■ MIDI DATA FORMAT (MIDIデータフォーマット)

1 Transmit/Receive Data

1.1 Channel Messages

1.1.1 Note On/ Note Off

When FADER START is on, Note-on messages will be transmitted when odd numbered faders from 1 through 15 are raised from -infinity (velocity 127) or lowered to -infinity (velocity 0).

CH	Note No.
1	37 (25h)
3	38 (26h)
5	39 (27h)
7	40 (28h)
9	41 (29h)
11	42 (2Ah)
13	43 (2Bh)
15	44 (2Ch)

Also, Note-on/off messages are received when the Effect is being frozen and MIDI TRG is not set to OFF. In this case, the velocity is ignored.

1.1.2 Control Changes

Control change messages will be transmitted or received when transmission or reception are respectively turned on.
With a setting of OMNI, all channels will be received.
The 114 control numbers 0 through 95 and 102 through 119 can be freely assigned to mixer parameters.

Note: 0 and 32 are Bank Change messages, and in the case of a device which cannot transmit or receive these correctly unless they are used in conjunction with a Program Change message, it is possible that there will be problems with operation. In this case, do not assign 0 or 32.
Data values for transmission and reception are calculated as follows.
Given the following:
(128 or in the case of two-byte data 16384) / (number of parameter steps) = X...Y
INT ((Y+1) / 2) = Z

Reception
If (MIDI DATA -Z) < 0, then INTERNAL = 0
If ((MIDI DATA -Z) / X) > MAX, then INTERNAL = MAX
Else, INT ((MIDI DATA -Z) / X) = INTERNAL

Transmission
If INTERNAL = 0, then MIDI DATA = 0
If INTERNAL = MAX then MIDI DATA = (127 or in the case of two-byte data 16384)
Else, (X x INTERNAL) + INT (X / 2) + Z = MIDI DATA

1.1.3 Program Changes

Transmission/reception of these messages can be turned on/off in the MIDI page.
When a memory recall is executed, the program change message corresponding to that memory number will be transmitted on the specified MIDI channel.
If a program change message is received on the specified MIDI channel or in OMNI, the memory corresponding to that program number will be recalled.
The user is free to create the program change assign table.

1. TRANSMIT/RECEIVE DATA

1.1 CHANNEL MESSAGE

1.1.1 NOTE ON/NOTE OFF

FADER STARTをONにしておくと1から15までの奇数のFADERが−∞(マイナス無限大)から上がったり(VELOCITY 127)−∞になったり(VELOCITY 0)するとNOTE ONを送信する。

CH	Note No.
1	37(25h)
3	38(26h)
5	39(27h)
7	40(28h)
9	41(29h)
11	42(2Ah)
13	43(2Bh)
15	44(2Ch)

またEFFECTでFREEZEにしていてMIDI TRGをOFFでない設定のときはNOTE ON/OFFを受信する。この場合VELOCITYは影響しない。

1.1.2 CONTROL CHANGE

CONTROL CHANGEの送信、受信をONにしておくとそれぞれ送信、受信する。
OMNIを設定するとすべてのCHを受信する。
CONTROL No.の0から95、102から119の114のNo.をMIXERのパラメーターに任意にアサインできる。

注意:0と32はBANK CHANGEでPROGRAM CHANGEと組合わせないと送受信しない機器からの場合はうまく動作しない可能性がある。その場合は0と32にアサインしないこと。
送受信は以下の方法で変換される。
(128もしくは2バイトDATAの時は16384)/(NUMBER of PARAMETER STEP)=X...Y
INT((Y+1)/2)=Zとして

受信
(MIDI DATA−Z)<0の時はINTERNAL=0
((MIDI DATA−Z)/X)>MAXの時はINTERNAL=MAX
それ以外の時INT((MIDI DATA−Z)/X)=INTERNAL

送信
INTERNAL=0の時はMIDI DATA=0
INTERNAL=MAXの時はMIDI DATA=(127　もしくは2バイトDATAの時は16383)
それ以外の時(X x INTERNAL)+INT(X/2)+Z=MIDI DATAとなる。

1.1.3 PROGRAM CHANGE

MIDI画面で送受信をON/OFFできる。
メモリーリコールが行われた時、そのメモリーNo.に対応したプログラムチェンジを設定したMIDIチャンネルで送信する。
設定したMIDIチャンネルかOMNIでプログラムチェンジを受信した時、そのプログラムNo.に対応したメモリーをリコールする。
プログラムチェンジのアサイン表はユーザーが任意に作成できる。

1.2 System Exclusive Messages

1.2.1 Bulk Dump/Request

Transmission is always on. Reception can be specified.
Bulk Request messages can be transmitted on the specified MIDI channel by operations in the MIDI page.
Bulk Dumps can be transmitted by operations in the MIDI page, or in response to an incoming Bulk Request that is received on the specified DEVICE channel. The contents of the corresponding memory will be transmitted on the specified DEVICE channel.
When a Bulk Dump is received, the contents of the corresponding memory will be rewritten.

1.2.2 Parameter Change/Request

Transmission / reception can be turned on/off in the MIDI page.
When a parameter of this unit is edited, a parameter change message will be transmitted on the specified DEVICE channel if Parameter Change Transmission is on.
If Parameter Change Reception is on, receiving a Parameter Request on the specified DEVICE channel will cause the content of the corresponding parameter to be transmitted, regardless of whether transmission is on or off.
When Parameter Change Reception is on, and a Parameter Change is received on the specified DEVICE channel, the contents of the corresponding parameter will be modified.

1.2.3 MMC (MIDI Machine Control)

These messages can be transmitted according to the User Define settings.

1.3 System Common Messages

1.3.1 MTC Quarter Frame Messages

Received by Automix for synchronization.

1.3.2 Song Position Pointer

When Automix is set to MIDI Clock Base, these messages are received, and a following Continue command will cause synchronization to begin from the middle of the song.

1.4 System Real Time Messages

1.4.1 Timing Clock

These are received for synchronization when Automix is set to MIDI Clock Base.

1.4.2 Start, Continue, Stop

These are received when Automix is set to MIDI Clock Base, and will start/stop the automix.
These can also be transmitted according to the User Define settings.

1.4.3 Active Sensing

This is transmitted at intervals of less than 300 ms.
If after this message is received, no message is received for an interval longer than 300 ms, Running Status will be cleared.

1.4.4 System Reset

When this is received, Running Status will be cleared.

1.5 MIDI Remote

MIDI Remote settings allow all MIDI commands to be transmitted on the specified channel.
Control Change, Program Change, and Exclusive messages will be received in the format determined for the specified model.

1.6 Echo Back

This setting allows each received command to be re-transmitted.

1.2 SYSTEM EXCLUSIVE MESSAGE

1.2.1 BULK DUMP/REQUEST

送信は常にON。受信は設定できる。
バルクリクエストは設定したMIDIチャンネルでMIDI画面の操作で送信できる。
バルクダンプはMIDI画面での操作か、もしくは設定したDEVICEチャンネルでバルクリクエストを受信した時、対応するメモリーの内容を設定したDEVICEチャンネルで送信する。
バルクアウトを受信した時は対応したメモリーの内容が変更する。

1.2.2 PARAMETER CHANGE/REQUEST

MIDI画面で送受信をON/OFFできる。
本体のパラメーターを変更した時はパラメーターチェンジの送信がONなら設定したDEVICEチャンネルで送信する。
パラメーターチェンジの受信がONで設定したDEVICEチャンネルでパラメーターリクエストを受信した時、送信のON/OFFによらず対応するパラメーターの内容を送信する。
パラメーターチェンジの受信がONで設定したDEVICEチャンネルでパラメーターチェンジを受信した時は対応するパラメーターの内容が変更する。

1.2.3 MMC(MIDI MACHINE CONROL)

USER DEFINEの設定により送信できる。

1.3 SYSTEM COMMON MESSAGE

1.3.1 MTC QUARTER FRAME MESSAGE

AUTOMIXで受信して同期する。

1.3.2 SONG POSITION POINTER

AUTOMIXをMIDI CLOCK BASEにしている時に受信してこれに続くCONTINUEのコマンドにより曲の途中から同期する。

1.4 SYSTEM REAL TIME MESSAGE

1.4.1 TIMING CLOCK

AUTOMIXをMIDI CLOCK BASEにしている時に受信してこれに同期する。

1.4.2 START, CONTINUE, STOP

AUTOMIXをMIDI CLOCK BASEにしている時に受信してこれによりAUTOMIXがSTART, STOPする。
またUSER DEFINEの設定により送信できる。

1.4.3 ACTIVE SENSING

300ms以内に送信する。また受信後300ms以上なにも受信しなかった時はランニングステータスをクリアする。

1.4.4 SYSTEM RESET

受信するとランニングステータスをクリアする。

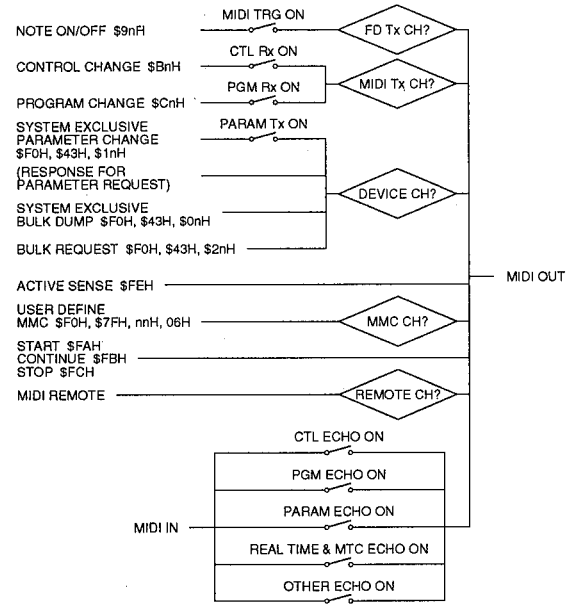
1.5 MIDI REMOTE

MIDI REMOTEは設定によりすべてのMIDIコマンドを任意のCHで送信できる。
CONTROL CHANGEとPROGRAM CHANGEとEXCLUSIVEは設定された機種によりその機種で決められたフォーマットで受信する。

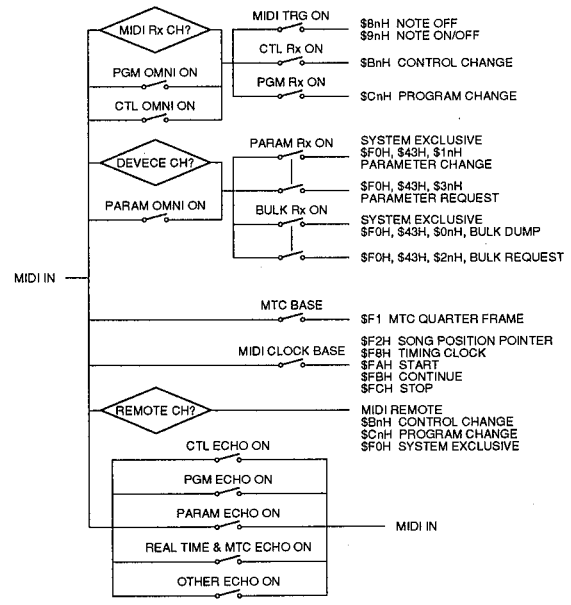
1.6 ECHO BACK

設定により受信した各コマンドを送信できる。

2. Transmission Condition



3. Receive Condition



4. Parameter Change & Request Format

Parameter Change & Request (basic format)

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0pppnnnn 1n	p=mode 1:parameter change or response for request, 3:parameter request n=0-15 (Device Channel No.1-16)
MODEL ID	00111101 3d	MODEL ID
PARAM TYPE	0ttttttt tt	(type)
DATA	0ddddddd dd0	data 0
	: :	:
	0ddddddd ddn	data n (max 33)
EOX	11110111 F7	End Of Exclusive

type:

0x08	edit buffer (byte operation format)
0x09	system memory (byte operation format)
0x0a	function call
0x0b	reserved
0x48	edit buffer (bit operation format)
0x49	system memory (bit operation format)
0x4a	reserved
0x4b	controller (key) (bit operation format)

Parameter Change (byte operation for type 0x08:edit buffer)

continuous address mode

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID No.(YAMAHA)
SUB STATUS	0001nnnn 1n	parameter change or response n=0-15 (Device Channel No.1-16)
MODEL ID	00111101 3d	MODEL ID
PARAM TYPE	00001000 08	byte operation for edit bufer (type)
DATA	00vvaaaa aa0	bit6:0 continuous address mode v:valid data 0:1st means, 1:0-3bit, 2:4-6bit, 3:2nd means address (H) high 4 bits of 11 bits address
	0aaaaaaa aa1	address (L) low 7 bits of 11 bits address
	0ddddddd dd	data
	: :	: continuous address data
EOX	11110111 F7	End Of Exclusive

individual address mode

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0001nnnn 1n	parameter change or response n=0-15 (Device Channel No.1-16)
MODEL ID	00111101 3d	MODEL ID
PARAM TYPE	00001000 08	byte operation for edit buffer (type)
DATA	01vvaaaa aa0	bit6:1 individual address mode v:valid data 0:ALL, 1:0-3bit, 2:4-6bit, 3:2nd means address (H) high 4 bits of 11 bits address
	0aaaaaaa aa1	address (L) low 7 bits of 11 bits address
	0ddddddd dd1	data
	01vvaaaa aa2	bit6:1 individual address mode v:valid data 0:1st means, 1:0-3bit, 2:4-6bit, 3:2nd means address (H) high 4 bits of 11 bits address
	0aaaaaaa aa3	address (L) low 7 bits of 11 bits address
	0ddddddd dd2	data
	: :	:
EOX	11110111 F7	End Of Exclusive

Parameter Change (bit operation for type 0x48:edit buffer)

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0001nnnn	1n	parameter change n=0-15 (Device Channel No.1-16)
MODEL ID	00111101	3d	MODEL ID
PARAM TYPE	01001000	48	bit operation for edit buffer (type)
DATA	0000aaaa	aa0	address (H) high 4 bits of 11 bits address
	0aaaaaaa	aa1	address (L) low 7 bits of 11 bits address
	0ddddddd	dd	data (bit 0-2:address offset, bit3:0=reset 1=set, bit4-6:change bit0-6)
	:	:	
EOX	11110111	F7	End Of Exclusive

Used to change on/off, etc., in bits.

Parameter Change (byte operation for type 0x09:system memory)

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0001nnnn	1n	parameter change or response n=0-15 (Device Channel No.1-16)
MODEL ID	00111101	3d	MODEL ID
PARAM TYPE	00001000	09	byte operation for system memory (type)
DATA	0000aaaa	aa0	address (H) high 4 bits of 11 bits address
	0aaaaaaa	aa1	address (L) low 7 bits of 11 bits address
	0ddddddd	dd	data
	:	:	: continuous address data
EOX	11110111	F7	End Of Exclusive

Parameter Change (bit operation for type 0x49:system memory)

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0001nnnn	1n	parameter change n=0-15 (Device Channel No.1-16)
MODEL ID	00111101	3d	MODEL ID
PARAM TYPE	01001000	48	bit operation for system memory (type)
DATA	0000aaaa	aa0	address (H) high 4 bits of 11 bits address
	0aaaaaaa	aa1	address (L) low 7 bits of 11 bits address
	0ddddddd	dd	data (bit 0-2:address offset, bit3:0=reset 1=set, bit4-6:change bit0-6)
	:	:	
EOX	11110111	F7	End Of Exclusive

Used to change the recall safe, etc., in bits.

Parameter Request (type 0x08:edit buffer, 0x09:sysytem memory)

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0011nnnn	3n	parameter request n=0-15 (Device Channel No.1-16)
MODEL ID	00111101	3d	MODEL ID
PARAM TYPE	00tttttt	tt	08:edit buffer, 09:system memory (type)
DATA	0000aaaa	aa0	address (H) high 4 bits of 11 bits address
	0aaaaaaa	aa1	address (L) low 7 bits of 11 bits address
	000ddddd	dd	count (max 0x1f)
EOX	11110111	F7	End Of Exclusive

Parameter Change (type 0x0a:function call)

library recall

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0001nnnn	1n	parameter change n=0-15 (Device Channel No.1-16)
MODEL ID	00111101	3d	MODEL ID
PARAM TYPE	00001010	0a	function call (type)
DATA	0ddddddd	dd0	function
	0ddddddd	dd1	number
	:	:	channel
EOX	11110111	F7	End Of Exclusive

Parameter Request (type 0x0a:function call)

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0011nnnn	3n	parameter request n=0-15 (Device Channel No.1-16)
MODEL ID	00111101	3d	MODEL ID
PARAM TYPE	00001010	0a	function call (type)
DATA	0ddddddd	dd0	function
	0ddddddd	dd1	number
EOX	11110111	F7	End Of Exclusive

Parameter Change (type 0x4b:bit operation for controller (key))

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0001nnnn	1n	parameter change n=0-15 (Device Channel No.1-16)
MODEL ID	00111101	3d	MODEL ID
PARAM TYPE	01001011	4b	controller (type)
DATA	0000dddd	dd0	No. 0-9:key 1-10
	0ddddddd	dd1	data (bit 0-2:address offset, bit3:0=release 1=push, bit4-6:change bit0-7)
	:	:	
EOX	11110111	F7	End Of Exclusive

key number table

	bit0	bit1	bit2	bit3	bit4	bit5	bit6	bit7
key1	ON1	ON2	ON3	ON4	ON5	ON6	ON7	ON8
key2	0N9	ON10	ON11	ON12	ON13	ON14	0N15	0N16
key3	SEL1	SEL2	SEL3	SEL4	SEL5	SEL6	SEL7	SEL8
key4	SEL9	SEL10	SEL11	SEL12	SEL13	SEL14	SEL15	SEL16
key5	STI SEL	RTN SEL	STO SEL	STI ON	RTN ON	STO ON	------	------
key6	FADER	EFF1	EFF2	AUX1	AUX2	AUX3	AUX4	LAYER
key7	USER1	USER2	USER3	USER4	------	SOLO	AUTOMIX	REMOTE
key8	MEM UP	STORE	RECALL	MEM DOWN	UNDO	SCENE	UTIL	MIDI
key9	UP	LEFT	RIGHT	DOWN	ENTER	DIO	GROUP	CUE
key10	EQ L	EQ LM	EQ HM	EQ H	DELAY	DYNA	PAN	VIEW

5. Bulk Dump & Request Format

How to get check sum, adding data from BYTE COUNT (LOW) to just before the CHECK SUM, multiplying -1 (2's complement), resetting MSB (bit7).
check sum =(-sum) & 0x7F

Scene Memory Bulk Dump Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT (HIGH)	00001011	0B	1498 (1488+10)bytes
BYTE COUNT (LOW)	01011010	5A	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01001101	4D	'M'
	0mmmmmmm	mm	m=0-50, 127 (Scene Memory No.0-50, edit buffer) Receive is effective 1-50, 127
DATA	0ddddddd	ds	Scene Memory (1488bytes)
	:	:	
	0ddddddd	de	
CHECK SUM	0eeeeeee	ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111	F7	End Of Exclusive

Scene Memory Bulk Dump Request Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID (YAMAHA)
SUB STATUS	0010nnnn	2n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01001101	4D	'M'
	0mmmmmmm	mm	m=0-50, 127 (Scene Memory No.0-50, edit buffer)
EOX	11110111	F7	End Of Exclusive

Equalizer Library Bulk Dump Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT (HIGH)	00000000	00	34 (24+10)bytes
BYTE COUNT (LOW)	00100010	22	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01010001	51	'Q'
	0mmmmmmm	mm	m=0-79 (Equalizer Library No.1-80) Receive is effective 40-79
DATA	0ddddddd	ds	Equalizer Library Memory (24bytes)
	:	:	
	0ddddddd	de	
CHECK SUM	0eeeeeee	ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111	F7	End Of Exclusive

Equalizer Library Bulk Dump Request Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01010001	51	'Q'
	0mmmmmmm	mm	m=0-79 (Equalizer Library No.1-80)
EOX	11110111	F7	End Of Exclusive

Dynamics Library Bulk Dump Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT (HIGH)	00000000	00	30 (20+10)bytes
BYTE COUNT (LOW)	00011110	1e	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01011001	59	'Y'
	0mmmmmmm	mm	m=0-79 (Dynamics Library No.1-80) Receive is effective 40-79
DATA	0ddddddd	ds	Dynamics Library Memory (20bytes)
	:	:	
	0ddddddd	de	
CHECK SUM	0eeeeeee	ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111	F7	End Of Exclusive

Dynamics Library Bulk Dump Request Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01011001	59	'Y'
	0mmmmmmm	mm	m=0-79 (Dynamics Library No.1-80)
EOX	11110111	F7	End Of Exclusive

Effect Library Bulk Dump Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT (HIGH)	00000000	00	55 (45+10)bytes
BYTE COUNT (LOW)	00110111	37	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01000101	45	'E'
	0mmmmmmm	mm	m=0-95 (Effect Library No.1-96)
			Receive is effective 64-95
DATA	0ddddddd	ds	Effect Library Memory (45bytes)
	:	:	
	0ddddddd	de	
CHECK SUM	0eeeeeee	ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111	F7	End Of Exclusive

Effect Library Bulk Dump Request Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01000101	45	'E'
	0mmmmmmm	mm	m=0-95 (Effect Library No.1-96)
EOX	11110111	F7	End Of Exclusive

CH Library Bulk Dump Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT (HIGH)	00000000	00	80 (70+10)bytes
BYTE COUNT (LOW)	01000100	44	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01001000	48	'H'
	0mmmmmmm	mm	m=0-50 (CH Library No.0-50)
			Receive is effective 2-50
DATA	0ddddddd	ds	CH Library Memory (70 bytes)
	:	:	
	0ddddddd	de	
CHECK SUM	0eeeeeee	ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111	F7	End Of Exclusive

CH Library Bulk Dump Request Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01001000	48	'H'
	0mmmmmmm	mm	m=0-50 (CH Library No.1-50)
EOX	11110111	F7	End Of Exclusive

Program Change Assignment Table Bulk Dump Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT (HIGH)	00000001	01	138 (128+10)bytes
BYTE COUNT (LOW)	00001010	0A	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01010000	50	'P'
	00100000	20	' '
DATA	0ddddddd	ds	Program Change Table (128bytes)
	:	:	
	0ddddddd	de	
CHECK SUM	0eeeeeee	ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111	F7	End Of Exclusive

Program Change Assignment Table Bulk Dump Request Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID (YAMAHA)
SUB STATUS	0010nnnn	2n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01010000	50	'P'
	00100000	20	' '
EOX	11110111	F7	End Of Exclusive

Control Change Assignment Table Bulk Dump Format

STATUS	11110000	F0	System Exclusive Message
ID No.	01000011	43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn	0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110	7E	Universal Bulk Dump
BYTE COUNT (HIGH)	00000001	01	238 (228+10)bytes
BYTE COUNT (LOW)	01101110	6e	
	01001100	4C	'L'
	01001101	4D	'M'
	00100000	20	' '
	00100000	20	' '
	00111000	38	'8'
	01000010	42	'B'
	00110000	30	'0'
	00110011	33	'3'
DATA NAME	01000011	43	'C'
	00100000	20	' '
DATA	0ddddddd	ds	Control Change Table (114x2bytes)
	:	:	
	0ddddddd	de	
CHECK SUM	0eeeeeee	ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111	F7	End Of Exclusive

Control Change Assignment Table Bulk Dump Request Format

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID (YAMAHA)
SUB STATUS	0010nnnn 2n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110 7E	Universal Bulk Dump
	01001100 4C	'L'
	01001101 4D	'M'
	00100000 20	' '
	00100000 20	' '
	00111000 38	'8'
	01000010 42	'B'
	00110000 30	'0'
	00110011 33	'3'
DATA NAME	01000011 43	'C'
	00100000 20	' '
EOX	11110111 F7	End Of Exclusive

Setup Memory Bulk Dump Format

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn 0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110 7E	Universal Bulk Dump
BYTE COUNT(HIGH)	368 (358+10)bytes 00000 10 02	
BYTE COUNT(LOW)	01110000 70	
	01001100 4C	'L'
	01001101 4D	'M'
	00100000 20	' '
	00100000 20	' '
	00111000 38	'8'
	01000010 42	'B'
	00110000 30	'0'
	00110011 33	'3'
DATA NAME	01010011 53	'S'
	00100000 20	' '
DATA	0ddddddd ds	Setup Memory (358bytes)
	: :	
	0ddddddd de	
CHECK SUM	0eeeeeee ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111 F7	End Of Exclusive

Setup Memory Bulk Dump Request Format

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID (YAMAHA)
SUB STATUS	0010nnnn 2n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110 7E	Universal Bulk Dump
	01001100 4C	'L'
	01001101 4D	'M'
	00100000 20	' '
	00100000 20	' '
	00111000 38	'8'
	01000010 42	'B'
	00110000 30	'0'
	00110011 33	'3'
DATA NAME	01010011 53	'S'
	00100000 20	' '
EOX	11110111 F7	End Of Exclusive

Automix Memory Bulk Dump Format

(One bulk out is transmitted by each 1K block)

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn 0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110 7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00001010 0A	1290 (1280+10)bytes
BYTE COUNT(LOW)	00001010 0A	
	01001100 4C	'L'
	01001101 4D	'M'
	00100000 20	' '
	00100000 20	' '
	00111000 38	'8'
	01000010 42	'B'
	00110000 30	'0'
	00110011 33	'3'
DATA NAME	01000001 41	'A'
	0mmmmmmm mm	m=0-3, 127 (Automix Memory No.1-4, current)
DATA	0ddddddd ds	Automix Memory (1280bytes)
	: :	
	0ddddddd de	
CHECK SUM	0eeeeeee ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111 F7	End Of Exclusive

Automix Memory Bulk Dump Request Format

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID (YAMAHA)
SUB STATUS	0010nnnn 2n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110 7E	Universal Bulk Dump
	01001100 4C	'L'
	01001101 4D	'M'
	00100000 20	' '
	00100000 20	' '
	00111000 38	'8'
	01000010 42	'B'
	00110000 30	'0'
	00110011 33	'3'
DATA NAME	01000001 41	'A'
	0mmmmmmm mm	m=0-3, 127 (Automix Memory No.1-4, current)
EOX	11110111 F7	End Of Exclusive

MIDI Remote Bulk Dump Format

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID No. (YAMAHA)
SUB STATUS	0000nnnn 0n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110 7E	Universal Bulk Dump
BYTE COUNT(HIGH)	00001010 0A	1320 (1310+10)bytes
BYTE COUNT(LOW)	00101000 28	
	01001100 4C	'L'
	01001101 4D	'M'
	00100000 20	' '
	00100000 20	' '
	00111000 38	'8'
	01000010 42	'B'
	00110000 30	'0'
	00110011 33	'3'
DATA NAME	01010100 54	'R'
	0mmmmmmm mm	m=0-3 (MIDI Remote No.1-4)
DATA	0ddddddd ds	MIDI Remote (1310bytes)
	: :	
	0ddddddd de	
CHECK SUM	0eeeeeee ee	ee=(-('L'+'M'+...+ds+...+de)) AND 7Fh
EOX	11110111 F7	End Of Exclusive

MIDI Remote Bulk Dump Request Format

STATUS	11110000 F0	System Exclusive Message
ID No.	01000011 43	Manufacturer's ID (YAMAHA)
SUB STATUS	0010nnnn 2n	n=0-15 (Device Channel No.1-16)
FORMAT No.	01111110 7E	Universal Bulk Dump
	01001100 4C	'L'
	01001101 4D	'M'
	00100000 20	' '
	00100000 20	' '
	00111000 38	'8'
	01000010 42	'B'
	00110000 30	'0'
	00110011 33	'3'
DATA NAME	01010100 54	'R'
	0mmmmmmm mm	m=0-3 (MIDI Remote No.1-4)
EOX	11110111 F7	End Of Exclusive

6. Parameter List For Control Change Assign

FADER

CHANNEL	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
EFF1 SEND	CH1-24, ST IN
EFF2 SEND	CH1-24, ST IN
AUX1 SEND	CH1-24, ST IN, RETURN1, RETURN2
AUX2 SEND	CH1-24, ST IN, RETURN1, RETURN2
AUX3 SEND	CH1-24, ST IN, RETURN1, RETURN2
AUX4 SEND	CH1-24, ST IN, RETURN1, RETURN2
BUS TO ST	1-4

ON

CHANNEL	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
BUS TO ST	1-4

PAN

CHANNEL	CH1-24, ST IN L,R, RETURN1 L,R, RETURN2 L,R
AUX1, 2	CH1-24, ST IN L,R, RETURN1 L,R, RETURN2 L,R
AUX3,4	CH1-24, ST IN L,R, RETURN1 L,R, RETURN2 L,R
BUS TO ST	1-4

BALANCE

	ST IN, RETURN1, RETURN2, MAS ST

SURROUND

LR (LEFT,RIGHT)	CH1-24, ST IN L,R, RETURN1 L,R, RETURN2 L,R
FR (FRONT,REAR)	CH1-24, ST IN L,R, RETURN1 L,R, RETURN2 L,R

PHASE

	CH1-24, ST IN L,R

PRE/POST

EFF1 SEND	CH1-24, ST IN
EFF2 SEND	CH1-24, ST IN
AUX1 SEND	CH1-24, ST IN, RETURN1, RETURN2
AUX2 SEND	CH1-24, ST IN, RETURN1, RETURN2
AUX3 SEND	CH1-24, ST IN, RETURN1, RETURN2
AUX4 SEND	CH1-24, ST IN, RETURN1, RETURN2
BUS TO ST	1-4

ROUTING

BUS1	CH1-24, ST IN, RETURN1, RETURN2
BUS2	CH1-24, ST IN, RETURN1, RETURN2
BUS3	CH1-24, ST IN, RETURN1, RETURN2
BUS4	CH1-24, ST IN, RETURN1, RETURN2
MAS ST	CH1-24, ST IN, RETURN1, RETURN2
YGDAI	1-8

DELAY

ON	CH1-24, ST IN, MAS BUS1-4, MAS ST L,R
TYPE	CH1-24, ST IN
TIME HIGH	CH1-24, ST IN, MAS BUS1-4, MAS ST L,R
TIME LOW	CH1-24, ST IN, MAS BUS1-4, MAS ST L,R
MIX HIGH	CH1-24, ST IN
MIX LOW	CH1-24, ST IN
FB GAIN H	CH1-24, ST IN
FB GAIN L	CH1-24, ST IN

EQ

ON	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
F LOW	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
G LOW	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
Q LOW	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
F L-MID	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
G L-MID	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
Q L-MID	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
F H-MID	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
G H-MID	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
Q H-MID	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
F HIGH	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
G HIGH	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
Q HIGH	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
ATT	CH1-24, ST IN

DYNAMICS

ON	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
KEYIN	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
RATIO/H_H(HOLD HIGH)	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
KNE/H_L/W(KNEE/HOLD LOW/WIDTH)	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
THRESHOLD	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
ATTACK	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
G/RANGE(GAIN/RANGE)	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
REL/DCY H(RELEASE/DECAY HIGH)	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST
REL/DCY L(RELEASE/DECAY LOW)	CH1-24, ST IN, RETURN1, RETURN2, MAS AUX1-4, MAS BUS1-4, MAS ST

EFFECT

1 PARAM H	1-16
1 PARAM L	1-16
2 PARAM H	1-16
2 PARAM L	1-16

NO ASSIGN

YAMAHA [Digital Mixing Console—Internal Parameters] Date: 05 Feb. 1997

Model: 03D

MIDI Implementation Chart

Version: 1.0

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	1-16	1-16	Memorized
	Changed	1-16	1-16	
Mode	Default	X	OMNI off/OMNI on	Memorized
	Messages	X	X	
	Altered	**********	X	
Note Number		37-44	36-96	
	True Voice	**********	X	
Velocity	Note On	x9nH, v=127	X	
	Note Off	x9nH, v=0	X	
After Touch	Keys	X	X	
	Ch's	X	X	
Pitch bend		X	X	
Control Change	0-95, 102-119	O	O	Assignable
Prog Change		0-127	0-127	Assignable
	:True#	**********	0-50	
System Exclusive		O	O	*1
System Common	:Song Pos	X	O	
	:Song Sel	X	X	
	:Tune	X	X	
System Real Time	:Clock	X	O	
	:Commands	O	O	
Aux Messages	:Local ON/OFF	X	X	
	:All Notes OFF	X	X	
	:Active Sense	O	X	
	:Reset	X	X	
Notes		MTC quarter frame message is recognized *1: Bulk Dump/Request, Parameter Change/Request, and MMC. For MIDI Remote, ALL messages can be transmitted.		

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO O: Yes

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO X: No

■ CIRCUIT DIAGRAMS CONTENTS (回路図目次)

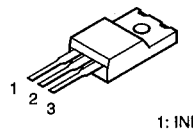
回路図内の標記説明

Note:

The number on the arrow in this circuit diagram shows the connected circuit diagram page.

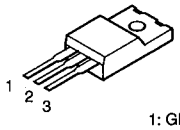
回路図の矢印の中の番号は、接続先回路図のページを表わします。

- NJM78M10FA (XS08A00) Regulator +10V



1: INPUT
2: GND
3: OUTPUT

- NJM7915FA (XD854A00) Regulator -15V
- NJM7905FA (XK309A00) Regulator -5V



1: GND
2: INPUT
3: OUTPUT

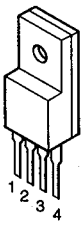
- NJM78L05A (XJ596A00) Regulator +5V

1: OUTPUT
2: GND
3: INPUT

- NJM79L24A (XS571A00) Regulator -24V

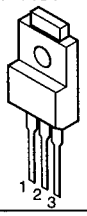
1: GND
2: INPUT
3: OUTPUT

- PQ05RF2 (XH672A00) Regulator +5V



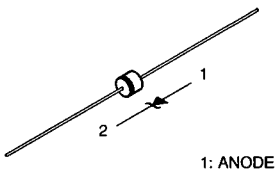
1: VIN
2: VOUT
3: GND
4: VC (ON/OFF)

- UPC2405AHF (XR607A00) Regulator +5V
  UPC2415AHF (XR608A00) Regulator +15V



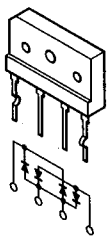
1: INPUT
2: GND
3: OUTPUT

- MTZJ4. 3A 4.3V (VI241100) Zener Diode
- MTZJ6. 2B 6.2V (VQ313100) Zener Diode
- MTZJ6. 8B 6.8V (VQ553900) Zener Diode
- MTZJ15B 15.0V (VQ556000) Zener Diode
- MTZJ24B 24.0V (VQ557500) Zener Diode
- MTZJ27B 27.0V (VQ557800) Zener Diode
- MTZJ33B 33.0V (VQ558500) Zener Diode

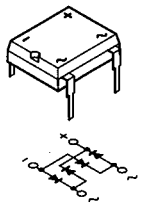


1: ANODE
2: CATHODE

- D3SBA20 4.0A 200V (VT359600) Diode Stack
- D6SB60L 6.0A 600V (VT682400) Diode Stack
- D3SBA20 4.0A 200V (VT359600) Diode Stack



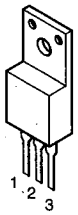
- S1WB(A)60 1.0A 60 (VB845300) Diode Stack



- 2SC1815 (IC1815M0) Transistor
- 2SA1015 (IA01590) Transistor
- 2SB647 (IB064730) Transistor
- 2SD667(ID066700) Transistor
- 2SC3200 (VS150800) Transistor

1: EMITTER
2: COLLECTOR
3: BASE

- 2SD2015 (VM923000) Transistor



1: EMITTER
2: COLLECTER
3: BASE

- 11ES4 (VB481900) Diode