GREYSTONE
ENERGY SYSTEMS INC

# WIRELESS SENSORS

Made in Canada

RoHS COMPLIANT

GREYSTONE HAS AN ISO 9001 REGISTERED QUALITY SYSTEM

# WIRELESS SENSORS

Greystone's wireless product line is one of the first wireless MESH systems that can be fully operated with a battery. Every transmitter acts simultaneously as a repeater, removing the need for external repeater units in the network. Utilizing the latest wireless technology innovations, Greystone's MESH network ensures extreme reliability even in the most challenging radio environments. In addition, with an external power supply, there is a possibility to run a wireless network with minimal latency in applications where speed is a high priority.


## WIRELESS NETWORK

The base unit GWBU is the heart of the wireless MESH network, supporting up to 100 wireless transmitters for a wide range of measurements and options, e.g. temperature, humidity, CO2, occupancy, and implementation of wireless room interface. There are also input modules that can convert digital contacts, NTC10 temperature measurement and 0...10 V inputs to wireless messages, which allows for almost unlimited application possibilities. The product line is designed to be both tangle-free and future-proof, aiming to offer the most comprehensive and multifunctional wireless portfolio on the market.

**Network can be designed without the need of any external repeater units**

**Easy installation and commissioning with Greystones mobile application**

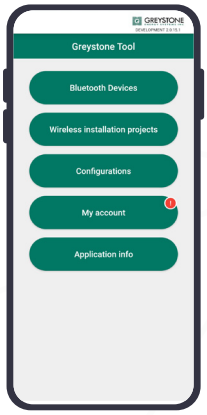
**All transmitters on network are working as a repeater**

**The entire network installation is done via mobile app**

**Possibility to make a fully battery operated MESH network**

**Patented FPCC technology to prevent radio signal interference caused by other radio equipment**

The wireless future is here.
Our next-generation wireless solution creates reliability for wireless measuring for a multitude of applications – from building automation to environment monitoring and IoT-applications.

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## WIRELESS

### Network Components

GWBU is a base unit for wireless network transmitters. On this network, all transmitters are communicating with GWBU over the air, with measurement data converted to Modbus TCP/IP, Modbus RTU or 0...10 V analog outputs (6x) for the requirements of BMS or other systems. Wired measurements can be read over Modbus to BMS via inputs (6 px).

## BATTERY-OPERATED WIRELESS

### ROOM TRANSMITTERS

GWBU is a base unit for wireless network The GWTR – battery-operated wireless transmitter – includes temperature measurement, and offers a variety of different options, such as humidity and CO2 measurement, occupancy detection, and display. Also, a setpoint knob and an advanced setpoint knob with the display are available for implementing a wireless user interface in the room. There are two basic colours available: white (GWTR) and black (GWTRB).

# POWER SUPPLY OPERATED WIRELESS

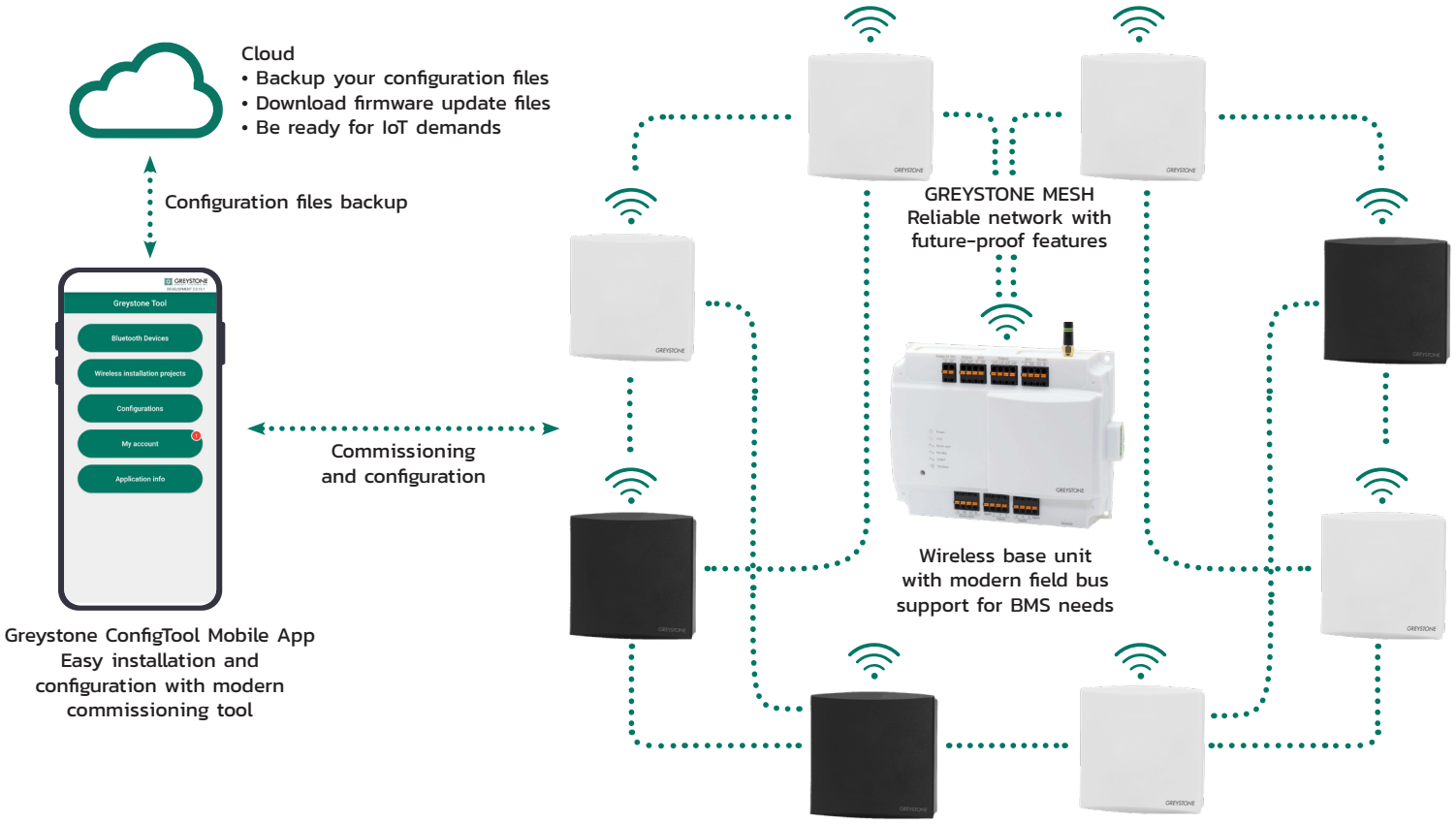
## ROOM TRANSMITTERS

The GWTR24 is a power supply operated wireless transmitter. The basic GWTR24 includes temperature measurement, and offers a variety of different options, such as humidity and CO2 measurement, occupancy detection, and display. Also, an advanced setpoint knob with the display is available for implementing a wireless user interface in the room. Most installations can use battery-powered devices, but wired versions can provide a fast frequency of measurements for applications where speed is a high priority. There are two basic colours available: white (GWTR24) and black (GWTR24B).

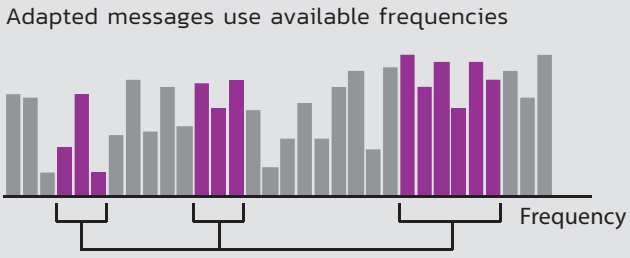
# WIRELESS

## INPUT MODULE

The GWTRIM can be operated with a battery and/or power supply. The basic GWTRIM includes temperature and humidity measurement. GWTRIM supports three additional external measurements, such as NTC10 temperature, 0...10 V inputs, or digital input. There are two basic colours available: white (GWTRIM ) and black (GWTRBIM).




## UNPARALLELED RELIABILITY AND SCALABILITY




MESH network operates along with other wireless technologies in the building by dynamically using the best available communication frequencies. This patented technology minimizes the likelihood of being interfered by or interfering with other wireless systems.

## WIRELESS INTERFERENCES ARE A THING OF THE PAST

A self-healing MESH network is the most energy-efficient way to ensure reliable data transfer, since every transmitter in a MESH network works as a repeater. In case of an interruption, the transmitters simply reroute communication through working nodes – thus keeping a steady connection at all times. Also, two-way communication ensures ultimate reliability with its smart message acknowledgement feature.
Wide network monitoring and supervising possibilities make the system extremely trustworthy.

- Scalable setup from small to large-sized installations.
- The best possible wireless connection
- A wider coverage area than ever before
- Transmitters working as repeaters extend the coverage.

## BATTERY-POWERED FREEDOM

- No need for extra repeaters
- Energy efficient technology
- No need for external power supplies for routing nodes
- Ultra-low power consumption
- Battery lifetime up to 8 years
- Adjustable battery alarm setpoint
- Battery-operated transmitters with displays also available

## The first fully battery-operated MESH network on the market

**Built-in options**

Temperature
Display
Value Over Bus
Adjustable poll interval
CO2
COV
Humidity
Dewpoint

**External measurements**

Dry contact
Resistance
NTC 10 K Thermistor
0...10V

## INTUITIVE SECURITY

By using the handy Greystone Configuration application, the entire wireless network can be configured and commissioned easily through your standard mobile device.

All the network messages between devices are encrypted in AES-128 level. Easy remote firmware updates allow time and money savings and ensure future-proof security.

## Presenting an easy-to-use tool for quick configuration and updates

**THE MANY FUNCTIONALITIES OF GREYSTONE CONFIGURATION**

- Network commissioning
- Network monitoring
- Signal scanning
- Finding the best possible transmitter installation places
- Device data monitoring

## STUNNING MULTIFUNCTIONALITY

Operating in the globally accepted frequency 2.4 GHz, which is acknowledged in various environments, Greystone wireless products offers a broad gamut of possibilities and options for system integrators – including wide measuring opportunities, alarm and monitoring functions, wireless user interface option, and more. With base unit polling and/or transmitter change of value features, the system provides increased flexibility to network data collecting.

## A plethora of features to fully benefit system integrators