

Innovation Wireless

KRONOsyc GPS or NTP Wireless Clock System

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Product Guide Specification

This product specification is written According to the Construction Specifications Institute (CSI), *MasterFormat™*, *Section Format*, and *Page Format*, contained in the *CSI Manual of Practice*.

**Reference section 16730, 16735.
Reference Master Format 2004 section 275313 (27 53 13 Clock Systems)**

Specifier Note: The following list should be reviewed and edited by Architect/Engineer as required for specific project

PART 1 – GENERAL

1.1 General Requirements and Scope

- A. Furnish and install a complete new Wireless Synchronized Clock system.

1.2 Summary

- A. Wireless Clock Transmitter System
- B. Wireless Clocks
- C. Integration / synchronization with bell system

1.3 Related Divisions and Sections

- A. Division 16- Electrical 120V grounded outlet required for Transmitter, AC powered Analog Clocks, and Digital Display LED Clocks as applicable.
- B. Division 26- Electrical 120V grounded outlet required for Transmitter, AC powered Analog Clocks, and Digital Display Clocks as applicable.

1.4 References

- A. Innovation Wireless Operations Manual and Associated drawings.
- B. Definitions:
 - 1.GPS – Global Positioning System.
 - 2.NTP - Network Time Protocol
 - 3.FCC – Federal Communications Commission
 - 4.DST – Daylight savings time

1.6 Submittals

- A. **System Product:** Submit data sheet for each component and system technical manual.
- B. **Operating License:** The system must be FCC licensed by the Mfg. and license provided to the end user.

1.7 Quality Assurance

A. Qualifications:

1. **Manufacturer:** Company specializing in manufacturing of timekeeping products with a minimum of 10+ year's experience.
2. **Installer:** Company with documented experience in the installation of commercial timekeeping systems or factory authorization.

B. **Warranty:** contractor to provide 1 year system performance warranty after owner occupation and manufacturer to provide a minimum of 3 year warranty on product after shipment.

C. **Operation Costs:** No reoccurring software fees or technical phone support fees are permitted.

1.8 Substitutions

- A. Any proposed substitutions must be identified not less than 10 days prior to bid date.
- B. Clock systems using wires for time synchronization are not acceptable.
- C. Unlicensed systems or systems with FCC license in the name of someone other than the building owner will not be accepted

1.9 Regulatory Requirements

- A. Equipment and components furnished shall be manufacturer's latest model.
- B. System Transmitter(s) shall comply with all FCC rules.
- C. System shall be installed in compliance with local and state authorities having jurisdiction

PART 2 – PRODUCTS

2.1 Manufacturers

- A. Innovation Wireless: - basis of design. Website: www.InnovationWireless.com
- B. Franklin Instruments
- C. If needed

2.2 System Description and Operation

The Innovation KRONOsync transmitter obtains a time update from NTP or GPS and wirelessly sends information to system devices (clocks). The system clocks will be synchronized to the master clock displayed time and automatically update for DST time change. Transmitter shall have an option for manually setting the time and an option for providing messages to system message board devices.

The system has a fail-safe design so that if GPS, NTP, or power interruption were to occur, the battery clocks will continue to operate. Upon the restoration of power, the transmitter will once again communicate with the clocks and normal operation will resume.

Transmitter System shall be rack mountable and 100% programmable from the front operation panel. System programming for Time Zone, Frequency, 12 or 24 hour display, DST on/off, and scheduling of dry contacts/relay located on the Transmitter. Dry contacts used for time updates to other manufactures equipment.

2.3 Equipment

Master Wireless Transmitter: The rack mountable Transmitter is to be installed in a centralized internal location.

A. Master Transmitter: KRONOsync Model # **101005N** basis of design.

1. Transmitter Bracket option – rack mountable part # **105003**

Specifier Note: If GPS is preferred use Transmitter model # 101005. Select additional GPS Cable length (if needed) for the appropriate distance between transmitter and the GPS unit. GPS unit must have an unobstructed view of the sky. 25' Cable part # 106025, 50' Cable Part # 106050, 100' Cable Part # 106100. If Wireless message board option is preferred use #101005MBN

2. NTP: Receiver box comes with a 20" Ethernet cable.

3. GPS option: GPS roof mounted receiver comes with an attached 15' cable (3m). The GPS receiver will be water tight and has a built in receiver. Additional extension cable lengths of 25', 50' and 100' are available. A GPS mounting bracket is provided for secure roof mount or side wall installation.

4. Antenna: 6" broadcasting antenna (included) is attached to the rear of the transmitter. An external mounted broadcasting antenna option on model 101005X (external - 5' tall) is available for extremely large schools or campus environments.

B. Analog Clocks: Analog clocks will be battery operated using 2 "D" cell batteries provided by the manufacturer or AC power based on specification. All clocks shall be wall mounted. Clocks can be added or expanded in any area within range of transmitter. Clocks shall not dependent on other clock devices to synchronize.

1. Clock Models: (Battery/Electric)

- a. 13" Standard Model # **210001** (#**312001** 120VAC, #**311001** 24VAC)
 - b. 16" Standard Model # **220001** (#**322001** 120VAC, #**321001** 24 VAC)
 - c. **Digital Clock options: 120V, 24V**(see website for model #'s)
 - d. **Analog Clock finish options: Brushed Aluminum and Wood Clocks are available:** (see website for specific model #'s)
 - e. **24" Outdoor clock option.** (see website for model #'s)
 - f. **Custom Logo's options are available for analog clocks.**
2. **Wire guards:** Provided to protect clocks in harsh environments:
- a. 16 x 16 inch Wire Guard for 13-inch clocks. Model #**104001**
 - b. 19 x 19-inch Wire Guard for 16-inch clocks. Model #**104002**
3. **Message Board option:** Single line model # 610001, Dual line model #610002, PC based messaging software #610003. The system operates by having a PC loaded with the IW software communicating through the NTP connection to the KRONOsync transmitter. (see website for additional product information)

PART 3 - EXECUTION

3.1 Examination

Verify that construction is complete in spaces to receive equipment and that rooms are clean and dry.

Verify that 120-volt electrical outlet is located within 6 feet of location of transmitter and the outlet is operational and properly grounded.

Verify that all 120-volt electrical outlets for any AC powered clocks are located at the exact installation point and the outlet is operational and properly grounded.

3.2 System Installation

Install in accordance with manufacturer's installation manual furnished with system. Install transmitter system then install clocks.

A. Transmitter

1. The **NTP receiver** shall be located next to or sit on top of the Transmitter. Connect the RJ45 Ethernet cable from your computer network to back of the NTP receiver. Connect the NTP receiver to the Transmitter. The NTP receiver does not require individual power supply
2. The **GPS receiver** shall be mounted on the outside wall of the building, roof, or inside window. In all cases the GPS unit must have a clear view of the sky. If mounted on exterior side wall, there is to be no overhanging structure that can block its view of the sky. If located on the roof, it must be at a height that will prevent it from contacting potentially standing water, or buried under snow. If inside window mounted, the glass cannot contain chemical shielding. (Low E)
3. When power is first applied to the master transmitter, the power light will flash and it will search for a valid NTP or GPS signal and upon receipt, it will

set the internal clock of the transmitter. The transmitter will then transmit time to all receiving devices.

A. Analog Clocks

1. For battery clocks, insert two “D” cell batteries. The receiver will search for a signal from the transmitter by scanning all frequencies. Upon receipt of the signal, the clock will store the frequency in memory and set the clock to the exact second of the transmitter. The clock hands will move in a quick “clockwise” motion until they get to the transmitter time. It can take a few minutes for the hands to set to the exact time.

B. Digital Clocks

1. Connect the DC adapter (supplied with each digital clock) to the appropriate power source. The built in receiver will search for a signal from the transmitter. Upon receipt of signal confirmation, the digital clock will synchronize to the exact time of transmitter.

D. Integration with other master clocks on the PA system or bell system.

1. Program relays located on transmitter #101005N to provide time synchronization via 2 wire connection with the PA system / Bell system. Consult PA system manufacturer for 2 wire integration requirements.

3.3 Cleaning

Prior to final acceptance, clean exposed surfaces of all system components.

3.4 Manufacturer Services

Provide phone technical assistance at no expense or annual fee as required. Operation manuals can be found at innovationwireless.com.

3.5 Field Inspection

Prior to final acceptance, inspect entire system to ensure proper functioning and synchronization of components. Contact Innovation Wireless at **1-888-559-5565**