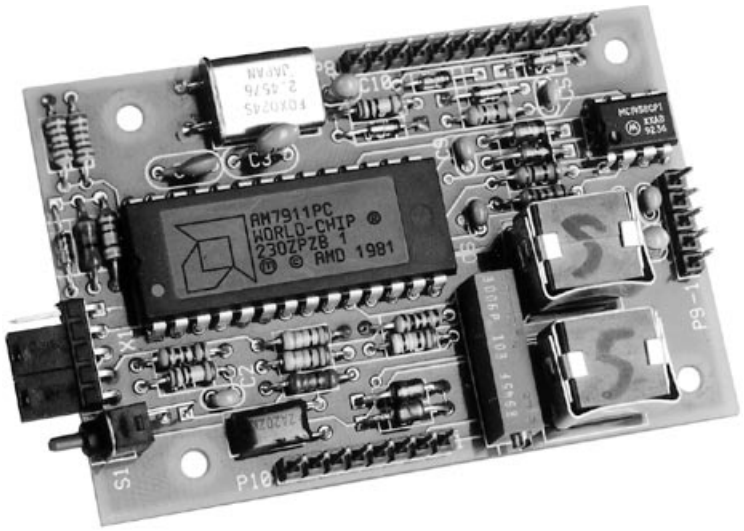
49213 202 MODEM SUBASSEMBLY



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About this Practice:

This practice has been reissued to:

- Meet ISO 9001 requirements.

Reissued Practices: Updated and new content can be identified by a banner in the right margin.

UPDATED

Issue date: December 1997

CAUTION

- Install or remove modules from the shelf only when the power is off. If you install a module in the shelf with the power on, the internal circuitry may suffer damage and the product warranty will be void.
- Remove and install circuit boards only in a static-safe environment (use antistatic wrist straps, smocks, footwear, etc.).
- Keep circuit boards in their antistatic bags when they are not in use.
- Do not ship or store circuit boards near strong electrostatic, electromagnetic, magnetic, or radioactive fields.
- For more complete information on electrostatic discharge safety precautions, refer to Bellcore™ Technical Reference # TR-NWT-000870.

ORDERING INFORMATION

NOTE: This section lists the different options available for this product. To order any of the available options, contact Dantel Inside Sales through our toll-free number, **1-800-432-6835.**

OPTION NUMBER	FEATURES
B12-49213-00	Smart Block 202 Modem

GENERAL DESCRIPTION

The Dantel 49213 202 Modem Subassembly (49213 Modem) converts digital data into frequency shifted tones and enters the data into a data transmission system. Conversely, the 49213 Modem receives frequency shifted tones for a transmission system and converts the tones into digital data.

The 49213 Modem operates as a Bell 202 full-duplex modem with a data rate of 1200 baud.

NOTE: *The 49213 Modem is used exclusively with Dantel's 46210 Alarm Block (46210 AB) or 46220 Alarm and Control Block (46210 ACB).*

CIRCUIT DESCRIPTION

Fig. 1 shows the 49213 202 Modem Subassembly functional schematic.

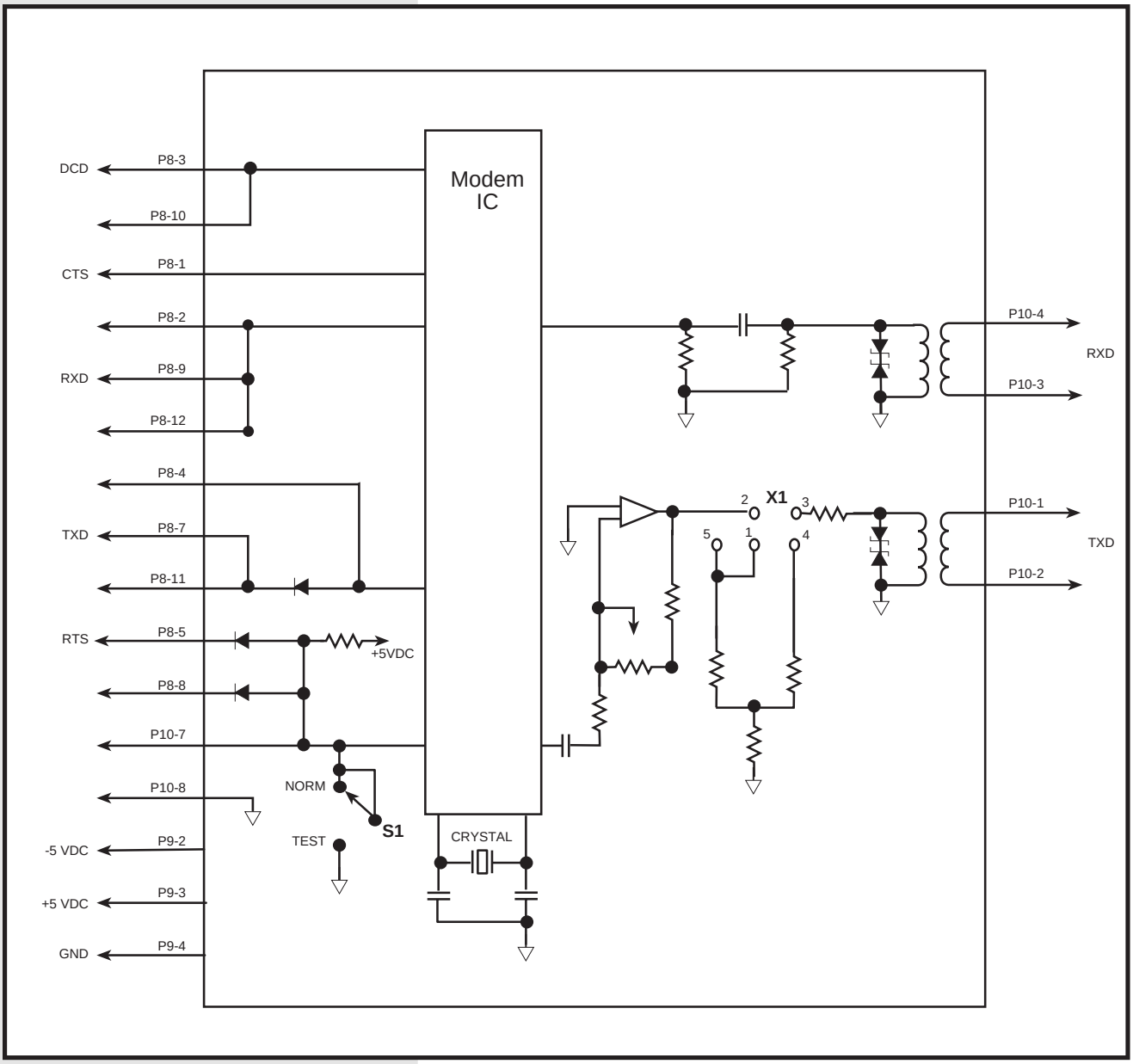
Subassembly input tones (RXD) appear at pins 3 and 4 of connector P10. The tones couple to the subassembly through a 600:600 ohm transformer. The signal applies to the modem integrated circuit chip, which controls the receive (RXD), clear to send (CTS) and data carrier detect (DCD) to the 46210 AB or 46220 ACB.

The integrated circuit (IC) chip receives 46210 AB or 46220 ACB transmit (TXD) and request to send (RTS) signals. The IC chip sends tones through a 600:600 ohm transformer to the transmit (TXD) output at pins 1 and 2 of connector P10. You can adjust the tone level with strap X1 and potentiometer R8.

A test switch (S1) grounds the RTS lead which "turns on" the opposing (distant end) modem DCD and causes data carrier transmission. Each modem verifies the presence of the data carrier, which allows level adjustment without the presence of data. Shorting pins 7 and 8 of connector P10 also activates the

data carrier. You can physically short the pins by interconnecting column 32 pins R and S of the 46210 AB or 46220 ACB wire-wrap terminal.

FIG. 1 - FUNCTIONAL SCHEMATIC, 49213



INSTALLATION

Installation consists of removing the existing subassembly, connecting the 49213 202 Modem Subassembly, and setting the straps.

1. Install the subassembly.

Refer to Figs. 2, 3 and 4. Open the 46210 AB or 46220 ACB and remove the existing subassembly. There is one screw for a bypass subassembly and four screws for a 202 modem or an RS-232 subassembly. Carefully mate the connectors on the subassembly with the 46210 AB or 46220 ACB connectors. Make sure the pins go straight into the sockets. Reinstall the screws.

2. Set the straps.

Refer to Fig. 5. Set the X1 straps. With the straps placed across pins 2-3 and 4-5, you can adjust the transmit output with potentiometer R8 between -1 and -20 dBm. With the straps placed across pins 1-2 and 3-4, you can adjust the transmit output with potentiometer R8 between -20 and -40 dBm.

NOTE: *There is no receive level adjustment.*

FIG. 2 - OPENING THE 46210/46220

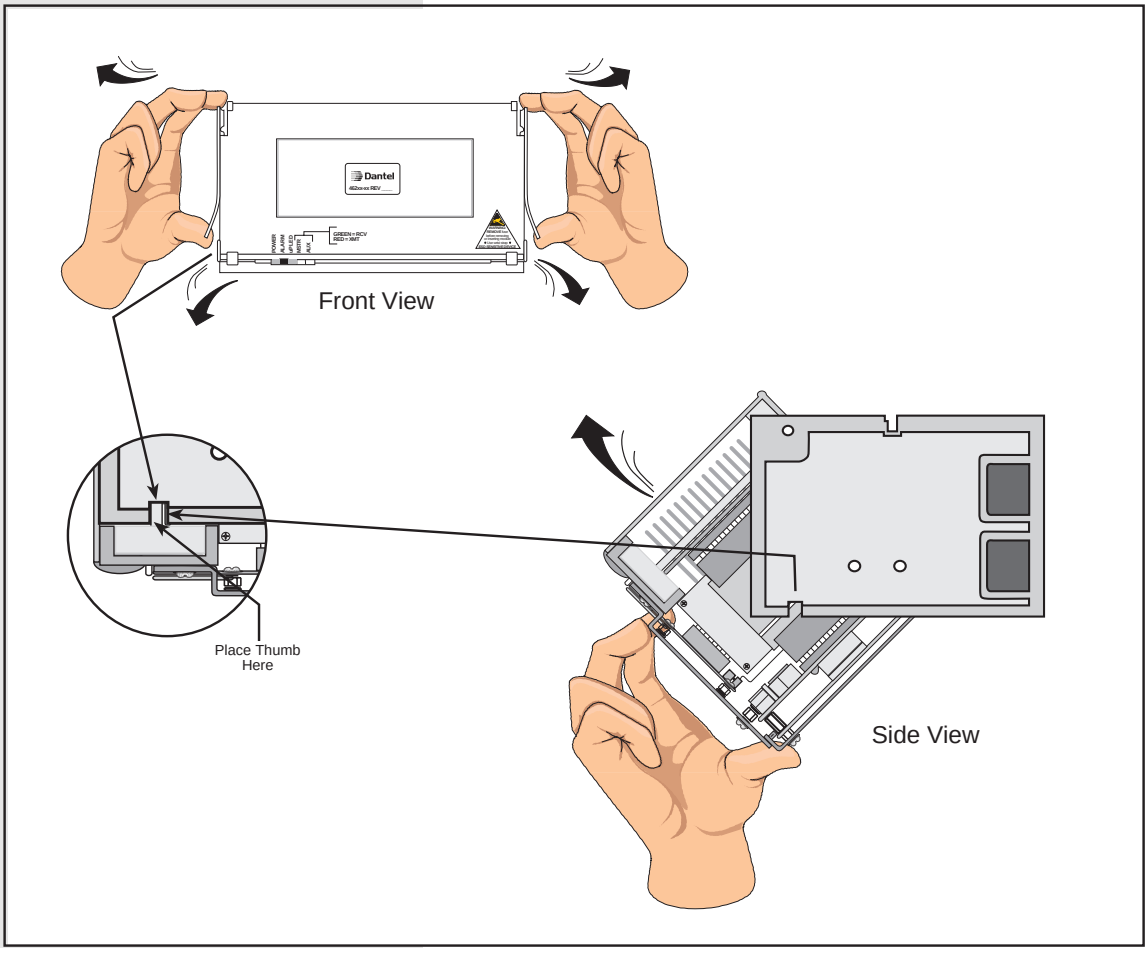


FIG. 3 - PULLING DOWN THE POWER SUPPLY AND CPU BOARDS

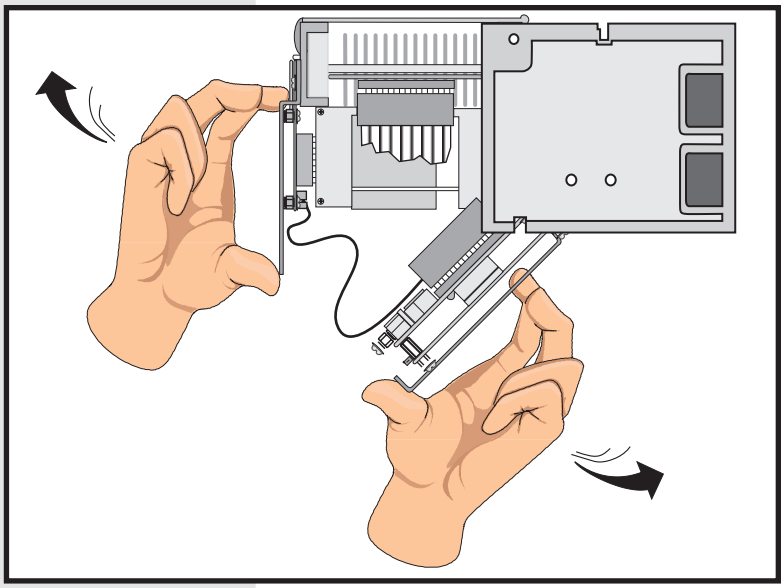
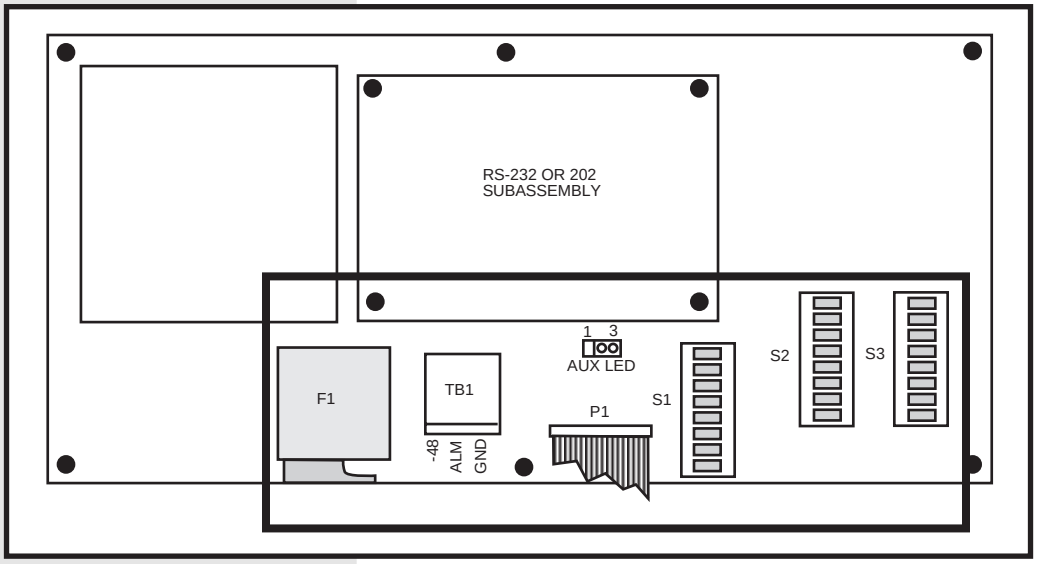
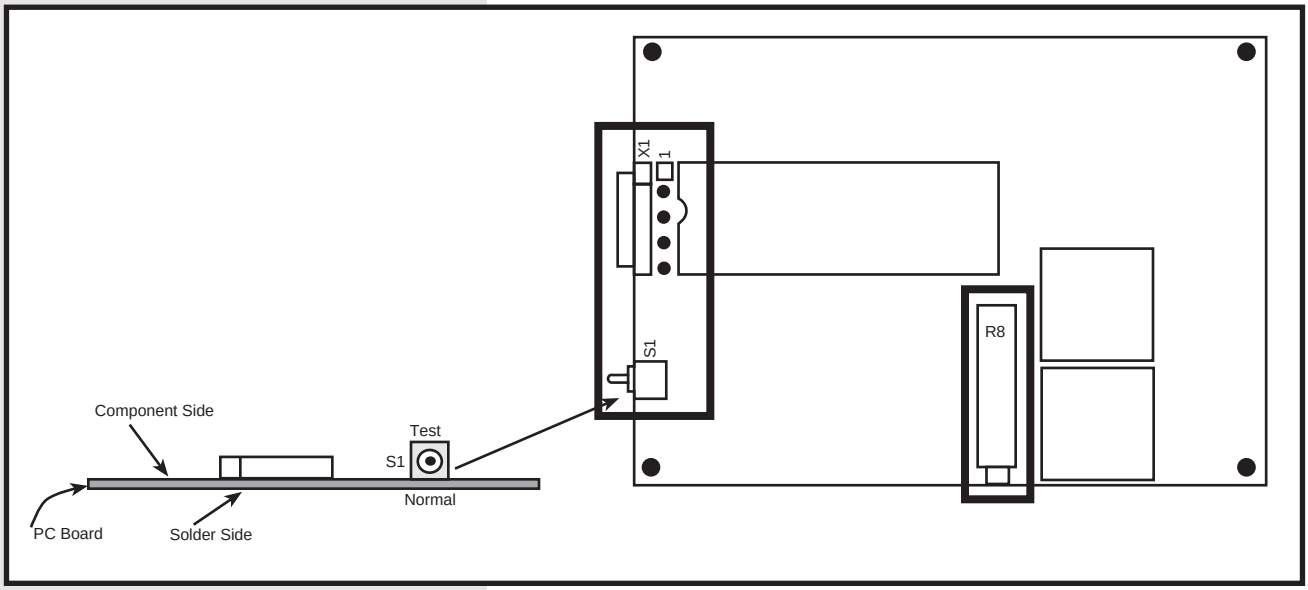


FIG. 4 - SUBASSEMBLY LOCATION ON POWER SUPPLY BOARD



INSTALLATION

FIG. 5 - SWITCH AND STRAP LOCATIONS, 49213



OPERATION

The 49213 202 Modem Subassembly begins operating when you apply power to the 46210 AB or 46220 ACB.

To check operation:

1. Connect the modem to another modem at the other end of the communications line.
2. Remove the 46210 AB or 46220 ACB plastic cover. Refer to Fig. 6.
3. Connect a 600-ohm dB meter (bridged) to pins J and K (XMT) of wire-wrap terminal column 32. The dB meter should not be terminated with 600 ohms.
4. Open the 46210 AB or 46220 ACB. Refer to Figs. 2 and 3.
5. Place S1 in the TEST position (up toward the component side of the subassembly) which activates the opposing (distant end) modem's carrier detect. Refer to Fig. 5.
6. Adjust the transmit level with potentiometer R8. (The amount of adjustment depends on the strapping of X1.)

NOTE: *There is no receive level adjustment.*

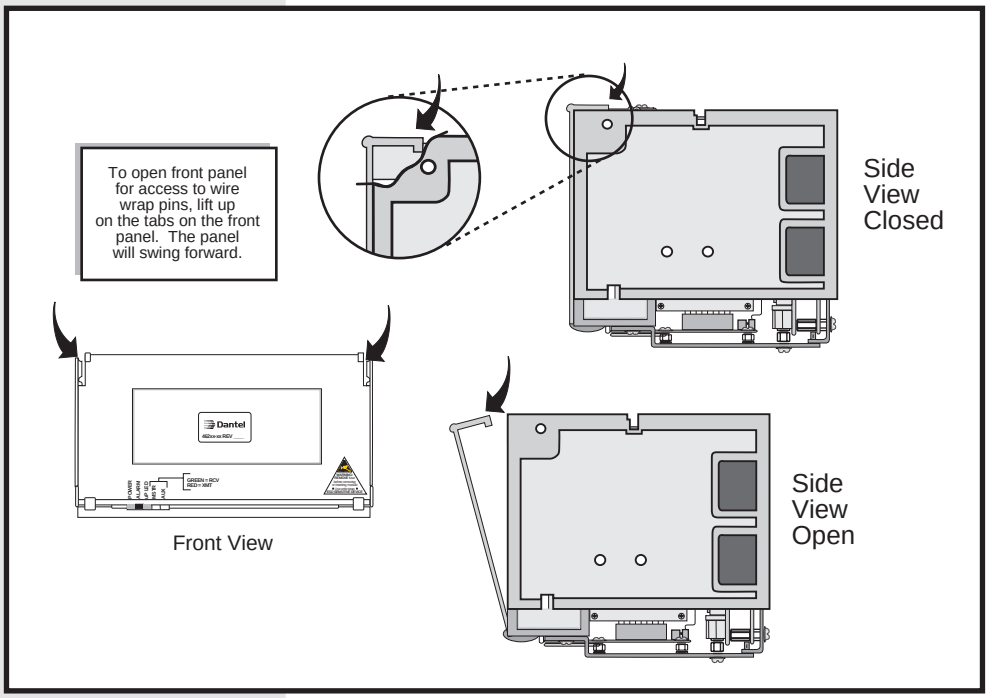
7. When you finish adjusting the transmit level, return S1 to NORM (down toward the solder side of the subassembly) and remove the dB meter.

CONTINUED . . .

INSTALLATION

NOTE: *Check the transmit level without making adjustments by shorting pins R and S of column 32.*

FIG. 6 - OPENING PLASTIC COVER



TECHNICAL SPECIFICATIONS

DESCRIPTION	DESCRIPTION
Input Voltage	+5 VDC and -5VDC (from host)
Max. Input Current +5 VDC -5 VDC	 150 mA 30 mA
Max. Heat Dissipation +5 VDC -5 VDC	 2.6 Btu/Hr 0.5 Btu/Hr
Data Rate	Up to 1200 Baud
Transmit Output Level Range	-1 to -20 dBm/-20 to -40 dBm (600 ohms)
Receiver Sensitivity with Frequency Deviation ±16 Hz	+1 dBm to -47 dBm
Operating Frequencies Mark Space	 1200 Hz 2200 Hz
Temperature Range	0° to 55° C.
Physical Dimensions	3.2" x 2.0" x 0.5"
Weight	1.5 ounces

WARRANTY

LIMITED WARRANTY

The Seller warrants that the standard hardware products sold will be free from defects in material and workmanship and perform to the Seller's applicable published specifications for a period of 18 months for hardware, and 3 months for software, from the date of the original invoice. The liability of the Seller hereunder shall be limited to replacing or repairing, at its option, any defective products which are returned F.O.B. to the Seller's plant, (or, at the Seller's option, refunding the purchase price of such products). In no case are products to be returned without first obtaining permission and a customer return authorization number from the Seller. In no event shall the Seller be liable for any consequential or incidental damages.

Equipment or parts which have been subject to abuse, misuse, accident, alteration, neglect, unauthorized repair or installation are not covered by warranty. The Seller shall make the final determination as to the existence and cause of any alleged defect. No warranty is made with respect to custom equipment or products produced to the Buyer's specifications except as specifically stated in writing by the Seller in the contract for such custom equipment.

This warranty is the only warranty made by the Seller with respect to the goods delivered hereunder, and may be modified or amended only by a written instrument signed by a duly authorized officer of the Seller and accepted by the Buyer.

Warranty and remedies on products not manufactured by the Seller are in accordance with warranty of the respective manufacturer. THE SELLER MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED; AND ALL IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEEDS THE AFORESAID OBLIGATIONS IS HEREBY DISCLAIMED BY THE SELLER.

IN CASE OF DIFFICULTY

If you experience difficulty with this equipment, check the following, as appropriate:

1. **Switch settings**
2. **Signal levels**
3. **Software configuration**
4. **Connections between Dantel's equipment and your equipment.**

If there is still a problem, substitute equipment that is known to be good. For additional assistance, call Dantel's Technical Field Service Department weekdays, 6 A.M. to 5 P.M. pacific time:

1-800-4DANTEL (1-800-432-6835).

If a thorough checkout shows a piece of equipment has malfunctioned, you may return it to the factory. For repairs and emergency replacements, obtain a Return Material Authorization (RMA) number from the Customer Service Representative at **1-800-4DANTEL** (1-800-432-6835).

To ensure expedient processing of your order, provide a purchase order number and shipping and billing information when requesting an RMA number. Also, when the units are returned to Dantel, include a description of the failure symptoms for each unit returned. Send defective equipment to:

Dantel, Inc. • 2991 North Argyle Avenue • Fresno, California 93727-1388