To: **T10 Membership**
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Subject: **PPR Message Enhancements**
Date: **Friday, February 04, 2000**

Background: The existing transfer period factor field in the PPR message should be defined to add values for future data rates and remove ambiguity in the historical value ranges.

Table 57 – Transfer Period Factor Table (PPR)

Transfer Period Factor	Description	Transfer Period	Transfer Rate - Wide	Fundamental Frequency	Signal Method	Supported Speeds		
						EWE4	EWE3	EWE2
00h	Reserved							
01h	Reserved							
02h	Reserved							
03h	Reserved							
04h	Reserved							
05h	Reserved							
06h	Reserved							
07h	Fast-160	6.25ns	320 MB/sec	80Mhz	Dual-Transition	Y		
08h	Fast-120	8.33ns	240 MB/sec	60Mhz	Dual-Transition	Y		
09h	Fast-80	12.5ns	160 MB/sec	40Mhz	Dual-Transition	Y		
0Ah	Fast-40	25ns	80 MB/sec	40Mhz	Single-Transition			
0Ah	Fast-40	25ns	80 MB/sec	20Mhz	Dual-Transition	Y	Y	
0Bh	Fast-40	30.3ns	80 MB/sec	40Mhz	Single-Transition			Y
0Bh	Fast-40	30.3ns	80 MB/sec	20Mhz	Dual-Transition	Y	Y	
0Ch	Fast-20	50ns	40 MB/sec	20Mhz	Single-Transition			Y
0Ch	Fast-20	50ns	40 MB/sec	10Mhz	Dual-Transition		Y	
0D-18h	Obsolete							
19h	Fast-10	100ns	20 MB/sec	10Mhz	Single-Transition			Y
19h	Fast-10	100ns	20 MB/sec	5Mhz	Dual-Transition		Y	
20h-31h	Obsolete							
32h	Fast-5	200ns	10 MB/sec	5Mhz	Single-Transition			Y
32h	Fast-5	200ns	10 MB/sec	2.5Mhz	Dual-Transition			
33h-FFh	Obsolete							

Note: The rows shown with a gray background are obsolete in SPI-4. Devices should use SDTR/WDTR meessages to negotiate these transfers.

Dual Transition signal methods require the DT_REQ bit to be set to one in the PPR message.

Byte 7, Bit 3 of the PPR message is defined as the Free Running Clock/Skew Management (FRC/SM) bit. YOU4 speeds require that the FRC/SM bit be set to one.

EWE4 – DT bit = 1; FRC/SM bit = 1
EWE3 – DT bit = 1; FRC/SM bit = 0
EWE2 – DT bit = 0; FRC/SM bit = 0

Table 61 – Transfer Period Factor Table (SDTR)

Transfer Period Factor	Description	Transfer Period	Transfer Rate - Wide	Fundamental Frequency	Signal Method	EWE2	EWE1	EWE0
00-09h	Reserved							
0Ah	Fast-40	25ns	80 MB/sec	40Mhz	Single-Transition	Y		
0Bh	Fast-40	30.3ns	80 MB/sec	40Mhz	Single-Transition	Y		
0Ch	Fast-20	50ns	40 MB/sec	20Mhz	Single-Transition	Y	Y	
0D-18h	Obsolete							
19h	Fast-10	100ns	20 MB/sec	10Mhz	Single-Transition	Y	Y	Y
20h-31h	Obsolete							
32h	Fast-5	200ns	10 MB/sec	5Mhz	Single-Transition	Y	Y	Y
33h-FFh	Obsolete							