



Data Collection from CDM-625 Advanced Satellite Modem Field Units

Application Note
P/N: AN-625DATACOLL

I. Introduction

In the event that an operational issue (such as degraded performance or loss of IP access) is encountered with a field-installed CDM-625 Advanced Satellite Modem equipped with the optional IP Packet Processor card, it is crucial for Comtech EF Data Customer Support to receive diagnostic information collected from the field unit in question in order to properly investigate and resolve the issue.

This Application Note instructs you on the procedures required to collect this diagnostic information from a field-installed CDM-625 Advanced Satellite Modem equipped with the optional IP Packet Processor card. The procedures described in this Application Note require a user-supplied, Windows-based PC and a custom Serial Adapter Cable¹.

These procedures are performed in the following sequence:

- *Pre-reboot* information* must be obtained from the CDM-625 field unit by the User PC. This is accomplished by text capture with a user-supplied terminal emulation program such as Tera Term or HyperTerminal installed on the User PC. This program is required to use the CDM-625 Command Line Interface (CLI) for serial communication (via the custom Serial Adapter Cable connection) between the modem and the User PC.



*** This information must be gathered while the issue exists. Do not reboot the CDM-625 Field Unit for any reason until otherwise instructed in this Application Note.**

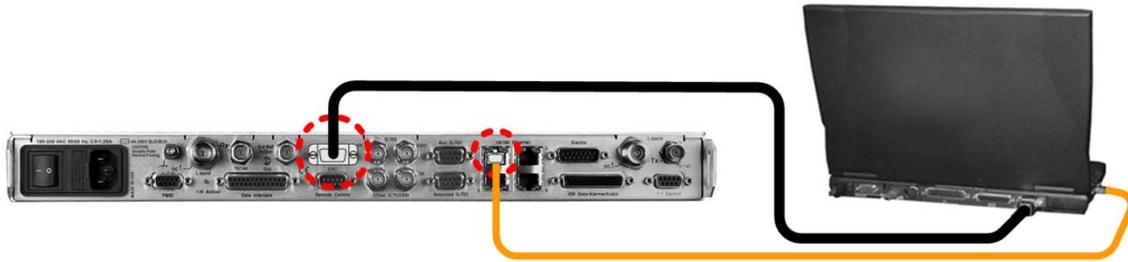
- Once this initial pre-reboot information is gathered, the CDM-625 Field Unit must be rebooted to re-initialize and restore service to the modem and its IP Packet Processor.
- After the CDM-625 Field Unit reboots, its onboard data collection files must be retrieved via Ethernet connection and transferred to the User PC.

The following *post-reboot* files are collected in addition to the pre-reboot CLI text capture file:

- The "**custserv.txt**" file, which contains the CDM-625 Base Modem configuration settings
- The "**param1.txt**" file, which contains the IP Packet Processor configuration settings.
- Assuming that the User PC is equipped with the appropriate Internet access and e-mail capabilities (Internet Explorer, for example), the three text files must be e-mailed to Comtech EF Data Customer Support for evaluation.

¹ The fabrication specifications for the custom Serial Adapter Cable that must be provided by the user for use in this procedure are provided on the last page of this Application Note.

II. Initial Setup of Communications between the CDM-625 Field Unit and the User PC



CAUTION: Obey precautions for handling electrostatic-sensitive devices.

- A. Connect the custom Serial Adapter Cable between the CDM-625 Field Unit's 'ESC' port and an available RS-232 serial port on the User PC.
- B. Connect a CAT5 Ethernet cable between CDM-625 Ethernet IP Module Port '1' and an available Ethernet network RJ-45 port on the User PC.
- C. Use the terminal emulator program to configure the serial port communication and terminal display operation as follows:
 - 115200 bps (Baud Rate)
 - Parity = NO
 - Local Echo = ON
 - 8 Data Bits
 - Port Flow Control = NONE
 - 1 Stop Bit
 - Display New line Rx/Tx: CR
- D. Upon successful setup of communications between the User PC and the CDM-625 Field Unit Command Line Interface (CLI), you will see the CLI command prompt on the terminal emulator display: "->".
- E. Using Windows Command-line (**Start > Run... > cmd.exe**), create a folder (directory) named "**temp**" (or some other easy-to-remember name) on the User PC for placement of the CLI, modem, and IP Packet Processor data collection files:

Example: C:\>md temp

- F. Set the terminal emulator program to capture the CLI session to a text file. Be sure to specify your "temp" folder as the path for the file that will be created.



Refer to your terminal emulator program User Guide or Help feature for instructions on configuring the serial port communications and for creating and saving text capture files.

You are now ready to begin pre-reboot collection of diagnostic information from the CDM-625 Field Unit.

III. Collection of Pre-Boot Diagnostic Information from the CDM-625 Field Unit



CAUTION: The pre-reboot information collection process differs depending on which version of the IP Packet Processor is installed. Be sure to select and follow the correct procedure.

Follow these steps to collect pre-reboot information from a CDM-625 Field Unit using IP Packet Processor Release **1.3.3 or newer**:

<i>To do this:</i>	<i>Type this at the CLI "->" prompt:</i>
Confirm that the Interfaces are operational	-> display_diag_info
End the CLI text capture session – be sure to verify that the file is successfully saved to your "temp" folder before rebooting.	<i>Refer to your terminal emulator program User Guide or Help feature.</i>
You may now reboot the CDM-625 and proceed to IV. Collection of Post-Reboot Diagnostic Information from the CDM-625 Field Unit.	

Follow these steps to collect pre-reboot information from a CDM-625 Field Unit using IP Packet Processor Release **1.3.2 or older**:

<i>To do this:</i>	<i>Type this at the CLI "->" prompt:</i>
Confirm that the interfaces are operational	-> ifconfig -> ping "LAN ip address" ▶ Get the configuration -> cimmib_display_settings
Confirm that the WAN and DMA is receiving and transmitting traffic	-> wan_dll_stats_print -> dma_stats_show 0 -> dma_stats_show 1 -> dma_stats_clear 0 <i>(Answer y to clear stats)</i> -> dma_stats_clear 1 <i>(Answer y to clear stats)</i> ▶ Now wait 30 seconds -> dma_stats_show 0 -> dma_stats_show 1

<i>To do this:</i>	<i>Type this at the CLI "->" prompt:</i>
Determine that QoS and Classifier are OK	-> qos_priorities_display ► Now wait 5 seconds -> qos_priorities_display
Display the reset of system context	-> display_full_system_info
Get the system state	-> i -> spy ► Now wait 10 seconds -> spyStop
Get kernel memory dump	-> cmd ► You will see the Command-line CMD> prompt CMD> slab
End the CLI text capture session – be sure to verify that the file is successfully saved to your "temp" folder before rebooting.	<i>Refer to your terminal emulator program User Guide or Help feature.</i>
<i>You may now reboot the CDM-625 and proceed to IV. Collection of Post-Reboot Diagnostic Information from the CDM-625 Field Unit.</i>	

IV. Collection of Post-Reboot Diagnostic Information from the CDM-625 Field Unit

A. "Ping" the CDM-625 Field Unit to verify the connection and communication:

- i. Set the IP address of the CDM-625 Field Unit so that it is in the same IP subnet as the User PC.
Using the CDM-625 Front Panel:

- *First*, select **Configuration ► Remote** and set to **Local**.
- *Next*, select **Configuration ► IP ► Addresses ► Addr/Range** to access the assigned CDM-625 Ethernet M&C IP Address/Range.
- *Then*, change the IP Address/Range as needed. Use the ◀ ▶ arrow keys to select a digit to edit, and then the ▲ ▼ arrow keys to change the value of that digit. Press ENTER when done.
- Finally, select **Configuration ► Remote** and set to **Ethernet**.

- ii. Use Command-line to "ping" the CDM-625 Field Unit.

At the Windows Command-line prompt, type `ping xxx.xxx.xxx.xxx` (where "xxx.xxx.xxx.xxx" is the IP address of the modem).

The results should confirm whether or not the CDM-625 Field Unit is connected and communicating.

B. Collect the "custserv.txt" file from the CDM-625 Field Unit using File Transfer Protocol (FTP):

<i>To do this:</i>	<i>Type this at the Windows Command-line prompt:</i>
Change to the User PC "temp" folder	<code>CMD>cd /temp</code>
Open the FTP session to the CDM-625 Field Unit	<code>CMD>ftp xxx.xxx.xxx.xxx</code> (where "xxx.xxx.xxx.xxx" is the IP address of the modem).
Log in as Administrator	(At the prompts, the default username and password are <code>comtech</code> and <code>comtech</code>)
Retrieve the custserve.txt file	<code>CMD>get custserv: custserv.txt</code>
Terminate the FTP session	<code>CMD>bye</code>

C. Collect the Packet Processor "param1.txt" file from the CDM-625 Field Unit using File Transfer Protocol (FTP):

<i>To do this:</i>	<i>Type this at the Windows Command-line prompt:</i>
Change to the User PC "temp" folder (if not already done)	<code>CMD>cd /temp</code>
Open the FTP session to the CDM-625 Field Unit	<code>CMD>ftp xxx.xxx.xxx.xxx</code> (where "xxx.xxx.xxx.xxx" is the IP address of the modem).
Log in as Administrator	(At the prompts, the default username and password are <code>comtech</code> and <code>comtech</code>)

<i>To do this:</i>	<i>Type this at the Windows Command-line prompt:</i>
Change to the Packet Processor "tffs" folder	<code>CMD>cd /tffs</code>
Retrieve the param1.txt file	<code>CMD>get param1.txt</code>
Terminate the FTP session	<code>CMD>bye</code>

D. Forward the data collection files to Comtech EF Data Customer Support :

- i. Prepare your e-mail and address it to cdmipsupport@comtechefdata.com
- ii. Attach the **CLI Capture**, "custserv.txt" and "param1.txt" files to your e-mail.
- iii. Send your e-mail to Comtech EF Data Customer Support.

The Data Collection and Reporting Process is now complete.

V. Serial Adapter Cable Fabrication Specifications Reference



CAUTION: To ensure proper operation, fabrication of this Serial Adapter Cable requires that :

- The connectors must be wired using the pinout tables and diagram provided here.
- The Type 'D' connectors must have back-shells with continuous metallic shielding.
- The Type 'D' cabling must have a continuous outer shield (either foil or braid, or both). The shield must be bonded to the connector back-shells.

User PC Interface End

Description: PC Serial Port Interface

Cable Connector Type: D-Subminiature DB-9F (Type D-Sub 9-pin Female)

Use: For connection to User PC RS-232 Serial port

WIRE LIST / PINOUT			
PIN	SIG	NAME	DTE (PC)
1	DCD	DATA CARRIER DETECT	IN
2	RXD	RECEIVE DATA	IN
3	TXD	TRANSMIT DATA	OUT
4	DTR	DATA TERMINAL READY	OUT
5	GND	SIGNAL GROUND	-
6	DSR	DATA SET READY	IN
7	RTS	REQUEST TO SEND	OUT
8	CTS	CLEAR TO SEND	IN
9	RI	RING INDICATOR	IN

CDM-625 Field Unit Interface End

Description: CDM-625 ESC Port Interface

Cable Connector Type: D-Subminiature DB-9M (Type D-Sub 9-pin Male)

Use: For connection to CDM-625 field unit ESC port

WIRE LIST / PINOUT		
PIN	ASYNCHRONOUS	SYNCHRONOUS
1	GROUND	GROUND
2	RS-232 Rx DATA OUT	RS-232 Rx DATA OUT
3	RS-232 Tx DATA IN	RS-232 Tx DATA IN
4	-	RS-232 Rx CLOCK OUT
5	-	RS-232 Tx CLOCK OUT
6	RS-232 Tx DATA 'B' IN	-
7	RS-232 Tx DATA 'A' IN	-
8	RS-232 Rx DATA 'B' OUT	-
9	RS-232 Rx DATA 'A' OUT	-

