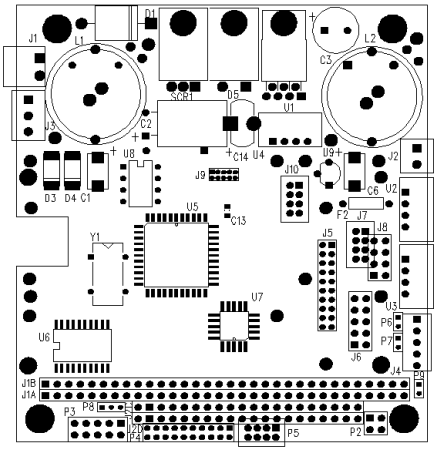
Zeli Systems
SATPAK104GPS-25 WATT



The *"No Hassle"* GPS Solution for the PC/104 Bus with 25 Watt PC/104 *Power Supply*

All on One Board

Comment:

Features:

- The SATPAK104GPS-25WATT is a carrier board for miniature GPS receivers with a 25 watt power supply in a single PC/104 module.
- Can be configured to accommodate the Trimble SK8/SK2, Trimble ACEII/ACEIII , Trimble LassenLP, Navman Jupiter, Canadian Marconi SuperstarII, and Motorola M12/VP/GT/UT GPS receivers.
- Employs a Universal Asynchronous Receiver Transmitter (UART) to communicate with the GPS receiver.
- Simple jumper selection of I/O communication port base address (COM1, COM2, COM3, or COM4) and interrupt level (IRQ3-IRQ7, IRQ10-IRQ12, IRQ14, or IRQ15).
- Onboard DC to DC converter for PC/104 applications that operates from 8V to 40V input range.
- +5V standard, with +12V, -12V, -5V options.
- Low voltage AC input optional.
- Transient suppression "Load Dump" for vehicle applications.
- GPS compliant power. +5V from DC-DC converter meets the ripple requirements of GPS receivers.
- Uses screw terminal blocks for voltage outputs.
- Uses a 0.22 Farad capacitor to retain almanac, ephemeris, and real-time clock of the selected GPS receiver.
- Time Pulse output (1PPS) provided on 10-pin right angle connector P3.
- Provides J1 pass-through for the PC-104 bus. J2 pass-through can be provided as an option.
- Connector P3 used for Differential Correction (RTCM-104) data or optional secondary GPS communication for some (Trimble) GPS receivers.
- Mounting hardware provided for GPS receiver.
- Development kits available for first time users.

SATPAK104GPS-25WATT Function: The SATPAK104GPS-25WATT is an advanced version of the popular SATPAK-104PLUS that also incorporates a 25 Watt DC-DC converter on the same PC/104 module. In many PC/104 applications, the addition of the 25 Watt DC-DC converter combined with the GPS function will eliminate a stack position that would otherwise require a dedicated PC/104 power supply module. This concept provides an inexpensive method to interface a GPS receiver to the PC/104 bus and provide power for the PC/104 bus and external peripherals. The SATPAK104GPS-25WATT can be configured to mate with either a Trimble SK2/SK8, Trimble ACEII/ACEIII, Trimble LassenLp, Navman Jupiter, Canadian Marconi SuperstarII, or Motorola M12/VP/GT/UT GPS receiver. The TTL communication signals of the selected GPS receiver are transmitted and received over the PC/104 bus using a universal asynchronous receiver transmitter (UART). The GPS receiver interface can be selected for COM1, COM2, COM3, or COM4 base addresses via a simple push-on jumper. The associated PC/104 bus interrupt can be selected from IRQ3-IRQ7, IRQ10-IRQ12, IRQ14, or IRQ15. A keep-alive voltage is generated by using a large value capacitor (0.22 Farad) to maintain the almanac, ephemeris, and real-time clock of the GPS receiver. A right angle 10-pin connector allows RS-232 communication to accommodate differential GPS (DGPS) corrections or secondary communication with some models of GPS (Trimble) receivers.

25 Watt DC-DC Converter: The 25 watt DC-DC converter accepts voltage inputs from 8V to 40V and provides +5V as standard, and optional +12V, -12V, and -5V to power the PC/104 bus and external peripherals. The +5V output by the DC-DC converter is GPS compliant and satisfies the ripple requirements of all GPS receiver modules that can be used with the SATPAK104GPS-25WATT. The DC-DC converter is designed for vehicle applications and utilizes a heavy duty transient suppressor (5000W) that clamps input transients to tolerable safe voltages. A low voltage AC input option is available. A pass-through connector (P2) allows connection to an optional battery pack module.

GPS Communication: Communication with the primary serial port of the selected GPS receiver is performed using the UART and 8-bit PC-104 input/output interface on the SATPAK104GPS-25WATT. Communication with the secondary serial port of the GPS receiver is via RS232 signal levels on right angle connector P3. Differential correction messages are also received on connector P3.

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SATPAK104GPS-25WATT SPECIFICATIONS

Mechanical, Environmental, Power:

Mechanical:	PC/104 Bus compatible
Dimensions:	3.775" x 3.550"
Operating Temp:	-10°C to 70° C
Extended Temp:	-40°C to 85°C
Relative Humidity:	<90% (non-condensing)
GPS Interface Power Consumption:	+5V +/- 5%, 0.2 A +/-12V +/- 5%, 0.010 A

Note: +/-12V only needed for RS-232 output on connector P3 if required. Will require +/-12V option on DC-DC converter.

DC-DC Converter:

+ 5V Output*	5 A
+12V Output	166 mA
-12V Output	166 mA
- 5V Output	400 mA
Input Voltage Range	8 to 40V
Efficiency	Up to 92%
Switching Frequency	260 kHz
AC Input Range	6 to 20 VAC
Output Ripple on 5V	<40 mV

- Current rating includes current supplied to +12V, -12V, and –5V regulators.

Connectors:

J1-1	8-40 VDC Input	3.81 mm screw terminal
-2	Ground	
J2-1	+5V Output	3.50 mm screw terminal
-2	Ground	
J3-1	+ VAC Input	3.50 mm screw terminal
-2	- VAC Input	
J4-1	+12V Output	2.54 mm screw terminal
-2	-12V Output	
-3	-5V Output	
-4	On/Off TTL Control	
-5	Ground	
P1-1	8-40 VDC Input	Mating Plug for J1
-2	Ground	
P2-1	Ground	Pass-through connector
-2	Battery In +	
-3	Ground	
-4	On/Off TTL Control	
PC/104	8-bit	64-pin pass-through
PC/104	16-bit	40-pin pass-through

Part Number Ordering Information:

SATPAK104GPS-25WATT-T	Trimble ACEII or ACEIII
SATPAK104GPS-25WATT-L	Trimble SK2/SK8
SATPAK104GPS-25WATT-LP	Trimble LassenLp
SATPAK104GPS-25WATT-J	Navman Jupiter
SATPAK104GPS-25WATT-JDR	Navman Jupiter with Dead-Reckoning
SATPAK104GPS-25WATT-C	Canadian Marconi Superstar

Options:

The basic configuration of the SATPAK104GPS-25WATT provides a GPS interface to the PC/104 bus for the GPS receiver specified above, +5V output from the 25 Watt DC-DC converter, and a 64-pin PC/104 pass-through connector for 8-bit communication over the PC/104 bus. All other options are specified using the following suffix designations:

-16BIT	PC/104 40-pin pass-through connector
-12 **	+12V and –12V outputs
-5	-5V output
-AC	AC Input on J3

** To use RS-232 signal levels on connector P3 for secondary channel GPS communication or differential correction, the "–12" (+/- 12V) option must be ordered.

Example: To order the SATPAK104GPS-25WATT configured for the Trimble SK-2 with the 16-bit pass-through connector, and +/-12V output, use the following part number:

SATPAK104GPS-25WATT-L-16BIT-12

Development Kits: Development kits are available for each of the receivers that can be used with the SATPAK-04GPS-25WATT. Each kit contains a SATPAK104GPS-25WATT configured for the selected GPS receiver, 16-bit PC/104 pass-through connector, +5V output, GPS receiver mounting hardware, operation manual, and 4 foot length RS-232 communication cable to communicate with the secondary GPS channel via connector P3. To specify a development kit, add the "-DEV" suffix to the basic configuration part number.

Example: To order a development kit that is configured to mate with the Trimble SK2, use the following part number:

SATPAK104GPS-25WATT-L-DEV

GPS Receivers: Zeli Systems can provide GPS receivers integrated with the SATPAK104GPS-25WATT. Contact the factory for pricing information

Antennas: Zeli Systems can provide a variety of antennas with the SATPAK104GPS-25WATT. Contact the factory for pricing information.

Mechanical Considerations: The SATPAK104GPS-25WATT conforms to all PC/104 specifications when used with all candidate GPS receivers.

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