



## Quad Integrated IEEE 802.3at PSE Controller and Power Management System with up to 30W per Port Capabilities

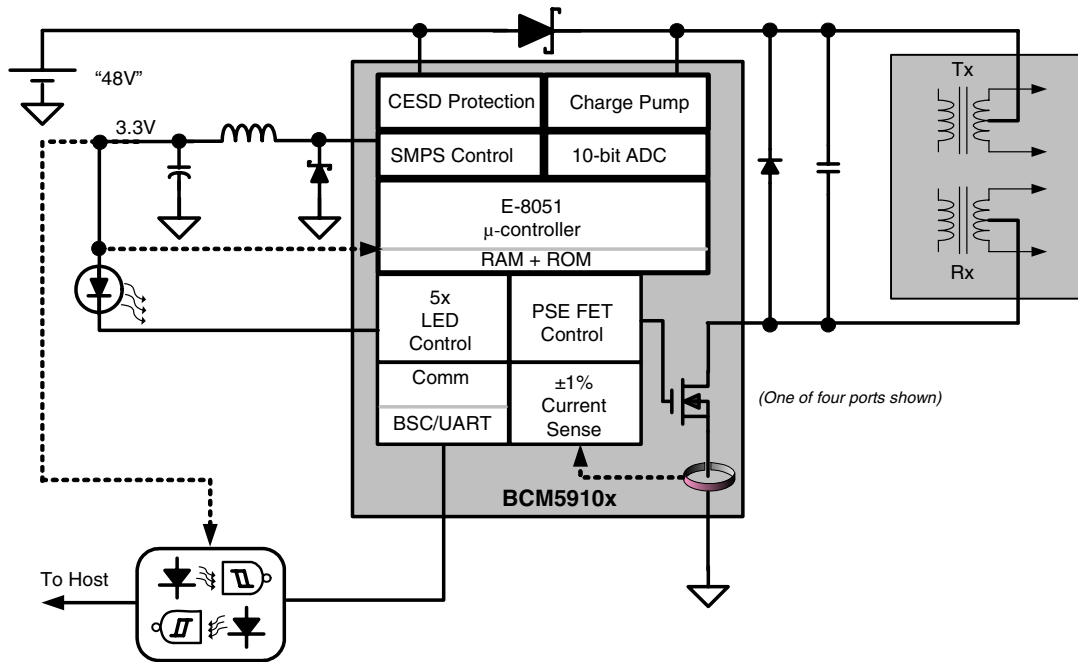
### FEATURES

- **Standards support**
  - IEEE 802.3at-2009-compliant
- **High hardware integration**
  - Integrated switches
  - Integrated current sense functionality
  - Integrated microcontroller
  - Integrated AC and DC disconnect options
- **Extensive hardware features**
  - Up to 30W per port to support Power Over Ethernet (POE) PDs via integrated circuitry
  - Programmable current limit
  - Low power dissipation eliminates the heat sink
  - Broadcom serial control (BSC) interface support to the host
  - UART interface support to the host
  - Robust switch protection circuit withstands cable discharge and ESD events (CESD)
  - Autonomous, semi-autonomous, or manual modes
  - Real-time current, voltage and temperature measurements available per port
  - Cascading of multiple devices up to 64 ports support with the option of single hardware and software interface for the host
  - Includes four LED drivers reporting POE port activity
  - Integrated 3.3V buck regulator (DC:DC) to support up to 200 mA
  - Over-temperature protection
  - Operates from a single 48V supply
- **Extensive software features**
  - Self-contained power allocation software
  - Integrated 4-port power management
  - Integrated power management for all ports in cascaded version

### SUMMARY OF BENEFITS

- **Highest integration that allows for**
  - Lowest total BOM count
  - Easier PCB placement and PCB area saving
  - Full functionality without external u-controller including power management
  - Eliminates the need for an external 48V to 3.3V power conversion
- **Further reduces BOM count via 3.3V DC:DC capability to be shared across multiple BCM59103 devices**
- **Enables support of IEEE 802.3at PDs, such as emerging APs, security cameras, and PTZ cameras**
- **Eliminates the need for a heat sink because of the no dissipation Rsense mechanism and DC:DC to 3.3V**
- **Makes layout and design easy via simple ground/power plane**
- **Works with Broadcom POE-enabled products for easy implementation**
- **Architected with system-oriented features to allow for system-level differentiation, including:**
  - Single point of interface for host hardware and software
  - Power management across all ports in cascaded configuration
  - Programmable current limits and dynamic measurement per port
  - Rapid power-down to support multiple power supply failures
- **Supports a variety of applications:**
  - Routers and switches for Enterprise, SMB, SOHO, and commercial markets
  - Ethernet midspans
  - PSE power injectors
  - Integrated magnetics

## OVERVIEW



### BCM59103 Module Architecture

The BCM59103 is compatible with IEEE 802.3at-2009. The controller is the first in the industry to offer a highly integrated architecture with revolutionary enhancements that are targeted at reducing the complexity of Power Over Ethernet (POE) designs. At 30W per port, the BCM59103 is also the industry first PSE controller to offer an integrated solution for higher power applications.

The BCM59103 integrates the microcontroller, power switches, low-loss current sense function, detection, classification, and voltage converters, 3.3V bias regulator (DC:DC converter) and AC disconnect functionality.

The high level of integration and innovation make the device the most power efficient integrated IEEE 802.3at POE system.

The BCM59103 offers a networking-oriented host interface that offers a full suite of power management. This easy to use interface can be extended to manage up to 64-cascaded ports through a single host interface.

The BCM59103 is designed with robustness and legacy support. It offers detection and classification mechanisms capable of detecting both IEEE 802.3at-compatible devices and legacy devices simultaneously. In addition, the BCM59103 is designed and tested to withstand cable discharge events as well as ESD events in excess of 2 kV.

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