



**MicroGRAM Attached to Component Side of SATPAK-MG**

**Solder Side of SATPAK-MG**

#### Features:

- The SATPAK-MG is a small 1.25" x 1.25" carrier board that provides a convenient interface for the Rockwell Collins MicroGRAM GPS Receiver. The MicroGRAM GPS receiver incorporates a Selective Availability Anti-Spoofing Module (SAASM) and measures 1.00" x 1.25" x 0.268".
- Option A of the SATPAK-MG is designed to connect directly to a mating connector on a host printed circuit board (PCB). This option utilizes two stand-offs that are soldered to the carrier board to mechanically stabilize the carrier/MicroGRAM assembly to the host PCB.
- Option B of the SATPAK-MG is designed for stand-alone mounting applications to a panel or plate within an enclosure. This option also utilizes two stand-offs that are soldered to the carrier board to mechanically stabilize the carrier/MicroGRAM assembly to a panel or plate.
- Both Option A and Option B utilize a single 30-contact interface connector to provide power, communication, keyload, and time pulse signals to the MicroGRAM GPS Receiver.
- The 30-contact interface connector for Option B is mounted on the opposite side of the PCB than used in Option A.
- Cable assemblies to interface with the 30-contact connector used in Option B may be obtained from Zeli Systems.
- The Rockwell Collins MicroGRAM is soldered directly to the SATPAK-MG carrier PCB.
- Two independent COM ports provided at RS-232 or CMOS signal levels (user selected) for both options.
- Same serial interface as MPE-S predecessor.
- DS-101(RS-232) or DS102 keyload.
- 1 pulse per second input.
- 1 pulse per second output.
- Antenna connection is direct to the MicroGRAM GPS Receiver.
- Zeli Systems possesses the required authority to handle SAASM-based GPS receivers and keying material.
- Development kits available for both options.

#### SATPAK-MG Function:

The SATPAK-MG is a PCB carrier board that provides a convenient interface for the Rockwell Collins MicroGRAM GPS Receiver. The MicroGRAM contains a Selective Availability Anti-Spoofing Module (SAASM).

#### Communicating with the Rockwell Collins SATPAK-MG:

The MicroGRAM utilizes two independent serial ports at CMOS levels for communication. The SATPAK-MG provides CMOS to RS-232 level translation for each communication channel. A jumper on the SATPAK-MG allows the user to select CMOS or RS-232 signal levels for each channel.

#### Time Interface Signals:

The MicroGRAM generates a 1 pulse per second (1PPS) output at CMOS levels that the SATPAK-MG provides on the interface connector. The MicroGRAM also supports a 1PPS input that is available on the SATPAK-MG interface connector.

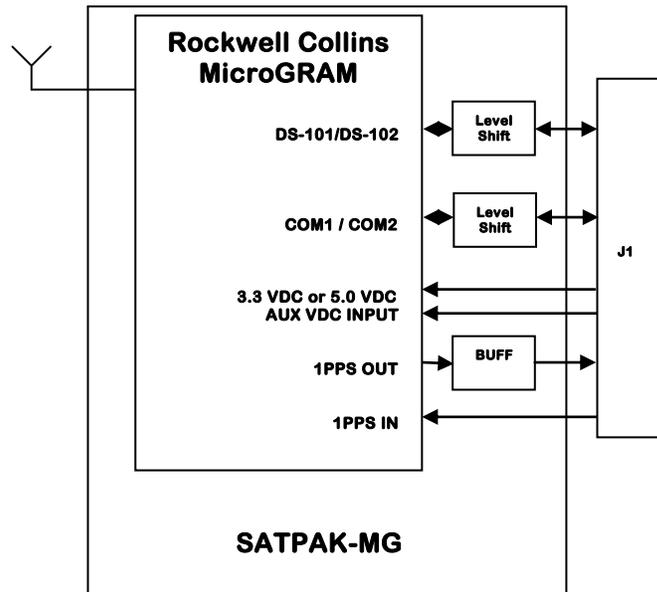
#### Key Loading and Zeroize:

The MicroGRAM uses DS-101 and DS-102 keyload signals at CMOS levels. The SATPAK-MG provides CMOS to RS232 level conversion for the DS101 signals. The SATPAK-MG also provides signal level conversion for the DS-102 keyload signals.

#### Power:

The SATPAK-MG/MicroGRAM combination can operate from a 3.3 VDC or 5.0 VDC power source. The auxiliary voltage to the MicroGRAM is input via the SATPAK-MG interface connector.

## SATPAK-MG SPECIFICATIONS



### Mechanical, Environmental, Power:

Physical Dimensions: 1.25" x 1.25" x 0.59"  
 1.25" x 1.25" x 0.465" (\* optional)  
 Operating Temp: -40°C to 85° C  
 Power: 3.3 V dc, < 0.6 W typical  
 (with MicroGRAM))

### Connectors:

**RF IN:** Located on MicroGRAM  
 Conn: AMC RF Jack A-1JB  
 Type: Coaxial

**Interface Connector:** J1  
 Conn: Samtec TFM-115-01-L-D  
 Type: Straight, 30 contact, dual row

### Interface Cables for Option B:

**Cable PN 9811007:** Straight termination to mate with J1  
 Type: Straight, 30 contact, dual row, 18" length

**Cable PN 9811017:** Right Angle termination to mate with J1  
 Type: Right Angle, 30 contact, dual row, 18" length

### Call Zeli Systems for custom design requirements

\* Optional height specification requires different connector and stand-offs.

### Ordering Information:

Part Number 9811xxx:  
 SATPAK-MG-OPTIONA-CMOS-5VDC:  
 (Configured for direct connection to host PCB with CMOS communication and 5.0 VDC Power Input)

Part Number 9811xx1:  
 SATPAK-MG-OPTIONA-RS232-5VDC:  
 (Configured for direct connection to host PCB with RS232 communication and 5.0 VDC Power Input)

Part Number 9811xx2:  
 SATPAK-MG-OPTIONA-CMOS-3.3VDC:  
 (Configured for direct connection to host PCB with CMOS communication and 3.3 VDC Power Input)

Part Number 9811xx3:  
 SATPAK-MG-OPTIONA-RS232-3.3VDC:  
 (Configured for direct connection to host PCB with RS232 communication and 3.3 VDC Power Input)

Part Number 9811xx4:  
 SATPAK-MG-OPTIONB-RS232-5.0VDC:  
 (Configured for stand-alone operation with RS232 communication and 5.0 VDC Power Input)

Part Number 9811xx5:  
 SATPAK-MG-OPTIONB-RS232-3.3VDC:  
 (Configured for stand-alone operation with RS232 communication and 3.3 VDC Power Input)

Part Number 9811xx6:  
 SATPAK-MG-OPTIONA-DEV:  
 (Option A development Kit with manual, and RF cable)

Part Number 9811xx7:  
 SATPAK-MG-OPTIONB-DEV:  
 (Option B development Kit with manual, RF cable, and J1 interface cable)