Zeli Systems
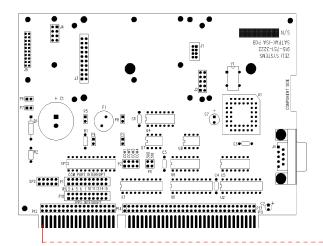## SATPAK-ISA

The *"NoHassle"* GPS solution for the Personal Computer

Features:

- The SATPAK-ISA is a carrier board that provides modular GPS receiver technology to the personal computer.
- The SATPAK-ISA can be configured to mate with the Trimble ACEII/ACEIII, Trimble SK2/SK8 (Lassen), Navman Jupiter, Canadian Marconi SuperstarII, or Motorola M12/VP/GT/UT Oncore GPS receivers.
- Employs a Universal Asynchronous Receiver Transmitter (UART) to communicate with the GPS receiver.
- Fused +5 volts to GPS receiver.
- Simple jumper selection of I/O communication port base address (COM1, COM2, COM3, COM4) and interrupt level (IRQ3-IRQ7, IRQ10-IRQ12, IRQ14, or IRQ15).
- Bracket mount DB9S connector for RS232 or RS422 differential RTCM correction data.
- Uses a 1 Farad capacitor to retain almanac, ephemeris, and real-time clock of the selected GPS receiver.
- Single-ended or differential Time Pulse output (1PPS) provided on bracket mount DB9S connector.
- Optional 1PPS interrupt to the ISA bus for NTP or timing applications. Interrupt level can be selected from IRQ3-IRQ7, IRQ10-IRQ12, IRQ14, or IRQ15.
- Mounting hardware provided for selected GPS receiver.
- Development kits available for first time users.
- Mounting and connector holes provided to mate with an 8-bit PC\104 module.

SATPAK-ISA Function: The SATPAK-ISA provides an inexpensive method to interface a modular GPS receiver to the ISA bus used in personal computers. The SATPAK-ISA can be configured to mate with the Trimble ACEII/ACEIII, Trimble SK2/SK8 (Lassen), Navman Jupiter, Canadian Marconi SuperstarII, or Motorola M12/VP/GT/UT Oncore GPS receivers. The TTL communication signals of the selected GPS receiver are transmitted and received over the ISA bus using a universal asynchronous receiver transmitter (UART). The SATPAK-ISA can be selected for COM1, COM2, COM3, or COM4 base

addresses via a simple push-on jumper. The associated ISA bus interrupt can be selected from IRQ3-IRQ7, IRQ10-IRQ12, IRQ14, or IRQ15. A keep-alive voltage is generated by using a large value (1 Farad) capacitor to maintain the almanac, ephemeris, and real-time clock of the selected receiver. A bracket mount DB9S connector allows RS-232 or RS422 communication to accommodate differential GPS (DGPS) corrections. The DB9S connector also provides the 1PPS timing pulse generated by the GPS receiver in either a single-ended or differential format.

Power: The GPS receiver +5 volt power is fused using a resettable fuse that is thermally activated. Once the fault condition has been removed, the fuse will automatically reset after cooling. If an active antenna is chosen for the Navman Jupiter, then a jumper on the SATPAK-ISA connects a fused +5V to the center conductor of the antenna cable. Auxiliary voltages (+12 and -12 volts) are only used by the 1488 driver that provides RS-232 signal level conditioning on pin 2 of the bracket mount connector J6. If this feature is not required, then the SATPAK-ISA can operate solely from +5 volts.

Serial Data: Communication with the primary serial port of the selected GPS receiver is performed using the UART and 8-bit ISA input/output interface on the SATPAK-ISA. DGPS data interfaces to the second serial port on the GPS receiver via connector J6 on the bracket.

1PPS Interrupt Option: The 1PPS interrupt option allows the SATPAK-ISA to generate an ISA bus interrupt from the Time Pulse (1PPS) signal generated by the GPS receiver. This interrupt can be used in timing applications or by various network protocols.

RF Input: An RG174 antenna adapter cable is typically used between the GPS receiver and the bracket on the SATPAK-ISA. Please reference the ordering information to specify what type of adapter cable is required. Zeli Systems can also integrate your GPS receiver, antenna, and cables with the SATPAK-ISA.

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SATPAK-ISA SPECIFICATIONS

Mechanical, Environmental, Power:

Mechanical:	ISA Bus compatible
Dimensions:	6.665" x 4.800"
Operating Temp:	0°C to 70° C
Extended Temp:	-40°C to 85° C
Relative Humidity:	<90% (non-condensing)
Power:	+5V +/- 5%, 0.3 A
	+/-12V +/- 5%, 0.010 A

Note: +/-12V only needed for RS-232 output on bracket connector J6 if required.

Connectors:

DGPS/1PPS:	J6
Conn:	Differential GPS and 1PPS port
Type:	Bracket Mount DB9S

Ordering Information:

Please note that the SATPAK-ISA can be delivered with various configurations for the DGPS/1PPS bracket mount connector J6. The SATPAK-ISA can also be ordered with various types of RF cables between the antenna cable and GPS receiver. The following part numbers and prices identify these ordering configurations.

Configured for Trimble ACEII/ACEIII:
SATPAK-ISA-TS   RS232 for DGPS on J6
SATPAK-ISA-TD   RS422 for DGPS on J6
Configured for Trimble SK2/SK8 (Lassen):
SATPAK-ISA-LS   RS232 for DGPS on J6
SATPAK-ISA-LD   RS422 for DGPS on J6
Configured for Navman Jupiter or Canadian Marconi SuperstarII:
SATPAK-ISA-JS   RS232 for DGPS on J6
SATPAK-ISA-JD   RS422 for DGPS on J6
Configured for Motorola M12/VP/GT/UT Oncore:
SATPAK-ISA-MS RS232 for DGPS on J6
SATPAK-ISA-MD RS422 for DGPS on J6

Antenna/Receiver RF Cables (1 foot length):
Add "BS" suffix   BNC Jack/SMB
Add "BO" suffix   BNC Jack/OSX

1PPS Interrupt Option:
ADD "1PPS" suffix

Example: To order the SATPAK-ISA configured for the Trimble ACEIII with the 1PPS interrupt option and an RF adapter cable providing a BNC jack for the antenna connection and an SMB connector at the GPS receiver, use the following part number:

SATPAK-ISA-TS-1PPS-BS

Development Kits: Development kits are available for each of the receivers that can be used with the SATPAK-ISA. Each kit contains a SATPAK-ISA configured for the selected GPS receiver, GPS receiver mounting hardware, SATPAK-ISA manual, 1PPS interrupt option, RF cable between the antenna cable and GPS receiver, plus a 4 foot length of cable to communicate with the differential correction port (J6) located on the bracket of the SATPAK-ISA.

Development Kit Ordering Information:

Development kit for Trimble ACEII/ACEIII:
SATPAK-ISA-TDEV
contains: SATPAK-ISA-TS
GPS Receiver Mounting Hardware
1PPS Interrupt Option (1PPS)
Operation Manual
BNC Jack/SMB RF adapter cable (BS)
Serial RS-232 DGPS cable (4 foot length)

Development kit for Trimble SK2SK8 (Lassen):
SATPAK-ISA-LDEV
contains: SATPAK-ISA-TS
GPS Receiver Mounting Hardware
1PPS Interrupt Option (1PPS)
Operation Manual
BNC Jack/SMB RF adapter cable (BS)
Serial RS-232 DGPS cable (4 foot length)

Development kit for Navman Jupiter or Canadian Marconi SuperstarII:
SATPAK-ISA-JDEV
contains: SATPAK-ISA-JS with
GPS Receiver Mounting Hardware
1PPS Interrupt Option (1PPS)
Operation Manual
BNC Jack/OSX RF adapter cable (BO)
Serial RS-232 DGPS cable (4 foot length)

Development kit for Motorola M12/VP/GT/UT ONCORE:
SATPAK-104-MDEV
contains: SATPAK-ISA-MS with
GPS Receiver Mounting Hardware
1PPS Interrupt Option (1PPS)
Operation Manual
BNC Jack/OSX RF adapter cable (BO)
Serial RS-232 DGPS cable (4 foot length)

Antennas: (various mounting options available)   Call

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