Zeli Systems
SGA – SAASM – JPADS

Rugged Packaging Solution for the SAASM-Based GB-GRAM Module

Features:

- Rugged enclosure developed for the U.S. Army Joint Precision Airdrop Systems (JPADS) that houses the Ground Based GPS Application Module (GB-GRAM).
- The GB-GRAM incorporates Selective Availability Anti-Spoofing Module (SAASM) technology.
- Incorporates one-piece extruded aluminum tube as main body. The main body tube utilizes side grooves/ribs to support the internal Printed Circuit Board (PCB) the entire length of the tube extrusion.
- Stainless Steel stand-offs are used to provide additional mechanical stabilization for the internal PCB.
- Rear panel (left photo above) incorporates combinational D-Subminiature connector for antenna input, communication, and power.
- Standard DS-101 keyload connector on rear panel.
- Front panel (right photo above) incorporates a standard KYK-13/KOI-18 keyload connector.
- Battery compartment on front panel houses a 2/3 AA Lithium battery to provide up to 4-months auxiliary voltage for the GB-GRAM. The 2/3 AA battery is specifically chosen to prevent inadvertent replacement with a commercial alkaline battery.
- Push Button zeroize switch easily accessed from front panel. The zeroize switch is slightly recessed behind the front panel to prevent accidental activation.
- Black anodized finish.
- Custom configurations available.

SGA-SAASM Function:
The SGA-SAASM-JPADS meets specifications for the U.S. Army JPADS program and is designed to operate with a guidance unit associated with a cargo parachute system. The same product can be used in any application that has a rugged SAASM-based requirement. A one-piece extruded aluminum body provides mechanical rigidity and protection for the internal GB-GRAM and associated interface circuitry. Internal grooves extruded into the walls of the one-piece extrusion provide full-length support for the PCB mounted within the SGA-SAASM-JPADS. Stainless steel stand-offs secured to the base of the unit provide added support for the internal PCB. Tapered guide pins attached to the rear combinational DSUB connector provide a self-alignment capability with a floating mating connector.

Power and Antenna Input:
The SGA-SAASM-JPADS operates from 9-36 VDC that is input via the rear-panel combinational DSUB connector. Internal circuitry provides 5000 Watt peak pulse transient suppression. Overcurrent protection to the GB-GRAM and internal circuitry is provided by a thermal fuse, which is automatically reset when the fault condition is corrected. Auxiliary power is provided by a 2/3 AA Lithium primary cell housed within the front panel battery compartment for convenient field replacement. The battery compartment also allows battery replacement without the need of an ESD workstation. The antenna connection to the GB-GRAM is available at the rear-panel combinational DSUB connector.

Communicating with the Internal GB-GRAM:
Communication with the primary communication channel of the GB-GRAM is performed using the combinational rear-panel DSUB connector at EIA RS-232 signal levels. Ancillary GB-GRAM signals that include HAVEQUICK, Successful keyfill, and COM1 PPS Out are available. The DSUB connector is soldered directly to the internal PCB to minimize internal cable assemblies. Optional part number is available to provide additional COM2 port of the GB-GRAM.

Zeroize and Key Loading:
A zeroize switch is easily accessible from the front-panel and is recessed to prevent accidental activation. KYK-13/KOI-18 keyloading is performed using the keyload connector located on the front-panel. DS-101 keyloading is performed using the keyload connector located on the rear panel.

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SGA-SAASM SPECIFICATIONS

Mechanical, Environmental, Power

Enclosure Dimensions:	Length: 5.120” Width: 4.175” Height: 1.520”
Battery Housing Extension:	0.150” (portion of battery housing that extends beyond front panel)
KYK-13/KOI-18 Connector Extension:	0.700” (portion connector extends beyond front panel)
DS-101 Connector Extension:	0.700” (portion connector extends beyond rear panel)
DSUB Tapered Alignment Pin Extension:	0.750” (portion alignment pin extends beyond rear panel)
Operating Temperature:	-40 °C to 85°C
Storage Temperature:	-55 °C to 85°C
Input Voltage:	9-36 VDC
Active Antenna Output Voltage:	3.3 VDC
Power:	1.2 W typical
Weight:	15.5 oz.

Battery

Battery Voltage:	3.6 VDC nominal
Battery Capacity:	1.5 ampere-hours
Battery Type:	2/3 AA Lithium
Battery Life:	4- months approximate
Battery Model:	Tadiran TL-5955 or equivlent

Front Panel

KYK-13/KOI-18 Connector:	General Connector GC-283
Zeroize Switch:	Recessed SPST, N.O.
Zeroize Actuation Force:	300 grams

Rear Panel

DS-101 Connector:	Ceneral Connector GC-283
DSUB RF Contact Manufacturer:	CONEC Connectors
DSUB Manufacturer:	CONEC Connectors

Ordering Information:	94514xx Standard Enclosure 9451401 Standard Enclosure with additional COM2 access to GB-GRAM
Security Review:	The SGA-SAASM-JPADS has been granted Security Approval by the NAVSTAR Global Positioning System Joint Program office.
Custom Configurations:	Contact Zeli Systems

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