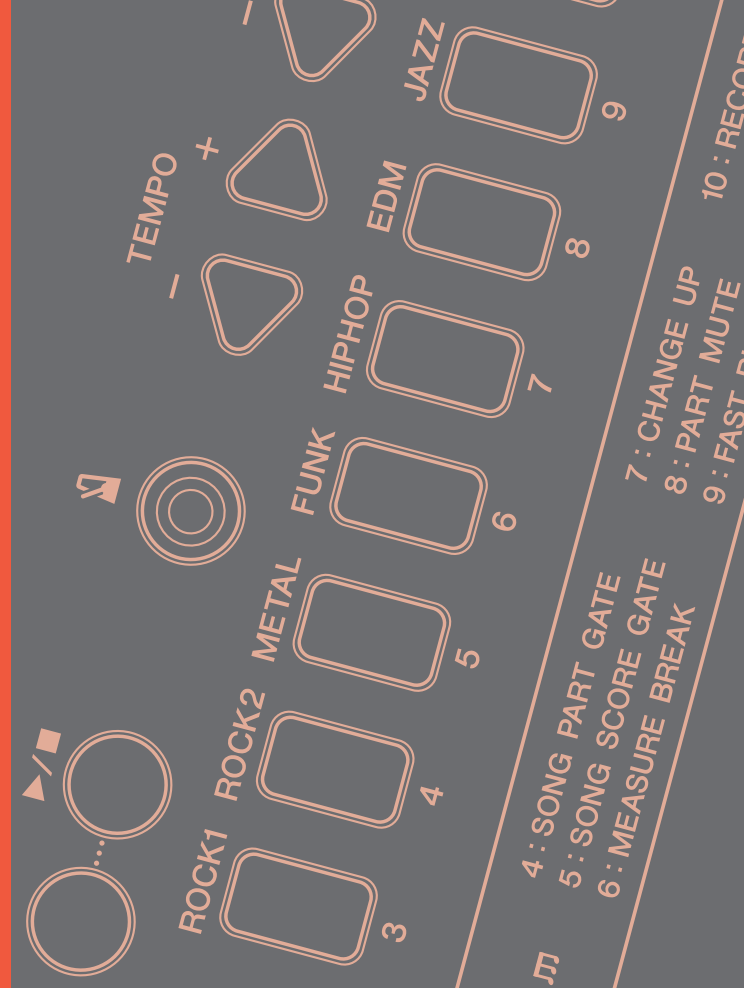# YAMAHA

DTX drums

ELECTRONIC DRUM KIT

DTX402K
DTX432K
DTX452K

MIDI Reference

How to Use This Manual

This MIDI Reference will prove useful when transferring MIDI data between the drum module that came with your DTX402K, DTX432K, or DTX452K electronic drum set and a computer after they have been connected with a USB cable.

Details on how to connect your drum module and computer with a USB cable can be found in the *Connecting to a Computer* section of your DTX402K, DTX432K, or DTX452K Owner's Manual.

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MIDI Note Numbers Assigned to Pads

The following table shows the default note numbers used by your drum module to output MIDI notes when the various pads are struck.

		Note assignment	
		Name	**Number (decimal)**
Snare *1	Head shots	D1	38
	Open rim shots (Rim 1)	E1	40
	Closed rim shots (Rim 2)	C#1	37
Toms	First tom pad	C2	48
	Second tom pad	B1	47
	Third tom pad	G1	43
Ride cymbal		D#2	51
Crash cymbal		C#2	49
Hi-hats	Open	A#1	46
	Closed	F#1	42
	Foot close	G#1	44
	Splash	B4	83
Kick		C1	36
Pad *2		A2	57

*1 Separate MIDI notes are output for open and closed rim shots only when using a TP70S Snare Pad.
*2 These MIDI notes are output only when a pad connected via the [PAD▲IN] jack on a KP65 Kick Pad is struck.

You can modify the note number assignments shown above. Details on how to do so can be found in the *Note Number* section of your DTX402K, DTX432K, or DTX452K Owner's Manual.

MIDI Reference Material

MIDI Data Format

1 General

1.1 Scope

The specifications described herein apply to transmission and reception of MIDI data by a DTX402K, DTX432K, or DTX452K drum module.

1.2 Compliance

• The specifications described herein comply with the MIDI 1.0 standard.

1.3 Legend

The following symbol has a special meaning herein.
• $: Placed in front of hexadecimal numbers.

2 Channel Messages

2.1 Key On & Key Off

Key On and Key Off messages are transmitted and received.
• Range of notes received: 0 (C-2) to 127 (G8)
• Velocity range: 1 to 127 (i.e., Note On only)

2.2 Control Change

2.2.1 Bank Select MSB (0), LSB (32)

Bank Select MSB and LSB messages are received but not transmitted.

MSB	LSB	MIDI Channel	Program Change Number
0	any	other than 10	Selects the corresponding GM Normal Voice.
127	any	1–16	Selects the same GM Drum Kit Voice regardless of the Program Number.
125	1	1–16	Selects the Voice that corresponds to the Music Category or "Kit" (with factory default sounds).

2.2.2 Modulation (1)

Modulation messages are received but not transmitted.

2.2.3 Foot Controller (4)

Foot Controller messages are transmitted but not received.

2.2.4 Portamento Time (5)

Portamento Time messages are received but not transmitted.

2.2.5 Data Entry MSB (6), LSB (38)

Data Entry messages are received but not transmitted. These messages are used to specify RPN data.

2.2.6 Main Volume (7)

Main Volume messages are received but not transmitted.

2.2.7 Pan (10)

Pan messages are received but not transmitted. A value of 0 corresponds to the far left of the stereo image; a value of 127, to the far right.

2.2.8 Expression (11)

Expression messages are received but not transmitted.

2.2.9 Hold 1 (64)

Hold 1 messages are received but not transmitted.

2.2.10 Portamento Switch (65)

Portamento Switch messages are received but not transmitted.

2.2.11 Sostenuto (66)

Sostenuto messages are received but not transmitted.

2.2.12 Harmonic Content (71)

Harmonic Content messages are received but not transmitted.

2.2.13 EG Release Time (72)

EG Release Time messages are received but not transmitted.

2.2.14 EG Attack Time (73)

EG Attack Time messages are received but not transmitted.

2.2.15 Brightness (74)

Brightness messages are received but not transmitted.

2.2.16 Effect 1 Depth (91)

Effect 1 Depth messages are received but not transmitted. The message value corresponds to the Reverb Send level.

2.2.17 Effect 3 Depth (93)

Effect 3 Depth messages are received but not transmitted. The message value corresponds to the Chorus Send level.

2.2.18 Data Increment (96), Decrement (97)

Data Increment and Decrement messages are received but not transmitted.

2.2.19 RPN (100, 101)

$00/$00 Pitch bend sensitivity:
Received but not transmitted.

$00/$01 Fine tuning:
Received but not transmitted. Has no effect on drum parts.

$00/$02 Coarse tuning:
Received but not transmitted. Has no effect on drum parts.

$7f/$7f NULL:
Received but not transmitted.

2.3 Channel Mode

All types of Channel Mode message are received, but none are transmitted.

2.3.1 All Sound Off (120)

Upon receipt of an All Sound Off message, the drum module mutes all voices currently playing on the corresponding channel.

2.3.2 Reset All Controllers (121)

Upon receipt of a Reset All Controllers message, the drum module resets the following controllers to their initial values:
Pitch Bend, Modulation, Expression, Hold 1, Sostenuto, and RPN number.

2.3.3 All Note Off (123)

Upon receipt of an All Note Off message, the drum module mutes all notes currently playing on the corresponding channel. If Hold 1 or Sostenuto is turned on, however, muting will not take place until said controller is turned off.

2.3.4 Omni Off (124)

Upon receipt of an Omni Off message, the drum module acts in the same way as if an All Notes Off message had been received.

2.3.5 Omni On (125)

Upon receipt of an Omni On message, the drum module acts in the same way as if an All Notes Off message had been received.

2.3.6 Mono (126)

Upon receipt of a Mono message, the drum module acts in the same way as if an All Sound Off message had been received.

2.3.7 Poly (127)

Upon receipt of a Poly message, the drum module acts in the same way as if an All Sound Off message had been received.

2.4 Program Change

Program Change messages are received but not transmitted.

2.5 Pitch Bend

Pitch Bend messages are received but not transmitted.

2.6 Channel Aftertouch

Channel Aftertouch messages are neither transmitted nor received.

2.7 Polyphonic Aftertouch

Polyphonic Aftertouch messages are transmitted but not received.

3 System Exclusive Messages

3.1 Universal Non-Real Time

3.1.1 General MIDI System On

$F0 $7E $7F $09 $01 $F7

General MIDI System On messages are transmitted and received. Receipt thereof does not cause the kit number or reverb type of the playback part to change.

3.1.2 Identity Request

$F0 $7E $00 $06 $01 $F7

Identity Request messages are received but not transmitted. Upon receipt of the above message, the drum module transmits an Identity Reply message.

3.1.3 Identity Reply

$F0 $7E $7F $06 $02 $43 $00 $41 $5B $06 $00 $00 $00 $7F $F7

Identity Reply messages are transmitted but not received.

3.2 Universal Real Time

3.2.1 MIDI Master Volume

$F0 $7F $7F $04 $01 $XX $mm $F7

Volume messages are received but not transmitted.
$XX is ignored. $mm represents the volume data. MIDI Master.

3.3 Parameter Change

3.3.1 XG System On

$F0 $43 $10 $4C $00 $00 $7E $00 $F7

XG System On messages are received but not transmitted. Upon receipt of an XG System On message, the drum module acts in the same way as if a General MIDI System On message had been received.

4 System Real Time Messages

4.1 Timing Clock

Timing Clock messages are transmitted but not received.

4.2 Start & Stop

Start and Stop messages are transmitted but not received.

4.3 Active Sensing

Reception:
If, following receipt of an Active Sensing message, no subsequent MIDI data is received for approximately 300 milliseconds, the drum module will mute all voices currently playing.

Transmission:
The drum module constantly transmits Active Sensing messages at intervals within approximately 300 milliseconds.

Function...	Transmitted	Recognized	Remarks
Basic Default Channel Changed	1 - 16 x	1 - 16 x	
Default Mode Messages Altered	x x **************	3 x x	
Note Number : True voice	0 - 127 **************	0 - 127 0 - 127	
Velocity Note ON Note OFF	o 9nH,v=1-127 x 9nH,v=0	o 9nH,v=1-127 x	
After Key's Touch Ch's	o x	x x	
Pitch Bend	x	o	
0,32 4 1,5,7,10,11 6,38 Control 64-66 71-74 Change 91,93 96,97 100,101	x o x x x x x x x	o x o o o o o o o	Bank Select Data Entry Effect Depth RPN Inc/Dec RPN LSB,MSB
Prog Change : True #	x **************	o 0 - 127	
System Exclusive	o	o	
: Song Pos. Common : Song Sel. : Tune	x x x	x x x	
System :Clock Real Time:Commands	o o	x x	
:All Sound Off Aux :Reset All Cntrls :Local ON/OFF Mes- :All Notes OFF sages:Active Sense :Reset	x x x x o x	o(120,126,127) o(121) x o(123-125) o x	

Notes:

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