Version 18 Date 2020-06-05

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

E	3Y	ΤE	0						BY	TE	1						BY	TE	2						ΒY	TE	3						BY	ΤE	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

Non-standard 0 ASCII7 ?-

Standard 1 $\stackrel{\square}{Q}$

Local standard packets are defined per source/destination

PRU → PRU Not used

PRU→LKM Page 3 ¬

LKM→PRU Page 3 ¬

LKM → *MFM* Page 3 ¬

MFM → *LKM* Page 3 ¬

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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

	~	
Standard	1 0 7	
Routed standard	SD0 SD1 SD2 URG	
Bulk	1 0 0 SD2 ?→	
Urgent	MFM SD0 SD1 SD2	
Flash	1 0 1 VR S D 0	
MFM	T SD1 SD2 ERR OVR	
KITC	1 0 1 SD2 SD2 SN2 SN2 SN2 SN2 SN2 SN2 SN2 SN2 SN2 SN	
ITC	1 0 1 NRR SD1 1 0 0 1 SN2 ?→	
Circuit signals	1 0 1 SD2 1 010-111 7	
Ring (lock request)	1 0 1 VR R S D 1 0 1 0 C C C C C C C C C C C C C C C C	CTRY Z RADIUS ?-
Answer (lock ACK)	1 0 1 1 1 0 1 1 1 CNO ?→ OVR SD1 0 1 1 1 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0	
Busy (lock NAK)	1 0 1 SD2 1 1 0 0 CN2 ?→	
Drop (lock discard)	1 0 1 SD1 1 1 0 1 CN2 ?→	
Talk (cache updates)	1 0 1 NRR SD1 1 1 1 0 CN2 ?→	
Hang up (evt done)	1 0 1 SD2 1 1 1 1 1 CN2 ?→	

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BYTE	0						ΒY	TE	1						BY	ΤE	2						BY	ΤE	3						ΒY	ΤE	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	

'0'..'1'

0

'0'..'3'

Local standard PRU→LKM

illegal	1	1	*	0	0	0	0	0	? →
debug	1	1	*	0	0	0	0	1	? →
value	1	1	*	0	0	0	1	0	? →

value	1	1	*	0	0	0	1	0	?-
control	1	1	*	0	0	0	1	1	0
Packet sync	1	1	*	0	0	0	1	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	Τ'	0	'0''1'	0	'0''2'
Monitor	1	1	*	0	0	0	1	1	0	'M'	0	'0''1'	0	'3'

reserved	1	1	*	0	0	0	1	1	0	all other values
reserved	1	1	*	0	0	0	1	1	1	?→
reserved	1	1	*	0	0	1	Х	Х	? ⊣	•
reserved	1	1	*	0	1	Х	Х	Х	?⊸	
		-		-					۱_	

1 1 * 1 x x x x |?→

Local standard LKM → PRU

reserved
$$1 1 \times x \times x \times x \times ? \rightarrow$$

LKM -> PRU uses non-standard packets rather than STNDLOCL. See T2-12/pru/itcio/firmware/SpecialPackets.c for details Note:

0

Local standard LKM → **MFM**

arraara			•		•				
illegal	1	1	*	0	0	0	0	0]? →
reserved	1	1	*	0	0	0	0	1	? →
reserved	1	1	*	0	0	0	1	Х	? →
reserved	1	1	*	0	0	1	Х	Х	? →
reserved	1	1	*	0	1	Х	Х	Х	? →
reserved	1	1	*	1	Х	Х	Х	Х	? →

Local standard MFM → LKM

tariuaru	IVII	IVI		IXIV	•				
illegal	1	1	*	0	0	0	0	0	? →
reserved	1	1	*	0	0	0	0	1	? →
reserved	1	1	*	0	0	0	1	Х	? →
reserved	1	1	*	0	0	1	Χ	Χ	? →
reserved	1	1	*	0	1	Х	Х	Х	? →
reserved	1	1	*	1	Х	Х	Χ	Х	? →

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	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	

Abbreviations:	Code:	Meaning
	?	Optional o

? 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*

CTRX Requested event window center, X coordinate, relative to ITC, s8 CTRY Requested event window center, Y coordinate, relative to ITC, s8

ENn Enable status bit, prudir *n*ERR Error, corrupted packet
ITC Intertile Connection
KITC Kernel Intertile Connection

LOCL Local packet moving PRU → ARM, but not PRU → PRU

MFM Movable Feast Machine

n Bit index counting from least significant bit is 0

OVR Overrun, packet too long

RADIUS Requested event window radius, 1..4

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

XITC Extended ITC

YNK Random 'Yoink' bit for race resolutions