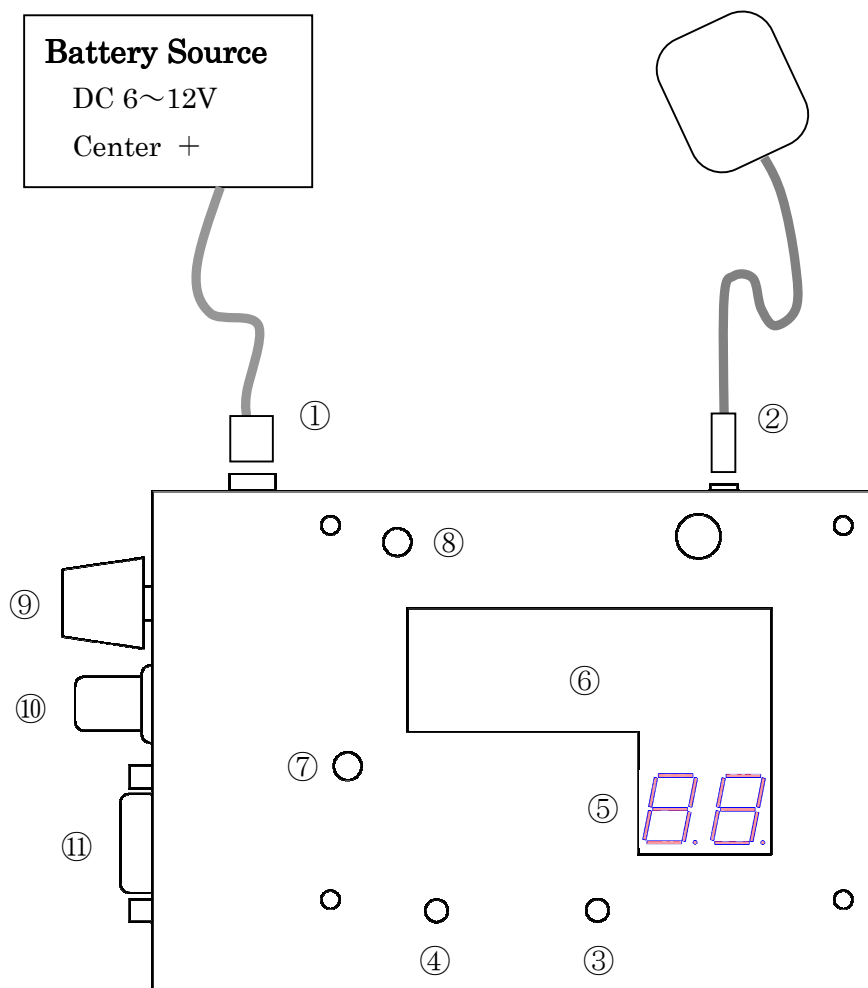


GHS15 clock Manual

Designed by T.Hayamizu



- ① Battery source : DC6~12V.
- ② GPS antenna
- ③ 1 pulse per second LED (red) : Flashing at every second. Duration 0.1sec
- ④ Minute LED (green) : Flashing at 00 second. Duration 0.3sec
- ⑤ 7segments LED : Actual second indicate.
- ⑥ LCD (Liquid Crystal Display)
- ⑦ Tool window : for adjusting LCD contrast.
- ⑧ Menu switch : for change LCD menu.
- ⑨ Speaker volume
- ⑩ Audio Line out : for audio output.
- ⑪ RS-232C Port : for connect to PC Serial port.

1 . Information about setting instruction of the "GHS15 clock"

1. Connect the GPS antenna to "GHS15" clock. The antenna should be located on clear stretched place.
2. Then, turn on the power supply and wait a few minutes...
 - While the GPS receiver is searching satellites,
GHS15clock V1.0 / Now waiting displayed,
and 7segments LEDs are blinking.
3. After the GPS receiver catch the satellites, LCD display UTC and geodesic information.

2 . LCD information

(1) Beginning message

G H S 1 5 c l o c k V 1 . 0
N o w w a i t i n g

(2) The informations

You can change three menu by pushing menu switch.

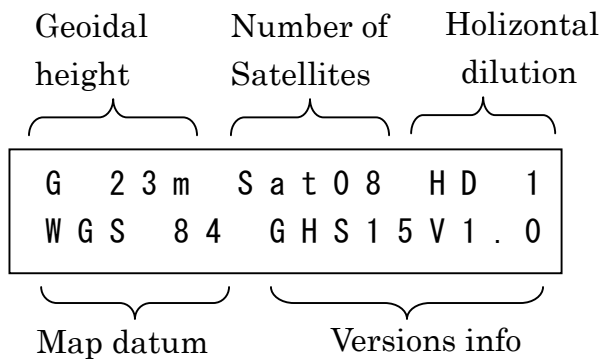
Please refer to "GPS Technical Specifications" page 14 & 17, as it is shown detailed explanation.

[Menu 1]

UTC "hhmm"	Longitude "dddmm.mmmm" E/W
{	{
<div style="border: 1px solid black; padding: 5px; display: inline-block;">1 2 0 3</div>	<div style="border: 1px solid black; padding: 5px; display: inline-block;">1 3 0 2 0 . 5 2 7 1 E</div>
2 8 m	3 1 4 9 . 2 3 0 0 N
}	}
Height	Latitude "ddmm.mmmm" N/S

- Height : Antenna height above mean sea level, meters. (but with a few 10 m error)
- UTC second are displayed at 7segments LEDs
- If the receiver is not stable, the 7segments LEDs change to blink and hemisphere at LCD change to "X".

[Menu 2]



[Menu 3]

Signature

d e s i g n 2 0 0 4 J u n 1 0 b y T . H a y a m i z u
--

3 . The specification of GHS15-clock given below.

(1) GPS receiver : Garmin GPS15L

(2) Voltage of power supply: 6 V DC to 40 V DC

(recommendable: 6V DC to 12V DC)

(3) Out puts

: Longitude, Latitude, height

within 15 m horizontally, but with a few 10 m error vertically.

: UTC/ LED beat (flasher), Buzzer output, Audio output

The rising timing of receiver's output is synchronized within 1 micro second.

But the LED device has a delay of about 40 micro seconds or so.

:Serial communications / Free software "Satk" (developed by Takashi Setoguchi) is usable via PC.