

Ethernet TSN Layer 2 Switch IP Datasheet

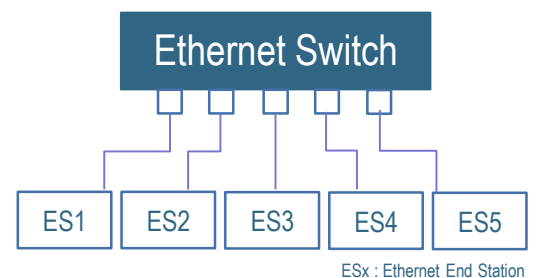
Ethernet TSN Layer 2 Switch

Overview

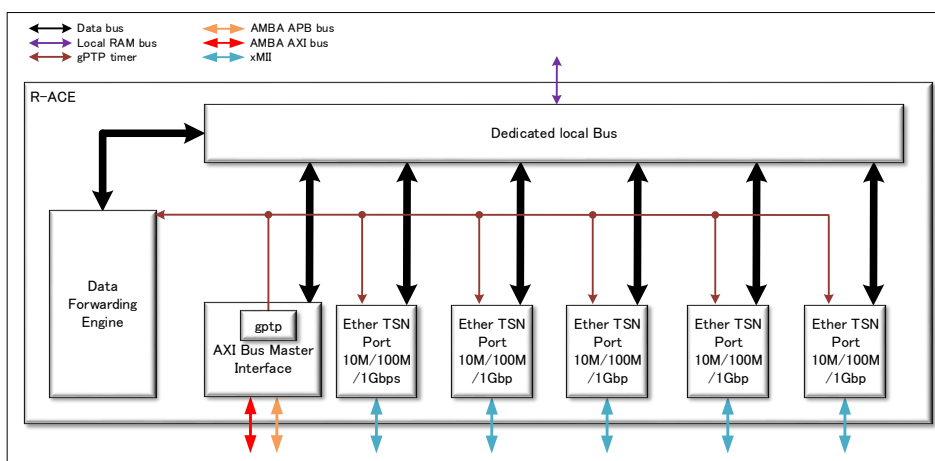
- The Renesas Ethernet TSN Layer 2 Switch IP provides interface features for Layer 2 switch(5ports) in Ethernet Time Sensitive Networking.
- The Ethernet TSN switch using dedicated low latency bus. Ether port to port transfer, CPU - Ether port to port transfer, broadcast transfer, multicast transfer are also possible. Various transfers featuring advanced filters are possible.
- This IP includes an Ethernet controller that conforms to the IEEE 802.3 standard, and standards related Ethernet TSN. This IP has standard and easy interface. You can easily implement this IP to your system.

Key Features

1. Ethernet Frame data routing / Forwarding using Various transfers featuring advanced filters
2. Integrated Ethernet Communication Controller (Ethernet MAC) according to standard IEEE 802.3 into each Ether port
3. The controller support these operation modes - 10/100/1000 Mbps - full-duplex operation
4. PHY Interface : MII, RMII,GMII, RGMII and SGMII (SGMII is Standard Ver1.8 and using External Converter)
5. Support Receive filtering (for L2~L4)
6. Support Jumbo Frame(up to 16KB)
7. Support IEEE 802.1AS-rev
8. Support IEEE 802.1Qci Ingress Policing
9. Support IEEE 802.1Qav Credit-based shaper
10. Support IEEE 802.1Qbv Time Aware Shaper
11. Support IEEE 802.3br Interspersed Express Traffic
12. Support IEEE 802.1Qbu Frame Preemption
13. Automatic Tx/Rx CRC computed by Ethernet Controller
14. Interrupt-free data transfer between system memory and network
15. Integrated DMA for data transfers from/to system memory
16. Integrated FIFO in Ethernet controller
17. Test Modes Internal loopback



Block diagram



1. 5 Ethernet port (Increase / decrease possible)
2. AXI Master 64 - 128 bits data bus
3. Built-in gPTP
4. Routing Table :
 1. Qci
 2. SRP
 3. MAC
 4. VLAN