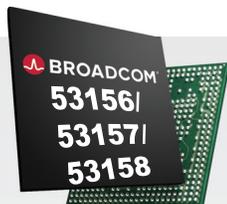# BCM53156/53157/53158
Multi-port GE Switch Series with Integrated PHYs and 10GE Uplinks

- Eight 10/100/1000Base-T port with Integrated GPHYs.
- One QSGMII port.
- Two 1000FX/2500FX (SGMII+) or 10000FX XFI/SFI ports.
- 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.

BCM53156/ 53157/ 53158	
✓	Unmanaged/ Web-Managed/ Managed SMB Switch
✓	Home Gateway MDU
✓	Port Extender
✓	Industrial Ethernet

BCM53156/53157/53158 OVERVIEW

Broadcom's BBCM53156/53157/53158 is a family of highly integrated Gigabit Ethernet switches designed for high-end and cost-effective 1GE and above applications. The switch family supports eight 10/100/1000Base-T ports (with integrated GPHYs), one QSGMII port and additional one, or two, high-speed 2.5GE SGMII, or 10GE XFI/SFI ports.

The BCM53156/53157/53158 are optimally designed for Gigabit-Ethernet SMB, industrial and service provider applications that take advantage of high speed uplinks connectivity of 2.5GE/10GE speeds.

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 compact filter processor (CFP), sophisticated VLAN manipulation capability, security features, packet synchronization for time sensitive networks, and many more.
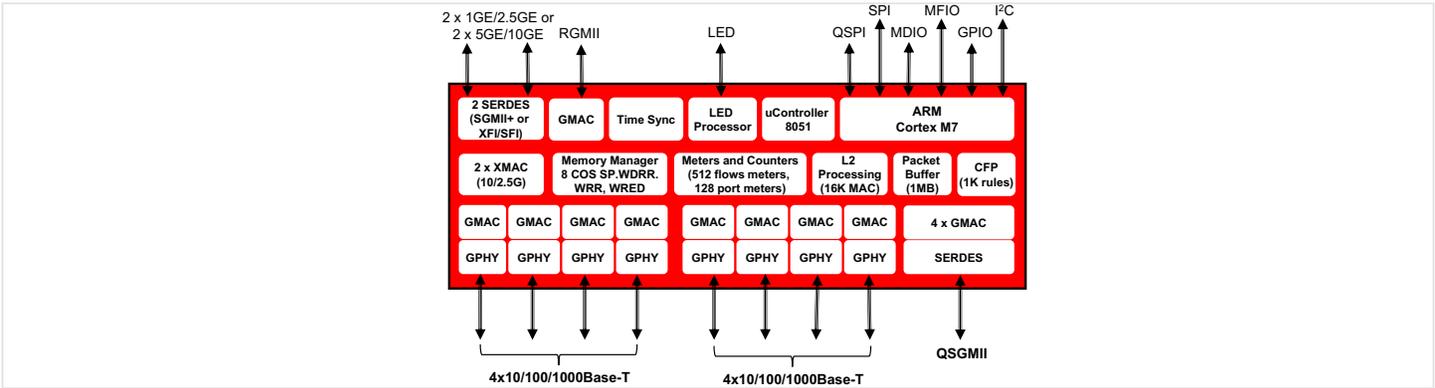
The BCM53156/53157/53158 family of switches is supported by several software packages designed for different applications. Basic unmanaged software can be used to construct unmanaged switches with basic functionalities and no VLAN segregation. Web-managed software, also known as Robo-OS™, can be used 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 Ethernet MDU Switches where BCM53156/53157/53158 chips are connected to an external PON or DSL SoC.

Broadcom's BCM53156/53157/53158 chips can be used to construct standalone platforms with low port-count configuration (up to 15 ports), or to construct, through a cascaded solution, a double port-count switch by connecting two chips back-to-back.

BCM53156/53157/53158 switches are offered to customers in commercial-grade as well as industrial-grade temperature ambient.

FEATURES AND BENEFITS

- Eight 10/100/1000Base-T port with Integrated GPHYs.
- One QSGMII port.
- Two 1000FX/2500FX (SGMII+) or 10000FX XFI/SFI ports.
- Integrated ARM-Cortex M7 CPU.
- 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 an 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 enable scheduled traffic transmission across an 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.

BCM53156/53157/53158 Block Diagram

ORDERING INFORMATION

	Part Number
Intelligent Unmanaged Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs + 1 x 1000FX/2500FX SGMII+ port. In small package (13 x 13 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53156UA0KFBG
Intelligent Web-Managed Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs + 1 x 1000FX/2500FX SGMII+ port. In small package (13 x 13 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53156WA0KFBG
Intelligent Managed Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs + 1 x 1000FX/2500FX SGMII+ port. In small package (13 x 13 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53156MA0KFBG
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Intelligent Managed Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs + 1 x 10000FX XFI/SFI port. In large package (19 x 19 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53156XMA0KLFBG
Intelligent Unmanaged Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs + 2 1000FX/2500FX SGMII+ ports. In small package (13 x 13 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53157UA0KFBG
Intelligent Web-Managed Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs + 2 x 1000FX/2500FX SGMII+ ports. In small package (13 x 13 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53157WA0KFBG
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Intelligent Unmanaged Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs + 1 x QSGMII port + 2 x 10000FX XFI/SFI ports. In small package (13 x 13 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53158XUA0KFBG
Intelligent Web-Managed Gig-Ethernet Robo II switch with 8 x 10/100/1000Base-T ports with integrated GPHYs+ 1 x QSGMII port + 2 x 10000FX XFI/SFI ports. In small package (13 x 13 mm). Supporting Commercial temperature ambient (0°C – +70°C)	BCM53158XWA0KFBG
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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®.