

RFL 9831

Dual Path Programmable Modem

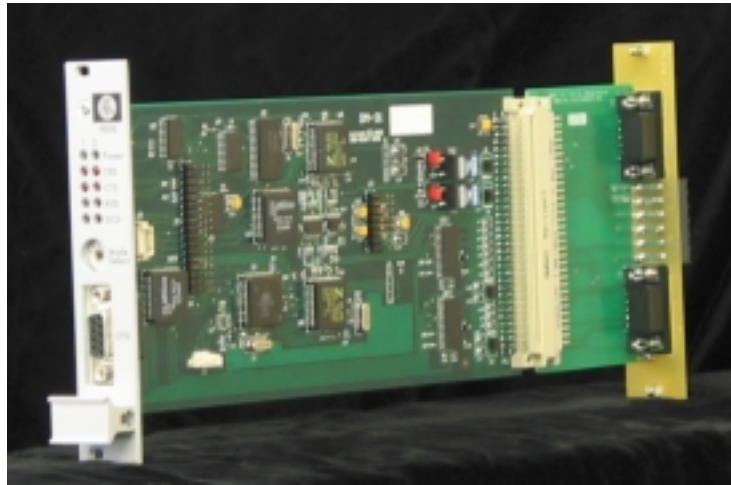


Figure 1. Typical RFL 9831 with Single Programmable Modem and I/O Module

The RFL 9831 Modem is a fully integrated multi function modem with unique options for data communication over VF circuits and copper cable pairs for data rates from 300 to 9600 Baud. Conventional modems are point to point devices, with long multi-hop systems eventually requiring regeneration and or complex hardware configurations, if redundant communications are required. The RFL-9831 modem is unique in that it is readily configurable for multi-drop, regenerated data transmission and it supports redundant communications paths making it the ideal choice for critical data communication applications. The RFL 9831 can operate over 30 ~ 40 km of unloaded or loaded copper cable pairs or a 2 or 4 wire CCITT standard VF channel, with a frequency range from 300 to 3,400 Hz.

The RFL 9831 architecture consists of three modules, (1) 98 Series modem module (P/N105720), (2) optional plug-on redundant modem (P/N 105720-1), (3) (P/N 105265-1) I/O module.

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The modem module functions as a programmable modem with state of the art features and is capable of emulating a range of standard data modem types.

The module also provides LED status indications of data signal state

The I/O module provides connectivity to the DC power supply, 2 x RS-232 DTEs and 2 x VF communication channels.

The RFL 9831 can be mounted in our standard 3 RU (5.75") or 1 RI (1.75") 19" wide rack mount chassis and can be used with our standard 10W, 25W, or 50W 98 Series power supplies.

The RFL 9831 modem's functionality and operating parameters are easily configured using a MS windows based programming utility via a PC connected to the RS-232 serial data port (labeled CFG) on the front panel. All programmable parameters, once entered, are stored in non-volatile memory.

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Configuration	Modulation	Carrier Frequency	Data Rate	Full Duplex	2 or 4 Wire	Constant Carrier Required
V.29 (9600 baud)	QAM	1700	9600	Yes	4	Yes
V.29 (7200 baud)	QAM	1700	7200	Yes	4	Yes
V.22 bis (2400 baud)	QAM	1200/2400	2400	Yes	2	Yes
V.23 (1200 baud)	FSK	1300/1700	1200	Yes	2 or 4	No
Bell 202 (1200 baud)	FSK	1200/1800	1200	Yes	2 or 4	No

Table 1. Typical table of PC Programmable Communication Modes.

ABCD rotary switch on the front panel of each carrier card enables one of four operating modes to be selected.

0. Configuration (programming)
1. Point to Point (P-P)
2. Multi-drop Master / Slave (M/S)
3. Redundant Ring
4. Redundant Point to Point

Point to Point mode: Requiring only one modem per modem card, to provide one transmitter and receiver per terminal. Appropriate communication modes are V.29 & V.22 bis, constant carrier.

Redundant Point to Point mode: Two modems per carrier card provide redundant transmitters

and receivers at each terminal which are connected to alternate communication paths.

Multi-drop point to point operation: For communication modes supporting multiple transmitters and receivers. All communication modes are supported, V.29 & V.22 bis are constant carrier, V.23 & Bell 202 can be either switched or continuous carrier.

Multi-drop Master/Slave: All communication modes are supported provided that constant carrier is used. Each DTE sees only messages from the master, not from the other slaves.

The diagram below illustrates a Master / Slave configuration

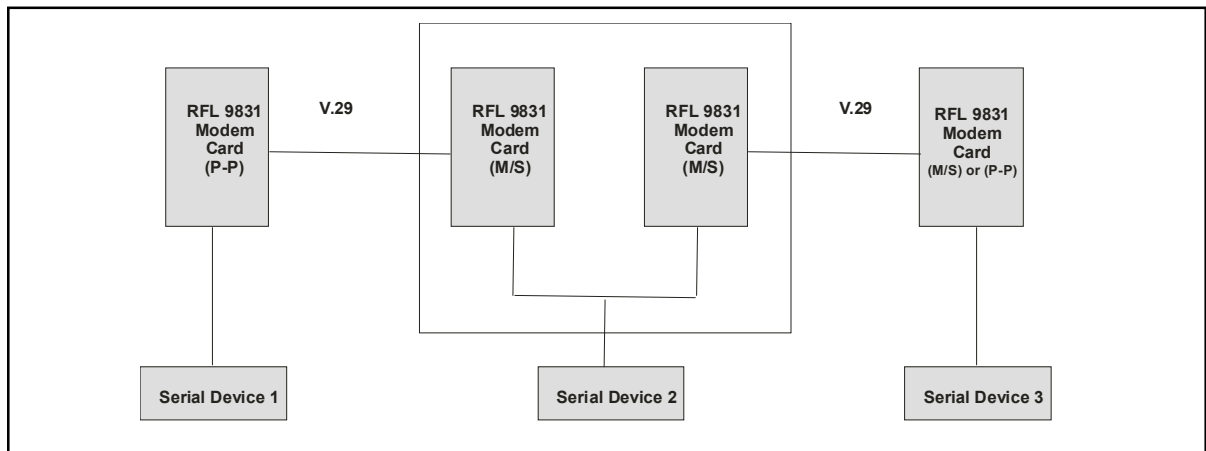


Figure 2. Typical example of Multi-drop Master/Slave configuration.

Redundant Ring operation:

Another special configuration providing multi-drop access for V.29 & V.22 bis is constant carrier communication modes which normally only support point to point operation. This configuration will also work in V.23 & Bell 202 communication modes, provided constant carrier is used. This operating mode provides path redundancy, thus maintaining Master / Slave communications in the event of either a slave modem or communications channel failure. In this mode, messages from the slave modems are broadcast to all DTEs, not only the master.

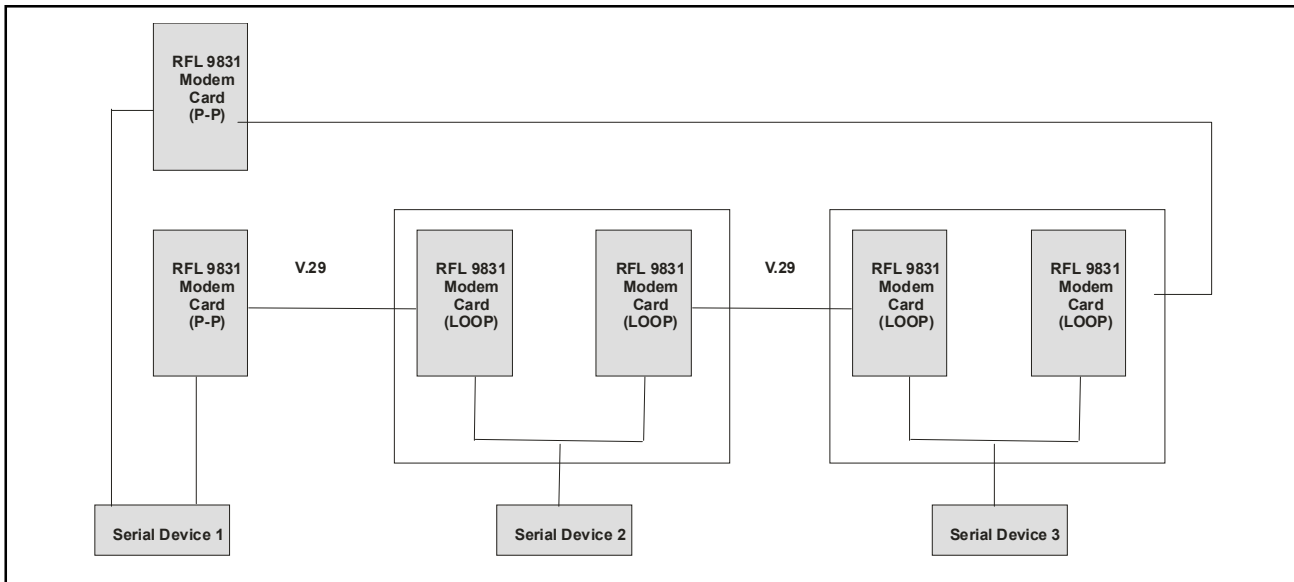


Figure 3. Typical Redundant Ring (Dual Path) configuration.

Data Communication Protocols:

Compatibility with proprietary RTU protocols, such as bit stream protocols, can be provided through an additional low cost protocol interface module in association with the RFL 9831.

Available Protocol compatibility:

1. Siemens SINAUT FW8DPDM
2. ABB Indactic 33/41
3. EMPROS CDC Type II
4. Conitel 2020, 2025, C3000
5. Westinghouse REDAC 70H

This technology allows the higher data rates and throughputs of V.22 bis and V.29, to be used for applications which previously were restricted to slower modems employing FSK modulation.

Please contact RFL Electronics Inc. for further details on these and specifications not listed.

Specifications:

Supply Voltage

300mA from 5Vdc on RFL 98 Series Power Supplies.

Asynchronous RS 232 ports

2 x DB-9 Male

LED Indications

1 green for "power on", 4 red modem indications for each modem

Analog Interface

2 x 2 or 4 wire, 600 ohm or 10k ohm (HiZ)

Transmit Level

-4 dBm ~ -20 dBm Adjustable in 1 dB steps

Receive Level

-4 dBm ~ -47 dBm Adjustable in 1 dB steps

Required Frequency Band

300 ~ 3,400 Hz for V.29

Operating Temperature

-10°C to +75°C

Relative Humidity

95% non condensing @ 25°C

Storage Temperature

-20°C to +75°C



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