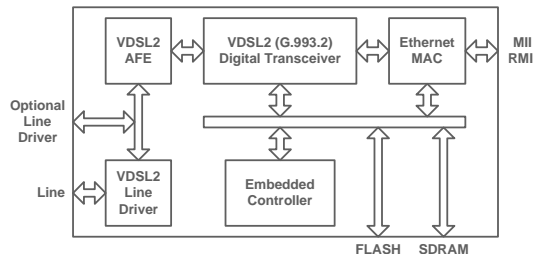


# Triathlon™ Family VDSL2 CPE Chip



The Triathlon™ family TRI-VSP200 VDSL2 chip is designed from the ground-up as a high performance, low power, and low cost VDSL2 solution for the exploding triple-play, video, and IPTV markets. As part of Triductor Technology's VDSL2 end-to-end solution, TRI-SP200 is primarily targeted for the customer premise equipment that addresses applications ranging from a simple bridge to multiple lines of VDSL2 to be implemented in a single enclosure such as Access Concentrators.



TRI-VSP200 Block Diagram

TRI-SP200 has integrated 10/100 Ethernet MAC with MII/RMII in MAC/PHY mode. It also provides GPIO and Dying Gasp function. In addition, it supports serial FLASH and SDRAM interfaces.

The Digital Transceiver provides programmable depth of interleaved dual-latency paths incorporated with re-transmission scheme for video application with higher level of impulse noise protection.

The software package includes modular IP stack with comprehensive networking protocol support including advanced bridging and routing capabilities, DHCP, and PPPoE.

TRI-SP200 is in 208-pin PQFP package.

## Features Highlight

- The most integrated VDSL2 single chip in the industry, device includes VDSL2 digital transceiver, AFE, and line driver
- ITU-T G.993.2 fully compliant with software programmable profiles 8a/8b/8c/8d, 12a/12b, 17a, and 30a
- Build-in low-power +5V line driver driving up to 14.5dBm on the line, and support external line driver for 20.5dBm application
- Interoperable with all the VDSL2 CO devices from other vendors
- Dual latency and re-transmission for reliable video application
- Application software supports TR-069, Web Server/Client, DHCP, PPPoE, Telnet, etc.
- +5V, +3.3V, and +1.8V power supply
- JTAG (IEEE 1149.1) boundary scan
- Industrial temperature range

The integrated Analog Front-end (AFE) features:

- 13-Bit 80MHz ADC and 14-Bit 80MHz DAC
- Low noise Variable Gain Amplifier (VGA) with -12dB to 36dB gain
- Programmable filter cut off on both Transmit and Receive filters
- 4<sup>th</sup> order anti-aliasing filter
- Built-in line driver can drive up to 14.5dBm on the line with -17dB power back-off
- On-chip crystal oscillator and DCXO with 12-Bit control over ±100ppm range
- Power down mode
- Low power 600mW with fully operation

## TARGET MARKET

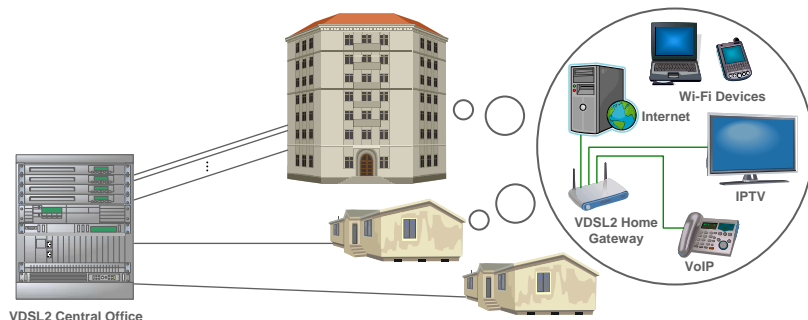
- Fiber extension (FTTB, FTTN, FTTC, FTTP)
- Multi-tenant and Multi-dwelling units (MxU)
- Legacy xDSL with VDSL2

## TYPICAL APPLICATION

- VDSL2 bridge mode CPE modem
- VDSL2 home gateway
- Triple play services

## BENEFITS

- Completed reference design
- Featured application software
- Simple system
- Low BOM cost
- Low power
- Fast time-to-market



VDSL2 Deployment Scenario and Applications

TRIATHLON

