



GPS-721

Quick Start Guide

Date: Oct. 2010

● Introduction:

This manual introduces the user to the methods used to implement the GPS-721 module into their applications in a quick and easy way, and will only provide basic instructions. For more detailed information, please refer to the GPS-721 user manual located on the ICP DAS CD-ROM, or download it from the ICP DAS web site: http://www.icpdas.com/products/GSM_GPRS/wireless/gps-721.htm

● Package Checklist



One GPS-721 Module



Software Utility CD



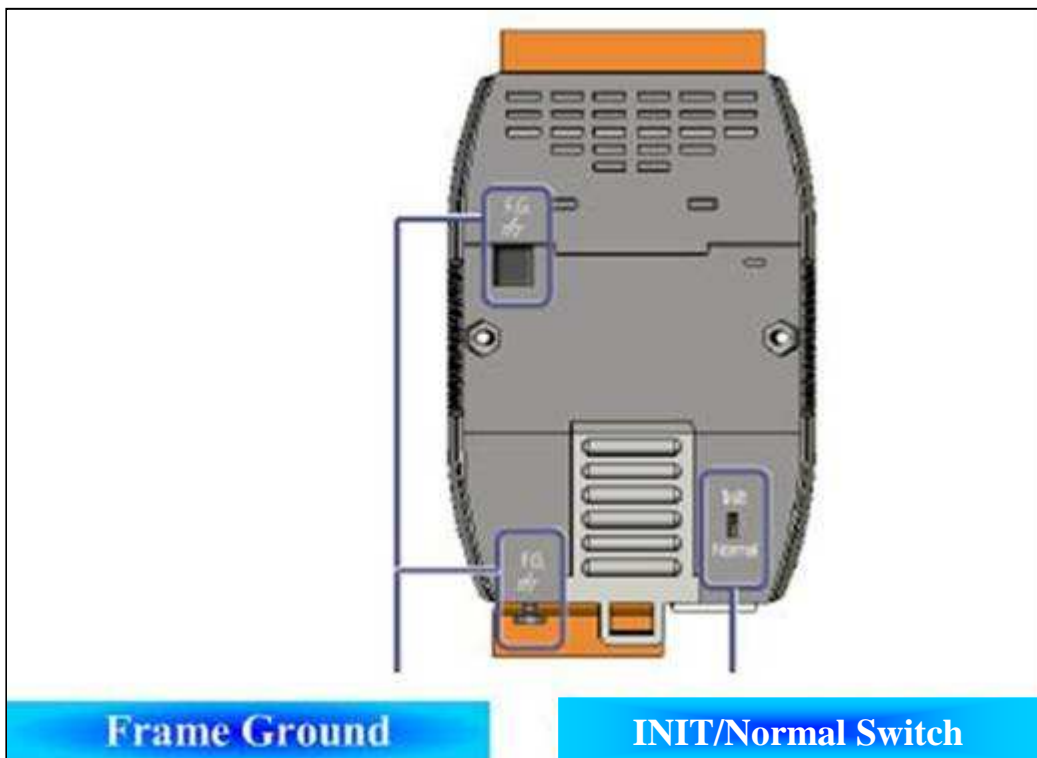
Quick Start Guide



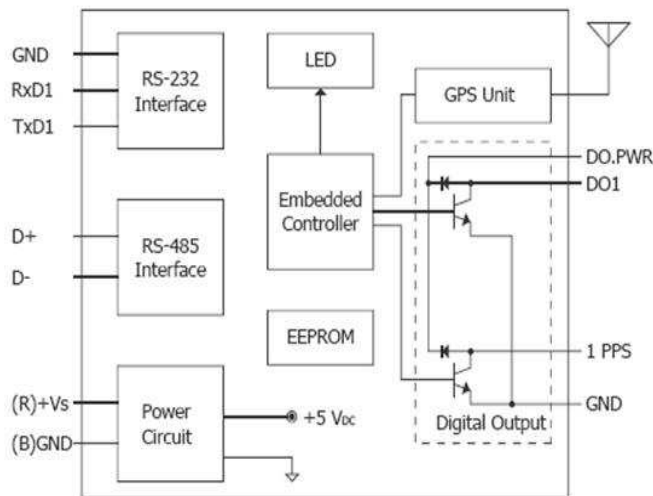
RS-232 Cable

Item	Quantity
GPS-721	1
External GPS antenna (ANT-115-03, Length: 5m)	1
RS-232 Cable (CA-0910)	1
Product CD	1
Quick Start Guide	1

● Appearance



● Block Diagram & Pin Assignments



Terminal No.	Pin Assignment
01	1 PPS
02	DO.PWR
03	DO1
04	GND
05	RxD
06	TxD
07	D+
08	D-
09	(R)+Vs
10	(B)GND

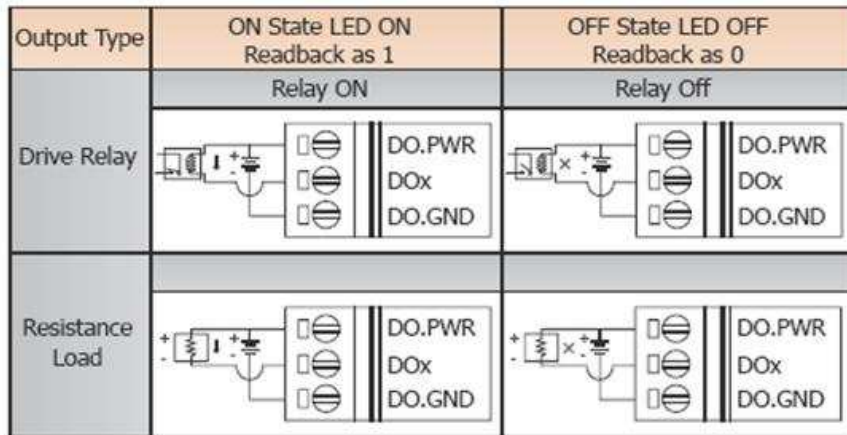


● LED Indicators

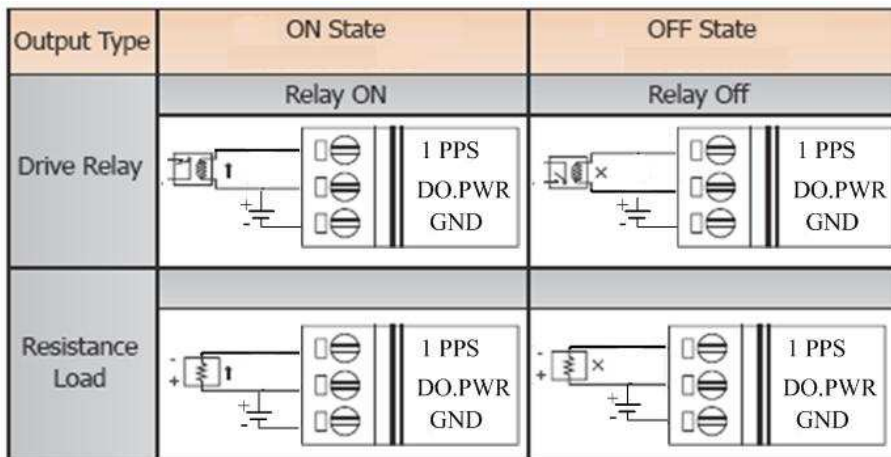
LED	Status	Description
Sys.	ON	The module is operating / functioning correctly.
	OFF	There is an error with the module. The module has encountered an error.
DO1	ON	Digital Output is active.
	OFF	Digital Output is off.
S1	ON	The number of signals received from GPS satellites is less than 5.
	OFF	Module can't receive any GPS signals.
S2	ON	The number of signals received from GPS satellites is 5 ~ 8 or above.
	OFF	The number of signals received from GPS satellites is less than 5.
S3	ON	The number of signals received from GPS satellites is more than 8.
	OFF	The number of signals received from GPS satellites is less than 8.
1 PPS	ON	The PPS is on.
	OFF	The PPS is off.

● Wiring

DO wiring

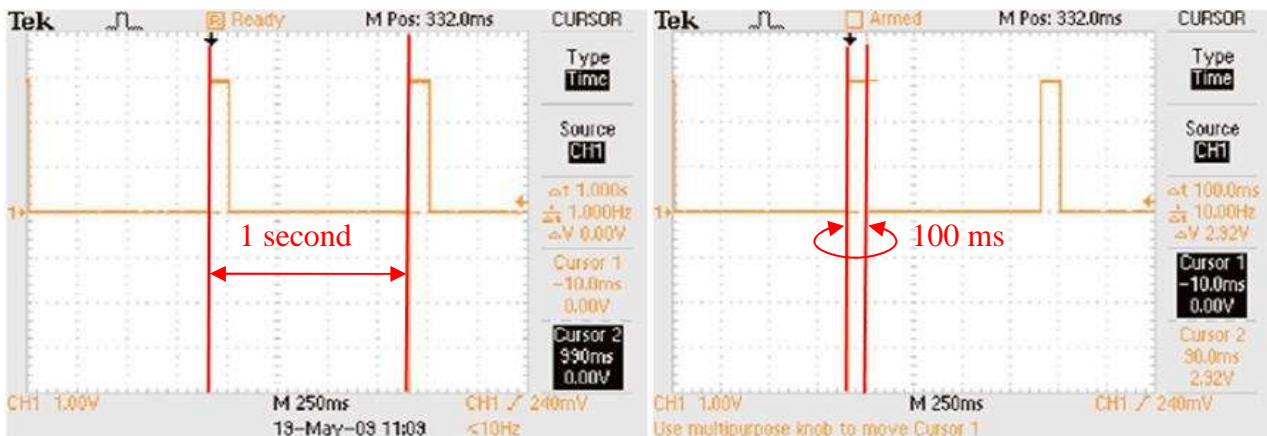


PPS wiring

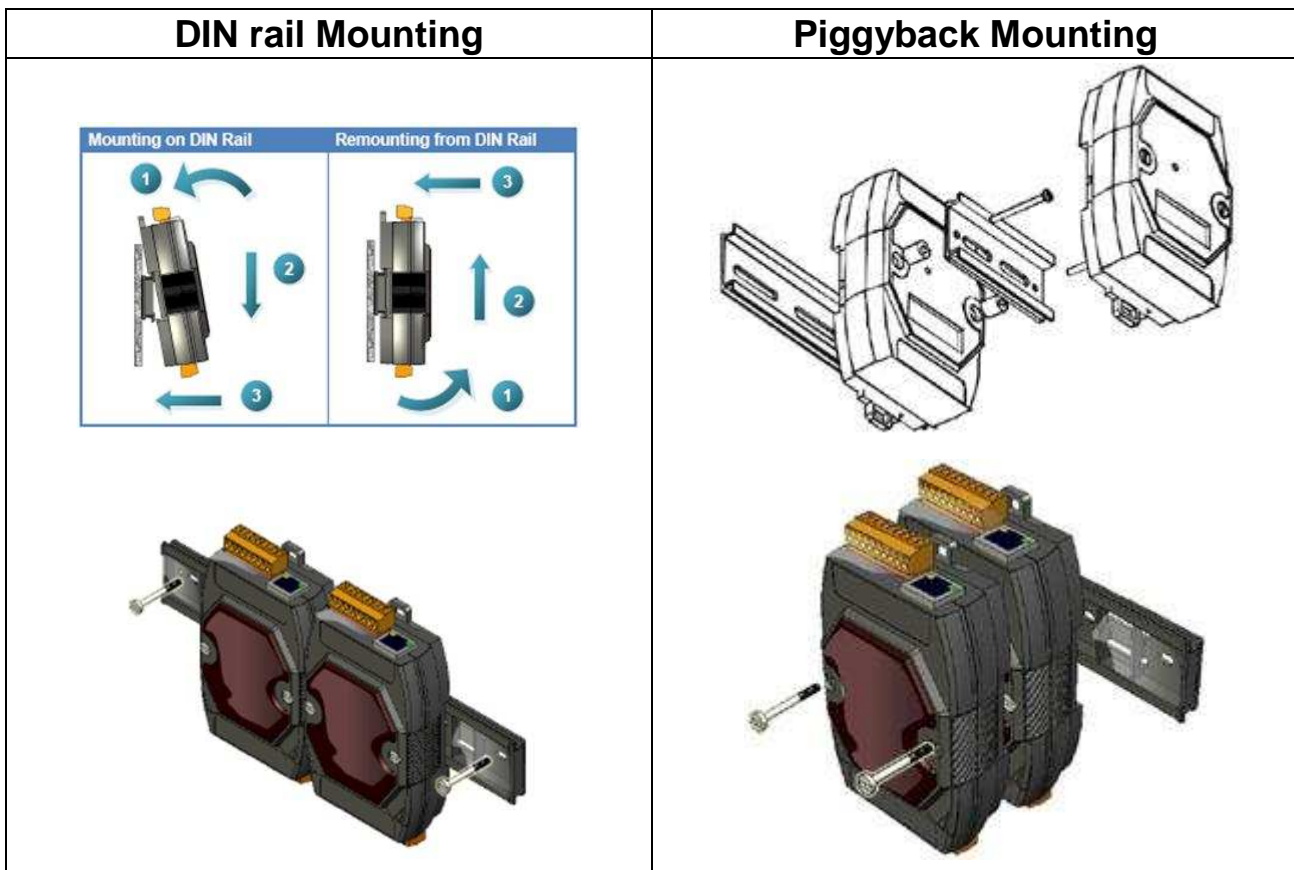


● PPS output

The PPS would output the pulse when receiving effective GPS signals. That would output 100 ms pulse per second. The figure is as follows.

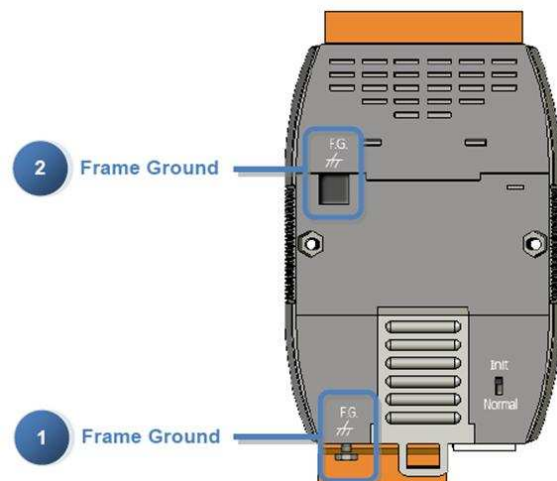


● Mounting



● Frame Ground

Electronic circuits are constantly vulnerable to Electro-Static Discharge (ESD), which becomes worse in a continental climate area. The GPS-721 features a new design for the frame ground, which provides a path for bypassing ESD, allowing enhanced static protection (ESD) capabilities and ensures that the module is more reliable. Either of the not described her options will provide a better protection for the module.



Default address and communication parameters:

- **Protocol: DCON**
- **Module address: 01 (INIT mode: 00)**
- **Communication Baud Rate: 9600 bps**
- **Checksum: Disabled**

How to Start

1. Refer to the pin assignments for details of how to install the power and antenna.
2. Connect the module to the RS-485 network using the DATA+ and DATA- terminals. If the host is only equipped with an RS-232 interface, then an RS-232 to RS-485 converter will be required. The GPS-721 supports RS-232 connections.

By setting GPS-721 to INIT mode, the default settings can be used to connect to the GPS-721.

3. Configure the module by sending the %AANNTTCCFF command. See Section 2.1 of the User Manual for details.

ICP DAS provides two free tools, the DCON Utility and Send232.exe, which can be downloaded from <http://ftp.icpdas.com/pub/cd/8000cd/napdos/>

4. You can implement the functions of the modules using the following DCON commands.
5. If the host is a PC with a Windows operating system installed, the DCON Utility can be used to allow easy configuration and reading of data. The DCON Utility can be downloaded from the ICP DAS website (<http://www.icpdas.com>). The documentation for the DCON Utility can be found in the "Getting Started For I-7000 Series Modules" manual.

Note:

If the GPS-721 is unable to receive GPS signals, check the position of the antenna or install the GPS antenna in an open environment.

● DCON Command Table

General Command Sets			
Command	Response	Description	Section
%AANNTTCCFF	!AA	Sets the Module Configuration	2.1
#**	No Response	Synchronized Sampling	2.2
#AA	!AA(Data)	Reads UTC Time, latitude, longitude, and the number of GPS satellite signals	2.3
#AAN	!AA(Data)	Reads UTC Time, latitude, longitude, date and the number of GPS satellite signals individually	2.4
#AA00(Data)	>	Sets the Digital Output	2.5
#AA0A(Data)	>	Sets the Digital Output	2.6
#AA1c(Data)	>	Sets the Digital Output	2.7
#AAAc(Data)	>	Sets the Digital Output	2.8
\$AA2	!AANNTTCCFF	Reads the Module Configuration	2.9
\$AA4	!S(Data)	Reads the Synchronized Data	2.10
\$AA5	!AAS	Reads the Reset Status	2.11
\$AA6	!AA(Data)	Reads the Digital Output Status	2.12
\$AAC	!AA	Clears the Latched DO Status	2.13
\$AAD	!AA	Save the current date temporarily	2.14
\$AAF	!AA(Data)	Reads the Firmware Version	2.15
\$AAM	!AA(Data)	Reads the Module Name	2.16
\$AALS	!AA(Data)	Reads the Latched DO Status	2.17

@AA	>(Data)	Reads the Digital I/O Status	2.18
@AA(Data)	>	Sets the Digital Output Channels	2.19
~AAO(Name)	!AA	Sets the Module Name	2.20
~AAD	!AAF	Reads the DI/O active status.	2.21
~AADVV	!AA	Sets the DI/O active status.	2.22
~AAI	!AA	Sets the soft INIT	2.23
~AAM	!AASC	Reads with the RS-232 communication mode of the module is NMEA 0183 or DCON	2.24
~AAMN	!AA	Sets the RS-232 communication mode of the module to either NMEA 0183 or DCON	2.25
~AATnn	!AA	Sets the soft INIT timeout value	2.26

Host Watch Dog Command Sets			
Command	Response	Description	Section
~**	No Response	Host OK (The address in this command is zero and can clear the watch dog counter.)	2.27
~AA0	!AASS	Reads the Status	2.28
~AA1	!AA	Resets the Status	2.29
~AA2	!AAVV	Reads the Timeout Settings	2.30
~AA3EVV	!AA	Sets the Timeout Settings	2.31
~AA4V	!AA(Data)	Reads the Power On/Safe Value	2.32
~AA5V	!AA	Sets the Power On/Safe Value	2.33

If you encounter any problems while using you I-87211W module, and are unable to find the help in this manual or on our website, please contact ICP DAS Product Support.

Email: service@icpdas.com

Website: <http://www.icpdas.com/sevices/support.htm>