



## DSP 9000RC (Figure 1) Operator's Card

### INSTALLATION AND CONFIGURATION

1. Install the DSP 9000RC Interface Cable at the audio interface between the communications and voice termination equipment.
2. Connect the DSP 9000RC Radio Connector end of the Interface Cable to the rear Radio Connector of the DSP 9000RC.
3. If applicable for this installation, install the handset to the front panel **HANDSET** connector.
4. Place the **OPERATIONAL MODE** switch on the DSP 9000RC to the **CMD** (Command Mode) position (see Figure 2) and follow the user specific, configuration set-up instructions

as noted in the Interface Installation Document (IID).

### TO OPERATE IN PLAIN MODE

1. Set the **OPERATIONAL MODE** switch to **PLAIN** (see Figure 2).
  - 2a. Full Duplex communications: At the local end audio interface, establish voice communications with the party at the other end of the radio link following normal procedures.
  - 2b. Half Duplex communications: If a handset is used to establish communications, press the Push-to-Talk (PTT) switch on the handset when speaking to the party at the other end of the radio link.

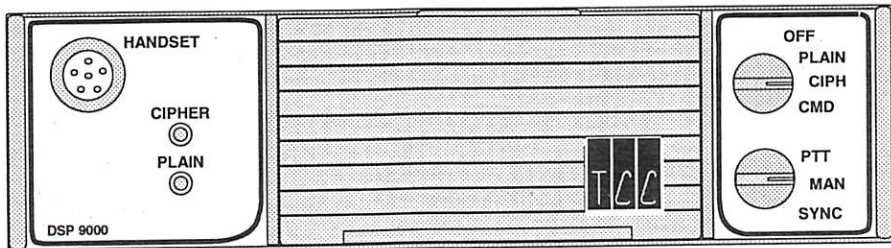


Figure 1. DSP 9000RC (with hatch closed)

## TO OPERATE IN CIPHER MODE

### Manual (Dual) Sync

#### NOTE

This is the normal Operating Mode for Full Duplex, Point-to-Point communications. Refer to the DSP 9000RC User's Manual for details.

1. Cipher Mode operations normally begin by establishing PLAIN mode communications. In the PLAIN mode, agree upon who will initiate SYNC.
2. Both parties should set their Operational Mode switch to CIPH (cipher) position.

#### NOTE

The DSP 9000RC offers a remote control line which allows selection of the CIPH (cipher) mode. See the User's Manual for details.

3. Both parties should set their Sync Mode switch to the MAN (manual) position.
- 4a. Initiating SYNC from the DSP 9000RC front panel: The initiating party momentarily rotates the SYNC MODE switch to the SYNC position. This party then must wait until SYNC is returned from the other party.

#### NOTE

The DSP 9000RC Full Duplex offers three methods of returning

SYNC. All three methods are user selectable under a CMD (command) mode menu option (see User's Manual for details). The normal method used in Full Duplex operation is the HAND-SHAKE mode which automatically returns the Sync Burst to the initiating party and allows nearly transparent operation. The RETRO-SYNC mode also returns Sync Bursts, and is normally used on half duplex communications channels. The third method is where both HAND-SHAKE and RETRO-SYNC are disabled. Each party must manually send Sync to each other to establish a Full or Half Duplex secure (cipher) link.

- 4b. Initiating SYNC from a remote location (away from the DSP 9000RC): The Sync Burst may be initiated from a user-installed remote control switch which, when momentarily pressed, initiates the identical Sync Burst operation as is accomplished when rotating the Sync Mode switch to the SYNC position (see User's Manual for details). The Sync-initiating party then must wait until a Sync Burst is returned from the other party.

5. Once Sync Bursts are exchanged between the two parties, both units should remain in-sync for about 40 minutes. If audio quality degradation is heard, repeat step 4 above.

#### NOTE

If SYNC COAST is selected (via CMD mode menu), the two parties may select between PLAIN

mode and CIPH mode without needing to resynchronize.

## Manual (Single) Sync

### NOTE

This mode is used in half duplex, multi-party "broadcast" radio nets where an initiating party sends SYNC to two or more net participants. Since all parties track a single Sync Burst, some parties may experience distortions (being slightly out-of-sync) due to radio propagation delays. Manual (Dual) Sync mode synchronization described above corrects for propagation delay, but is not operationally suitable for multi-party net operations.

1. All parties set their Sync Mode switches to MAN (manual).

2. In the PLAIN mode, agree on who will initiate SYNC.

3. All parties set their Operational Mode switches to CIPH (cipher).

4a. Initiating SYNC from the DSP 9000RC front panel: The initiating party momentarily rotates the SYNC MODE switch to the SYNC position. All receiving parties lock onto sync burst; no further sync bursts need be sent.

4b. Initiating SYNC from a remote location (away from the DSP 9000RC): The Sync Burst may be initiated from a user-installed remote control switch which, when momentarily pressed,

initiates transmission of the single Sync Burst (see User's Manual for details). Again, no other Sync Bursts need be sent.

5. Once the Sync Burst is received by the two or more other parties in the multi-party net, all units should remain in-sync for about 40 minutes. If audio quality degradation is heard, repeat step 4 above.

### PTT SYNC (used in Half Duplex Operational Mode; two-party or multi-party)

1. Set the Operational Mode switch to CIPH, and set the Sync Mode switch to PTT. Plain Mode voice coordination is not needed regarding who will initiate Sync Bursts, since they are sent at every transmission automatically.

2a. Handset Half Duplex Operation at the DSP 9000RC: Press the PTT switch and begin speaking; release PTT to receive.

2b. Remoted Handset Operation: Press the remoted Send (PTT) to send; release the Send (PTT) to receive. All incoming transmissions will be preceded by a short, audible Sync Burst tone.

## TO LOAD A SMARTMODULE

1. Press the Control Panel Latch and open the DSP 9000RC Control Panel Hatch (see Figure 2).
2. Rotate the Operational Mode switch to the CMD (command) position.
3. Insert the SmartModule onto the 9-pin Keyfill Connector.
4. Select the desired key-load operation by pressing "A" or "V" keypad keys. Press SEL (select) to initiate the operation.

### NOTE

When inserted, the default load condition of the SmartModule is "LOAD ALL". Pressing SEL loads the entire contents of the SmartModule into the DSP 9000RC. The data header, time and date loaded, or a list of contents (by type) may be viewed by scrolling to that item and pressing SEL (select). Pressing EXIT returns the DSP 9000RC to the SmartModule Main Menu.

5. When the "LOAD OK!" message displays, remove the Smart Module and return the Operational Mode switch to either PLAIN or CIPH (cipher) position.

## TO ERASE KEYS WITHIN THE DSP 9000RC

1. Open the Control Panel hatch. Depress and hold down the ZERO keypad button while rotating the Sync Mode switch to the SYNC position. After one (1) second, release both switches.
2. To confirm key erasure, switch the Operational Mode switch to OFF and then to CIPH. An audio alarm error tone should be presented at the audio output interface and a "NO LOCAL KEYS" indication should be viewable on the LCD display.

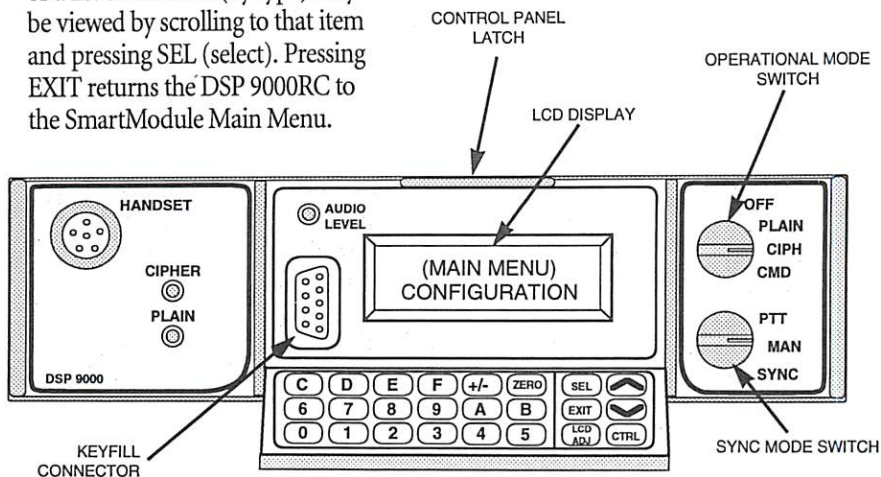


Figure 2. DSP 9000RC (with hatch open)