 04 : 7String WAH 05 : Custom1 06 : Custom2 07 : Custom3
** ** 01 04	00 00 00 01	00 - 64	WAH:Pedal Position	0 - 100
** ** 01 05	00 00 00 01	00 - 64	WAH:Level	0 - 100
** ** 01 06	00 00 00 01	00 - 01	AW :Mode	00 : LPF 01 : BPF
** ** 01 07	00 00 00 01	00 - 01	AW :Polarity	00 : Down 01 : Up
** ** 01 08	00 00 00 01	00 - 64	AW :Sensitivity	0 - 100
** ** 01 09	00 00 00 01	00 - 64	AW :Frequency	0 - 100
** ** 01 0A	00 00 00 01	00 - 64	AW :Peak	0 - 100
** ** 01 0B	00 00 00 01	00 - 71	AW :Rate	*Refer to Table Rate
** ** 01 0C	00 00 00 01	00 - 64	AW :Depth	0 - 100
** ** 01 0D	00 00 00 01	00 - 64	AW :Level	0 - 100
** ** 01 0E	00 00 00 01	00 - 07	FW :Type	00 : CRY WAH 01 : VO WAH 02 : Fat WAH 03 : Light WAH 04 : 7String WAH 05 : Custom1 06 : Custom2 07 : Custom3
** ** 01 0F	00 00 00 01	00 - 64	FW :Pdl Position	0 - 100
** ** 01 10	00 00 00 01	00 - 64	FW :Level	0 - 100

--- OD / DS ---

** ** 02 00	00 00 00 01	00 - 01	OD :On/Off	00 : Off 01 : On
** ** 02 01	00 00 00 01	00 - 0A	OD :Quick Setting	
** ** 02 02	00 00 00 01	00 - 11	OD :Type	00 : Blues OD 01 : Turbo OD 02 : Booster 03 : Distortion 04 : American DS 05 : GUV DS 06 : OD-1 07 : T-Scream 08 : DST+ 09 : 60sFUZZ' 0A : Oct FUZZ 0B : BIG MUFF 0C : Metal Zone 0D : R-MAN 0E : Heavy Metal 0F : Custom1 10 : Custom2 11 : External
** ** 02 03	00 00 00 01	00 - 64	OD :Drive	0 - 100
** ** 02 04	00 00 00 01	00 - 64	OD :Bass	-50 - +50
** ** 02 05	00 00 00 01	00 - 64	OD :Treble	-50 - +50
** ** 02 06	00 00 00 01	00 - 64	OD :Level	0 - 100

--- PREAMP / SP SIM ---

** ** 03 00	00 00 00 01	00 - 01	PRE/SP:On/Off	00 : Off 01 : On
** ** 03 01	00 00 00 01	00 - 0C	PRE/SP:Quick Setting	
** ** 03 02	00 00 00 01	00 - 20	PRE/SP:Type	00 : JC-120 01 : Jazz Combo 02 : Full Range 03 : Clean TWIN 04 : Pro Crunch 05 : Tweed 06 : Crunch 07 : Blues 08 : StackCrunch 09 : VO Drive 0A : VO Lead 0B : VO Clean 0C : MATCH Drive 0D : MATCH Lead 0E : Fat MATCH 0F : BG Lead 10 : BG Drive 11 : BG Rhythm 12 : MS1959(1) 13 : MS1959(1+2) 14 : MS HiGain

				15 : R-Fier Red 16 : R-FierOrang 17 : R-FierVint 18 : SLDN 19 : Drive Stack 1A : Lead Stack 1B : 5150 Drive 1C : Metal Stack 1D : Metal Lead 1E : Custom1 1F : Custom2 20 : Custom3
** ** 03 03	00 00 00 01	00 - 64	PRE/SP:Gain	0 - 100
** ** 03 04	00 00 00 01	00 - 64	PRE/SP:Bass	0 - 100
** ** 03 05	00 00 00 01	00 - 64	PRE/SP:Middle	0 - 100
** ** 03 06	00 00 00 01	00 - 64	PRE/SP:Treble	0 - 100
** ** 03 07	00 00 00 01	00 - 64	PRE/SP:Presence	0 - 100 (-100 - 0)
** ** 03 08	00 00 00 01	00 - 64	PRE/SP:Amp Level	0 - 100
** ** 03 09	00 00 00 01	00 - 01	PRE/SP:Bright	00 : Off 01 : On
** ** 03 0A	00 00 00 01	00 - 02	PRE/SP:Gain SW	00 : Low 01 : Middle 02 : High
** ** 03 0B	00 00 00 01	00 - 01	PRE/SP:Speaker SW	00 : Off 01 : On
** ** 03 0C	00 00 00 01	00 - 05	PRE/SP:Speaker Type	00 : 1x10" 01 : 1x12" 02 : 2x12" 03 : 4x12" 04 : 8x12" 05 : ORIGINAL
** ** 03 0D	00 00 00 01	00 - 0A	PRE/SP:Mic Setting	00 : Center OUTPUT Select = LINE(PHONES or PA) 01 : 1cm 02 : 2cm 03 : 3cm 04 : 4cm 05 : 5cm 06 : 6cm 07 : 7cm 08 : 8cm 09 : 9cm 0A : 10cm
** ** 03 0E	00 00 00 01	00 - 64	PRE/SP:Mic Level	0 - 100 OUTPUT Select = LINE(PHONES or PA)
** ** 03 0F	00 00 00 01	00 - 64	PRE/SP:Direct Level	0 - 100 OUTPUT Select = LINE(PHONES or PA)
--- EQ ---				
** ** 04 00	00 00 00 01	00 - 01	EQ :On/Off	00 : Off 01 : On
** ** 04 01	00 00 00 01	00 - 0B	EQ :Quick Setting	
** ** 04 02	00 00 00 01	00 - 28	EQ :Low EQ	-20dB - +20dB
** ** 04 03	00 00 00 01	00 - 14	EQ :Low-Middle Frequency	*Refer to Table EQ_Mid_f
** ** 04 04	00 00 00 01	00 - 05	EQ :Low-Middle Q	*Refer to Table EQ_Mid_Q
** ** 04 05	00 00 00 01	00 - 28	EQ :Low-Middle EQ	-20dB - +20dB
** ** 04 06	00 00 00 01	00 - 14	EQ :High-Middle Frequency	*Refer to Table EQ_Mid_f
** ** 04 07	00 00 00 01	00 - 05	EQ :High-Middle Q	*Refer to Table EQ_Mid_Q
** ** 04 08	00 00 00 01	00 - 28	EQ :High-Middle EQ	-20dB - +20dB
** ** 04 09	00 00 00 01	00 - 28	EQ :High EQ	-20dB - +20dB
** ** 04 0A	00 00 00 01	00 - 28	EQ :Level	-20dB - +20dB
--- FX 2 ---				
** ** 05 00	00 00 00 01	00 - 01	FX2:On/Off	00 : Off 01 : On
** ** 05 01	00 00 00 01	00 - 50	FX2:Quick Setting	
** ** 05 02	00 00 00 01	00 - 0F	FX2:FX Select	00 : PH 01 : FL 02 : HR 03 : PS 04 : PB 05 : 2CE 06 : PAN 07 : VB 08 : UV 09 : SDD 0A : HU 0B : RM 0C : SL 0D : AR 0E : SYN 0F : SEQ
** ** 05 03	00 00 00 01	00 - 03	PH :Type	00 : 4 Stage 01 : 8 Stage 02 : 12 Stage 03 : Bi-Phase
** ** 05 04	00 00 00 01	00 - 71	PH :Rate	*Refer to Table Rate
** ** 05 05	00 00 00 01	00 - 64	PH :Depth	0 - 100
** ** 05 06	00 00 00 01	00 - 64	PH :Manual	0 - 100
** ** 05 07	00 00 00 01	00 - 64	PH :Resonance	0 - 100
** ** 05 08	00 00 00 01	00 - 01	PH :Step	00 : Off 01 : On
** ** 05 09	00 00 00 01	00 - 71	PH :Step Rate	*Refer to Table Rate
** ** 05 0A	00 00 00 01	00 - 64	PH :Effect Level	0 - 100
** ** 05 0B	00 00 00 01	00 - 64	PH :Direct Level	0 - 100
** ** 05 0C	00 00 00 01	00 - 71	FL :Rate	*Refer to Table Rate
** ** 05 0D	00 00 00 01	00 - 64	FL :Depth	0 - 100
** ** 05 0E	00 00 00 01	00 - 64	FL :Manual	0 - 100
** ** 05 0F	00 00 00 01	00 - 64	FL :Resonance	0 - 100
** ** 05 10	00 00 00 01	00 - 64	FL :Separation	0 - 100
** ** 05 11	00 00 00 01	00 - 64	FL :Effect Level	0 - 100
** ** 05 12	00 00 00 01	00 - 64	FL :Direct Level	0 - 100
** ** 05 13	00 00 00 01	00 - 02	HR :Voice	00 : 1-Voice 01 : 2-Mono 02 : 2-Stereo
** ** 05 14	00 00 00 01	00 - 39	HR :HR1 Harmony	*Refer to Table HR_Scale
** ** 05 15	00 00 00 02	00 00 -	HR :HR1 Pre Delay	*Refer to Table PreDly
** ** 05 16#		- 02 33		
** ** 05 17	00 00 00 01	00 - 64	HR :HR1 Feedback	0 - 100
** ** 05 18	00 00 00 01	00 - 64	HR :HR1 Level	0 - 100
** ** 05 19	00 00 00 01	00 - 39	HR :HR2 Harmony	*Refer to Table HR_Scale
** ** 05 1A	00 00 00 02	00 00 -	HR :HR2 Pre Delay	*Refer to Table PreDly
** ** 05 1B#		- 02 33		
** ** 05 1C	00 00 00 01	00 - 64	HR :HR2 Level	0 - 100
** ** 05 1D	00 00 00 01	00 - 0B	HR :Key	C(Am) - B(G#m)
** ** 05 1E	00 00 00 01	00 - 64	HR :Direct Level	0 - 100
** ** 05 1F	00 00 00 01	00 - 02	PS :Voice	00 : 1-Voice 01 : 2-Mono 02 : 2-Stereo

** ** 05 20	00 00 00 01	00 - 02	PS :PS1 Mode	00 : Fast 01 : Medium 02 : Slow 03 : Mono
** ** 05 21	00 00 00 01	00 - 30	PS :PS1 Pitch	-24 - +24
** ** 05 22	00 00 00 01	00 - 64	PS :PS1 Fine	-50 - +50
** ** 05 23	00 00 00 01	00 00 -	PS :PS1 Pre Delay	*Refer to Table PreDly
** ** 05 24#		- 02 33		
** ** 05 25	00 00 00 01	00 - 64	PS :PS1 Feedback	0 - 100
** ** 05 26	00 00 00 01	00 - 64	PS :PS1 Level	0 - 100
** ** 05 27	00 00 00 01	00 - 02	PS :PS2 Mode	00 : Fast 01 : Medium 02 : Slow 03 : Mono
** ** 05 28	00 00 00 01	00 - 30	PS :PS2 Pitch	-24 - +24
** ** 05 29	00 00 00 01	00 - 64	PS :PS2 Fine	-50 - +50
** ** 05 2A	00 00 00 01	00 00 -	PS :PS2 Pre Delay	*Refer to Table PreDly
** ** 05 2B#		- 02 33		
** ** 05 2C	00 00 00 01	00 - 64	PS :PS2 Level	0 - 100
** ** 05 2D	00 00 00 01	00 - 64	PS :Direct Level	0 - 100
** ** 05 2E	00 00 00 01	00 - 30	PB :Pitch Min	-24 - +24
** ** 05 2F	00 00 00 01	00 - 30	PB :Pitch Max	-24 - +24
** ** 05 30	00 00 00 01	00 - 64	PB :Pdl Position	0 - 100
** ** 05 31	00 00 00 01	00 - 64	PB :Effect Level	0 - 100
** ** 05 32	00 00 00 01	00 - 64	PB :Direct Level	0 - 100
** ** 05 33	00 00 00 01	00 - 10	2CE:Xover Frequency	*Refer to Table Xover f
** ** 05 34	00 00 00 01	00 - 71	2CE:Low Rate	*Refer to Table Rate
** ** 05 35	00 00 00 01	00 - 64	2CE:Low Depth	0 - 100
** ** 05 36	00 00 00 01	00 - 50	2CE:Low Pre Delay	0.0ms - 40.0ms (0.5ms step)
** ** 05 37	00 00 00 01	00 - 64	2CE:Low Level	0 - 100
** ** 05 38	00 00 00 01	00 - 71	2CE:High Rate	*Refer to Table Rate
** ** 05 39	00 00 00 01	00 - 64	2CE:High Depth	0 - 100
** ** 05 3A	00 00 00 01	00 - 50	2CE:High Pre Delay	0.0ms - 40.0ms (0.5ms step)
** ** 05 3B	00 00 00 01	00 - 64	2CE:High Level	0 - 100
** ** 05 3C	00 00 00 01	00 - 64	PAN:Wave Shape	0 - 100
** ** 05 3D	00 00 00 01	00 - 71	PAN:Rate	*Refer to Table Rate
** ** 05 3E	00 00 00 01	00 - 64	PAN:Depth	0 - 100
** ** 05 3F	00 00 00 01	00 - 71	VB :Rate	*Refer to Table Rate
** ** 05 40	00 00 00 01	00 - 64	VB :Depth	0 - 100
** ** 05 41	00 00 00 01	00 - 01	VB :Trigger	00 : Off 01 : On
** ** 05 42	00 00 00 01	00 - 64	VB :Rise Time	0 - 100
** ** 05 43	00 00 00 01	00 - 71	UV :Rate	*Refer to Table Rate
** ** 05 44	00 00 00 01	00 - 64	UV :Depth	0 - 100
** ** 05 45	00 00 00 01	00 - 64	UV :Level	0 - 100
** ** 05 46	00 00 00 02	00 00 -	SDD:Delay Time	*Refer to Table SDD_DlyTime
** ** 05 47#		- 03 17		
** ** 05 48	00 00 00 01	00 - 64	SDD:Feedback	0 - 100
** ** 05 49	00 00 00 01	00 - 78	SDD:Effect Level	0 - 120
** ** 05 4A	00 00 00 01	00 - 02	HU :Mode	00 : Picking 01 : Auto 02 : Random
** ** 05 4B	00 00 00 01	00 - 04	HU :Vowel 1	Mode = Picking, Auto
** ** 05 4C	00 00 00 01	00 - 04	HU :Vowel 2	00 : 'a' 01 : 'e' 02 : 'i' 03 : 'o' 04 : 'u'
** ** 05 4D	00 00 00 01	00 - 64	HU :Sensitivity	0 - 100 Mode = Picking
** ** 05 4E	00 00 00 01	00 - 71	HU :Rate	*Refer to Table Rate
** ** 05 4F	00 00 00 01	00 - 64	HU :Depth	0 - 100
** ** 05 50	00 00 00 01	00 - 64	HU :Manual	0 - 100 Mode = Auto
** ** 05 51	00 00 00 01	00 - 64	HU :Level	0 - 100
** ** 05 52	00 00 00 01	00 - 01	RM :Mode	00 : Normal 01 : Intelligent
** ** 05 53	00 00 00 01	00 - 64	RM :Freq	0 - 100
** ** 05 54	00 00 00 01	00 - 64	RM :Effect Level	0 - 100
** ** 05 55	00 00 00 01	00 - 64	RM :Direct Level	0 - 100
** ** 05 56	00 00 00 01	00 - 13	SL :Pattern	00 : P1 : 13 : P20
** ** 05 57	00 00 00 01	00 - 71	SL :Rate	*Refer to Table Rate
** ** 05 58	00 00 00 01	00 - 64	SL :Trigger Sens	0 - 100
** ** 05 59	00 00 00 01	00 - 27	AR :Phrase	Preset1 - Preset30, User1 - User10
** ** 05 5A	00 00 00 01	00 - 01	AR :Loop	00 : Off 01 : On
** ** 05 5B	00 00 00 01	00 - 71	AR :Tempo	*Refer to Table Rate
** ** 05 5C	00 00 00 01	00 - 64	AR :Sensitivity	0 - 100
** ** 05 5D	00 00 00 01	00 - 0B	AR :Key	C(Am) - B(G#m) Phase = Preset 1-30
** ** 05 5E	00 00 00 01	00 - 64	AR :Attack	0 - 100
** ** 05 5F	00 00 00 01	00 - 01	AR :Hold	00 : Off 01 : On
** ** 05 60	00 00 00 01	00 - 64	AR :Effect Level	0 - 100
** ** 05 61	00 00 00 01	00 - 64	AR :Direct Level	0 - 100
** ** 05 62	00 00 00 01	00 - 64	SYN:Sensitivity	0 - 100
** ** 05 63	00 00 00 01	00 - 03	SYN:Wave	00 : Square 01 : Saw 02 : Brass 03 : Bow
** ** 05 64	00 00 00 01	00 - 01	SYN:Chromatic	00 : Off Wave = Square, Saw 01 : On
** ** 05 65	00 00 00 01	00 - 02	SYN:Octave Shift	00 : 0 Wave = Square, Saw 01 : -1 02 : -2
** ** 05 66	00 00 00 01	00 - 64	SYN:PWM Rate	0 - 100 Wave = Square
** ** 05 67	00 00 00 01	00 - 64	SYN:PWM Depth	0 - 100 Wave = Square
** ** 05 68	00 00 00 01	00 - 64	SYN:Cutoff Frequency	0 - 100
** ** 05 69	00 00 00 01	00 - 64	SYN:Resonance	0 - 100
** ** 05 6A	00 00 00 01	00 - 64	SYN:FLT.Sens	0 - 100
** ** 05 6B	00 00 00 01	00 - 64	SYN:FLT.Decay	0 - 100
** ** 05 6C	00 00 00 01	00 - 64	SYN:FLT.Depth	00 : -100 01 : -98 : 63 : +98 64 : +100
** ** 05 6D	00 00 00 01	00 - 65	SYN:Attack	00 : Decay 01 : 0 : 65 : 100
** ** 05 6E	00 00 00 01	00 - 64	SYN:Release	0 - 100
** ** 05 6F	00 00 00 01	00 - 64	SYN:Velocity	0 - 100
** ** 05 70	00 00 00 01	00 - 01	SYN:Hold	00 : Off Wave = Square, Saw 01 : On
** ** 05 71	00 00 00 01	00 - 64	SYN:Synth Level	0 - 100
** ** 05 72	00 00 00 01	00 - 64	SYN:Direct Level	0 - 100
** ** 05 73	00 00 00 01	00 - 28	SEQ:Low EQ	-20dB - +20dB
** ** 05 74	00 00 00 01	00 - 14	SEQ:Low-Middle Frequency	*Refer to Table EQ_Mid_f

```
** ** 05 75   00 00 00 01   00 - 05   SEQ:Low-Middle Q              *Refer to Table EQ_Mid_Q
** ** 05 76   00 00 00 01   00 - 28   SEQ:Low-Middle EQ             -20dB - +20dB
** ** 05 77   00 00 00 01   00 - 14   SEQ:High-Middle Frequency     *Refer to Table EQ_Mid_f
** ** 05 78   00 00 00 01   00 - 05   SEQ:High-Middle Q             *Refer to Table EQ_Mid_Q
** ** 05 79   00 00 00 01   00 - 28   SEQ:High-Middle EQ            -20dB - +20dB
** ** 05 7A   00 00 00 01   00 - 28   SEQ:High EQ                   -20dB - +20dB
** ** 05 7B   00 00 00 01   00 - 28   SEQ:Level                     -20dB - +20dB

--- DELAY ---
** ** 06 00   00 00 00 01   00 - 01   DD :On/Off                    00 : Off
                                                                   01 : On
** ** 06 01   00 00 00 01   00 - 0A   DD :Quick Setting
** ** 06 02   00 00 00 01   00 - 01   DD :Type                      00 : Single
                                                                   01 : Pan
** ** 06 03   00 00 00 01   00 - 67   DD :DlyTime                   *Refer to Table DD_DlyTime
** ** 06 04   00 00 00 01   00 - 14   DD :DlyTime.F                 0 - 20ms
** ** 06 05   00 00 00 01   00 - 64   DD :Tap Time                  0% -  100%   Type = Pan
** ** 06 06   00 00 00 01   00 - 64   DD :Feedback                  0 - 100
** ** 06 07   00 00 00 01   00 - 09   DD :High Cut Filter           *Refer to Table High_Cut
** ** 06 08   00 00 00 01   00 - 78   DD :Effect Level              0 - 120

--- CHORUS ---
** ** 07 00   00 00 00 01   00 - 01   CE :On/Off                    00 : Off
                                                                   01 : On
** ** 07 01   00 00 00 01   00 - 0A   CE :Quick Setting
** ** 07 02   00 00 00 01   00 - 01   CE :Mode                      00 : Mono
                                                                   01 : Stereo
** ** 07 03   00 00 00 01   00 - 71   CE :Rate                      *Refer to Table Rate
** ** 07 04   00 00 00 01   00 - 64   CE :Depth                     0 - 100
** ** 07 05   00 00 00 01   00 - 50   CE :Pre Delay                 0.0ms - 40.0ms(0.5ms step)
** ** 07 06   00 00 00 01   00 - 09   CE :High Cut Filter           *Refer to Table High_Cut
** ** 07 07   00 00 00 01   00 - 64   CE :Effect Level              0 - 100

--- REVERB ---
** ** 08 00   00 00 00 01   00 - 01   RV :On/Off                    00 : Off
                                                                   01 : On
** ** 08 01   00 00 00 01   00 - 0A   RV :Quick Setting
** ** 08 02   00 00 00 01   00 - 04   RV :Type                      00 : Room 1
                                                                   01 : Room 2
                                                                   02 : Hall 1
                                                                   03 : Hall 2
                                                                   04 : Plate
** ** 08 03   00 00 00 01   00 - 63   RV :Reverb Time               0.1s - 10.0s
** ** 08 04   00 00 00 01   00 - 64   RV :Pre Delay                 0ms - 100ms
** ** 08 05   00 00 00 01   00 - 09   RV :Low Cut Filter            *Refer to Table Low_Cut
** ** 08 06   00 00 00 01   00 - 09   RV :High Cut Filter           *Refer to Table High_Cut
** ** 08 07   00 00 00 01   00 - 0A   RV :Density                   0 - 10
** ** 08 08   00 00 00 01   00 - 64   RV :Effect Level              0 - 100

--- MASTER ---
** ** 09 00   00 00 00 01   00 - 01   NS :On/Off                    00 : Off
                                                                   01 : On
** ** 09 01   00 00 00 01   00 - 64   NS :Threshold                 0 - 100
** ** 09 02   00 00 00 01   00 - 64   NS :Release                   0 - 100
** ** 09 03   00 00 00 01   00 - 64   Patch Level                   00 : 0%
                                                                   01 : 2%
                                                                      :
                                                                   64 : 200%
** ** 09 04   00 00 00 02   00 00 -   Master BPM                    00 00 : 40
** ** 09 05#                - 01 52                                    :
                                                                   00 7F : 167
                                                                   01 00 : 168
                                                                      :
                                                                   01 52 : 250
** ** 09 06   00 00 00 01   00 - 64   FV : Level                   0 - 100

--- Effect Chain ---
** ** 0A 00   00 00 00 01   00 - 0A   Chain 1                       *Refer to Table Chain
** ** 0A 01#  00 00 00 01   00 - 0A   Chain 2                       *Refer to Table Chain
** ** 0A 02#  00 00 00 01   00 - 0A   Chain 3                       *Refer to Table Chain
** ** 0A 03#  00 00 00 01   00 - 0A   Chain 4                       *Refer to Table Chain
** ** 0A 04#  00 00 00 01   00 - 0A   Chain 5                       *Refer to Table Chain
** ** 0A 05#  00 00 00 01   00 - 0A   Chain 6                       *Refer to Table Chain
** ** 0A 06#  00 00 00 01   00 - 0A   Chain 7                       *Refer to Table Chain
** ** 0A 07#  00 00 00 01   00 - 0A   Chain 8                       *Refer to Table Chain
** ** 0A 08#  00 00 00 01   00 - 0A   Chain 9                       *Refer to Table Chain
** ** 0A 09#  00 00 00 01   00 - 0A   Chain 10                      *Refer to Table Chain
** ** 0A 0A#  00 00 00 01   00 - 0A   Chain 11                      *Refer to Table Chain

--- NAME ---
** ** 0B 00   00 00 00 01   20 - 7F   Name 1                        *Refer to Table Name
** ** 0B 01#  00 00 00 01   20 - 7F   Name 2                        *Refer to Table Name
   :          :             :         :                               :
** ** 0B 0F#  00 00 00 01   20 - 7F   Name 16                       *Refer to Table Name

--- EXP PEDAL ---
** ** 0C 00   00 00 00 01   00 - 01   EXP PEDAL:On/Off              00 : Off
                                                                   01 : On
** ** 0C 01   00 00 00 01   00 - 64   EXP PEDAL:Foot Vol Min        0 - 100
** ** 0C 02   00 00 00 01   00 - 64   EXP PEDAL:Foot Vol Max        0 - 100

--- EXP PEDAL SW ---
** ** 0D 00   00 00 00 01   00 - 01   EXP PEDAL SW:On/Off           00 : Off
                                                                   01 : On
** ** 0D 01   00 00 00 01   00 - 0A   EXP PEDAL SW:Quick Setting
** ** 0D 02   00 00 00 02   00 00 -   EXP PEDAL SW:Target           *Refer to Table Patch:Assign Target
** ** 0D 03#                - 01 6C
** ** 0D 04   00 00 00 02    00 00 -  EXP PEDAL SW:Target Min
** ** 0D 05#                - $$ $$
** ** 0D 06   00 00 00 02    00 00 -  EXP PEDAL SW:Target Max
** ** 0D 07#                - $$ $$
** ** 0D 08   00 00 00 01    00 - 01  EXP PEDAL SW:Source Mode      00 : Normal
                                                                   01 : Toggle

--- CTL PEDAL ---
** ** 0E 00   00 00 00 01   00 - 01   CTL PEDAL:On/Off              00 : Off
                                                                   01 : On
** ** 0E 01   00 00 00 01   00 - 0A   CTL PEDAL:Quick Setting
** ** 0E 02   00 00 00 02   00 00 -   CTL PEDAL:Target             *Refer to Table Patch:Assign Target
```

```
** ** 0E 03#                - 01 6C
** ** 0E 04   00 00 00 02   00 00 -   CTL PEDAL:Target Min
** ** 0E 05#                - $$ $$
** ** 0E 06   00 00 00 02   00 00 -    CTL PEDAL:Target Max
** ** 0E 07#                - $$ $$
** ** 0E 08   00 00 00 01    00 - 01  CTL PEDAL:Source Mode          00 : Normal
                                                                    01 : Toggle

--- Assign 1 ---
** ** 0F 00   00 00 00 01   00 - 01   Assign 1:On/Off                00 : Off
                                                                    01 : On
** ** 0F 01   00 00 00 01   00 - 0A   Assign 1:Quick Setting
** ** 0F 02   00 00 00 02   00 00 -   Assign 1:Target               *Refer to Table Patch:Assign Target
** ** 0F 03#                - 01 6C
** ** 0F 04   00 00 00 02   00 00 -   Assign 1:Target Min
** ** 0F 05#                - $$ $$
** ** 0F 06 00 00 00 0200 00 -Assign 1:Target Max
** ** 0F 07#                - $$ $$
** ** 0F 08   00 00 00 01   00 - 44   Assign 1:Source               *Refer to Table Source
** ** 0F 09   00 00 00 01   00 - 01   Assign 1:Source Mode          00 : Normal
                                                                    01 : Toggle
** ** 0F 0A   00 00 00 01   00 - 7F   Assign 1:Source Act.Range Low  0 - 127
** ** 0F 0B   00 00 00 01   00 - 7F   Assign 1:Source Act.Range High 0 - 127

--- Assign 2 ---
** ** 10 00   00 00 00 01   00 - 01   Assign 2:On/Off                00 : Off
                                                                    01 : On
** ** 10 01   00 00 00 01   00 - 0A   Assign 2:Quick Setting
** ** 10 02   00 00 00 02   00 00 -   Assign 2:Target               *Refer to Table Patch:Assign Target
** ** 10 03#  - 01 6C
** ** 10 04   00 00 00 02   00 00 -   Assign 2:Target Min
** ** 10 05# - $$ $$
** ** 10 06   00 00 00 02   00 00 -   Assign 2:Target Max
** ** 10 07# - $$ $$
** ** 10 08   00 00 00 01   00 - 44   Assign 2:Source               *Refer to Table Source
** ** 10 09   00 00 00 01   00 - 01   Assign 2:Source Mode          00 : Normal
                                                                    01 : Toggle
** ** 10 0A   00 00 00 01   00 - 7F   Assign 2:Source Act.Range Low  0 - 127
** ** 10 0B   00 00 00 01   00 - 7F   Assign 2:Source Act.Range High 0 - 127

--- Assign 3 ---
** ** 11 00   00 00 00 01   00 - 01   Assign 3:On/Off                00 : Off
                                                                    01 : On
** ** 11 01   00 00 00 01   00 - 0A   Assign 3:Quick Setting
** ** 11 02   00 00 00 02   00 00 -   Assign 3:Target               *Refer to Table Patch:Assign Target
** ** 11 03#                - 01 6C
** ** 11 04   00 00 00 02   00 00 -   Assign 3:Target Min
** ** 11 05#                - $$ $$
** ** 11 06   00 00 00 02   00 00 -   Assign 3:Target Max
** ** 11 07#                - $$ $$
** ** 11 08   00 00 00 01   00 - 44   Assign 3:Source               *Refer to Table Source
** ** 11 09   00 00 00 01   00 - 01   Assign 3:Source Mode          00 : Normal
                                                                    01 : Toggle
** ** 11 0A   00 00 00 01   00 - 7F   Assign 3:Source Act.Range Low  0 - 127
** ** 11 0B   00 00 00 01   00 - 7F   Assign 3:Source Act.Range High 0 - 127

--- Assign 4 ---
** ** 12 00   00 00 00 01   00 - 01   Assign 4:On/Off                00 : Off
                                                                    01 : On
** ** 12 01   00 00 00 01   00 - 0A   Assign 4:Quick Setting
** ** 12 02   00 00 00 02   00 00 -   Assign 4:Target               *Refer to Table Patch:Assign Target
** ** 12 03#                - 01 6C
** ** 12 04   00 00 00 02    00 00 -  Assign 4:Target Min
** ** 12 05#                - $$ $$
** ** 12 06   00 00 00 02    00 00 -  Assign 4:Target Max
** ** 12 07#                - $$ $$
** ** 12 08   00 00 00 01   00 - 44   Assign 4:Source               *Refer to Table Source
** ** 12 09   00 00 00 01   00 - 01   Assign 4:Source Mode          00 : Normal
                                                                    01 : Toggle
** ** 12 0A   00 00 00 01   00 - 7F   Assign 4:Source Act.Range Low  0 - 127
** ** 12 0B   00 00 00 01   00 - 7F   Assign 4:Source Act.Range High 0 - 127

--- Assign 5 ---
** ** 13 00   00 00 00 01   00 - 01   Assign 5:On/Off                00 : Off
                                                                    01 : On
** ** 13 01   00 00 00 01   00 - 0A   Assign 5:Quick Setting
** ** 13 02   00 00 00 02   00 00 -   Assign 5:Target               *Refer to Table Patch:Assign Target
** ** 13 03#                - 01 6C
** ** 13 04   00 00 00 02   00 00 -   Assign 5:Target Min
** ** 13 05#                - $$ $$
** ** 13 06   00 00 00 02   00 00 -   Assign 5:Target Max
** ** 13 07#                - $$ $$
** ** 13 08   00 00 00 01   00 - 44   Assign 5:Source               *Refer to Table Source
** ** 13 09   00 00 00 01   00 - 01   Assign 5:Source Mode          00 : Normal
                                                                    01 : Toggle
** ** 13 0A   00 00 00 01   00 - 7F   Assign 5:Source Act.Range Low  0 - 127
** ** 13 0B   00 00 00 01   00 - 7F   Assign 5:Source Act.Range High 0 - 127

--- Assign 6 ---
** ** 14 00   00 00 00 01   00 - 01   Assign 6:On/Off                00 : Off
                                                                    01 : On
** ** 14 01   00 00 00 01   00 - 0A   Assign 6:Quick Setting
** ** 14 02   00 00 00 02   00 00 -   Assign 6:Target               *Refer to Table Patch:Assign Target
** ** 14 03#                - 01 6C
** ** 14 04   00 00 00 02   00 00 -   Assign 6:Target Min
** ** 14 05#                - $$ $$
** ** 14 06   00 00 00 02   00 00 -   Assign 6:Target Max
** ** 14 07#                - $$ $$
** ** 14 08   00 00 00 01   00 - 44   Assign 6:Source               *Refer to Table Source
** ** 14 09   00 00 00 01   00 - 01   Assign 6:Source Mode          00 : Normal
                                                                    01 : Toggle
** ** 14 0A   00 00 00 01   00 - 7F   Assign 6:Source Act.Range Low  0 - 127
** ** 14 0B   00 00 00 01   00 - 7F   Assign 6:Source Act.Range High 0 - 127

--- Assign 7 ---
** ** 15 00   00 00 00 01   00 - 01   Assign 7:On/Off                00 : Off
                                                                    01 : On
** ** 15 01   00 00 00 01   00 - 0A   Assign 7:Quick Setting
** ** 15 02   00 00 00 02   00 00 -   Assign 7:Target               *Refer to Table Patch:Assign Target
** ** 15 03#                - 01 6C
** ** 15 04   00 00 00 02   00 00 -   Assign 7:Target Min
```

```
** ** 15 05#              - $$ $$
** ** 15 06  00 00 00 02  00 00 -  Assign 7:Target Max
** ** 15 07#              - $$ $$
** ** 15 08  00 00 00 01  00 - 44  Assign 7:Source               *Refer to Table Source
** ** 15 09  00 00 00 01  00 - 01  Assign 7:Source Mode          00 : Normal
                                                                01 : Toggle
** ** 15 0A  00 00 00 01  00 - 7F  Assign 7:Source Act.Range Low  0 - 127
** ** 15 0B  00 00 00 01  00 - 7F  Assign 7:Source Act.Range High 0 - 127
```

--- Assign 8 ---

```
** ** 16 00  00 00 00 01  00 - 01  Assign 8:On/Off               00 : Off
                                                                01 : On
** ** 16 01  00 00 00 01  00 - 0A  Assign 8:Quick Setting
** ** 16 02  00 00 00 02  00 00 -  Assign 8:Target               *Refer to Table Patch:Assign Target
** ** 16 03#              - 01 6C
** ** 16 04  00 00 00 02  00 00 -  Assign 8:Target Min
** ** 16 05#              - $$ $$
** ** 16 06  00 00 00 02  00 00 -  Assign 8:Target Max
** ** 16 07#              - $$ $$
** ** 16 08  00 00 00 01  00 - 44  Assign 8:Source               *Refer to Table Source
** ** 16 09  00 00 00 01  00 - 01  Assign 8:Source Mode          00 : Normal
                                                                01 : Toggle
** ** 16 0A  00 00 00 01  00 - 7F  Assign 8:Source Act.Range Low  0 - 127
** ** 16 0B  00 00 00 01  00 - 7F  Assign 8:Source Act.Range High 0 - 127
** **:Specify the memory area
      06H 00H - 07H 0BH ( Patch Memory UG01-1 - UG35-4 )
      08H 00H - 09H 47H ( Patch Memory PG36-1 - PG85-4 )
      0AH 00H           ( Temporary Buffer Area(Bulk) )
      0BH 00H           ( Temporary Buffer Area(Individual) )
$$:Follows the maximum data value of the parameter selected as the Assign Target.
Rules for exchanging effect positions
      The same effect cannot be used more than once.
```

Table Target <QuickFx:Assign Target>

Data(H)	Description
00 00 00 00	FX1:On/Off
00 00 00 01	FX1:FX Select
00 00 00 02	CS :Sustain
00 00 00 03	CS :Attack
00 00 00 04	CS :Tone
00 00 00 05	CS :Level
00 00 00 06	LM :Threshold
00 00 00 07	LM :Release
00 00 00 08	LM :Tone
00 00 00 09	LM :Level
00 00 00 0A	AC :Top
00 00 00 0B	AC :Body
00 00 00 0C	AC :Level
00 00 00 0D	PIC:Type
00 00 00 0E	PIC:Tone
00 00 00 0F	PIC:Level
00 00 01 00	TR :Wave Shape
00 00 01 01	TR :Rate
00 00 01 02	TR :Depth
00 00 01 03	SG :Sensitivity
00 00 01 04	SG :Rise Time
00 00 01 05	FB :Mode
00 00 01 06	FB :Rise Time
00 00 01 07	FB :Rise Time(▲)
00 00 01 08	FB :F.B.Level
00 00 01 09	FB :F.B.Level(▲)
00 00 01 0A	FB :Vibrato Rate
00 00 01 0B	FB :Vibrato Depth
00 00 01 0C	AFB:Freq1
00 00 01 0D	AFB:Depth1
00 00 01 0E	AFB:Freq2
00 00 01 0F	AFB:Depth2
00 00 02 00	AFB:Freq3
00 00 02 01	AFB:Depth3
00 00 02 02	FRT:Tone
00 00 02 03	FRT:Sensitivity
00 00 02 04	FRT:Attack
00 00 02 05	FRT:Depth
00 00 02 06	FRT:Resonance
00 00 02 07	FRT:Effect Level
00 00 02 08	FRT:Direct Level
00 00 02 09	WAH:On/Off
00 00 02 0A	WAH:FX Select
00 00 02 0B	AW :Mode
00 00 02 0C	AW :Polarity
00 00 02 0D	AW :Sensitivity
00 00 02 0E	AW :Frequency
00 00 02 0F	AW :Peak
00 00 03 00	AW :Rate
00 00 03 01	AW :Depth
00 00 03 02	AW :Level
00 00 03 03	FW :Type
00 00 03 04	FW :Pedal Position
00 00 03 05	FW :Level
00 00 03 06	OD :On/Off
00 00 03 07	OD :Type
00 00 03 08	OD :Drive
00 00 03 09	OD :Bass
00 00 03 0A	OD :Treble
00 00 03 0B	OD :Level
00 00 03 0C	PRE/SP:On/Off
00 00 03 0D	PRE/SP:Type
00 00 03 0E	PRE/SP:Gain
00 00 03 0F	PRE/SP:Bass
00 00 04 00	PRE/SP:Middle
00 00 04 01	PRE/SP:Treble
00 00 04 02	PRE/SP:Presence
00 00 04 03	PRE/SP:Amp Level
00 00 04 04	PRE/SP:Bright
00 00 04 05	PRE/SP:Gain SW
00 00 04 06	PRE/SP:Speaker SW
00 00 04 07	PRE/SP:Speaker Type
00 00 04 08	PRE/SP:Mic Setting
00 00 04 09	PRE/SP:Mic Level
00 00 04 0A	PRE/SP:Direct Level
00 00 04 0B	EQ :On/Off
00 00 04 0C	EQ :Low EQ
00 00 04 0D	EQ :Low-Middle Frequency
00 00 04 0E	EQ :Low-Middle Q
00 00 04 0F	EQ :Low-Middle EQ

```
00 00 05 00  EQ :High-Middle Frequency
00 00 05 01  EQ :High-Middle Q
00 00 05 02  EQ :High-Middle EQ
00 00 05 03  EQ :High EQ
00 00 05 04  EQ :Level
00 00 05 05  FX2:On/Off
00 00 05 06  FX2:FX Select
00 00 05 07  PH :Type
00 00 05 08  PH :Rate
00 00 05 09  PH :Depth
00 00 05 0A  PH :Manual
00 00 05 0B  PH :Resonance
00 00 05 0C  PH :Step
00 00 05 0D  PH :Step Rate
00 00 05 0E  PH :Effect Level
00 00 05 0F  PH :Direct Level
00 00 06 00  FL :Rate
00 00 06 01  FL :Depth
00 00 06 02  FL :Manual
00 00 06 03  FL :Resonance
00 00 06 04  FL :Separation
00 00 06 05  FL :Effect Level
00 00 06 06  FL :Direct Level
00 00 06 07  HR :Voice
00 00 06 08  HR :HR1 Harmony
00 00 06 09  HR :HR1 Pre Delay
00 00 06 0A  HR :HR1 Feedback
00 00 06 0B  HR :HR1 Level
00 00 06 0C  HR :HR2 Harmony
00 00 06 0D  HR :HR2 Pre Delay
00 00 06 0E  HR :HR2 Level
00 00 06 0F  HR :Key
00 00 07 00  HR :Direct Level
00 00 07 01  PS :Voice
00 00 07 02  PS :PS1 Mode
00 00 07 03  PS :PS1 Pitch
00 00 07 04  PS :PS1 Fine
00 00 07 05  PS :PS1 Pre Delay
00 00 07 06  PS :PS1 Feedback
00 00 07 07  PS :PS1 Level
00 00 07 08  PS :PS2 Mode
00 00 07 09  PS :PS2 Pitch
00 00 07 0A  PS :PS2 Fine
00 00 07 0B  PS :PS2 Pre Delay
00 00 07 0C  PS :PS2 Level
00 00 07 0D  PS :Direct Level
00 00 07 0E  2CE:Xover Frequency
00 00 07 0F  2CE:Low Rate
00 00 08 00  2CE:Low Depth
00 00 08 01  2CE:Low Pre Delay
00 00 08 02  2CE:Low Level
00 00 08 03  2CE:High Rate
00 00 08 04  2CE:High Depth
00 00 08 05  2CE:High Pre Delay
00 00 08 06  2CE:High Level
00 00 08 07  PAN:Wave Shape
00 00 08 08  PAN:Rate
00 00 08 09  PAN:Depth
00 00 08 0A  VB :Rate
00 00 08 0B  VB :Depth
00 00 08 0C  VB :Trigger
00 00 08 0D  VB :Rise Time
00 00 08 0E  UV :Rate
00 00 08 0F  UV :Depth
00 00 09 00  UV :Level
00 00 09 01  SDD:Delay Time
00 00 09 02  SDD:Feedback
00 00 09 03  SDD:Effect Level
00 00 09 04  HU :Mode
00 00 09 05  HU :Vowel 1
00 00 09 06  HU :Vowel 2
00 00 09 07  HU :Sensitivity
00 00 09 08  HU :Rate
00 00 09 09  HU :Depth
00 00 09 0A  HU :Manual
00 00 09 0B  HU :Level
00 00 09 0C  RM :Mode
00 00 09 0D  RM :Freq
00 00 09 0E  RM :Effect Level
00 00 09 0F  RM :Direct Level
00 00 0A 00  SL :Pattern
00 00 0A 01  SL :Rate
00 00 0A 02  SL :Trigger Sens
00 00 0A 03  AR :Phrase
00 00 0A 04  AR :Loop
00 00 0A 05  AR :Tempo
00 00 0A 06  AR :Sensitivity
00 00 0A 07  AR :Key
00 00 0A 08  AR :Attack
00 00 0A 09  AR :Hold
00 00 0A 0A  AR :Effect Level
00 00 0A 0B  AR :Direct Level
00 00 0A 0C  SYN:Sensitivity
00 00 0A 0D  SYN:Wave
00 00 0A 0E  SYN:Chromatic
00 00 0A 0F  SYN:Octave Shift
00 00 0B 00  SYN:PWM Rate
00 00 0B 01  SYN:PWM Depth
00 00 0B 02  SYN:Cutoff Frequency
00 00 0B 03  SYN:Resonance
00 00 0B 04  SYN:FLT.Sens
00 00 0B 05  SYN:FLT.Decay
00 00 0B 06  SYN:FLT.Depth
00 00 0B 07  SYN:Attack
00 00 0B 08  SYN:Release
00 00 0B 09  SYN:Velocity
00 00 0B 0A  SYN:Hold
00 00 0B 0B  SYN:Synth Level
00 00 0B 0C  SYN:Direct Level
00 00 0B 0D  SEQ:Low EQ
00 00 0B 0E  SEQ:Low-Middle Frequency
00 00 0B 0F  SEQ:Low-Middle Q
00 00 0C 00  SEQ:Low-Middle EQ
00 00 0C 01  SEQ:High-Middle Frequency
00 00 0C 02  SEQ:High-Middle Q
00 00 0C 03  SEQ:High-Middle EQ
00 00 0C 04  SEQ:High EQ
00 00 0C 05  SEQ:Level
00 00 0C 06  DD :On/Off
00 00 0C 07  DD :Type
00 00 0C 08  DD :DlyTime
00 00 0C 09  DD :DlyTime.F
00 00 0C 0A  DD :Tap Time
00 00 0C 0B  DD :Feedback
00 00 0C 0C  DD :High Cut Filter
00 00 0C 0D  DD :Effect Level
00 00 0C 0E  CE :On/Off
00 00 0C 0F  CE :Mode
00 00 0D 00  CE :Rate
00 00 0D 01  CE :Depth
00 00 0D 02  CE :Pre Delay
00 00 0D 03  CE :High Cut Filter
00 00 0D 04  CE :Effect Level
00 00 0D 05  RV :On/Off
00 00 0D 06  RV :Type
00 00 0D 07  RV :Reverb Time
00 00 0D 08  RV :Pre Delay
00 00 0D 09  RV :Low Cut Filter
00 00 0D 0A  RV :High Cut Filter
00 00 0D 0B  RV :Density
00 00 0D 0C  RV :Effect Level
00 00 0D 0D  NS :On/Off
00 00 0D 0E  NS :Threshold
00 00 0D 0F  NS :Release
00 00 0E 00  Patch Level
00 00 0E 01  Master BPM
00 00 0E 02  FV :Level
00 00 0E 03  MANUAL On/Off
00 00 0E 04  TUNER On/Off
00 00 0E 05  Master BPM(Tap)
00 00 0E 06  Delay Time(Tap)
00 00 0E 07  MIDI Start/Stop
00 00 0E 08  MMC Play/Stop
00 00 0E 09  Patch Level Inc1
00 00 0E 0A  Patch Level Inc2
00 00 0E 0B  Patch Level Dec1
00 00 0E 0C  Patch Level Dec2
```

Table Rate <Rate>

Data(H)	Description
00	0
:	:
64	100
65	1/4*BPM
66	1/3*BPM
67	3/8*BPM
68	1/2*BPM
69	2/3*BPM
6A	3/4*BPM
6B	1.0*BPM
6C	4/3*BPM
6D	1.5*BPM
6E	2.0*BPM
6F	8/3*BPM
70	3.0*BPM
71	4.0*BPM

Table EQ_Mid_f <EQ :Lo(Hi) Mid f>

Data(H)	Description
00	100Hz
01	125Hz
02	160Hz
03	200Hz
04	250Hz
05	315Hz
06	400Hz
07	500Hz
08	630Hz
09	800Hz
0A	1.00kHz
0B	1.25kHz
0C	1.60kHz
0D	2.00kHz
0E	2.50kHz
0F	3.15kHz
10	4.00kHz
11	5.00kHz
12	6.30kHz
13	8.00kHz
14	10.0kHz

Table EQ_Mid_Q <EQ :Lo(Hi) Mid Q>

Data(H)	Description
00	0.5
01	1
02	2
03	4
04	8
05	16

Table HR_Harm <HR:Harm>

Data(H)	Description
00	-2oct
01	-14th
02	-13th
03	-12th
04	-11th
05	-10th
06	-9th
07	-1oct
08	-7th
09	-6th
0A	-5th
0B	-4th
0C	-3rd
0D	-2nd
0E	Unison
0F	+2nd
10	+3rd
11	+4th

12	+5th
13	+6th
14	+7th
15	+1oct
16	+9th
17	+10th
18	+11th
19	+12th
1A	+13th
1B	+14th
1C	+2oct
1D	Scale 1
1E	Scale 2
1F	Scale 3
20	Scale 4
21	Scale 5
22	Scale 6
23	Scale 7
24	Scale 8
25	Scale 9
26	Scale 10
27	Scale 11
28	Scale 12
29	Scale 13
2A	Scale 14
2B	Scale 15
2C	Scale 16
2D	Scale 17
2E	Scale 18
2F	Scale 19
30	Scale 20
31	Scale 21
32	Scale 22
33	Scale 23
34	Scale 24
35	Scale 25
36	Scale 26
37	Scale 27
38	Scale 28
39	Scale 29

Table HR_Scale <Harmony Scale>

Harmony		Input note											
		C	C#	D	D#	E	F	F#	G	G#	A	A#	B
	User Scale	Harmony note(Default)											
-2oct	Scale 1	-C↓↓	-C#↓↓	-D↓↓	-D#↓↓	-E↓↓	-F↓↓	-F#↓↓	-G↓↓	-G#↓↓	-A↓↓	-A#↓↓	-B↓↓
-14th	Scale 2	-D↓	-D#↓	-E↓	-F↓	-F↓	-G↓	-G#↓	-A↓	-A#↓	-B↓	-C↓	-C↓
-13th	Scale 3	-E↓	-E↓	-F↓	-F#↓	-G↓	-A↓	-A#↓	-B↓	-B↓	-C↓	-C#↓	-D↓
-12th	Scale 4	-F↓	-F#↓	-G↓	-G#↓	-A↓	-B↓	-B↓	-C↓	-C#↓	-D↓	-D#↓	-E↓
-11th	Scale 5	-G↓	-G↓	-A↓	-A↓	-B↓	-C↓	-C↓	-D↓	-D↓	-E↓	-E↓	-F↓
-10th	Scale 6	-A↓	-A#↓	-B↓	-B↓	-C↓	-D↓	-D↓	-E↓	-E↓	-F↓	-F↓	-G↓
-9th	Scale 7	-B↓	-B↓	-C↓	-C↓	-D↓	-E↓	-E↓	-F↓	-F↓	-G↓	-G↓	-A↓
-1oct	Scale 8	-C↓	-C#↓	-D↓	-D#↓	-E↓	-F↓	-F#↓	-G↓	-G#↓	-A↓	-A#↓	-B↓
-7th	Scale 9	-D	-D#	-E	-F	-F	-G	-G#	-A	-A#	-B	-B	-C
-6th	Scale 10	-E	-E	-F	-F#	-G	-A	-A#	-B	-B	-C	-C#	-D
-5th	Scale 11	-F	-F#	-G	-G#	-A	-B	-B	-C	-C#	-D	-D#	-E
-4th	Scale 12	-G	-G	-A	-A	-B	-C	-C	-D	-D	-E	-E	-F
-3rd	Scale 13	-A	-A#	-B	-B	-C	-D	-D	-E	-E	-F	-F#	-G
-2nd	Scale 14	-B	-B	-C	-C	-D	-E	-E	-F	-F	-G	-G	-A
Unison	Scale 15	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
+2nd	Scale 16	+D	+D#	+E	+F	+F	+G	+G#	+A	+A#	+B	+C	+C
+3rd	Scale 17	+E	+E	+F	+F#	+G	+A	+A#	+B	+B	+C	+C#	+D
+4th	Scale 18	+F	+F#	+G	+G#	+A	+B	+B	+C	+C#	+D	+D#	+E
+5th	Scale 19	+G	+G	+A	+A	+B	+C	+C	+D	+D	+E	+E	+F
+6th	Scale 20	+A	+A#	+B	+B	+C	+D	+D	+E	+E	+F	+F#	+G
+7th	Scale 21	+B	+B	+C	+C	+D	+E	+E	+F	+F	+G	+G	+A
+1oct	Scale 22	+C↑	+C#↑	+D↑	+D#↑	+E↑	+F↑	+F#↑	+G↑	+G#↑	+A↑	+A#↑	+B↑
+9th	Scale 23	+D↑	+D#↑	+E↑	+F↑	+F↑	+G↑	+G#↑	+A↑	+A#↑	+B↑	+C↑	+C↑
+10th	Scale 24	+E↑	+E↑	+F↑	+F#↑	+G↑	+A↑	+A#↑	+B↑	+B↑	+C↑	+C#↑	+D↑
+11th	Scale 25	+F↑	+F#↑	+G↑	+G#↑	+A↑	+B↑	+B↑	+C↑	+C#↑	+D↑	+D#↑	+E↑
+12th	Scale 26	+G↑	+G↑	+A↑	+A↑	+B↑	+C↑	+C↑	+D↑	+D↑	+E↑	+E↑	+F↑
+13th	Scale 27	+A↑	+A#↑	+B↑	+B↑	+C↑	+D↑	+D↑	+E↑	+E↑	+F↑	+F#↑	+G↑
+14th	Scale 28	+B↑	+B↑	+C↑	+C↑	+D↑	+E↑	+E↑	+F↑	+F↑	+G↑	+G↑	+A↑
+2oct	Scale 29	+C↑↑	+C#↑↑	+D↑↑	+D#↑↑	+E↑↑	+F↑↑	+F#↑↑	+G↑↑	+G#↑↑	+A↑↑	+A#↑↑	+B↑↑

* This is harmoney output, in case that it is as Key=C(Am).

Table PreDly <PreDly>

Data(H)	Description
00 00	0ms
00 01	1ms
:	:
00 7F	127ms
01 00	128ms
:	:
01 7F	255ms
02 00	256ms
:	:
02 2C	300ms
02 2D	4.0*BPM
02 2E	3.0*BPM
02 2F	8/3*BPM
02 30	2.0*BPM
02 31	1.5*BPM
02 32	4/3*BPM
02 33	1.0*BPM

Table Xover_f <2CE Xover f>

Data(H)	Description
00	100Hz
01	125Hz
02	160Hz
03	200Hz
04	250Hz
05	315Hz
06	400Hz
07	500Hz
08	630Hz
09	800Hz
0A	1.00kHz
0B	1.25kHz
0C	1.60kHz
0D	2.00kHz
0E	2.50kHz
0F	3.15kHz
10	4.00kHz

Table SDD_DlyTime <SDD DlyTime>

Data(H)	Description
00 00	0ms
00 01	1ms
:	:
00 7F	127ms
01 00	128ms
:	:
01 7F	255ms
02 00	256ms
:	:
02 7F	383ms
03 00	384ms
:	:
03 10	400ms
03 11	4.0*BPM
03 12	3.0*BPM
03 13	8/3*BPM
03 14	2.0*BPM
03 15	1.5*BPM
03 16	4/3*BPM
03 17	1.0*BPM

Table DD_DlyTime <DD DlyTime>

Data(H)	Description
00	0ms
01	20ms
:	:
5A	1800ms
5B	4.0*BPM
5C	3.0*BPM
5D	8/3*BPM
5E	2.0*BPM
5F	1.5*BPM
60	4/3*BPM
61	1.0*BPM

62	3/4*BPM
63	2/3*BPM
64	1/2*BPM
65	3/8*BPM
66	1/3*BPM
67	1/4*BPM

Table High_Cut <High Cut>

Data(H)	Description
00	700Hz
01	1.00kHz
02	1.40kHz
03	2.00kHz
04	3.00kHz
05	4.00kHz
06	6.00kHz
07	8.00kHz
08	11.0kHz
09	Flat

Table Low_Cut <Low Cut>

Data(H)	Description
00	55.0Hz
01	110Hz
02	165Hz
03	200Hz
04	280Hz
05	340Hz
06	400Hz
07	500Hz
08	630Hz
09	800Hz

Table Chain <Chain>

Data(H)	Description
00	FX1
01	Wah
02	Overdrive/Distortion
03	Preamp/Speaker Simulator
04	Equalizer
05	FX2
06	Delay
07	Chorus
08	Reverb
09	Noise Suppressor
0A	Foot Volume

Table Name <Name Edit>

Data(H)	Description
20	
21	!
22	"
23	#
24	$
25	%
26	&
27	'
28	(
29	)
2A	*
2B	+
2C	,
2D	-
2E	.
2F	/
30	0
31	1
32	2
33	3
34	4
35	5
36	6
37	7
38	8
39	9
3A	:
3B	;
3C	<
3D	=
3E	>
3F	?
40	@
41	A
42	B
43	C
44	D
45	E
46	F
47	G
48	H
49	I
4A	J
4B	K
4C	L
4D	M
4E	N
4F	O
50	P
51	Q
52	R
53	S
54	T
55	U
56	V
57	W
58	X
59	Y
5A	Z
5B	[
5C	¥
5D	]
5E	^
5F	_
60	`
61	a
62	b
63	c
64	d
65	e
66	f
67	g
68	h
69	I
6A	j
6B	k
6C	l
6D	m
6E	n
6F	o
70	p
71	q
72	r
73	s
74	t
75	u
76	v
77	w
78	x
79	y
7A	z
7B	{
7C	|
7D	}
7E	→
7F	←

Table Target <Patch:Assign Target>

Data(H)	Description
00 00	FX1:On/Off
00 01	FX1:FX Select
00 02	CS :Sustain
00 03	CS :Attack
00 04	CS :Tone
00 05	CS :Level
00 06	LM :Threshold
00 07	LM :Release
00 08	LM :Tone
00 09	LM :Level
00 0A	AC :Top
00 0B	AC :Body
00 0C	AC :Level
00 0D	PIC:Type
00 0E	PIC:Tone
00 0F	PIC:Level
00 10	TR :Wave Shape
00 11	TR :Rate
00 12	TR :Depth
00 13	SG :Sensitivity
00 14	SG :Rise Time
00 15	FB :Mode
00 16	FB :Rise Time
00 17	FB :Rise Time(▲)
00 18	FB :F.B.Level
00 19	FB :F.B.Level(▲)
00 1A	FB :Vibrato Rate
00 1B	FB :Vibrato Depth
00 1C	AFB:Freq1
00 1D	AFB:Depth1
00 1E	AFB:Freq2
00 1F	AFB:Depth2
00 20	AFB:Freq3
00 21	AFB:Depth3
00 22	FRT:Tone
00 23	FRT:Sensitivity
00 24	FRT:Attack
00 25	FRT:Depth
00 26	FRT:Resonance
00 27	FRT:Effect Level
00 28	FRT:Direct Level
00 29	WAH:On/Off
00 2A	WAH:FX Select
00 2B	AW :Mode
00 2C	AW :Polarity
00 2D	AW :Sensitivity
00 2E	AW :Frequency
00 2F	AW :Peak
00 30	AW :Rate
00 31	AW :Depth
00 32	AW :Level
00 33	FW :Type
00 34	FW :Pedal Position
00 35	FW :Level
00 36	OD :On/Off
00 37	OD :Type
00 38	OD :Drive
00 39	OD :Bass
00 3A	OD :Treble
00 3B	OD :Level
00 3C	PRE/SP:On/Off
00 3D	PRE/SP:Type
00 3E	PRE/SP:Gain
00 3F	PRE/SP:Bass
00 40	PRE/SP:Middle
00 41	PRE/SP:Treble
00 42	PRE/SP:Presence
00 43	PRE/SP:Amp Level
00 44	PRE/SP:Bright
00 45	PRE/SP:Gain SW
00 46	PRE/SP:Speaker SW
00 47	PRE/SP:Speaker Type
00 48	PRE/SP:Mic Setting
00 49	PRE/SP:Mic Level
00 4A	PRE/SP:Direct Level
00 4B	EQ :On/Off
00 4C	EQ :Low EQ
00 4D	EQ :Low-Middle Frequency
00 4E	EQ :Low-Middle Q
00 4F	EQ :Low-Middle EQ

```
00 50        EQ :High-Middle Frequency
00 51        EQ :High-Middle Q
00 52        EQ :High-Middle EQ
00 53        EQ :High EQ
00 54        EQ :Level
00 55        FX2:On/Off
00 56        FX2:FX Select
00 57        PH :Type
00 58        PH :Rate
00 59        PH :Depth
00 5A        PH :Manual
00 5B        PH :Resonance
00 5C        PH :Step
00 5D        PH :Step Rate
00 5E        PH :Effect Level
00 5F        PH :Direct Level
00 60        FL :Rate
00 61        FL :Depth
00 62        FL :Manual
00 63        FL :Resonance
00 64        FL :Separation
00 65        FL :Effect Level
00 66        FL :Direct Level
00 67        HR :Voice
00 68        HR :HR1 Harmony
00 69        HR :HR1 Pre Delay
00 6A        HR :HR1 Feedback
00 6B        HR :HR1 Level
00 6C        HR :HR2 Harmony
00 6D        HR :HR2 Pre Delay
00 6E        HR :HR2 Level
00 6F        HR :Key
00 70        HR :Direct Level
00 71        PS :Voice
00 72        PS :PS1 Mode
00 73        PS :PS1 Pitch
00 74        PS :PS1 Fine
00 75        PS :PS1 Pre Delay
00 76        PS :PS1 Feedback
00 77        PS :PS1 Level
00 78        PS :PS2 Mode
00 79        PS :PS2 Pitch
00 7A        PS :PS2 Fine
00 7B        PS :PS2 Pre Delay
00 7C        PS :PS2 Level
00 7D        PS :Direct Level
00 7E        2CE:Xover Frequency
00 7F        2CE:Low Rate
01 00        2CE:Low Depth
01 01        2CE:Low Pre Delay
01 02        2CE:Low Level
01 03        2CE:High Rate
01 04        2CE:High Depth
01 05        2CE:High Pre Delay
01 06        2CE:High Level
01 07        PAN:Wave Shape
01 08        PAN:Rate
01 09        PAN:Depth
01 0A        VB :Rate
01 0B        VB :Depth
01 0C        VB :Trigger
01 0D        VB :Rise Time
01 0E        UV :Rate
01 0F        UV :Depth
01 10        UV :Level
01 11        SDD:Delay Time
01 12        SDD:Feedback
01 13        SDD:Effect Level
01 14        HU :Mode
01 15        HU :Vowel 1
01 16        HU :Vowel 2
01 17        HU :Sensitivity
01 18        HU :Rate
01 19        HU :Depth
01 1A        HU :Manual
01 1B        HU :Level
01 1C        RM :Mode
01 1D        RM :Freq
01 1E        RM :Effect Level
01 1F        RM :Direct Level
01 20        SL :Pattern
01 21        SL :Rate
01 22        SL :Trigger Sens
01 23        AR :Phrase
01 24        AR :Loop
01 25        AR :Tempo
01 26        AR :Sensitivity
01 27        AR :Key
01 28        AR :Attack
01 29        AR :Hold
01 2A        AR :Effect Level
01 2B        AR :Direct Level
01 2C        SYN:Sensitivity
01 2D        SYN:Wave
01 2E        SYN:Chromatic
01 2F        SYN:Octave Shift
01 30        SYN:PWM Rate
01 31        SYN:PWM Depth
01 32        SYN:Cutoff Frequency
01 33        SYN:Resonance
01 34        SYN:FLT.Sens
01 35        SYN:FLT.Decay
01 36        SYN:FLT.Depth
01 37        SYN:Attack
01 38        SYN:Release
01 39        SYN:Velocity
01 3A        SYN:Hold
01 3B        SYN:Synth Level
01 3C        SYN:Direct Level
01 3D        SEQ:Low EQ
01 3E        SEQ:Low-Middle Frequency
01 3F        SEQ:Low-Middle Q
01 40        SEQ:Low-Middle EQ
01 41        SEQ:High-Middle Frequency
01 42        SEQ:High-Middle Q
01 43        SEQ:High-Middle EQ
01 44        SEQ:High EQ
01 45        SEQ:Level
01 46        DD :On/Off
01 47        DD :Type
01 48        DD :DlyTime
01 49        DD :DlyTime.F
01 4A        DD :Tap Time
01 4B        DD :Feedback
01 4C        DD :High Cut Filter
01 4D        DD :Effect Level
01 4E        CE :On/Off
01 4F        CE :Mode
01 50        CE :Rate
01 51        CE :Depth
01 52        CE :Pre Delay
01 53        CE :High Cut Filter
01 54        CE :Effect Level
01 55        RV :On/Off
01 56        RV :Type
01 57        RV :Reverb Time
01 58        RV :Pre Delay
01 59        RV :Low Cut Filter
01 5A        RV :High Cut Filter
01 5B        RV :Density
01 5C        RV :Effect Level
01 5D        NS :On/Off
01 5E        NS :Threshold
01 5F        NS :Release
01 60        Patch Level
01 61        Master BPM
01 62        FV :Level
01 63        MANUAL On/Off
01 64        TUNER On/Off
01 65        Master BPM(Tap)
01 66        Delay Time(Tap)
01 67        MIDI Start/Stop
01 68        MMC Play/Stop
01 69        Patch Level Inc1
01 6A        Patch Level Inc2
01 6B        Patch Level Dec1
01 6C        Patch Level Dec2
```

Table Source <Assign Source>

Data(H)	Description
00	EXP PEDAL
01	EXP PEDAL SW
02	CTL PEDAL
03	SUB EXP PEDAL
04	SUB CTL 1
05	SUB CTL 2
06	MIDI CTL# 1
:	:
24	MIDI CTL# 31
25	MIDI CTL# 64
:	:
44	MIDI CTL# 95

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all Exclusive messages (type IV):

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

• MIDI status: F0H, F7H

An Exclusive message must be flanked by a pair of status codes, starting with a Manufacturer ID immediately after F0H (MIDI version 1.0).

• Manufacturer ID: 41H

The Manufacturer ID identifies the manufacturer of a MIDI instrument that sends an Exclusive message. Value 41H represents Roland's Manufacturer ID.

• Device ID: DEV

The Device ID contains a unique value that identifies individual devices in the implementation of several MIDI instruments. It is usually set to 00H–0FH, a value smaller by one than that of a basic channel, but value 00H–1FH may be used for a device with several basic channels.

• Model ID: MDL

The Model ID contains a value that identifies one model from another. Different models, however, may share an identical Model ID if they handle similar data.

The Model ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model IDs, each representing a unique model:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

• Command ID: CMD

The Command ID indicates the function of an Exclusive message. The Command ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command IDs, each representing a unique function:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

• Main data: BODY

This field contains a message to be exchanged across an interface. The exact data size and content will vary with the Model ID and Command ID.

2. Address-mapped Data Transfer

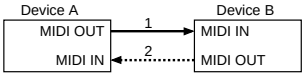
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records—waveform and tone data, switch status, and parameters, for example, to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures: one-way transfer and handshake transfer.

• One-way transfer procedure (See Section 3 for details.)

This procedure is suited to the transfer of a small amount of data. It sends out an Exclusive message completely independent of the receiving device's status.

Connection Diagram

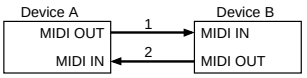


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

• Handshake-transfer procedure (This device does not use this procedure)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above procedures

** There are separate Command IDs for different transfer procedures.*

** Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device ID and Model ID, and are ready for communication.*

3. One-way Transfer Procedure

This procedure sends out data until it has all been sent and is used when the messages are so short that answerbacks need not be checked.
For longer messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts 20 milliseconds intervals.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

• Request data #1: RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.
If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device won't send out anything.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
|	|
|	|
	LSB
ssH	Size MSB
|	|
|	|
	LSB
sum	Check sum
F7H	End of exclusive

** The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.*

** Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.*

** The same number of bytes comprises address and size data, which, however, vary with the Model ID.*

** The error-checking process uses a checksum that provides a bit pattern where the last 7 bits are zero when values for an address, size, and that checksum are summed.*

•Data set 1: DT1 (12H)

This message corresponds to the actual data transfer process.
Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more bits of data as well as a series of data formatted in an address-dependent order.

The MIDI standards inhibit non real-time messages from interrupting an Exclusive one. This fact is inconvenient for devices that support a "soft-thru" function. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate 'segments'.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
|	|
|	|
	LSB
ddH	Data MSB
|	|
|	|
	LSB
sum	Check sum
F7H	End of exclusive

** A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.*

** Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.*

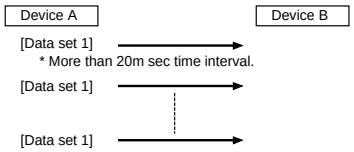
** The number of bytes comprising address data varies from one Model ID to another.*

** The error-checking process uses a checksum that provides a bit pattern where the last 7 bits are zero when values for an address, size, and that checksum are summed.*

•Example of Message Transactions

•Device A sending data to Device B

Transfer of a DT1 message is all that takes place.



•Device B requesting data from Device A

Device B sends an RQ1 message to Device A.
Checking the message, Device A sends a DT1 message back to Device B.