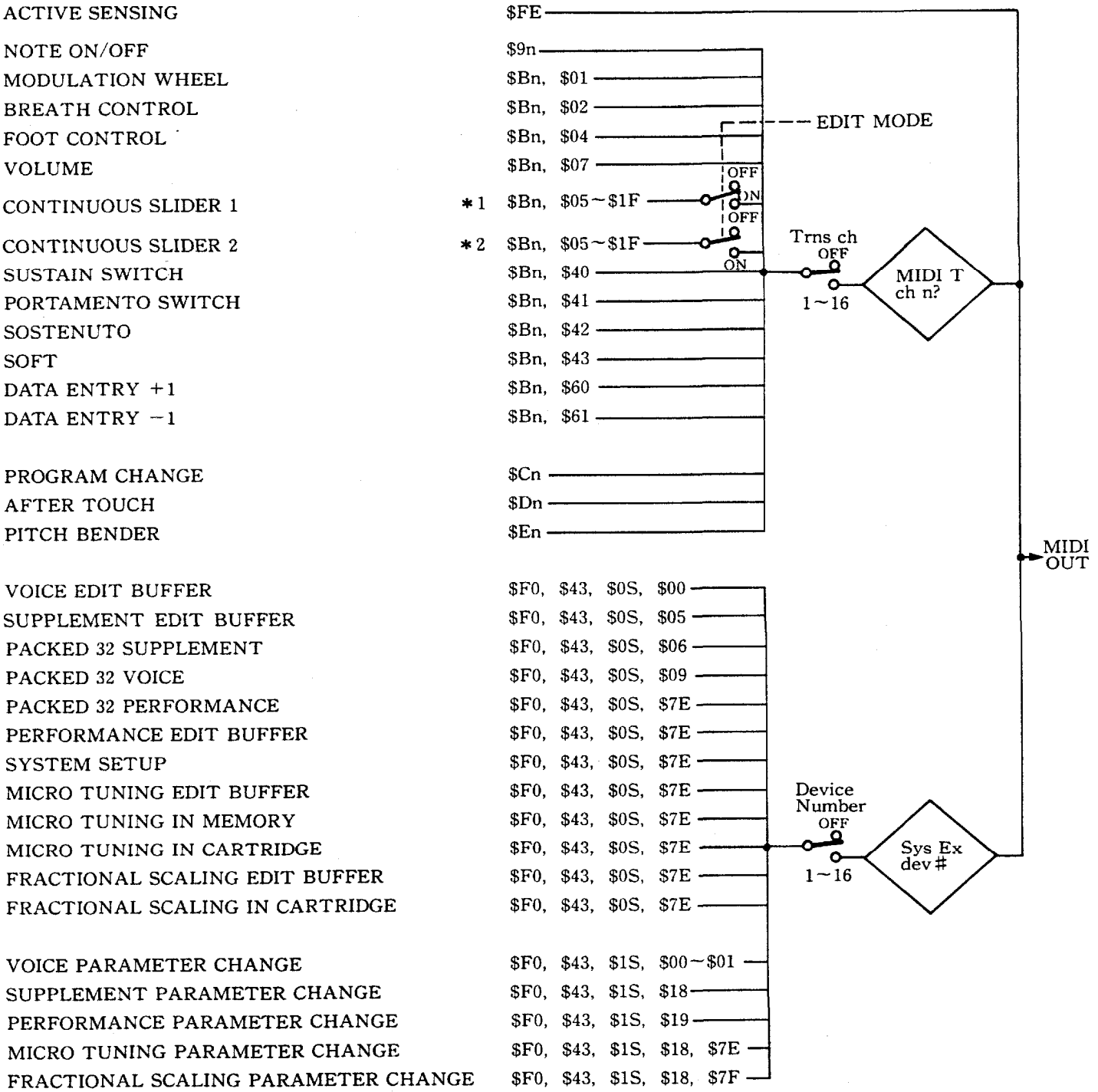
DX7-2

MIDI DATA FORMAT

1. Transmission Requirements



*1 BALANCE $Bn, $08 in EDIT MODE

2. Transmission Data

2-1. Channel information

Transmission is possible only when 1~ 16 is specified as the transmission channel.

1) Channel voice message

1 Key ON/OFF

Status	1 0 0 1 n n n n	(9n)	n = channel No.
Note No.	0 k k k k k k k		k = 36(C1) ~ 96(C6)
Velocity	0 v v v v v v v	(v = 0)	Key ON
	0 0 0 0 0 0 0 0	(v = 0)	Key OFF

2 Control change

Status	1 0 1 1 n n n n	(Bn)	n = channel No.
Control No.	0 c c c c c c c		
Control Value	0 v v v v v v v		

Control No.

c = 1	Modulation wheel	v = 0 ~ 127
c = 2	Breath control	v = 0 ~ 127
c = 4	Foot control	v = 0 ~ 127
c = 5	Portamento time	v = 0 ~ 127
c = 7	Volume	v = 0 ~ 127
c = 5 ~ c = 31	Continuous slider	v = 0 ~ 127
c = 64	Sustain SW	v = 0: OFF, 127: ON
c = 65	Portamento SW	v = 0: OFF, 127: ON
c = 66	Sostenuto	v = 0: OFF, 127: ON
c = 67	Soft	v = 0: OFF, 127: ON

3 Program change

Status	1 1 0 0 n n n n	(Cn)	n = channel No.
Program No.	0 p p p p p p p		p = 0 ~ 63: INTERNAL p = 64 ~ 127: CARTRIDGE

4 After touch

Status	1 1 0 1 n n n n	(Dn)	n = channel No.
Value	0 v v v v v v v		v = 0 ~ 127

5 Pitch bender

Status	1 1 1 0 *n n n n*	*(En)*	*n = channel No.*
Value (LSB)	0 u u u u u u u		
Value (MSB)	0 v v v v v v v		

Resolution 7bit

The transmission data are as follows:

MSB		LSB		
00000000	(00)	00000000	(00)	Min.
01000000	(40)	00000000	(00)	Mid.
01111111	(7F)	01111110	(7E)	Max.

2-2. System information

1) System real time message

Active sensing

Status	1 1 1 1 1 1 1 0	(FE)

2) System exclusive message

Transmission is possible only when the device No. is set to 1 ~ 16.

1 Parameter change

Status	1 1 1 1 0 0 0 0	(F0)	
ID No.	0 1 0 0 0 0 1 1	(43)	
Substatus/ device No.	0 0 0 1 n n n n	(1n)	
Parameter group No.	0 g g g g g h h		
Parameter No.	0 p p p p p p p		
Data	0 d d d d d d d 0 d d d d d d d		Single or multiple bytes
EOX	1 1 1 1 0 1 1 1	(F7)	

There are seven parameter group Nos. and parameter Nos.

Parameter	g	h	p	No. of data byte
Voice	0	0	0 ~ 127	1
	0	1	0 ~ 28	1
Supplement Note 3)	6	0	0 ~ 73	1
Performance	6	1	0 ~ 52	1
System set-up	6	1	64 ~	1
Micro tuning	6	0	126	3 Note 1)
Fractional scaling	6	0	127	4 Note 2)

NOTE 1

Data bytes

0kkkkkkk	key number		total of 3 bytes
0hhhhhhh	data (high)	0-84 binary	
01111111	data (low)	0-127 binary	

NOTE 2

Data bytes

00000ppp	operator number		total of 4 byte
00kkkkkk	key group number		
0hhhhhhh	data (high)	0-1 binary	
01111111	data (low)	0-127 binary	

NOTE 3

Under the Supplement parameter change, DX7 function parameter change will be transmitted along with the above.

● **Fractional Scaling Parameter Change**

Operator number

P	Operator
0	op 6
1	op 5
2	op 4
3	op 3
4	op 2
5	op 1

Key group number

K	Key	Data
0	offset	−127 ~ 127
1	C -2~ C-1	0 ~255
2	C#-1~D#-1	
3	E-1 ~F#-1	
4	G-1 ~ A-1	
5	A#-1~ C0	
6	C#0 ~ D#0	
7	E0 ~ F#0	
8	G0 ~ A0	
9	A#0 ~ C1	
10	C#1 ~ D#1	
11	E1 ~ F#1	
12	G1 ~ A1	
13	A#1 ~ C2	
14	C#2 ~ D#2	
15	E2 ~ F#2	
16	G2 ~ A2	
17	A#2 ~ C3	
18	C#3 ~ D#3	
19	E3 ~ F#3	
20	G3 ~ A3	
21	A#3 ~ C4	
22	C#4 ~ D#4	
23	E4 ~ F#4	
24	G4 ~ A4	
25	A#4 ~ C5	
26	C#5 ~ D#5	
27	E5 ~ F#5	
28	G5 ~ A5	
29	A#5 ~ C6	
30	C#6 ~ D#6	
31	E6 ~ F#6	
32	G6 ~ A6	
33	A#6 ~ C7	
34	C#7 ~ D#7	
35	E7 ~ F#7	
36	G7 ~ A7	
37	A#7 ~ C8	
38	C#8 ~ D#8	
39	E8 ~ F#8	
40	G8	

(Complement of 2)
(Binary)

2 Bulk data

For { Voice edit buffer
Supplement edit buffer
Packed 32 supplement
Packed 32 voice

Status	1 1 1 1 0 0 0 0	(F0)
ID No.	0 1 0 0 0 0 1 1	(43)
Substatus/ device No.	0 0 0 0 n n n n	(0n)
Format No.	0 f f f f f f f	
Byte count (MSB)	0 b b b b b b b	
Byte count (LSB)	0 b b b b b b b	
Data	0 d d d d d d d	
	↓	
	0 d d d d d d d	
Checksum	0 e e e e e e e	
EOX	1 1 1 1 0 1 1 1	(F7)

Format No.	Data	Byte count
0	Voice edit buffer	155
5	Supplement edit buffer	49
6	Packed 32 supplement	1120
9	Packed 32 voice	4096

● **When using universal Bulk Damp**

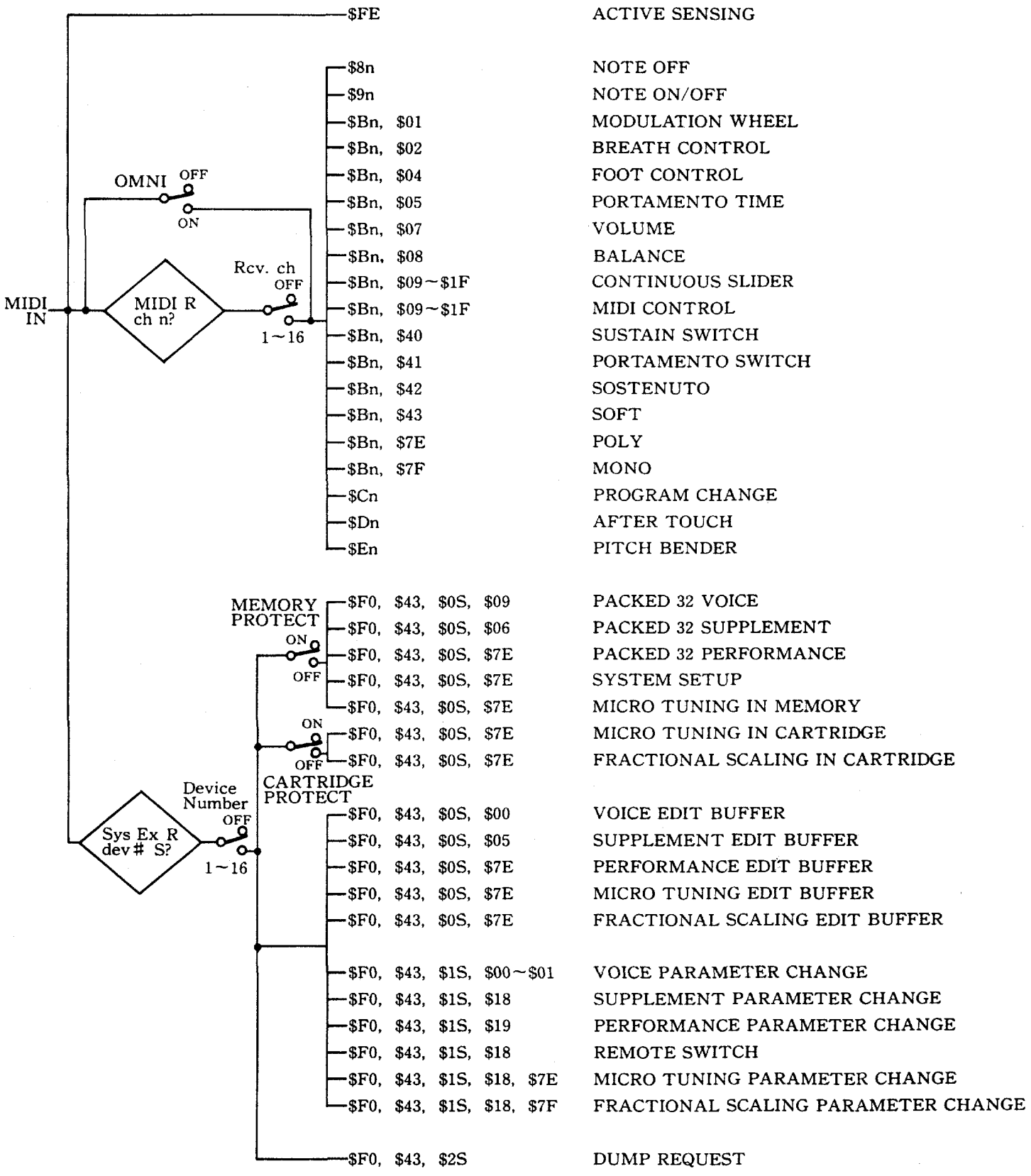
Status	1 1 1 1 0 0 0 0	(F0)
ID No.	0 1 0 0 0 0 1 1	(43)
Substatus/ device No.	0 0 0 0 n n n n	(0n)
Format No.	0 1 1 1 1 1 1 0	(7E)
Byte count (MSB)	0 b b b b b b b	
Byte count (LSB)	0 b b b b b b b	
Classification	0 a a a a a a a	ASCII 'L
name	0 a a a a a a a	'M
(4 bytes)	0 a a a a a a a	'␣
	0 a a a a a a a	'␣
Data format	0 mmmmmmm	ASCII
name (6 bytes)	↓	
	0 mmmmmmm	
Data	0 d d d d d d d	
	↓	
	0 d d d d d d d	
Checksum	0 e e e e e e e	
EOX	1 1 1 1 0 1 1 1	(F7)

Repeat group

Data	Byte count	Classification name	Data format name	No. of repeats
DX7 II Performance Edit Buffer	61	LM␣␣	8973P E	1
DX7 II Packed 32 Performance	1642	LM␣␣	8973P M	1
DX7 II System Set-up	112	LM␣␣	8973 S␣	1
Micro Tuning Edit Buffer	266	LM␣␣	MCRYE	1
Micro Tuning with Memory #x	266	LM␣␣	MCRYMx	1
Micro Tuning Cartridge	266	LM␣␣	MCRYC␣	64
Fractional Scaling Edit Buffer	502	LM␣␣	FKSYE␣	1
Fractional Scaling in Cartridge with Memory #	502	LM␣␣	FKSYC␣	32

Note 1) The x of MCRYMx is a memory No. expressed in binary form, 0 or 1.
Note 2) When the number of repeats is 64, the data group from byte count to checksum will be transmitted 64 times.

3. Reception Requirements



4. Reception Data

4-1. Channel Information

There are two types of MIDI reception channels for channel messages: A and B.

Single mode : Only A is effective
Dual mode : Only A is effective
Split mode : A, B independent
The split point function is effective when A = B, assigning A to the lower half and B to the upper half.

1) Channel voice message

1 Key OFF

Status	1 0 0 0 n n n n	(8n)	n = channel No.
Note No.	0 k k k k k k k		k = 0(C_{-2}) ~ 127(G_8)
Velocity	0 v v v v v v v		Ignore vs

2 Key ON/OFF

Status	1 0 0 1 n n n n	(9n)	n = channel No.
Note No.	0 k k k k k k k		k = 0(C_{-2}) ~ 127(G_8)
Velocity	0 v v v v v v v		v = 1 ~ 127 Key ON
	0 0 0 0 0 0 0 0		Key OFF

3 Control change

Status	1 0 1 1 n n n n	(Bn)
Control No.	0 c c c c c c c	
Control Value	0 v v v v v v v	

c = 1	Modulation wheel	v = 0 ~ 127
c = 2	Breath control	v = 0 ~ 127
c = 4	Foot control	v = 0 ~ 127
c = 5	Portamento time	v = 0 ~ 127
c = 8	Balance	v = 0 ~ 127
c = 9-31	Continuous slider	v = 0 ~ 127
c = 9-31	MIDI control	v = 0 ~ 127
c = 64	Sustain SW	v = 0 ~ 63: OFF, 64 ~ 127: ON
c = 65	Portamento SW	v = 0 ~ 63: OFF, 64 ~ 127: ON
c = 66	Sosutenuto	v = 0 ~ 63: OFF, 64 ~ 127: ON
c = 67	Soft	v = 0 ~ 63: OFF, 64 ~ 127: ON

The continuous sliders can be assigned to certain internal effects.
MIDI control can be assigned in the same way as foot control.

4 Program change

Status	1 1 0 0 n n n n	(Cn)	n = channel No.
Program No.	0 p p p p p p p		p = 0 ~ 127

0 ~ 31 select internal PERFORMANCE combinations in PERFORMANCE mode.
32 ~ 63 select cartridge PERFORMANCE combinations. Values over 63 repeat this order of selection (INT 1 ~ 32 → CRT 1 ~ 32).
In Single, Dual or Split mode, 0 ~ 63 select INT voices, 64 ~ 127 CRT voices.

5 After touch

Status	1 0 1 1 n n n n	(Dn)	n = channel No.
Value	0 v v v v v v v		v = 0 ~ 127

6 Pitch bender

Status	1 1 1 0 n n n n	(En)	n = channel No.
Value (LSB)	0 u u u u u u u		
Value (MSB)	0 v v v v v v v		

Operates with only the MSB data.

MSB	
00000000	Min.
01000000	Mid.
01111111	Max.

2) Channel mode message

1 MONO/All note off

1 0 1 1 n n n n	(Bn)
0 1 1 1 1 1 1 0	(7E) Mono/All note off
0 m m m m m m m	Set to the Mono mode with only m = 1 recognized. Ignore when m ≠ 1.

2 POLY/All note off

1 0 1 1 n n n n	(Bn)
0 1 1 1 1 1 1 1	(7F)
0 0 0 0 0 0 0 0	Poly/All note off

4-2. System Information

1) System real time messages

Active sensing

Status	1 1 1 1 1 1 1 0	(FE)

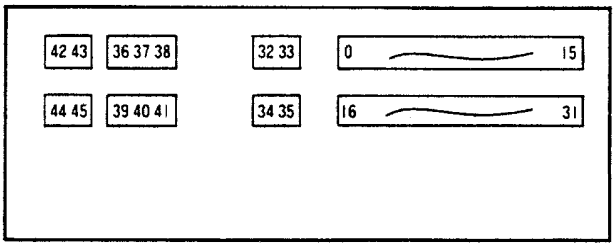
Upon reception of the code, sensing will start. When there is no status byte or data for 300 msec, the MIDI reception buffer is cleared and the on-going sound turned OFF.

2) System exclusive messages

1 Parameter change (Switch remote)

Status	1 1 1 1 0 0 0 0	(F0)
ID No.	0 1 0 0 0 0 1 1	(43)
Substatus/ device No.	0 0 0 1 n n n n	(1n)
Parameter group No.	0 0 0 1 1 0 1 1	(1B)
Switch No.	0 m m m m m m m	
Data	0 d d d d d d d	d=0: OFF d=127: ON
EOX	1 1 1 1 0 1 1 1	(F7)

All the panel switches are controlled.
The switch numbers are follows:



2 Parameter change
Same as for transmission

3 Bulk data
Same as for transmission

4 Dump request

For
- Voice edit buffer (f=0)
- Supplement edit buffer (f=5)
- Packed 32 supplement (f=6)
- Packed 32 voice (f=9)

Status	1 1 1 1 0 0 0 0	(F0)
ID No.	0 1 0 0 0 0 1 1	(43)
Substatus/ device No.	0 0 1 0 n n n n	(2n)
Format No.	0 f f f f f f f	f=0, 5, 6, 9
EOX	1 1 1 1 0 1 1 1	(F7)

- **Universal bulk dump**

Status	1 1 1 1 0 0 0 0	(F0)
ID No.	0 1 0 0 0 0 1 1	(43)
Substatus/ device No.	0 0 1 0 n n n n	(2n)
Format No.	0 1 1 1 1 1 1 0	(7E)
Classification name (ASCII 4 letters)	0 a a a a a a a ↓ 0 a a a a a a a	
Data format name (ASCII 6 letters)	0 m m m m m m m ↓ 0 m m m m m m m	
EOX	1 1 1 1 0 1 1 1	(F7)

Classification name and data format name are same as for transmission.

5-1. Voice Parameter (VCED format)

g	h	P.NO	PARAMETER	DATA	NOTES		INIT
0	0	0	R1	0 - 99	EG RATE1	21 42 63 84 105	99
		1	R2	0 - 99	EG RATE2	22 43 64 85 106	99
		2	R3	0 - 99	EG RATE3	23 44 65 86 107	99
		3	R4	0 - 99	EG RATE4	24 45 66 87 108	99
		4	L1	0 - 99	EG LEVEL1	25 46 67 88 109	99
		5	L2	0 - 99	EG LEVEL2	26 47 68 89 110	99
		6	L3	0 - 99	EG LEVEL3	27 48 69 90 111	99
		7	L4	0 - 99	EG LEVEL4	28 49 70 91 112	00
		8	BP	0 - 99	BREAK POINT	29 50 71 92 113	39
		9	LD	0 - 99	LEFT DEPTH	30 51 72 93 114	0
		10	RD	0 - 99	RIGHT DEPTH	31 52 73 94 115	0
		11	LC	0 - 3	LEFT CURVE	32 53 74 95 116	0
		12	RC	0 - 3	RIGHT CURVE	33 54 75 96 117	0
		13	RS	0 - 7	RATE SCALING	34 55 76 97 118	0
		14	AMS	0 - 3	MODULATION SENSITIVITY	35 56 77 98 119	0
		15	TS	0 - 7	TOUCH SENSITIVITY	36 57 78 99 120	0
		16	TL	0 - 99	TOTAL LEVEL	37 58 79 100 121	(OP1:99)0
		17	PM	0 - 1	FREQUENCY MODE	38 59 80 101 122	0
		18	PC	0 - 31	FREQUENCY COURSE	39 60 81 102 123	1
		19	PF	0 - 99	FREQUENCY FINE	40 61 82 103 124	0
		20	PD	0 - 14	DETUNE	41 62 83 104 125	7
		126	PR1	0 - 99	PEG RATE1		99
		127	PR2	0 - 99	PEG RATE2		99
0	1	128	PR3	0 - 99	PEG RATE3		99
		129	PR4	0 - 99	PEG RATE4		99
		130	PL1	0 - 99	PEG LEVEL1		50
		131	PL2	0 - 99	PEG LEVEL2		50
		132	PL3	0 - 99	PEG LEVEL3		50
		133	PL4	0 - 99	PEG LEVEL4		50
		134	ALS	0 - 31	ALGORITHM SELECTOR		0
		135	FBL	0 - 7	FEED BACK LEVEL		0
		136	OPI	0 - 1	OSC.PHASE INIT		1
		137	LFS	0 - 99	LFO SPEED		35
		138	LFD	0 - 99	LFO DELAY TIME		0
		139	LPMD	0 - 99	PITCH MODULATION DEPTH		0
		140	LAMD	0 - 99	AMPLITUDE MODULATION DEPTH		0
		141	LFKS	0 - 1	LFO KEY SYNC		1
		142	LFW	0 - 5	LFO WAVE		0
		143	LPMS	0 - 7	LFO PITCH MODULATION SENSITIVITY		3
		144	TRNP	0 - 48	TRANSPOSE		24
		145	VNAM1	ASC	VOICE NAME		I
		146	VNAM2	ASC	VOICE NAME		N
		147	VNAM3	ASC	VOICE NAME		I
		148	VNAM4	ASC	VOICE NAME		T
		149	VNAM5	ASC	VOICE NAME		
		150	VNAM6	ASC	VOICE NAME		V
		151	VNAM7	ASC	VOICE NAME		O
		152	VNAM8	ASC	VOICE NAME		I
		153	VNAM9	ASC	VOICE NAME		C
		154	VNAM10	ASC	VOICE NAME		E
		155	OPE	0 - 63	OPERATOR ENABLE B5:OP1,--,B0:OP6		
		156	OPSEL	0 - 5	OPERATOR SELECT 0:OPI,--,5:OP6		

5-2. Additional Parameters (ACED format)

g	h	P.NO	PARAMETER	DATA	INIT	NOTES
6	0	0	SCM	0 - 1	0	OP6 scaling mode normal/fraction
		1	SCM	0 - 1	0	OP5 scaling mode normal/fraction
		2	SCM	0 - 1	0	OP4 scaling mode normal/fraction
		3	SCM	0 - 1	0	OP3 scaling mode normal/fraction
		4	SCM	0 - 1	0	OP2 scaling mode normal/fraction
		5	SCM	0 - 1	0	OP1 scaling mode normal/fraction
		6	AMS	0 - 7	0	OP6 amplitude modulation sensitivity
		7	AMS	0 - 7	0	OP5 amplitude modulation sensitivity
		8	AMS	0 - 7	0	OP4 amplitude modulation sensitivity
		9	AMS	0 - 7	0	OP3 amplitude modulation sensitivity
		10	AMS	0 - 7	0	OP2 amplitude modulation sensitivity
		11	AMS	0 - 7	0	OP1 amplitude modulation sensitivity
		12	PEGR	0 - 3	0	pitch EG range 8va/4va/1va/1/2va
		13	LTRG	0 - 1	0	LFO key trigger (delay) single/multi
		14	VPSW	0 - 1	0	pitch EG by velocity switch off/on:0/1
		15	PMOD	0 - 3	0	bit0;poly/mono , bit1;unison off/on
		16	PBR	0 - 12	2	pitch bend range
		17	PBS	0 - 12	0	step
		18	PBM	0 - 2	0	mode low/high/k.on
		19	RNDP	0 - 7	0	ramdom pitch fluctuation off/5c-41c
		20	PORM	0 - 1	0	portamento mode rtn/fllw fngrd/flltm
		21	PQNT	0 - 12	0	step
		22	POS	0 - 99	0	time
		23	MWPM	0 - 99	0	modulation wheel pitch mod range
		24	MWAM	0 - 99	0	amplitude mod range
		25	MWEB	0 - 99	0	EG bias range
		26	FC1PM	0 - 99	0	foot controler 1 pitch mod range
		27	FC1AM	0 - 99	0	amplitude mod range
		28	FC1EB	0 - 99	0	EG bias range
		29	FC1VL	0 - 99	0	volume range
		30	BCPM	0 - 99	0	breath controler pitch mod range
		31	BCAM	0 - 99	0	amplitude mod range
		32	BCEB	0 - 99	0	EG bias range
		33	BCPB	0 - 100	50	pitch bias range
		34	ATPM	0 - 99	0	after touch pitch mod range
		35	ATPM	0 - 99	0	amplitude mod range
		36	ATEB	0 - 99	0	EG bias range
		37	ATPB	0 - 100	50	pitch bias range
		38	PGRS	0 - 7	0	pitch EG rate scaling depth
		39-63	reserved			
		64	FC2PM	0 - 99	0	pitch mod. range
		65	FC2AM	0 - 99	0	amp mod. range
		66	FC2EB	0 - 99	0	EG bias range
		67	FC2VL	0 - 99	0	volume range
		68	MCPM	0 - 99	0	pitch mod. range
		69	MCAM	0 - 99	0	amp mod. range
		70	MCEB	0 - 99	0	EG bias range
		71	MCVL	0 - 99	0	volume range
		72	UDTN	0 - 7	0	unison detune depth
		73	FCCS1	0 - 1	0	foot cntl.1 use as CS1 switch off/on:0/1

5-3. PERFORMANCE Parameters (PCED, PMEM format)

g	h	P.NO	PARAMETER	DATA	NOTES	INIT
6	1	0	PLMD	0 - 2	0/1/2 : SINGLE/DUAL/SPLIT	1
		1	VNMA	0 - 127	A-CH VOICE NUMBER	0
		2	VNMB	0 - 127	B-CH VOICE NUMBER	0
		3	MCTB	0 - 74	MICRO TUNING TABLE SELECT	0
		4	MCKY	0 - 11	MICRO TUNING KEY	0
		5	MCSW	0 - 3	MICRO TUNING SWITCH BIT0:A,BIT1:B 0/1:OFF/ON	0
		6	DDTN	0 - 7	DUAL DETUNE	0
		7	SPPT	0 - 127	SPLIT POINT	60
		8	FDMP	0 - 1	EG FORCED DAMPING SWITCH 0/1:OFF/ON	0
		9	SFSW	0 - 3	SUSTAIN FOOT SWITCH BIT0:A,BIT1:B 0/1:OFF/ON	3
		10	FSAS	0 - 3	FOOT SWITCH ASSIGN 0:SUS,1:POR,2:KHLD,3:SFT	1
		11	FSW	0 - 3	FOOT SWITCH BIT0:A,BIT1:B 0/1:OFF/ON	3
		12	SPRNG	0 - 7	SOFT PEDAL RANGE	0
		13	NSFTA	0 - 48	NOTE SHIFT RANGE FOR SINGLE,DUAL,SPLIT(A)	24
		14	NSFTB	0 - 48	NOTE SHIFT RANGE FOR SPLIT(B)	24
		15	BLNC	0 - 100	VOLUME BALANCE (-50 -+50)	0
		16	TVLM	0 - 99	TOTAL VOLUME	99
		17	CSLD1	0 - 105	CONTINUOUS SLIDER 1	0
		18	CSLD2	0 - 109	CONTINUOUS SLIDER 2	0
		19	CSSW	0 - 3	CONTINUOUS SLIDER ASSIGN SWITCH b1,3:B,b0,2:A	0
		20	PNMD	0 - 3	PAN MODE 0:MIX,1:ON-ON,2:ON-OFF,3:OFF-ON	1
		21	PANRNG	0 - 99	PAN CONTROLL RANGE	0
		22	PANASN	0 - 2	PAN CONTROLL ASSIGN 0/1/2:LFO/VELOCITY/KEY#	0
		23	PNEGR1	0 - 99	PAN EG RATE 1	99
		24	PNEGR2	0 - 99	PAN EG RATE 2	99
		25	PNEGR3	0 - 99	PAN EG RATE 3	99
		26	PNEGR4	0 - 99	PAN EG RATE 4	99
		27	PNEGL1	0 - 99	PAN EG LEVEL 1	50
		28	PNEGL2	0 - 99	PAN EG LEVEL 2	50
		29	PNEGL3	0 - 99	PAN EG LEVEL 3	50
		30	PNEGL4	0 - 99	PAN EG LEVEL 4	50
		31	PNAM	ASCII	PERFORMANCE NAME	I
		32	〃	〃	〃	N
		33	〃	〃	〃	I
		34	〃	〃	〃	T
		35	〃	〃	〃	
		36	〃	〃	〃	P
		37	〃	〃	〃	E
		38	〃	〃	〃	R
		39	〃	〃	〃	F
		40	〃	〃	〃	
		|	〃	〃	〃	
		50	〃	〃	〃	

5-4. Voice Data (VMEM format)

NO		BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0	
0	R1				R1				17 34 51 68 85
1	R2				R2				18 35 52 69 86
2	R3				R3				19 36 53 70 87
3	R4				R4				20 37 54 71 88
4	L1				L1				21 38 55 72 89
5	L2				L2				22 39 56 73 90
6	L3				L3				23 40 57 74 91
7	L4				L4				24 41 58 75 92
8	BP				BP				25 42 59 76 93
9	LD				LD				26 43 60 77 94
10	RD				RD				27 44 61 78 95
11	RC	-	-	-		RC		LC	28 45 62 79 96
12	PD			PD			RS		29 46 63 80 97
13	TS	-	-		TS			AMS	30 47 64 81 98
14	TL				TL				31 48 65 82 99
15	PC	-			PC			PM	32 49 66 83 100
16	PF				PF				33 50 67 84 101
102	PR1				PR1				
103	PR2				PR2				
104	PR3				PR3				
105	PR4				PR4				
106	PL1				PL1				
107	PL2				PL2				
108	PL3				PL3				
109	PL4				PL4				
110	ALS	-	-		ALS				
111	OPI	-	-	-	OP1		FBL		
112	LFS				LFS				
113	LFD				LFD				
114	LPMD				LPMD				
115	LAMD				LAMD				
116	LPMS		LPMS			LFW		LFKS	
117	TRNP				TRNP				
118	VNAM1				VNAM1				
119	VNAM2				VNAM2				
120	VNAM3				VNAM3				
121	VNAM4				VNAM4				
122	VNAM5				VNAM5				
123	VNAM6				VNAM6				
124	VNAM7				VNAM7				
125	VNAM8				VNAM8				
126	VNAM9				VNAM9				
127	VNAM10				VNAM10				

5-5. Additional Data (AMEM format)

NO		BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
0	SCM	-	OP1	OP2	OP3	OP4	OP5	OP6
1	AMS	-		OP5			OP6	
2	AMS	-		OP3			OP4	
3	AMS	-		OP1			OP2	
4	PEGR		RNDP		VPSW	LTRG	PEGR	
5	PMOD	-		PBR			PMOD	
6	PBS	-		PBM		PBS		
7	RNDP	-	-			PQNT		PORM
8	POS				POS			
9	MWPM				MWPM			
10	MWAM				MWAM			
11	MWEB				MWEB			
12	FC1PM				FC1PM			
13	FC1AM				FC1AM			
14	FC1EB				FC1EB			
15	FC1VL				FC1VL			
16	BCPM				BCPM			
17	BCAM				BCAM			
18	BCEB				BCEB			
19	BCPB				BCPB			
20	ATPM				ATPM			
21	ATAM				ATAM			
22	ATEB				ATEB			
23	ATPB				ATPB			
24	PGRS						PGRS	
25	----				RESERVED			
26	FC2PM				FC2PM			
27	FC2AM				FC2AM			
28	FC2EB				FC2EB			
29	FC2VL				FC2VL			
30	MCPM				MCPM			
31	MCAM				MCAM			
32	MCEB				MCEB			
33	MCVL				MCVL			
34	UDTN				FCCS1		UDTN	

5-6. System Set-up Parameters

* ..... SYSTEM memory 102 bytes g=6,h=1

p#	name	data	init	notes
64 0	TXCH	0-15	0	* MIDI TX channel
65 1	CVMSW	0-1	1	* MIDI channel voice message TRANS switch
66 2	RXCHA	0-16	0	* MIDI RX channel 16:off
67 3	RXCHB	0-16	0	* MIDI RX channel 16:off
68 4	OMNI	0-1	1	* MIDI OMNI MODE SWITCH 0/1:OFF/ON
69 5	MCONTA	11-31	12	* MIDI CONTROLER NUMBER
70 6	MCONTB	11-31	13	* MIDI CONTROLER NUMBER
71 7	MCSNUM1	11-31	14	* CONTINUOUS SLIDER 1 CONTROLL MUMBER
72 8	MCSNUM2	11-31	15	* CONTINUOUS SLIDER 2 CONTROLL NUMBER
73 9	MKOEFG	0-2	0	* MIDI key on/off normal/odd/even:0/1/2 flag
74 10	PPCMOD	0-2	1	* PROGRAM CHANGE TRANS MODE FLAG 0/1/2:of/nor/prg
75 11	LOCAL	0-1	0	* LOCAL SWITCH 0/1:OFF/ON
76 12	MTBFLG	0-1	0	* MIDI transmit block flag
77 13	MRBFLG	0-1	0	* MIDI recieve block flag
78 14	SCMCH	0-15	0	* MIDI system common message RX channel (device No.)
79 15	SCMSW	0-1	1	* MIDI system common message switch
80 16	APTBNK1	0-15	0	* cartridge appoint bank number
81 17	APTBNK2	0-15	2	* cartridge appoint bank number
82 18	APTBNK3	0-15	3	* cartridge appoint bank number
83 19	PROTECT	0-3	3	* memory protect --- bit0=INT. bit1=CRT.
g=1,h=0				
64 37	MSTUNE	0-127	64	* master tune
-38-101	PPCBUF	0-127	sw#	* PROGRAMMABLE PROGRAM CHANGE TRANS SET BUFFER

5-7. Micro Tuning Parameters

BYTE	KEY NAME	DATA	NOTES					
0	C-2	0 - 84	MSB	48 C0	96 C2	144 C4	192 C6	240 C8
1	C-2	0 -127 0-10794	LSB	49	97	145	193	241
2	C#-2	0 - 84	MSB	50	98	146	194	242
3	C#-2	0 -127 0-10794	LSB	51	99	147	195	243
4	D-2	0 - 84	MSB	52	100	148	196	244
5	D-2	0 -127 0-10794	LSB	53	101	149	197	245
6	D#-2	0 - 84	MSB	54	102	150	198	246
7	D#-2	0 -127 0-10794	LSB	55	103	151	199	247
8	E-2	0 - 84	MSB	56	104	152	200	248
9	E-2	0 -127 0-10794	LSB	57	105	153	201	249
10	F-2	0 - 84	MSB	58	106	154	202	250
11	F-2	0 -127 0-10794	LSB	59	107	155	203	251
12	F#-2	0 - 84	MSB	60	108	156	204	252
13	F#-2	0 -127 0-10794	LSB	61	109	157	205	253
14	G-2	0 - 84	MSB	62	110	158	206	254
15	G-2	0 -127 0-10794	LSB	63	111	159	207	255
16	G#-2	0 - 84	MSB	64	112	160	208	
17	G#-2	0 -127 0-10794	LSB	65	113	161	209	
18	A-2	0 - 84	MSB	66	114	162	210	
19	A-2	0 -127 0-10794	LSB	67	115	163	211	
20	A#-2	0 - 84	MSB	68	116	164	212	
21	A#-2	0 -127 0-10794	LSB	69	117	165	213	
22	B-2	0 - 84	MSB	70	118	166	214	
23	B-2	0 -127 0-10794	LSB	71	119	167	215	
24	C-1			72 C1	120 C3	168 C5	216 C7	
25				73	121	169	217	
26				74	122	170	218	
27				75	123	171	219	
28				76	124	172	220	
29				77	125	173	221	
30				78	126	174	222	
31				79	127	175	223	
32				80	128	176	224	
33				81	129	177	225	
34				82	130	178	226	
35				83	131	179	227	
36				84	132	180	228	
37				85	133	181	229	
38				86	134	182	230	
39				87	135	183	231	
40				88	136	184	232	
41				89	137	185	233	
42				90	138	186	234	
43				91	139	187	235	
44				92	140	188	236	
45				93	141	189	237	
46				94	142	190	238	
47				95	143	191	239	

5-8. Fractional Key Scaling Parameters

OPG				OP5	OP4	OP3	OP2	OP1	DATA
0	OFS			41	82	123	164	205	-128 -127
1	C-2	–	C-1	42	83	124	165	206	0 -255
2	C#-1	–	D#-1	43	84	125	166	207	0 -255
3	E-1	–	F#-1	44	85	126	167	208	0 -255
4	G-1	–	A-1	45	86	127	168	209	0 -255
5	A#1	–	C0	46	87	128	169	210	0 -255
6	C#0	–	D#0	47	88	129	170	211	0 -255
7	E0	–	F#0	48	89	130	171	212	0 -255
8	G0	–	A0	49	90	131	172	213	0 -255
9	A#0	–	C1	50	91	132	173	214	0 -255
10	C#1	–	D#1	51	92	133	174	215	0 -255
11	E1	–	F#1	52	93	134	175	216	0 -255
12	G1	–	A1	53	94	135	176	217	0 -255
13	A#1	–	C2	54	95	136	177	218	0 -255
14	C#2	–	D#2	55	96	137	178	219	0 -255
15	E2	–	F#2	56	97	138	179	220	0 -255
16	G2	–	A2	57	98	139	180	221	0 -255
17	A#2	–	C3	58	99	140	181	222	0 -255
18	C#3	–	D#3	59	100	141	182	223	0 -255
19	E3	–	F#3	60	101	142	183	224	0 -255
20	G3	–	A3	61	102	143	184	225	0 -255
21	A#3	–	C4	62	103	144	185	226	0 -255
22	C#4	–	D#4	63	104	145	186	227	0 -255
23	E4	–	F#4	64	105	146	187	228	0 -255
24	G4	–	A4	65	106	147	188	229	0 -255
25	A#4	–	C4	66	107	148	189	230	0 -255
26	C#5	–	D#5	67	108	149	190	231	0 -255
27	E5	–	F#5	68	109	150	191	232	0 -255
28	G5	–	A5	69	110	151	192	233	0 -255
29	A#5	–	C6	70	111	152	193	234	0 -255
30	C#6	–	D#6	71	112	153	194	235	0 -255
31	E6	–	F#6	72	113	154	195	236	0 -255
32	G6	–	A6	73	114	155	196	237	0 -255
33	A#6	–	C7	74	115	156	197	238	0 -255
34	C#7	–	D#7	75	116	157	198	239	0 -255
35	E7	–	F#7	76	117	158	199	240	0 -255
36	G7	–	A7	77	118	159	200	241	0 -255
37	A#7	–	C8	78	119	160	201	242	0 -255
38	C#8	–	D#8	79	120	161	202	243	0 -255
39	E8	–	F#8	80	121	162	203	244	0 -255
40	G8	–		81	122	163	204	245	0 -255

NOTE:

For the bulk data transmission, 8 bit (0~255) data will be divided in half: lower 4 bits and higher 4 bits, to be converted into ASCII codes.