

TC Electronic Triple C MIDI specification

Document revision history:

V1.00 2000-11-26 First release

General message format:

0xF0	MIDI System Exclusive message start
0x00	3 byte manufacturer ID for TC Electronic
0x20	..
0x1F	..
<Device ID>	System Exclusive device ID (User parameter)
0x47	Triple C model ID
<Message type>	Triple C message type
<Data>	Data depends on message type
..	..
..	..
0xF7	MIDI System Exclusive message terminator

Preset numbers

Preset numbers are represented in the SysEx messages as 2 bytes (14-bit value). The first byte is the 7 most significant bits and the second byte is the 7 least significant bits.

Preset numbers are mapped accordingly:

0x01 (1) to 0x32 (50)	Factory bank
0x33(51) to 0x64 (150)	User bank

Preset number 0 is used to access the edit buffer. When recalling presets with program changes, sending a controller 0 or controller 32 change first can be used to indicate bank number (when sending other than zero selects user-bank as opposed to factory-bank).

Binary data

Messages containing binary data dumps consists of a set of 14-bit values as 2-byte pairs. The most significant byte is sent in the first byte and the least significant in the second. The dump is terminated with a 14-bit checksum value which is the negative sum of all bytes in the dump truncated to 14 bits, ie. $(-\text{sum}(\text{all data bytes})) \& 0x3FFF$.

Communication precautions

When linking together two Triple C devices for transfer of data, make sure that the receiving device is set to receive only SysEx.

During MIDI operation the Triple C may present the following messages:

```
"> Preset Received <"
"> Preset Dumped <"
"> Checksum Error <"
">MIDI Error Occured<"
"> Event Unknown <"
"> Preset Stored <"
">Kernel Par Changed<"
"> Bulk In Progress <"
```

Triple C message types:

SYXTYPE_PRESETREQUEST	0x45
SYXTYPE_PRESETDATA	0x20
SYXTYPE_PARAMREQUEST	0x47
SYXTYPE_PARAMDATA	0x22

Preset Request

0xF0	SysEx
0x00	TC Electronic
0x20	..
0x1F	..
<Device ID>	Device ID
0x47	Triple C
0x45	SYXTYPE_PRESETREQUEST
<Preset MSB>	Preset number
<Preset LSB>	..
0xF7	EOX

Preset Data

0xF0	SysEx	
0x00	TC Electronic	
0x20	..	
0x1F	..	
<Device ID>	Device ID	
0x47	Triple C	
0x20	SYXTYPE_PRESETDATA	
0x00		
<Preset MSB>	Preset number	
<Preset LSB>	..	
<Data>	32 x 14-bit data	
	14-bit	Preset number
	20 x 14-bit	Preset name (characters in LSB)
	11 x 14-bit	Reserved
	32 x 14-bit data	
	14-bit checksum	
0xF7	EOX	

Param Data Request

0xF0	SysEx
0x00	TC Electronic
0x20	..
0x1F	..
<Device ID>	Device ID
0x47	Triple C
0x47	SYXTYPE_PARAMREQUEST
<Engine>	Engine identifier (0/1 for Effect/System parameter)
<Param ID>	Base parameter identifier
0xF7	EOX

System Data

0xF0	SysEx
0x00	TC Electronic
0x20	..
0x1F	..
<Device ID>	Device ID
0x47	Triple C
0x22	SYXTYPE_SYSDATA
<Engine>	Engine identifier (0/1 for Effect/System parameter)
<Param ID>	Parameter identifier
<Data>	Byte pair yielding signed 14-bit parameter values (MSB first)
0xF7	EOX

See below for a list of parameter identifiers. If a Parameter Data Request message requests a parameter range extending across any undefined parameter identifiers, the corresponding parameter values in the Parameter Data message should be ignored.

Parameters

Parameters can be changed by the System Data SysEx message or hard-wired controller change messages (for the algorithm-parameters and a collection of system parameters). Parameters are always set as scaled 7-bit values. The system-parameters controllable via Midi-CC are given below. The controllers used for algorithm-parameters are as follows (ID's are given below):

Midi-SysEx controllable systemparameters:

System parameter name	ID	Min value	Max value
MIDI_INPUT	0	0	1
MIDI_OUTRANGE	1	0	3
MIDI_CLOCK	2	0	2
MIDI_INRANGE	3	0	1
MIDI_DITHER	4	0	3
MIDI_OUTLEVEL	5	-100	0
MIDI_DIGINLEVEL	6	-100	6
MIDI_INLEVEL	7	-5	7
MIDI_BYPASS	9	0	1
MIDI_LINK	10	0	1
MIDI_MIDIPRGBANK	11	0	2
MIDI_MIDICHNL	12	0	17
MIDI_MIDICC	13	0	1
MIDI_MIDISYSEX	14	0	127
MIDI_CURPRESET	19	1	150
MIDI_STATUSBITS	21	0	1

System : Ctrl 16 + <ID>
Effect: Ctrl 48 + <ID>

Midi-CC controllable system parameters:

System parameter name	ID	Min value	Max value
MIDI_INLEVEL	0	-5	7
MIDI_DIGINLEVEL	1	-100	6
MIDI_OUTLEVEL	2	-100	0
MIDI_BYPASS	3	0	1

Midi-CC controllable effect parameters:

Effect parameter name	ID	Min value	Max value
MIDI_THRESHOLD	0	-40	0
MIDI_RATIO	1	0	15
MIDI_ATTACK	2	0	15
MIDI_RELEASE	3	0	12
MIDI_LOLEVEL	4	-30	30
MIDI_HILEVEL	5	-30	30
MIDI_LEVEL	6	-18	18
MIDI_COMPSTYLE	7	0	8
MIDI_DRG	8	0	10
MIDI_HIXOVER	9	0	30
MIDI_LOXOVER	10	0	30
MIDI_EXTSIDE	11	0	2
MIDI_MULTIBAND	12	0	1
MIDI_PEAKSENS	13	0	1
MIDI_SOFTLIM	14	0	1
MIDI_LOOKAHEAD	15	0	1
MIDI_ENVELOPE	16	0	1