T2 Tile Packet Header Formats   Version   13   Date   **2020-03-27**

VERSION	**13**
DATE	**2020-03-27**

Packet length is 1..255 bytes. Transport layer must handle byte and packet framing.

BYTE 0	BYTE 1	BYTE 2	BYTE 3	BYTE 4	
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	…

Packet header   ⌐

T2 packet   *STND* ⌐

Non-standard | 0 | ASCII7 | ? →

Standard   1 *LOCL* ⌐

Local standard   1 1 | RSV0 | TYP4 | TYP3 | TYP2 | TYP1 | TYP0 | ⌐

		RSV0	TYP4	TYP3	TYP2	TYP1	TYP0		ASCII7:Code	0	ASCII7:PRU	0	ASCII7:DIR	
illegal	1 1	*	0	0	0	0	0	? →						
debug	1 1	*	0	0	0	0	1	? →						
value	1 1	*	0	0	0	1	0	? →						
control	1 1	*	0	0	0	1	1	0	ASCII7:Code	0	ASCII7:PRU	0	ASCII7:DIR	
Packet sync	1 1	*	0	0	0	1	1	0	'P'	0	'0'..'1'	0	'0'..'2'	
Frame error	1 1	*	0	0	0	1	1	0	'F'	0	'0'..'1'	0	'0'..'2'	
Timeout	1 1	*	0	0	0	1	1	0	'T'	0	'0'..'1'	0	'0'..'2'	
Monitor	1 1	*	0	0	0	1	1	0	'M'	0	'0'..'1'	0	'3'	0 0 0 0 0 EN2 EN1 EN2
reserved	1 1	*	0	0	0	1	1	0	..all other values..	0	'0'..'1'	0	'0'..'3'	? →
reserved	1 1	*	0	0	0	1	1	1	? →					
reserved	1 1	*	0	0	1	x	x	? →						
reserved	1 1	*	0	1	x	x	x	? →						
reserved	1 1	*	1	x	x	x	x	? →						

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Standard   1 | LOCL | ↰

Format																	
Routed standard	1	0	URG	OVR	ERR	SD2	SD1	SD0	?→								
Bulk	1	0	0	OVR	ERR	SD2	SD1	SD0	?→								
Urgent	1	0	1	OVR	ERR	SD2	SD1	SD0	MFM	↰							
Flash	1	0	1	OVR	ERR	SD2	SD1	SD0	0	ASCII7:Code				?→			
MFM	1	0	1	OVR	ERR	SD2	SD1	SD0	1	ITC	↰						
ITC	1	0	1	OVR	ERR	SD2	SD1	SD0	1	1	RSV1	RSV0	SN3	SN2	SN1	SN0	?→

Format																	
Circuit	1	0	1	OVR	ERR	SD2	SD1	SD0	1	0	CTL	ACT	↰				
Ring	1	0	1	OVR	ERR	SD2	SD1	SD0	1	0	1	1	CN3	CN2	CN1	CN0	?→
Hang up	1	0	1	OVR	ERR	SD2	SD1	SD0	1	0	1	0	CN3	CN2	CN1	CN0	?→
Cache updates	1	0	1	OVR	ERR	SD2	SD1	SD0	1	0	0	1	CN3	CN2	CN1	CN0	?→
Cache upd ack	1	0	1	OVR	ERR	SD2	SD1	SD0	1	0	0	0	CN3	CN2	CN1	CN0	?→

Abbreviations:

Code:	Meaning
?	Optional data not defined by this spec
*	Reserved, should ignore on read, should be 0 on write
→	For rest of packet
↰	Defined below
ACT	Active, sender is performing an event
CTL	Circuit control packet
CNn	Circuit number, bit *n*
ENn	Enable status bit, prudir *n*
ERR	Error, corrupted packet
ITC	Intertile Connection
LOCL	Local packet moving PRU ↔ ARM, but not PRU ↔ PRU
MFM	Movable Feast Machine

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n	Bit index counting from least significant bit is 0
OVR	Overrun, packet too long
RSVn	Reserved, bit n
SDn	Packet source direction on read, destination direction on write, bit n
SNn	State number, bit n
STND	Standard packet format, defined by this spec
TYPn	Type code, bit n
URG	Urgent
x	0 or 1