

Datasheet Parameters

60802 Contribution

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Jan 2019

This presentation contains a list of parameters that need to be considered in the 'Datasheet Parameters' for 60802

- To have a structured way of defining the data sheet parameters
- Have a starting point – preliminary list
- The goal is to reduce the list to the absolute necessary parameters

The parameters shall be grouped for

- compliant bridges (also for bridged part of the bridged endstation)
- compliant endstations

Step 1 – Define the parameters, NOT the values

We should define which ‘Datasheet Parameters’, are needed, before discussing the parameters values.

Example: How long does it take for a frame to pass a bridge in worst case.

Vendor 1 provides:

- Latency of Rx-Phy
- Latency of bridge logic
- Latency of Tx-Phy

Vendor 2 provides:

- Wire to core latency
- Core to wire latency

Vendor 3 provides:

- Wire to Wire latency

Tools should not be confronted with different sets of input parameters for the same thing !

Table 12 – Required Ethernet Bridge delays

Data rate	Value	Comment
10 Mb/s	< 30 μ s	Bridge delay measure from MII to MII ¹⁾
100 Mb/s	< 3 μ s	Bridge delay measure from MII to MII ¹⁾
1 Gb/s	< 1 μ s	Bridge delay measure from RGMII to RGMII ¹⁾
2,5 Gb/s	< 1 μ s	Bridge delay measure from XGMII to XGMII ¹⁾
5 Gb/s	< 1 μ s	Bridge delay measure from XGMII to XGMII ¹⁾
10 Gb/s	< 1 μ s	Bridge delay measure from XGMII to XGMII ¹⁾
25 Gb/s – 1 Tb/s:	< 1 μ s	Bridge delay measure from XGMII to XGMII ¹⁾

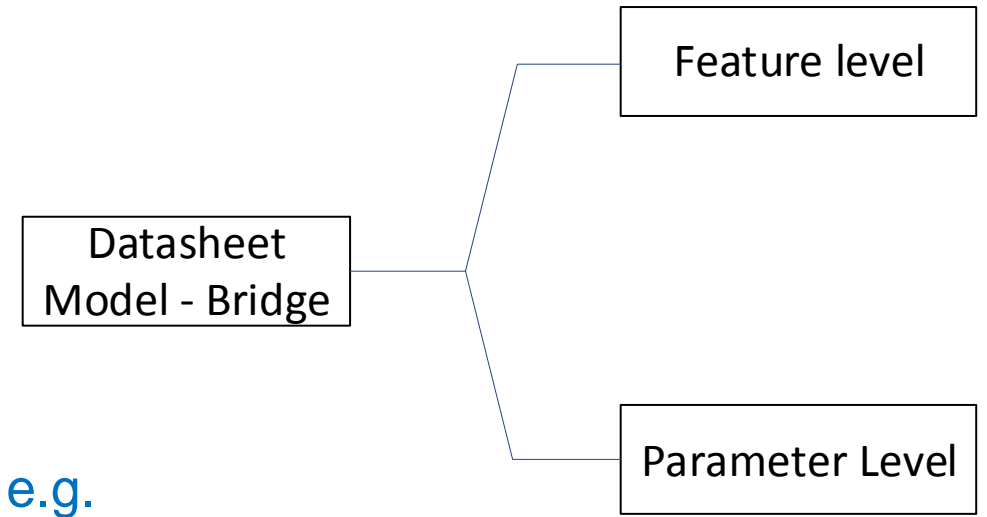
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- The values are not aligned with the bridge delay parameters description in 802.1Qcc
- Does not contain the delay parameters for ports with different communication speed (e.g., input port is 100Mbit/s and output port is 1Gbit/s port)

Different “level” of capabilities/parameters

- **Feature level:**
 - Protocols, e.g., NETCONF,...
 - Mechanisms, e.g., Qbv,...
- **Parameter (Detailed) level:** contains parameters like, e.g.
 - switch delay parameters (e.g., dependentDelayMin/Max,...), ...
 - number of gates in the gate control list,...
- Parameters at the “**Parameter (Detailed) level**” shall comply with the existing managed objects and/or YANG models
 - exception are possible for parameters for which no managed objects exists, like: frame buffer size

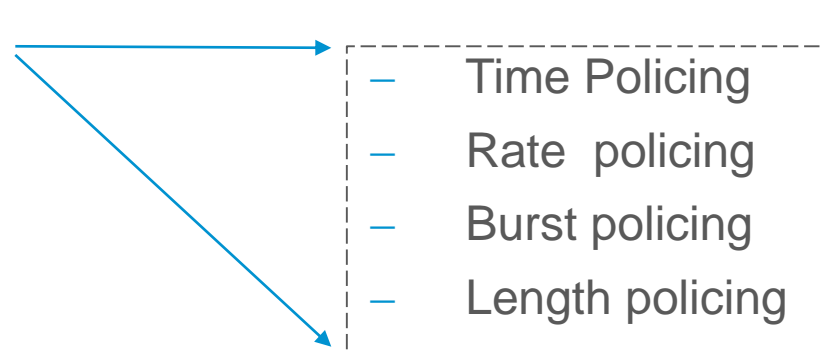


Feature level – Protocols

- Management Protocols:
 - NETCONF
 - RESTCONF
 - SNMP V1,...
 - SRP, MSRP, RAP,...
- Clock Synchronization:
 - IEEE 1588 v1,...
 - IEEE 1588 power profile
 - IEEE 802.1AS(Rev)
 - Roles (master, slave)
- Others
 - LLDP
 - STP, RSTP,...
- Security
 - 802.1X

Feature level – Mechanisms

- Qbv
- Qbu
- **1CB**
- Qav
- **Qci**
- Qch
- Qcr
- ...



- Strict priority
- Cut-through (future)
- Security
 - MACsec

Device parameters

- Number of Queues
- Max Nr of VLANs
- VLAN, retagging, removing, adding
- Number of queues
- Max number of queue entries
- dependentDelayMin/Max (per port combination and per speed)
 - Incl PHY delays
- independentDelayMin/Max (per port combination and per speed)
- Frame buffer
- Frame chunk granularity
- Max No of Streams
- Number of per-stream filtering and policing entries
- Supported number of dest. MAC entries in the FDB
- Supported Stream Identification functions
 - NULL stream
 - Source MAC and VLAN
 - Active Destination MAC and VLAN
 - IP Stream identification
 - P802.1CBdb
- Qbu - Minimum fragment size

Per Port Parameters

- Qbv
 - Max No of Gate Events
 - Min/Max AdminCycleTime
 - Tick granularity
- 1CB
 - Sequencing
 - Splitting
 - Recovery

Feature level – per device

- Management Protocols:
 - SNMP V1,...
 - SRP, MSRP, RAP,...
 - CUC support (PTCC)
- Clock Synchronization:
 - IEEE 1588 v1,...
 - IEEE 1588 power profile
 - IEEE 802.1AS(Rev)
 - Roles (master, slave)
- Qbv
- Qbr
- 1CB
- Qav
- ...

Device parameters

- VLAN capable (VID insertion capability)
- Number of queues
- Max number of queue entries
- Tx/Rx delay, Incl PHY delays
- Tx/Rx jitter, Incl PHY jitter
- Frame buffer
- Frame chunk granularity
- Tick granularity

Per Port Parameters

- Qbv
 - Max Gate Events
 - Min/Max AdminCycleTime
- Supported Stream Identification functions
 - NULL stream
 - Source MAC and VLAN
 - Active Destination MAC and
 - IP Stream identification
 - P802.1CBdb
- Qbu
 - Minimum supported fragment size

