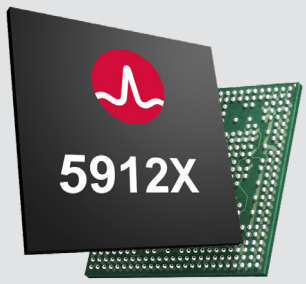
BROADCOM®

Product Brief

BCM5912X

Octal Power Sourcing Equipment Controller



Key Features

- IEEE 802.3bt-compliant with support for IEEE 802.3at and IEEE 802.3af
- Supports Type 2, Type 3, and Type 4 multi-event classification (Type 4 only supported by BCM59122)
- Supports four-pair 60W bt Type 3 and 90W bt Type 4 applications (Type 4 only supported by BCM59122)
- Supports detection of legacy power devices (PDs)
- Cascading of multiple devices; up to 64 ports supported
- Programmable I_{CUT} and I_{LIM} for Type 1, Type 2, Type 3, and Type 4 (Type 4 only supported by BCM59122)
- Broadcom Serial Control (BSC), an I²C-compatible bus architecture
- Manual and semiautonomous operating mode
- Real-time current, voltage, and temperature measurements available per port
- Overtemperature protection (warning and shutdown)

Overview

The Broadcom® BCM5912X is a highly integrated IEEE 802.3bt-compliant power sourcing equipment (PSE) controller family with unsurpassed integration and flexibility. The devices contain eight low-RDS (0.2Ω), high-voltage FETs, each with a very accurate, lossless, proprietary internal current sense and an onboard microcontroller, all targeted to significantly reduce the complexity of Power over Ethernet (PoE), Power over Ethernet Plus (PoE+), and UPoE designs while easing PCB layout. The BCM5912X family provides excellent protection under all possible fault conditions and overloads. It also supports two-event Classification for Type 2 (30W) applications and multi-event Classification for 802.3bt Standard Type 3/ Type 4 applications.

The BCM5912X family of controllers has a networking-oriented host interface, communicating by using a BSC bus, and capable of speeds up to 2.4 Mb/s.

Benefits

- Cascading of multiple devices; up to 64 ports supported
- Integrated Field Effect Transistor (FETs) eliminates the need for external FETs
- Integrated current-sense mechanism eliminates the need for external sense resistor and fuse
- Integrated MCU for firmware download, custom features, and bug fixes
- Underwriters Laboratory (UL) certified

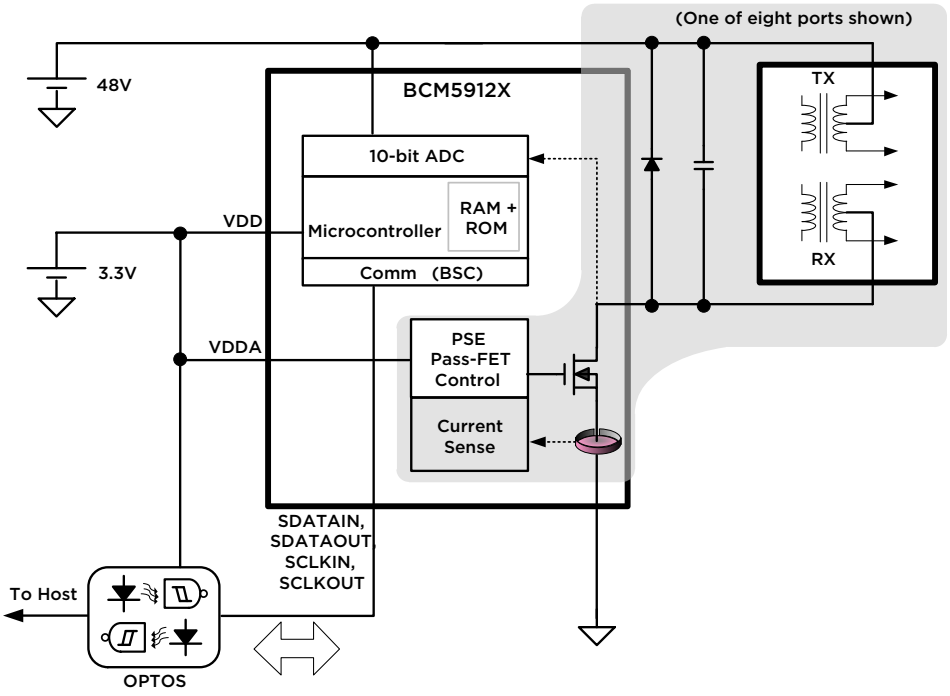
Applications

- Routers
- Enterprise switches
- Security camera switch hub
- POE lighting

Key Features (con't)

- Operates from a 48V supply (nominal) and external 3.3V supply
- Firmware download capability through BSC communication bus from host
- 8 mm × 8 mm × 0.9 mm QFN-56 package (0.5-mm pitch) with exposed pad

BCM5912X Block Diagram



Ordering Information

Part Number	Package	Ambient Temperature
BCM59121B0KMLG	56-pin, 8 mm × 8 mm, QFN56 (Pb-free)	–40°C to +85°C
BCM59122B0KMLG	56-pin, 8 mm × 8 mm, QFN56 (Pb-free)	–40°C to +55°C

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