

YAMAHA

DIGITAL PROGRAMMABLE ALGORITHM SYNTHESIZER

DX7

MIDI DATA FORMAT

006581

SINCE 1887



YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

2-HK 31   Printed in Japan 84.3

1. TRANSMISSION DATA.

1-1. Channel information

1001nnnn Key ON & Channel number (n=0; ch1)
 0kkkkkkk Key number (k=36; C₁) – (k=96; C₆)
 0vvvvvvvv Key velocity (v=0; Key OFF)
 (v=1; ppp) – (v=127; fff)

 1011nnnn Control change & Channel number
 (n=0; ch1)
 0ccccccc Control number
 0vvvvvvvv Control value

C	Parameter	V
1	Modulation wheel	0 – 127
2	Breath controller	0 – 127
4	Foot controller	0 – 127
6	Data entry knob	0 – 127
64	Sustain foot switch	0 ; OFF, 127 ; ON
65	Portamento foot switch	0 ; OFF, 127 ; ON
96	Data entry +1	127 ; ON only
97	Data entry -1	127 ; ON only

1100nnnn Program change & Channel number
 (n=0 ; ch1)(at System information unavailable)
 0pppppppp Program number (p=0; INT1) – (p=31; INT32),
 (p=32; CRT1) – (p=63; CRT32)
 1101nnnn After touch & channel number
 (n=0; ch1)
 0vvvvvvvv Touch value (0 – 127)

 1110nnnn Pitch bender & Channel number (n=0 ; ch1)
 0vvvvvvvv Pitch bender value LS byte
 0vvvvvvvv Pitch bender value MS byte (0 – 64 – 127)

MS byte	LS byte
0 – 64	0
65 – 127	2 (MS byte – 64)

1-2-2. Bulk data for one voice

11110000 Status byte
 0iiiiiii Identification number (i=67; YAMAHA)
 0sssnnnn Sub status (s=0) & Channel number
 (n=0 ; ch1)
 0ffffff Format number (f=0 ; 1 voice)
 0bbbbbbb Byte count MS byte (b=155 ; 1 voice)
 0bbbbbbb Byte count LS byte
 0ddddd Data 1st byte
 | |
 0ddddd Data 155th byte
 0eeeeeee Check Sum (2'S complement of the sum of 155
 bytes)

11110111 EOX

1-2-3. Bulk data for 32 voices

11110000 Status byte
 0iiiiiii Identification number (i=67 ; YAMAHA)
 0sssnnnn Sub status (s=0) & Channel number
 (n=0 ; ch1)
 0ffffff Format number (f=9 ; 32 voices)
 0bbbbbbb Byte count MS byte (b=4096 ; 32 voices)
 0bbbbbbb Byte count LS byte
 0ddddd Data 1st byte
 | |
 0ddddd Data 4096th byte
 0eeeeeee Check Sum (2'S complement of the sum of 4096
 bytes)

11110111 EOX

1-2-4. Parameter change

F0 11110000 Status byte
 43 0iiiiiii Identification number (i=67 ; YAMAHA)
 0sssnnnn Sub status (s=1) & Channel number
 (n=0 ; ch1)
 0gggggpp Parameter group number (g=0 ; Common DX
 Voice parameter), (g=2; DX7 Function para-
 meter)
 0ppppppp Parameter number
 0ddddd Data
 F7 11110111 EOX

1-2. System exclusive information

1-2-1. MIDI active sensing

11111110 Status byte

MIDI active sensing is continuously output at 80 ms inter-
 vals, except during bulk dump data transmission and recep-
 tion.

INDISPENSABLE
 DANS DATAT PAR PPG. ?

DX7**MIDI DATA FORMAT**

g=0 : Common DX Voice parameter

P	Parameter	d
0	OP6 EG RATE 1	0 - 99
1	" RATE 2	"
2	" RATE 3	"
3	" RATE 4	"
4	" LEVEL 1	"
5	" LEVEL 2	"
6	" LEVEL 3	"
7	" LEVEL 4	"
8	OP6 KEY BOARD LEVEL SCALE BREAK POINT	"
9	" LEFT DEPTH	"
10	" RIGHT DEPTH	"
11	" LEFT CURVE	0 - 3
12	" RIGHT CURVE	"
13	OP6 KEY BOARD RATE SCALING	0 - 7
14	OP6 MOD SENSITIVITY AMPLITUDE	0 - 3
15	OP6 OPERATOR KEY VELOCITY SENSITIVITY	0 - 7
16	OP6 OPERATOR OUTPUT LEVEL	0 - 99
17	OP6 OSCILLATOR MODE	0 - 1
18	OP6 OSCILLATOR FREQUENCY COARSE	0 - 31
19	" FINE	0 - 99
20	DETUNE	0 - 14
21	OP5 ~ OP1	
125		
126	PITCH EG RATE 1	0 - 99
127	" RATE 2	"
128	" RATE 3	"
129	" RATE 4	"
130	" LEVEL 1	"
131	" LEVEL 2	"
132	" LEVEL 3	"
133	" LEVEL 4	"
134	ALGORITHM SELECT	0 - 31
135	FEED BACK	0 - 7
136	OSCILLATOR SYNC	0 - 1
137	LFO SPEED	0 - 99
138	" DELAY	"
139	" PMD	"
140	" AMD	"

P	Parameter	d
141	LFO SYNC	0 - 1
142	" WAVE	9 - 4
143	MOD SENSITIVITY PITCH	0 - 7
144	TRANPOSE	0 - 48
145	VOICE NAME 1	ASCII
154	VOICE NAME 10	ASCII
155	OPERATOR ON/OFF	D ₆ D ₅ D ₄ D ₃ D ₂ D ₁ D ₀
	0=OFF, 1=ON	0 OP1 OP2 OP3 OP4 OP5 OP6

g=2 : DX7 Function parameter

P	Parameter	d
64	MONO/POLY MODE CHANGE	0 - 1
65	PITCH BEND RANGE	0 - 12
66	" STEP	0 - 12
67	PORTAMENT MODE	0 - 1
68	" GLISSAND	0 - 1
69	" TIME	0 - 99
70	MODULATION WHEEL RANGE	0 - 99
71	" ASSIGN	0 - 7
72	FOOT CONTROLLER RANGE	0 - 99
73	" ASSIGN	0 - 7
74	BREATH CONTROLLER RANGE	0 - 99
75	" ASSIGN	0 - 7
76	AFTER TOUCH RANGE	0 - 99
77	" ASSIGN	0 - 7

2. RECEPTION DATA.

2-1. Channel information

Reception is possible when the channel number of the received data matches the channel number set up at the DX7.

1000nnnn Key OFF & Channel number

(n=0 ; ch1) – (n=15 ; ch16)

0kkkkkkk Key number (k=0, 1 ; C₂[#]) – (k=127 ; G₈)

0vvvvvvvv Key velocity (v ; Ignored)

1001nnnn Key ON & Channel number

(n=0 ; ch1) – (n=15 ; ch16)

0kkkkkkk Key number (k=0, 1 ; C₂[#]) – (k=127 ; G₈)

0vvvvvvvv Key velocity

(v=0 ; Key OFF), (v=1 ; ppp) – (v=127 ; fff)

1011nnnn Control change & channel number

(n=0 ; ch1) – (n=15 ; ch16)

0ccccccc Control number

0vvvvvvvv Control value

c	Parameter	v
1	Modulation wheel	0 – 127
2	Breath controller	0 – 127
4	Foot controller	0 – 127
5	Portamento time	0 – 127
6	Data entry knob (MASTER TUNE only)	0 – 127
7	Volume (Lowest 4 bits ignored)	0 – 127
64	Sustain foot switch	0 : OFF, 127 : ON
65	Portamento foot switch	0 : OFF, 127 : ON
96	Data entry +1	127 ; ON only
97	Data entry -1	127 ; ON only
125	OMNI all key off	Ignored
126	MONO all key off	1
127	POLY all key off	Ignored

1100nnnn Program change & Channel number

(n=0 ; ch1) – (n=15 ; ch16)

0pppppppp Program number (p=0 ; INT1) – (p=31 ; INT32)

(p=32 ; CRT1) – (p=63 ; CRT32)

1110nnnn Pitch bender & Channel number

(n=0 ; ch1) – (n=15 ; ch16)

0vvvvvvvv Pitch bender value LS byte (Ignored)

0vvvvvvvv Pitch bender value MS byte (0 – 64 – 127)

2-2. System exclusive information

2-2-1. MIDI active sensing

MIDI active sensing is received regardless of channel number. If the sensing is interrupted for more than 666 ms at any time other than during reception of bulk data, the DX7 assumes that transmitter power is off or the line has been disconnected, and stops note output.

2-2-2. Bulk data for one voice

1-voice bulk data is received in the same format as the transmission data when the MIDI channel numbers match in the "System Information Available" mode.

2-2-3. Bulk data for 32 voices

32-voice bulk data is received in the same format as the transmitted data when the MIDI channel numbers match in the "System Information Available" mode, and when Memory Protect is OFF.

2-2-4. Parameter change

Voice and function parameters are received in the same format as the transmitted data when the MIDI channel numbers match in the "System Information Available" mode.

2-2-5. Bulk data for one performance memory

DX1'S 1-performance bulk data is received when the MIDI channel numbers match.

11110000 Status

0iiiiiii Identification number

(i=67;YAMAHA)

0ssnnnn Sub status (s=0) & channel number

(n=0;ch1) – (n=15;ch16)

0ffffff Format number (f=2:1 performance)

0bbbbbbb Byte count MS byte

(b=94;1 performance)

0bbbbbbb Byte count LS byte

0ddddd Data 1st byte

!

0ddddd Data 94th byte

0eeeeeee Check sum (2's complement of the sum of 94 bytes)

11110111 EOX