General Description

The Triathlon™ TRI-VSPD210 is VDSL2/ADSL2 customer premise equipment (CPE) digital device, which must be combined with VDSL2/ADSL2 CPE analog front end device TRI-VSPA210 for VDSL2/ADSL2 CPE Bridge or Residential Gateway router application.

TRI-VSPD210 integrates VDSL2/ADSL2 DSP transceiver, TPS PTM and ATM SAR, 5X5 Switch/Router, GMAC, Microprocessor Core and a proprietary SoC subsystem with a variety of peripherals packaged in a single chip.

The chip includes a DSP processor, internal boot ROM, internal 8M byte SDRAM, MII/RGMII interface for MAC, proprietary data bus interface connected with TRI-VSPA210, UART, SPI interface for serial Flash, and 24 GPIOs used for general purpose interface configurations such LED status display. In addition, the chip offers an optional proprietary simple bit synchronous interface for easily receiving and transmitting bit-based user data.

Applications

- xDSL Customer Premise Equipment for internet access and single port router
- xDSL Residential Gateway Equipment with easy integration with all major vendors' RG chipsets
- xDSL Single-Port CO Solution supporting xDSL central office protocol
- Point to Point Application Equipment with proprietary DSP firmware optimized for point to point communication performance

Key Features

- Full-speed multimode VDSL2/ADSL2+ PHY compliant to ITU G.993.2 and backward compatible to G.992.1, G.992.2, G.992.3, G.992.4, G.992.5 and ANSI T1.413 specifications;
- TR069 and G.997.1 management protocol;
- All G.993.2 profiles including 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a;
- G.998.4 Retransmission(G.INP);
- G.993.5 Vectoring;
- G.998.1 ATM bonding and G.998.2 PTM bonding;
- Advanced VDSL2 features including SRA Dynamic D and OH, Erasure Decoding, SOS, INPM, ToD based Time Stamp;
- Dual latency and dual bearer channel support up to four channels;
- ATM header compression mode to improve ATM data efficiency;
- Full-feature and high-speed ATM and PTM SAR supporting 8 hardware PVCs or flows and unlimited software PVCs;
- 64 Classification rules and 128 dedicated NAPT flows with versatile network processor based packet classification, forwarding and modification;
- Channel-level and packet-level QoS based on configuration, 802.1D, port, MAC, Diffserv DSCP and/or the traffic classifications, supporting all service classes of CBR, UBR, rt-VBR, nrt-VBR and guaranteed bandwidth;
- Multiple boot modes through internal embedded Boot-ROM, SPI Flash, MDIO, or network interface;
- Peripheral Interfaces: UART, SPI,GPIO, MDIO, BITSYNC, WATCHDOG;
- Network Interfaces: RGMII/MII/;
- 128-pin LQFP MCM package with 8MB SDRAM;
- 3.3V and 1.2V power supply;
- Industrial/Commercial Temperature Range

Block Diagram

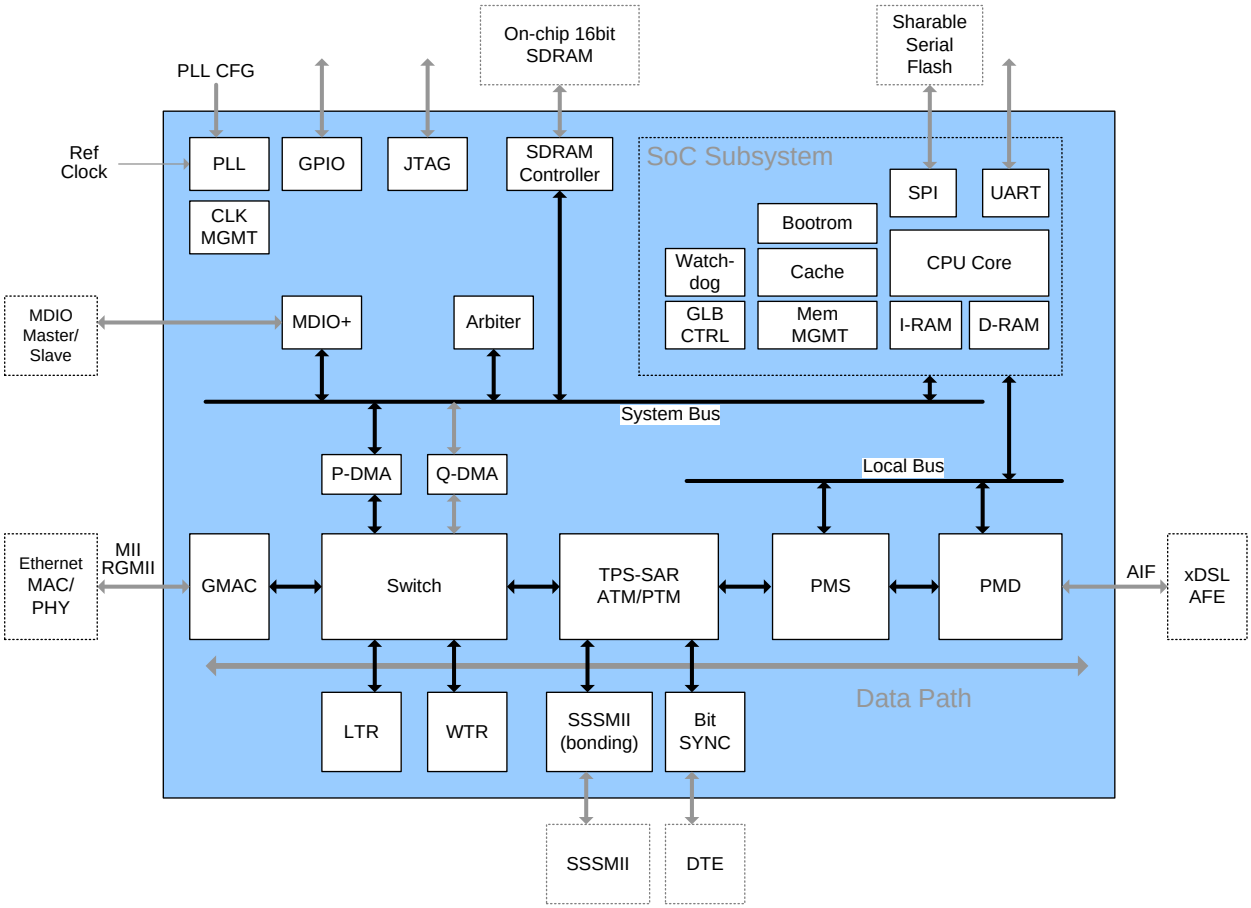

Figure 1 TRI-VSPD210 Block Diagram