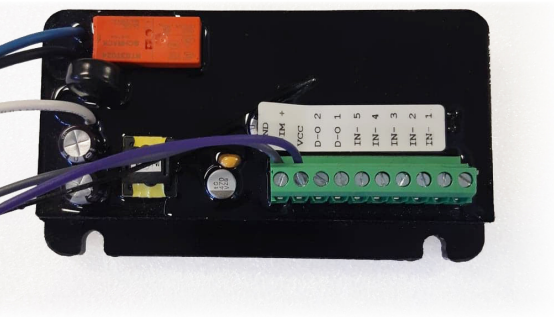
RTM Wireless Smart Lighting Node



PRODUCT OVERVIEW

Dimonoff's third generation (H3) RTM node is a compact, addressable internal module that facilitates the creation of smart lighting control systems.

The RTM enables wireless control, monitoring and metering, as well as integration of digital and analog inputs as well as sensors. It also allows the use of two outputs for the control of other smart devices. It suits both small and large networks that use state-of-the-art features.

No wires to run means simpler control and automation projects, especially retrofit lighting applications and decorative lights.

AT A GLANCE

- **NEW: 2 options to control your colored LEDs with the RTM node: CK and DMX**. To watch a video on that subject: https://www.youtube.com/watch?v=uZNalXoTTwo
- **NEW:** Voltage on the H3 is auto-calibrated. This results in both more precise metering and fewer false alarms.
- **NEW:** Enhanced CUMULATIVE revenue-grade power metering (+/- 0.5 % accuracy) with multiple user-configurable alarms.
- **NEW:** Includes real-time operating system (RTOS) that can run multiple simultaneous tasks with minimal latency.
- **NEW:** A tilt sensor measuring the earth's gravity angles changes is included.
- Complete integration with Dimonoff's Gateways and Smart Central Management System including Dimonoff | SCMS and DOO Express software platform.
- On/off switching and flexible dimming, adjustable minimum and maximum levels with 1 % steps.
- Compatible with BACnet via Dimonoff gateways G3 and G3+.
- Dynamic level adjustment for daylight harvesting, RP-8 optimal roadway and interior lighting design and similar applications.
- Programmable delay and dimming level when power is restored following a power outage for peak shaving.
- Built-in demand response (load shedding) feature.
- Lumen depreciation compensation over time available with Dimonoff | SCMS.
- Compatible with Dimonoff low-voltage occupancy and lux sensors (daylight harvesting), photocells and switches enabling energy conservation.
- Secondary low-voltage outputs for driving another external load.
- Any node with a sensor can be set as a master and control several nodes.
- Each node can be part of 14 different groups and 30 separate scenarios.
- Generic timer features available enabling execution of a series of instructions at set intervals.
- Energy consumption reporting with Dimonoff | SCMS.

INSTALLATION

RTM nodes fit conveniently inside fixtures. They typically reside inside a luminaire with the antenna made accessible outside the luminaire to establish the RF mesh network. They can also be fitted in NEMA4 enclosures for mounting outside fixtures. In either case, colour-coded wiring simplifies the installation process. The mobile scanning app compatible with Dimonoff | SCMS enables quick, simple and economical commissioning. Upon installation, it performs both an instant functional test and geolocation.

LUMINAIRES

RTM nodes feature high-capacity long-life nodes. One node works with voltages ranging from 110 to 480 Vac and 50/60 Hz. The adaptable 0-10 V sink and source output or the DALI interface is compatible with most dimming drivers. One RTM node can control up to 4 drivers (5 or 6 may be possible depending on the load).

COMMUNICATION

The RTM node, when combined with a Digi radio, is built for low-latency communication, even in large networks. The fully bidirectional long-range RF mesh system, suitable for both rural and urban areas, works wirelessly over a robust 2.4 GHz (900 MHz option) ISM (Industrial, Scientific and Medical certified) meshed radio signal.

Clients can choose from two radio options:

- Digi XBee PRO 2.4 GHz
- Digi XBee PRO 900 MHz

SECURITY AND MAINTENANCE

Communication between devices flows through a private radio network and is protected using 128-bit AES encryption (AES 256-bit encryption available with Digi XBee PRO radio option). Each node is uniquely serialized with an individual address. The node firmware can be upgraded over-the-air.

SPECIFICATIONS

ELECTRICAL

- Operating voltage: 110 to 480 Vac (- 13 % / + 6 %) -50 and 60 Hz.
- Less than 1-Watt node consumption (may vary according to specific configuration).
- Maximum load amperage: 7 Amps (7 A at 120-240 Vac, 5 A at 277-347 Vac and 2 A at 480 Vac).
- Power metering: amperage, voltage, power (+/-0.5 % accuracy), power factor, energy, burn-time and cycles counters - ANSI C12.20 metering protocol compliance.
- Meets standards IEC61000-4-3 and EN61000-4-3: immunity to radiated electromagnetic fields.
- Surge protection.

ELECTRONIC

- 0-10 V: for all types of 0 - 10 V drivers and ballasts using using a source or collector-type power supply up to 10 mA.
- **NEW:** DALI: Bus Power supply: 24 mA / DALI load: 2mA (with optional 24 V auxiliary power supply)
- 5 digital / analog inputs: 0-30 Vdc (3 mA max at 30 Vdc), examples: photocell, motion sensor, switches, lux meter, generic sensor.
- 2 digital outputs: sink (max: 50 mA total) or source 2.4 mA (10 K pull-up).
- Aux power supply: 24 Vdc - 50 mA.

RADIO

	Digi XBee PRO 2.4 GHz	Digi XBee PRO 900 MHz
Recommended Range	○ Up to 300 meters/1000 ft between nodes. ○ Communication range may vary widely depending on environmental factors (up to 1 kilometre)	
Transmit Power	+19 dBm	+24 dBm
Receiver Sensibility	- 103 dBm	- 103 dBm

OPTIONS

- NEMA4 enclosure (model: 1554k2GY / 6.3 x 3.5 x 3.5 in)
- **NEW:** 0-10 V or DALI lamp driver
- **NEW:** Bi-directional serial communication port (TTL or RS-232)
- **NEW: DMX or CK RGB control**

LISTINGS

- U.S. FCC (Digi XBee PRO 2.4 GHz): MCQ-PS2CTH, Canada IC: 1846A-PS2CTH, Europe CE: ETSI, Australia: C-TICK, Japan: TELEC
- U.S. FCC (Digi XBee PRO 900 MHz) Part 15.247 Class A: MCQ-XB900HP
- UL94 V-0 flame retardant ABS with epoxy molding
- ANSI/UL 8750, CSA 22.2 No. 250.13-14 (Dimonoff file ID E481666)
- DLC & RoHS compliant

ENVIRONMENTAL

- Ambient temperature range: -40 °C to +70 °C (-40 °F to 158°F)
  *Note: integrator to verify actual internal maximum fixture temperature
- Relative humidity: up to 99 % non-condensing
- Adaptative lighting: Manual on/auto-off, auto-on/auto-off and grace period compliant (complies with N.Y. LL48 and many other energy regulations)

WARRANTY

- Limited 5-year warranty
- Up to 10-year extended available

DIMENSIONS

(LENGHT X WIDTH X MAX HEIGHT) (IN/MM)
4.75 x 2.65 x 1.53 in / 120.65 x 67.31 x 38.9 mm

WIRING DIAGRAM

Please refer to the wiring diagram's documents.

ORDERING INFORMATION

RTM	Radio Type	Driver (0-10V by Default)	Options
	XBP-IO: Digi XBee PRO 2.4 GHz **9HP-IO:** Digi XBee PRO 900 MHz	**DALI:** DALI	**SENSOR**: Example: Snow Sensor **N4**: NEMA4 enclosure **CK**: RGB wireless control **DMX**: RGB wireless control