

Product Brief

5VT2511 GPON ONT SoC Family



Highly Optimized GPON ONT SoC with 600MHz RISC Process for high performance, low cost GPON SFU applications

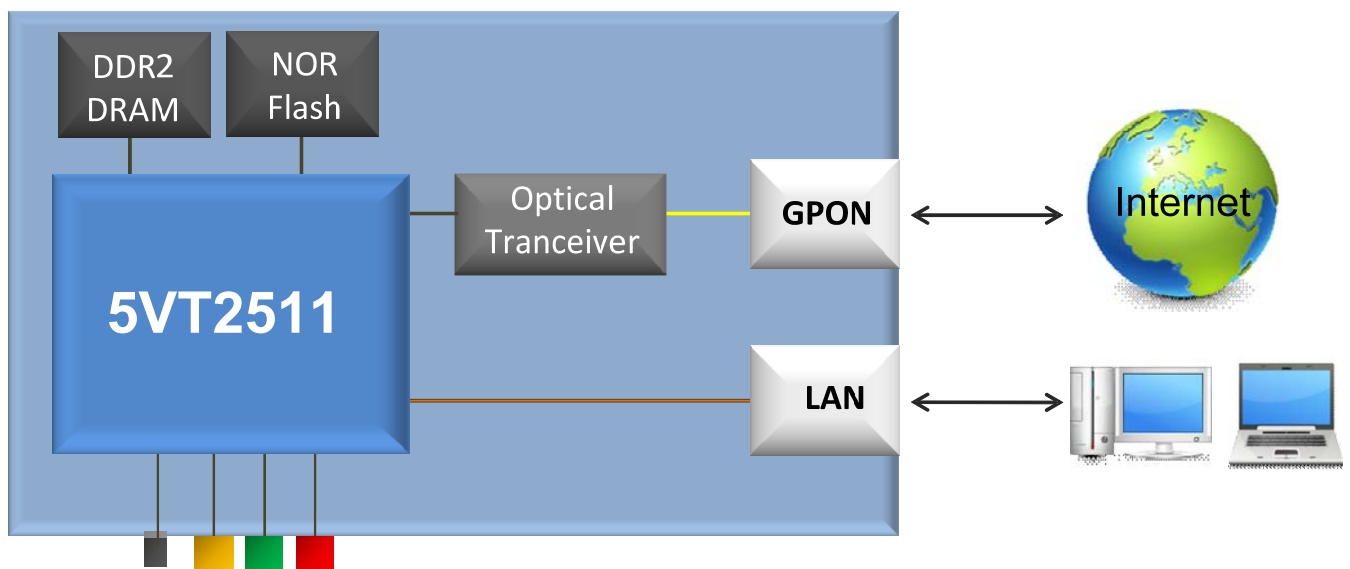
The 5VT2511 SoC is a low-cost, highly-integrated GPON ONT (Optical Network Terminal) SoC (System-on-Chip) devices compliant to ITU-T G.984 GPON standard. 5VT2511 SoC is designed to support the GPON SFU (Single Family Unit) devices with small form-factor & Low Power Consumption.

5VT2511 contains a high performance RISC 32Bit Processor running up to 600MHz, SPI Flash Memory Controller, Multi-port DDR2 SDRAM Memory Controller (MDMC), L2/L3/L4 Gigabit Ethernet Switch with one 10/100/1000Mbps physical layer transceivers, GPON ONT MAC with SerDes/CDR, and numerous other serial and parallel interfaces which collectively provide an optimal SoC solution for GPON SFU (Single Family Unit) deployments.

The 5VT2511 supports booting from SPI Flash. The MDMC provides memory access DDR2 800 SDRAM. The L2/L3/L4 GE Switch ensures up to wire-speed performance. 5VT2511 has successfully passed Inter-Operability-Tests (IOTs) with a number of market-leading GPON Optical Line Terminals (OLTs).

Quick time to the market with bundled OMCI software package

The OMCI software module for ONT, which is ITU G.984.4/988 and BBF TR-156 Compliant, enables GPON equipment vendors to create GPON ONT system products rapidly. With the ease of software architecture and advanced feature set, it allows quick implementation of GPON SFU products to easily interoperate with OLT from different vendors.



Simple GPON ONT with 1 GE UNI

Key Features

Processor

- ▶ 32Bit RISC, 600MHz, MMU
- ▶ 64KB I-Cache and 32KB D-Cache (Primary)
- ▶ Power-down support
- ▶ EJTAG debug interface

External Memory Interface

- ▶ SPI Serial Flash: up to 62.5MHz
- ▶ DDR2 SDRAM: 8-bit bus width, with density up to 128Mb

System Function

- ▶ Boot-up from SPI Flash memory
- ▶ Single 25MHz Crystal for System Operation

GPON

- ▶ GPON ONT MAC
 - ITU-T G.984.x Compliant
 - 32 T-CONT, 128 GEM port
 - AES, Key Switch
 - HW dying gasp
- ▶ CDR SerDes
 - Integrated 2.488/1.244Mbps CDR
 - Single-ended and Differential Burst-Enable
 - Support CML/LVPECL TX/RX Interface

Ethernet & Misc.

- ▶ Switching Capabilities
 - Three Gigabit ethernet MAC switch with one 10/100/1000Mbps PHY
 - 802.1Q VLAN
 - 802.1ad Stacking VLAN
 - 802.1X
 - 802.3ad
 - Layer-2 Learning
 - Spanning Tree Protocol
 - QoS Support
 - ACL rules support
- ▶ L3/L4 hardware NAT/NAPT support
- ▶ One I²C, Master, with 7bit address support
- ▶ One 16550-compatible UART
- ▶ Up to 22 GPIO share pins support
- ▶ Serial LED support

Power Supply Voltages

- ▶ Core : 1.0V
- ▶ I/O : 1.0V, 3.3V
- ▶ DDR2 : 1.8V

Package

- ▶ LQFP-128 E-Pad: 14x14mm², 0.4mm pitch

Bundled System Software

- ▶ Operating System
 - SVT ported Linux/Kernel 2.6.28
- ▶ TCP/IP Networking Support
 - MAC Bridging
 - IGMP Snooping V1/V2
 - Static IP
 - PPPoE
 - DHCP Client
 - DNS Client
- ▶ Management Interface
 - OMCI

Selection Guide for 5VT2511 Family

Part Number	32bit RISC Speed	Ethernet Interface	Temperature Range (°C)	Package
5VT2511	600MHz	3 Gigabit MAC 1 10/100/1000 PHY	0 ~ 70	LQFP-128 E-Pad

Development Tools

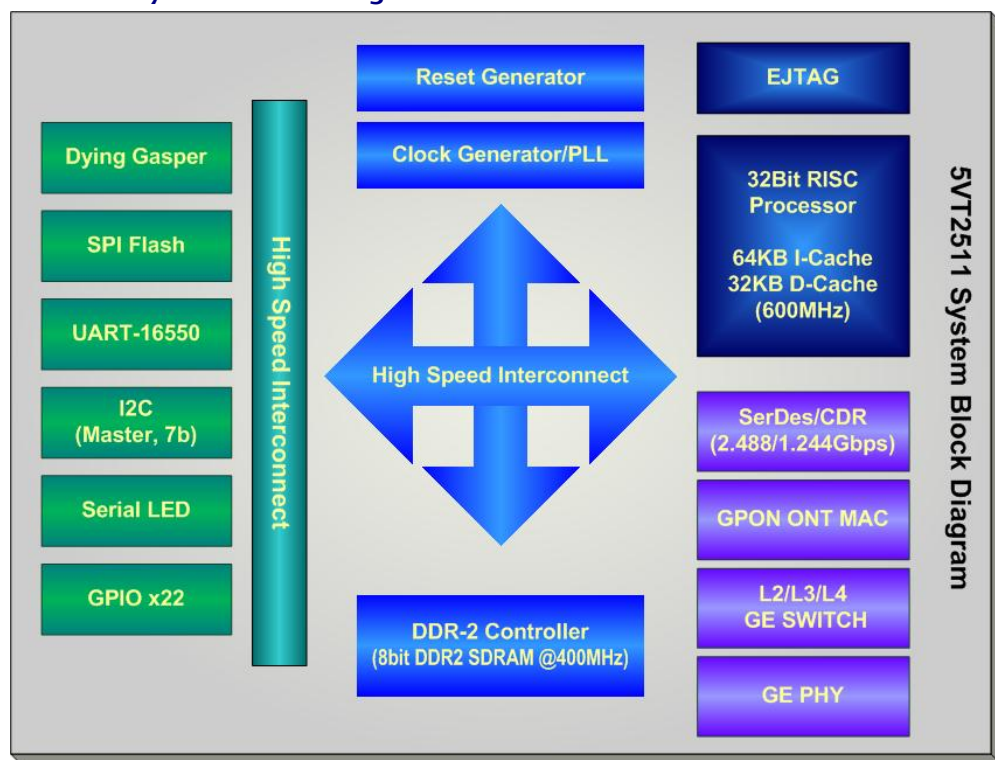
Available to partners: Evaluation Kit composed of the "Evaluation Board" with 1-port GE LAN, 1-port FE LAN modules for various application development scenarios.

The SDK and Software tool chain are shipped with the Evaluation Kit to help users with the development efforts.

For most recent updates on Evaluation Kits and all available options, please visit

<http://www.5vtechnologies.com>

5VT2511 System Block Diagram



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