

TR-6s / TR-8S SysEx Formats

M00	M01	M02	M03	M04	M05	M06	M07	M08	M09	M0A	M0B	M0C	M0D	M0E	M0F	M10	M11		
Roland TR - 8s / TR - 6s SysEx Format																			
Data Trans	58	58	00	00	V	08	-	01	00	:									
F0	41	10	00	00	00	45	12	10	59	18	10	00	01	6E	F7				
SysEx Start																			
	Roland ID												Message overhead = 14 bytes						
		Device ID,	Manual indicates 10-1F are valid, default 10																
			Roland four byte model ID (45 = TR-8s, 6D = TR-6s)																
							Data Tx = 12												
								Start Memory Address - always 4 bytes											
								A3	A2	A1	A0	Data - 1 to 256 bytes, two in this example							
								Data included in checksum ->							Checksum				
								Sum data, mod 128, subtract from 128, mod 128											SysEx End
Data Request																			
F0	41	10	00	00	00	45	11	10	59	18	10	00	00	00	02	6E	F7		
SysEx Start																			
	Roland ID																		
		Device ID,	Manual indicates 10-1F are valid, default 10																
			Roland four byte model ID (45 = TR-8s, 6D = TR-6s)																
							Data req = 11												
								Start Memory Address - always 4 bytes				L3	L2	L1	L0				
								A3	A2	A1	A0	Bytes requested - always 4 bytes							
								Data included in checksum ->							Checksum				
								Sum data, mod 128, subtract from 128, mod 128											SysEx End
Note, the example Data Request would generate the Data Transmission shown (with the current data values)																			

TR-8s / TR-6s Memory Overview

TR-8s / TR-6s Memory Overview (work in progress)

	A3	A2	A1	A0	
Unknown	00	01	00	00	User Names 01-32?
System Data	00	03	xx	xx	Rx edit data, Tx edit data, etc
General	01	xx	xx	xx	Current kit, current pattern, next pattern, Run status, beat, etc.
Kit - General	10	##	00	xx	## is kit number 0 - 7F (1-128)
Kit - Reverb	10	##	01	xx	
Kit - Delay	10	##	02	xx	
Kit - Mfx	10	##	03	xx	
Kit - Controls	10	##	06	xx	
Kit - Instrument	10	##	1\$	xx	\$ is track
					TR-6s / TR-8S
			_0		BD / BD
			_1		SD / SD
			_2		LT / LT
			_3		HC / MT
			_4		CH / HT
			_5		OH / RS
			_6		/ HC
			_7		/ CH
			_8		/ OH
			_9		/ CC
			_A		/ RC
Kit - Inst Fx	10	##	2\$	xx	\$ as above
Pattern	2#	##	xx	xx	20 00 pattern 0 20 10 pattern 1 2F 70 pattern 127 LSB is pattern # mod 8 x 10h (count 00-7F, not 1-128) MSB is pattern # / 8 + 20h
Instrument	30??				Haven't done work here
Special ?	50	xx	xx	xx	Two messages, transmit only

TR-8s / TR-6s Messages

TR-8s / TR-6s Messages
(work in progress)

Section	Item	MSB			LSB		Bytes	Note
		M08	M09	M0A	M0B			
▼ Message Format								
Message Format	Prefix				F0		1	
Message Format	Roland ID				41		1	Roland ID,
Message Format	Device ID				10		1	10-1F = 17-32
Message Format	Roland four byte model ID	00	00	00	##		4	8s - 45 6s - 6D
Message Format	Data Transmission or Data Request				##		1	12 - Data Transmission 11 - Data Request
Message Format	Data Address	A3	A2	A1	A0		4	Data address
Message Format	-- Data Transmission Only				Dn		1+	1 to 256 bytes
Message Format	-- Data Request Only	L3	L2	L1	L0		4	Length requested (always four bytes)
Message Format	Checksum				Cs		1	Enforced - does not respond without correct checksum Includes all address and data bytes - Sum data and address bytes - Mod 80h - Subtract from 80h - Mod 80h
Message Format	Suffix				F7		1	
▼ System								
System	Local On / Off	00	02	00	00		1	0 = Off, 1 = on, 2 = surface
System	Device ID	00	03	00	00		1	
System	Omni Mode	00	03	00	01		1	
System	Pattern Channel	00	03	00	02		1	
System	Kit Channel	00	03	00	03			
System	BD Note	00	03	00	04		2	
System	SD Note	00	03	00	06		2	
System	--	00	03	00	--			
System	OH Note (Last - Tr-6S)	00	03	00	0E		2	
System	RC Note (Last - Tr-8s)	00	03	00	18		2	
System	BD Alt Note	00	03	00	1A		2	
System	--	00	03	00	--			
System	OH Alt Note (Last - Tr-6S)	00	03	00	24		2	
System	RC Alt Note (Last - Tr-8s)	00	03	00	2E		2	
System	USB MIDI Thru	00	03	00	32		1	
System	Soft Thru	00	03	00	33		1	
System	Tx Prog Chg	00	03	00	34		1	
System	Tx Edit Data	00	03	00	36		1	Rekurs when editor active
System	Tx Nudge	00	03	00	37		1	
System	Rx Prog Chg	00	03	00	39		1	
System	Rx Edit Data	00	03	00	3B		1	Rekurs when editor active
▼ Names								
Names		00	01	00	00			Holds names User 01 - 32 In basic editor query (3 segments)
▼ General								
General	Kit	01	00	00	00		1	Not captured by load? Ptn Chg
General	Pattern	01	00	00	01		1	Ptn Chg

TR-8s / TR-6s Messages

Section	Item	MSB			LSB	Bytes	Note
		M08	M09	M0A	M0B		
General	Next pattern	01	00	00	02	1	Ptn Chg
General	??	01	00	00	03	2	0F 0F some sound volume?, not var #
General	??	01	00	00	05	2	0F 0F, not var #
General	Beat	01	00	00	07	1	During run, 0-F
General	Run	01	00	00	08	1	Appears on run
General	Scatter ??	01	00	00	09	1	Appears on run
General	??	01	00	00	0A		Valid - F
General	??	01	00	00	0B		Valid - 0
General	??	01	00	00	0C		
General	??	01	00	00	0D		
General	??	01	00	00	0E		
General	??	01	00	00	0F		
General	??	01	00	00	10	1	
General	??	01	00	00	11	2	0F 0F
General	Substep button	01	00	00	13	1	Substep (0,1), accent (0)
General	??	01	00	00	14	2	
General	Button Action Flag ???	01	00	00	16	1	Appears on run & button action
General	Sub step value	01	00	00	19	2	0-3 = 1/2, 1/3, 1/4, Flam
General	Pattern Chain Bit map	01	00	00	1B	4	0x 0x 0x 0x, x = nnnn, Ptn 1 is LSB, Ptn Chg
General	Tempo	01	00	00	39	4	40-300 * 10 -> Rn, Ptn Chg
General	Count In / Out	01	00	00	3D	1	Appears on remote run or stop, Ptn Chg
General	Master Fx sw display	01	00	00	40	1	0-1, follows kit Mfx
▼ Kit							
Kit	Kit Name	10	##	00	00	16	## is kit number 00 - 7F (1-128)
Kit	Kit Switch	10	##	00	06	1	
Kit	Kit Level	10	##	00	10	1	-Inf to +10.0, non-linear
Kit	BD Color	10	##	00	42	1	00-0A
Kit	SD Color	10	##	00	43	1	
Kit	LT	10	##	00	44	1	
Kit	HC	10	##	00	45	1	
Kit	CH	10	##	00	46	1	
Kit	Last color 6s OH	10	##	00	47	1	
Kit	Last color 8s RC	10	##	00	4C	1	
▼ Kit-Reverb							
Kit-Reverb	Type	10	##	01	00	1	
Kit-Reverb	Time	10	##	01	01	2	0 - 255
Kit-Reverb	Level	10	##	01	03	2	0 - 255
Kit-Reverb	Pre-delay	10	##	01	05	1	0 - 100
Kit-Reverb	Low Cut	10	##	01	06	1	
Kit-Reverb	High Cut	10	##	01	07	1	
Kit-Reverb	Density	10	##	01	08	1	
▼ Kit-Delay							
Kit-Delay	Type	10	##	02	00	1	
Kit-Delay	Sync	10	##	02	01	1	
Kit-Delay	Level	10	##	02	02	2	
Kit-Delay	Time	10	##	02	04	2	

TR-8s / TR-6s Messages

Section	Item	MSB			LSB	Bytes	Note
		M08	M09	M0A	M0B		
Kit-Delay	Feedback	10	##	02	06	2	
Kit-Delay	Reverb Send	10	##	02	1C	2	
▼ Kit-Mfx							
Kit-Mfx	Type	10	##	03	00	1	Always sends full report
Kit-Mfx	Switch	10	##	03	01	1	0-1
Kit-Mfx	Ctrl Assignment	10	##	03	26	1	
Kit-Mfx	First controls	10	##	03	27	2	
Kit-Mfx	Side chain source	10	##	04	00	1	
Kit-Mfx	Side chain type	10	##	04	01	1	
Kit-Mfx	Side chain depth	10	##	04	02	2	0-255
Kit-Mfx	Side Chain Gain	10	##	04	04	2	-40 - + 40
Kit-Mfx	Side Pan	10	##	04	06	2	
Kit-Mfx	Side Reverb Send	10	##	04	08	2	
Kit-Mfx	Side Delay Send	10	##	04	0A	2	
▼ Kit-LFO							
Kit-LFO	Waveform	10	##	05	00	1	
Kit-LFO	Rate / Step	10	##	05	01	2	
Kit-LFO	Sync	10	##	05	03	1	
▼ Kit-Controls							
Kit-Controls	Kit Ctrl	10	##	06	00	1	
Kit-Controls	BD Ctrl	10	##	06	01	1	
Kit-Controls	SD Ctrl	10	##	06	02	1	
Kit-Controls	Last Ctrl 6s	10	##	06	05	1	
Kit-Controls	Last Ctrl 8s	10	##	06	0A	1	
Kit-Controls	Mute - BD	10	##	08	00	1	
Kit-Controls	Mute - SD	10	##	08	01	1	
Kit-Controls	Mute - LT	10	##	08	02	1	
Kit-Controls	Mute - HC	10	##	08	03	1	
Kit-Controls	Mute - CH	10	##	08	04	1	
Kit-Controls	Mute - OH	10	##	08	05	1	
▼ Kit - Instrument							
Kit - Instrument	Instrument	10	##	1@	00	4	@ is track, see mem map
Kit - Instrument	Tune	10	##	1@	04	2	-128 - + 127
Kit - Instrument	Decay	10	##	1@	06	2	0 - 255
Kit - Instrument	Inst Level	10	##	1@	08	2	0 - 255, Ptn Chg
Kit - Instrument	Inst Gain	10	##	1@	0A	2	Inf, -40 to +40 (max 0A0A)
Kit - Instrument	Pan	10	##	1@	0C	2	L127 - R127
Kit - Instrument	Reverb Send	10	##	1@	0E	2	0-255
Kit - Instrument	Delay Send	10	##	1@	10	2	0-255
Kit - Instrument	LFO Dest	10	##	1@	13	1	
Kit - Instrument	LFO Depth	10	##	1@	14	2	
Kit - Instrument	Attack	10	##	1@	35	2	
▼ Kit - Inst Fx							
Kit - Inst Fx	Inst Fx	10	##	2@	00	1	Always sends full report
Kit - Inst Fx	Parameter 1	10	##	2@	09	2	
▼ Pattern							

TR-8s / TR-6s Messages

Section	Item	MSB			LSB	Bytes	Note
		M08	M09	M0A	M0B		
Pattern	Pattern Name	2x	xx	00	00	16	x xx see memory map
Pattern	Kit	2x	xx	00	14	2	00 01 - 08 00
Pattern	Scale	2x	xx	00	16	1	0-3: 8(t), 16(t), 16, 32
Pattern	Shuffle	2x	xx	00	23	2	Centered on 08 08
Pattern	Tempo	2x	xx	00	39	4	
Pattern	??	2x	xx	00	40		
Pattern	Variation	2x	xx	00	41	2	0F 0F, A is LSB
Pattern	Last step A	2x	xx	00	43	1	0-F
Pattern	Last step B	2x	xx	00	44	1	
Pattern	Last step C	2x	xx	00	45	1	
Pattern	Last step D	2x	xx	00	46	1	
Pattern	Last step E	2x	xx	00	47	1	
Pattern	Last step F	2x	xx	00	48	1	
Pattern	Last step G	2x	xx	00	49	1	
Pattern	Last step H	2x	xx	00	4A	1	
Pattern	Last Step BD	2x	xx	00	4B	1	Clearing does not change value - turns off bitmap - see below
Pattern	Last Step SD	2x	xx	00	4C	1	
Pattern	Last Step LT	2x	xx	00	4D	1	
Pattern	Last Step HC	2x	xx	00	4E	1	
Pattern	Last Step CH	2x	xx	00	4F	1	
Pattern	Last Step OH	2x	xx	00	50	1	
Pattern	Last Step T.7	2x	xx	00	51	1	
Pattern	Last Step T.8	2x	xx	00	52	1	
Pattern	Last Step T.9	2x	xx	00	53	1	
Pattern	Last Step T.10	2x	xx	00	54	1	
Pattern	Last Step T.11	2x	xx	00	55	1	
Pattern	??	2x	xx	00	56		
Pattern	Last Step - not used?	2x	xx	00	57		Bitmap that shows if track last step is active (overrides variation). Last step stored above, set bit to activate. Track 1 (BD) is LSB Probably have to be rx/tx as four byte group (not tested)
Pattern	Last Step Bitmap T.9-11	2x	xx	00	58		0 T.11 T.10 T.9
Pattern	Last Step Bitmap T.5-8	2x	xx	00	59		T.8 T.7 T.6 T.5
Pattern	Last Step Bitmap T.1-4	2x	xx	00	5A		T.4 T.3 T.2 T.1
Pattern	??	2x	xx	00	5B		
Pattern	Scatter Type	2x	xx	00	5C	1	
Pattern	Flam spacing	2x	xx	00	5B	1	
Pattern	Scatter Depth	2x	xx	00	5D	1	
Pattern	Auto fill	2x	xx	00	7E	1	0-1
Pattern	Fill cycle	2x	xx	00	7F	1	0-5 = 32, 16, 12, 8, 4, 2
Pattern	Fill pattern	2x	xx	01	00	1	0-9 = A-H, 1, 2
Pattern	Last step 1	2x	xx	01	01	1	0-F
Pattern	Last step 2	2x	xx	01	02	1	0-F
Pattern	Accent Level	2x	xx	01	04	2	0F-0F
Pattern	Load Kit Switch	2x	xx	01	06	1	0-1
Pattern	Master Prob	2x	xx	01	07	2	00 01 - 07 0C

TR-8s / TR-6s Messages

Section	Item	MSB			LSB	Bytes	Note
		M08	M09	M0A	M0B		
▼ Pattern - Pattern Step Data							
Pattern - Pattern Step Data	Accent + ?	2x	xv	yy	zz		2x x is pattern v is variation 1-0A = A -H, 1, 2 See next tab for details
▼ ? 30 xx							
? 30 xx		30	xx	00	00		in basic editor Counts by 1 00 00 to 37 7F - 1024 instances
▼ Unique - Transmit only (12)							
Unique - Transmit only (12)	Version	50	00	00	13	8	Initial editor connect Version, add'l data, 8 bytes
Unique - Transmit only (12)	Force Rx data on	50	00	00	15	1	Force Rx data on

TR Step Edit Overview

Step edit messages are eight bytes, typically encoding four parameters in Roland Nibble format, must be transmitted & requested as eight byte groups

(only the lower four bits of a byte are used, with values spread across two or four MIDI bytes)

One variation is laid out as follows:

Accent / Trigger Message - 8 bytes, Rn bit encoded accent steps

Instrument 1 (e.g, BD), for each step 1-16

- Instrument Message Part A (SubProb, Prob, Alt (08), Sub/flamm, Velocity) - all single byte except velocity

Repeat for instruments 2 - 11

Instrument 1 (e.g, BD), for each step 1-16

- Instrument Message Part B (Delay Time, Delay Lvl, Rev Lvl) - all two byte

Repeat for instruments 2 - 11

Variation Data, for each step 1-16

- Data A (Delay Time, Delay Lvl, Rev Lvl - two bytes each, maybe something in first two bytes)

Variation Data, for each step 1-16

- Data B (Mfx Ctl, Mfx Sw, Dly Fdbk - Mfx sw is one byte, remainder two, maybe something in first two bytes)

TR-8s / TR-6s Step Edit Overview
(work in progress)

				A3	A2	A1	A0								
Ptn	Var	Inst	Step	M08	M09	M0A	M0B	M0C	M0D	M0E	M0F	M10	M11	M12	M13
				Note - these bytes CANNOT be individually queried or set, you must query (11) or set (12) as a complete eight byte message (Query / 11 may work in increments of eight bytes, have not tested)											
				Accent / Trigger Message - 8 bytes, Rn bit encoded accent steps											
01	A	A/T		20	01	00	00	1-4	5-8	9-12	13-15	Trigger?	Trigger?	Trigger?	Trigger?
				Instrument 1 (e.g, BD), for each step 1-16 Instrument Message Part A - SubProb, Prob, Alt (08), Sub/flamm, Velocity - all single byte except velocity											
01	A	1.A	01	20	01	00	08			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
01	A	1.A	16	20	01	01	00			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
				repeat for instruments 2 - 11											
01	A	2.A	01	20	01	01	08			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
01	A	2.A	16	20	01	02	00			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
01	A	6.A	01	20	01	05	08			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
01	A	6.A	16	20	01	06	00			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
01	A	11.A	16	20	01	0A	08			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
01	A	11.A	16	20	01	0B	00			SubProb	Prob	Alt (08)	Sub/flamm	Velocity	Velocity
				Instrument 1 (e.g, BD), for each step 1-16 Instrument Message Part B - Delay Time, Delay Lvl, Rev Lvl - all two byte, maybe something in first two bytes											
01	A	1.B	01	20	01	0C	08	?	06	CTL	CTL	Decay	Decay	Tune	Tune
01	A	1.B	16	20	01	0D	00	?	06	CTL	CTL	Decay	Decay	Tune	Tune
				repeat for instruments 2 - 11											
01	A	2.B	01	20	01	0D	08	?	06	CTL	CTL	Decay	Decay	Tune	Tune
01	A	6.B	01	20	01	11	08	?	06	CTL	CTL	Decay	Decay	Tune	Tune
01	A	11.B	16	20	01	16	00	?	06	CTL	CTL	Decay	Decay	Tune	Tune
				Variation Data, for each step 1-16 Data A - Delay Time, Delay Lvl, Rev Lvl - two bytes each, maybe something in first two bytes											
01	A	V.A	01	20	01	17	08	08	0C	Delay Time	Delay Time	Delay Lvl	Delay Lvl	Rev Lvl	Rev Lvl
01	A	V.A	16	20	01	18	00	08	0C	Delay Time	Delay Time	Delay Lvl	Delay Lvl	Rev Lvl	Rev Lvl

				A3	A2	A1	A0								
Ptn	Var	Inst	Step	M08	M09	M0A	M0B	M0C	M0D	M0E	M0F	M10	M11	M12	M13
				Variation Data, for each step 1-16 Data B - Mfx Ctl, Mfx Sw, Dly Fdbk - Mfx sw is one byte, remainder two, maybe something in first two bytes											
01	A	V.B	01	20	01	18	08	08		Mfx Ctl	Mfx Ctl		Mfx Sw	Dly Fdbk	Dly Fdbk
01	A	V.B	16	20	01	19	00	08		Mfx Ctl	Mfx Ctl		Mfx Sw	Dly Fdbk	Dly Fdbk
				Repeat for Variations B - H, 1, 2											
01	B	A/T		20	02	00	00	1-4	5-8	9-12	13-15	Trigger?	Trigger?	Trigger?	Trigger?
01	B	1.A	01	20	02	00	08			SubProb	Prob	Alt (08)	Sub/flam	Velocity	Velocity
				...											
01	02	T.B	16	20	0A	19	00	08		Mfx Ctl	Mfx Ctl		Mfx Sw	Dly Fdbk	Dly Fdbk
				Repeat for each pattern, see pattern header encoding in memory map											
02	A	A/T		20	11	00	00	1-4	5-8	9-12	13-15	Trigger?	Trigger?	Trigger?	Trigger?
1j02	A	1.A	01	20	11	00	08			SubProb	Prob	Alt (08)	Sub/flam	Velocity	Velocity

Address Summary

Variation	A2 lower nibble		Instrument	A1	A0 (start)		A1	A0 (start)
				Part A			Part B	
1	01		A/T	00	00			
2	02		1	00	08		0C	08
3	03		2	01	08		0D	08
4	04		3	02	08		0E	08
5	05		4	03	08		0F	08
6	06		5	04	08		10	08
7	07		6	05	08		11	08
8	08		7	06	08		12	08
9	09		8	07	08		13	08
10	0A		9	08	08		14	08
			10	09	08		15	08
			11	0A	08		16	08
			Var	17	08		18	08

Other Message Formats

Two Byte Messages
Roland Nibble Format - only lower four bits of each byte used
00 - 00 = 0
...
0F - 0F = FF = 256
Bit encoded
Four steps per Roland Nibble, LSB = Step 1, four nibbles
00 00 00 01 = Step 1
08 00 00 00 = Step 16, etc

Message Details

	Message	MIDI	Setting
▼	Sub / Flam		
	Sub / Flam	0	~
	Sub / Flam	1	Flam
	Sub / Flam	2	1/2
	Sub / Flam	3	1/3
	Sub / Flam	4	1/4
▼	Prob		
	Prob	0	~
	Prob	1	90
	Prob	
	Prob	A	0