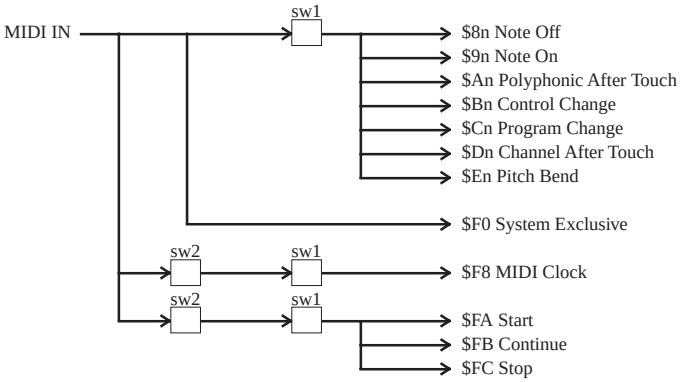
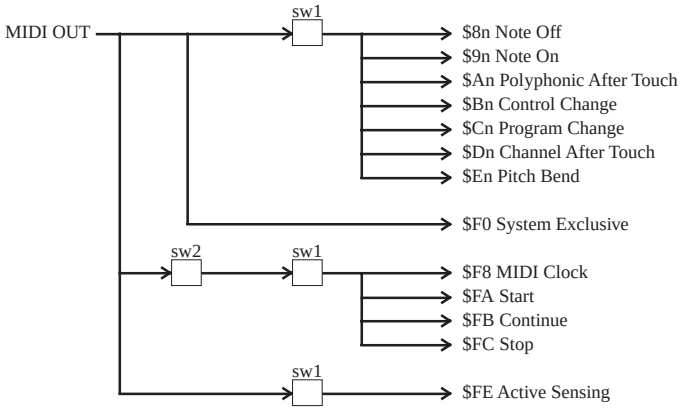
1. MIDI Transmission/Reception Block Diagram

Reception flow diagram



Note:
sw1: ON in SEQ mode, OFF in MDR mode.
sw2: ON when the "Sync mode" function is set to "MIDI".
sw3: ON when the "MIDI control" function is set to "on".

Transmission flow diagram



Note:
sw1: ON in SEQ mode, OFF in MDR mode.
sw2: ON when the "MIDI control" function is set to "on".

2. DATA TRANSMISSION AND RECEPTION

2.1 CHANNEL VOICE MESSAGES

Channel voice messages are received and recorded when recording in SEQ mode. Data is received from all channels at all times, and recorded without modification. Channel voice messages are ignored in MDR mode. Channel voice messages are transmitted when playing back files in SEQ mode. Data is transmitted as recorded on disk, without modification.

2.1.1 NOTE OFF

STATUS	1000nnnn	($8n)	n = 0 – 15 channel number
NOTE NUMBER	0kkkkkkk		k = 0(C-2) – 127(G8)
VELOCITY	0vvvvvvv		

2.1.2 NOTE ON

STATUS	1001nnnn	($9n)	n = 0 – 15 channel number
NOTE NUMBER	0kkkkkkk		k = 0(C-2) – 127(G8)
VELOCITY	0vvvvvvv		

2.1.3 POLYPHONIC AFTER TOUCH

STATUS	1010nnnn	($An)	n = 0 – 15 channel number
NOTE NUMBER	0kkkkkkk		k = 0(C-2) – 127(G8)
PRESSURE VALUE	0vvvvvvv		v = 0 – 127

2.1.4 CONTROL CHANGE

STATUS	1011nnnn	($Bn)	n = 0 – 15 channel number
CONTROL NUMBER	0ccccccc		c = 0 – 120
CONTROL VALUE	0vvvvvvv		v = 0 – 127

2.1.5 PITCH BEND

STATUS	1110nnnn	($En)	n = 0 – 15 channel number
LSB	0vvvvvvv		v = 0 – 127
MSB	0vvvvvvv		v = 0 – 127

2.1.6 PROGRAM CHANGE

STATUS	1100nnnn	($Cn)	n = 0 – 15 channel number
PROGRAM NUMBER	0ppppppp		p = 0 – 127

2.1.7 CHANNEL AFTER TOUCH

STATUS	1101nnnn	($Dn)	n = 0 – 15 channel number
PRESSURE VALUE	0vvvvvvv		v = 0 – 127

2.2 SYSTEM EXCLUSIVE MESSAGES

System exclusive messages are received and recorded when recording in either SEQ or MDR modes. All received data is recorded with the addition of time signals, but without other modification.
System exclusive messages are transmitted when playing back files in either SEQ or MDR modes. Data is transmitted as recorded on disk, without modification.

2.3 CHANNEL MODE MESSAGES

Channel mode messages are received and recorded when recording in SEQ mode. Data is received from all channels at all times, and recorded without modification. Channel mode messages are ignored in MDR mode.
Channel mode messages are transmitted when playing back files in SEQ mode. Data is transmitted as recorded on disk, without modification.
Note, however that ALL NOTE OFF messages (c = 123) are ignored when received; such messages are neither recorded nor transmitted.

STATUS	1011nnnn	($Bn)	n = 0 – 15 channel number
MODE NUMBER	0ccccccc		c = 121 – 127(except C = 123)
MODE VALUE	0vvvvvvv		v = 0-127

2.4 SYSTEM COMMON MESSAGES

System common messages are neither transmitted nor received.

2.5 SYSTEM REALTIME MESSAGES

2.5.1 TIMING CLOCK

STATUS 11111000 ($F8)

The MDF3 synchronizes recording or playback in SEQ mode to a received timing clock signal when the “Sync mode” function is set to “MIDI”.
The MDF3 transmits a timing clock signal synchronized to its internal clock at all times when the “MIDI control” function is set to “on”. It does not transmit this signal when the “MIDI control” function is set to “off”.

2.5.2 START

STATUS 11111010 ($FA)

The MDF3 starts recording or playback of the selected file when a start message is received while recording or playback is paused in SEQ mode, if the “MIDI control” function is set to “on”. If the MDF3 was paused at a location other than the start of a file, the MDF3 begins recording or playback from the paused location rather than from the beginning of the file.
The MDF3 transmits a start message when recording or playback is started at the beginning of a file in SEQ mode, if the “MIDI control” function is set to “on”. The MDF3 does not transmit a start message when the “MIDI control” function is set to “off”.

2.5.3 CONTINUE

STATUS 11111011 ($FB)

The MDF3 starts recording or playback of the currently selected file at the current position when a continue message is received while recording or playback is paused in SEQ mode, if the “MIDI control” function is set to “on”.
The MDF3 transmits a continue message when recording or playback of a file is started in SEQ mode, if the “MIDI control” function is set to “on”.

2.5.4 STOP

STATUS 11111100 ($FC)

The MDF3 stops recording or playback of a file when a stop message is received while recording or playing back a file in SEQ mode, if the “MIDI control” function is set to “on”.
The MDF3 transmits a stop message when recording or playback is stopped in SEQ mode, if the “MIDI control” function is set to “on”.

2.5.5 ACTIVE SENSING

STATUS 11111110 ($FE)

The MDF3 outputs an active sensing signal every 200 msec while its power supply is turned on. It does not receive active sensing signals,

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Model MDF3 MIDI Implementation Chart Version : 1.0

Function ...		Transmitted	Recognized	Remarks
Basic	Default	1 - 16	1 - 16	
Channel	Changed	1 - 16	1 - 16	*1
Mode	Default	x	x	
	Messages	x	x	
	altered	**********	x	*1
Note Number		0 - 127	0 - 127	
	True voice	**********	0 - 127	*1
Velocity	Note ON	o 9nH,v=1-127	o v=1-127	
	Note OFF	o 8nH,v=0-127	o v=0-127	*1
After Touch	Key's	o	o	
	Ch's	o	o	*1
Pitch Bender		o	o	*1
Control Change	0-121	o	o	*1
Prog Change		o 0 - 127	o 0 - 127	
	True #	**********		*1
System Exclusive		o	o	
common	Song Pos.	x	x	
	Song Sel.	x	x	
	Tune	x	x	
System Real Time	Clock	o *2	o *3	
	Commands	o *2	o *2	
Aux	Local ON/OFF	o	o	*1
	All Notes OFF	x	x	
Mes- sages	Active Sense	o	x	
	Reset	x	x	

Notes: *1 if SEQ mode.
*2 if MIDI control switch is on.
*3 receive clock at MIDI sync mode.

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO x : No

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