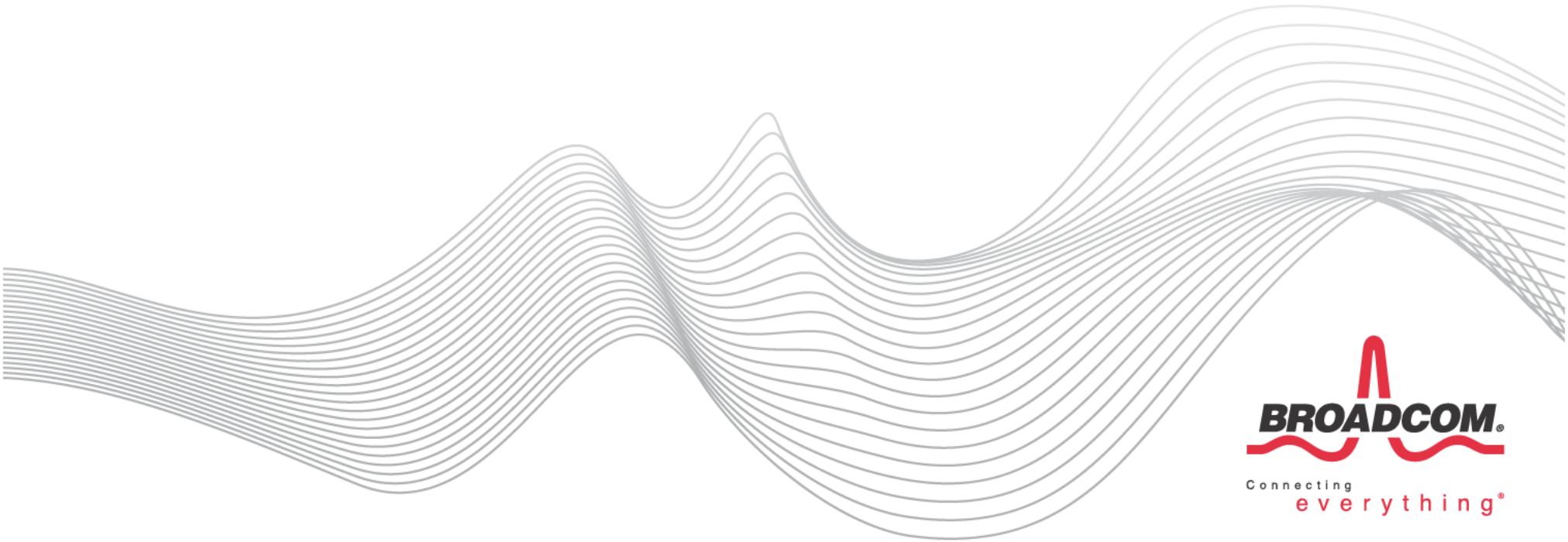
2013 PRODUCT SELECTOR GUIDE

INFRASTRUCTURE & WIRELESS SOLUTIONS



BROADCOM®

Connecting everything®

MAY 2013

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OVERVIEW

Broadcom's communications solutions revolutionize the bandwidth capacities and performance capabilities of wireless and wired networks for voice, video, and data delivery to consumers and businesses worldwide.

Our market-leading products connect seamlessly through the network delivering voice, video, data and multimedia connectivity in the home, office and mobile environments and promote low system development costs. These solutions address product categories across a broad set of areas including enterprise, service provider, data center, small and medium business, home office, industrial, and automotive. Broadcom networking products provide not only best-in-class devices, but also complete system solutions for addressing end-customer needs.

Broadcom provides the industry's most comprehensive portfolio of switching products ranging from 5-port to 100-port devices at speeds up to 100 Gbps. Our switching products support the broadest and most recent protocols in service provider, enterprise, and data center networks, including VPN and virtualization overlays, leading the level of integration for highly efficient system-level solutions. Broadcom provides full turnkey solutions through rich SDK and application software.

For applications that require a set of rich programming capabilities within a switching environment, StrataGX™ products provide a set of system-on-chip (SoC) offerings. These devices couple best-in-class ARM® CPUs with our proven switching and security capabilities to solve some of the industry's most complex networking challenges.

Broadcom's comprehensive set of physical layer (PHY) devices is optimally designed to work seamlessly with our switching, controller, and multicore processor solutions. These PHYs support speeds of various ranges of 10-100 Mbps, 1 Gbps, 10 Gbps, and 40 Gbps and operate over twisted pair, copper, and optical links, plus they are best-in-class in both performance and power. Broadcom products provide support for a multitude of channels, such as long-haul optical, and support higher level functions that can be used to augment the operation of standard Ethernet switches like BroadR-Reach®, packet precision timing protocols, MACSec, and FCoE-to-Fibre Channel conversion.

Complementing the switch and physical layer products is a full line of Power over Ethernet (PoE) devices for providing power to IP phones, WLAN APs, and remote IP cameras.

Broadcom's processor products consist of the industry's most powerful, throughput-optimized solutions based on a multicore and multithreaded architecture coupled with highly integrated hardware-based, networking- and application-aware accelerators. Our processors have industry-leading price/performance and low power dissipation.

We also provide a complete portfolio of industry-leading MIPS64-based multicore processor SoCs. These SoCs contain from 2 to 8 physical cores and 4 to 32 virtual CPUs through the use of multithreading. In addition, the CPUs implement superscalar and out-of-order speculative execution to achieve the industry's highest levels of performance for this class of product.

OVERVIEW (Cont.)

Broadcom's knowledge-based processors (KBPs) enable high-performance decision making for packet processing in a variety of advanced devices in the enterprise, metro, access, edge, and core networking markets. KBPs feature superscalar design architecture for high-speed performance, providing the ability to process packets at wirespeed and lowest power consumption.

Our NetXtreme® family of Ethernet controllers offers highly integrated, single-chip networking solutions optimized for enterprise server and client applications. The NetXtreme I Client and NetXtreme I and II Server controllers are high-performance and cost-effective solutions providing the latest features and manageability for data centers and desktops/notebook users. Delivering several combinations of Gigabit and 10-Gigabit port configurations, they provide the most flexibility in system I/O performance.

Broadcom's portfolio of Wi-Fi solutions for Enterprise, Carrier and SMB applications includes our best-in-class RF technology for IEEE 802.11n and 802.11ac (5G Wi-Fi). "Enterprise class" features, such as Spectrum Intelligence, Beam forming and Industrial Temp, set these products apart from consumer solutions.

We also have the most complete SMB offering for Wi-Fi that includes not only "enterprise class" RF technology, but also a full turnkey software offering that enables quick time-to-market with minimal engineering support.

To connect these and many more devices, the WICED™ software platform creates secure wireless networking applications on an existing product microcontroller or on an additional WICED module that includes a microcontroller. Either way, the comprehensive and size-optimized WICED application library and embedded Wi-Fi driver work together with a Broadcom® embedded wireless LAN chip to provide seamless wireless connectivity.

With the industry's broadest portfolio of state-of-the-art system-on-a-chip and embedded software solutions, Broadcom is changing the world by Connecting everything®.

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INTRODUCTION

10-Gigabit PHYs: Use Broadcom's 10-Gigabit Ethernet (GbE) transceivers to develop compact, affordable 10GbE optical systems for high-speed LANs, campus, and metropolitan area networks. Our transceivers offer the highest integration with the lowest power, enabling manufacturers to build affordable 10GbE-based SFP+ or XFP optical module line cards linking Gigabit Ethernet with 10GbE traffic. Broadcom's family of 10GBASE-T devices offers low power, small size, interoperability, and backwards compatibility over twisted-pair cabling, which is well-suited for distances of up to 100m over structured cabling in the data center.

Gigabit Ethernet PHYs: Design your networking equipment with Broadcom's proven GbE transceiver technology. Broadcom's industry-leading 10/100/1000BASE-T Ethernet transceiver devices offer the lowest power, smallest footprint, proven interoperability, and advanced features, making it easier and less expensive to build Gigabit Ethernet switches, routers, VoIP phones, networked printers, and broadband CPEs.

Fast Ethernet PHYs: Design your networking equipment with Broadcom's proven Fast Ethernet transceiver technology. Broadcom's industry-leading 10/100BASE-T Ethernet transceiver chips offer the lowest power, smallest footprint, proven interoperability and advanced features, making it easier and less expensive to build fast Ethernet-networked printers and broadband CPEs.

BroadR-Reach PHYs: Innovative BroadR-Reach technology extends the range of twisted-pair connections from 100 meters to up to 500 meters. Designed to comply with CCSA specifications for a reach-extended Ethernet physical layer, these devices also offer interoperability with 10BASE-T, 100BASE-TX, and 1000BASE-T through a common RJ-45 interface.

BroadR-Reach technology also enables full-duplex operation over a single twisted pair, so that Ethernet and IP services can now be deployed at 100 Mbps over installed telephone wiring. Additionally, BroadR-Reach is compatible with PoE, greatly expanding the range of applications for PoE appliances.

Power over Ethernet PHYs: All edge switches require PoE. Broadcom has offered PoE solutions since 2007 and continues to offer the most advanced solutions for integration, heat dissipation, and flexibility. We integrate the FETs, the MCU, and the current-sense mechanism inside the IC. These devices have been certified by Underwriters Laboratory (UL) as current-limiting devices. Our PoE solution is unrivaled: systems integration, UL certification, overall cost effectiveness, and simplicity make it the best value in the market.

ETHERNET PHYSICAL LAYER SOLUTIONS

10GBASE-T PRODUCT SELECTOR

Broadcom's 10GBASE-T family provides a wide selection of devices for customers implementing server connectivity and creating high-density switching platforms.

Server Platforms: Broadcom's dual-port PHYs offer both XAUI and XFI interfaces, as well as critical value-adding features such as the ability to support a line-side SerDes for dual-media applications. The IEEE1588v2 feature in the BCM84833 and BCM84836 offers one-step timestamp insertion, providing the highest level of timing accuracy for Precision Timing Protocol applications. These devices also implement Energy Efficient Ethernet™ (EEE), critical for maximizing power savings.

Switching Platforms: Broadcom's quad-port BCM84834 couples high density with the high performance required in the design of switching systems of up to 48 ports of 10GBASE-T. The robust XFI interface is well-suited for typical switching applications, with long trace lengths between the switch and the PHY. Similar to the duals, the BCM84834 offers 1588v2 and EEE.

10GBASE-T PHY	TARGET MARKET	MEDIA INTERFACE		MAC INTERFACE		PROCESS	FEATURES				
		Copper Ports	Combo Ports	XAUI™	XFI		IEEE 802.3az Energy Efficient Ethernet	IEEE 1588 V2	MACsec	Package	Power Rails
BCM84823B Dual	Servers	2	XAUI	✓	✓	65 nm				25 mm	3
BCM84833 Dual	Servers	2	XAUI	✓	✓	40 nm	✓	✓		25 mm	2
BCM84836 Dual	Servers	2	XFI		✓	40 nm	✓	✓		21 mm	2
BCM84834 Quad	Servers	4			✓	40 nm	✓	✓		27 mm	2

Broadest selection of 10GBASE-T PHY in the marketplace.

ETHERNET PHYSICAL LAYER SOLUTIONS

GIGABIT/FAST-ETHERNET PRODUCT SELECTOR

Design your networking equipment with Broadcom's proven Gigabit Ethernet transceiver technology. Broadcom's industry-leading 10/100/1000BASE-T Ethernet transceiver chips offer the lowest power, smallest footprint, proven interoperability and advanced features, making it easier and less expensive to build Gigabit Ethernet switches, routers, VoIP phones, networked printers, and broadband CPEs.

The Gigabit product families are based on our proven digital signal processor technology integrating digital adaptive equalizers, ADCs, phase-locked loops, line drivers, encoders, decoders, echo cancelers, crosstalk cancelers, and all other required support circuitry into a single device. With full compliance to the IEEE 802.3az Energy Efficient Ethernet standard, the E-series products (BCM546xxE/BCM548xxE/BCM5461xE) offer substantially lower power consumption during periods of low-link utilization. In addition, with our AutogrEEEn® technology, the PHYs can be in EEE mode when interfacing with non-EEE enabled MAC switches, allowing system designers to take advantage of EEE technology and realize additional power savings.

For applications that require precise and accurate synchronization of the nodes in a network, Broadcom's Gigabit PHYs include support for 1588 Precision Time Protocol (PTP) and are fully compliant with the IEEE 1588-2008 (version 2) standard. For the first time, the IEEE 1588 precision timing protocol (PTP) standard makes it possible to synchronize clocks of different end devices over a packet-based network to within one microsecond, with Ethernet as the chosen transport technology. Service provider backhaul networks, data center networks, and smart grid power control networks are all in need of these packet-based timing solutions.

SINGLE GIGABIT PHY	MEDIA INTERFACE			MAC INTERFACE				FEATURES							AVAILABILITY
	Copper Ports	Fiber Ports	SGMII Slave	GMII	SGMII	RGMII	MII	BroadR-Reach	Synch Ethernet	IEEE 1588v2	IEEE 802.3az Energy Efficient Ethernet	Power Rails	Package		
BCM54610	1	0	0	0	0	1	0					1.2V/3.3V	7 x 7 mm, 9 x 9 mm	48 MLP, 100 BGA	Production
BCM54616	1	0	0	1	0	0	1		✓			1.2V/3.3V	10 x 10 mm, 9 x 9 mm	68 MLP, 100 BGA	Production
BCM54616S	1	1	1	0	1	1	1		✓			1.2V/3.3V	9 x 9 mm	100 BGA	Production
BCM54810	1	0	0	1	0	1	1	✓	✓			1.2V/3.3V	7 x 7 mm, 9 x 9 mm	48 MLP, 100 BGA	Production
BCM54810S	1	1	1	0	1	1	1	✓	✓			1.2V/3.3V	9 x 9 mm	100 BGA	Production
BCM54612E	1	0	0	0	0	1	0		✓		✓	1.2V/3.3V	7 x 7 mm, 9 x 9 mm	48 MLP, 100 BGA	Production
BCM54614E	1	0	0	0	0	1	0		✓	✓	✓	1.2V/3.3V	10 x 10 mm	68 MLP	Production
BCM54618E	1	0	0	1	0	0	1		✓		✓	1.2V/3.3V	10 x 10 mm, 9 x 9 mm	68 MLP, 100 BGA	Production
BCM54619E	1	0	0	1	0	0	1		✓	✓	✓	1.2V/3.3V	10 x 10 mm	68 MLP	Production
BCM54618SE	1	1	1	0	1	1	1*		✓	✓	✓	1.2V/3.3V	9 x 9 mm	100 BGA	Production
BCM54811S	1	1	1	0	1	1	1*	✓	✓	✓		1.2V/3.3V	9 x 9 mm	100 BGA	Production

Most complete single-port PHY product family in the marketplace.

ETHERNET PHYSICAL LAYER SOLUTIONS

GIGABIT/FAST-ETHERNET PRODUCT SELECTOR

MULTIPORT GIGABIT PHY	MEDIA INTERFACE		MAC INTERFACE			FEATURES									AVAILABILITY
	Copper Ports	Fiber Ports	QSGMII	S3MII/SMII	SGMII	Sync Ethernet	IEEE 1588v2	IEEE 802.3az Energy Efficient Ethernet	BroadR-Reach	Prog Current LED	Thermal Monitor	Voltage Monitor	Power Rails	Package	
BCM54680	8	0	0	0	8	✓				✓	✓	✓	1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM54880	8	0	0	0	8	✓			✓	✓	✓	✓	1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM54684	8	2	2	0	0	✓				✓	✓		1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM54685	8	8	2	0	0	✓				✓	✓	✓	1.2V/3.3V	23 x 23 mm 484 BGA	Production
BCM54680E	8	0	0	0	8	✓		✓		✓	✓	✓	1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM54880E	8	0	0	0	8	✓	✓	✓		✓	✓	✓	1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM54640E	4	4	0	0	4	✓	✓	✓		✓	✓	✓	1.2V/3.3V	17 x 17 mm 256 BGA	Production
BCM54682E	8	2	2	0	0	✓	✓	✓		✓	✓	✓	1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM54685E	8	8	2	0	0	✓	✓	✓		✓	✓	✓	1.2V/3.3V	23 x 23 mm 484 BGA	Production
BCM54881	8	0	0	8	0	✓			✓	✓	✓	✓	1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM52681	8	0	0	8	0	✓				✓	✓	✓	1.2V/3.3V	21 x 21 mm 400 BGA	Production
BCM52681E	8	0	0	8	0	✓	✓	✓		✓	✓	✓	1.2V/3.3V	17 x 17 mm 256 BGA	Production

Most complete multiport PHY product family in the marketplace.

ETHERNET PHYSICAL LAYER SOLUTIONS

BroadR-Reach®/AUTOMOTIVE PRODUCT SELECTOR

As consumer demand for in-vehicle connectivity continues to grow, automotive manufacturers are under pressure to deliver competitive, innovative features while minimizing cost. Broadcom's BroadR-Reach automotive solutions allow multiple in-vehicle systems (such as infotainment and advanced driver assist system) to simultaneously access information over unshielded single twisted-pair cable. By eliminating cumbersome, shielded cabling, automotive manufacturers can significantly reduce connectivity costs and cabling weight.

The Broadcom automotive Ethernet product portfolio consists of five devices, including three highly integrated switches with embedded PHYs, and two stand-alone PHY solutions. Each device in the automotive portfolio is designed to meet in-car EMC requirements and extreme automotive temperature grades. Broadcom is TS16949-compliant, and all solutions are AEC-Q100 qualified.

BroadR-Reach	TARGET APPLICATION	Number of Ports	BroadR-Reach Integrated	Process	AEC-Q100 Qualified	PPAP Complete	FEATURES				
							Low-Power Modes	802.1AS/ IEEE 1588 v2	Auto EMC	Package	Auto Temperature
BCM89810 Auto PHY	In-car Network	Single	✓	65 nm	✓	✓	✓	✓	✓	48-pin MLP	Grade 1
BCM89610 Auto PHY	Onboard Diag.	Single	10/100/1000	65 nm	✓	✓	✓	✓	✓	48-pin MLP	Grade 1
BCM89500 Auto Switch	In-car Network	7-port switch	✓	65 nm	✓	✓	✓	✓	✓	176-pin eLQFP	Grade 2
BCM89501 Auto Switch	In-car Network	7-port switch	✓	65 nm	✓	✓	✓	✓	✓	176-pin eLQFP	Grade 2
BCM89200 Auto Switch	In-car Network	4-port switch	✓	65 nm	✓	✓	✓	✓	✓	176-pin eLQFP	Grade 2

All devices (with exception of the BCM89610) are compliant with OPEN Alliance specifications.

POWER OVER ETHERNET PRODUCT SELECTOR

All edge switches require Power over Ethernet (PoE). Broadcom has been offering PoE solutions since 2007 and continues to offer the most advanced solutions in terms of integration, heat dissipation, and flexibility. We integrate the FETs, the MCU, and the current-sense mechanism inside the IC. Additionally, the devices are certified by Underwriters Laboratory (UL) as current-limiting devices. Between integration and UL certification, our PoE solution implementation is unmatched in terms of overall cost and simplicity.

Our PoE product portfolio consists of three devices intended for Power Sourcing Equipment (PSE) applications. All three devices are 4-port solutions with integrated FETs and UL certification.

POWER OVER ETHERNET	TARGET APPLICATION	Number of Ports in IC	Number of Ports in Solution	Integrated FET/MCU/ Current Sense	Power Management Capability	Integrated 3.3V DCDC	FEATURES				
							60W-Capable	2-Event Classification	UL Certification	Package	Industrial Temperature
BCM59101 Quad PSE	4-port, 15W	4	96	✓	✓	✓			✓	52-pin QFN	✓
BCM59103 Quad PSE	4-port, 30W	4	96	✓	✓	✓	✓		✓	52-pin QFN	✓
BCM59111 Quad PSE	8 ports or more	4	96	✓	✓		✓	✓	✓	48-pin QFN	✓

INTRODUCTION

Broadcom's High-Speed Interconnect Products (HSIP) offer the broadest portfolio of products for the 10/40/100G front-panel and backplane Ethernet applications and 10/40/100G long-haul optical transport applications. These highly integrated products have best-in-class performance and consume low power while boasting industry-leading features.

10G/40G/100G Front-Panel PHYs: Broadcom offers the industry's most comprehensive portfolio of 10G/40G/100G Front Panel PHYs. Our proven Electronic Dispersion Compensation (EDC)-based 10G Front-Panel PHYs support SFP+ SR/LR/LRM/ZR/CX1 while our EDC-based 40G Front-Panel PHYs support QSFP+ SR4/LR4/CR4. We also offer higher-layer functions such as MACSec, 1588, FCoE, and WAN. The 10G/40G PHYs are available in Dual/Quad/Octal-port count configurations that support XAUI/XFI/RXAUI host interfaces.

Broadcom's 100G Gearbox PHYs are specifically designed to meet the needs of the CFP module market. Devices in this product line are designed for IEEE 802.3ba (100G Ethernet) compliance as well as the CFP Multisource Agreement (MSA). Interoperability with upstream components on the line card is ensured via compliance to 100G Attachment Unit Interface (CAUI) bus, as specified in IEEE 802.3ba Annexes 83A and 83B. Broadcom provides data rate options for both at 100G Ethernet and OTU4.4 rates (25.78 Gbps and 27.95 Gbps, respectively). These devices achieve the highest performance at the lowest possible power consumption rates thanks to 40 nm CMOS technology fabrication.

10G/40G Backplane PHYs: Broadcom's 10G/40G Backplane PHY devices incorporate sophisticated, high-speed digital signal processor DSP-based receiver equalizers. The high-performance architecture exceeds the performance requirements of the IEEE 802.3ap and IEEE 802.3ba specifications and can extend the life of legacy systems by operating at 10G serial over backplanes designed for lower serial data rates (such as 1G or 2.5G). Our Backplane PHYs all come equipped with auto-negotiation capability per IEEE 802.3 Clause 73. The family of devices comes with various port count (such as Dual/Quad/Octal) and host interface configurations (such as XAUI/XFI). Our Backplane PHY devices offer the best interoperability (IOP) performance and lowest power.

Optical Transport/CDR/Retimer: Broadcom's Optical Transport Product line consists of a family of high-performance 10G/40G/100 Gbps CMOS CDR/MUX/DEMUX/Transceiver devices for optical module applications and a family of Optical Transport Network/Forward Error Correction (OTN/FEC) Framer/Processor devices for Ethernet/Packets/TDM-over-OTN line-card applications. Both device families leverage our most advanced mixed-signal technology, enabling high-performance, low-power, and high-density solutions for module and system vendors. This enables service providers to efficiently deliver data and voice traffic over existing fiber networks. Our CDR/MUX/DEMUX/Transceiver devices feature advanced analog and DSP-based architecture which consistently delivers the highest performance and lowest power possible at each CMOS process node. We leverage high-performance, high-speed I/O technology to allow OTN/FEC Framer/Processor devices to deliver unprecedented integration of mixed signal and various protocol/FEC processing functions.

10G/40G/100G FRONT-PANEL PRODUCT SELECTOR

FRONT PANEL	NUMBER OF 10GbE PORTS	IEEE PMD	HOST INTERFACE	SFP+		SFP+ OPTICAL		SFP+ COPPER	PACKAGE				MACsec	FCoE	1588	WIS	Backward Pin Compatible	Power/10GBE PORT	PROCESS	SAMPLES	
	Single, Dual, Quad, Octal	PHY Type	XAUI or XFI	RX Equalization	TX: Preemphasis	Limiting (SR, LR)	Linear (LRM)	SFP+ Twin-ax Copper Compliance	13 x 13 mm BGA, 1.0 mm	17 x 17 mm BGA, 1.0 mm	19 x 19 mm BGA, 1.0 mm	21 x 21 mm BGA, 1.0 mm							CMOS	Availability	Production
BCM84753	4	LAN/FC	Super XFI	Adaptive DFE/FFE	✓	✓		✓		✓							BCM8753	0.8W	40 nm	Now	Now
BCM84754	4	10GbE LAN	Super XFI	Adaptive DFE/FFE	✓	✓	✓	✓		✓							BCM8754	0.8W	40 nm	Now	Now
BCM84740	4	40GbE	XLAUI	Adaptive DFE/FFE	✓	SR4/LR4		CR4		✓								0.8W	40 nm	Now	Now
BCM84756	4	10GbE LAN	Super XFI	Adaptive DFE/FFE	✓	✓	✓	✓		✓			✓		✓		BCM84754	1.0W	40 nm	Now	Now
BCM84757	4	10GbE LAN	Super XFI	Adaptive DFE/FFE	✓	✓	✓	✓		✓				✓	✓		BCM84754	1.0W	40 nm	Now	Now
BCM84758	4	10GbE LAN	Super XFI	Adaptive DFE/FFE	✓	✓	✓	✓		✓					✓		BCM84754	0.5W	40 nm	Now	Now
BCM84752	2	10GbE LAN	Super XFI	Adaptive DFE/FFE	✓	✓	✓	✓	✓								BCM8752	0.7W	40 nm	Now	Now
BCM84741	4	40GbE	XLAUI	Adaptive DFE/FFE	✓	SR4/LR4		CR4		✓			✓				BCM84740	1.0W	40 nm	Now	Now
BCM84780	8	10GbE LAN	Super XFI	Adaptive DFE/FFE	✓	✓	✓	✓				✓			✓			0.5W	40 nm	Now	Now
BCM84784	8	40GbE	XLAUI	Adaptive DFE/FFE	✓	SR4/LR4		CR4				✓						0.5W	40 nm	Now	Now
BCM84328	8	10GbE LAN/40GbE	Super XFI/XLAUI	Adaptive DFE/FFE	✓	SR/LR/SR4/LR4		CR/CR4		✓	✓							0.3W	40 nm	Now	Now
BCM84324	4	10GbE LAN/40GbE	Super XFI/XLAUI	Adaptive DFE/FFE	✓	SR/LR/SR4/LR4		CR/CR4	✓									0.3W	40 nm	Now	Q2-13
BCM84728	2	10GbE LAN/WAN	XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓							✓	✓	BCM8728	1.0W	40 nm	Now	Now
BCM84748	4	10GbE LAN/WAN	XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓				✓			✓	✓	BCM8747	1.0W	40 nm	Now	Now
BCM84764	4	10GbE LAN	RXAUI	Adaptive DFE/FFE	✓	✓	✓	✓		✓					✓			0.8W	40 nm	Now	Now
BCM84727	2	10GbE LAN	XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓			✓				✓		BCM8728	0.8W	40 nm	Now	Now
BCM84747	4	10GbE LAN	XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓				✓			✓		BCM8747	0.8W	40 nm	Now	Now
BCM84729	2	10GbE LAN	XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓			✓		✓		✓		BCM8728	0.8W	40 nm	Now	Now
BCM84749	4	10GbE LAN	XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓				✓	✓		✓		BCM8747	0.8W	40 nm	Now	Now
BCM84790	1x100GbE	100GbE	CAUI	Adaptive DFE/FFE	✓	10GBASE-LR 4/ER4				✓								2.5W	40 nm	Now	Now
BCM84793	1x100GbE	100GbE	CAUI	Adaptive DFE/FFE	✓	10GBASE-LR 4/ER4 10GBASE-SR 10/LR10					✓							3.0W	40 nm	Now	Now

10G/40G BACKPLANE PRODUCT SELECTOR

BACKPLANE	NUMBER OF 10GbE PORTS	IEEE PMD	HOST INTERFACE	10G-KR				40GBASE-KR	PACKAGE				Backward Pin Compatible	Power/10GbE Port	PROCESS	SAMPLES	
	Single, Dual, Quad, Octal	PHY Type	XAUI or XFI	RX Equalization	TX: Preemphasis	Transmit Training (CL72)	Auto-negotiation (CL73)		13 x 13 mm BGA, 1.0 mm	17 x 17 mm BGA, 1.0 mm	19 x 19 mm BGA, 1.0 mm	21 x 21 mm BGA, 1.0 mm			CMOS	Availability	Production
BCM84073	2	10GBASE-KR	XAUI	Adaptive DFE/FFE	✓	✓	✓				✓		BCM8073	0.8W	40 nm	Now	Q2-13
BCM84074	4	10GBASE-KR	XAUI	Adaptive DFE/FFE	✓	✓	✓					✓	BCM8074	0.8W	40 nm	Now	Now
BCM84064	4	10GBASE-KR	XAUI/ XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓		✓				0.7W	40 nm	Now	Now
BCM84164	4	10GBASE-KR	XAUI/ XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓		✓			BCM841064	0.5W	40 nm	Now	Q2-13
BCM84168	8	10GBASE-KR	XAUI/ XLAUI	Adaptive DFE/FFE	✓	✓	✓	✓				✓		0.5W	40 nm	Now	Q2-13
BCM84024	4	10GBASE-KR	XAUI/ XLAUI	Adaptive DFE/FFE	✓				✓					0.3W	40 nm	Q2-13	Q2-13
BCM84088	8	10GBASE-KR	XAUI/ XLAUI	Adaptive DFE/FFE	✓					✓				0.3W	40 nm	Q2-13	Q2-13

OPTICAL TRANSPORT PRODUCT SELECTOR

OPTICAL TRANSPORT	MUX/DEMUX		MODULATION			HOST I/F			DATA RATE (Gbps)			PACKAGE				PROCESS	SAMPLES	
	Mux	Demux	DQPSK	DPSK	DP-QPSK/DP-DQPSK	OIF SFI5.1	OIF SFI5.2	OIF SFI-S	43G ~ 45.6G	39.8G ~ 44.6G	111.6G ~ 128.4G	14 x 14 mm BGA, 0.8 mm	14 x 14 mm BGA, 0.65 mm	Backward Pin Compatible	Power	CMOS	Availability	Production
BCM84141		✓	✓			✓			✓			✓			1W	40 nm	Now	Now
BCM84142	✓		✓			✓			✓			✓			1W	40 nm	Now	Now
BCM84151		✓	✓			✓			✓			✓		BCM84141	1W	40 nm	Now	Now
BCM84152	✓		✓			✓			✓			✓		BCM84142	1W	40 nm	Now	Now
BCM84145		✓		✓			✓			✓			✓		1.2W	40 nm	Now	Now
BCM84146	✓			✓			✓			✓			✓		1.2W	40 nm	Now	Now
BCM84147		✓		✓		✓				✓			✓	BCM84145	0.8W	40 nm	Now	Q2-13
BCM84148	✓			✓		✓				✓			✓	BCM84146	0.8W	40 nm	Now	Q2-13
BCM84128	✓				✓	✓		✓			✓	✓			2.3W	40 nm	Q2-13	Q2-13

CDR/RETIMER PRODUCT SELECTOR

CDR/RETIMER	NUMBER OF UNIDIRECTIONAL CHANNELS	DIRECTIONAL		Reference-Less	Electronic Dispersion Compensation (EDC)	SPEED (Gbps)			PACKAGE						Backward Pin Compatible	Power/Unidirectional Channel	PROCESS	SAMPLES	
	Single, Dual, Quad, Octal	Bidirectional	Unidirectional			8.5G ~ 11.4G	9.9G ~ 11.4G	10.3125G Only	5 x 5 mm BGA, 0.8 mm	6 x 6 mm BGA, 0.8 mm	8 x 8 mm BGA, 0.8 mm	14 x 14 mm BGA, 1.0 mm	17 x 17 mm BGA, 1.0 mm	21 x 21 mm BGA, 1.0 mm			CMOS	Availability	Production
BCM8302	2		✓			✓			✓	✓						0.12W	65 nm	Now	Now
BCM8304	4		✓			✓					✓					0.12W	65 nm	Now	Now
BCM8305	4		✓					✓			✓					0.12W	65 nm	Now	Now
BCM8322	2		✓	✓					✓	✓					BCM8302	0.12W	65 nm	Now	Now
BCM8324	4		✓	✓		✓					✓				BCM8304	0.12W	65 nm	Now	Now
BCM8325	4		✓	✓		✓		✓			✓				BCM8305	0.12W	65 nm	Now	Now
BCM84322	4		✓				✓				✓					0.15W	40 nm	Now	Now
BCM84315	4		✓		✓		✓					✓				0.35W	40 nm	Now	Q2-13
BCM84314	8	✓			✓		✓						✓			0.35W	40 nm	Now	Q2-13
BCM84318	16	✓			✓		✓							✓	BCM84780	0.35W	40 nm	Now	Now

INTRODUCTION

Achieve the highest level of performance and integration in your next-generation network switch architecture with Broadcom's multiple families of switches ranging from 100 Mbps to 100 Gbps and multi-terabit fabrics. Our data center and service provider Ethernet switches offer GbE/10GbE/40GbE/100GbE capability and expansion of L2/L3/ACL with a single external KBP device. Our devices deliver a wide array of features at line-rate performance, including the latest tunnel protocols, hierarchical quality of service (QoS), traffic shaping, network OAM plus time synchronization, and protection switching. For enterprise-data center convergence, the BCM56640 and BCM88650 support data center bridging, L2 multipathing, virtual machine switching, traffic visualization, and application-based QoS. Broadcom also offers a full suite of leading-edge software solutions for switch families that addresses a wide array of products for home and small business, data center, enterprise, and service provider networks.

SMB Switches: Home and small-to-medium-sized business (SMB) networks need equipment that is cost-effective and simple to manage, with the right feature set. Broadcom home and SMB switch products range from 5-port up to 48-port and cover the managed, websmart, and unmanaged switch segments. Our products are easy to use and manage with our FASTPATH® software. Broadcom home and SMB switch chips consume less power and provide automatic power management features for Green networking.

StrataConnect™ Switches: Broadcom combines Layer 2 and Layer 3 (L2/L3) light switching, 16 integrated GbE physical layer transceivers (PHYs), 10GbE uplinks, and a high-performance central processing unit (CPU) onto a single piece of silicon delivering enterprise-class features to the SMB network.

The new StrataConnect series includes advanced features for tighter security and application-based prioritization. The integrated CPU can scale processing power as necessary and includes added intelligence to enable cloud-based network management. In addition, advanced power management features deliver power savings that go beyond Energy Efficient Ethernet (EEE) to reduce energy costs.

StrataConnect Breakthrough Integration & Advanced Features

- Scalable table sizes and advanced security features support increasing numbers of VoIP and wireless deployments.
- High-performance integrated ARM-based CPU scales with cloud-based applications/network management.
- Integrated 10GbE ports for connecting to high-speed servers and for high-bandwidth applications deployed in SMB networks.
- Advanced power saving techniques such as burst and batch control policy and LED intensity controls achieve savings beyond targets set by IEEE.

INTRODUCTION (Cont.)

StrataGX™: The StrataGX family comprises Broadcom's high-performance, single- and dual-core, ARM® Cortex-A9-based, highly integrated communications processor SoC solutions. The StrataGX BCM5301x family of products is capable of processing three-stream multiple input/multiple output (MIMO) dual-band concurrent Wi-Fi traffic including 5G Wi-Fi (IEEE 802.11ac) plus IEEE 802.11n. The BCM5301x family provides Network Address Translation and packet transfers from WAN to LAN at line-rate speeds (2 Gbps) with a hardware flow accelerator that completely offloads known flows from the ARM Cortex-A9.

The integration of a full-featured Layer 2 switch into the StrataGX family of products enables line-rate switching without any intervention by the processor. The inclusion of EEE Gigabit Ethernet PHYs eliminates the need for external 10/100/1000 Ethernet-active components for most designs. Other features, such as on-chip generation of required supply voltages (including those for the external DDR SRAM memories and the internal processing core) and the integration of several high-speed SerDes-based peripherals (such as PCIe and USB 3.0), reduce the total system BOM cost. These connectivity functions, combined with powerful ARM® Cortex-A9-based processors, lead to a single-chip processing and switching solution for wide range of wired and wireless applications including consumer wireless routers, enterprise wireless access points, consumer network attached storage, WLAN routers, and SMB-integrated services routers.

StrataXGS® Switches: The StrataXGS switch families are deployed in service provider, enterprise, and data center networks. In service provider applications, the switches meet requirements from the LTE edge to the provider core. Here, the advanced MPLS-TP OAM and synchronization, plus large IPv6 forwarding capacity, are common requirements. In enterprise applications, StrataXGS switches meet wiring closet needs in small to large enterprises as well as aggregation needs in campus-scale deployments. Support for WLAN, packet inspection, fast stacking, and integration of PHYs and CPUs are important in these applications.

For data center networks, StrataXGS switches support bandwidths in excess of 1 Tbps, with advanced multipath forwarding support for high network performance without hotspots, as well as tunneling for layer 2 adjacency across remote sites. Overall, StrataXGS enables consistent network behavior from edge to core, with its unified feature set and common software spanning a wide selection of capacities and bandwidths.

XGS Core® Network Processors: The XGS Core Network Processor family supports fully programmable packet processing from 10 Gbps to 200 Gbps throughput, ensuring that the most demanding applications can be supported. The XGS Core family of NPUs delivers extremely high performance by utilizing an array of 64 purpose-built processing engines, as well as large-scale hardware acceleration of key functions such as packet parsing, Exact Match, and Longest Prefix Match (LPM) classification and lookups. Our deterministic architecture ensures line-rate processing for those flows that demand this level of performance. The latest, fourth-generation product line integrates GbE, 10GbE, 40GbE, and 100GbE network interfaces to enable high density routing and switching products.

DNX Switches and Fabrics: DNX devices are Broadcom's most dense 100GbE switching solutions, enabling the scaling of switching platforms to comprise up to 4,000 100GbE ports. These devices are capable of processing a single stream of 200 Gbps traffic, supporting two 100-Gigabit full-duplex ports at Layer 2 through Layer 4, with integrated deep-buffer traffic management capabilities and a fabric interface. The integration of GbE, 10GbE, 40GbE, and 100GbE network interfaces eliminates the need for additional components and enables dense systems when using several DNX devices on a line card.

SMB FAST ETHERNET SWITCH PRODUCT SELECTOR

SMB FE SWITCHES	Description	FE	GbE	2.5G	Integrated PHYs	U/S/M	Integrated CPU	CPU Interfaces (MII, etc.)	Packet Buffer	# of MAC Addresses	# of VLAN Addresses	# of QoS Queues/Ports	Package Type	Package Size	Package Size
BCM53101E	5-port 10/100 Switch with integrated PHY	5			5	M		MII	64 KB	2k	4k	4	DRQFN	132-pin	400-pin
BCM53202	8-port FE Switch with integrated PHY	8	2		8	M		MII	384 KB	8k	4k	4	PBGA	400-pin	400-pin
BCM53282	Managed 8-port FE Switch with integrated PHY	8	2		8	M		MII	1.5 MB	16k	4k	8	PBGA	400-pin	400-pin
BCM53212	16-port FE Switch with integrated PHY	16	2		16	M		MII	384 KB	4k	4k	4	PBGA	400-pin	676-pin
BCM53283	Managed 16-port FE Switch with integrated PHY	16	2		16	M		MII	1.5 MB	16k	4k	8	PBGA	400-pin	676-pin
BCM5324	Managed 24-port FE Switch with integrated PHY	24	2		24	M/S		MII	256 KB	8k	4k	4	PBGA	400-pin	676-pin
BCM53242	24FE(w PHY) + 2GbE(GMII/RGMII) with integrated PHY	24	2		24	M/S		MII	384 KB	8k	4k	4	PBGA	400-pin	676-pin
BCM53284	Managed 24-port FE Switch with integrated PHY	24	2		24	M		MII	1.5 MB	16k	4k	8	PBGA	400-pin	676-pin
BCM53262	24-port FE Switch with 4GbE with integrated PHY	24	4		24	M/S		MII	384 KB	8k	4k	4	PBGA	676-pin	324-pin
BCM53288	Managed 24-port FE Switch with 2.5GbE with integrated PHY	24	2	1	24	M		MII	1.5 MB	16k	4k	8	PBGA	676-pin	324-pin
BCM53286	Managed 24-port FE Switch with 4GbE with integrated PHY	24	4		24	M		MII	1.5 MB	16k	4k	8	PBGA	676-pin	256-pin
BCM5348	48-port Managed FE Switch with integrated PHY	48	4		24	M/S		MII	4 MB	8k	4k	4	FBPGA	676-pin	457-pin

SMB GIGABIT ETHERNET SWITCH PRODUCT SELECTOR

SMB GbE SWITCHES	Description	FE	GbE	2.5G	Integrated PHYs	U/S/M	Integrated CPU	CPU Interfaces (MII, etc.)	Packet Buffer	# of MAC Addresses	# of VLAN Addresses	# of QoS Queues/Port	Package Type	Package Size
BCM53125	7-port GbE EEE switch with integrated PHY		7		5	U/M/S	8051	RGMII/GMII/MII	128 KB	4k	4k	4	MML	186-pin
BCM5389	8-port Switch SGMII		8		SerDes	M		RGMII/GMII	128 KB	4k	4k	4	FBGA	256-pin
BCM53312	8-port Gig Smart with integrated PHY/CPU		8		8	S	Y	PCI	512 KB	8k	4k	4	PBGA	676-pin
BCM53322	8-port Gig Smart with integrated EEE PHY/CPU		8		8	S	Y	PCI	512 KB	8k	4k	4	PBGA	676-pin
BCM53118	8-port Gigabit Ethernet Switch with integrated PHY/CPU		9		8	U	8051	RGMII/GMII	192 KB	4k	4k	4	eLQFP	256-pin
BCM53128	8-port Gigabit Ethernet Switch with integrated EEE PHY/CPU		9		8	U/S	8051	RGMII/GMII	192 KB	4k	4k	6	eLQFP	256-pin
BCM5396	16-port Switch SGMII		16		SerDes	M		RGMII/GMII	256 KB	4k	4k	4	FBGA	256-pin
BCM53313	16-port Gig Smart with integrated PHY/CPU		16		8	U/S	Y	PCI	512 KB	8k	4k	4	PBGA	676-pin
BCM53323	16-port Gig Smart with integrated EEE PHY/CPU		16		8	U/S	Y	PCI	512 KB	8k	4k	4	PBGA	676-pin
BCM53716	16-port Gig SGMII switch with integrated CPU, 90 nm		16		SerDes	M	Y	MII	512 KB	8k	4k	4	FCBGA	1152-pin
BCM53726	16-port Gig SGMII switch with integrated CPU, 65 nm		16		SerDes	M	Y	MII	512 KB	8k	4k	4	FCBGA	1152-pin
BCM53314	24-port Gig Smart with integrated PHY/CPU		24		8	U/S	Y	PCI	512 KB	8k	4k	4	PBGA	676-pin
BCM53324	24-port Gig Smart with integrated EEE PHY/CPU		24		8	U/S	Y	PCI	512 KB	8k	4k	4	PBGA	676-pin
BCM53714	24-port Gig SGMII switch with integrated CPU, 90 nm		24		SerDes	M	Y	MII	512 KB	8k	4k	4	FCBGA	1152-pin
BCM53724	24-port Gig SGMII switch with integrated CPU, 65 nm		24		SerDes	M	Y	MII	512 KB	8k	4k	4	FCBGA	1152-pin
BCM53718	48-port Gig SGMII switch with integrated CPU, 90 nm		48		SerDes	M	Y	MII	512 KB	8k	4k	4	FCBGA	1292-pin

StrataConnect™ SWITCH PRODUCT SELECTOR

	StrataConnect SWITCHES	Description	QSGMII	Cascade Option	SerDes	# of Integrated PHYs	Integrated CPU	CPU DMIPS	CPU DRAM Type	PCIe	Packet Buffer	# of MAC Addresses	# of VLANS	IFP Rules/Slices	# of Queues/Ports	FCBGA Package	Package Size
WEBSMART	BCM53346	24-port GbE Switch 4x10GbE or 2x10GbE + 2xHiGig™	2	✓	4x10G	16	Single, ARM A9	1000 @400 MHz	DDR2/3	✓	1.5 MB	16k	4k	1k/8	8	1006-pin	29 x 29 mm
	BCM53344	24-port GbE Switch 4xGbE or 2xGbE + 2xHiGig	2	✓	4x1G	16	Single, ARM A9	1000 @400 MHz	DDR2/3	✓	1.5 MB	16k	4k	1k/8	8	1006-pin	29 x 29 mm
	BCM53343	16-port GbE Switch 4xGbE			4x1G	16	Single, ARM A9	1000 @400 MHz	DDR2/3	✓	1.5 MB	16k	4k	1k/8	8	1006-pin	29 x 29 mm
	BCM53342	8-port GbE Switch				8	Single, ARM A9	1000 @400 MHz	DDR2/3	✓	1.5 MB	16k	4k	1k/8	8	1006-pin	29 x 29 mm
UNMANAGED/ CPE	BCM53334	24-port GbE Switch	2			16	Single, ARM A9	312 @125 MHz			512 KB	8k	4k	512/4	8	648-pin	23 x 23 mm
	BCM53333	16-port GbE Switch				16	Single, ARM A9	312 @125 MHz			512 KB	8k	4k	512/4	8	648-pin	23 x 23 mm
EMBEDDED	BCM53393	14-port SerDes/SGMII Switch			14x1G		Single, ARM A9	1000 @400 MHz	DDR2/3	✓	1.5 MB	16k	4k	1k/8	8	1006-pin	29 x 29 mm
	BCM53394	10-port SerDes/SGMII Switch + 4x10G			10x1G 4x10G		Single, ARM A9	1000 @400 MHz	DDR2/3	✓	1.5 MB	16k	4k	1k/8	8	1006-pin	29 x 29 mm

StrataGX™ SoC PRODUCT SELECTOR

StrataGX SWITCHES	Package	ARM Core	Number of Cores	NEON/ VFP	CPU Speed per Core	L1 I/D Cache	L2 Shared Cache	Integrated 5-port Switch	Integrated PHY	Accelerator	RGMII/MII-Lite	External Memory i/f	Flash Support	PCIe™ 2.0	USB 3.0	USB2 .0	Audio Interface	BSC	UART	GPIO	MDIO	SPI	PWM	SDIO3
BCM53010	15 x 15 FCBGA	Cortex-A9	1		800 MHz	32k/32k	256k	8-port 10/100/1000	5 10/100/1000	Flow Accelerator for NAPT		800 MT/s DDR2-800 1x16-bit device, max size 1 Gb	Serial, dual, quad	2 ports 1 lane each		Host with HS, FS, LS		✓	2	16	✓	✓	✓	✓
BCM53011	15 x 15 FCBGA	Cortex-A9	2		800 MHz	32k/32k	256k	8-port 10/100/1000	5 10/100/1000	Flow Accelerator for NAPT		800 MT/s DDR2/ DDR3-1066 1x16-bit device, max size 4 Gb 2x8-bit device, max size 4 Gb	Serial, dual, quad, ONFI	2 independent 1x ports and 1 shared port with USB3	✓	Host with HS, FS, LS		✓	2	16	✓	✓	✓	✓
BCM53012	17 x 17 FCBGA	Cortex-A9	2		1000 MHz	32k/32k	256k	8-port 10/100/1000	5 10/100/1000	Flow Accelerator for NAPT	1	1333/1600 MT/s DDR3-1333/1600 1x16-bit device, max size 4 Gb 2x8-bit device, max size 8 Gb	Serial, dual, quad, ONF	2 independent 1x ports and 1 shared port with USB3	✓	Host with HS, FS, LS	TDM, I²S, S/ PDIF	✓	3	24	✓	✓	✓	✓
BCM53014	15 x 15 FCBGA	Cortex-A9	1		800 MHz	32k/32k	256k	5-port 10/100/1000	2 10/100/1000	Flow Accelerator for NAPT		800 MT/s DDR2-800 1x16-bit device, max size 1 Gb	Serial, dual, quad	2 ports 1 lane each		Host with HS, FS, LS		✓	2	16	✓	✓	✓	✓
BCM53015	15 x 15 FCBGA	Cortex-A9	2		800 MHz	32k/32k	256k	5-port 10/100/1000	2 10/100/1000	Flow Accelerator for NAPT		800 MT/s DDR2/ DDR3-1066 1x16-bit device, max size 4 Gb 2x8-bit device, max size 4 Gb	Serial, dual, quad, ONF	2 independent 1x ports and 1 shared port with USB3	✓	Host with HS, FS, LS		✓	2	16	✓	✓	✓	✓
BCM53016	17 x 17 FCBGA	Cortex-A9	2		1000 MHz	32k/32k	256k	5-port 10/100/1000	2 10/100/1000	Flow Accelerator for NAPT	1	1333/1600 MT/s DDR3-1333/1600 1x16-bit device, max size 4 Gb 2x8-bit device, max size 8 Gb	Serial, dual, quad, ONF	2 independent 1x ports and 1 shared port with USB3	✓	Host with HS, FS, LS	TDM, I²S, S/ PDIF	✓	3	24	✓	✓	✓	✓
BCM53017	17 x 17 FCBGA	Cortex-A9	2	✓	1000 MHz	32k/32k	512k w/ ECC	5-port 10/100/1000	2 10/100/1000	Flow Accelerator for NAPT	1	11333/1600 MT/s DDR3-1333/1600 1x16-bit device, max size 4 Gb 2x8-bit device, max size 8 Gb	Serial, dual, quad, ONF	2 independent 1x ports and 1 shared port with USB3	✓	Host with HS, FS, LS	TDM, I²S, S/ PDIF	✓	3	24	✓	✓	✓	✓
BCM53018	17 x 17 FCBGA	Cortex-A9	2	✓	1000 MHz	32k/32k	512k w/ ECC	8-port 10/100/1000	5 10/100/1000	Flow Accelerator for NAPT	1	1333/1600 MT/s DDR3-1333/1600 1x16-bit device, max size 4 Gb 2x8-bit device, max size 8 Gb	Serial, dual, quad, ONF	2 independent 1x ports and 1 shared port with USB3	✓	Host with HS, FS, LS	TDM, I²S, S/ PDIF	✓	3	24	✓	✓	✓	✓

StrataXGS® SWITCH PRODUCT SELECTOR

StrataXGS SWITCHES	Highest Density	HiGig/100GbE	HiGig/40GbE	10GbE	GbE	Segment	Expansion TCAM	802.1Qbh Bridge Port Extender	External Memory	Integrated CPU	Traffic Management Level	Deep Packet Inspection	Jumbo	1588	EEE	MAC-in-MAC PBB	MPLS	MPLS-TP & OAM	Size
BCM56850	104x10GbE/32x40GbE		32	104	104	High Capacity		✓			3		12k	✓	✓	✓	✓		50 x 50 mm
BCM56840	64x10GbE/16x40GbE		16	64	64	High Capacity					3		12k	✓	✓	✓	✓		50 x 50 mm
BCM56750	32xHG[42]		32	1	4	High Capacity					3		12k		✓	✓	✓		50 x 50 mm
BCM56740	16xHG[42]		16		4	High Capacity					3		12k		✓	✓	✓		50 x 50 mm
BCM56640	24x10GbE	2	6	16	48	Premium Carrier	✓	✓			3	✓	12k	✓	✓	✓	✓	✓	45 x 45 mm
BCM56547	48GbE + 4x10GbE + 2xHG[42]		2	12	48	Premium Enterprise		✓		✓	3	✓	12k	✓	✓	✓	✓	✓	45 x 45 mm
BCM56540	48GbE+4x10GbE+2xHG[42]		2	12	48	Premium Carrier		✓			3	✓	12k	✓	✓	✓	✓	✓	45 x 45 mm
BCM56445	24GbE+4x10GbE			4	24	Premium Carrier					4		12k	✓	✓	✓	✓	✓	35 x 35 mm
BCM56440	24GbE+4x10GbE			4	24	Premium Carrier			192 MB		4		12k	✓	✓	✓	✓	✓	37.5 x 37.5 mm
BCM56340	48GbE + 4x10GbE + 2xHG[21]			12	48	Premium Enterprise		✓		✓	3	✓	12k	✓	✓	✓			45 x 45 mm
BCM56240	10GbE+2x10GbE			2	10	Premium Carrier			192 MB		4		12k	✓	✓	✓	✓	✓	37.5 x 37.5 mm
BCM56150	24GbE+4x10GbE			4	24	Value				✓	1		12k		✓				29 x 29 mm
BCM56140	24GbE+4x10GbE			4	24	Value					1		12k						21 x 21 mm

XGS® CORE SWITCH PRODUCT SELECTOR

XGS CORE SWITCHES	Process	Processor Cores	Core Frequency	Packets per Second	Bandwidth	INTERFACES					SerDes	External Memory	Expansion KBP
						GbE	10GbE	40GbE	100GbE	Interlaken			
BCM88025	65 nm	48	375 MHz	72M	40G	24	4				6.56G	SDRAM	
BCM88032	40 nm	64	Up to 1 GHz	75M	50G	48	24	2		2	Up to 12.5G	DDR3 DRAM	✓
BCM88034	40 nm	64	Up to 1 GHz	150M	100G	48	24	6	2	2	Up to 12.5G	DDR3 DRAM	✓
BCM88038	40 nm	64	Up to 1 GHz	300M	200G	48	24	6	2	2	Up to 12.5G	DDR3 DRAM	✓

INTRODUCTION

XLP Processor Family: Broadcom's 2nd generation architectural enhancement to the industry-leading multicore, multithreaded technology. XLP is enhanced to provide superior control plane CPU processing and data path processing up to 40G. XLP processors are fabricated using 40 nm technology and are offered in devices up to 8 cores/32 threads and at core frequencies up to 1.6 GHz. The XLP processor is ideally suited to both data-plane applications, which are inherently sensitive to memory latencies, and control-plane applications, which require best-in-class processing performance. XLP processors are available in various pin-compatible versions and are suitable across a wide range of networking, security, wireless, and storage platforms.

Key XLP Features:

- Superscalar, quad-issue cores with out-of-order execution with 4-way simultaneous multithreading support (SMT)
- MIPS®-compliant floating point unit per core
- Tri-level cache subsystem
- 40 Gbps Autonomous Network Acceleration Engine® supporting Interlaken, XAUI™/RXAUI and SGMII interfaces
- Packet Ordering Engine used for maintaining packet distribution and resequencing to maintain per flow packet ordering
- Up to 40 Gbps Autonomous Security Acceleration Engine®
- Up to 40k RSA exchanges per second
- Up to 10 Gbps of Compression acceleration
- Hardware-based Regular Expression Engine to offload Deep Packet Inspection (DPI) tasks
- RAID-5/RAID-6 acceleration
- Interlaken-LA interface for connection to a KBP
- ICI interface to seamless scale up to a 4-chip configuration
- IEEE 1588™ hardware timestamping

XLP800/400 Series: A high-end offering with support for 16 to 32 nxCPUs, an 8 MB L3 cache, and 4 DDR3 memory controllers in a 47.5 x 47.5 mm package. For applications that require very high levels of performance, XLP800 series processors can be configured in multichip configuration using the Interchip Coherency Interface (ICI).

Three ICI interfaces seamlessly interconnect up to four XLP832 processors. Each interface has 80 Gbps of full-duplex bandwidth. These interfaces are fully software transparent. Hardware manages the chip-to-chip coherency message passing between threads, as well as the sharing of memory and I/O resources.

XLP300/300-Lite Series: A midrange offering with support for 4 to 16 nxCPUs, a 4 MB L3 cache, and two DDR3 memory controllers. The 300 series is offered in a 40 x 40 mm package, while the 300-lite series is offered in a small form factor 31 x 31 mm package.

These processors offer an expanded system interface including USB 2.0, PCIe Gen 2, SATA, and SRIO. These processors also support a Regular Expression (RegEx) engine to offload Deep Packet Inspection (DPI) tasks. The DPI engine utilizes an advanced superscalar architecture with deep pipelining that is optimized for high-performance content processing supporting both string-based recognition and Perl-Compatible Regular Expression (PCRE) processing.

XLS Processor Family: Mid- to entry-level processors, leveraging the XLR's performance, scalability, and technology innovations while incorporating additional advanced connectivity standards. The XLS processor family is targeted towards applications that demand smaller form factors and lower power consumption, while maintaining software compatibility.

MULTICORE PROCESSOR SOLUTIONS

XLP®800/400 SERIES PRODUCT SELECTOR

XLP800/400	Process	Core	Core Count/nxCPUs	Core Frequency	CACHE				HARDWARE ACCELERATION ENGINES				Memory	NETWORK INTERFACES			SYSTEM INTERFACES			ICI (Interchip Interconnect)	Package
					L1-I (per CPU Core)	L1-D (per CPU Core)	L2 (per CPU Core)	L3 (Shared)	Security Acceleration Engine	RSA Acceleration Engine	Compression Engine	RAID Acceleration		10/100/1000 MB Ethernet Ports	10 Gbps XAUI Ports	Interlaken x8/x6	USB 2.0	PCIe Gen2	Interlaken-LA (KBP)		
XLP832	40 nm	EC4400 MIPS64 R2	8/32	800 MHz - 1.6 GHz	64 KB	32 KB	512 KB	8 MB	40 Gbps	40 K/s	10 Gbps	RAID 5/6	4 x40b, 4 x72b, DDR3, 1066/1333/1600 MT/s	Up to 18 SGMII ports	Up to 4 XAUI ports (shared with SGMII)	Up to 2 Interlaken x8/x6 interfaces (shared with SGMII)	4H or 2H + 1D	2 x8 or 4 x4	1 x 8 (shared with 1 PCIe x8 interface)	✓	47.5 x 47.5 mm BGA
XLP824	40 nm	EC4400 MIPS64 R2	6/24		64 KB	32 KB	512 KB	6 MB	40 Gbps	40 K/s	10 Gbps									✓	
XLP816	40 nm	EC4400 MIPS64 R2	4/16		64 KB	32 KB	512 KB	4 MB	20 Gbps	40 K/s	10 Gbps									✓	
XLP432	40 nm	EC4400 MIPS64 R2	8/32		64 KB	32 KB	512 KB	8 MB	40 Gbps	40 K/s	10 Gbps										
XLP424	40 nm	EC4400 MIPS64 R2	6/24		64 KB	32 KB	512 KB	6 MB	40 Gbps	40 K/s	10 Gbps										
XLP416	40 nm	EC4400 MIPS64 R2	4/16		64 KB	32 KB	512 KB	4 MB	20 Gbps	40 K/s	10 Gbps										

MULTICORE PROCESSOR SOLUTIONS

XLP300/300-LITE SERIES PRODUCT SELECTOR

XLP300/300-LITE	Process	Core	Core Count/nxCPUs	Core Frequency	CACHE				HARDWARE ACCELERATION ENGINES				Memory	NETWORK INTERFACES		SYSTEM INTERFACES				Package
					L1-I (per CPU Core)	L1-D (per CPU Core)	L2 (per CPU Core)	L3 (shared)	Security Acceleration Engine	RSA Acceleration Engine	Regex Engine for Deep Packet Inspection (DPI)	RAID Acceleration		10/100/1000 MB Ethernet Ports	10 Gbps XAUI Ports	USB 2.0	PCIe Gen2	SATA	SRIO	
XLP316	40 nm	EC4400 MIPS64 R2	4/16	500 MHz - 1.6 GHz	64 KB	32 KB	512 KB	4 MB	10 Gbps	7.5 K/s	10 Gbps	RAID 5/6	1 x40b, 2 x72b, DDR3, 1066/1333/1600 MT/s	Up to 18 SGMII ports	Up to 2 XAUI/RXAUI ports (shared with SGMII)	4H or 2H + 1D	2 x 8 or 4 x4	4 ports	1 x4, 4 x1, 2 x2	40 x 40 mm BGA
XLP308	40 nm	EC4400 MIPS64 R2	2/8		64 KB	32 KB	512 KB	2 MB	5 Gbps	3.75 K/s	5 Gbps									
XLP304	40 nm	EC4400 MIPS64 R2	1/4		64 KB	32 KB	512 KB	1 MB	2.5 Gbps	2 K/s	2.5 Gbps									
XLP316L/H/Q	40 nm	EC4400 MIPS64 R2	4/16		64 KB	32 KB	512 KB	4 MB	10 Gbps	7.5 K/s	10 Gbps					3H or 2H + 1D	1 x4 (L), 2 x2 (H), 4 x1 (Q)	N/A		31 x 31 mm BGA
XLP308L/H/Q	40 nm	EC4400 MIPS64 R2	2/8		64 KB	32 KB	512 KB	2 MB	5 Gbps	3.75 K/s	5 Gbps									
XLP304L/H/Q	40 nm	EC4400 MIPS64 R2	1/4		64 KB	32 KB	512 KB	1 MB	2.5 Gbps	2 K/s	2.5 Gbps									

MULTICORE PROCESSOR SOLUTIONS

XLS®600/400/200/100 SERIES PRODUCT SELECTOR

XLS	Process	Core	Core Count/nxCPUs	Core Frequency	CACHE			HARDWARE ACCELERATION ENGINES		Memory (DDR2, 533 MT/s)	NETWORK INTERFACES		SYSTEM INTERFACES			Package
					L1-I (per CPU core)	L1-D (per CPU core)	L2 (per CPU core)	Security Acceleration Engine	Compression Engine		10/100/1000 MB Ethernet Ports	10 Gbps Ports	USB	PCIe	SRIO (optional on PCIe quad)	
XLS616	90 nm	MIPS64-R1	4/16	500 MHz - 1.2 GHz	32 KB	32 KB	1 MB	2.5 Gbps	2.5 Gbps	4 x36b or 2 x72b	1 RGMII/SGMII + 7 SGMII ports	2 XAUI	2	1 x4 or 4 x1	1 x4 or 4 x1	33 x 33 mm
XLS608	90 nm	MIPS64-R1	2/8		32 KB	32 KB	1 MB	2.5 Gbps	2.5 Gbps				2			
XLS416	90 nm	MIPS64-R1	4/16		32 KB	32 KB	1 MB	2.5 Gbps	2.5 Gbps	2 x36b or 1 x72b			2			31 x 31 mm
XLS408	90 nm	MIPS64-R1	2/8		32 KB	32 KB	1 MB	2.5 Gbps	2.5 Gbps			1 XAUI	2			
XLS404	90 nm	MIPS64-R1	1/4		32 KB	32 KB	512 KB	1.25 Gbps	1.25 Gbps				2			
XLS208	90 nm	MIPS64-R1	2/8		32 KB	32 KB	512 KB	1 Gbps		1 x36b or 1 x72b			2	4 x1		
XLS204	90 nm	MIPS64-R1	1/4		32 KB	32 KB	512 KB	1 Gbps					2			
XLS108	90 nm	MIPS64-R1	2/8		32 KB	32 KB	512 KB	0.75 Gbps		1 x36b	RGMII/SGMII + 7 SGMII		1	2 x1		
XLS104	90 nm	MIPS64-R1	1/4		32 KB	32 KB	512 KB	0.75 Gbps					1			

INTRODUCTION

Knowledge-Based Processor Family: Broadcom's Layers 2-4 Knowledge-Based Processors (KBPs) enable high-performance decision making for packet processing across a large landscape of advanced networking markets. The massively parallel, hybrid, and cutting edge heterogeneous architectures enable line-rate performance from tens of gigabits to hundreds of gigabits per second across a wide range of search tables (including ACL classification, QoS, MAC (L2), IPV4 and IPV6 forwarding (L3)). KBPs are uniquely designed to provide a scalable solution without compromising performance, independent of database size at a deterministic low latency. KBPs are designed to simultaneously perform high-speed parallel operations on a single or multiple database(s). This set of core features positions the KBP family with a wide range of applications in enterprise, metro, access, edge, and core networking markets.

Massively Parallel Architecture: The NL7000 family builds on several generations of massively parallel architecture. The devices are pin-, package-, register-, and instruction-compatible with its predecessor, the NL6000 family, allowing for scaling of existing designs to address dynamically evolving network requirements. This architecture offers the ability to store up to 1024k 36-bit IPv4 routes and sustained parallel search rates of up to 500 million per second.

Hybrid Architecture: The NLA9000 and NLA10000 product families build on the massively parallel architecture and introduce the Sahasra™ algorithmic forwarding solution. These devices are capable of processing speeds up to 1.5 billion decisions per second and incorporate a flexible knowledge database size of up to 2048k records for advanced processing capability. The NLA9000 and NLA10000 KBP families are also designed to be cascadable, allowing multiple processors to be concatenated to support millions of records. This feature is critical in the processing of packets under the new IPv6 standard. Furthermore, the hybrid architecture is equipped with high-speed DDR I/Os to complement large databases and increased core performance.

Heterogeneous Architecture: Broadcom's 28 nm KBPs are based on a pioneering heterogeneous architecture. This new architecture enables cutting edge performance, up to 24x greater than competing solutions, while delivering unprecedented power savings. 2.4 billion searches per second are achieved at deterministic latency, which is essential for the majority of telecommunications applications, including routers (core, edge, and multiservice), enterprise, data center and carrier Ethernet switches, security appliances, and wireless infrastructure equipment.

The heterogeneous KBP provides network awareness and enables real-time modifications and updates to the routing configuration, making them ideal for packet classification, policy enforcement, and Layer 2/Layer 3 forwarding. The integration of on-chip User Data Array facilitates a lower overall system cost to the end user by reducing BOM costs as well as ASIC complexity. The 28 nm heterogeneous KBPs deliver flexibility and scalability to address the needs of a large landscape of networking applications. Furthermore, the heterogeneous architecture is complemented with a feature-rich and easy-to-use software toolset encompassing Broadcom's proprietary NetRoute™ technology. This toolset enables support for up to 2.4x the knowledge database capacity per device (9.6x larger database capacity per system than competing solutions) without compromising performance. The NLA12000 family is the first KBP family armed with this all new heterogeneous architecture on the 28 nm node.

KNOWLEDGE-BASED PROCESSOR SOLUTIONS

PRODUCT SELECTOR

KNOWLEDGE-BASED PROCESSORS	Interface	I/O Bandwidth	Core Frequency	Maximum Single Table Search Rate (Millions of Searches per Second)	Maximum Aggregated Search Rate (4x) (Millions of Searches per Second)	# of IPV6 Forwarding Entries Supported	# of IPV6 ACL Supported (no FIB)	Associated Data (on-chip SRAM)	Range Matching	Algorithmic Forwarding NetRoute/Sahasra™	Algorithmic ACL Power Control	Exact Match	Dual Port	Attach Point	Package Size and RoHS
NLA122048	Serial 12.5 Gbps	300 Gbps	600 MHz	600	2400	2M	512k	128 Mb	✓	✓	✓	✓	✓	ASIC/NPU/FPGA	35 mm
NLA121024	Serial 12.5 Gbps	300 Gbps	600 MHz	600	2400	1M	256k	64 Mb	✓	✓	✓	✓	✓	ASIC/NPU/FPGA	35 mm
NLA12512	Serial 12.5 Gbps	300 Gbps	600 MHz	600	2400	512k	128k	32 Mb	✓	✓	✓	✓	✓	ASIC/NPU/FPGA	35 mm
NL88659	Serial 10.3125 Gbps	123.75 Gbps	500 MHz	500	2000	750k	512k	128 Mb	✓	✓		✓		Arad (BCM88650)	35 mm
NL88657	Serial 10.3125 Gbps	123.75 Gbps	500 MHz	500	2000	350k	256k	64 Mb	✓	✓		✓		Arad (BCM88650)	35 mm
NL88655	Serial 10.3125 Gbps	123.75 Gbps	500 MHz	500	2000	150k	128k	32 Mb	✓	✓		✓		Arad (BCM88650)	35 mm
NLA111024	Serial 6.25 Gbps	150 Gbps	400 MHz	400	1600	512k	256k		✓	✓				ASIC/NPU/FPGA	31 mm
NL111024	Serial 6.25 Gbps	150 Gbps	400 MHz	400	1600	256k	256k		✓					ASIC/NPU/FPGA	31 mm
NLA56640C3	Serial 6.25 Gbps	150 Gbps	400 MHz	400	1600	512k	256k		✓	✓				Caladan 3	31 mm
NL56640C3	Serial 6.25 Gbps	150 Gbps	400 MHz	400	1600	256k	256k		✓					Caladan 3	31 mm
NL56640T3	Serial 6.25 Gbps	150 Gbps	400 MHz	400	1600	256k	256k		✓					Triumph 3	31 mm
NLA102048	Parallel 80b bus	80 Gbps	400 MHz	400	1600	980k	512k		✓	✓				ASIC/NPU/FPGA	35 mm, 31 mm
NL102048	Parallel 80b bus	80 Gbps	400 MHz	400	1600	512k	512k		✓					ASIC/NPU/FPGA	35 mm, 31 mm
NL101024	Parallel 80b bus	80 Gbps	400 MHz	400	1600	256k	256k		✓					ASIC/NPU/FPGA	35 mm, 31 mm
NLA9512	Parallel 80b bus	60 Gbps	360 MHz	360	1440	235k	128k		✓	✓				ASIC/NPU/FPGA	31 mm, 27 mm
NL9512	Parallel 80b bus	60 Gbps	360 MHz	360	1440	128k	128k		✓					ASIC/NPU/FPGA	31 mm, 27 mm
NL9256	Parallel 80b bus	60 Gbps	360 MHz	360	1440	64k	64k		✓					ASIC/NPU/FPGA	31 mm, 27 mm
NL7000	Parallel 72b bus	25.2 Gbps	450 MHz	225	450	225k	225k							ASIC/NPU/FPGA	25 mm
NL56610	Parallel 72b bus	25.2 Gbps	450 MHz	225	450	225k	225k							Triumph 1, 2	25 mm

INTRODUCTION

Broadcom is a leading supplier of Ethernet controllers to the computer industry's leading PC OEMs and add-in card manufacturers. We offer converged network interface controllers (C-NICs) for LAN on Motherboard (LOM) applications, as well as field-proven Ethernet controllers that consistently outperform competitive solutions. Our NetXtreme and NetXtreme II C-NICs integrate the media access controller (MAC) and transceiver into a single-chip solution, and include support for the industry-standard PCI Express® local bus interfaces for improved throughput.

Broadcom Ethernet controllers can be found in a variety of products for the enterprise, data center, home, and small business. All NetXtreme adapters and NetXtreme II controllers come with an advanced suite of software supporting a variety of operating systems.

NetXtreme I Server/Client GbE Controller: Broadcom's NetXtreme Gigabit Ethernet controllers are highly integrated, single-chip networking solutions optimized for enterprise client PC applications. Low cost and energy efficiency are "must have" requirements in an enterprise environment. Our innovative hardware and software controller architecture takes it a step further by offering value-add features including standards-based manageability, network security, and advanced power management to maintain low cost and energy compliance with government agencies.

NetXtreme II Server Enterprise Controller: Broadcom's NetXtreme II 10-Gigabit Ethernet controllers deliver high-performance dual-port, single-chip C-NIC at 10 Gbps rates, without requiring external packet memory. The NetXtreme II controllers are full-featured solutions that include on-chip TCP processing and iSCSI Host Bus Adapter (HBA) capabilities, leading the path to converged networking. With the first converged solution of this kind introduced in 2004, NetXtreme II represents some of the most mature full-featured controllers available in the market today.

10GbE Network Interface Controllers (NICs): Broadcom's portfolio of Gigabit and 10GbE market-leading NICs and C-NICs provide end users the flexibility to configure their servers with the highest performance NIC cards. Our NICs and C-NICs are based on the NetXtreme I and II controllers, providing seamless operation with our switching devices, and found in a large number of data center switches.

ENTERPRISE CONTROLLER SOLUTIONS

NetXtreme® I SERVER PRODUCT SELECTOR

NetXtreme I SERVER	MEDIA INTERFACE		HOST INTERFACE (PCIe LANES)		Port Count	Integrated Management Processor	OS to BMC	Virtualization Queues (per port)	Description
	BASE-T	SerDes	Generation 2	Generation 1					
BCM5720	✓	✓	2	2	2		✓	16	Premium dual-port controller
BCM5719	✓	✓	4	4	4			16	Premium quad-port controller
BCM5717	✓		1	2	2				Value dual-port controller
BCM5725	✓		1	1	1	✓			Single GbE-port controller with integrated BMC
BCM5727	✓		1	1	1				Value single-port controller

All products support RSS, NC-SI, MSI-X, Jumbo Frames, Energy Efficient Ethernet, and Stateless Offloads.

NetXtreme I CLIENT PRODUCT SELECTOR

NetXtreme I CLIENT	Marketing Part Number	Key Features	Package	Product Notes
ENTERPRISE CLIENTS WITH MANAGEABILITY FEATURES				
BCM5761	BCM5761B0KFBG	Original TruManage Design	121 FBGA 12 x 12	Broadcom TruManage (DASH) Controller. Use BCM5762 for new designs.
BCM5762	BCM5762B0KMLG	TruManage Processor	76 QFN 9 x 9	Updated design adds CR, EEE, new PCIe features, smaller package, and lower power than BCM5761.
CONSUMER CLIENT CONTROLLER WITH INTEGRATED CARD READER				
BCM57766	BCM57766A1KMLG	SDXC Card Reader with UHS-104 support	68 QFN 8 x 8	High-performance LAN and Card Reader features. Low power consumption and small package.
BCM57767	BCM57767B0KMLG	PCIe ASPM Features SD 4.0 (UHS-II) support	76 QFN 9 x 9	Followup device to the BCM57766. SD4.0 Card Reader and improved CPU for more offline services. Better power management technology.
BCM57786	BCM57786A1KMLG	SDXC Card Reader UHS-50 support	68 QFN 8 x 8	Value Combo Controller + Card Reader (SD3.0)
STAND ALONE CONSUMER CLIENT CONTROLLER				
BCM57762	BCM57762A1KMLG	High-performance GbE, Windows PM Offload, Ethernet AV (AVB)	48 QFN 6 x 6	Inbox drivers for both Windows and MAC OS. Suitable device for Thunderbolt™ Applications.
BCM57782	BCM57782A1KMLG	Windows PM Offload	48 QFN 6 x 6	Value standalone GbE controller

NetXtreme II® SERVER PRODUCT SELECTOR

NetXtreme II SERVER	Marketing Part Number	Key Features	Package	Product Notes
BCM57710	BCM57710A1KPBG	Dual-Port 10G Converged Controller	27 x 27 KPBG	XAUI for network interface
BCM57711	BCM57711A0KPBG	Dual-Port 10G Converged Controller	27 x 27 KPBG	XAUI for network interface
BCM57712	BCM57712A1KFSBG	Dual-Port 10G Converged Controller with SR-IOV	27 x 27 FCBGA	XAUI for network interface
BCM57800	BCM57800SB0KFSBG	Dual-Port 10G + Dual-Port 1G Converged Controller with SR-IOV & FCoE	23 x 23 FCBGA	Integrated SerDes for backplane (KR) and front-panel (SFI) applications
BCM57810	BCM57810SB0KFSBG	Dual-Port 10G Converged Controller with SR-IOV & FCoE	23 x 23 FCBGA	Integrated SerDes for backplane (KR) and front-panel (SFI) applications
BCM57840	BCM57840SB1KFSBG	Quad-Port 10G or Dual-Port 20G Converged Controller with SR-IOV, FCoE, and PCIe Gen. 3	23 x 23 FCBGA	Integrated SerDes for backplane (KR) and front-panel (SFI) applications

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INTRODUCTION

Wireless connectivity is becoming ubiquitous in everyday life, whether at work, at home, or even in transit. With the ever-increasing mission-critical status that wireless connectivity is playing in both the Enterprise and Carrier markets, business-class wireless solutions are in growing demand. Broadcom's portfolio of hardened wireless connectivity products can service markets from SMB and Enterprise to the most demanding carrier infrastructures for access points, routers, and bridges.

Enterprise and Carrier: Broadcom's portfolio of Wi-Fi solutions for enterprise and carrier applications includes our best-in-class RF technology for 802.11n and now 802.11ac (5G Wi-Fi). We have solutions for indoor and outdoor applications and support a number of key technologies (including Spectrum Intelligence, Beamforming, Industrial Temp) that differentiate us from consumer products.

SMB: Broadcom has the most complete SMB offering for Wi-Fi that not only includes the same "enterprise class" RF technology above, but a full turnkey software offering that enables quick time-to-market with minimal engineering support using the FASTPATH UAP software stack solution.

WICED: Broadcom's Wireless Internet Connectivity for Embedded Devices (WICED™) platform (pronounced "wik-id") eases development effort and simplifies the implementation of Internet connectivity in an array of consumer and industrial devices, especially those without existing support for networking.

Developers use the WICED software platform to create secure wireless networking applications on an existing product microcontroller or on an additional WICED module that includes a microcontroller. In either scenario, the comprehensive and size-optimized WICED application library and embedded driver work together with a Broadcom-embedded wireless LAN or Bluetooth chip to provide seamless wireless connectivity.

The WICED Development system enables Wi-Fi, Bluetooth, and Bluetooth Low Energy (BLE) connectivity for:

- Home appliances (speakers, washers, dryers, fridges, ranges)
- Home monitoring and control (garage door openers, thermostats, security cameras, alarms, light switches)
- Health and fitness (weight scales, fitness equipment, heart rate monitors, blood pressure monitors, fitness wrist bands, pedometers)
- Automation and logistics (proximity tags, asset tracking)
- Digital cameras and imaging devices
- Smart meters and energy management devices
- "Headless" devices without a means of interactive configuration for connectivity
- PAN-LAN bridge and cloud applications
- Consumer (toys, games, pet tracking, shoe sensors)

WIRELESS SOLUTIONS

ENTERPRISE WI-FI PRODUCT SELECTOR

ENTERPRISE WI-FI	a/b/g/n/ac	20/40/80/160 MHz	1 x 1/2 x 2/3 x 3	2.4 GHz Support	2.4 GHz 11ac Support (256 QAM in 2.4G)	5 GHz Support	Integrated Switch (FE/GE)	Host Interface	Integrated Host CPU	Explicit TX Beamforming	Implicit TX Beamforming	PHY Rate	LDPC	STBC	Internal PA	Smart Antenna Support	Spectrum Analysis Support in HW	I-Temp Solution for Outdoor	One Driver (same SDK for all chips 11n and 11ac)	FASTPATH UAP Support
BCM43428	a/b/g/n	20/40	2 x 2	✓		✓		PCIe				300 Mbps		✓	✓		✓		✓	✓
BCM5358	a/b/g/n	20/40	2 x 2	✓			✓ (FE)		✓			300 Mbps		✓	✓		✓		✓	✓
BCM4749	a/b/g/n	20/40	2 x 2	✓					✓			300 Mbps		✓	✓		✓		✓	✓
BCM4748	a/b/g/n	20/40	2 x 2	✓		✓			✓			300 Mbps		✓	✓		✓		✓	✓
BCM43431	a/b/g/n	20/40	3 x 3	✓		✓		PCIe				450 Mbps	✓	✓	✓	✓	✓	✓	✓	✓
BCM43520	a/b/g/n/ ac	20/40/80	2 x 2	✓	✓	✓		PCIe (Gen2)		✓ (2.4 GHz/ 5 GHz)	✓ (2.4 GHz/ 5 GHz)	867 Mbps 2SS	✓	✓		✓	✓	✓	✓	✓
BCM43460	a/b/g/n/ ac	20/40/80	3 x 3	✓	✓	✓		PCIe (Gen2)		✓ (2.4 GHz/ 5 GHz)	✓ (2.4 GHz/ 5 GHz)	1.3 Gbps 3SS	✓	✓		✓	✓	✓	✓	✓

WICED™

WICED Hardware Development Kit: Broadcom provides a full-featured WICED Development Kit and is working with partners to deliver turnkey hardware solutions of different form factors to readily enable Wi-Fi connectivity in system designs. The following reference WICED boards are available for development and device prototyping:

- BCM943362WCD4: This WICED module includes the BCM43362 802.11n 2.4 GHz Wi-Fi controller with integrated antennas and diversity, as well as STM32F205 32-bit ARM microcontroller. It is a complete solderable module that is 20.6 x 61 mm.
- BCM943362WCD4_EVB: BCM943362WCD4 is mounted on a full-featured evaluation and development board, and is fully compatible with the WICED Software Development Kit (SDK). Connection is via USB.

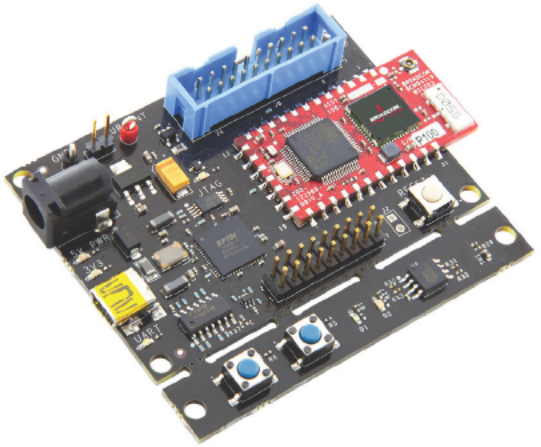
WICED with Apple® MFi-Licensed Technology: WICED is designed to work with iPhone®, iPad®, and iPod® devices. The WICED+ module and SDK, paired with Apple-licensed technology, provides a simple out-of-box setup experience for Wi-Fi devices when used with Apple iOS devices.

WICED SMART (Embedded Bluetooth Low Energy): The WICED architecture is being enhanced to include full support for "Bluetooth SMART" technology, ideal for connection to sensors and data-gathering nodes.

- BCM920732_BLE_KIT: A complete evaluation and development kit that include the BCM20732, a fully integrated Bluetooth SMART SoC, and is configured for easy evaluation and software development. It is compatible with the WICED Wi-Fi architecture and tool suite, allowing simple development and implementation of a full end-to-end wireless solution.
- BCM20732KMLG: This module includes the BCM20732 fully integrated Bluetooth SMART SoC-integrated controller.

WICED Software Development Kit: The WICED SDK includes the following:

- An open source build system and toolchain based on GNU 'make'.
- A GUI Development Environment based on Eclipse CDT that seamlessly integrates with a JTAG programmer and single-step, thread-aware debugger based on OpenOCD and gdb.
- A comprehensive software stack with a choice of several RTOS/TCP stack options including ThreadX/NetX, ThreadX/NetX Duo, and FreeRTOS/LwIP.
- Advanced security and networking features such as SSL/TLS, IPv4/IPv6 networking, and mDNS (Bonjour) device discovery.
- WICED Application Framework including production-ready features such as bootloader, flash storage API, over-the-air (OTA) upgrades, factory reset, and system monitor.
- Production-ready sample applications and application snippets demonstrating how to use the rich WICED API feature set.
- Various test applications to aid manufacturing and certification.
- Full documentation included inside the WICED SDK.



The BCM943362WCD4 WICED module mounted on a full-featured evaluation and development board.

ABOUT BROADCOM

Broadcom Corporation (NASDAQ: BRCM), a FORTUNE 500® company, is a global leader and innovator in semiconductor solutions for wired and wireless communications. Broadcom products seamlessly deliver voice, video, data and multimedia connectivity in the home, office and mobile environments. With the industry's broadest portfolio of state-of-the-art system-on-a-chip and embedded software solutions, Broadcom is changing the world by Connecting everything®.

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