

## GPS Wireless Clock Systems

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### Product Guide Specification

# GPS Wireless Clock Systems Host Manual

Version 1.03

**Specifier Note: This section covers the Primex Wireless GPS Synchronized Clock System. Consult Primex Wireless for assistance in editing this section for the specific application.**

# GPS Wireless Clock Systems

## Foreword

1.

The user is cautioned that changes or modifications not expressly approved by Chaney Instruments Co. could void the user's authority to operate the equipment.

15.105:

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

15.19 (labeling not on EUT due to size must be in manual:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.

The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

## Chapter I: Introduction

The "GPS Wireless Clock Systems" is a revolutionary, synchronized timekeeping system- it is so easy to use.

The GPS Receiver captures a time signal from the U.S. government's global positioning system (GPS) satellites, the time signal passing by the 902-928MHz Hoping Channels transceiver are sent to indoor Unit, then The 72MHz Transmitter ( another systems ) then broadcasts the time to every Primex Wireless clock in your facility. So all of the clocks are synchronized to the exact second .

## Chapter II: Features

1. 900MHz FHSS transceiver with GPS receiver

Power Supply	Solar Battery TD13515X103/10-12-H(8V/1.55W)
Ni-MH Battery	1.2V X4

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Operation Time	10 minutes every hour
Transmitter distance	300 feet (OPEN SPACE)
Operation Temperature	-40 to +60 centigrade
MCU	PIC16F630
Transceiver	CC1000 (900MHz IS Band, FHSS 50 Hopping Channels)
GPS Receiver Baud rate	4800 (NEMA 0183)
GPS Receiver Unit	Himark Module (EN6808)
Operation Time without solar	60 hours
Full Charging Time	320 hours

## **Chapter III: RF Module Specification**

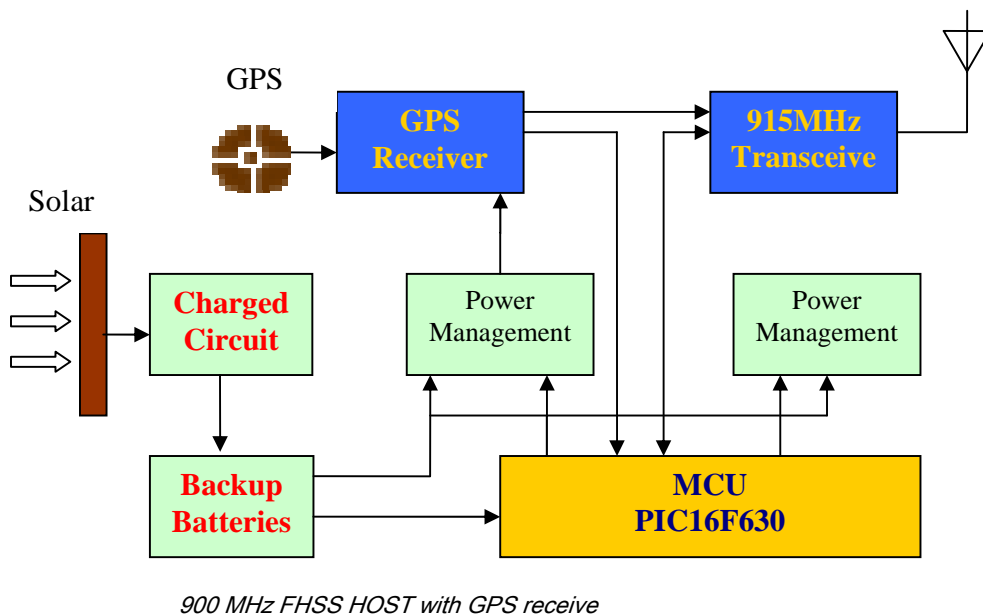
Frequency 902MHz -928 MHz (ISM)

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	902.1	20	911.7	40	921.3
1	902.58	21	912.18	41	921.78
2	903.06	22	912.66	42	922.26
3	903.54	23	913.14	43	922.74
4	904.02	24	913.62	44	923.22
5	904.5	25	914.1	45	923.7
6	904.98	26	914.58	46	924.18
7	905.46	27	915.06	47	924.66
8	905.94	28	915.54	48	925.14
9	906.42	29	916.02	49	925.62
10	906.9	30	916.5		
11	907.38	31	916.98		
12	907.86	32	917.46		
13	908.34	33	917.94		
14	908.82	34	918.42		
15	909.3	35	918.9		
16	909.78	36	919.38		
17	910.26	37	919.86		
18	910.74	38	920.34		
19	911.22	39	920.82		

## GPS Wireless Clock Systems

Transmitter Power	5dBm
Transmitter Time	<400ms
Receiver Sensitivity	-105dBm
Bandwidth of each channel :	64K
Data Rate	2.4K
Channel	50
A transmitter cycle :	<400ms
Antenna :	Helix Antenna
Connector:	SMA-K
Up to the standard for FCC 15.247	

## Chapter IV: Block Diagram

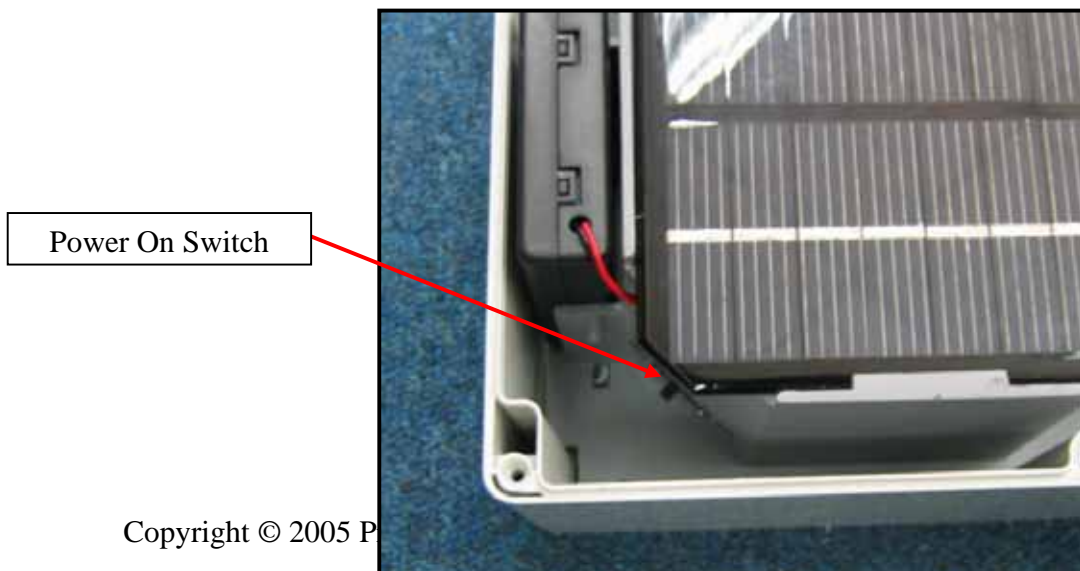


## GPS Wireless Clock Systems

### Chapter V: Interface



Solar panel  
NH rechargeable battery  
ATTENNA  
GPS



Power On Switch

## GPS Wireless Clock Systems

Tx Unit:



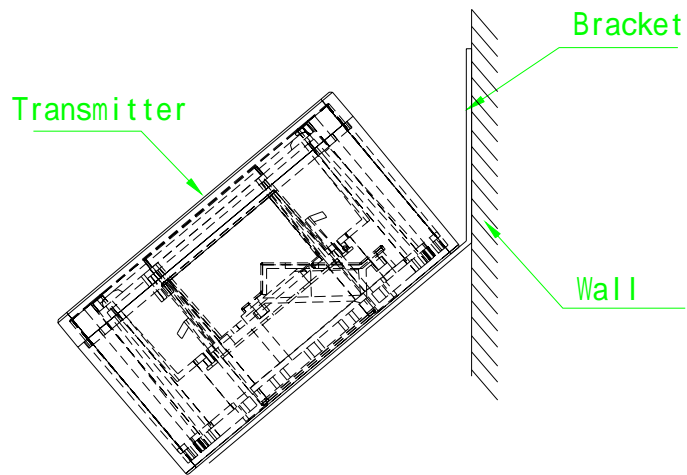
- a. If the transmitter does not receive a valid GPS signal, the transmitter will be shut down within 10 minutes. If the receiver has received 3 packets with valid GPS signal, the transmitter also will be shut down.
- b. If the transmitter did not receive a valid GPS signal before it was shut down last times, After a hour it would be turn on. And the other hand, if it has received a valid GPS signal, it will turn on in next whole hour.

## GPS Wireless Clock Systems

### Chapter VI: Operation



## GPS Wireless Clock Systems



### Installation

1. The solar battery panel is suggested to install at the angle of 35, facing toward the west exactly.
2. The inner GPS module should be adjusted to the sea level by any possibility. Facing to the open air, while it's installed near the wall.
3. The receptor should be fixed in the well-receiving place.
4. After the installment is finished, power on, and the equipment is under working.