

## 11 MIDI COMMANDS

### Data transmission

The panel operation data is transmitted by MIDI command, as per the table below.

### Send command to PC

	items	MIDI command			Message type
		Command	Number	Value	
1	Playlist	SW ON : 0x9n SW OFF : 0x8n	0x02	SW ON : 0x40 SW OFF : 0x00	Note ON/OFF
2	JOG mode	↑	0x04	↑	↑
3	Pitch/KEY	↑	0x05	↑	↑
4	TAP	↑	0x07	↑	↑
5	Pitch Bend+	↑	0x08	↑	↑
6	Pitch Bend-	↑	0x09	↑	↑
7	Fast search+	↑	0x10	↑	↑
8	Fast search-	↑	0x11	↑	↑
9	EFX1/ECHO/LOOP	↑	0x12	↑	↑
10	EFX2/FLANGER	↑	0x13	↑	↑
11	EFX3/FILTER	↑	0x14	↑	↑
12	HOT1	↑	0x17	↑	↑
13	HOT2	↑	0x18	↑	↑
14	HOT3	↑	0x19	↑	↑
15	HOT4	↑	0x20	↑	↑
16	HOT5	↑	0x21	↑	↑
17	TIME/TOTAL	↑	0x23	↑	↑
18	MEMO/PRESET	↑	0x24	↑	↑
19	TITLE	↑	0x25	↑	↑
20	CONT./SINGLE	↑	0x26	↑	↑
21	Parameters KNOB SW	↑	0x28	↑	↑
22	BACK	↑	0x30	↑	↑
23	SOURCE mode	↑	0x31	↑	↑
24	FLIP	↑	0x36	↑	↑
25	A1	↑	0x37	↑	↑
26	A2	↑	0x38	↑	↑
27	B	↑	0x39	↑	↑
28	EXIT/Reloop	↑	0x40	↑	↑
29	Cue	↑	0x42	↑	↑
30	Play	↑	0x43	↑	↑
31	JOG UP	↑	0x47	↑	↑
32	JOG DOWN	↑	0x48	↑	↑
33	JOG LEFT	↑	0x49	↑	↑
34	JOG RIGHT	↑	0x50	↑	↑
35	Jogwheel touch	↑	0x51	↑	↑

	items	MIDI command			Message type
		Command	Number	Value	
36	Preset Mode	SW ON : 0x9n SW OFF : 0x8n	0x52	SW ON : 0x40 SW OFF : 0x00	Note ON/OFF
37	D4500 Cont. mode	↑	0x53	↑	↑
38	Jogwheel fwd/rev	0xBn	0x51	Reverse 0x3F ~ 0x00 Forward 0x41 ~ 0x7F slow → fast * relative data	Control change
39	X-Control fader	↑	0x53	0x00 (min) → 0x7F (max)	↑
40	Parameters KNOB Increment/Decrement	↑	0x54	Increment : 0x00 Decrement : 0x7F	↑
41	Pitch Slider	0xE <sub>n</sub>	0x1 <sub>lh</sub> (LSB)	0x <sub>mmh</sub> (MSB) -100% : 0x7F7F (MSB/LSB) 0% : 0x4000 (MSB/LSB) +100% : 0x0000 (MSB/LSB)	Pitch bend change

n = MIDI CH

**Data reception**

**LED data reception**

The panel's LEDs can be set to on, off or blinking by MIDI command, as per the table below.

■ **Receive command for LED**

	items	MIDI command			Message type	Notes
		Command	Number	Value		
	<b>LED</b>	<b>0xBn</b>	<b>ON TRG : 0x4A OFF TRG : 0x4B Blink ON TRG : 0x4C</b>	<b>↓</b>	<b>Control Change</b>	
1	Playlist			0x02		
2	Pitch match LED			0x04		
3	JOG mode Green			0x05		
4	JOG mode Orange			0x06		
5	Pitch/KEY Green			0x07		
6	Pitch/KEY Orange			0x08		
7	TAP Green			0x09		
8	TAP Orange			0x0A		
9	EFX1/ECHO/LOOP RED			0x0B		
10	EFX1 Green			0x0C		
11	EFX2/FLANGER RED			0x0D		
12	EFX2 Green			0x0E		
13	EFX3/FILTER RED			0x0F		
14	EFX3 Green			0x10		
15	HOT1			0x11		
16	HOT1 Dimmer			0x12		
17	HOT2			0x13		
18	HOT2 Dimmer			0x14		
19	HOT3			0x15		
20	HOT3 Dimmer			0x16		
21	HOT4			0x17		
22	HOT4 Dimmer			0x18		
23	HOT5			0x19		
24	HOT5 Dimmer			0x1A		
25	Parameter KNOB			0x1E		
26	A1			0x24		
27	A1 Dimmer			0x3C		
28	A2			0x25		
29	A2 Dimmer			0x3D		
30	Cue			0x26		
31	Play			0x27		
32	Jogwheel			0x3B		
33	Pitch slider request		only Use 0x4A (request TRG)	0x3C		DN-HC4500 return pitch slider position
34	X-Control fader request		only Use 0x4A (request TRG)	0x3D		DN-HC4500 return X-Control fader position

n = MIDI CH

**VFD symbol data reception**

The various VFD symbols can be set to on, off or blinking, as per the table below.

■ **Receive command for VFD Symbol**

	items	MIDI command			Message type
		Command	Number	Value	
	<b>VFD Symbol</b>	<b>0xBn</b>	<b>ON TRG : 0x4D OFF TRG : 0x4E Blink ON TRG : 0x4F</b>	<b>↓</b>	<b>Control Change</b>
1	T.			0x01	
2	REMAIN			0x02	
3	ELAPSED			0x03	
4	CONT.			0x04	
5	SINGLE			0x05	
6	BPM			0x06	
7	m			0x07	
8	s			0x08	
9	f			0x09	
10	Pitch dot Right			0x0A	
11	Pitch dot center			0x0B	
12	Pitch dot left			0x0C	
13	MP3			0x10	
14	WAV			0x11	
15	KB			0x13	
16	KEY ADJ.			0x14	
17	MEMO			0x15	
18	( : A1 side			0x16	
19	( : A2 side			0x17	
20	) : A1 side			0x18	
21	) : A2 side			0x19	
22	A1			0x1A	
23	A2			0x1B	
24	B : A1 side			0x1C	
25	B : A2 side			0x1D	
26	Scratch Ring out side			0x1E	
27	Scratch Ring in side			0x1F	
28	Touch dot			0x20	
29	Track Position Blink		only Use 0x4F/0x4E	0x21	
30	Scratch Position 1 (Top right)		only Use 0x4D/0x4E	0x22	
31	Scratch Position 2		only Use 0x4D/0x5E	0x23	
32	Scratch Position 3		only Use 0x4D/0x6E	0x24	
33	Scratch Position 4		only Use 0x4D/0x7E	0x25	
34	Scratch Position 5		only Use 0x4D/0x8E	0x26	
35	Scratch Position 6		only Use 0x4D/0x9E	0x27	
36	Scratch Position 7		only Use 0x4D/0x10E	0x28	

	items	MIDI command			Message type
		Command	Number	Value	
VFD Symbol	0xBn	ON TRG : 0x4D OFF TRG : 0x4E Blink ON TRG : 0x4F	↓	Control Change	
37	Scratch Position 8		only Use 0x4D/0x11E	0x29	
38	Scratch Position 9		only Use 0x4D/0x12E	0x2A	
39	Scratch Position 10		only Use 0x4D/0x13E	0x2B	
40	Scratch Position 11		only Use 0x4D/0x14E	0x2C	
41	Scratch Position 12		only Use 0x4D/0x15E	0x2D	
42	Scratch Position 13		only Use 0x4D/0x16E	0x2E	
43	Scratch Position 14		only Use 0x4D/0x17E	0x2F	
44	Scratch Position 15		only Use 0x4D/0x18E	0x30	
45	Scratch Position 16 (Bottom)		only Use 0x4D/0x19E	0x31	
46	Scratch Position 17		only Use 0x4D/0x20E	0x32	
47	Scratch Position 18		only Use 0x4D/0x21E	0x33	
48	Scratch Position 19		only Use 0x4D/0x22E	0x34	
49	Scratch Position 20		only Use 0x4D/0x23E	0x35	
50	Scratch Position 21		only Use 0x4D/0x24E	0x36	
51	Scratch Position 22		only Use 0x4D/0x25E	0x37	
52	Scratch Position 23		only Use 0x4D/0x26E	0x38	
53	Scratch Position 24		only Use 0x4D/0x27E	0x39	
54	Scratch Position 25		only Use 0x4D/0x28E	0x3A	
55	Scratch Position 26		only Use 0x4D/0x29E	0x3B	
56	Scratch Position 27		only Use 0x4D/0x30E	0x3C	
57	Scratch Position 28		only Use 0x4D/0x31E	0x3D	
58	Scratch Position 29		only Use 0x4D/0x32E	0x3E	
59	Scratch Position 30		only Use 0x4D/0x33E	0x3F	
60	Scratch Position 31		only Use 0x4D/0x34E	0x40	
61	Scratch Position 32 (Top)		only Use 0x4D/0x35E	0x41	

n = MIDI CH

\* "Track Position Blink" sets blinking of the entire track position display segment on or off.

### VFD parameter data reception

The time-related display and segment display can be set by MIDI command, as per the table below.

#### Receive command for VFD Parameter

	Items	MIDI command			Message Type
		Command	Number	Value	
VFD Parameter					
1	Tr number MSB	0xBn	0x40	0-99 100-109 : "-0" to "-9" 110 : "--", 111 : " "	Control Change
2	Tr number LSB	↑	0x41	↑	↑
3	Time mini	↑	0x42	↑	↑
4	Time sec	↑	0x43	↑	↑
5	Time frame	↑	0x44	↑	↑
6	Pitch POL	↑	0x45	" " 0x00 "+ " 0x01 "- " 0x02	↑
7	Pitch MSB	↑	0x46	↑	↑
8	Pitch LSB	↑	0x47	↑	↑
9	Track Position	↑	0x48 normal 0x49 reverse	0-100%	↑
10	Segment 1-1 MSB	↑	0x01	0x00 ~ 0x0F	↑
11	Segment 1-2 MSB	↑	0x02	↑	↑
12	Segment 1-3 MSB	↑	0x03	↑	↑
13	Segment 1-4 MSB	↑	0x04	↑	↑
14	Segment 1-5 MSB	↑	0x05	↑	↑
15	Segment 1-6 MSB	↑	0x07	↑	↑
16	Segment 1-7 MSB	↑	0x08	↑	↑
17	Segment 1-8 MSB	↑	0x09	↑	↑
18	Segment 1-9 MSB	↑	0x0A	↑	↑
19	Segment 1-10 MSB	↑	0x0B	↑	↑
20	Segment 1-11 MSB	↑	0x0C	↑	↑
21	Segment 1-12 MSB	↑	0x0D	↑	↑
22	Segment 1-1 LSB	↑	0x21	↑	↑
23	Segment 1-2 LSB	↑	0x22	↑	↑
24	Segment 1-3 LSB	↑	0x23	↑	↑
25	Segment 1-4 LSB	↑	0x24	↑	↑
26	Segment 1-5 LSB	↑	0x25	↑	↑
27	Segment 1-6 LSB	↑	0x27	↑	↑
28	Segment 1-7 LSB	↑	0x28	↑	↑
29	Segment 1-8 LSB	↑	0x29	↑	↑
30	Segment 1-9 LSB	↑	0x2A	↑	↑
31	Segment 1-10 LSB	↑	0x2B	↑	↑
32	Segment 1-11 LSB	↑	0x2C	↑	↑

Items	MIDI command			Message Type	
	Command	Number	Value		
<b>VFD Parameter</b>					
33	Segment 1-12 LSB	0xBn	0x2D	0x00 ~ 0x0F	Control Change
34	Segment 2-1 MSB	↑	0x0E	↑	↑
35	Segment 2-2 MSB	↑	0x0F	↑	↑
36	Segment 2-3 MSB	↑	0x10	↑	↑
37	Segment 2-4 MSB	↑	0x11	↑	↑
38	Segment 2-5 MSB	↑	0x12	↑	↑
39	Segment 2-6 MSB	↑	0x13	↑	↑
40	Segment 2-7 MSB	↑	0x14	↑	↑
41	Segment 2-8 MSB	↑	0x15	↑	↑
42	Segment 2-9 MSB	↑	0x16	↑	↑
43	Segment 2-10 MSB	↑	0x17	↑	↑
44	Segment 2-11 MSB	↑	0x18	↑	↑
45	Segment 2-12 MSB	↑	0x19	↑	↑
46	Segment 2-1 LSB	↑	0x2E	↑	↑
47	Segment 2-2 LSB	↑	0x2F	↑	↑
48	Segment 2-3 LSB	↑	0x30	↑	↑
49	Segment 2-4 LSB	↑	0x31	↑	↑
50	Segment 2-5 LSB	↑	0x32	↑	↑
51	Segment 2-6 LSB	↑	0x33	↑	↑
52	Segment 2-7 LSB	↑	0x34	↑	↑
53	Segment 2-8 LSB	↑	0x35	↑	↑
54	Segment 2-9 LSB	↑	0x36	↑	↑
55	Segment 2-10 LSB	↑	0x37	↑	↑
56	Segment 2-11 LSB	↑	0x38	↑	↑
57	Segment 2-12 LSB	↑	0x39	↑	↑

n = MIDI CH

**VFD segment data reception**

The various segments are set by 2-byte data, as per the following font code. (0x00/0x00 to 0x00/0x07 cannot be used.)

**Font codes for segments**

MSB LSB	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000	RAM0	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
0001	RAM1	!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
0010	RAM2	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
0011	RAM3	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
0100	RAM4	U	V	W	X	Y	Z	[	\	]	^	_	~	?	@	A
0101	RAM5	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
0110	RAM6	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
0111	RAM7	~	?	@	A	B	C	D	E	F	G	H	I	J	K	L
1000		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
1001		F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1010		U	V	W	X	Y	Z	[	\	]	^	_	~	?	@	A
1011		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1100		Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
1101		~	?	@	A	B	C	D	E	F	G	H	I	J	K	L
1110		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
1111		F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T

\* For the Reflex function operations corresponding to the above MIDI commands, refer to the Reflex manual.

**Preset data**

The DN-HC4500's presettings can be loaded and some items can be set from an external device using the DENON DJ's MIDI system exclusive format.

**(1) Configuration command format**

The basic configuration supported by the DN-HC4500 is as follows:

CMD	Item	Data	Length
SOX	Start of System Exclusive	0xF0	1Byte
IDC	ID code → DENON DJ ID	0x004003	3Byte
FMT	Communication format	0x12: one way	1Byte
MDN	Model number	0x41 (DN-HC4500)	1Byte
UN	Unit number	depends on preset mode (0x00 to 0x0F)	1Byte
MCH	MIDI channel	depends on preset mode (0x00 to 0x05)	1Byte
MST	Message Type	0x53: Selecting, 0x50: Polling,	1Byte
CMD	Command	0x20: Preset set/ 0x21: Preset request	1Byte
DL	Data Length	0x** number of the data Byte	1Byte
Data	Preset data	refer the preset data table	****
BCC	Block check character	0x** EVEN parity of the Data block	1Byte
EOX	End of System Exclusive	0xF7	1Byte

**(2) Loading preset data from an external device**



Issue the commands shown below from the PC to the DN-HC4500. [DRM]

CMD	Item	Data	Length
SOX	Start of System Exclusive	0xF0	1Byte
IDC	ID code → DENON DJ ID	0x004003	3Byte
FMT	Communication format	0x12: one way	1Byte
MDN	Model number	0x41 (DN-HC4500) or 0x7F (ALL model)	1Byte
UN	Unit number	depends on preset mode (0x00 to 0x0F)	1Byte
MCH	MIDI channel	depends on preset mode (0x00 to 0x05)	1Byte
MST	Message Type	0x50: Polling	1Byte
CMD	Command	0x21: Preset request	1Byte
EOX	End of System Exclusive	0xF7	1Byte

The text shown below is returned from the DN-HC4500. [DSM]

CMD	Item	Data	Length
SOX	Start of System Exclusive	0xF0	1Byte
IDC	ID code → DENON DJ ID	0x004003	3Byte
FMT	Communication format	0x12: one way	1Byte
MDN	Model number	0x41 (DN-HC4500)	1Byte
UN	Unit number	depends on preset mode (0x00 to 0x0F)	1Byte
MCH	MIDI channel	depends on preset mode (0x00 to 0x05)	1Byte
MST	Message Type	0x53: Selecting	1Byte
CMD	Command	0x21: Preset request (Return)	1Byte
DL	Data Length	0x** number of the data Byte	1Byte
Data	Preset data	refer the preset data table	****
BCC	Block check character	0x** EVEN parity of the Data block	1Byte
EOX	End of System Exclusive	0xF7	1Byte

The structure of the reply data to the preset request command is as shown below.

**Return data table for Preset request command**

Preset name	Item	Data	Length
USB mode Sel	USB Control mode select	0x00: HC4500 MIDI, 0x02 to 0x0F: Reserve	1Byte
CD Model Sel	Drive control model select	0x00: DN-D4500, 0x01: DN-D4000	1Byte
Audio Fs Sel	Audio sampling frequency select	0x01: 44.1kHz, 0x02: 48kHz, 0x08: 96kHz, 0x04; AUTO (AUTO: Automatically follow Fs by USB data)	1Byte
Unit number Set	Unit number	0x00 to 0x0F	1Byte
MIDI CH Set	MIDI CH	0x00: CH1&2, 0x01: CH3&4, 0x02: CH5&6	1Byte
JOG Pulse Sel	JOG count number per cycle	0x00: 1480, 0x01: 740, 0x02: 555, 0x03: 370	1Byte
Fader In Mode	Fader In mode select	0x00: 2wire Play/Cue, 0x01: 1wire Play/Cue	1Byte
Xcont XFD	X-control mode select	0x00: OFF, 0x01: ON	1Byte
Audio buffer	Audio buffer size	0x0040 to 0x0810 (2Byte)	2Byte
Model code	Model number	0x41	1Byte

### (3) Setting the preset data from an external device.



Issue the selecting message shown below from the PC to the DN-HC4500. [DSM]

CMD	Item	Data	Length
SOX	Start of System Exclusive	0xF0	1Byte
IDC	ID code → DENON DJ ID	0x004003	3Byte
FMT	Communication format	0x12: one way	1Byte
MDN	Model number	0x41 (DN-HC4500)	1Byte
UN	Unit number	depends on preset mode (0x00 to 0x0F)	1Byte
MCH	MIDI channel	depends on preset mode (0x00 to 0x05)	1Byte
MST	Message Type	0x53: Selecting,	1Byte
CMD	Command	0x20: Preset set	1Byte
DL	Data Length	0x** number of the data Byte	1Byte
Data	Preset data	refer the preset data table	****
BCC	Block check character	0x** EVEN parity of the Data block	1Byte
EOX	End of System Exclusive	0xF7	1Byte

When the DN-HC4500 identifies that the model number and unit number match, the preset data for the items settable from an external device are updated according to the received message's data table.

The structure of the preset set command's data is as shown below.

#### ■ Preset set data table

Preset name	Item	Data	Length
USB mode Sel	USB Control mode select	0x00: HC4500 MIDI, 0x02 to 0x0F: Reserve	1Byte
CD Model Sel	Drive control model select	0x00: DN-D4500, 0x01: DN-D4000	1Byte
Audio Fs Sel	Audio sampling frequency select	0x01: 44.1kHz, 0x02: 48kHz, 0x08: 96kHz, 0x04; AUTO (AUTO: Automatically follow Fs by USB data)	1Byte
JOG Pulse Sel	JOG count number per cycle	0x00: 1480, 0x01: 740, 0x02: 555, 0x03: 370	1Byte
Fader In Mode	Fader In mode select	0x00: 2wire Play/Cue, 0x01: 1wire Play/Cue	1Byte
Xcont XFD	X-control mode select	0x00: OFF, 0x01: ON	1Byte

## 12 TROUBLESHOOTING

### ■ DN-HC4500 does not operate normally or no sound is produced

- **Are the USB cable, audio cables, etc., properly connected?**
- **Is the volume setting for the source, audio device, application, OS, etc., properly raised?**
- **Is the appropriate device selected on your audio application?**
- **Is the sampling frequency setting appropriate?**  
 ➔ Either make the same settings in the DN-HC4500's preset mode and on the application or set the DN-HC4500's preset mode to "AUTO".
- **Are there WAV files with different sampling frequencies and bit rates?**  
 ➔ Depending on your audio application, it may not be possible to play WAV files with different sampling frequencies and bit rates simultaneously.
- **Is other USB equipment in use?**  
 ➔ If other USB devices are connected, try connecting only Yamaha USB devices to check for problems.
- **Is the USB connector of the connected computer compatible with USB 2.0 (Hi-Speed)?**  
 ➔ Use a USB 2.0-compatible cable.

### ■ Sound is broken or distorted

- **Are other applications or device drivers operating?**  
 ➔ Close any unneeded applications.
- **Are you playing multiple WAV files?**  
 ➔ When playing multiple WAV files simultaneously, depending on the capacity of your computer, the sound may be broken.