How to display exact GPS time

If you want to display the exact time on the LED sign, install a GPS receiver[1].
When a GPS receiver is connected to the LMD controller, it periodically receives accurate time data from satellites and maintains the controller's time accurately.

Here, we explain how to connect the GPS receiver to the LMD controller(LMD-C1-1S, "96x32" pixel screen basis) and display the date and time as the picture right.
The method is similar regardless of the LMD controller model.

1. Supply power to the LED sign.

2. Run DABIT Protocol Simulator on you Windows PC.

3. Connect the controller's port "J3(TTL)" to your PC by a RS232 cable and set the communication.
   >> refer to "DABIT Simulator Manual, A-1" .

4. Click "ASCII Protocol" tab, and enter/send the packet below.

   ![000/C2 20/i17-/i18-/i19 /i24 /C1/i21/i31/i22 /C6/i27!]

   ☞ /i17,18,19,24,21,31,22,27 : protocol to import the time data
      For details, refer to "LMD Protocol Document, A-2".
   Then, the LED sign will display the default time "2070-01-00 AM 12:00 WED".

5. Change the baud rate of port "J3(TTL)" to **9600bps** according to "DABIT Simulator Manual, A-9".

6. Connect "J3(5V, RX, GND)" port of the LMD Controller to GPS receiver(red, white, black) as shown below.
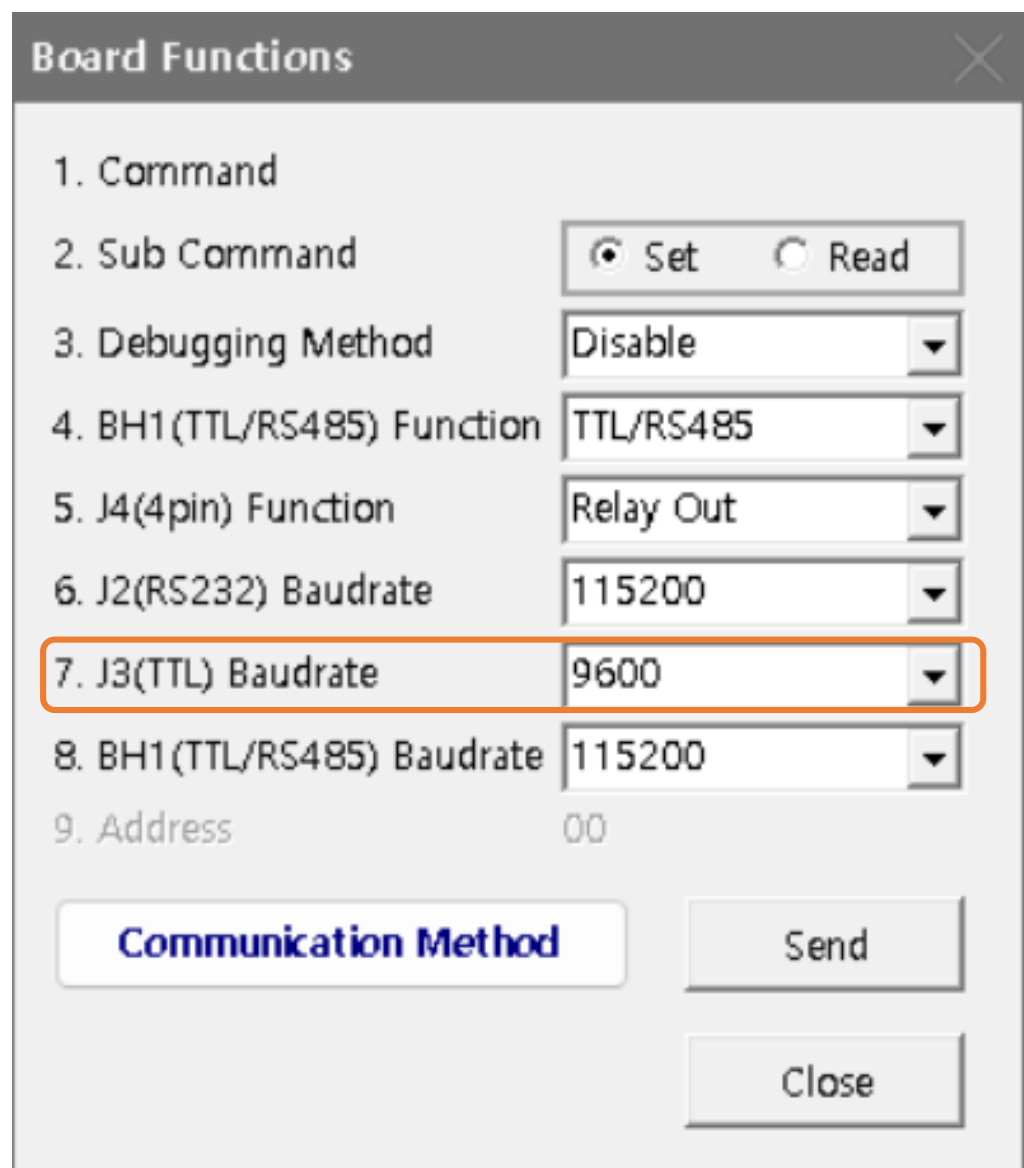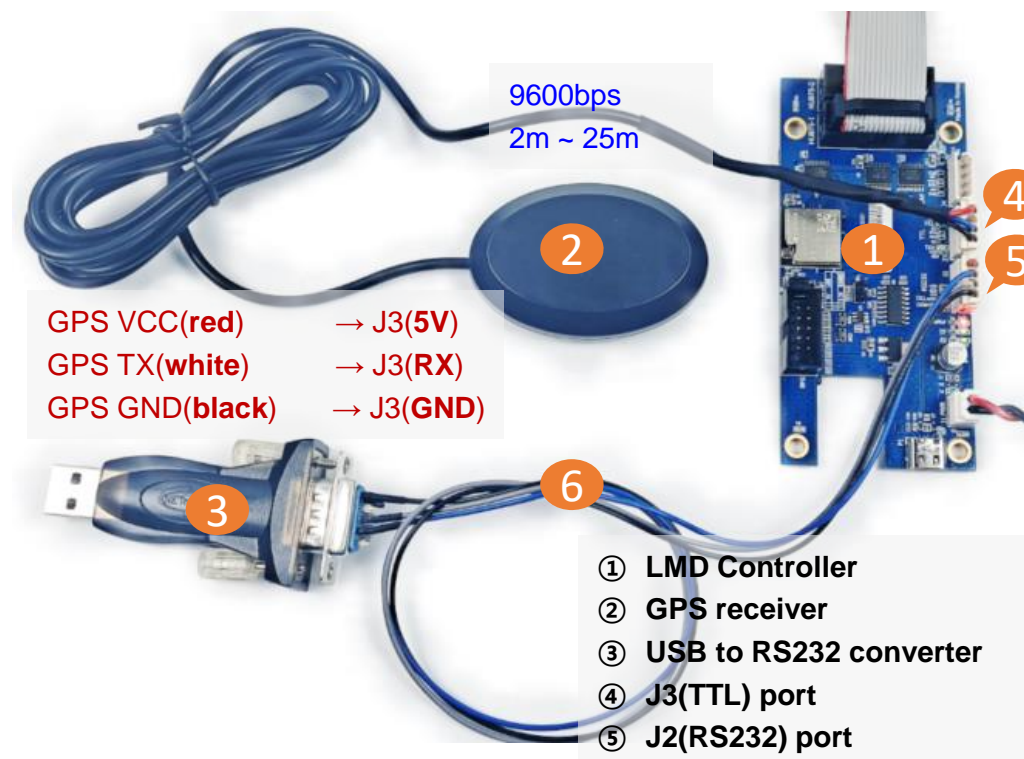
   ☞ GPS VCC(**red**) → J2(**5V**), GPS TX(**white**) → J2(**RX**)
      GPS GND(**black**) → J2(**GND**)

   Then, LED7(Green) for RX of "J2(RS232)" will start blinking.

7. Place the head of the GPS receiver in an open air with a clear view of the sky to receive satellite signals well.
   Then, The LMD Controller will try to receive satellite time data.
   Initially, it may take "30 seconds ~ 3 minutes" depending on the satellite reception sensitivity.
   When satellite data is received, the exact time will be displayed on the LED sign as shown in the photo above.

9600bps
2m ~ 25m

GPS VCC(**red**)   → J3(**5V**)
GPS TX(**white**)   → J3(**RX**)
GPS GND(**black**)   → J3(**GND**)

① LMD Controller
② GPS receiver
③ USB to RS232 converter
④ J3(TTL) port
⑤ J2(RS232) port

Board Functions

1. Command
2. Sub Command   ⦿ Set   ○ Read
3. Debugging Method   Disable
4. BH1(TTL/RS485) Function   TTL/RS485
5. J4(4pin) Function   Relay Out
6. J2(RS232) Baudrate   115200
7. J3(TTL) Baudrate   9600
8. BH1(TTL/RS485) Baudrate   115200
9. Address   00

Communication Method   Send
                            Close

[NOTE 1] You can buy the "GPS receiver(TTL, 9600bps)" at www.aliexpress.com or from us. >>link1, link2
The cable length is approximately 2m, and if necessary, you can extend it up to 25m.