



**Automation
Electronics**

WRAT Modem

Overview

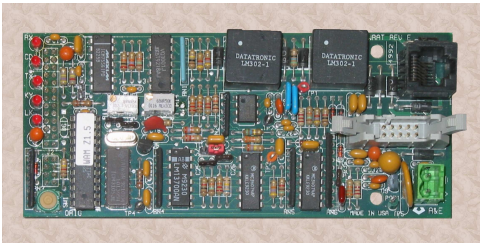


Figure 1: Bell 202 Modem

The WRAT 202 piggy-back modem is specifically designed to interface either radio or wire-line communication signals with the 6008, 608 or 604 family of single board controllers.

The modem piggy-backs on all boards. It requires a regulated input voltage within the range of 12 V_{DC} to 15 V_{DC} to operate.

Features

The modem is designed with five indication LEDs.

- RX (Receive Data)
- CD (Carrier Detect)
- TX (Transmit Data)
- KY (Radio Key On) and
- LK (Transmit Lockout)

The RX LED will illuminate when the modem is receiving data. The CD LED will turn on when it has detected a band of carrier energy. The TX LED comes on when the modem is transmitting data. The KY LED illuminates when the modem is keying its radio for data transmission. The LK LED will turn on when the modem is in transmit mode for more than 12 seconds.

The modem has an Originate (ORIG) button provided for testing purposes. When the ORIG button is pressed and held, the modem will continually transmit its Mark and Space signals until the button is released. Another way to force the modem to continuously transmit its Mark and Space signals is by installing the jumper switch S1 (this is the same as pressing and holding the ORIG button). In normal operation, the jumper switch S1 is removed.

For proper operation of the modem, the jumper switch S2 must be installed in either the position 1-2 or 2-3. For wire-line communication interface, jumper switch S2 should be installed in position 2-3. Jumpering position 2-3 will activate a temperature compensation circuitry that is designed to compensate for the signal drop in the wire-line interface card (Wire card).

The voltage provided by the external 12 V_{DC} is protected by the modem's 1.6 A PolySwitch fuse PCP1 (located next to the modem's input voltage terminal block TB1). Following the PolySwitch fuse PCP1, is the transient protection circuitry designed and tested per the IEEE 472.1974 surge test specification.

Specifications

Mechanical

Size: 5-1/2" x 2-3/8" x 1-1/2" PC daughter board
Data interface: RS-232

Modem

Style: Bell 202
Mark frequency: 1200 Hz
Space frequency: 2200 Hz
Modulation: Frequency shift key (FSK)
Baud rate: 1200 bits/sec asynchronous half duplex

Transmit output power

Mark: 0 dBm
Space: 3 dBm

Transmit output voltage (based on 600 Ω line)

Mark: .775 V_{RMS} OR 2.191 V_{PP}
Space: 1.094 V_{RMS} OR 3.095 V_{PP}

Transmit lockout After 12 seconds of continuous transmit

Receive power sensitivity -40 dBm to 10 dBm

Receive voltage sensitivity 7.75 mV_{RMS} to 2.449 V_{RMS}

Surge withstand Designed to meet or exceed IEEE 472.1974 surge test
