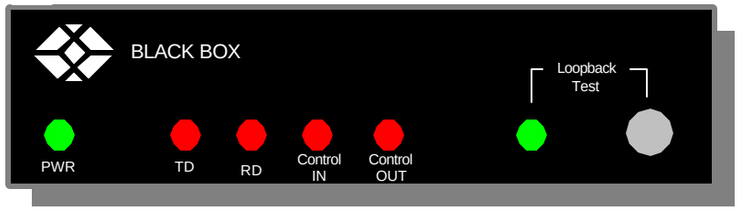
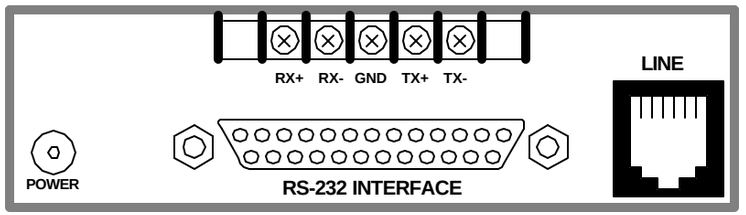
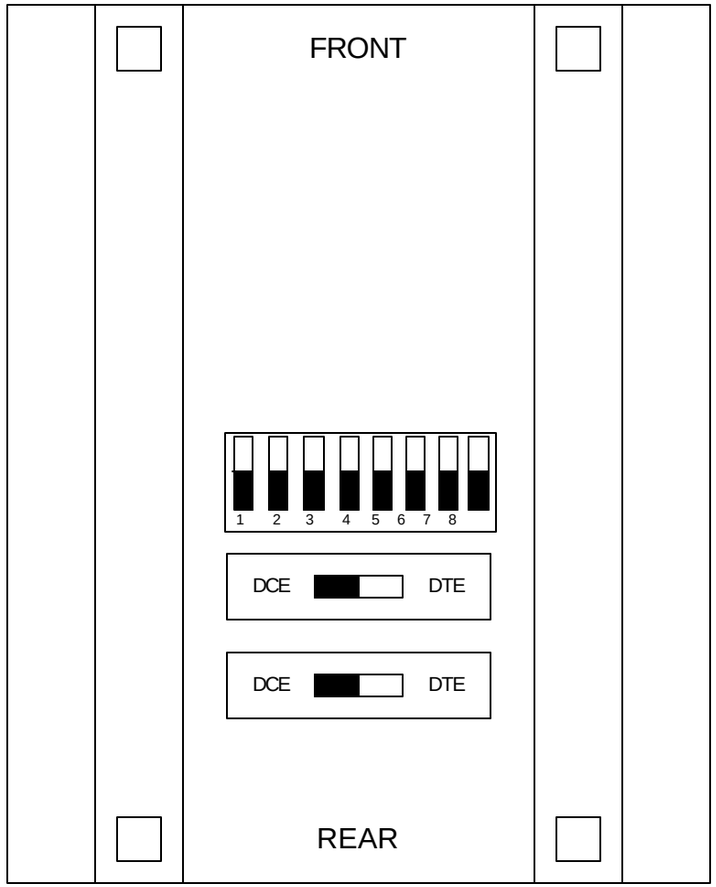
FRONT PANEL



BACK PANEL



BOTTOM OF UNIT



SPECIFICATIONS:

Transmission Format: Asynchronous

Tranmission Line: 19 to 26 AWG twisted pair

Serial Interface: EIA RS-232

Connectors: (1) DB25; (1) Terminal Block; (1) RJ-11 jack

Data Rates: Up to 115,200 bps

Applications: Point-to-Point or Multi-Point

Indicators: Tri-state for transmit data, receive data, control in, control out, dual-state for power, loopback test.

Diagnostics: Local Analog Loopback (LAL), Remote Analog Loopback (RAL)

Optical Isolation: 2500V RMS minimum

Surge Suppression: Over-voltage protection for opto-isolators via Silicon Avalanche Diodes.

Power Supply: 115VAC, 60 Hz, 12 watts input; 10 VDC, 700 ma output.

INTRODUCTION:

The Async Short-Haul modem MP is equipped with a virtual wish list of bells and whistles. Point-to-Point or multi-point applications are supported. Two separate control signals may be passed (one each way), each with switch-selectable pin assignments. Data lines are protected from ground loops and electrically volatile environments by optical isolation and Silicon Avalanche Diodes. System intergrity can be evaluated using two built-in test modes: local analog loopback and remote analog loopback. Tri-state LED's monitor transmit data, receive data and control signals. Finally, 4-wire connections may be made using either RJ-11 jack or terminal block (both are included).

In addition, the Async Short-Haul Modem MP is perfect for low-power RS-232 environments. The modem is AC powered, and therefore is the recommended solution for RS-232 environments whose interface voltages are below RS-232 environments. The modem supports data rates to 115.2Kbps and extends RS-232 transmission distances up to 14 miles (22.5 km) over two twisted pairs.

CONFIGURATION:

The Async short-Haul Modem MP features externally accessible configuration switches (two DCE/DTE switches and a DIP-switch set), located on the underside of the unit; there is no need to oped the case to configure the Modem.

QUICK SET-UP INSTRUCTIONS:

In the majority of applications, you won't need and in-depth knowledge of the modem's capabilities to get up and running. The following quick set-up DIP Switch configurations cover most Modem operating environments. (NOTE: DIP switch 8 is NOT used)

Point-toPoint Configuration:

If you are installing these Modems in a point-to-point application with a computer, printer, or terminal, configure the DIP switches on both Modems as follows:

1	2	3	4	5	6	7
OFF	OFF	OFF	ON	ON	ON	OFF

Multi-Point Configuration:

The Modem supports multi-point operation in either daisychain or star configurations. In a multi-point topology, you must configure the master Async short haul modem MP's DIP switches differently than those of the slave modems. These are the proper DIP switch settings for a daisychain topology:

	1	2	3	4	5	6	7
Master Positions:	ON	ON	ON	OFF	OFF	OFF	OFF
Slave Positions:	ON	ON	ON	OFF	OFF	OFF	ON

DCE/DTE SWITCH SETTINGS:

Correct setting of the DCE/DTE switches eliminates the need for RS-232 crossover cables. If the RS-232 device you are connecting to the modem is a PC, terminal or host (or is wired like one) set both of the DCE/DTE switches to DCE. If the RS-232 device you are connecting to the Async Short-Haul Modem MP is a modem or multiplexor, or is wired like one, set both of the DCE/DTE switches to DTE.

CONTROL INPUT (Cin):

The Control Input signal is used by the local unit as an input signal to activate it's transmitter (Enable settings) and allow data transmission to the remote device. This is required for half-duplex/switched carrier environments as well as in hardware flow-control applications. In the other Disabled settings, the Modem is always "turned ON" and sends a continuous carrier to the remote Modem.

CONTROL OUTPUT (C out):

The Control Output signal is transmitted by the local modem to it's attached DTE device. This signal should be the same logic state as the Control Input signal on the remote Modem. This signal is required in half-duplex/switched-carrier environments or in hardware flow-control applications.

+VOLTAGE OUTPUT (+V OUT):

The + Voltage Output signal is a constant positive voltage that is sent from the Modem to it's attached DTE device.

CARRIER CONTROLLED by (C in):

When Carrier Controlled by Control Input is Enabled, the modem's transmitter is activated by the corresponding C in Signal from the DTE. In effect, the Control Input signal on the local modem controls the presence of carrier and the Control Output signal on the remote Modem. This setting is required in half-duplex/ switched carrier environments or in hardware-flow-control applications. When Carrier Control by Control Input is Disabled, the Modem sends a continuous carrier and is always "turned ON".

FOR SPECIAL CONFIGURATION OF THE MODEM, REFER TO THE MANUAL

INSTALLATION:

The Async Short-Haul Modem MP is easy to install. After configuring the DIP switches and DCE/DTE switches, connect the two twisted pairs using either terminal blocks or the RJ-11 jack.

TWISTED-PAIR WIRING OVERVIEW:

This modem is designed to work in pairs. You will need one each end of a 4-wire twisted-pair circuit. The pairs must be "DRY (unconditioned)" metallic wire, 19 to 26 AWG. The smaller gauges limit distances somewhat compared with larger gauges. When you have completed wiring for your data circuit, the pin connections should be as shown below:

```
XMIT + ------------------------- RCV +  ┐ One Pair
XMIT - ------------------------- RCV -  ┘
  G ---------- To Sheild (optional)
RCV + ------------------------- XMIT +  ┐ One Pair
RCV - ------------------------- XMIT -  ┘
```

TWISTED-PAIR CONNECTION USING TERMINAL BLOCKS:

If your two-pair cable is terminated in an RJ-11 plug, you may use the RJ-11 jack on the back of the Modem to make the connection. The RJ-11 jack on the modem is prewired for a standard telco wiring environment. To be sure you have the right wiring, use the pinout below as a guide.

RJ-11	SIGNAL
1	GND
2	RCV-
3	XMT+
4	XMT-
5	RCV+
6	GND

WIRING FOR MULTIPOINT CIRCUITS:

The Modem supports multi-point applications using either a star or daisychain topology. Both topologies require special wiring, as well as specific DIP-switch settings for master and slave units.

DAISYCHAIN TOPOLOGY:

Using a daisychain topology, you may connect as many as 10 Async Short-Haul Modem MP's together in a master/slave arrangement. Maximum distance between the units will vary based upon the number of drops, data rate, wiring gauge, etc. To wire the two-pair cables properly for an Async Short-Haul Modem MP in a daisychain topology is shown below.

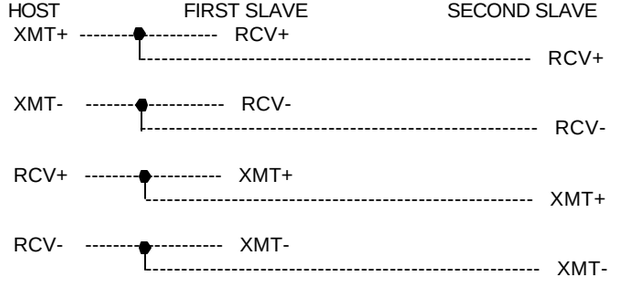
HOST	FIRST SLAVE	OTHER SLAVE(S)
XMT	RCV+	RCV+
XMT-	RCV-	RCV-
RCV+	XMT+	XMT+
RCV-	XMT-	XMT-

In a multi-point topology, you must configure the master Async Short-Haul Modem MP's DIP switches differently than those of the slave Modems. These are the properDIP-switch settings for a daisychain topology:

SWITCH NUMBER	1	2	3	4	5	6	7
Master Positions	ON	ON	ON	OFF	OFF	OFF	OFF
Slave Positions	ON	ON	ON	OFF	OFF	OFF	ON

STAR TOPOLOGY:

Using a star topology, yo may connect several Modems together in a master/slave arrangement. Maximum distance between the units will vary based upon the number of drops, data rate, wire gauge, etc. To wire the two-pair cables properly for a Modem star topology is shown below:



In a multi-point topology, you must configure the master Modem's DIP switches differently than those of the slave Modems. Here are the proper DIP-switch settings for a star topology:

SWITCH NUMBER	1	2	3	4	5	6	7
Master Positions	ON	ON	ON	OFF	OFF	OFF	OFF
Slave Positions	ON	ON	ON	OFF	OFF	OFF	ON