

 Roland

**JS-30**

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***SAMPLING WORKSTATION***

**MIDI implementation**



# JS-30 MIDI IMPLEMENTATION

MIDI IMPLEMENTATION

Version 1.00

Date: May 1994

## ARRANGER SECTION

### 1 Recognized (Receive data)

#### - Channel Voice Message -

##### ■ Note off

Status	Second	Third			
8nH	kkH	vvH			
9nH	kkH	00H			
n=MIDI channel	: 00H - 0FH (0 - 15)	0=ch1	15=ch16		
kk=Note number	: 0CH - 78H (12 - 120)				
vv=Velocity	: ignored				

##### ■ Note on

Status	Second	Third			
9nH	kkH	vvH			
n=MIDI channel	: 00H - 0FH (0 - 15)	0=ch1	15=ch16		
kk=Note number	: 0CH - 78H (12 - 120)				
vv=Velocity	: 01H - 7FH (1-127)				
*Ignored when "Midi Rx Channel = OFF" and the Note number is outside the "Limits".					

##### ■ Control change

###### Foot Controller

Status	Second	Third			
BnH	04H	vvH			
n= MIDI Channel	:00H-0FH (0 - 15)	0=ch.1	15=ch.16		
vv = Control Value	:00H-7FH (0 - 127)	0 - 63 = OFF	64 - 127 = ON		
* Received only in Record mode					

###### Scratch Control H MSB

Status	Second	Third			
BnH	10H	vvH			
n= MIDI channel	:00H - 0FH (0-15)	0=ch.1	15= ch.16		
vv= Control Value	:00H - 7FH (0 - 127)				
*Received when MIDI scratch function is on.					

###### Scratch Control H LSB

Status	Second	Third			
BnH	30H	vvH			
n= MIDI channel	:00H - 0FH (0-15)	0=ch.1	15= ch.16		
vv= Control Value	:00H - 7FH (0 - 127)				
*Received when MIDI scratch function is on.					

###### Scratch Control L LSB

Status	Second	Third			
BnH	11H	vvH			
n= MIDI channel	:00H - 0FH (0-15)	0=ch.1	15= ch.16		
vv= Control Value	:00H - 7FH (0 - 127)				
*Received when MIDI scratch function is on.					

##### Hold 1

Status	Second	Third			
BnH	40H	vvH			
n = MIDI Channel	:00H-0FH (0 - 15)	0=ch.1	15=ch.16		
vv = Control Value	:00H-7FH (0 - 127)	0 - 63 = OFF	64 - 127 = ON		
* Received when MIDI hold function is ON.					

##### RPN MSB, LSB

Status	Second	Third			
BnH	65H	mmH			
BnH	64H	llH			
n = MIDI Channel	:00H-0FH (0 - 15)	0=ch.1	15=ch.16		
mm = 7FH	RPN Null				
11 = 7FH					

##### NRPN MSB, LSB

Status	Second	Third			
BnH	63H	mmH			
BnH	62H	llH			
n = MIDI Channel	:00H-0FH (0 - 15)	0=ch.1	15=ch.16		
mm = SCSI Device ID number			(0-7)		
11 = Performance Number to be loaded			(0-99)		

##### Data Entry

Status	Second	Third			
BnH	06H	mmH			
n = MIDI Channel	:00H-0FH (0 - 15)	0=ch.1	15=ch.16		
mm = Memory Bank to be loaded			(0 = AB Load not While Play)		
			(1 = A Load While Play)		
			(2 = B Load While Play)		

Example: Load Memory Bank AB with Performance 9 from SCSI ID 3 JS-30 Basic Channel is 1

MIDI DATA [HEX]	Description
B0 63 03	:NRPN LSB
B0 62 09	:NRPN MSB
B0 06 00	:MSB of data entry

Example: Load Memory Bank A with Performance 20 from SCSI ID 0 JS-30 Basic Channel is 1

MIDI DATA [HEX]	Description
B0 63 00	:NRPN LSB,
B0 62 14	:NRPN MSB
B0 06 01	:MSB of data entry

Example: Load Memory Bank B with Performance 15 from SCSI ID 5 JS-30 Basic Channel is 1

MIDI DATA [HEX]	Description
B0 63 05	:NRPN LSB
B0 62 0F	:NRPN MSB
B0 06 02	:MSB of data entry

**Pitch Bend Change**

Status	Second	Third
EnH	11H	mmH
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
mm, ll = Value	:00H,00H - 40H,00H - 7FH,7FH (-8192 - 0 - 8191)	

**- Channel Mode Message -**

**All Notes Off**

Status	Second	Third
BnH	7BH	00H
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
* Turns off all MIDI keys on the corresponding MIDI channel		

**OMNI OFF**

Status	Second	Third
BnH	7CH	00H
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
* Will act the same as all note off.		

**OMNI ON**

Status	Second	Third
BnH	7DH	00H
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
* Will act the same as all note off.		

**MONO**

Status	Second	Third
BnH	7EH	mmH
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
mm = Mono Channel Range	:ignored	
* Will act the same as all note off.		

**POLY**

Status	Second	Third
BnH	7FH	00H
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
* Will act the same as all note off.		

**- System Exclusive Message -**

Status	Second	Third
F0H	:System Exclusive	
F7H	:EOX (End Of Exclusive)	
* For details refer to "Roland Exclusive Message" and Section 3.		
System Real Time Message		
Active Sensing		
Status	Second	Third
FEH		

\* When JS-30 receives Active sensing, it measures time intervals between incoming messages. If the subsequent message has not come within 420 ms after the previous one, JS-30 judges that there is some trouble on MIDI path (broken wiring, etc.) and turns off all MIDI-on notes and then returns to normal operation mode (will not check MIDI message interval).

**2 Transmitted data**

**- Channel Voice Message -**

**■ Note Off**

Status	Second	Third
9nH	kkH	00H
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
kk = Note Number	:18H-53H (24 - 83)	
vv = Velocity	:00H-01H (0 - 1)	Scratch key *
:ignored		
* 00 = fwd ;01 = rev		

**■ Note On**

Status	Second	Third
9nH	kkH	vvH
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
kk = Note Number	:18H-53H (24 - 83)	:00H-01H (0 - 1) *1
vv = Velocity	:01H-7FH (1 - 127)	*2
*1 Scratch Key number (00 = fwd ;01 = rev)		
*2 Velocity is a fixed value but it may be changed by user.		

**■ Control Change**

**RPN MSB,LSB**

Status	Second	Third
BnH	65H	mmH
BnH	64H	llH
n = MIDI Channel	:00H-0FH (0 - 15)	0=ch.1 15=ch.16
mm = 7FH	RPN Null	
ll = 7FH		

**NPRN**

Status	Second	Third
BnH	63H	mmH
BnH	62H	llH
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
mm = SCSI Device ID number (0-7)		
ll = Performance Number to be loaded (0-99)		

**Data Entry**

Status	Second	Third
BnH	06H	mmH
n = MIDI Channel	:0H - FH (0 - 15)	0=ch.1 15=ch.16
mm = Memory Bank to be loaded	(0 = AB Load not While Play)	
	(1 = A Load While Play)	
	(2 = B Load While Play)	

Example: Load Memory Bank AB with Performance 9 from SCSI ID 3 JS-30 Basic Channel is 1

MIDI DATA [HEX]	Description
B0 63 03	:NRPN LSB
B0 62 09	:NRPN MSB
B0 06 00	:MSB of data entry
B0 65 7F	:RPN LSB NULL
B0 64 7F	:RPN MSB NULL

Example: Load Memory Bank A with Performance 20 from SCSI ID 0 JS-30 Basic Channel is 1

MIDI DATA [HEX]	Description
B0 63 00	:NRPN LSB
B0 62 14	:NRPN MSB
B0 06 01	:MSB of data entry
B0 65 7F	:RPN LSB NULL
B0 64 7F	:RPN MSB NULL

Example: Load Memory Bank B with Performance 15 from SCSI ID 5  
JS-30 Basic Channel is 1

MIDI DATA (HEX)	Description
B0 63 05	:NRPN LSB
B0 62 0F	:NRPN MSB
B0 06 02	:MSB of data entry
B0 65 7F	:RPN LSB NULL
B0 64 7F	:RPN MSB NULL

### - System Exclusive Message -

#### Status

F0H	:System Exclusive
F7H	:EOX ( End Of Exclusive )

\* For details refer to "Roland Exclusive Message" and Section 3.

### 3. Exclusive Communications

#### Exclusive Messages Handled by JS-30

The JS-30 transfers the following messages as exclusive messages.

System Exclusive Message (in special format designed by Roland)  
Sound Parameter Information and others

Universal System Exclusive Message (in MIDI standard format)  
Sample Dump Standard (Sampling data body)

### - System Exclusive Message -

#### General

With the JS-30, the system exclusive message can be used to transmit sound parameter and some other information. Exclusive message can be used in two ways: one way communications and handshake communications, each in different format from the other.

#### Terminology

##### Model ID

The model ID of the JS-30 is 5FH.

#### ■ Control Channel

This is the channel used to control entire JS-30. The channel can be set to 1-16.

#### ■ Unit Number

Parameters like MIDI Channel are not available in Exclusive message. Therefore, separate parameters are provided for controlling various parameters.

Parameter	Value
Control Channel	1-16 or OFF
Unit Number	17-32 or 1-32

\* When unit number is 1-16, its value is synchronized with that of control channel.  
When the unit number is 17-32, the value can be set independently.

#### ■ Device ID

Device ID is set to a value smaller than the unit number by one.  
With Roland exclusive message, the device ID is used which contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H-1FH, a value smaller by one than that of a basic channel (MIDI note information receiving channel).

#### ■ One-way Communications

##### Request Data RQ1 11H

When the JS-30 receives this message, it first checks whether the specified address matches the parameter base address and the specified address size is one or more. When these checks are satisfactory, it sends the corresponding

parameter by using the Data Set 1 (DT1) message.  
The JS-30 does not send this message.

#### Byte Description

F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
11H	Command ID (RQ1)
aaH	Address MSB *3-1
aaH	Address
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size
ssH	Size LSB
sum	Checksum
F7H	EOX (End Of Exclusive)

##### Data Set DT1 12H

The JS-30 accepts this message when the following conditions are met.

Matches the MIDI unit number of the MIDI function; and the address specified corresponds to the parameter base address.  
The JS-30 stores the received data into location starting with this address.

The JS-30 transmits this message in the following case.

Having received the request data (RQ1) and to send the data specified by the RQ1.

For details of parameters to be transferred, refer to the parameter address map.

#### Byte Description

F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
12H	Command ID (RQ1)
aaH	Address MSB *3-1
aaH	Address
aaH	Address
aaH	Address LSB
ddH	Data
:	
sum	Checksum
F7H	EOX (End Of Exclusive)

### - Handshake Communications -

##### Want to Send Data WSD 40H

When JS-30 receives this message, it transmits acknowledge (ACK) and waits a Data Set (DAT) message.

#### Byte Description

F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
40H	Command ID (WSD)
aaH	Address MSB *3-1
aaH	Address
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size
ssH	Size LSB
sum	Checksum
F7H	EOX (End Of Exclusive)

##### Request Data RQD 41H

When the JS-30 receives this message, it first checks whether the specified address matches the parameter base address and the specified address size is one or more. When these checks are satisfactory, it sends the corresponding parameter by using the Data Set (DAT) message.

The JS-30 does not send this message.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
41H	Command ID (RQD)
aaH	Address MSB *3-1
aaH	Address
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size
ssH	Size LSB
sum	Checksum
F7H	EOX (End Of Exclusive)

**Data Set** DAT 42H

When JS-30 receives this message and the address specified corresponds to the parameter base address, it stores the received data into location starting with this address.

When JS-30 receives this message, it sends data located within the specified start address and subsequent length of address size, along with the parameter base address.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
42H	Command ID (DAT)
aaH	Address MSB *3-1
aaH	Address
aaH	Address
aaH	Address LSB
ddH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

**Acknowledge** ACK 43H

When the JS-30 receives this message in response to Data Set (DAT), it sends the next data following the data sent in the previous Data Set message, also using Data Set.

When the JS-30 receives this message in response to End Of Data (EOD), it terminates handshake communication.

The JS-30 sends this message upon receiving Want to send data (WSD), End of data or Data set (DAT).

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
43H	Command ID (ACK)
F7H	EOX (End Of Exclusive)

**End Of Data** EOD 45H

When the JS-30 receives this message, it terminates handshake communication by sending an acknowledge.

The JS-30 sends this message when the data is end during bulk dumping.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
45H	Command ID (EOD)
F7H	EOX (End Of Exclusive)

**Communication Error** ERR 4EH

The JS-30 sends this message upon detecting receiving error (checksum fails). Upon receiving this message, the JS-30 sends rejection and then terminates handshake communication.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
4EH	Command ID (ERR)
F7H	EOX (End Of Exclusive)

**Rejection** RJC 4FH

The JS-30 sends this message upon receiving a communication error. Upon receiving this message, the JS-30 terminates current communications.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
5FH	Model ID
4FH	Command ID (RJC)
F7H	EOX (End Of Exclusive)

**- Parameter Address Map -**

Address is in Hex. and in unit of 7 bits.

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

Actual address is the start address of a block plus offset address.

\*3-1 Address and Size must specify a location in which data exist.

**- Parameter Base Address -**

**Temporary Area**

Size should not cover more than one parameter area.

Start address	Size	Description
00 00 00 00	24 x 72	Zone Parameter
00 00 20 00	28 x 72	Sample Parameter
00 01 00 00	16384	Song Data
00 03 00 00	14	Global Parameter

Table 1: Zone Parameter.

Offset address	Description	
00 00H 00 01H	0000 aaaa 0000 bbbb	Sample Number aaaa bbbb 0 - 71
00 02H 00 03H	0000 aaaa 0000 bbbb	Volume aaaa bbbb 0 - 127
00 04H 00 05H	0000 aaaa 0000 bbbb	Note Shift aaaa bbbb - 99 - 0 + 99
00 06H 00 07H	0000 aaaa 0000 bbbb	Pitch aaaa bbbb - 125 - 0 + 125
00 08H 00 09H	0000 aaaa 0000 bbbb	Kbd Lower Limit aaaa bbbb 12 - 120
00 0AH 00 0BH	0000 aaaa 0000 bbbb	Kbd Upper Limit aaaa bbbb 12 - 120

00 0CH 00 0DH	0000 aaaa 0000 bbbb	Mode aaaa bbbb 0 = Fwd 1 = One Shot 2 = Reverse
00 0EH 00 0FH	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 10H 00 11H	0000 aaaa 0000 bbbb	TVA Level 0,4 aaaa bbbb 0 - 127
00 12H 00 13H	0000 aaaa 0000 bbbb	TVA Level 1 aaaa bbbb 0 - 127
00 14H 00 15H	0000 aaaa 0000 bbbb	TVA Level 2 aaaa bbbb 0 - 127
00 16H 00 17H	0000 aaaa 0000 bbbb	TVA Level 3 aaaa bbbb 0 - 127
00 18H 00 19H	0000 aaaa 0000 bbbb	TVA Time 1 aaaa bbbb 0 - 127
00 1AH 00 1BH	0000 aaaa 0000 bbbb	TVA Time 2 aaaa bbbb 0 - 127
00 1CH 00 1DH	0000 aaaa 0000 bbbb	TVA Time 3 aaaa bbbb 0 - 127
00 1EH 00 1FH	0000 aaaa 0000 bbbb	TVA Time 4 aaaa bbbb 0 - 127
00 20H 00 21H	0000 aaaa 0000 bbbb	Zone Rx Midi Channel aaaa bbbb -1 = off 0 = ch1 / 15 = ch16 16 = Bsc
00 22H 00 23H	0000 aaaa 0000 bbbb	Zone Rx Midi Bender Range aaaa bbbb 0 = off 12 = 1 octave 24 = 2 octave 25 = Vol 26 = Vol-
00 24H 00 25H	0000 aaaa 0000 bbbb	Zone Rx Midi Hold aaaa bbbb 0 = Off 1 = On
00 26H 00 27H	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 28H 00 29H	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 2AH 00 2BH	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 2CH 00 2DH	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 2EH 00 2FH	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
Total size	00 00 30H	

Table 2: Sample Parameter

Offset address		Description
00 00H 00 01H 00 02H 00 03H 00 04H 00 05H 00 06H 00 07H	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd 0000 eeee 0000 ffff 0000 gggg 0000 hhhh	Start Point aaaa bbbb cccc dddd eeee ffff gggg hhhh 00000000H - 1FFFFFF00H 80000000H - 8FFFFFF00H

00 08H 00 09H 00 0AH 00 0BH 00 0CH 00 0DH 00 0EH 00 0FH	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd 0000 eeee 0000 ffff 0000 gggg 0000 hhhh	Loop Start Point aaaa bbbb cccc dddd eeee ffff gggg hhhh 00000000H - 1FFFFFF00H 80000000H - 8FFFFFF00H
00 10H 00 11H 00 12H 00 13H 00 14H 00 15H 00 16H 00 17H	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd 0000 eeee 0000 ffff 0000 gggg 0000 hhhh	Loop End Point aaaa bbbb cccc dddd eeee ffff gggg hhhh 00000000H - 1FFFFFF00H 80000000H - 8FFFFFF00H
00 18H 00 19H 00 1AH 00 1BH	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd	Segment Top aaaa bbbb cccc dddd 0 - 451
00 1CH 00 1DH 00 1EH 00 1FH	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd	Segment Length aaaa bbbb cccc dddd 0 - 451
00 20H 00 21H	0000 aaaa 0000 bbbb	Sampling Frequency aaaa bbbb 0 : 48k 1 : 44.1k 2 : 24k 3 : 22.05k 4 : 30k 5 : 15k
00 22H 00 23H	0000 aaaa 0000 bbbb	Original Key aaaa bbbb 12 - 120
00 24H 00 25H 00 26H 00 27H 00 28H 00 29H 00 2AH 00 2BH	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd 0000 eeee 0000 ffff 0000 gggg 0000 hhhh	Real End Point aaaa bbbb cccc dddd eeee ffff gggg hhhh 00000000H - 1FFFFFF00H 80000000H - 8FFFFFF00H
00 2CH 00 2DH	0000 aaaa 0000 bbbb	Sample BPM Value aaaa bbbb 50 - 200
00 2EH 00 2FH	0000 aaaa 0000 bbbb	Sample BPM on/off aaaa bbbb 0 = off 1 = on
00 30H 00 31H	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 32H 00 33H	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 34H 00 35H	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
00 36H 00 37H	0000 aaaa 0000 bbbb	Dummy aaaa bbbb
Total size	00 00 38H	

Table 3: Global Parameter

Offset address		Description
00 00H 00 00H	0000 aaaa 0000 bbbb	Midi Channel aaaa bbbb -1 = off 0 = ch1 / 15 = ch16

00 02H 00 03H	0000 aaaa 0000 bbbb	TX Velocity aaaa bbbb	1 - 127
00 04H 00 05H 00 06H 00 07H	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd	Scratch Sensitivity aaaa bbbb cccc dddd	0 - 100
00 08H 00 09H	0000 aaaa 0000 bbbb	Scratch Zone aaaa bbbb	-1 = off 0 - 71
00 0AH 00 0BH	0000 aaaa 0000 bbbb	Scratch Key aaaa bbbb	36- 107
00 0CH 00 0DH	0000 aaaa 0000 bbbb	Track #1 Midi channel aaaa bbbb	0 = ch1 / 15 = ch16 16 = Bsc
00 0EH 00 0FH	0000 aaaa 0000 bbbb	Track #2 Midi channel aaaa bbbb	0 = ch1 / 15 = ch16 16 = Bsc
00 10H 00 11H	0000 aaaa 0000 bbbb	Track #3 Midi channel aaaa bbbb	0 = ch1  15 = ch16 16 = Bsc
00 12H 00 13H	0000 aaaa 0000 bbbb	Track #4 Midi channel aaaa bbbb	0 = ch1 / 15 = ch16 16 = Bsc
00 14H 00 15H	0000 aaaa 0000 bbbb	Reserved aaaa bbbb	
00 16H 00 17H	0000 aaaa 0000 bbbb	Master BPM Value aaaa bbbb	50 = 200
00 18H 00 19H	0000 aaaa 0000 bbbb	Master BPM on/off aaaa bbbb	0 = off 1 = on
00 1AH 00 1BH	0000 aaaa 0000 bbbb	Dummy aaaa bbbb	
Total size	00 00 1CH		

----- Address Map -----			
address	Block	Sub Block	Reference
00-00-00-00	Zone Parameter 1728 Byte	Zone #1	Table 1
		Zone #2	
		:	
		Zone #72	
00-00-1A-7F			
00-00-20-00	Sample Parameter 2016 Byte	Sample # 1	Table 2
		Sample # 2	
		:	
		Sample #72	
00-00-3F-3F			
00-01-00-00	Song Data  16384 Byte		
00-02-7F-7F			
00-03-00-00	Global Parameter  14 Byte		
00-03-00-1C			

### - Universal System Exclusive Message -

#### Sample Dump Standard

With sample dump standard, the following messages are used to transfer data.

This command requires the sample specified by the number is to be sent. When the JS-30 receives this command, it first performs checksum of the sample number to see it is within the valid range. If legal, it sends the required data to the command sender. If illegal, the JS-30 ignores this command.

The JS-30 will not send this message.

Byte	Description
F0H	Exclusive Status
7EH	Sample Dump Command
ccH	Channel Number
03H	Command ID (Dump Req)
ss ss	Request Sample (LSB first)
F7H	EOX

\* Channel Number is the device ID of the System Exclusive Message.



### Dump Header

The JS-30 dumps the header when it receives the request dump or it wants to start dump. It terminates dumping upon receiving a cancel.  
 The JS-30 starts data transfer upon receiving an ACK and will stop sending upon receiving a Wait until it receives the next message.  
 If the JS-30 has not received any message from the receiving party within 2 seconds after it sent the dump header, it judges the current communication is open loop (one-way communications) and starts data transmission again.

When the JS-30 receives this message, it checks whether the memory has more space to accommodate the data and whether the start and end points of sustain loop are correct. If everything is OK to accept the data, it sends ACK and waits for data packet. If not OK, sends a cancel message.

Byte	Description
F0H	Exclusive Status
7EH	Sample Dump Command
ccH	Channel Number
01H	Command ID (Dump Head)
ss ss	Request Sample (LSB first)
10H	Sample Format (16 bits)
ff ff ff	Sample Period (1/sampling rate nS)
gg gg gg	Data(word) Length
hh hh hh	Sustain Loop Start Point (word number)
ii ii ii	Sustain Loop End Point (word number)
jjH	Loop Type
	00H = Forwards only (unidirectional)
	01H = Backwards/Forwards (bi-directional)
	7FH = Off
F7H	EOX

\* Channel Number is the Device ID of the System Exclusive Message.

### Data Packet

Data is sent in a form of 7 bits, at 3 bytes/word (40 words/packet), left justified, upper byte first with a "0" placed at lower 5th bit of the 3rd byte of a word.  
 Upon receiving the data packet, the JS-30 checks the checksum: when checksum agrees, it sends ACK and waits for the next packet; if not, sends NAK and requests retransmission of the previous packet.

When the JS-30 receives Cancel message after sending the data packet, it immediately stops dumping; when receives ACK, it sends the next data packet; when receives Wait, it will not send until it receives the next message.

Byte	Description
F0H	ExclusiveStatus
7EH	Sample Dump Command
ccH	Channel Number
02H	Command ID (Data Packet)
ppH	Packet Number
:	}
:	}
:	} 120 Byte.Data
:	}
:	}
llH	Checksum
F7H	EOX

\* Channel Number is the Device ID of the System Exclusive Message.

### ACK

This handshake flag is sent out when no error was detected on reception of the last packet and the next data is requested to be sent. The Packet Number is the last packet received correctly.

Byte	Description
F0H	Exclusive Status
7EH	Sample Dump Command
ccH	Channel Number
7FH	Command ID (ACK)
ppH	Packet Number
F7H	EOX

\* Channel Number is the device ID of the System Exclusive Message.

This handshake flag is sent out when error was detected on reception of the last packet and the same data is requested to be sent again. The Packet Number is the last packet failed to be received.

Byte	Description
F0H	Exclusive Status
7EH	Sample Dump Command
ccH	Channel Number
7EH	Command ID (NAK)
ppH	Packet Number
F7H	EOX

\* Channel Number is the device ID of the System Exclusive Message.

### Cancel

This is a handshake flag indicating that the current dump is cancelled.  
 The Packet Number is the packet number cancelled. The cause of this transmission may be overflow at the receiving memory.

Byte	Description
F0H	Exclusive Status
7EH	Sample Dump Command
ccH	Channel Number
7DH	Command ID (Cancel)
ppH	Packet Number
F7H	EOX

\* Channel Number is the device ID of the System Exclusive Message.

### Wait

This is a handshake flag inhibiting packet transmission until another message requiring transmission is issued.  
 The Packet Number represents the packet that was not received.  
 This flag is sent out when the receiving device requires a time to become ready for the next reception.  
 An ACK is used to resume transfer; and Cancel is used to cancel the current transmission.

The JS-30 will not send this message.

Byte	Description
F0H	Exclusive Status
7EH	Sample Dump Command
ccH	Channel Number
7CH	Command ID (Wait)
Packet Number	
F7H	EOX

\* Channel Number is the device ID of the System Exclusive Message.

# MIDI IMPLEMENTATION CHART

[SAMPLING WORKSTATION]  
Model JS-30

Date: May 1994  
Version: 1.00

FUNCTION	TRANSMITTED	RECOGNIZED	REMARKS
<b>Basic Channel</b> Default Changed	1 1-16, OFF	1 1-16, OFF	*1
<b>Mode</b> Default Messages Altered	X X *****	3 X X	
<b>Note Number:</b> True voice	24-83 *****	12-120 *****	
<b>Velocity</b> Note ON Note OFF	X X	O X	v=1-127
<b>After Touch</b> Key's Ch's	X X	X X	
<b>Pitch Bender</b>			
<b>Control Change</b> 100,101 98,99 6	X X X X X O O O	*2 *1 *1 *1 *1 *1 O O O	Foot Controller Hold 1 Scratch H MSB Scratch H LSB Scratch L MSB Scratch L LSB  RPN LSB MSB NRPN LSB MSB Data Entry MSB
<b>Prog change:</b> True #	X *****	X *****	
<b>System Exclusive</b>	O	O	
<b>System Common</b> : Song Pos : Song Sel : Tune	X X X	X X X	
<b>System Real Time</b> : Clock : Commands	X X	X X	
<b>Aux Messages</b> : Local ON/OFF : All Notes OFF : Active Sense : Reset	X X X X	X O (123-127) O X	
<p><b>Notes</b></p> <p>*1 Selectable between O and X; result can be memorized internally and/or saved onto disk. *2 Recognizez only in record Mode.</p>			

Mode 1: OMNI ON, POLY  
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO  
Mode 4: OMNI OFF, MONO

O: YES  
X: NO



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**K6018177**

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**JS-30**

RES 078-95

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