

# Summary of Modifications - T11-2018-00164-v001

## Instructions for the Editor

### 1. Clause 4.2.4.1

- Table 6

- i. Add descriptor definition for Port Congestion Descriptor

### 2. Clause 4.3.49.5.10

- Add new clause

\*Changes are shown highlighted in yellow.

## 4.2.4 Link Service TLV descriptors

### 4.2.4.1 Overview

Link Service TLV descriptors are specified in table 6.

**Table 6 – Link Service TLV descriptors**

Tag value	Descriptor	Reference
0000 0000h	Reserved	
0000 0001h	Link Service Request Information	4.2.4.2
0000 0002h	Reserved	
0000 0003h	N_Port_ID descriptor	4.2.4.3
0001 0000h	SFP Diagnostics descriptor	4.3.49.5.1
0001 0001h	Port Speed descriptor	4.3.49.5.1
0001 0002h	Link Error Status Block descriptor	4.3.49.5.2
0001 0003h	Port Names descriptor	4.3.49.5.3
0001 0004h	QSFP Diagnostics descriptor	4.3.49.5.5
0001 0005h	FEC Status descriptor	4.3.49.5.6
0001 0006h	Buffer Credit descriptor	4.3.49.5.7
0001 0007h	Optical Element Data descriptor	4.3.49.5.8
0001 0008h	Optical Product Data descriptor	4.3.49.5.9
0001 0009h	Priority Range Descriptor	4.3.49
0001 000Ah	VEM ID Descriptor	4.3.50
0001 000Bh	Instantiated VE Mapping Descriptor	4.3.50
0001 000Ch	Deinstantiated VE Mapping Descriptor	4.3.50
0001 000Eh	Port Congestion Descriptor	4.3.49.5.10
All other values	Reserved	

#### 4.3.49.5.10 Port Congestion descriptor

The Port Congestion Descriptor contains information about counters as specified in table xxx.

**Table XXX – Port Congestion Descriptor**

Bits Word	31 .. 24	23 .. 16	15 .. 08	07 .. 00
0	Port Congestion Descriptor tag = 0001 0009h			
1	Port Congestion Descriptor Length (64 bytes)			
2	Counter Validity Mask (13 Bits Used)			
3	Transmit Buffer to Buffer Credit Transitions to Zero			
4	Receive Buffer to Buffer Credit Transitions to Zero			
5	Transmit Buffer to Buffer Credit at 0 for Interval			
6	Receive Buffer to Buffer Credit at 0 for Interval			
7	Interval (in Nanoseconds) for the Transmit / Receive Buffer Credit at 0			
8	Frame Transmit Discards			
9	Interval (in Microseconds) for Frame Transmit Discards			
10	Link Reset Transmitted in Active State			
11	Link Reset Received in Active State			
12	Vendor Specific Counter 1			
13	Vendor Specific Counter 2			
14	Vendor Specific Counter 3			
15	Vendor Specific Counter 4			

**Counter Validity Mask:** 13 bit field masking for each of the 13 possible counters. A value of 1 indicates that a valid value is present, 0 indicates no value. When a 0 is marked for any counter, the contents of that counter shall be ignored.

**Transmit Buffer to Buffer Credit Transitions to Zero:** Number of times that transmit B2B has transitioned to zero. Validity of this counter is indicated with bit[0] in Counter Validity Mask.

**Receive Buffer to Buffer Credit Transitions to Zero:** Number of times that receive B2B has transitioned to zero. Validity of this counter is indicated with bit[1] in Counter Validity Mask.

**Transmit Buffer to Buffer Credit at 0 for Interval Events:** Number of times that transmit B2B credits have been at zero for a given interval. Validity of this counter is indicated with bit[2,4] in Counter Validity Mask.

**Receive Buffer to Buffer Credit at 0 for Interval Events:** Number of times that receive B2B credits have been at zero for a given interval. Validity of this counter is indicated with bit[3,4] in Counter Validity Mask.

**Interval Used for Transmit and Receive Buffer to Buffer Credit at 0 for Interval:** The value in nanoseconds used for the previous two counters. Validity of this field is indicated with bit[4] in Counter Validity Mask. A value of zero (0) for this counter with an accompanying validity bit shall indicate that the interval is unknown.

**Frame Transmit Discards:** Number of times that a frame has been discarded from the interface due to exceeding the congestion drop threshold. Validity of this counter is indicated with bit[5] in Counter Validity Mask.

**Interval for Frame Transmit Discards:** Length of time in microseconds that a frame can reside in an interface before reaching the congestion drop threshold. Validity of this counter is indicated with bit[6] in Counter Validity Mask.

**Link Reset transmitted while in Active state:** Number of times that the interface has transmitted an LR (link reset) while in an Active state (see FC-FS-5). Validity of this counter is indicated with bit[7] in Counter Validity Mask.

**Link Reset Received while in Active state:** Number of times that the interface has received an LR (link reset) while in an Active state (see FC-FS-5). Validity of this counter is indicated with bit[8] in Counter Validity Mask.

**Vendor Specific Counter 1 - 4:** The four vendor specific counters may be used to indicate vendor unique counters as related to port link congestion. Validity of these counters are indicated by bits[9-12] respectively in the Counter Validity Mask.

All of the counters are persistent across link events. Whether counters are reset when a port is reset or for other condition is vendor specific.