

LAMPYRiS

SiP embedded cellular outdoor lighting controller

Product description

LAMPYRiS is a complete System in Package (SiP) Low Power Wide Area Cellular Narrow Band DALI-2 outdoor lighting controller, designed to be embedded directly into the electronic board of a smart LED driver, a LED light engine or a solar lighting MPPT smart charge controller, like a regular electronic component.

LAMPYRiS works straight out of the box, connecting your lighting equipment directly to the existing NB-IoT/LTE-M cellular network without the need for additional gateways, self-acquiring its GPS location and auto-commissioning into any LwM2M or TALQ compliant Central Management Platform. Just like that, with no more complexity to the adoption of massive IoT technology in the urban environments.

Key advantages and features

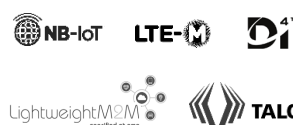
- Complete SiP cellular lighting controller
- Disruptive industry-leading form factor
- Plug and Play auto commissioning
- Extremely low power consumption
- Onboard GPS for self- location and commissioning
- Dramatically reduces smart control costs, enabling any luminaire to be factory-smart
- It can be soldered directly into a printed circuit board or clipped into a connector
- Asset management oriented, extended control and data exchange with the D4i Drivers
- Multi-driver and multi-master management capabilities, allowing for efficient control of luminaires with up to 4 drivers and sensors
- Provides a robust and secure full, two-way wireless communications
- Over-the-air firmware upgrades
- Automatic identification of all lamp failures reducing on-site activities
- It runs onboard astronomical clock and lighting schedules with dimming profiles
- Energy and electrical parameters metering suitable for supporting utility billing
- Improved safety from the usage of an extra-low voltage power supply
- Very high reliability, with 10 years warranty from factory

Typical applications

Embedded into a luminaire LED driver, LED light engine or MPPT smart solar charge controller to control the lighting of streets, roads and highways, residential areas, road intersections, plazas, parks, outdoor industrial and logistics areas, parking lots, bridges, etc.

Ordering data

Model no.	Description	Installation	Wireless network	Power supply	Luminaire interface
DCobi-NBEC	LAMPYRiS - SiP embedded cellular (NB-IoT/LTE-M) outdoor lighting controller	Soldered into a PCB or clipped into a card edge connector	Works with standard LTE 3GPP cellular network NB-IoT/LTE-M	24VDC (operational range: 4VDC to 33VDC)	DALI-2



...you may also be interested in the
obiWAN[®] LAMPYRiS testing board



Technical Data

Input

Supply voltage: 24VDC (operational range: 4VDC to 33VDC)
Power consumption: Average <0.3W

Interfaces

DALI-2 according to IEC 62386 standard, compliant with D4i, up to 4 Drivers, individually addressed

Onboard GPS

GNSS automatic and precise self-location and commissioning of the smart device, ≤5m

Metering

Accuracy as per EN50470 or ANSI C136.52

Environmental

Operating temperature range: -40 °C to +70 °C
Humidity: 95% RH, non-condensing
Storage temperature: -40 °C to +85 °C

Mechanical

Dimensions: L43,38mm (1.71") x W23mm (0.91") x H5mm(0.20")
Weight: 10g

Mounting type

Soldering into a PCB or clipped into a card edge connector

Warranty⁽¹⁾

10 years

Reliability data

654 FIT (@25°C, FIDES 2009)

NB-IoT/LTE-M Network

Modem: 700-2200MHz Band Support, CAT-M1: B1-B5; B8; B12-B14; B17-B20; B25-B26; B28 and B66, CAT-NB1/NB2: B1-B5; B8; B12-B13; B17; B19-B20; B25-B26; B28 and B66
Communications: Data Throughput: NB-IoT: 30/60 kbps (DL/UL) LTE-M: 300/375 kbps (DL/UL), Rx Sensitivity LTE-M1: -108 dBm | NB-IoT: -114 dBm | GPS: -155dBm, Output Power: up to 23dBm
Protocols/Security: LwM2M (OMA objects), IPv4/IPv6 Addressing, Secure Socket (DTLS), Root of Trust and Cryptographic Services to meet the latest requirements on internet security and authentication, TRNG and PRNG, RSA public key cryptography, Elliptic Curve Cryptography (ECC), Secure Remote Password Protocol (SRP), Hashing Functions (SHA-1, SHA-2), AES Symmetric Encryption

Certifications⁽²⁾

D4i Certified, LwM2M and TALQ compliant

Approval marks⁽²⁾



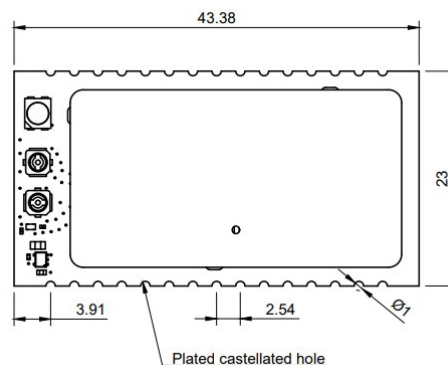
Standards

Safety: EN 62311:2008, EN 62368-1:2014, EN 62368-1:2014 + AC:2015, EN 62368-1:2014 + AC:2015 + AC:2017 + A11:2017
Electromagnetic compatibility: EN 301 489-1 V2.2.0, EN 301 489-19 V2.1.0, EN 301 489-52 V1.0.0, IEC 61000-4-2:2008, CISPR11:2015 + AMD1:2016 + AMD2:2019, ANSI C63.4:2004 + ANSI C63.4a:2017
Effective use of the spectrum: EN 301 908-1 V11.1.1, EN 301 908-13 V13.0.1, EN 303 413 V1.1.1

Installation

Soldered into a PCB or clipped into a card edge connector

SiP drawing



(1) Warranty subject to obiWAN Terms & Conditions

(2) Approval pending