

45 W PoE powered LED lighting with BLE control



Features

- PoE-PD IEEE 802.3af/at/bt compliant
- Constant current output, working in buck topology
- Output Current – 1.4 A with < 0.05% current regulation
 - Number of LEDs connected at output: 6 – 11 White LEDs (3.3 V each)
- LED driver input voltage range 37 – 57 V_{DC}
- Peak Efficiency at maximum load > 95%
- Standby power consumption of LED driver < 100 mW
- Comprehensive set of protections:
 - open/no-load circuit protection
 - short/overload circuit protection
- Wireless On/Off and dimming control
 - PoE Lighting android application available on Google Play store
- LED dimming technique:
 - Digital dimming with 1% resolution
- RoHS compliant
- WEEE compliant

Description

The **STEVAL-POEL45W1** is a PoE-enabled constant current LED driver with a **PM8805** Power over Ethernet interface, **LED6000** LED driver and Bluetooth module **SPBTLE-1S** for smart dimming control.

The **PM8805** is a highly integrated device, embedding a double active bridge, a hot-swap MOSFET and an IEEE802.3bt-compliant Powered Device (PD) PoE interface.

The **LED6000** is a step-down monolithic switching regulator designed to source up to 3 A_{DC} current for high power LED driving. The 250 mV typical RSENSE voltage drop enhances the efficiency. Digital dimming is implemented by driving the dedicated DIM pin.

The **SPBTLE-1S** is a Bluetooth® low Energy System-on-Chip application processor certified module, compliant with BT specifications v4.2 and BQE qualified.

The **STEVAL-POEL45W1** evaluation board is designed to provide a power output of 48 W and can dim LEDs down to 1% of the maximum brightness without any flicker.

Remote on/off and dimming control can be managed through the **PoE Lighting** android application available free of charge on the Google Play store.

| Product summary | |
|---|------------------------|
| 45 W PoE-enabled constant current LED driver with BLE control | STEVAL-POEL45W1 |
| IEEE802.3bt PoE-PD interface with integrated dual-active bridge | PM8805 |
| 3 A, 61 V monolithic current source with dimming capability | LED6000 |
| very low power application module for Bluetooth® Smart v4.2 | SPBTLE-1S |

Figure 1. STEVAL-POEL45W1 board schematic (1 of 2)

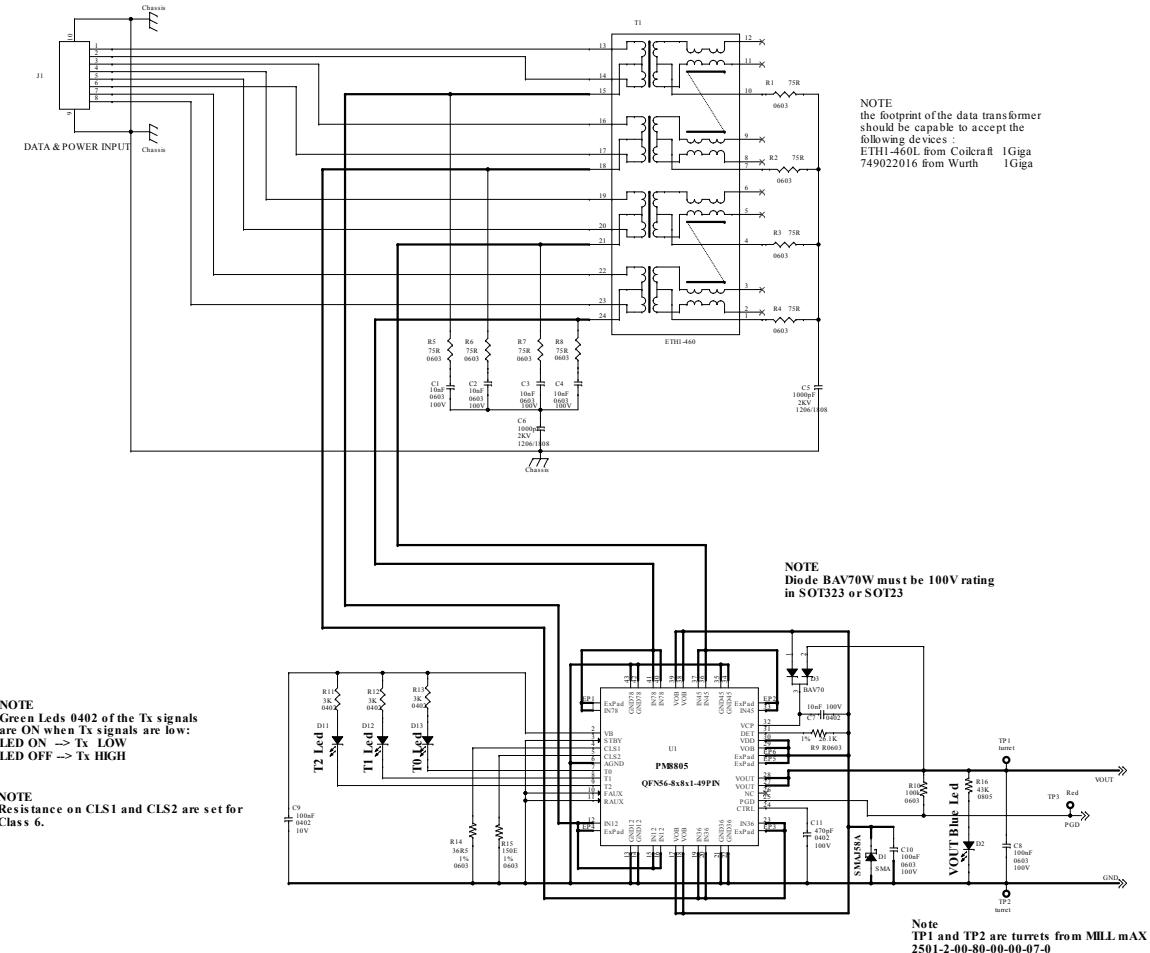
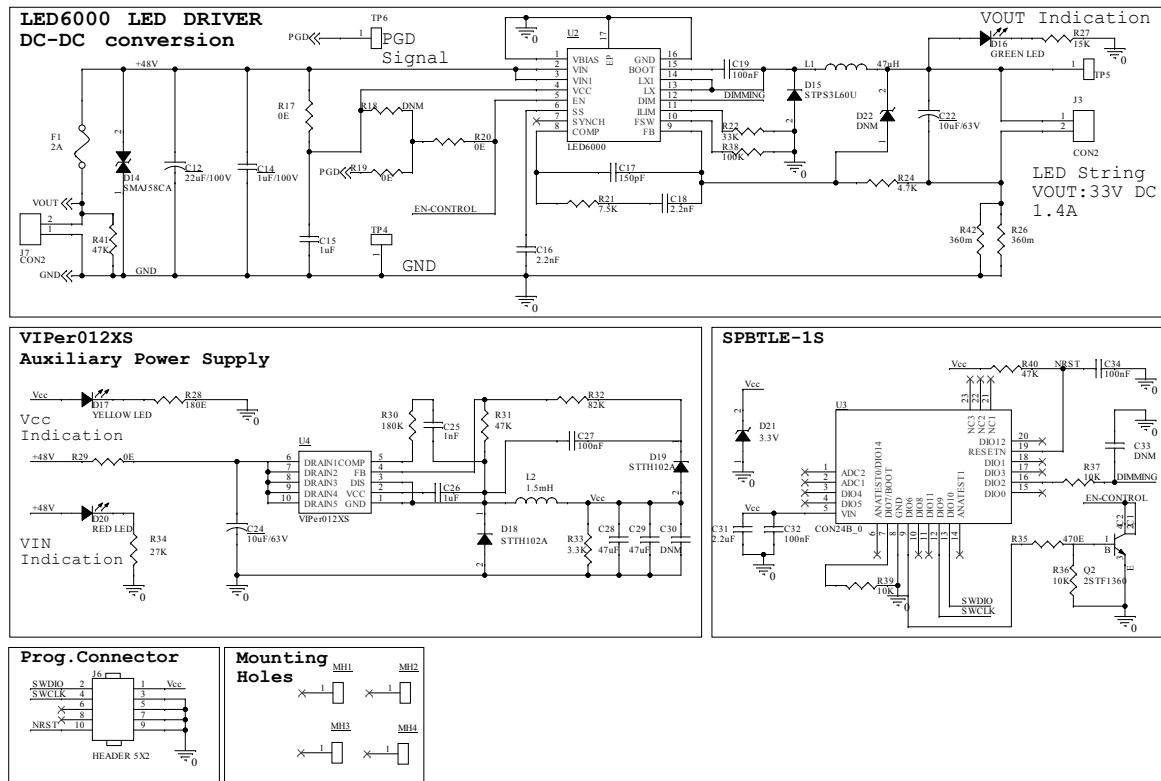


Figure 2. STEVAL-POEL45W1 board schematic (2 of 2)



Revision history

Table 1. Document revision history

| Date | Version | Changes |
|-------------|---------|------------------|
| 10-Oct-2018 | 1 | Initial release. |

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