

Overview

GE wireless clock solutions comprise a reliable master/slave cascading network that synchronizes clocks from a central on-site master controller. The master clock receives highly accurate time signals from an NTP or GPS source and relays timecodes to local slave clocks via wireless signals.

Each receiving slave clock acts as a signal repeater, transmitting the timecode instantly to nearby clocks, which do the same. This ripple effect occurs in mere microseconds, but has the ability to synchronize more than 60,000 clocks installed throughout highrises, sprawling facilities, and small buildings alike.

Because the signal fans out and is repeated by a cascading number of devices, a single clock will typically receive its data from a number of different angles. This dramatically reduces the effect of obstructions, noise sources, or long distances on the reliability of the system. Furthermore, if an individual clock loses its signal, it will link to a nearby clock and automatically synchronize with that new source.

The cascading network also reduces system setup and installation costs, thanks to the relatively low signal strength that is necessary for it to function efficiently. This eliminates the expense and time required to obtain an FCC license.

Standard Features

- ZigBee open protocol cascading wireless network
- Master clock supports GPS or NTP time source
- Can support over 60,000 slave clocks
- Slave clocks act as signal repeaters for enhanced reliability
- Easy to install: low voltage power and signaling; no wiring, no FCC radio license required
- Intuitive browser-based setup
- Digital clocks support count-up/count-down timers and message actuation on Code Blue (GE-ZB266 and GE-ZB-456 only) or via remote, or event timing
- Date and time clocks support English, French and Spanish formatting
- Powered via a 110 AC outlet

Wireless Timekeeping Equipment



Application

GE wireless clocks are ideal wherever synchronized timekeeping is desirable, including schools, hospitals, workplaces, transportation terminals, commercial settings, and industrial facilities. A wide selection of analog and digital slave clocks are available, as is a flexible range of mounting and installation options.

GE master clocks easily interface to paging and intercom systems such as GE's StarCall for tone generation and audible signaling for bell schedules. They also conform to the open communications standard adopted by the ZigBee alliance of manufacturers, giving them interoperability with a wide range of wireless automation platforms available today and in the future.

Configuration

GE wireless clocks are easy to configure thanks to GE's exclusive browser-based setup tool. Simply log in to the master clock for intuitive and easy-to-use on-screen configuration.



Specifications

Operating Current	Powered by an AC Adaptor from 120VAC to 19V 3A UL/CSA, CE approved. AC cord with U.S. type 3 prong grounded plug, or directly from AC24V
Storage & Operating Environment	50° F to 120° F (10° C to 49° C) Humidity: 10% to 95% non-condensing
Agency Listings	UL /CSA, FCC
Construction and Finish	Black metal
Master Clock Mounting	Configured as a 19" Rack mount. "Computer Server Black" metal case, 435mm (W), x295mm (D), x45mm (H) .
Clock Mounting	Wall mount and ceiling mount
Transmitting power from master clock	Approximately 0.06W at 2.450~2.480Ghz.
Synchronization time from master to slave clock and slave-to-slave clock (one repeater jump)	Not exceed 0.007 seconds (7mS), maximum jump time is 19; maximum delay 0.13 seconds (133mS).
Time Synchronization	NTP or GPS Master Clocks are synchronized every second and the system has an internal oscillator that maintains plus or minus one second per day between synchronizations so that clock accuracy does not exceed plus or minus 0.2 seconds.
Daylight Saving Rules	Reconfigurable to any new rule without a hardware update.
Relay Contacts	4 relay dry contact O/P (NC, C, NO), 5A, Programmable timer for bell operation or lamp on/off control
Scheduling	Support an interface for a software application to manage clock bell schedules and tones
Master clock	Support the synchronization of up to 65,000 slave clocks or digital displays.
GPS Antenna	Operating temperature: 50° F to 120° F (10° C to 49° C), Humidity: 0% to 95% non-condensing, Length of signal cable: 4.5 meters optional 50 meter extension cable, window or roof mounted
Slave clocks	Acts as a repeater. Maximum repeat time is 19; average transmission range should be 100 meters. Line of Sight (LOS) range (nothing blocking) will be 200 meters. It is expected that there will be one slave clock on each floor, within close proximity to each other, when supporting a multi-floor configuration. Synchronization time from master to slave clock and slave-to-slave clock (one repeater jump) shall not exceed 0.007 seconds (7mS), maximum jump time is 19; maximum delay should be 0.13 seconds (133mS). The slave digital clock colon stays lit when the clock is synchronized. If more than seven minutes elapse with no data received from the master clock, the slave clock will run on its time based (crystal) and the colon will flash
Code Blue	GE-ZB266 and GE-ZB456 support interface to Nurse Call systems that support relay pulse interface to start code blue count up. When invoked, a relay/pulse is sent to the timer, which triggers it to begin counting up. If a code blue status is in effect, it will take priority and the timer's previous task will run in the background until the code blue function is stopped. A switch control allows the user to operate the timer in multiple modes. (3.0mA max. @ 5vac/dc-120vac/dc)

Ordering Information

Model	Description
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Master Clock/Transmitters

GE-MC100-NTP/GPS-ZB Master Clock, NTP/GPS time based, with ZigBee transmitter/receiver, UL Listed, AC Adapter. 650 x 400 x 200 mm / 5.0kg

ZigBee Wireless Digital Clocks (Count down/up)

	Size (WxHxD)	Weight, lb (kg)	LED Size	LED color	Power in	Current	Included
GE-ZB266	14" x 6.7" x 2.5" (355 x 170 x 65 mm)	7.7 (3.5)	Hours: 2.66" Minutes: 2.66" Seconds: 2.0"	Red	DC19V or AC24V	Max.0.5 amperes, consuming power <10 Watts	Antenna, Code Blue wired input, mounting hardware, 110VAC power adapter.
GE-ZB266D	25.8" x 6.7" x 2.5" (655 x 170 x 65 mm)	12.1 (5.5)	Hours: 2.66" Minutes: 2.66" Seconds: 2.0" Date: 1.2	Hours, minutes, seconds: Red Date: Amber	DC19V or AC24V	Max.0.9 amperes, consuming power <20 Watts	Antenna, mounting hardware, 110VAC power adapter.
GE-ZB266W (Double-Faced)	25.8" x 6.7" x 5.1" (655 x 170 x 130 mm)	15.4 (7.0)	Hours: 2.66" Minutes: 2.66" Seconds: 2.0" Date: 1.2	Hours, minutes, seconds: Red Date: Amber	DC19V or AC24V	Max.1.0 amperes, consuming power <20 Watts	Antenna, ceiling mount hardware, 110VAC power adapter.
GE-ZB266DW (Double-Faced)	25.8" x 6.7" x 5.1" (655 x 170 x 130 mm)	26.5 (12.0)	Hours: 2.66" Minutes: 2.66" Seconds: 2.0" Date: 1.2	Hours, minutes, seconds: Red Date: Amber	DC19V or AC24V	Max.1.5 amperes, consuming power <30 Watts	Antenna, ceiling mount hardware, 110VAC power adapter.
GE-ZB456	21.7" x 6.7" x 2.5" (550 x 170 x 65 mm)	4.5 (10.0)	Hours: 4.56" Minutes: 4.56" Seconds: 3.0"	Red	DC19V or AC24V	Max.0.6 amperes, consuming power <25 Watts	Antenna, Code Blue wired input, wall mount hardware, 110VAC power adapter.
GE-ZB456W (Double-Faced)	21.7" x 6.7" x 5.2" (550 x 170 x 131 mm)	18.1 (8.2)	Hours: 4.56" Minutes: 4.56" Seconds: 3.0"	Red	DC19V or AC24V	Max.1.2 amperes, consuming power <30 Watts	Antenna, ceiling mount hardware, 110VAC power adapter.

Accessories

GE-IFR-2	IR Count Down Clock Actuator Infrared transmitter distance: max. 10 meters (face to the clock), Operating battery: 1.5V x 2 size AAA, Operating time: about 2 years (depends on how often it is used). Also used to adjust or set LED brightness and to set language displayed.
GE-MC-020	GPS Receiver with 4.5 m Antenna Cable (Includes GE-MC-040)
GE-MC-030	50 Meter Extension cable for GPS antenna
GE-WCD-01	Wireless Digital Clock demo kit

GE Security

U.S.
T 888-378-2329
F 866-503-3996

Canada
T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Australia
T +61 3 9239 1200
F +61 3 9239 1299

Europe
T 32 2 725 11 20
F 32 2 721 86 13

Latin America
T 305 593 4301
F 305 593 4300

www.gesecurity.com

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