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connecting everything ®
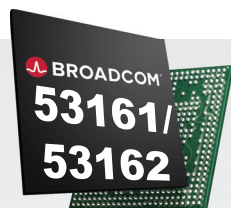
BCM53161/BCM53162
A 2.5GE Multi-Port Switch Series with High-Speed 10GE Uplinks

53161/ 53162

- Four 1GE/2.5GE SGMII+ ports.
- Two 2.5GE/5GE/10GE XFI/SFI ports.
- Up to Eight 10/100/1000Base-T ports with Integrated GPHYs.
- Integrated Arm-Cortex M7 CPU.
- An RGMII, MII, RvMII, port to connect to an external CPU (or used as a 1GE customer port).
- Chip cascading that enables creation of unified, single CPU managed, 16-26 port switch.
- Support advanced QoS, CFP, VLAN manipulation, L1-L4 classification via CFP, Time Sensitive Networking (TSN).
- Support 802.1BR port extender.
- Support Power-saving green technology per IEEE 802.3az Energy Efficient Ethernet™.
- Support commercial (0°C - +70°C) and industrial (-40°C - +85°C) temperature ambient.

BCM53161/ BCM53162	
✓	Unmanaged/ Web-Managed/ Managed SMB Switch
✓	Home Gateway MDU
✓	Port Extender
✓	Industrial Ethernet

OVERVIEW

Broadcom's BCM53161/BCM53162 is a family of 2.5GE switches designed for high-end and cost - effective multi-GE applications in the SMB, Industrial, and service provider markets.

The BCM53161/BCM53162 switches support four 2.5GE SGMII+ ports and two 2.5GE/5GE/10GE XFI/SFI ports. BCM53162 also supports eight 10/100/1000Base-T ports with integrated GPHYs.

This switch family is based on the industry-leading 28 nm RoboSwitch™ architecture, also known as Robo II. Products in this family integrate the powerful ARM Cortex-M7 CPU that enables customers to design switching platforms without adding an external processor. They are also equipped with high-end forwarding mechanisms that are required in many advanced applications. Among which, advanced QoS engine, flexible content filter processor (CFP), sophisticated VLAN manipulation capability, security features, packet synchronization for time sensitive networks, and many more.
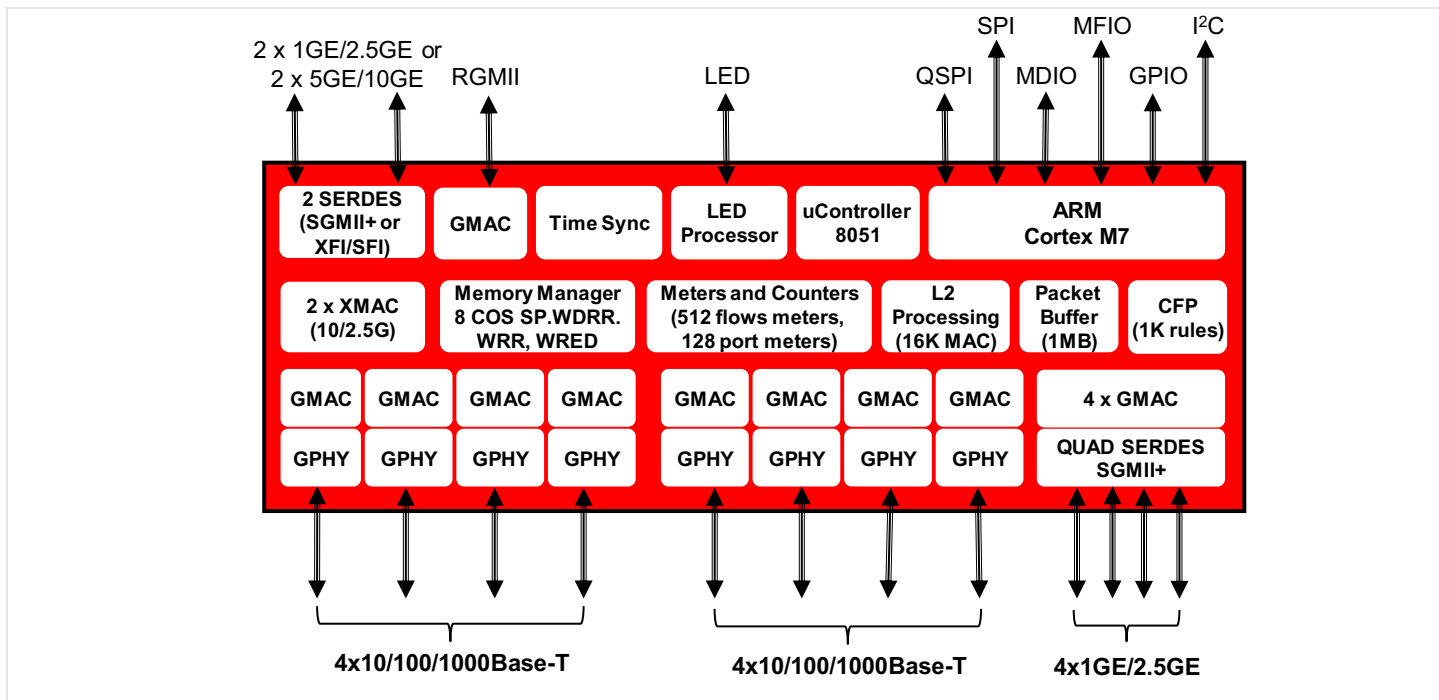
The BCM53161/BCM53162 family of switches is supported by multiple software packages designed for different applications. Basic unmanaged software can be used to construct unmanaged switches with basic functionalities and no VLAN segregation. Web-managed software, also known as Robo-OS™, can be used to build web-controlled switches, and fully-featured SDK software can be used to construct managed devices that are controlled by an external CPU, for example, home-gateways and MDUs where BCM53161/BCM53162 chips are connected to an external PON or DSL SoC.

Broadcom's BCM53161/BCM53162 chips can be used to construct standalone platforms with low port-count configuration (up to 15 ports), or to construct, using a cascaded design, a double port-count switch by connecting two chips backto-back.

BCM53161/BCM53162 switches are offered to customers in commercial-grade as well as Industrial- grade temperature ambient.

FEATURES AND BENEFITS

- Four 1GE/2.5GE SGMII+ ports.
- Two 2.5GE/5GE/10GE XFI/SFI ports.
- Up to Eight 10/100/1000Base-T ports with Integrated GPHYs.
- RGMII, MII, and RvMII interface to an external CPU (can also be used as a 1GE customer facing port).
- Integrated Arm-Cortex M7 CPU for cost-effective applications.
- Support for cascading mode that enables the creation of a unified, single CPU, managed 16-26 port switch.
- Support high-end QoS capabilities with hierarchical scheduling, eight egress buffer queues per port each with its own shaper, WRED and Tail-drop congestion avoidance, and dual-leaky-bucket ingress rate-limiters (also known as policers).
- Advanced Compact Filter Processor (CFP), also known as the Access-List engine that can classify L1-L4 headers.
- Support for Virtual Switching Instances (VSI) for explicit segregation of bridging domains with advanced VLAN translation and encapsulation (for example, Mac-in-Mac).
- Port-Extender support per 802.1BR for design of modular chassis devices or pizza box platforms with remote port extensions.
- Advanced Time Sensitive Networking (TSN) protocol support such as 802.1AS to synchronize traffic transmission across entire network domain.
- Power-saving green technology per IEEE 802.3az Energy Efficient Ethernet.
- Can be delivered with unmanaged software, Web-Managed software or two different Managed SDK software (RoboSwitch SDK and Network Switch SDK).
- Supports both commercial and industrial temperature grades.

BCM53161/BCM53162 Block Diagram

ORDERING INFORMATION

	Part Number
Intelligent Unmanaged 2.5 Gig-Ethernet Robo II switch with 4 x 1000FX/2500FX SGMII+ ports + 2 x 10000FX XFI/SFI ports. In large package (19 x19 mm). Supporting Commercial temperature ambient (0°C - +70°C)	BCM53161XUA0KLFBG
Intelligent Managed 2.5 Gig-Ethernet Robo II switch with 4 x 1000FX/2500FX SGMII+ ports + 2 x 10000FX XFI/SFI ports. In large package (19 x19 mm). Supporting Commercial temperature ambient (0°C - +70°C)	BCM53161XMA0KLFBG
Intelligent Unmanaged 2.5 Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with Integrated GPHYs + 6 x 1000FX/2500FX SGMII+ ports. In large package (19 x19 mm). Supporting Commercial temperature ambient (0°C - +70°C)	BCM53162UA0KLFBG
Intelligent Unmanaged 2.5 Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with Integrated GPHYs + 4 x 1000FX/2500FX SGMII+ ports + 2 x 10000FX XFI/SFI ports. In large package (19 x19 mm). Supporting Commercial temperature ambient (0°C - +70°C)	BCM53162XUA0KLFBG
Intelligent Managed 2.5 Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with Integrated GPHYs + 4 x 1000FX/2500FX SGMII+ ports + 2 x 10000FX XFI/SFI ports. In large package (19 x19 mm). Supporting Commercial temperature ambient (0°C - +70°C)	BCM53162XMA0KLFBG
Intelligent Managed 2.5 Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with Integrated GPHYs + 4 x 1000FX/2500FX SGMII+ ports + 2 x 10000FX XFI/SFI ports. In large package (19 x19 mm). Supporting Industrial temperature ambient (-40°C - +85°C)	BCM53162XMA0ILFBG

ABOUT **BROADCOM**

Broadcom (NASDAQ: AVGO) is a diversified global semiconductor leader built on 50 years of innovation, collaboration and engineering excellence. Broadcom's extensive product portfolio serves multiple applications within four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & others. Broadcom is changing the world by Connecting everything[®].