

D18-05547-XX DTSS3A ORDER WIRE/DATA INTERFACE

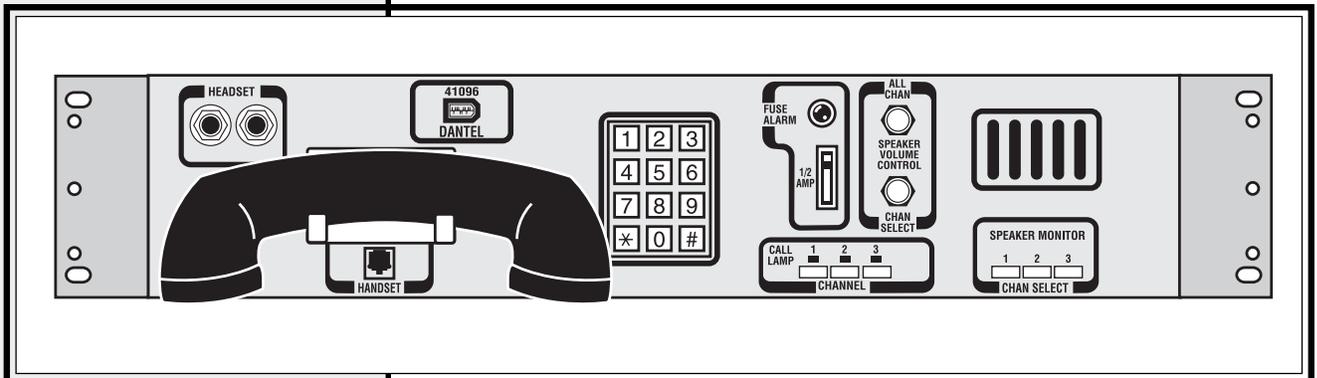


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About this Practice:

This practice has been reissued to:

- Update Figs. 2, 4-6, 16, & 20.

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

Issue date: July 1998

UPDATED

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 |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D18-05547-01 | Wired assembly with 41096 Order-Wire Panel, one DTSS3A, 3-digit dialing, one 46105 64Kb Interface, one 44214 9600 BPS Modem |
| D18-05547-02 | Wired assembly with 41096 Order-Wire Panel, one DTSS3A, 3-digit dialing, one 46105 64Kb Interface |
| D18-05547-03 | Wired assembly with 41096 Order-Wire Panel, one DTSS3A, 3-digit dialing, one 46105 64Kb Interface, one 44214 9600 BPS Modem, one B15-00331-00 Off-Net package. |
| D18-05547-04 | Wired assembly with 41096 Order-Wire Panel, one DTSS3A, 3-digit dialing, one 46105 64Kb Interface, one 44214 9600 BPS Modem, one A18-05723-01 Network Interface package. |
| B15-00331-00 | DTSS3ON Order-Wire/PABX Interface (Off-Net Assembly) |
| A18-05723-01 | Network Interface Shelf |
| A17-49017-00 | Spare components for 41096 |
| A11-44020-00 | DTMF Decoder |
| A12-49018-00 | Station Selector Subassembly |
| B11-44022-00 | Subscriber Line Interface |
| C11-49920-00 | Common Interrupt Supply |
| B11-46105-00 | 64 KB Interface Supply |
| B11-46105-01 | 64 KB Interface Supply with companders |
| A11-44214-00 | 4-Wire 9600 Baud Modem |
| A11-44093-00 | RJ-11 Interface |
| Glossary Utility Disk | Defines the terms used in Dantel's product documentation. |

GENERAL DESCRIPTION

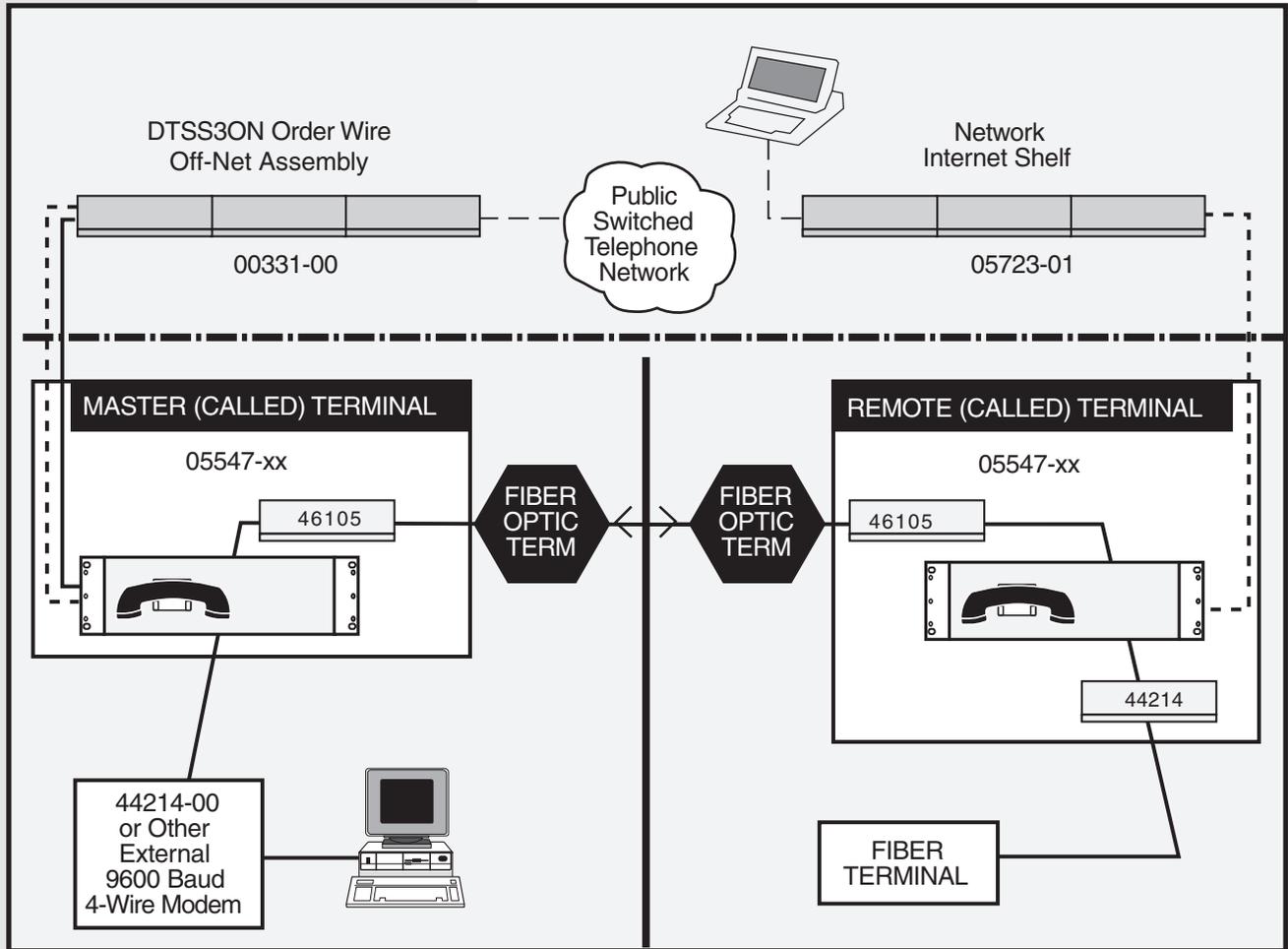
The 05547 Equipment Assembly is an order-wire system for either voice or data communications.

The system consists of a 41096 Order-Wire Control and Speaker Monitor Panel, 00330-02 Selective Signaling Order-Wire Terminal, 46105 Dual VF 64-Kilobit Channel module, 44214 9600 BPS Modem, a backplane with an M-lead driver, an optical coupler circuit, and a clock-phase correction circuit to correct phase problems between the 46105 and external equipment.

APPLICATION INFORMATION

Refer to Fig. 1 for an application drawing of the system.

FIG. 1 - 05547 APPLICATION



VOICE APPLICATION

The system operates as a standard order-wire when you pick up the handset on the front of the 41096 panel and call someone at a remote terminal. The voice circuit uses channel 1 of the system.

APPLICATION INFORMATION

DATA APPLICATION

When you use the order wire system as a voice circuit, you dial a preset number (station 1 code) to call someone at a remote terminal. When you use the system as a data circuit, you dial a different number (station 2 code) to call the same remote terminal to set up a data communications path.

Here is how the data circuit works:

1. Select channel 1 on the 41096 panel, then pick up the handset and call the remote terminal (station 2 code). At the remote end, the 00330 order-wire terminal answers your call and operates an M lead driver that opens a communications channel through the 44214 9600 BPS Modem.
2. Select both channels 1 and 2 on the 41096 panel. This connects your computer and external modem to the system. At the same time the optical coupler (O.C.) circuit disables the sidetone in the 00330 order wire terminal so that the modem does not receive its own data.
3. Hang up the handset and start sending or receiving digital data.
4. When you finish, press the # key to disconnect the modem at the remote terminal. Release the channel 2 push button. You can either release the channel 1 push button or leave it pushed in since it is used for both voice and data communications.

OFF-NET APPLICATION

The 05547-03 option includes the B15-00331-00 DTSS3ON Order Wire/PABX Interface (Off-Net) Assembly. This option allows world-wide off-net access to virtually any telephone in the world. The DTSS3ON allows any station in the order wire system to dial an access line direct to a central office or through a PABX, then dial out through the public-switched telephone network (PSTN). In the same manner, an outside party can dial into the order wire system and selectively dial any station desired.

NETWORK INTERFACE APPLICATION

The 05547-04 option includes the A18-05723-01 Network Interface shelf. Used in conjunction with the Off-Net shelf described in the previous paragraph, the Network Interface Shelf allows the user to access their network from a remote location on the order wire system.

INSTALLATION

This chapter consists of five sections which install and set up the 05547-01. These sections are: Equipment Mounting, Wiring, Switch and Strap Settings, Turn-Up Procedure, and Troubleshooting. Follow these sections in order. Following those are sections on the 00331 Off-Net Interface and the 05723 Network Interface Shelf.

All switch, strap, and level settings are factory-set.

EQUIPMENT MOUNTING

TOOLS REQUIRED:

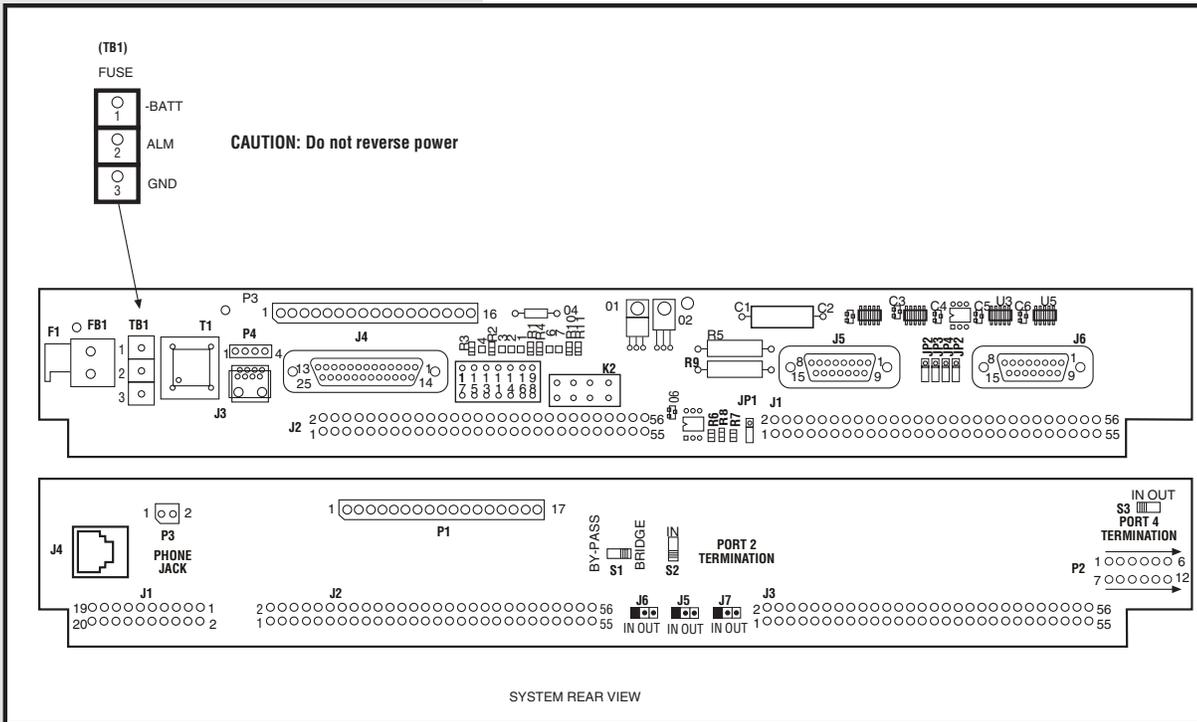
- Ohmmeter
- Phillips screwdriver

To install the equipment assembly:

1. Set the assembly on a flat surface.
2. On the left side of the front panel of the assembly is a Phillips screw. Turn the screw counterclockwise 90 degrees and open the panel.
3. Carefully remove the 46105, 44214, 44020, 44022, and 49920 modules. All options and levels have been factory-set.
4. Visually inspect the shelf and modules for obvious damage.
5. Close the front panel of the assembly.
6. Use the ohmmeter to check for a short across the power input at TB1-1 (negative battery) and TB1-3 (ground) on the rear of the top (33337-00) equipment shelf. Refer to Fig. 2 for the location of TB1.
7. Refer to Fig. 3 and install the unit in your equipment rack. Hardware is supplied in a bag attached to the side of the assembly.
 - Fasten the assembly in the rack with three Phillips screws and lockwashers - two on the right side, and one on the lower left side.
 - Fasten the upper left corner of the assembly with one ESD stud and lockwasher. Make sure the stud is properly grounded to the frame rail.
 - Place an ESD label next to the ESD stud.
 - From the rear of the rack, install the other ESD stud and lockwasher in the frame rail, ensuring proper grounding of the stud.
 - Place an ESD label next to the ESD stud.

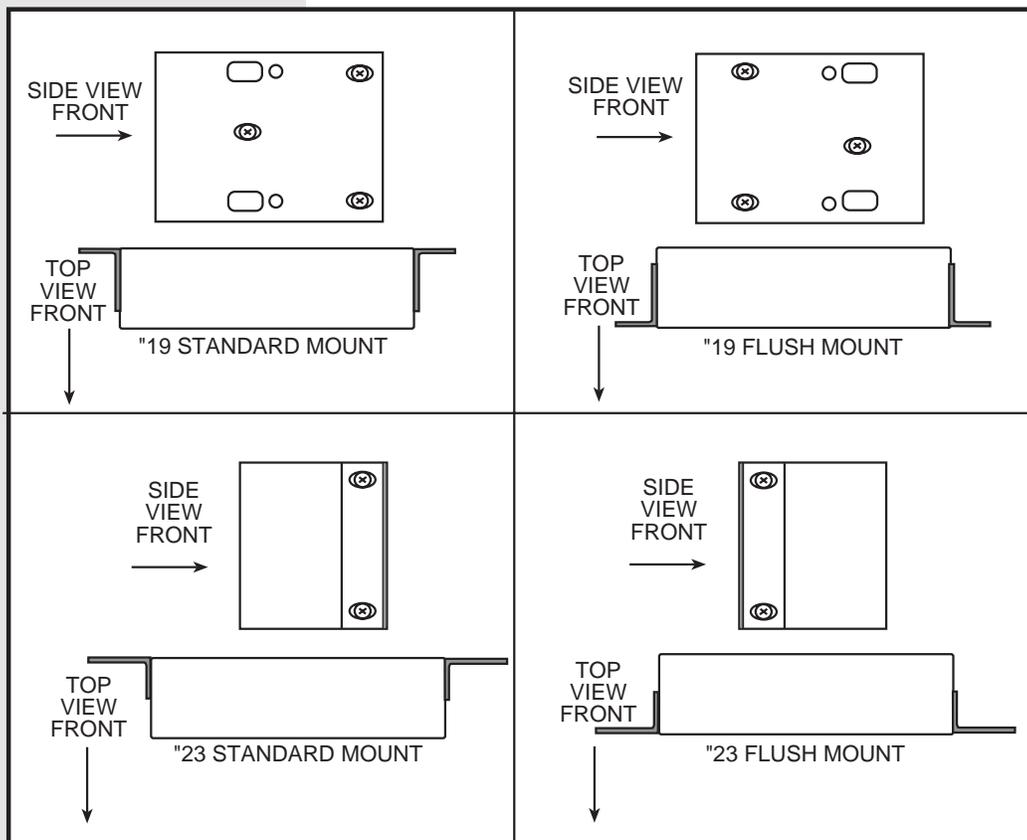
INSTALLATION

FIG. 2 - TB1 LOCATION



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FIG. 3 - MOUNTING DIAGRAM



INSTALLATION

WIRING

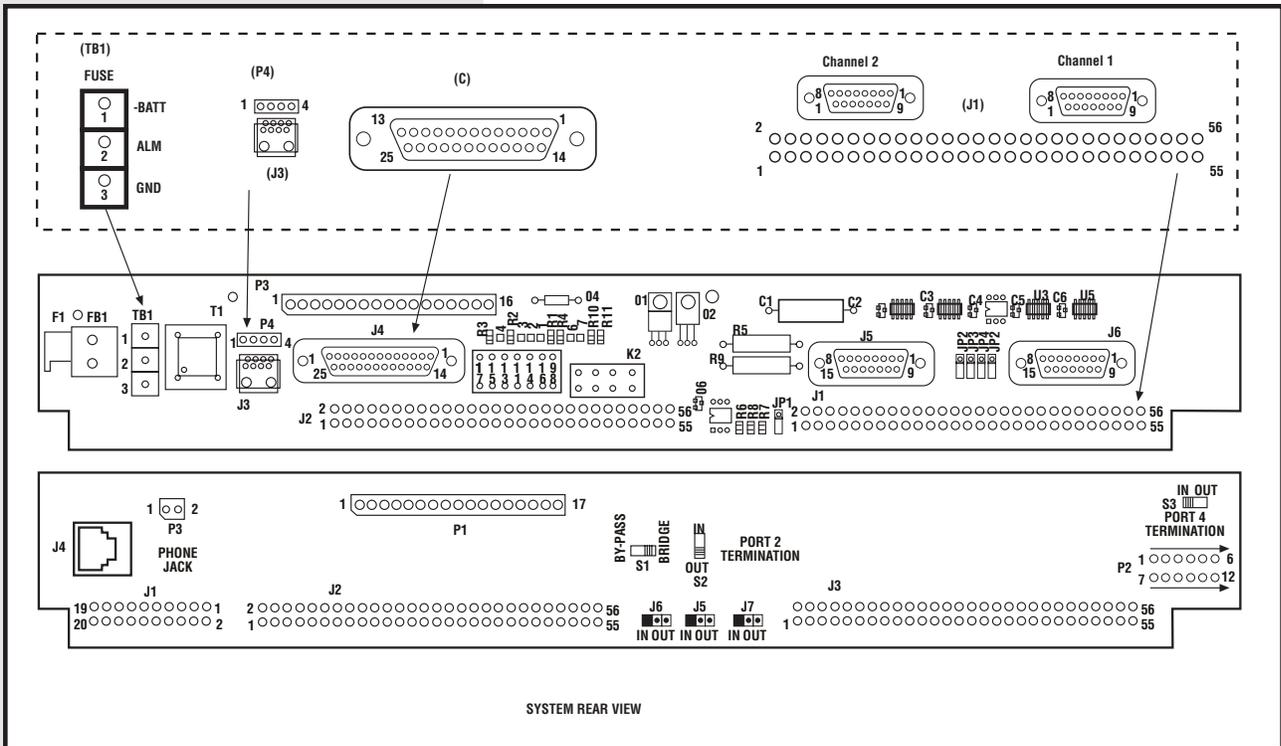
NOTE:

Do all wiring at the rear of the assembly on the top (33337-00) equipment shelf. Refer to Fig. 4 and the D18-05547-XX Block Diagram.

To wire the equipment assembly:

1. Wire the 46105 Dual VF 64-Kilobit Channel module to the fiber optic terminal. Refer to the D18-05547-XX Block Diagram. Channel 1 is labeled J6. Channel 2 is labeled J5. J1 can be used instead of J5 and J6 if wire-wrap connections are preferred.
2. To use the assembly as a master data terminal, connect an external 202 modem (you must supply the modem) either to J3 (RJ-45 phone jack) or to the wire-wrap pins at P4.
3. To use the assembly as a remote data terminal, connect the 25-pin DB connector (C; also labeled J4) to a computer.
4. Wire the power as follows:
 - Wire ground to connection 3 of TB1.
 - Wire a visual or audible device to connection 2 of TB1. The device will indicate when the fuse has blown. When the fuse blows, connection 2 will have negative battery on it.
 - Wire negative battery (-21 to -56 VDC) to connection 1 of TB1.
5. End of this section.

FIG. 4 - EQUIPMENT WIRING



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INSTALLATION

SWITCH AND STRAP SETTINGS

33337-00 EQUIPMENT SHELF

NOTE:

All switch, strap, and level settings are factory-set.

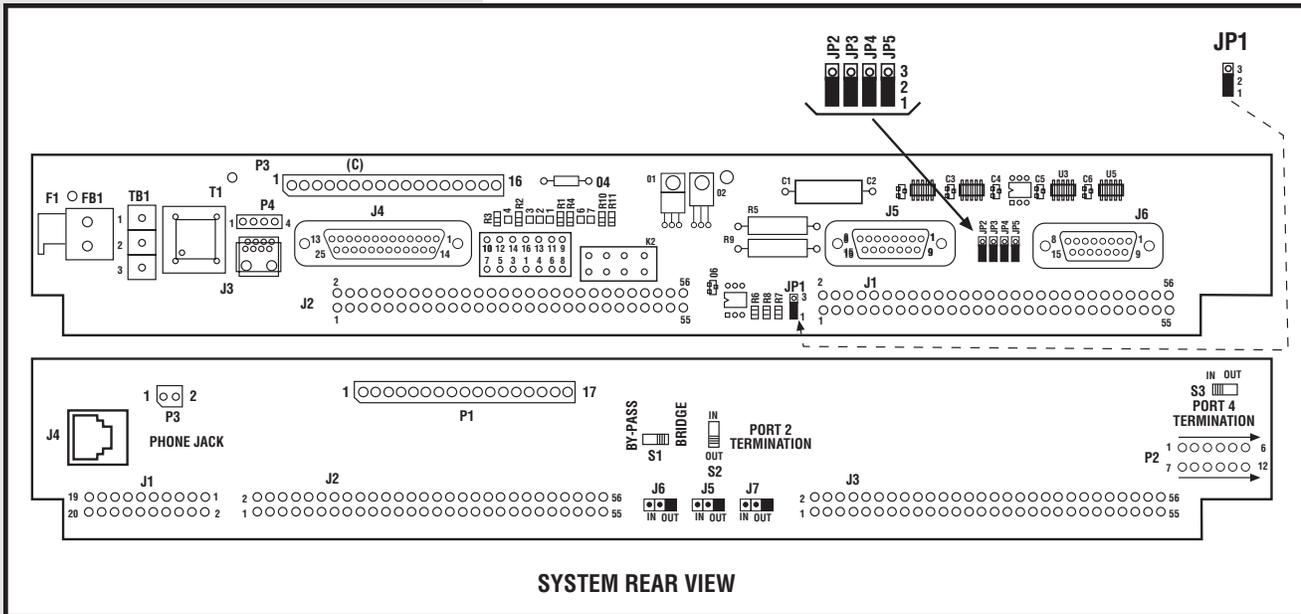
To set the straps:

Refer to Fig. 5 for the location of the straps.

- ◆ Set JP1 in the 1-2 position if the battery is -48 VDC.
- ◆ Set JP1 in the 2-3 position if battery is -24 VDC.

Set JP2-JP5 to the 1-2 position to engage the Clock Phase Correction Circuit. This will correct clocking problems between the Data Interface Shelf (05547) and the external device that the shelf connects to. Set JP2-JP5 to the 2-3 position to bypass this circuit.

Fig. 5 - STRAP LOCATION



INSTALLATION

00330-02 ORDER-WIRE TERMINAL SHELF

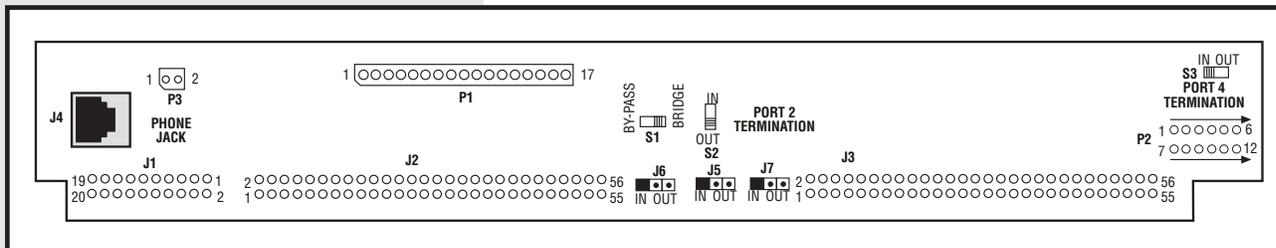
NOTE:

All switch, strap, and level settings are factory-set.

To set the switches:

Remove the back panel cover plate to verify that the switches are set according to Fig. 6.

FIG. 6 - 00330-02 ORDER-WIRE SWITCH LOCATIONS



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41096 ORDER-WIRE CONTROL AND SPEAKER MONITOR PANEL

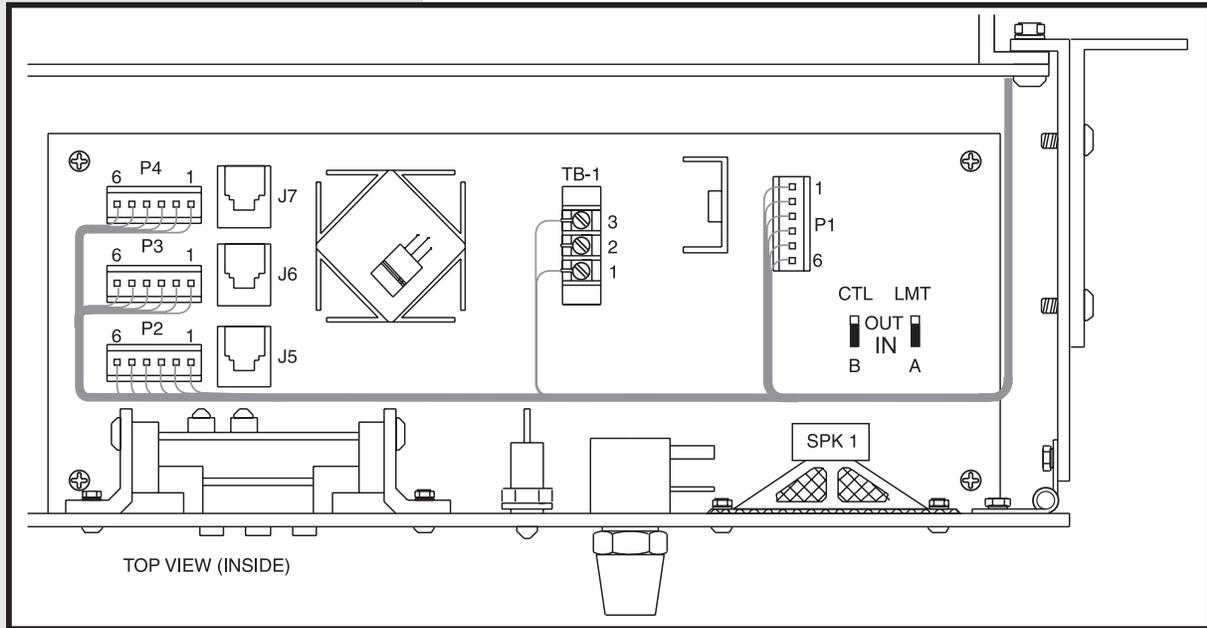
To set the straps:

Refer to Fig. 7 for the location of the straps.

1. Open the front panel of the unit.
2. Place the CTL LMT A strap in the IN position to **prevent** the ALL CHAN volume control knob from turning off the speaker. Place the strap in the OUT position to **allow** the volume control knob to turn off the speaker.
3. Place the CTL LMT B strap in the IN position to **prevent** the CHAN SELECT volume control knob from turning off the speaker. Place the strap in the OUT position to **allow** the volume control knob to turn off the speaker.
4. End of this section.

INSTALLATION

FIG. 7 - 41096 PANEL STRAP LOCATIONS



46105 DUAL VF 64-KILOBIT CHANNEL MODULE

NOTE:

All switch, strap, and level settings are factory-set.

NOTE:

If an external clock is not used, strap XMT CLK 1 and XMT CLK 2 to TTL+.

NOTE:

To strap the module for terminal mode, set switch S1 to TERM and place the MODE strap in TERM.

To set the switches:

Refer to Fig. 8 for the locations of the switches.

1. Set S1 (BRDG) in RPTR.
2. Set S2 (LPBK 1) in OFF.
3. S101 (LPBK 2) in OFF.

To set the straps:

Refer to Fig. 8 for the locations of the straps.

1. Set the XMT CLK 1 and XMT CLK 2 straps in TERM.
2. Set the RCV CLK 1 and RCV CLK 2 straps in TERM.
3. Set the RCV DATA 1 and RCV DATA 2 straps in TERM.
4. Set the M LEAD 1 and M LEAD 2 straps in YES.
5. Set the MODE strap in RPTR.
6. Reinstall the module in the left slot in the top equipment shelf.
7. End of this section.

INSTALLATION

NOTE:

The 44214 communicates with a second 44214 at the other end. One of these two modules must have its ORG/ANS switch set for ORG and the other module must be set for ANS.

NOTE:

Switches 1, 3, 4, 5, and Level Controls R44 and R53 are accessible through the front panel.

NOTE:

All switch, strap, and level settings are factory-set.

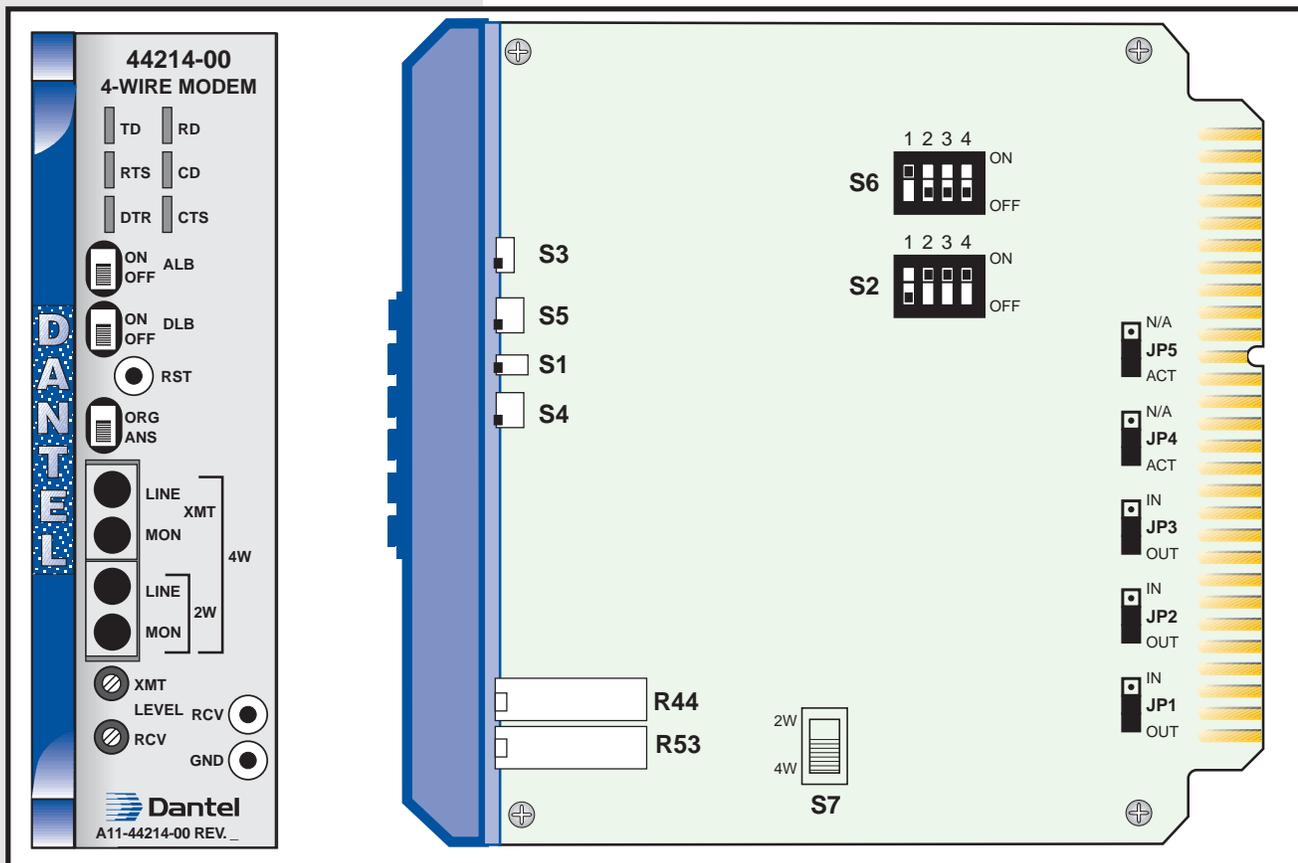
44214 9600 BPS MODEM

To set the switches and straps:

Refer to Fig. 9 for the locations of the switches and straps.

1. On the front panel of the module, set the ALB and DLB switches (S3 and S5) in the DOWN positions.
2. On the circuit board, set the 2W/4W switch (S7) for 4W.
3. Set S2 and S6 on the circuit board as follows:
 - S2-1 off, rest on (9600 baud operation)
 - S6-1 off, rest on (TTL/CMOS I/O port enabled)
4. Set JP1-JP3 to the O (OUT) position. Set JP4 and JP5 to the ACT position.
5. Reinstall the module in the middle slot in the top equipment shelf.
6. End of this section.

FIG. 9 - 44214 SWITCH AND STRAP LOCATIONS



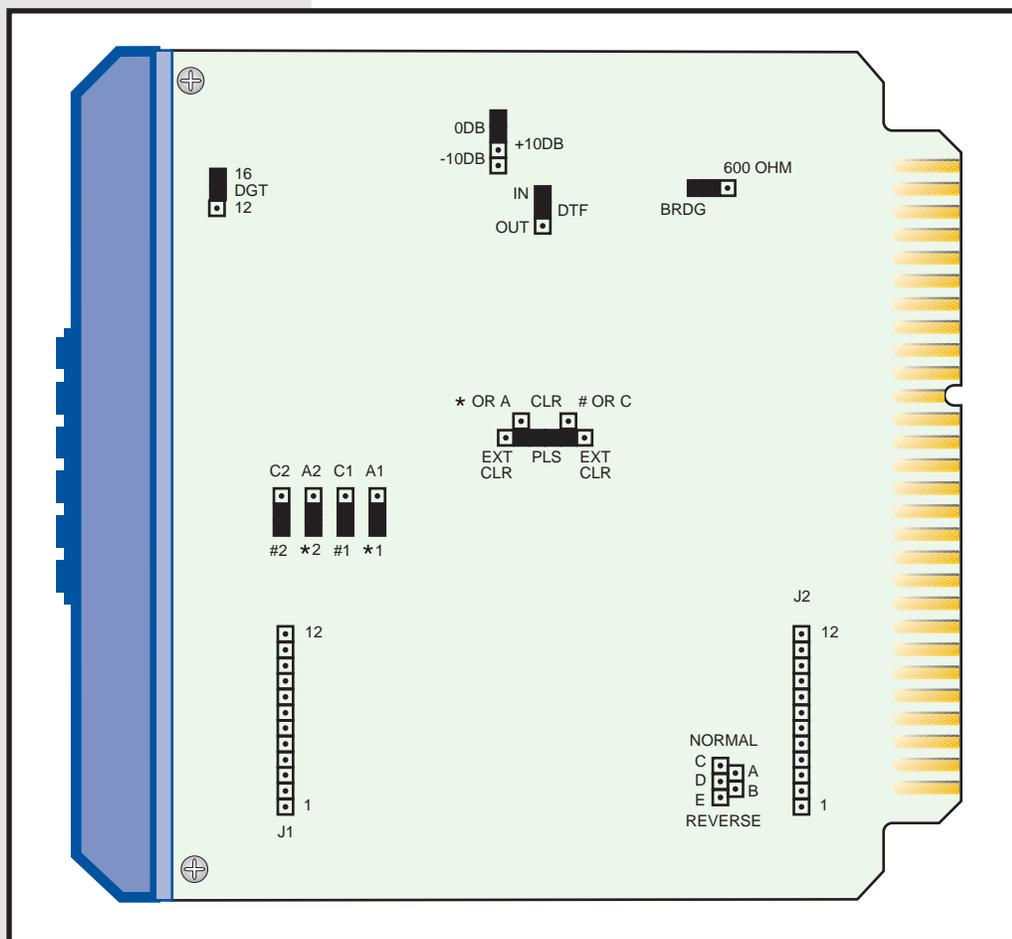
INSTALLATION

44020 DTMF DECODER WITH 49018 STATION SELECTOR SUBASSEMBLY

To set the switches and straps:

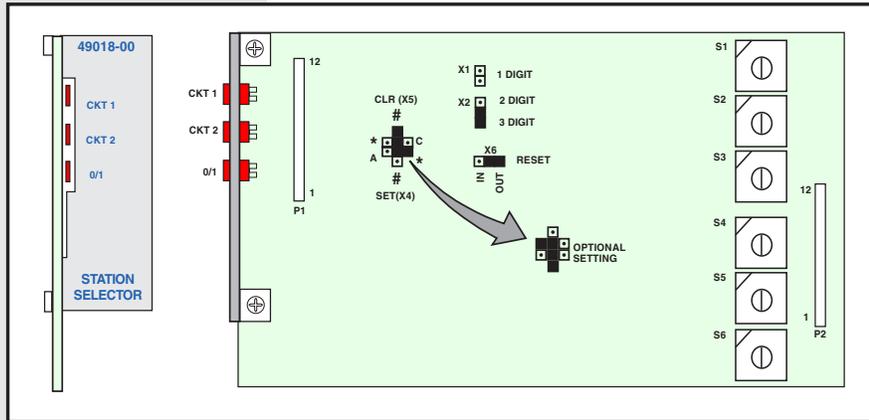
1. Verify that the switches and straps are set according to Figs. 10 and 11.
2. On the 49018 subassembly, set the station 1 code with S1, S2, and S3. S1 is the first digit. Use this code to call this order wire terminal for voice communications.
3. On the 49018 subassembly, set the station 2 code with S4, S5, and S6. S4 is the first digit. Use this code to call this order wire terminal when it is a remote data terminal.
4. Reinstall the module in the left slot of the bottom equipment shelf.
5. End of this section.

FIG. 10 - 44020 STRAP LOCATIONS



INSTALLATION

FIG. 11 - 49018 SWITCH AND STRAP LOCATIONS

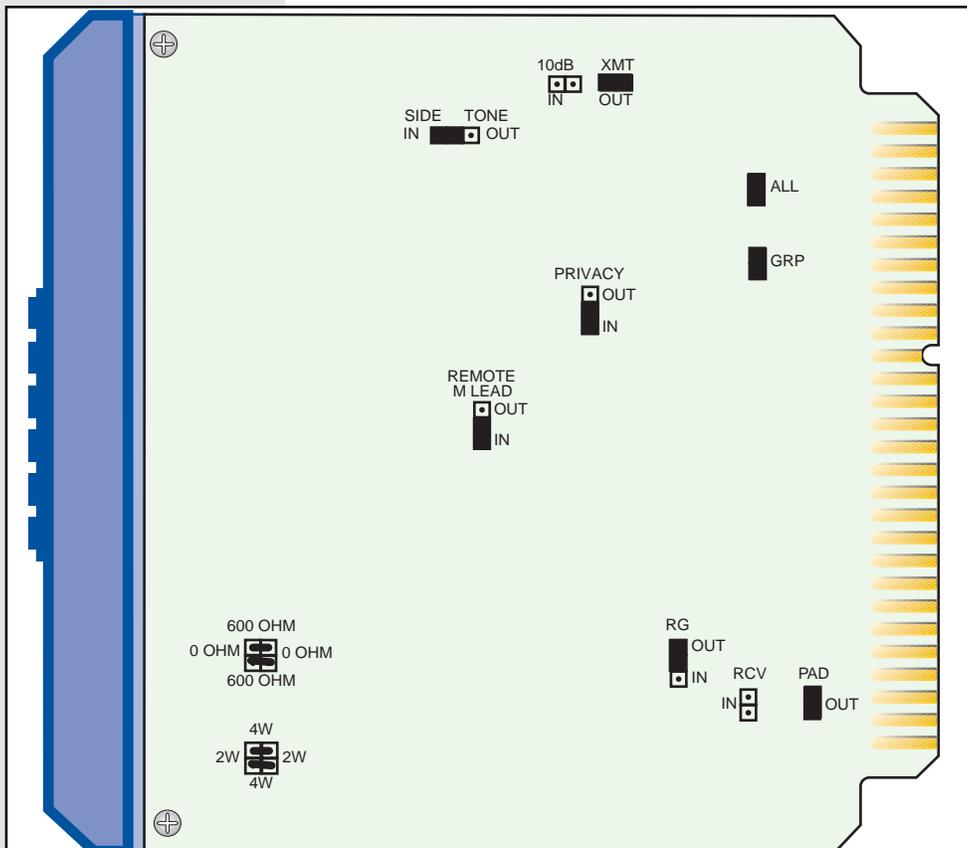


44022 STATION INTERFACE MODULE

To set the straps:

1. Verify that the straps are set according to Fig. 12.
2. Reinstall the module in the middle slot of the bottom equipment shelf.
3. End of this section.

FIG. 12 - 44022 STRAP LOCATIONS



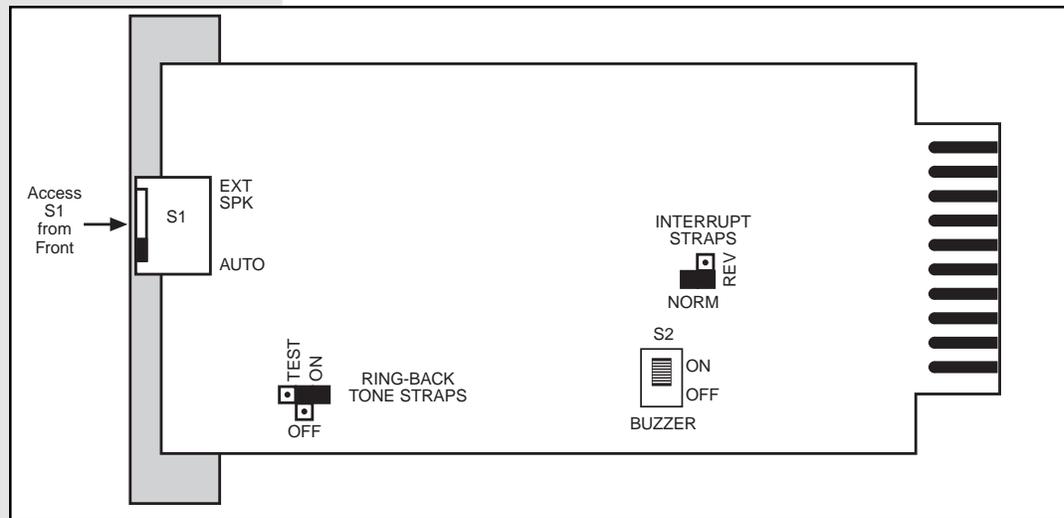
INSTALLATION

49920 INTERRUPT-SUPPLY MODULE

To set the switches and straps:

1. Verify that the switches and straps are set according to Fig. 13.
2. Reinstall the module in the right slot of the bottom equipment shelf.

Fig. 13 - 49920 SWITCH AND STRAP LOCATIONS



TURN-UP PROCEDURE

Check the tone levels of the external modem:

1. Apply power to the order wire system.
2. Push in the CHANNEL 1 and 2 buttons on the front of the 41096.
3. Connect a 600-ohm dB meter (bridging) to the XMT MON jack on the front panel of the 44022 Station Interface module.
4. Turn on the carrier signal on the external modem.
5. Adjust the transmit level on the modem until the dB meter reads -13 dB.
6. Turn off the carrier signal on the modem.
7. Remove the dB meter.
8. Release the CHANNEL 1 and 2 buttons on the front of the 41096.
9. Set up the external modem to receive a signal of -26 dB.
10. End of this section.

INSTALLATION

Check the system.

The order wire system is aligned at the factory. Once installed, it is ready to operate.

Follow the procedures in the *Operation* chapter to check the system as a voice circuit and as a data circuit.

Adjusting Signal Levels

Follow the procedures below if you have to check signal levels or, if you install replacement equipment, to set the levels.

ORDER-WIRE ALIGNMENT

NOTE:

All switch, strap, and level settings are factory-set.

To check or set signal levels:

1. Remove power from the order wire system.
2. Remove the 46105 module and place switch S2 (LPBK 1) in the ON position. Refer to Fig. 8 in the *Installation* chapter for the location of the switch. Reinstall the module.
3. Apply power to the order wire system.
4. Connect a 600-ohm load across the signal output of a 600-ohm signal generator. Set the generator for 1004 Hz and a level of 0 dB. Remove the 600-ohm load and connect the generator to the XMT DROP jack on the 44022 module.
5. Connect a 600-ohm dB meter (bridging) to the channel 1 XMT MON jack on the front panel of the 46105 module.
6. Adjust the transmit level on the front of the 44022 module for a reading of -16 dB.
7. Move the dB meter (bridging) to the channel 1 XMT LVL pin jacks on the front of the 46105 module.
8. Adjust the channel 1 transmit level on the front of the 46105 module for a reading of 0 dB.
9. Move the dB meter (bridging) to the channel 1 RCV MON jack on the front panel of the 46105 module.
10. Adjust the channel 1 receive level on the front of the 46105 module for a reading of +7 dB.
11. Terminate the dB meter with 600 ohms and move it to the RCV DROP jack on the 44022 module.
12. Adjust the receive level on the front of the 44022 module for a reading of -13 dB.
13. Remove the signal generator and dB meter.
14. Remove power from the order-wire system.
15. Remove the 46105 module and place switch S2 (LPBK 1) in the OFF position. Reinstall the module.

CONTINUED . . .

INSTALLATION

16. Proceed to the next section to align the 44214 modem, or apply power to the system and follow the procedures in the *Operation* chapter to check the system.

44214 MODEM ALIGNMENT

Set modem to Originate Mode

Set Switch 4, accessible through the front panel, to ORG.

Adjust transmit level

1. Connect a 600 ohm terminated dB meter to the module. Connection can be made at either of two places. A mini-plug can be inserted into the front panel jack labeled 4W MON or the meter can be connected to the 44214's edge connector at pins 40 and 39.
2. Adjust the XMT LEVEL, at the bottom of the front panel, until the meter reads -6dBm.

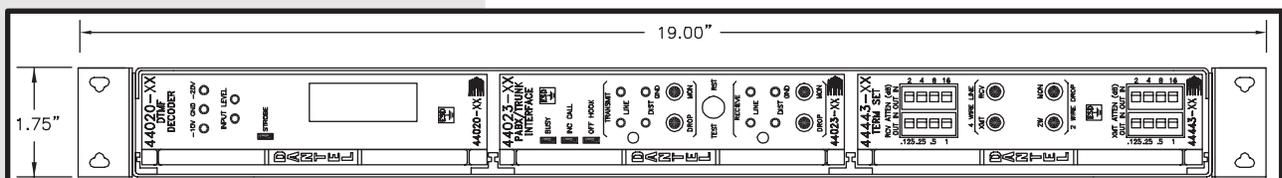
Adjust the receive level

1. Connect a 600 ohm load across the output of a signal generator. With a 600 dB meter across those same outputs, adjust the output level of the generator until the meter reads -29 dBm, at 1004 Hz.
2. Remove the meter and the 600 ohm load from the generator. Connect the generator to the 44214. Connection can be made at either of two places. A mini-plug can be inserted into the front panel jack labeled 2W LINE or the meter can be connected to the 44214's edge connector at pins 41 and 42.
3. Connect the dB meter, unterminated, to the pinjacks on the front panel. These are labeled RCV and GND.
4. Adjust the RCV LEVEL, at the bottom of the front panel, until the meter reads -20 dBm.
5. Remove the meter and the generator.

00331-00 OFF-NET INTERFACE

This shelf is part of the D18-05547-03. Fig. 14 shows the front view of this shelf.

FIG. 14 - 00331 FRONT VIEW



INSTALLATION

Verify that the switches and straps are set as shown in Figs. 15-18 and Table A.

Wiring

Connect the 00331 Off-Net Interface to the 05547 Assembly. Refer to page 3 of 6 of the D18-05547-XX Block Diagram.

FIG. 15 - 44020 DTMF DECODER STRAP SETTINGS

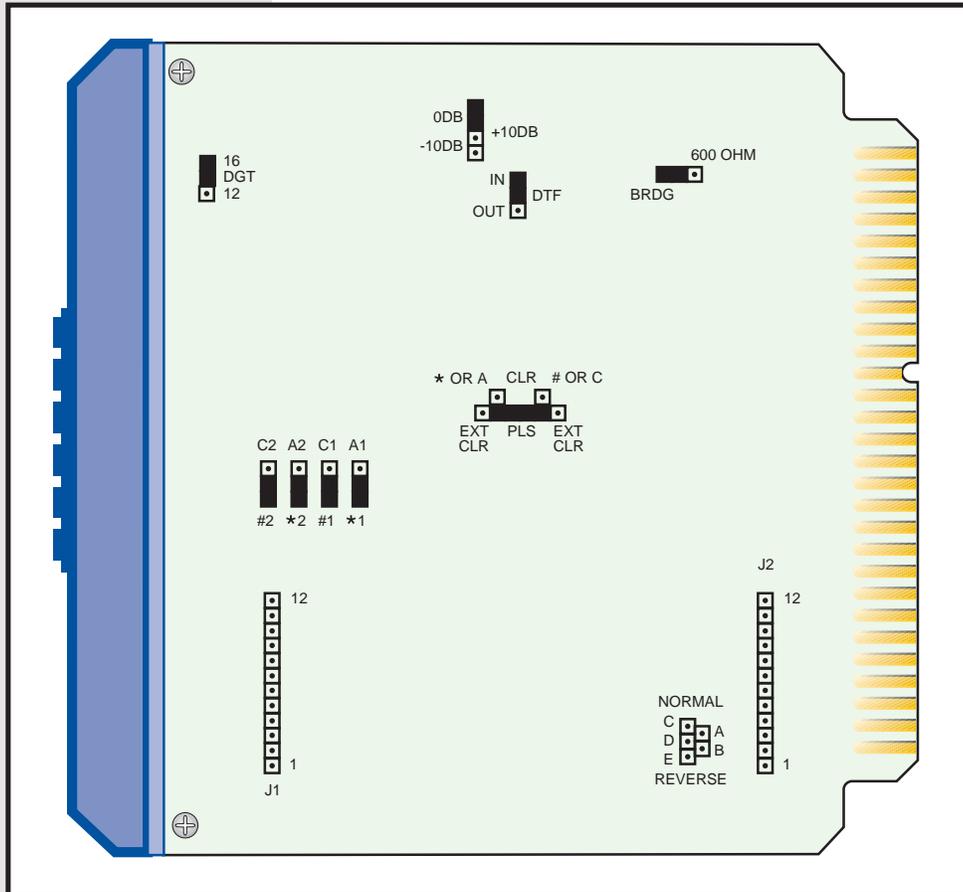
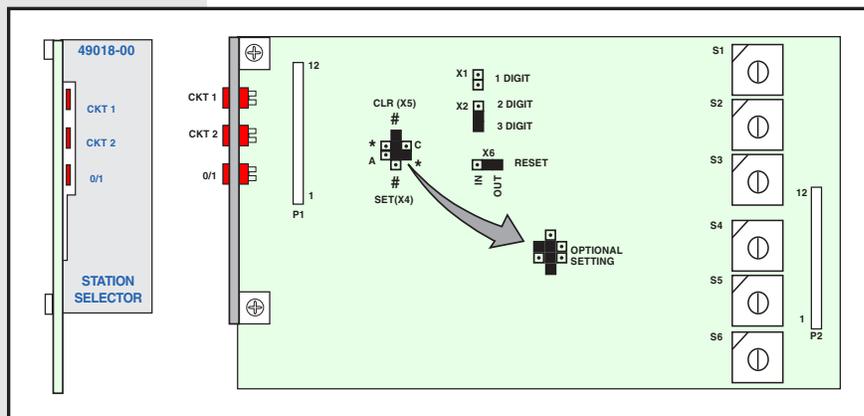


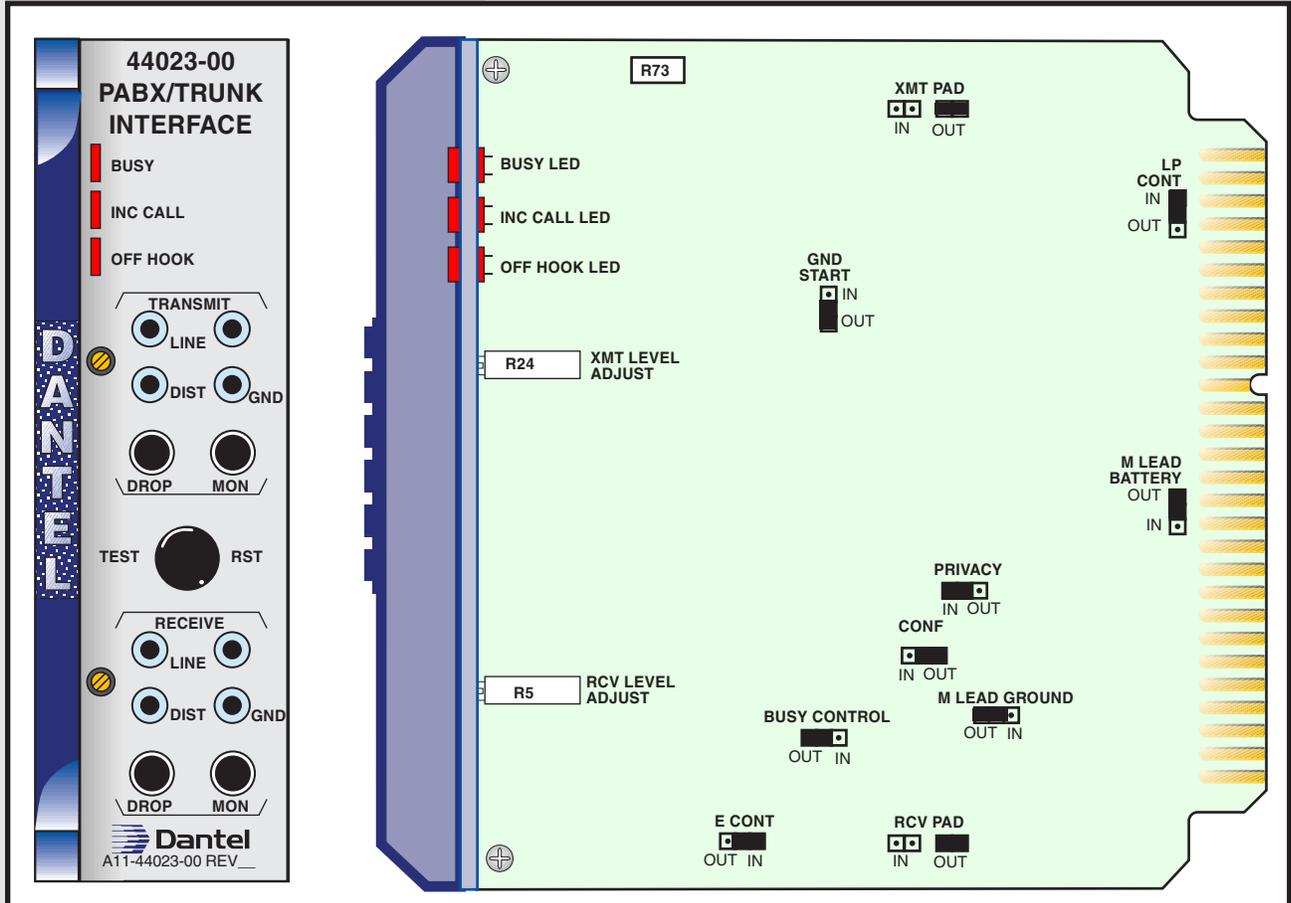
FIG. 16 - 49018 STATION SELECTOR SUBASSEMBLY SWITCH AND STRAP SETTINGS



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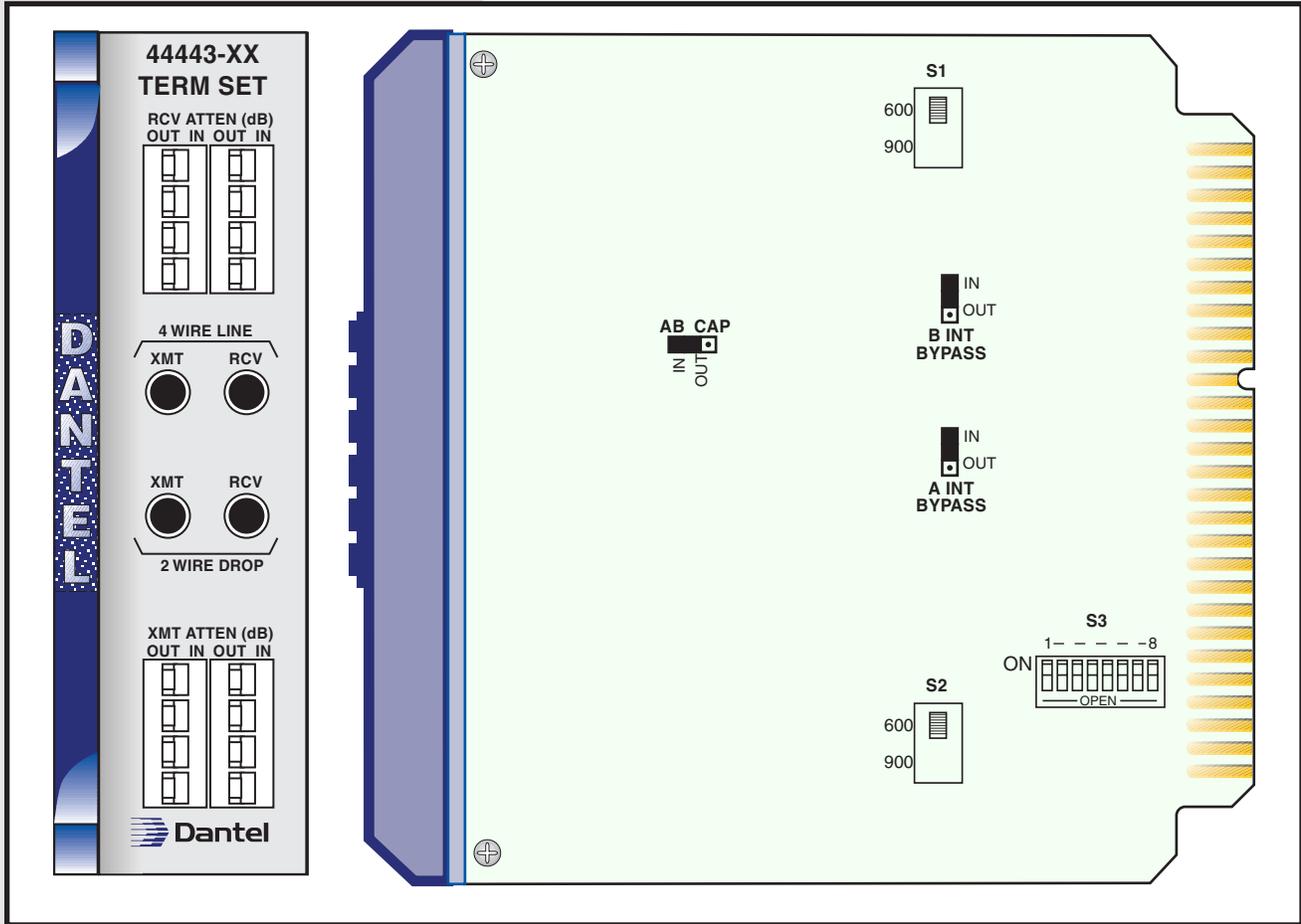
INSTALLATION

FIG. 17 - 44023 PABX/TRUNK INTERFACE STRAP SETTINGS



INSTALLATION

FIG. 18 - 44443 FOUR-WIRE TERM SET SWITCH AND STRAP SETTINGS



INSTALLATION

TABLE A - 00331 OFF-NET SWITCH AND STRAP SETTINGS

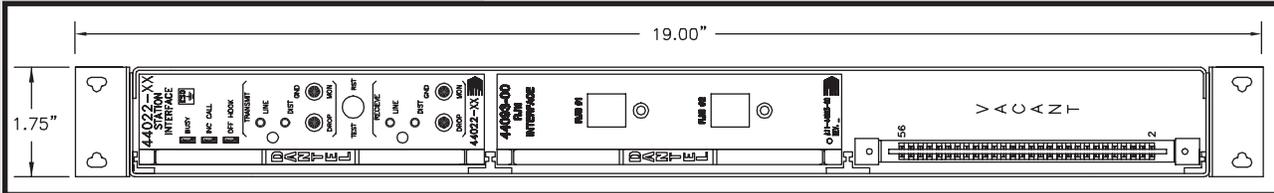
| BACKPLANE | |
|-------------------------------------------|-------------------------------|
| Called Party | S1 DOWN |
| Line T/R Normal | S2 NOR UP |
| Line T/R Reversed | S2 REV DOWN |
| * Control | S3 * DOWN |
| # Control | S3 # UP |
| 44020 MODULE | |
| Input Impedance | BRDG |
| Input Level 0 to -20dBm | 0 |
| Dial Tone Filter In | DTF IN |
| 16-Digit Dialing | 16 DGT |
| * and # Aux. Output | *1, *2, #1, #2 |
| * Non-latching | PLS |
| # Non-latching | PLS |
| 49018 SUBASSEMBLY | |
| External Reset | RESET OUT |
| NUMBER OF DIGITS | |
| One-Digit Codes | DIGIT 1 |
| Two-Digit Codes | DIGIT 2 |
| Three-Digit Dialing | DIGIT 2 |
| CIRCUIT CODE 1 (OFF-NET) | |
| First Digit | S1 |
| Second Digit | S2 |
| Third Digit | S3 |
| CIRCUIT CODE 2 (FORCED DISCONNECT) | |
| First Digit | S4 |
| Second Digit | S5 |
| Third Digit | S6 |
| BUSY/RESET | |
| Normal # Control | # CLR, * SET |
| Optional * Control | * CLR, # SET |
| 44023 MODULE | |
| Line RCV Level -16 to -3dBm | RCV PAD OUT |
| Drop XMT Level -3 to +7dBm | XMT PAD OUT |
| Manual Privacy | PVT IN |
| M Lead Dry Contact | M BATT OUT; M GND OUT |
| E Lead | E CONT IN |
| CONTROL INTERFACE | |
| Loop Start | LP CONT IN; GND ST OUT |
| Ground Start | LP CONT IN; GND ST IN |
| No Conferance Delay | CONF OUT |
| No Busy Control | B CONT OUT |
| 44443 MODULE | |
| Receive Attenuation | 8.5 dB |
| Transmit Attenuation | 8.5 dB |
| NBO | S3-1 thru 6 open; S3-8 closed |
| Impedance 600 Ohms | S1, S2 on 600 |
| A-B Capacitors | AB CAP IN |

INSTALLATION

SWITCH AND STRAP SETTINGS FOR A18-05723-01 NETWORK INTERFACE SHELF.

This shelf is part of the D18-05547-04. Fig. 19 shows the front view of this shelf.

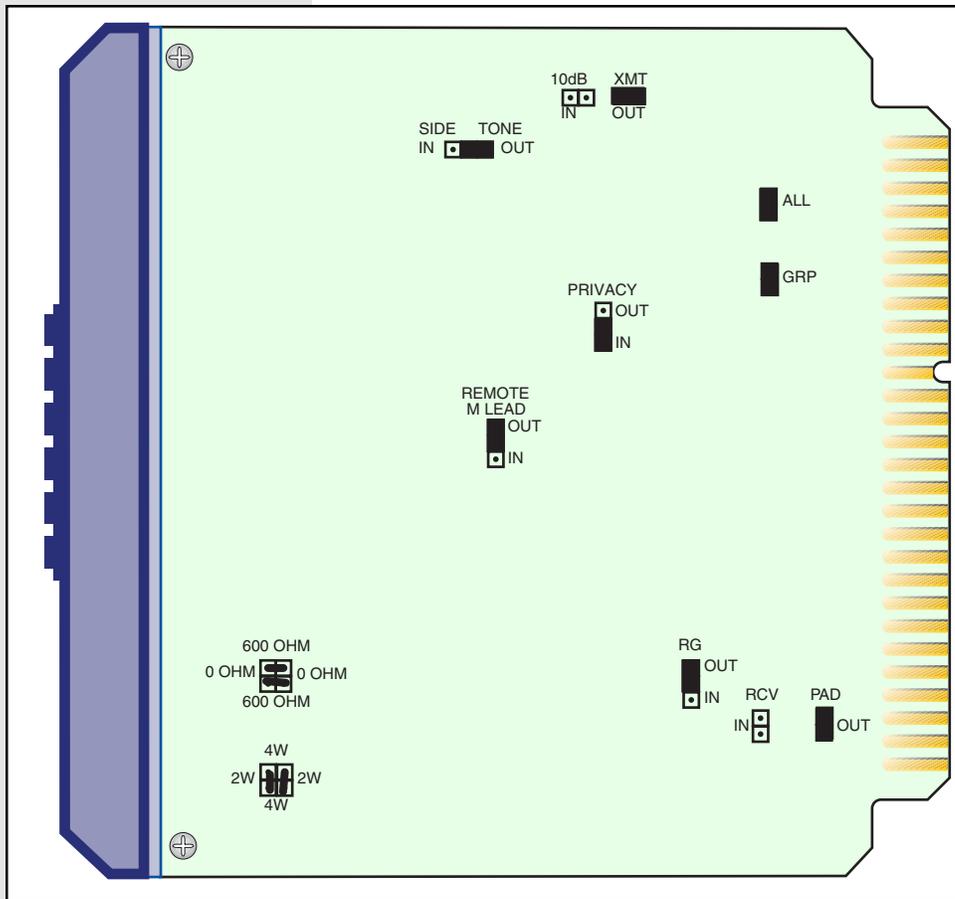
FIG. 19 - 05723 FRONT VIEW



Switch and Strap Settings

Verify that the switches and straps are set as shown in Fig. 20.

FIG. 20 - 44022 SUBSCRIBER LINE INTERFACE SWITCH AND STRAP SETTINGS



Wiring

Connect the 05723 Network Interface to the 05547 Assembly. Refer to page 4 of 6 of the D18-05547-XX Block Diagram.

OPERATION

The 05547 Order Wire system can be used for either voice or data communications.

VOICE CIRCUIT

The system operates as a standard order wire when you use it for voice communications. You can call one or more remote terminals.

To monitor the order wire system:

Only channel 1 is connected to the speaker. You can monitor voice and data traffic over the system in one of two ways:

- Turn the ALL CHAN SPEAKER VOLUME CONTROL knob clockwise until a sufficient level is heard.
- Push in the SPEAKER MONITOR CHAN SELECT button for Channel 1. Turn the CHAN SELECT SPEAKER VOLUME CONTROL knob clockwise until a sufficient level is heard.

NOTE:

If the CTL LMT straps are placed IN, the volume cannot be turned completely off.

To place a call:

1. Listen to the speaker to hear if anyone is talking or sending data over the system.
2. If the order-wire is available, push in the CHANNEL 1 button if it is not already pushed in.
3. Pick up the handset and dial the three-digit station 1 code of the terminal you want to call. You will hear the ring-back tone.
4. If the call is not answered, you can:
 - Press the # button to terminate the call.
 - Wait 90 seconds for the call to be cancelled auto-matically.

Additional stations can be added to the conversation by dialing the appropriate station codes.

To answer a call:

1. The Channel 1 CALL LAMP LED is flashing and the buzzer is sounding.
2. Push in the CHANNEL 1 button if it is not already pushed in.
3. Pick up the handset or plug in a headset.

DATA CIRCUIT

To transmit or receive data:

1. At a master (calling) terminal, listen to the speaker to hear if anyone is talking or sending data over the system (refer to the *Voice Circuit* section on the previous page for how to monitor the system).
2. If the order-wire is available, push in the CHANNEL 1 button if it is not already pushed in.

CONTINUED . . .

OPERATION

3. Pick up the handset and dial the three-digit station 2 code of the remote terminal.
4. Hold in the CHANNEL 1 button and push in the CHANNEL 2 button. (Both buttons are pushed in.)
5. Hang up the handset.
6. Start transmitting or receiving data.
7. When you finish, press the # key to disconnect the modem at the remote terminal. Release the CHANNEL 2 button. You can either release the CHANNEL 1 button or leave it pushed in since it is used for both voice and data communications.

OFF-NET CIRCUIT

NOTE:

Pushing the Channel 2 button in, engages an optical coupler circuit which disables the sidetone and prevents the external modem of the order wire system from hearing its own data.

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- To call out from within the order wire system:**
1. Press #
 2. Dial the outside access code and listen for dial tone.
 3. Dial the desired outside number.
 4. Press # to end call.

-
- To call into the order wire system from an outside line:**
1. Call the Telco phone number of the Off-Net. The caller will hear one ring, followed by a short tone burst
 2. Dial the desired order wire station code. The caller will hear a ring-back tone until the party answers. If a loop trunk is used, the person at the answering order wire must dial a * or # to prevent the call from self-terminating in 10 to 80 seconds.
 3. Hang up or press # to end the call.

NETWORK INTERFACE CIRCUIT

To access an outside Public Switched Telephone Network (PSTN) line, through an order wire off-net shelf, from a computer:

1. Connect the computer's modem to RJ11 #1, in the front panel of the 44093 RJ11 Interface Module.
2. Disable the dial tone detect on the modem

Once the dial tone detect is disabled, the modem can be commanded to dial the off-net shelf number, pause for a brief period, and then dial the PSTN number of the remote modem.

CONTINUED . . .

OPERATION

Typically, dial tone detection is disabled with the following command:

ATX3.

This command, however, combines several other commands with it, such as external results codes and busy tone detection. Other commands which would disable dial tone detection are:

ATX0 or ATX1

3. Dial the Off-Net shelf.

The string needed to dial a remote modem must include: the off-net shelf number, a pause, and then the phone number of the remote modem. An example of a full dial string looks like the following:

ATX3DT228,555-1998

“228” is the off-net access shelf number, the comma is typically used for a delay of 2 seconds, and “555-1998” is the PSTN remote modem number.

The delay may also be adjusted, typically by setting the S8 register in the modem. If the delay is not long enough to get to the off-net shelf and onto the PSTN, then this value may have to be adjusted. The typical setting of a delay is as follows:

ATS8=n

where ‘n’ is the value, in seconds, to delay.

If a modem is using a standard terminal type of program, setting these command strings is very simple. However, internet access dialers are usually much more restrictive about setting up modem parameters. In order to get these dialers to work, the command strings mentioned above must be put in the file that the Internet access dialer is using to initialize the modem. Usually, this file is named “modems.ini”, but this is far from universal.

4. End of this section.

NOTE:

The “AT” command sets of modems vary from manufacturer to manufacturer. This section presents a typical setup. This setup may not be accurate for all modems. Refer to the documentation specific to the modem in use.

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



P.O. Box 55013 • Fresno, CA 93747-5013 Phone (209) 292-1111 Fax (209) 292-9355 <http://www.dantel.com>