

# SDM-300A/SDM-300L3/ SLM-3650 Duplex Reed-Solomon Code FEC

Application Note

Part # APN/300ADuplexR-S.doc

## Introduction

The SDM-300A, SDM-300L3, and SLM-3650 modems support the optional Duplex Reed-Solomon Codec Forward Error Correction (FEC) feature. A Duplex Reed-Solomon Codec can be installed at the factory or added as a field-installed upgrade to modems currently deployed.

## Remote Control and Menu Structure Changes

Changes to the remote control and menu structure are minimal. The following list summarizes the changes required for the Duplex Reed-Solomon option. There are no Menu structure changes for the Duplex Reed-Solomon.

- **Modem type Select** – CDM Modem type added for compatibility with CDM-550's and CDM-600's.  
Remote command - < ADD/SMT\_CDM 'cr'

## Upgrading To Duplex Reed-Solomon

Upgrading requires installation of the Duplex Reed-Solomon module ( Simplex Reed-Solomon modules must be removed if installed, Turbo and Duplex Reed-Solomon can be populated at the same time), installation of new M&C firmware, and installation of new Bulk firmware, and installation of new Turbo firmware are required.

An upgrade kit includes the following items:

### Upgrade Kit Part Number KT/9658-1:

1. PL/9658-1 (Duplex Reed-Solomon Module)
2. FW/6535-1AA or later version (M&C firmware) SDM-300A/SLM-3650  
\*\*FW/8460-1AC or later version SDM-300L3
3. FW/6094W or later version (Bulk firmware)
4. Installation instructions
5. FW/9600C or later version  
(Turbo Firmware – if Turbo is installed)

\*\* SDM-300L3: Firmware is reflashable and can be downloaded at: [www.comtechefdata.com/downloads](http://www.comtechefdata.com/downloads)

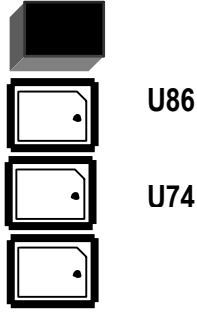
The modems must have a Revision C (or later) main board for the Duplex Reed-Solomon upgrade. There are two ways to determine the revision status:

Step	Procedure
1	Provide the SN of the modem to Comtech EF Data for verification of the revision status.
2	If the first two digits off the modem SN start with 99, 00 or 01, corresponding to the year of manufacture, then the modem main board is revision C. If the SN starts with 98 then it is either revision B or C and it is necessary to check with the factory. SNs beginning 97 or earlier are not eligible for upgrade.



**Observe all normal precautions for handling electrostatic-sensitive devices.**

## To Install Duplex Reed-Solomon Board and Firmware:

Step	Procedure	
1	Disconnect the AC power to the unit.	
2	Remove the (2) side screws near the front of the modem. Slide top cover back and lift off.	
*3	Card 1 Removal, refer to Figure 2. If unit has top board (Card 1 – Overhead board), remove the (4) rear panel screws around the 50-Pin I/O switch module. Unplug the I/O module, then Remove the (7) mounting screws holding the Overhead board and carefully lift it off.	
4	Simplex Reed-Solomon removal, refer to Figure 2. Remove all Simplex Reed-Solomon Boards if installed, from the SIMM sockets by pushing the spring clips outward while rocking the board vertically, then lift out.	
**5	Duplex Reed-Solomon installation, refer to Figure 3. Align the Duplex Reed-Solomon board with either of the SIMM sockets while holding it nearly vertical with components toward Rear Panel. Seat the connector into the socket and tilt the board toward the Front Panel until the spring clips lock the board into place.	
***6	Firmware installation, refer to Figure 3. <i>If replacement Firmware IC's where sent with the Duplex Reed- Solomon Board, Remove existing Firmware, U86 and U74 with PLCC type IC puller. If puller not available, use ice pick type tool to alternately, carefully pry upward at opposite corners of IC.</i>	 <p>U86</p> <p>U74</p>
7	Install the replacement Firmware, noting that the Dot mark should be oriented toward the beveled corner of the socket before pushing the IC into the socket. U86 is located next to the lithium battery NV-RAM (Large Black or Yellow IC, U95). U74 is located in the center socket position.	
*8	If step #3 was required, re-install the Overhead board with its (7) mounting screws then re-plug the I/O Module into the Rear Panel location and install its (4) mounting screws.	
9	Replace the Top Cover so forward edge mates under Front Panel lip. While holding in place, re-install the (2) side screws.	
10	Turn on the AC power to the modem. Modem will re-initialize.	

\* Dependent steps – Other procedures shall be accomplished prior to performing steps indicated by an \*.

\*\* For PL/9394-1 Rev. A Turbo Codec Board (Has a socket that the firmware is installed into). This assy shall be installed in card slot #2 (see Figure 2) and Duplex Reed-Solomon in card slot #3. All other revisions of PL/9394-1 Turbo Codec Board can be installed in either slot.

\*\*\*SDM-300L3 firmware is reflashable and can be downloaded from: [www.comtechefdata.com/downloads](http://www.comtechefdata.com/downloads)

### Duplex Reed Solomon Set-up:

No special setup is required the Reed-Solomon option is available as normal under **Configuration: Modulator/Demodulator** menu.

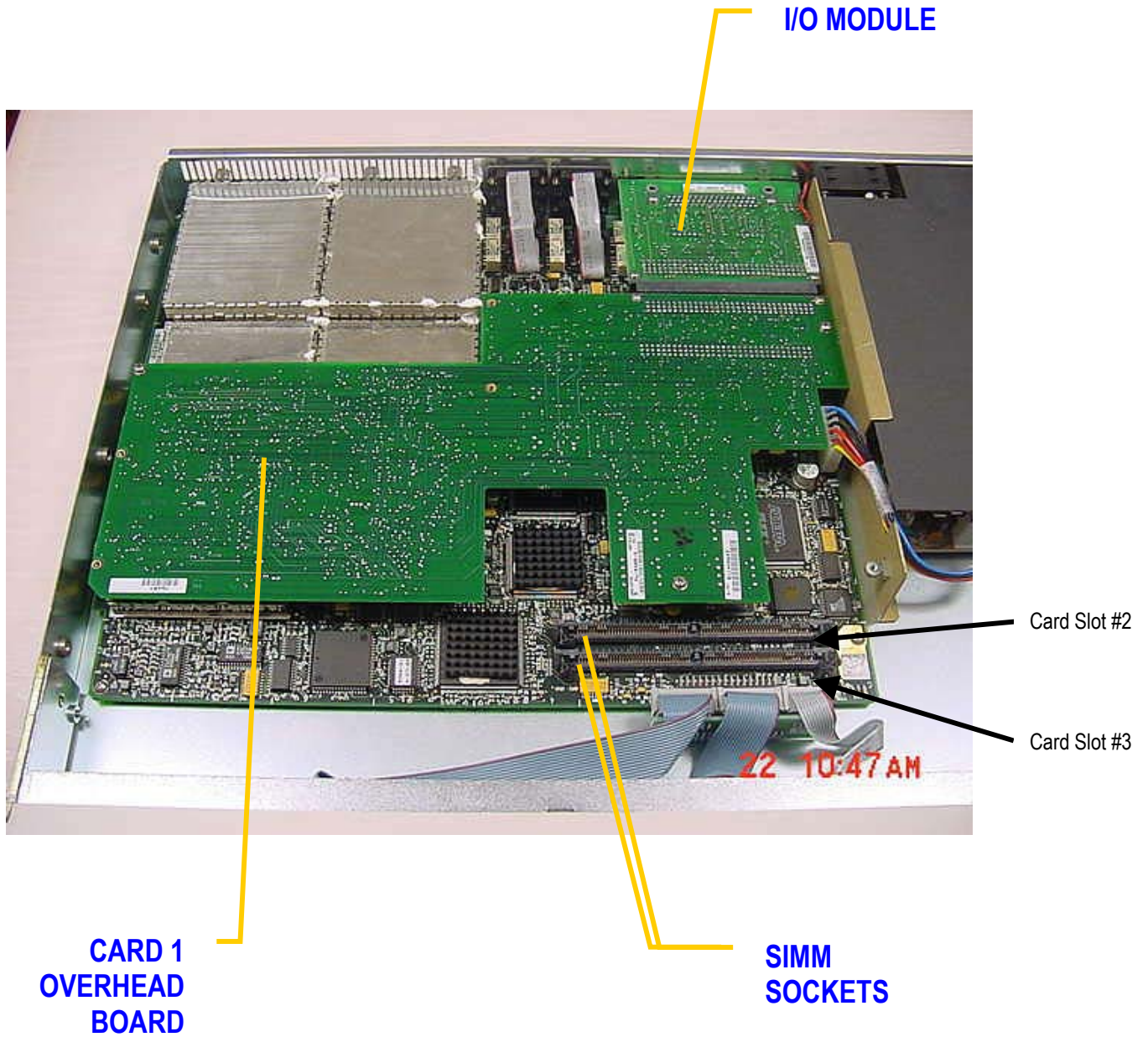


Figure 2

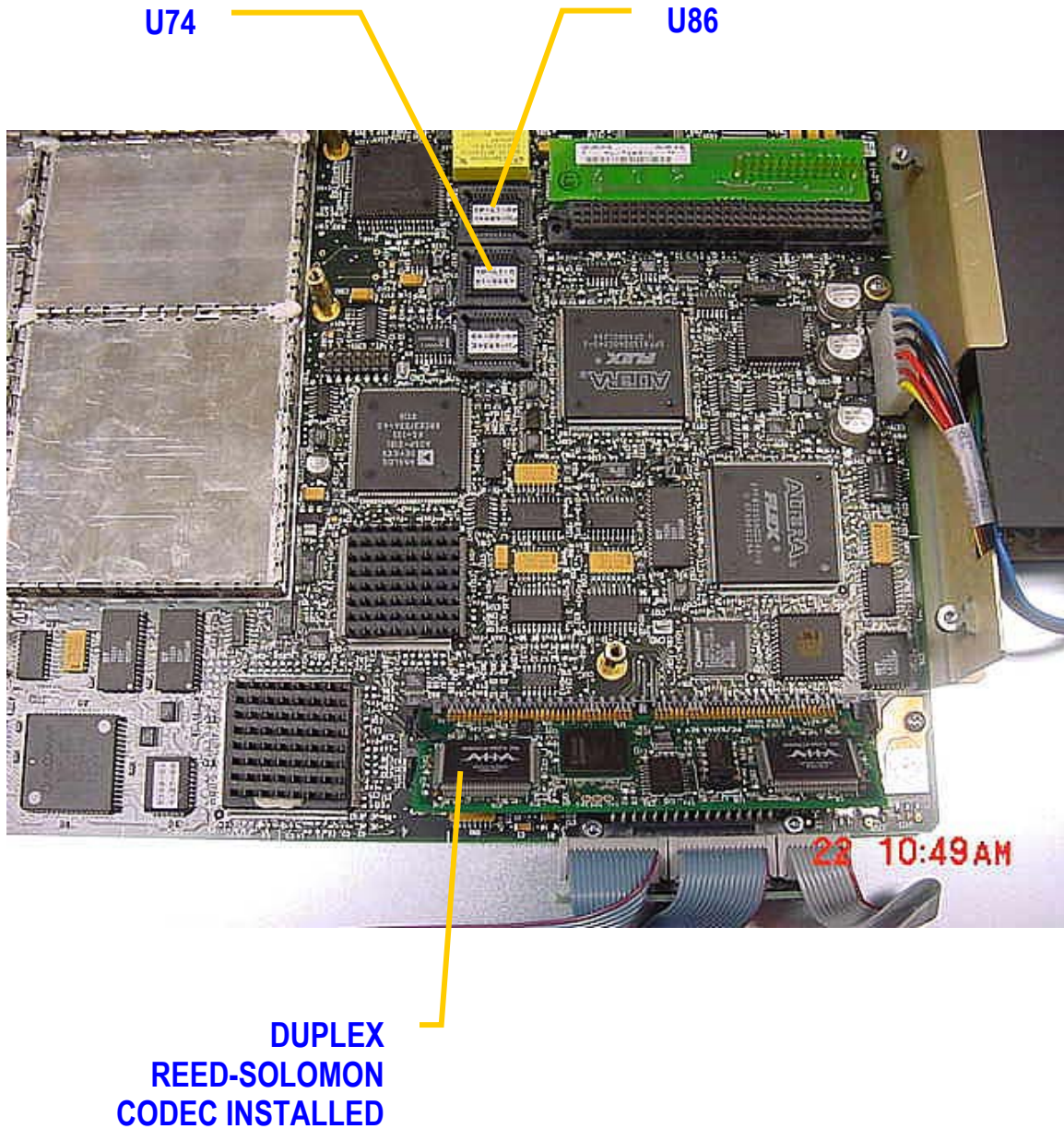


Figure 3



Comtech EF Data  
2114 West 7th Street  
Tempe, Arizona 85281 USA  
Tel: 1 480 333 2200  
Fax: 1 480 333 2540  
[www.comtechefdata.com](http://www.comtechefdata.com)