



**THE DATASHEET OF
BCM53161XMB1ILFBG**



RoboSwitch™

Selection Guide

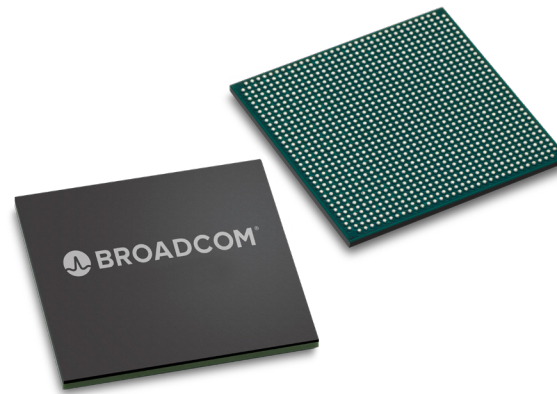
Features

- 10/100/1000BASE-T with integrated PHYs
- GMII for 1000FX and SGMII for 1000/2500FX connectivity
- XFI for 10000FX connectivity (only in Robo-2 ICs)
- RGMII/RvMII/MII for external CPU connection
- IEEE 802.1Q and IEEE 802.1ad VLAN segregation, cascading and translation
- L2 Address-Resolution-Logic (ARL) Table, also-known-as Learning-Table
- Virtual-Switching-Instances (only in Robo-2 ICs)
- Link-Aggregation per 802.3ad
- Rate-limit meters and shapers
- Scheduling mechanism SP and WRR
- Content-Field-Processor (CFP), also-known-as Access-List (ACL) engine
- Integrated ARM Cortex (available in Robo-2 ICs only)
- Clock Synchronization support per 1588v2 and Synchronized Ethernet (SyncE)
- Audio-Video-Bridging per IEEE 802.1Qav
- Time-Sensitive-Networking per IEEE 802.1Qbv (only in Robo-2 ICs)

Overview

Broadcom's RoboSwitch product line is a set of intelligent, highly integrated, power-efficient, and cost-sensitive, 5-port to 48-port switching Integrated Circuits (ICs).

The switches support Fast Ethernet (FE), Gigabit Ethernet (GbE), 2.5-Gigabit Ethernet (2.5GbE), and 10-Gigabit Ethernet (10GbE) port speeds.



The product line is based on a field-proven, industry-leading architecture, and its ICs are designed for Unmanaged, Web-Managed, Smart-Managed, and Fully-Managed solutions. The product line ICs combine all of the functions of a high-speed switching system into single CMOS devices, including ARM CPU, integrated memory for packet buffers and application RAM, PHY transceivers, and many more. Despite the low cost, product line ICs have an extremely rich feature set including policers, shapers, scheduling and congestion avoidance mechanisms, VLAN translation, virtual-switching-instances (VSIs), Synchronization engines (1588, SyncE), Audio-Video-Bridging (AVB), Time-Aware-Scheduling (TSN).

RoboSwitch Fast Ethernet (FE) Solutions

Switch	Description	FE	GbE	2.5G	Integrated PHYs	U/S/W/P/M	Integrated MCU	Interfaces	Packet Buffer	# of MAC Addresses	# of VLAN Addresses	# of QoS Queues/Ports	Package Type	Package Size (mm)
BCM53101M	5-port 10/100 Switch + MII + 1 GMAC	6	1		5	M		GMII/RGMII/RvMII/RMII	64 KB	2k	4k	6	132-pin DRQFN	10 × 10
BCM53101P	5-port 10/100 Switch + MII + 1 GMAC	5	1		5	M		GMII/RGMII/RvMII/RMII	64 KB	2k	4k	6	132-pin DRQFN	10 × 10
BCM53101E	5-port 10/100 Switch + MII + 1 GMAC	6			5	M		MII/RvMII	64 KB	2k	4k	6	132-pin DRQFN	10 × 10
BCM53106M	6-port 10/100 Switch with Integrated 4-FE PHY	4	2		5	M/S	8051	RGMII	128 KB	4k	4k	8	212-pin FBGA	12 × 12
BCM53106O	6-port 10/100 Switch with Integrated 4-FE PHY	4	2		5	M/S	8051	RGMII/SGMII	128 KB	4k	4k	8	212-pin FBGA	12 × 12
BCM53106P	6-port 10/100 Switch with Integrated 4-FE PHY	4	2	1	5	M/S	8051	RGMII/SGMII	128 KB	4k	4k	8	212-pin FBGA	12 × 12
BCM53106S	6-port 10/100 Switch with Integrated 4-FE PHY	4	2	1	5	M/S	8051	RGMII	128 KB	4k	4k	8	212-pin FBGA	12 × 12
BCM53107	7-port 10/100 Switch with Integrated EEE PHY	5	2		5	M/S	8051	GMII/RGMII/RvMII	128 KB	4k	4k	6	186-pin MML	12 × 12
BCM53108	8-port FE Switch with Integrated PHY + 1GbE	8	1		8	U/S	8051	GMII/RGMII/RvMII	192 KB	4k	4k	6	256-pin eLQFP	28 × 28
BCM53108V	7-port FE Switch with Integrated PHY + 2GbE	7	2		7	U/S	8051	GMII/RGMII/RvMII	192 KB	4k	4k	6	256-pin eLQFP	28 × 28
BCM53112M	15-port Switch: 8-ports 10/100BASE-T + 4x 1GbE SGMII + 2x 1GbE/2.5GbE XFI + RGMII	8	5	2	8	M/W	M7	XFI/SGMII/RGMII - QSGMII: No - XFI: Yes, 2 x XFI - SGMII: Yes, 4 x SGMII - RGMII: Yes, 1 x RGMII	1 MB	16k	4k	8	425-pin FBGA	19 × 19
BCM53202	8-port FE Switch with Integrated PHY + 2GbE	8	2		8	M/S		GMII/RGMII/RvMII	384 KB	8k	4k	4	400-pin PBGA	27 × 27
BCM53212	16-port FE Switch with Integrated PHY + 2GbE (GMII/RGMII)	16	2		16	M/S		GMII/RGMII/RvMII	384 KB	8k	4k	4	400-pin PBGA	27 × 27
BCM53242	24-port FE Switch with Integrated PHY + 2GbE (GMII/RGMII)	24	2		24	M/S		GMII/RGMII/RvMII	384 KB	8k	4k	4	400-pin PBGA	27 × 27
BCM53262	24-port FE Switch with Integrated PHY + 4GbE (GMII/RGMII)	24	4		24	M/S		GMII/RGMII/RvMII	384 KB	8k	4k	4	676-pin PBGA	35 × 35
BCM53282	Managed 8-port FE Switch with Integrated PHY + 2GbE	8	2		8	M/S		GMII/RGMII/RvMII	1.5 MB	16k	4k	8	400-pin PBGA	27 × 27
BCM53283	Managed 16-port FE Switch with Integrated PHY + 2GbE	16	2		16	M/S		GMII/RGMII/RvMII	1.5 MB	16k	4k	8	400-pin PBGA	27 × 27
BCM53284	Managed 24-port FE Switch with Integrated PHY + 2GbE	24	2		24	M/S		GMII/RGMII/RvMII	1.5 MB	16k	4k	8	400-pin PBGA	27 × 27
BCM53285	Managed 16-port FE Switch with Integrated PHY + 4GbE	16	4		16	M		SerDes/SGMII/RGMII/RvMII	1.5 MB	16k	4k	8	676-pin PBGA	35 × 35
BCM53286	Managed 24-port FE Switch with Integrated PHY + 4GbE	24	4		24	M/S		SerDes/SGMII/RGMII/RvMII	1.5 MB	16k	4k	8	676-pin PBGA	35 × 35
BCM53288	Managed 24-port FE Switch with Integrated PHY + 2GbE + 2.5G SGMII	24	2	1	24	M		SerDes/SGMII/RGMII/RvMII	1.5 MB	16k	4k	8	676-pin PBGA	35 × 35

RoboSwitch 1GbE/2.5GbE/10GbE Gigabit Ethernet Solutions

Switch	Description	GbE	2.5 GbE	10 GbE	Integrated PHYs	U/S/W/P/M	Integrated MCU	Interfaces	Packet Buffer	# of MAC Addresses	# of VLAN Addresses	# of QoS Queues/Ports	Package Type	Pkg Size (mm)
BCM53134M	6-port GbE Switch with Integrated EEE PHY	6			4	M/S	8051	RGMII	128 KB	4k	4k	8	212-pin FBGA	11 x 11
BCM53134O	6-port GbE Switch with Integrated EEE PHY	6	1		4	M/S	8051	RGMII/SGMII	128 KB	4k	4k	8	212-pin FBGA	11 x 11
BCM53134P	6-port GbE Switch with Integrated EEE PHY	6	1		4	M/S	8051	RGMII/SGMII	128 KB	4k	4k	8	212-pin FBGA	11 x 11
BCM53134S	6-port GbE Switch with Integrated EEE PHY	6			4	M/S	8051	RGMII	128 KB	4k	4k	8	212-pin FBGA	11 x 11
BCM53125	7-port GbE Switch with Integrated EEE PHY	7			5	U/M/S	8051	GMII/RGMII/MII/RvMII	128 KB	4k	4k	6	186-pin MML	12 x 12
BCM53128	8-port GbE Switch with Integrated EEE PHY + 1GbE	9			8	U/M/S	8051	GMII/RGMII/MII/RvMII	192 KB	4k	4k	6	256-pin eLQFP	28 x 28
BCM53128V	7-port GbE Switch with Integrated EEE PHY + 2GbE	9			7	U/M/S	8051	GMII/RGMII/MII/RvMII	192 KB	4k	4k	6	256-pin eLQFP	28 x 28
BCM5387	5-port Switch SGMII	5			SerDes	M		GMII/RGMII/MII/RvMII/SerDes	128 KB	4k	4k	4	256-pin FBGA	17 x 17
BCM5389	8-port Switch SGMII	8			SerDes	M		GMII/RGMII/MII/RvMII/SerDes	128 KB	4k	4k	4	256-pin FBGA	17 x 17
BCM5396	16-port Switch SGMII	16			SerDes	M		GMII/RGMII/MII/RvMII/SerDes	256 KB	4k	4k	4	256-pin FBGA	17 x 17
BCM53154M	6-port Switch: 4x 10/100/1000BASE-T + 1x 1GbE/2.5GbE SGMII + RGMII	5	1		4	M	M7	SGMII/RGMII - QSGMII: No - SGMII: Yes, 1 x SGMII - XFI: No - RGMII: Yes, 1 x RGMII	1 MB	16k	4k	8	425-pin FBGA	19 x 19
BCM53156XU	10-port Switch: 8x 10/100/1000BASE-T + 1x 1GE/2.5GE/10GE XFI/SFI + RGMII	9		1	8	U	M7	XFI/RGMII - QSGMII: No - SGMII: No - XFI: Yes, 1 x XFI - RGMII: Yes, 1 x RGMII	1 MB	16k	4k	8	311-pin FBGA	13 x 13
BCM53156XM	10-port Switch: 8x 10/100/1000BASE-T + 1x 1GE/2.5GE/10GE XFI/SFI + RGMII	9		1	8	M	M7	XFI/RGMII - QSGMII: No - SGMII: No - XFI: Yes, 1 x XFI - RGMII: Yes, 1 x RGMII	1 MB	16k	4k	8	311-pin FBGA	13 x 13
BCM53158XU	15-port Switch: 8x 10/100/1000BASE-T + 1x QSGMII + 2x 1GE/2.5GE/10GE XFI/SFI + RGMII	9		2	8	U	M7	XFI/QSGMII/RGMII - QSGMII: Yes, 1 x QSGMII - SGMII: No - XFI: Yes, 2 x XFI - RGMII: Yes, 1 x RGMII	1 MB	16k	4k	8	311-pin FBGA	13 x 13

RoboSwitch 1GbE/2.5GbE/10GbE Gigabit Ethernet Solutions

Switch	Description	GbE	2.5 GbE	10 GbE	Integrated PHYs	U/S/W/P/M	Integrated MCU	Interfaces	Packet Buffer	# of MAC Addresses	# of VLAN Addresses	# of QoS Queues/Ports	Package Type	Pkg Size (mm)
BCM53158XP	15-port Switch: 8x 10/100/1000BASE-T + 1x QSGMII + 2x 1GE/2.5GE/10GE XFI/SFI + RGMII	9		2	8	P	M7	XFI/QSGMII/RGMII - QSGMII: Yes, 1 x QSGMII - SGMII: No - XFI: Yes, 2 x XFI - RGMII: Yes, 1 x RGMII	1 MB	16k	4k	8	311-pin FBGA	13 x 13
BCM53158XM	15-port Switch: 8x 10/100/1000BASE-T + 1x QSGMII + 2x 1GE/2.5GE/10GE XFI/SFI + RGMII	9		2	8	M	M7	XFI/QSGMII/RGMII - QSGMII: Yes, 1 x QSGMII - SGMII: No - XFI: Yes, 2 x XFI - RGMII: Yes, 1 x RGMII	1 MB	16k	4k	8	311-pin FBGA	13 x 13
BCM53161XU	7-port Switch: 4x 1GbE/2.5GbE SGMII + 2x 1GbE/2.5GbE/10GbE XFI/SFI + RGMII	1	4	2		U	M7	XFI/QSGMII/SGMII+/RGMII - QSGMII: Yes, 1 x QSGMII - SGMII+: Yes, 4 x SGMII+ - XFI: Yes, 2 x XFI - RGMII: Yes, 1 x RGMII Note: 1. Either QSGMII or SGMII+ for Port 8-11, cannot use both 2. When QSGMII is using, only Port 8 pins are used, Port 9-11 pins are disabled	1 MB	16k	4k	8	425-pin FBGA,	19 x 19
BCM53161XM	7-port Switch: 4x 1GbE/2.5GbE SGMII + 2x 1GbE/2.5GbE/10GbE XFI/SFI + RGMII	1	4	2		M	M7	XFI/QSGMII/SGMII+/RGMII - QSGMII: Yes, 1 x QSGMII - SGMII+: Yes, 4 x SGMII+ - XFI: Yes, 2 x XFI - RGMII: Yes, 1 x RGMII Note: 1. Either QSGMII or SGMII+ for Port 8-11, cannot use both 2. When QSGMII is using, only Port 8 pins are used, Port 9-11 pins are disabled	1 MB	16k	4k	8	425-pin FBGA,	19 x 19
BCM53162XM	15-port Switch: 8x 10/100/1000BASE-T + 4x 1GbE/2.5GbE SGMII + 2x 1GbE/2.5GbE/10GbE XFI/SFI + RGMII	9	4	2	8	M	M7	XFI/QSGMII/SGMII+/RGMII - QSGMII: Yes, 1 x QSGMII - SGMII+: Yes, 4 x SGMII+ - XFI: Yes, 2 x XFI - RGMII: Yes, 1 x RGMII Note: 1. Either QSGMII or SGMII+ for Port 8-11, cannot use both 2. When QSGMII is using, only Port 8 pins are used, Port 9-11 pins are disabled	1 MB	16k	4k	8	425-pin FBGA,	19 x 19

For more product information: broadcom.com

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