

Optimize Energy Efficiency with the TBH300 Energy Management System

Universal Electronics Inc.'s (UEI) new TBH300 Energy Management System (EMS) Kit is designed to help optimize energy efficiency. The TBH300 EMS Kit is a combination of hardware and software that provides a solution to reduce energy consumption when a hotel room is unoccupied. The TBH300 EMS Kit includes a smart thermostat, and door/window and occupancy sensors.

Improving Energy Efficiency & Reducing Energy Consumption

With multiple efforts being made by commercial businesses to reduce their energy usage and implement solutions and systems that are more energy efficient, the hotel industry is leading the way. Research performed by the Sustainable Hospitality Alliance found that the hotel industry needs to reduce its carbon emissions by 66% per room by 2030, and by 90% per room by 2050.

Hoteliers are implementing energy management systems to be more energy efficient in unoccupied guest rooms. A typical guest room can be unoccupied nearly 70% of the time. Hoteliers are paying for heating, cooling, lighting, and power in empty guest rooms. **Climate Control**

TBH300 Energy Management System Kits



White and Black versions available





Many hoteliers are automating their guest rooms with smart outlets, smart light switches, occupancy sensors, smart door sensors, smart thermostats, and system software for controlling guest rooms remotely.

The TBH300 EMS Kit is a solution for reducing energy consumption in unoccupied guest rooms with the following features:

- When a room is occupied with the HVAC system turned on and either a window or door is opened, the TBH300 thermostat LCD screen will display a warning message and turn the system off after a specified amount of time. The time for the events to be triggered is configurable via the installer mobile app.
- Advanced logic and separate occupancy and door/window sensors identify the room state and adjust the HVAC system operation to optimize energy usage. If the occupancy sensor does not detect motion within a set amount of time, then the thermostat will switch to the unoccupied state and either turn off or switch to the temperature setpoints for the away state.

While some energy management systems rely solely on occupancy sensors in the thermostat, the energy management system does not always get an accurate occupancy state (blind zone or guest is asleep in the bed), the TBH300 energy management system looks for extra information (entry door open/close) in addition to the occupancy sensor, and has an integration option to override the operation if needed.

Increase Energy Savings

The U.S Energy Information Administration reports that incentives, in the form of equipment subsidies or rebates, are deducted from installed equipment costs for high-efficiency equipment – namely, those equipment types or appliances that meet or exceed ENERGY STAR® specifications. Electric bills account for 60% of an average hotel's total energy expenditure, according to CBRE's Consumption and Pricing Influence Hotel Utility Costs expenses data. Implementing a solution such as the TBH300 EMS Kit will aid in increasing energy cost savings within a few billing cycles.

The U.S Energy Information Administration conducted a Commercial Buildings Energy Consumption Survey, where they report that hotels and motels in the U.S use an average of 14 kilowatt-hours (kWh) of electricity and 49 cubic feet of natural gas per square foot (ft2) annually.

By installing an energy management system, a hotelier may expect to see savings by conserving three hours per day (assuming that the room is vacant for at least three out of the 24 booked hours). The average electricity rate in the U.S is 10.42 cents per kilowatt-hour. For reference, the table below provides examples of monthly savings per room for top tourism states.

State	Average KW/H price for each state for September 2020 Rates updated daily	Average KW/H estimated saving with energy management system (three hours conserved/day)**	Average saving per month/ per room with energy management system
California	21.23	7.5	\$47.77
Florida	9.01	10	\$27.03
Hawaii	27.28	8.125	\$66.50
Nevada	7.89	10	\$23.67
New York	15.8	8.75	\$41.48

Electricity rates per state gathered from Energybot (<u>https://www.energybot.com/electricity-rates-by-state.html</u>)

** Estimates only. Actual savings may vary due to variables such as room size, occupancy time, guest behavior, AC efficiency, etc.



Energy Management System Components

An energy management system is composed of hardware and software that works to lower energy consumption.

The most common sensors/devices included are:

- Smart thermostats
- Motion/occupancy sensors
- Door/window sensors
- Lighting controls
- Smart light bulbs

The TBH300 EMS Kit includes a smart thermostat that utilizes both door/window and in-room occupancy sensors to detect motion and switches the thermostat between on and unoccupied modes to adjust the room's temperature accordingly.

TBH300 Thermostat Connected vs. Non-Connected

The TBH300 EMS Kit can be installed as a standalone energy management system (non-connected) per room or connected to a property management system (PMS).

Improving guests' experience is one of hoteliers' top priorities. With a remote control with a TBH300 thermostat connected to a PMS, the TBH300 unit will have been turned on by the PMS as the guest makes their way from the front desk to the hotel room.

With the addition of remote control via a PMS, when a guest checks out, the TBH300 unit can be remotely turned to the unoccupied state with the unoccupied temperature setpoints and remain in the unoccupied state until the next guest checks in.

If the TBH300 EMS Kit is installed as a standalone energy management system (non-connected), the system will respond when the guest walks into the room and the occupancy sensor will trigger the TBH300 unit to turn on the HVAC system to either heat or cool to the preset temperature setpoint. With offline management no Cloud or gateway is required, only TBH300 and sensors to manage and adjust setpoints, based on occupancy state.

Installer Benefits

The TBH300 EMS Kit includes a mobile application for installers to easily configure the TBH300 thermostat with the door/window and occupancy sensors without the need to repeat the thermostat setup every time on every unit that needs to be installed. The app also makes it easy to create and configure profiles per room and property, to reduce setup time. The mobile application features BLE for easy configuration and setup of the TBH300 thermostat with the door/window and occupancy sensors. The configuration and setup process can be completed offsite, which increases per room installation efficiency when on property. The mobile application is available on iOS and Android.

TBH300 Thermostat Paired with Nevo Butler for Voice Capabilities

The TBH300 thermostat can also offer voice capabilities via UEI's flagship smart hub, Nevo Butler, powered by our nevo.ai digital assistant, allowing hoteliers to offer unique and branded experiences for all in-room services including entertainment control, climate control to help with managing energy costs, and guest services.

With Nevo Butler the TBH300 EMS Kit is a complete system for energy management by enabling voice control and remote access to the thermostat, saving energy automatically with advanced logic and separate sensors to identify room state without sacrificing guests' comfort.

Learn more about nevo.ai and Nevo Butler: <u>https://quicksetcloud.com/nevo/nevo-butler/</u>





Types of TBH300 Energy Management System Kits

To accommodate different types and sizes of properties and hotel rooms we offer three kits:

- EcoBasicRoom
 - o 1TBH300 thermostat
 - o 1 occupancy sensor
 - o 1 door/window sensor
- EcoStandardRoom
 - o 1TBH300 thermostat
 - o 1 occupancy sensor
 - o 2 door/window sensors

EcoExtendedRoom

- o 1TBH300 thermostat
- o 2 occupancy sensors
- o 1 door/window sensor

Each of the products included can be sold separately to accommodate the needs of each hotelier.

Please note that the information provided herein is for informational purposes only, and does not constitute any representations or warranties by Universal Electronics Inc.

For samples and pricing please contact UEI's Senior Vice President of Global Sales for Home Automation, Security and Hospitality, Hrag Ohannessian, at hohannessian@uei.com





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About UEI

Founded in 1986, Universal Electronics Inc. (NASDAQ: UEIC) is the global leader in universal control and sensing technologies for the smart home. The company designs, develops, manufactures and ships over 500 innovative products that are used by the world's leading brands in the consumer electronics, subscription broadcast, security, home automation, hospitality and climate control markets. For more information, please visit www.uei.com.