



## G3 Technologies, Inc.

### G305-01 packaged FSK Modem User Documentation



#### Introduction:

G3 Technologies, Inc. is pleased to introduce the Model G305-01 packaged FSK Modem. It is a 600 baud narrow-band Modem designed for use on VHF and UHF “splinter” frequencies that were widely used in the ‘80s and ‘90s for SCADA system radio communications.

Although there are some current applications for the FSK Modem, its primary application is in supporting the legacy Amocams SCADA systems. The G305 FSK Modem is a replacement for the Amocams AI 830 MIU (Modem Interface Unit). It is used on the serial port of the Master PC to communicate with the Amocams RTUs in the field.

NOTE also that model G303-558 RIO serves as a drop-in replacement for the Amocams ASC 558 Combo RTU. (See G303-558 User Documentation.)

#### Description:

The G305-01 FSK Modem package is approx. 4”x 4”x1.5”. It requires 12Vdc power, and has a DB9 RS232 DCE port for connection to the PC serial port. A “straight through” RS232 cable is used. The unit also has four LED indicators for Pwr, TXD, RXD and RTS.

The Audio/PTT connection to the radio is provided with a four pin Molex latching connector with /PTT, TX audio, RX audio and Gnd. PTT is active low, and is controlled by RTS from the PC.

NOTE that the FSK Modem module in the G305-01 can be replaced with a Spread Spectrum Radio module converting the unit into a G306 RF Modem. See product data on [www.g3ti.com](http://www.g3ti.com) for more information.

#### G305-01 Features and AI 830 MIU Compatibility Limitations:

1. 600 baud FSK using 1000Hz (space) and 1400Hz (mark). This proprietary FSK was developed and widely used by Amocams SCADA systems.
2. The Molex audio connector pins (connection to the radio) are: 1 (white) = /PTT, 2 (red) = TX audio, 3 (green) = RX audio, 4 (black) = Power common.
3. G3 Technologies supplies general purpose or custom interconnect cables for Modem-to-Radio. However, if you want to fabricate the cables, the required mating connector is: Molex housing #50-57-9404, and 4 ea. crimp terminals #16-02-0097. Parts are stock at DigiKey.
4. The AI 830 MIU was offered in “freq A” and “freq B” versions. The G305-01 FSK Modem is compatible with the AI 830 MIU using “freq A” only. Few “freq B” units were used.
5. The AI 830 MIU uses 120Vac power, while the G305-01 uses +12Vdc power.

6. The AI 830 MIU audio port is 600 ohm balanced pairs (Tx & Rx) suitable for telephone line use, while the G305-01 FSK Modem offers single-ended audio suitable for interface to local radio only.
7. Unlike the AI 830 MIU, the G305-01 provides PTT (active low) for direct control of the radio transmitter. With the AI 830, an ASC 803 "tone operated PTT" board was required to generate the PTT for keying the radio.
8. The G305-01 TX audio level is fixed at approx. 0dbm. NOTE: On most audio-input type radios the FM Deviation is relative to the TX Audio input level. The radio transmitter tuning/alignment must be tested and adjusted by a qualified RF service technician to meet FCC requirements & limitations.

For additional info on the G305-01, as well as other G3 Technologies products, visit our website at [www.g3ti.com](http://www.g3ti.com).

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