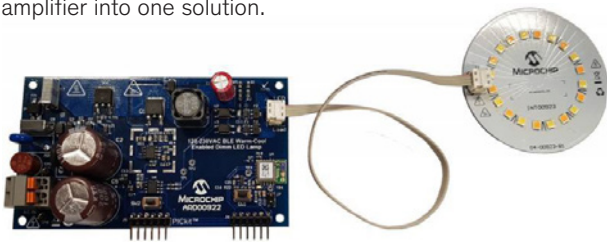


Human Centric Lighting



There is a wealth of scientific evidence that suggests that wellbeing and behaviour are related to the quality of light we are exposed to. Modifying our lighting can have significant benefits. Microchip has developed a reference design that demonstrates how customers can drive two different white temperature LED strings and how to control the desired colour through Bluetooth® communication. This solution combines a buck LED driver (HV9961) with an 8-bit microcontroller (PIC16F15313) which communicates with the Bluetooth module (RN4871) to create an intelligent LED lighting system solution. This demo combines a Bluetooth low energy module which includes a Bluetooth baseband controller, on-board Bluetooth stack, digital and analog I/O and RF power amplifier into one solution.



Orderable Part Numbers at arrow.com

- > HV9961
- > PIC16F15313
- > RN4871

PoE for Lighting

Digital Ceiling is reshaping enterprises as the revolutionary PoE-based lighting system creates a new breed of smart buildings where everything is connected into a vast Internet of Things (IoT). Microchip Digital Ceiling Switch Paves the Way for Smart Buildings with Enterprise IoT.

The Microchip PDS-408G digital ceiling PoE switch offers an optimal and cost-effective solution for PoE application like PoE lighting and other digital ceiling applications. It allows lighting fixtures and other Ethernet terminals to receive power, along with data, over standard Ethernet cables in the most efficient way. The PDS-408G is a 480W fan-less switch, designed to be deployed in the ceiling or in communications rooms. Provides automatic output PoE power based on PoE PD device class. It supports full power mode by providing 60W for all 8 ports simultaneously and any specific port can go up to 90W. The 480W high-speed switch can be managed over Web, SSH, Telnet, CLI. It has 8 ports of 10/100/1000 Mbps (Gigabit Ethernet) with PoE BT ports, 2 Gigabit ports and one 1000M/100M SFP port.

PDS-408G Features

- > Digital ceiling PoE Switch: 8 PoE 10/100/1000mbps ports
 - + 3 10/100/1000mbps uplink ports – total available PoE power: 480W
- > IEEE802.3bt compliant and supports legacy 60/90W PoE devices
- > Full power of 8x60W – any individual port can go up to 90W
- > Fanless design – enhanced reliability and silent operation
- > High energy efficiency – very low power consumption in standby and in operation
- > Layer 2 switch – including 802.1Q-based VLANs enables segmentation of networks for improved performance and security
- > Remote management - Web and SNMP



Orderable Part Number at arrow.com

- > PDS-408G



Smart Connected Street Lighting



The SAM R34/R35 is a highly-integrated LoRa® System-in-Package (SiP) family which includes an ultra-low power, highperformance 32-bit microcontroller (MCU), LoRa transceiver and software stack. With certified reference designs and proven interoperability with major LoRaWAN™ gateway and network providers, the SAM R34/R35 SiPs significantly reduce time to market for Internet of Things (IoT) designs.

Features

- > Industry's lowest power LoRa® SiP device
- > 32-bit Arm® Cortex M0+ MCU and LoRa Transceiver
- > Small form factor: 6×6 mm compact BGA package
- > 256KB Flash and 40KB RAM accommodates application code and stack
- > Most cost and size effective solution, eliminating need for external MCU



Orderable Part Number at arrow.com

- > SAM R34/R35

Pre-Provisioned Security Solutions

When it comes to LoRa security, provisioning and storing network server and application server keys is as important as it is complex due to the nature of the shared key authentication model. Because of this, you will face three main challenges when implementing secure authentication on a LoRaWAN network:

- > Protecting the symmetric keys both in the network backend and at the edge node
- > Overcoming the manufacturing logistics of securely shipping and distributing the physical keys into millions of edge nodes
- > Preventing attackers who will be taking advantage of this known security weakness from accessing keys and exploiting your system

To overcome these challenges, you can strengthen the authentication process by implementing a secure hardened key storage both at the node and in the LoRaWAN backend. This prevents the exposure of authentication keys to software, firmware, manufacturing sites, end users and other third parties. Our secure elements – ATECC608A-TNGLORA for The Things Industries (TTI) and ATECC608A-TNGACT for Activity – are pre-provisioned with the corresponding authentication keys and provide secure key storage to isolate keys in the nodes. This is especially valuable in LoRa systems that are based on a shared key security model and leverage a wide variety of traditional low-power microcontrollers.



Orderable Part Numbers at arrow.com

- > ATECC608A-TNGLORA
- > ATECC608A-TNGACT