HYPERCOM POINT-OF-SALE

T7 Series Troubleshooting Manual

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Version 1.2

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HYPERCOM®

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NOTICE

Hypercom Corporation reserves the right to make changes to specifications at any time and without notice. The information furnished in this publication is believed to be accurate and reliable; however, no responsibility is assumed by Hypercom Corporation for its use.

This document applies to the *T7 Series Troubleshooting Manual, version 1.2*.

FCC PART 68 REQUIREMENTS NOTICE

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

Note: REN is not required for some types of analog or digital facilities.

This equipment uses an RJ11 jack.

An FCC compliant telephone cord and modular plug are provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See installation instructions for details.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

Note: REN is associated with loop-start and ground-start ports. Do not use for E&M or digital ports.

If your telephone equipment causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a compliant with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact the Hypercom Repairs Department at (602) 504-5378 for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

This telephone receiver is hearing aid compatible (if applicable).

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Introduction

The *T7 Series Troubleshooting Manual*, is your comprehensive manual to troubleshooting the Hypercom T7 Series Terminals with the Hypercom System Standard Software. T7 Series refers to the Hypercom T7, T7E, T7P, T77, T7PRC, and T7PRA series of terminals.

Who Should Use This Book

This document is intended for Help Desk personnel to assist Hypercom customers in troubleshooting and diagnostics of specific functions. It contains a high level of troubleshooting recommended solely for Help Desk personnel.

Document Conventions

This manual contains the following special terms and style conventions.

Notes

Notes are indented for emphasis, as follows:

> NOTE: A note is used for information that may not be mandatory for completing a procedure, but provides details that enhance the procedure.

Component Names

This manual uses special bold text formatting to highlight terminal key names and field description names, as follows:

Manually enter the card account number and press **Enter**.

The **Surcharge** field option increments the total purchase amount by the value set in Term-Master.

Procedures

Procedures have a special graphic appearing in the margin of the text. The words *Step-By-Step* also appear in bold at the beginning of the procedure.

Text within a box indicates a terminal display.

```
[DATE]                    [TIME]
SWIPE CUSTOMER CARD
```

Warning and Caution Messages

When you see a Warning message or Caution message, read it promptly and carefully before proceeding further. The format of these messages is shown in the following examples.

WARNING
Please read this information before continuing.

CAUTION
Please read this information before continuing.

How This Book Is Organized

This book provides information relevant to the System Software application and Term-Master. This book is divided into the following sections.

Introduction—This section describes information relevant to using this book.

Chapter 1 Equipment Information—This chapter describes equipment troubleshooting.

Chapter 2 Error Message—This chapter describes instructions for troubleshooting error messages.

Chapter 3 T7PRA Troubleshooting—This chapter provides troubleshooting instructions specific to the T7PRA.

Chapter 4 Cellular Hardware—This chapter provides instructions for connecting a cellular bag phone or cellular flip phone to a T7E or T7P terminal.

Equipment Information

Each of the Hypercom terminals contains an EPROM, Application, and an Initialization.

EPROM

The EPROM releases are:

- T7AEPRM045
- T7AEPRM048
- T7AEPRM109
- T7AEPRM200
- T7AEPRM300
- T7AEPRM400
- T7AEPRM401

Applications

Please contact the Hypercom Client Services Representative for a list of applications that your company supports.

Initialization

The Initialization is the personality of the terminal which is the merchant-specific information. Examples include merchant name, address, card types merchant accepts, offline options, and phone numbers to dial for authorization and settlement.

Maintaining the specific initialization on Term Master establishes control for the Hypercom Customer to prevent other organizations from tampering or changing information at the terminal level.

Press the key sequence: **Function**, **9**,**1**, **Enter**, to find out the release of the EPROM and application. The terminal displays a prompt similar to the example below.

```
T7_SMHT.XXX          DLL-XX
T7AEPRMXXX           XXXXXXXXX
```

Custom Maintenance Password

A six-digit, custom maintenance password is required on some terminals when performing certain functions such as, Function 2, and Initialization.

Certain processors have this six-digit, custom maintenance password written within their profile parameters to prevent another processor from converting the merchant. You can delete the terminal software, but the six-digit, custom maintenance password will remain in the terminal's memory. If you or the merchant do not know the correct six-digit password, the terminal will not allow you to perform certain functions.

The only way to remove this six-digit, custom maintenance password is to download the terminal with System Software Version 5 or lower.

Please contact Hypercom Client Services if you have any questions regarding this matter.

Proprietary Equipment

The following tables list Hypercom's proprietary equipment. Although this equipment is in the field, it operates off different software and has a different EPROM version.

AMEX name	AMEX model	Hypercom model
Express 3200	XT7	T7
Express 3200	T7E	T7E
Express 2200	T7P	T7P
Express 4200	T77F	T77F
Express 3200 Printer	P3D	P7E
P8F	P8F	P8F
NOTE: American Express equipment cannot be converted.		

FDMS name	FDMS model	Hypercom model
CT7	CT7	T7
T7E	T7E	T7E
T7P	T1E or T7P	T7P
CP7	CP7	P7E

VISA name	VISA model	Hypercom model
T7E	T7E	T7E
T7P	T7P	T7P
P7E	P7E	P7E
T77F	T77F	T77F
T77S	T77S	T77S
P8F	P8F	P8S
P8S	P8S	P8S
NOTE: Proprietary logos are on each of these terminals.		

Hardware Conversion of Terminals

When converting a proprietary terminal into a Hypercom Standard terminal or vice versa, please understand the following business issues:

- The turn-around time of the terminal is 7-10 working days.
- The cost is $50.00 per terminal.
- Terminals that are converted will have a 90 day warranty for the conversion.

  NOTE: The original 5-year terminal warranty will stay in effect from the original terminal purchase date.

The conversion includes:

- Labor
- EPROM change
- All ECO upgrades
- Display window change

- Replacement of the warranty sticker
- Return shipment by surface delivery
- Replace overlay when applicable

Contact the Hypercom Terminal Services Department for an RMA number. You must include a note stating the purpose of the shipment.

You can also convert any proprietary terminal except for American Express by changing the Option setting in the terminal's Boot level.

Step-by-Step

To convert a proprietary terminal:

1. Put the terminal in Boot level. Refer to "Accessing the Terminal's Boot Level" on page 1-9 for further details.

2. At the Boot Level menu, press Enter to scroll down to the Options setting.

3. In the Options setting, type 01 for a standard terminal setting or 05 for a Visanet or CES terminal setting. Press Enter.

4. To exit the menu, press Cancel.

5. To exit the terminal's Boot level, press the key sequence: Function, 3, Enter.

Repairs

Hypercom has the following warranties on equipment.

- Terminals—5 years
- Printers—1 year
- PIN Pads—1 year

Step-by-Step

To handle repairs:

1. Call the Hypercom POS Terminal Services Department at (800) 584-1876 for an RMA number.

2. Provide written information as to the nature of the problem or the results of diagnostic testing. This information must accompany each piece of equipment to help expedite the repair.

3. If the equipment is to be returned to a different address, please include this in the shipment.

4. Pack up the equipment.

5. Write the RMA number on the enclosed paperwork and on the outside of the box.

6. Ship the equipment to:

Hypercom
Attn: POS Terminal Services
2851 West Kathleen Road
Phoenix, AZ 85053

Terminal Memory

The Hypercom terminal memory consists on an Application level and a Boot level.

Application Level

The following table illustrates what information resides in the Application level and various functions needed to access, change, or delete parameters.

Terminal display	Key strokes	Result
`DATE                TIME` `SWIPE  CUSTOMER  CARD`	Function, 99, Enter	
`PASSWORD`	028510, Enter	
`PROGRAM FUNCTION`	9, Enter	Accesses the Application Level Memory
`TYPE?`	6, Enter	Deletes Reversals
`TYPE?`	2, Enter	Deletes Batches
`TYPE?`	1, Enter	Deletes Initialization
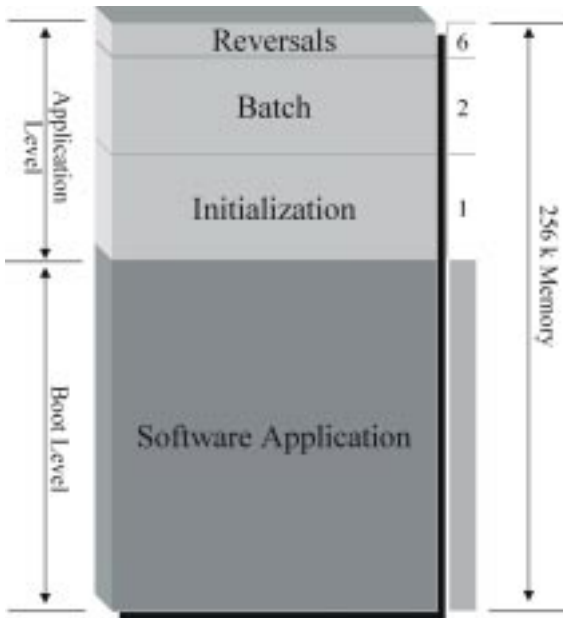
Figure 1-1. Application memory diagram

Boot Level

The following table illustrates what information resides in the Boot level and various functions needed to access, change, or delete parameters.

Terminal display	Key strokes	Result
`DATE                    TIME` `SWIPE CUSTOMER CARD`	Function 3, Enter Card Verify, Void, Offline NOTE: Hold **Card Verify**, **Void**, and **Offline** until the terminal beeps twice.	Accesses the Boot Level Memory For more information, refer to "Accessing the Terminal's Boot Level" on page 1-9.
`PLEASE INITIALIZE OR` `CALL HELP - FE`	**Function**, **98**, **Enter**	Deletes the software application

Deleting Reversals, Batch, and Initialization at Application Level

While in Function 99, 9, you can delete any one or all of the following parameters:

- Reversals (6)
- Batch (2)
- Initialization (1)

Before loading a new application into a terminal you must delete all Reversals, Batch, and Initialization at Application level.

Step-by-Step

To delete Reversals, Batches, and Initialization:

Step	Action	Terminal display
	The terminal displays the Idle prompt.	`DATE                    TIME` `SWIPE CUSTOMER CARD`
1	Press the key sequence: **Function**, **9**, **9**, **Enter**.The terminal displays the following message.	`MERCHANT FUNCTION` `                      99`
2	Type the password, **028510**, and press **Enter**.	`ENTER PASSWORD` `                  ******`
3	Press the key sequence: **9**, **Enter**.	`PROGRAM FUNCTION` `                       9`
4	To delete reversals, press the key sequence: **6**, **Enter**. NOTE: Reversals are incomplete transactions. If the terminal receives ND messages during settlement, complete steps one through four to fix the problem.	`TYPE?` `                       6`
5	Press **Cancel** to return to the Idle prompt or proceed with the next Step.	`TYPE?` `TRANSACTION COMPLETED`
6	To delete batches, press the key sequence: **2**, **Enter**.	`TYPE?` `                       2`

Step	Action	Terminal display
6a	If more than one host exists in the terminal, type the host ID, or **0** for all hosts, and press **Enter**. **Caution:** This action deletes the batch. The batch is no longer in the terminal once you perform this function. The Hypercom terminal can support more than one financial host. The terminal individually dials each host for authorization and then settles to each respectively. This is called Multi-Host.	`HOST NUMBER` `0`
7	Press **Cancel** to return to the Idle prompt or proceed with the next Step.	`TYPE?` `TRANSACTION COMPLETED`
8	To delete the initialization, press the key sequence: **1**, **Enter**.	`TYPE?` `1`
	The terminal displays the following message.	`TYPE?` `TRANSACTION COMPLETED`
9	Press **Cancel**. If the EPROM version is *less* than 2.00, the terminal displays the following message.	`CONFIGURE TERMINAL` `OR CALL HELP - CO`
	If the EPROM is *higher* than 2.00, the terminal displays the following message.	`PLEASE INITIALIZE`
10	If you are preparing to download the terminal with a new software application, you must delete the existing software application which resides at the terminal's Boot level. Refer to "Accessing the Terminal's Boot Level" on page 1-9 for more information.	

Accessing the Terminal's Boot Level

The terminal's Boot level contains the terminal software application, for example, T7_SMHT.xxx, as well as other various settings like: dial modes, option settings, hook delay, and printer settings.

> NOTE: Printer settings reside in the Boot level for terminals with EPROM 2.00 or *higher* only.

One of the following screens will appear, depending on the EPROM version and the previous action taken at the terminal's Application level.

Screen 1

Previous action and EPROM version	Terminal display
If the terminal's Initialization has been deleted by performing **Function 9**, **9**, **Enter**, **9**, **Enter**, and **1**, **Enter** at the terminal's Application level, the the following message appears on terminals with EPROMs *less* than 2.00.	`CONFIGURE TERMINAL` `OR CALL HELP - CO`

Screen 2

Previous action and EPROM version	Terminal display
If the terminal's initialization has been deleted by performing **Function 9**, **9**, **Enter**, **9**, and **1**, **Enter** at the terminal's Application level, the following message appears on terminals with EPROMs *higher* than 2.00.	`PLEASE INITIALIZE`

Screen 3

Previous action	Terminal display
If the terminal's software and initialization have not been deleted at the terminal's Application level, the terminal displays the following message.	`DATE                    TIME` `SWIPE CUSTOMER CARD`

Step-by-Step

To access the terminal's Boot level:

Step	Action	Terminal display

1	Press the key sequence: **Function** 3, **Enter**.	`MERCHANT FUNCTION`
		
		`                    3`

2	Immediately after you press **Enter**, press the following orange keys simultaneously: n **Card Verify** n **Void** n **Offline** Continue to hold until the terminal beeps twice.	
	The terminal performs a self-test and displays the EPROM version.	`T7AEPRMXXX` `WAIT FOR SELF-TEST`
	The terminal performs a self-test and displays the Memory Page status.	`MEMORY PAGE STATUS` `OO: AAAAAFF-----`
	The terminal performs a self-test and displays the EPROM version.	`T7AEPRMXXX` `WAIT FOR SELF-TEST`
	If the terminal's initialization has been deleted by performing **Function** 9, 9, **Enter**, 9, **Enter**, and 1, **Enter** at the terminal's Application level, the following message appears on terminals with EPROMs *less* than 2.00. NOTE: FE means Format Error, indicating you are in Boot level.	`CONFIGURE TERMINAL` `OR CALL HELP – F E`
	If the terminal's initialization has been deleted by performing **Function** 9, 9, **Enter**, 9, **Enter**, and 1, **Enter** at the terminal's Application level, the following message appears on terminals with EPROMs *higher* than 2.00. NOTE: FE means Format Error, indicating you are in Boot level.	`PLEASE INITIALIZE` `OR CALL HELP- F E`
3	If you want to return to the Idle prompt at the terminal's Application level, press **Function** 3, **Enter**.	`DATE              TIME` `SWIPE CUSTOMER CARD`
4	If you want to change various settings that reside in the terminal's Boot level, refer to "Changing Settings in the Terminal's Boot Level" on page 1-17.	
5	If you want to delete the current terminal software application, refer to "Deleting the Current Software Application at the Terminal's Boot Level" on page 1-11.	

Deleting the Current Software Application at the Terminal's Boot Level

The terminal's Boot level contains the terminal software application as well as other various settings like: dial modes, option bit settings, hook delay, and printer settings.

When preparing to do a new software download, you must delete the current terminal software application from the terminal's Boot level.

One of the following screens will appear, depending on the EPROM version and the previous action taken at the terminal's Application level.

Screen 1

Previous action and EPROM version	Terminal display
If the terminal's Initialization has been deleted by performing **Function 9, 9, Enter, 9, Enter**, and **1, Enter** at the terminal's Application level, the terminal displays the following message on terminals with EPROMs *less* than 2.00. NOTE: FE means Format Error, indicating you are in Boot level.	`CONFIGURE TERMINAL` `OR CALL HELP - F E`

Screen 2

Previous action and EPROM version	Terminal display
If the terminal's initialization has been deleted by performing **Function 9, 9, Enter, 9, Enter**, and **1, Enter** at the terminal's Application level, the following message appears on terminals with EPROMs *higher* than 2.00. NOTE: FE means Format Error, indicating you are in Boot level.	`PLEASE INITIALIZE` `OR CALL HELP - F E`

Step-by-Step

To delete the current software application at the terminal's Boot level:

Step	Action	Terminal display
1	Press the key sequence: **Function 9, 8, Enter**.	`MERCHANT FUNCTION` `                    98`

Step	Action	Terminal display
	The terminal performs a self-test and displays the EPROM version.	`T7AEPRMxxx` `WAIT SELF-TEST`
	The terminal performs a self-test and displays the Memory Page status.	`MEMORY PAGE STATUS` `OO: FFFFFFF-----`
	The terminal performs a self-test and displays the EPROM version.	`T7AEPRMxxx` `WAIT SELF-TEST`
	If the terminal has an EPROM of *less* than 2.00, the following message appears. NOTE: PE means Program Error, indicating the terminal has no software.	`CONFIGURE TERMINAL` `OR CALL HELP - P E`
	If the terminal has an EPROM of 2.00 or *higher*, the terminal displays the following message. NOTE: PE means Program Error, indicating the terminal has no software.	`PLEASE INITIALIZE` `OR CALL HELP - P E`
2	The current software application has been deleted from the terminal's Boot level and is ready to be configured to receive a new software application download. Refer to "Configuring a Terminal for a Software Application Download" on page 1-12.	

Configuring a Terminal for a Software Application Download

The terminal will need to be configured by performing a **Function 2** and entering a Terminal Identification Number and the INIT and NMS telephone numbers to dial the host for a software application download.

One of the following screens appear, depending on the terminal's EPROM version.

Screen 1

EPROM version	Terminal display
If the EPROM is *less* than 2.00, the terminal displays the following message. NOTE: PE means Program Error, indicating the terminal has no software.	`CONFIGURE TERMINAL` `OR CALL HELP - P E`

Screen 2

EPROM version	Terminal display
If the EPROM is 2.00 or *higher*, the terminal displays the following message. NOTE: PE means Program Error, indicating the terminal has no software.	`PLEASE INITIALIZE` `OR CALL HELP - P E`

Step-by-Step

To download the terminal with software.

Step	Action	Terminal display
1	Press the key sequence: Function, 2, Enter.	`MERCHANT FUNCTION` `                    2`
2	Type the password and press Enter. The default password is 0000.	`              MERCH PROG` `ENTER PASSWORD * * * *`
3	Type the terminal ID and press Enter.	`TERMINAL ID. NUMBER` `XXXXXXXXX`
4	Type the INIT phone number and press Enter. The INIT phone number is the number the terminal dials for initializations.	`INIT TELEPHONE NO.` `XXXXXX`
5	Type the NMS phone number and press Enter. The NMS phone number is the number the terminal dials for software downloads.	`NMS TELEPHONE NO.` `XXXXXX`
6	Type the number corresponding to the desired dial mode and press Enter.	`DIAL: 0-TONE      1-PULSE` `0`
7	If needed, type a PABX access code and press Enter. For example, type 9 if needed prior to dialing out. To disable call waiting, type 1170 in this field. NOTE: To bypass this field, press Enter.	`PABX ACCESS CODE`
8	Press Cancel to exit the menu.	`EXIT,PRESS 'CANCEL'`
	If the terminal has an EPROM of *less* than 2.00, the following message appears. NOTE: PE means Program Error, indicating the terminal has no software.	`CONFIGURE TERMINAL` `OR CALL HELP - P E`

Step	Action	Terminal display
	If the terminal has an EPROM version of 2.00 or *higher*, the following message appears. NOTE: PE means Program Error, indicating the terminal has no software.	`PLEASE INITIALIZE` `OR CALL HELP – P E`
9	The terminal has been configured with new parameters and will need a program load to receive the new software application. Refer to "Program Loading a Terminal with Software" on page 1-14.	

Program Loading a Terminal with Software

The terminal dials the NMS telephone number in the **Function** 2 parameters and initiates a program load for the software application shell. This process takes approximately five minutes per page or a total of 25 minutes.

> NOTE: After you complete this procedure, you will need to initialize the terminal to download the merchant's specific profile.

One of the following screens appear, depending on the terminal's EPROM version.

Screen 1

EPROM version	Terminal display
If the EPROM is *less* than 2.00, the terminal displays the following message.	`CONFIGURE TERMINAL` `OR CALL HELP – P E`

Screen 2

EPROM version	Terminal display
If the EPROM is 2.00 or *higher*, the terminal displays the following message.	`PLEASE INITIALIZE` `OR CALL HELP – P E`

Step-by-Step

To program load a terminal for a software application:

Step	Action	Terminal display
1	Press the key sequence: **Function**, 9, 2, Enter.	`MERCHANT FUNCTION` `9 2`

Step	Action	Terminal display
2	Press Enter/Yes. NOTE: A Yes confirms that your configuration parameters in function 2 are correct.	`PROGRAM LOAD` `CORRECT?        YES OR NO`
	The terminal checks the phone line for a proper connection.	`PROGRAM LOAD` `CHECKING LINE`
	The terminal detects a proper phone line connection and is waiting to detect a dial tone.	`PROGRAM LOAD` `WAITING FOR DIAL TONE`
	The terminal detects a dial tone and is waiting to dial out.	`PROGRAM LOAD` `DIALING NOW`
	The terminal has dialed out and is waiting for an answer from the Host.	`PROGRAM L0AD` `WAITING FOR ANSWER`
	The terminal has made a connection and is communicating with the Host.	`PROGRAM LOAD` `TRAINING MODEM`
	The terminal is downloading the software application shell from the Host. Approximate time is 25 minues.	`PROGRAM LOAD` `LOADING MEM 01  X  X  X  X`
	The terminal has successfully downloaded the software application shell from the Host.	`PROG. LOAD` `PROG. LOAD GOOD`
3	After receiving the software application shell, you will need to initialize the terminal in order for the Host to download the merchant's profile. Refer to "Initializing a Terminal for a Parameter Download" on page 1-15.	`PLEASE INITIALIZE`

Initializing a Terminal for a Parameter Download

The terminal dials to receive an initialization (the INIT. telephone number located in the Function 2 parameters) for the unique terminal ID, also known as the terminal profile.

One of the following screens appear, depending on what previous action was taken at the terminal's Application level.

Screen 1

Previous action	Terminal display
After receiving the software application shell, you need to initialize the teminal to download the merchant profile from the Host.	`PLEASE INITIALIZE`

Screen 1

Previous action	Terminal display
If you have software and you are adding a card type or printer, the terminal displays the following message. NOTE: Do not initialize the terminal over an open batch when adding a card type or acquirer.	```DATE TIME``` ```SWIPE CUSTOMER CARD```

Step-by-Step

To initialize the terminal for a parameter download.

Step	Action	Terminal display
1	Press **Initialize, Enter**. NOTE: A Yes confirms that your configuration parameters in Function 2 are correct.	``` INITIALIZE``` ```CORRECT? YES OR NO```
	The terminal checks the phone line for a proper connection.	``` INITIALIZE``` ```CHECKING LINE```
	The terminal detects a proper phone line connection and is waiting to detect a dial tone.	``` INITIALIZE``` ```WAITING FOR DIAL TONE```
	The terminal detects a dial tone and is waiting to dial out.	``` INITIALIZE``` ```DIALING NOW```
	The terminal has dialed out and is waiting for an answer from the Host.	``` INITIALIZE``` ```WAITING FOR ANSWER```
	The terminal has made a connection and is communicating with the Host.	``` INITIALIZE``` ```TRAINING MODEM```
	The terminal has successfully initialized with the merchant's specific profile.	```TRANSACTION COMPLETED```
2	Press **Cancel** to return to the idle prompt. NOTE: The terminal display returns to the Idle prompt whether **Cancel** is pressed or not.	```DATE TIME``` ```SWIPE CUSTOMER CARD```

Navigating through the Boot Level

The following table provides tips for navigating through the terminal's Boot level.

Key	Used to...
Enter	Scroll down the Boot level menu.
Clear	Scroll up the Boot level menu.
Cancel	Return to the *Please Initialize or Call Help - F E* screen, or Return to the *Please Initialize or Call Help - PE* screen
Function 3, Enter	Exit the Boot level. NOTE: This option is available only if existing software is loaded.

Changing Settings in the Terminal's Boot Level

There are approximately 22 settings in the terminal's Boot level. Some can be changed and other cannot be changed. This procedure identifies the only option settings you can change.

> **WARNING**
>
> If any Boot level settings not identified in this procedure are changed, the terminal may not function properly.

One of the following screens appear, depending on the terminal's EPROM version and the previous action taken at the terminal's Application level.

Screen 1

EPROM version	Terminal display
If the EPROM is *less* than 2.00, the terminal displays the following message. NOTE: FE means Format Error, indicating you are in Boot level.	`CONFIGURE TERMINAL` `OR CALL HELP – F E`

Screen 2

EPROM version	Terminal display
If the EPROM is 2.00 or *higher*, the terminal displays the following message. NOTE: FE means Format Error, indicating you are in Boot level.	`PLEASE INITIALIZE` `OR CALL HELP - F E`

Screen 3

Previous action and EPROM version	Terminal display
If the the terminal's software and initialization parameters have not been deleted at the terminal's Application level, the following message appears. NOTE: FE means Format Error, indicating you are in Boot level.	`PLEASE INITIALIZE` `OR CALL HELP - F E`

Step-by-Step

To change settings in the terminal's Boot level:

Step	Action	Terminal display
1	Press the key sequence: **Function** 9, 9, **Enter**.	`MERCHANT FUNCTION` `                 99`
2	Press the key sequence: **Function** 3, **Enter**.	`PROGRAM FUNCTION` `                3`
3	The terminal displays the current Leased Line, Dial, and LAN options. The dial mode should be at the default setting of **01**. Press the key sequence: **Function** 0, 1, **Enter** or press **Enter** to bypass this field.	`0-LL    1-DIAL    2,3-LAN` `01`
4	The terminal displays the current CU Address for LAN configuration. The dial configuration should be at the default setting of **30**. Press the key sequence: **Function** 3, 0, **Enter** or press **Enter** to bypass this field.	`CU ADDR` `30`

Step	Action	Terminal display
5	Press Enter until the terminal scrolls to the Options Bit settings. ▪ 01=Standard terminal setting ▪ 05=Visanet or CES	`OPTIONS 1 - 4` `01000000`
6	Press 01 or 05 and Enter or press Enter to bypass this field.	`OPTIONS 1 - 4` `01000000` `XX`
7	Press Enter until the terminal scrolls to the Hook Delay settings. The Hook Delay default setting is 01. Set to 00, if attaching a portable cellular phone to the terminal.	`HOOK DELAY 0.15` `01`
8	Press 00 or 01, and Enter or press Enter to bypass this field.	`HOOK DELAY 0.15` `01` `XX`
9	Press Enter until the terminal scrolls to the Printer setting. The terminal displays the current Printer settings on terminals with EPROM versions 2.00 or *higher*. n 00=T7E ▪ 01=T7P ▪ 06=T77F ▪ 07=T77S n 0A=T7P Thermal n 0B=T77T Select the appropriate Printer setting and press Enter or press Enter to bypass this field.	`PRINTER` `XX`
10	Press Cancel to exit the menu screen.	
	If the software application has been deleted from Boot level, the terminal displays the following message.	`PLEASE INITIALIZE` `OR CALL HELP - P E`
	If you have existing software, press Function 3, Enter. The terminal displays the following message.	`PLEASE INITIALIZE` `OR CALL HELP - F E`

Printers

If the printer is functioning improperly, such as printing incorrect characters or not printing at all, use the following function or the troubleshooting steps found on the following pages.

Step-by-Step

1. Verify the printer connections are secure.

2. Verify the printer type is correct in Term-Master setup. See the Term-Master Profile documentation for details about printer types.

3. If you have a terminal with an EPROM of 2.00 or *higher*, verify the printer setting in the terminal's Boot level. For instructions, refer to "Verifying the Printer Setting" on page 1-21.

4. Verify the printer is enabled by pressing the key sequence: Function, 7,1, Enter. To enable the printer when the terminal displays, *DISABLED*, press Enter.

```
PRINTER IS DISABLED?
ENABLED              YES/NO
```

5. Perform a printer test by pressing the key sequence: Function, 8, 2, Enter.

```
PRINT TEST COMPLETE
```

Use this function to output a sample receipt and verify the printer is printing all the characters and fonts correctly.

The following figure illustrates a sample printer receipt.

```
**************NORMAL  FONT**************

ABCDEFGHIJ                    KLMNOPQRST
UVWXYZ

abcdefghij                    klmnopqrst
uvwxyz

!ö#$%&()*+,-./:;<=>?@
[\]^_Æ{|}~?

**************FONT  CHANGE**************

ABCDEFGHIJ                    KLMNOPQRST
UVWXYZ

abcdefghij                    klmnopqrst
uvwxyz0123456789

!ö#$%&()*+,-./:;<=>?@
[\]^_Æ{|}~?

NORMAL                        DOUBLE

***************THE  END***************
```

Figure 1-2. Printer sample receipt

Verifying the Printer Setting

Use this procedure to verify the Printer setting in the terminal's Boot level. This is only available for terminal's having EPROMs of 2.00 or *higher*.

Step-by-Step

1. Put the terminal in Boot level. Refer to "Accessing the Terminal's Boot Level" on page 1-9.

2. At the Boot level menu, press **Enter** to scroll down to the Printer setting. The Printer setting should be one of the following:

    –   **00** = T7E

    –   **01** = T7P

    –   **06** = T77F

    –   **07** = T77S

> – **0A** = T7P Thermal

> – **0B** = T77T

3. Select the appropriate Printer setting and press **Enter**.

4. Press **Cancel** to exit the Boot level menu.

5. Press the key sequence: **Function 3**, **Enter** to exit the terminal's Boot level and return to the Idle prompt.

Troubleshooting the Printers

P7E Printers

Step-by-Step

To clear a paper jam:

1. Disconnect the power cable from the back of the printer.

2. Disconnect the printer cable from the back of the printer.

3. Remove the paper from the printer.

4. Lift the printer lid.

5. Pull the silver metal tab towards the front of the printer. The metal cover should pop off.

6. Examine the interior of the paper guide and clear out any jams.

7. Reconnect the printer cable to the back of the terminal.

8. Reconnect the power cable and run a printer test by pressing the key sequence: **Function 8**, **2**, **Enter**.

WARNING

Do not stick any sharp objects inside the printer. This can result in permanent damage to the printer or the printer guide.

T7P/T7P-T Terminal with Integrated Printer

Step-by-Step

To remove the printer mechanism:

1. Disconnect the power cable from the back of the T7P/T7P-T terminal.

2. Remove the paper from the terminal.

3. Open the cover and remove the ribbon from the printer mechanism.

4. Squeeze the board tab labeled Lift Up Tab and Pull Out. By applying a moderate squeezing pressure to the tab while exerting a smooth, pulling pressure, the module will slide free of the T7P terminal.

Step-by-Step

To clear a paper jam:

1. Disconnect the power cable from the back of the terminal.

2. Remove the paper from the terminal.

3. Feed a business card through. The thickness of the business card will usually force any paper jams out.

P8F and P8S Printers

Step-by-Step

To troubleshoot a P8F or P8S printer:

1. Disconnect the power cable from the back of the printer.

2. Disconnect the printer cable from the back of the printer.

3. Remove the paper from the printer.

4. Lift the printer lid.

5. Examine the interior of the paper guide and clear out any jams.

6. Reconnect the printer cable to the back of the terminal.

7. Reconnect the power cable and run a printer test by pressing the key sequence: **Function**, **8**, **2**, **Enter**.

> **WARNING**
>
> Do not stick any sharp objects inside the printer. This can result in permanent damage to the printer or the printer guide.

T77 Terminals

Step-by-Step

To remove the printer mechanism:

1. Disconnect the power from the T77 terminal.

2. Remove the paper from the terminal, and leave the paper cover open.

3. Open the cover. Using both hands, locate the levers on the back of the T77 terminal and push them away from you in a downward motion stopping at a 45-degree angle.

4. Carefully remove the modular printer by pulling the printer mechanism away from you.

Display

To perform a display test, press the key sequence: **Function**, **8**, **3**, **Enter**. The terminal displays two lines of 20 blocks.
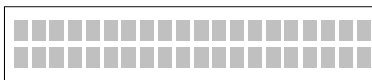
If anything else displays, send the terminal to Hypercom, via an RMA, for additional testing and if necessary, repairs.

Card Reader

If the card reader does not accept credit or debit cards, use the following procedures for testing and diagnostics.

Unsupported Card

Step-by-Step

If the terminal displays *Unsupported Card*, complete the following steps:

1. Verify the Merchant should be accepting the card.

2. Verify that the issuers are set up correctly in Term-Master. If not then correct the issuer and re-initialize the terminal.

3. Verify that the Card Range is set up correctly in Term-Master. If not, correct the card range table and re-initialize the terminal.

Track 2, Available For All Hypercom Applications
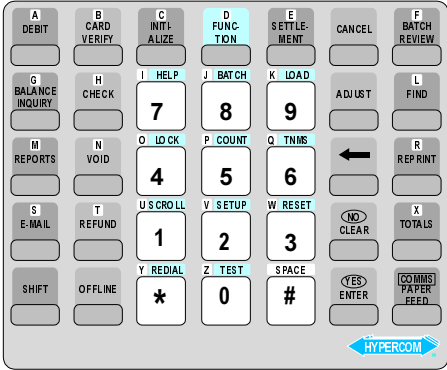
Step-by-Step

To test track two:

Step	Action	Terminal display
1	Press the key sequence: **Function**, **8**, **9**, **Enter**.	`READ CARD NOW`
2	Swipe the card. If the terminal does not display the correct card information, send the terminal to Hypercom, via an RMA, for additional testing and, if necessary, repairs.	`123456789012345=001` `2101`

Keyboard

If the keyboard on the terminal is not working, perform a keyboard test to determine if all of the keys are functioning properly.

Step-by-Step

Step	Action	Terminal display
1	Press the key sequence: **Function 8, 4, Enter.** The terminal displays the column and row of the pressed key. To exit, press **Cancel** twice.	`KEYBOARD TEST` `CANCEL TWICE TO END`
2	Press any key and the terminal displays the location of the key. For example, if you press the **Debit** key, the terminal displays the following message.	`COL 00ROW 01` `CANCEL TWICE TO END`
	Column Row 0 1 2 3 4 5 6 	
3	To test the alpha and paper feed key on a T7P, hold down the **Shift** key and press the **Paper Feed** key.	`COL 06ROW 0A` `CANCEL TWICE TO END`
4	If the display does not match the location of the key, send the terminal to Hypercom, via an RMA, for additional testing and, if necessary, repairs.	

FIP 11 Configuration for a T7P Terminal

The following figure illustrates a FIP 11 configuration for a T7P Terminal.

Figure 1-3. FIP 11 configuration

Error Messages

Please Try Again—CE

Communication Error indicates the terminal dialed a number that does not answer.

- Verify that the information in the PABX field is correct.

- Does the merchant need a nine or eight to dial out?

- Does the merchant have call waiting that is, 1170 in PABX field to block?

- Does the merchant need a pause before starting the dial strings?

  NOTE: The letter B equals a 1.5 second pause.

- Verify that the terminal is dialing the correct phone number.

- Verify that the phone line is plugged in to the LINE port.

- Ask the merchant if there have been any phone system changes recently.

- Verify the line is an analog line and not digital.

- Check to see if there are any long distance blocks or 800 blocks on the phone line.

- Instruct the merchant to plug a telephone into the line and verify the line is working properly.

- Enable the enhanced dial messages by pressing the key sequence: Function, 9, 8, to verify at what point the terminal is having difficulty.

Please Try Again—TO

Time Out indicates the terminal made a connection but it timed out because of no reply from the host.

- Verify that the merchant is active (staged) at the host.

- Verify that the merchant number is correct in Term-Master.

- Verify that the terminal ID is correct in Term-Master.

- Verify that the modem mode is correct in Term-Master.

- Increase the host response field in Term-Master from 30 to 45 seconds.

Please Try Again—LC

This error message indicates the terminal lost communications.

- Verify the modem modes are set correctly in Term-Master.

- Call Hypercom POS Client Services.

Error Call Help—SE

System Error indicates the terminal is trying to initialize but something is not correct in Term-Master.

- Verify that Term-Master is running.

- Go into the profile attempting an initialization and verify the profile for errors.

    NOTE: The Term-Master **Verify** function checks to verify a card range is pointing to an issuer, an issuer is pointing to an acquirer, and an acquirer is pointing to the terminal configuration. It does not check for typos or transposition of characters.

Please Try Again—ND

This error message indicates the terminal received no response to the sales completion message.

Step-by-Step

1. Press the key sequence: **Function 9**, **9**, **Enter**.

2. Type the password, **028510**, and press **Enter**.

3. Press the key sequence: **9**, **Enter**.

4. Press the key sequence: **6**, **Enter**.

5. Press **Cancel**.

6. Attempt the transaction again.

Retry Batch Trans

Retry Batch Trans indicates the terminal settlement was unsuccessful. Hypercom terminals require settlement error correction before allowing processing of new transactions.

- Press the key sequence: **Function 2**, **9**, **Enter** to verify settlement status.
- Attempt to settle again.
- Identify the error, for example, host response.
- Delete the batch and re-enter transactions as a last resort.
- After deleting and re-entering, try to settle again.
- Verify that all card types are supposed to be in the batch.

For example: The merchant sends a Diners Club transaction to American Express and the account numbers for both start with the number three.

Invalid Transaction

Invalid Transaction indicates the terminal does not allow the transaction. Verify the correct options are set in Term-Master for this transaction type.

Line Busy

Line Busy indicates the terminal does not detect a dial tone.

- Verify that the telephone line is plugged into the line port.
- Verify that the line is analog and not digital.
- Plug the line into a telephone and verify if a dial tone is heard.

Replace Handset

If the terminal shares the phone line with a telephone, terminal functions are unavailable while the handset is off-hook.

NO COMMS

The terminal is configured for Leased-Line or LAN mode.

- Put the terminal in Boot mode. For instructions, refer to "Accessing the Terminal's Boot Level" on page 1-9.

- Press the key sequence: **Function 9**, **9**, **Enter**.

- Press the key sequence: **Function 3**, **Enter**.

- In the **Dial Type** field, type **01** and press **Enter**.

- In the **CU Address** field, type **30** and press **Enter**.

- Press **Cancel**.

Unsupported Card

The card being swiped through the terminal is not accepted at the merchant.

- Verify the card ranges are set up correctly in Term-Master.
- Verify the issuer is set up correctly in Term-Master.
- Verify the card range table is complete in Term-Master.

Printer Error

The printer is not functioning or is not plugged in.

- Verify the printer is plugged in.

- Verify the printer type is correct in Term-Master setup.

- Verify the printer is enabled by pressing the key sequence: **Function 7**, **1**, **Enter**.

- Perform a printer test by pressing the key sequence: **Function**, **8**, **2**, **Enter**.

- If the terminal has an EPROM of 2.00 or higher, verify the Printer setting is correct in the terminal's Boot level. For instructions, refer to "Verifying the Printer Setting" on page 1-21.

ERROR—Wrong Trans

ERROR—Wrong Trans indicates the Visa II Table in the Term-Master's profile was not correctly filled out with the required information for the Visanet, NDC, or MAPP modules on Hypercom's System Software.

Before Loading or Initializing a Terminal

The following messages appear before loading or installing a terminal.

Please Initialize or Call Help—FE (Format Error)

Format Error indicates the terminal is in Boot mode and requires an initialization *personality load*.

Please Initialize or Call Help—PE (Program Error)

Program Error indicates the terminal requires a full program load and an initialization. After the program load is complete, initialize the terminal.

Host Messages

The terminal displays messages it receives directly from the host. These messages can be up to 40 characters long and may display on both lines of the terminal display.

To verify that the terminal receives a host message and not a terminal message:

- Turn on enhanced dialing by pressing the key sequence: **Function, 9, 8**. If the terminal displays *Dialing Now,* then *Processing Now* and displays the corresponding response, the message is a host message.

- If the terminal displays *Processing Now* and appears to be inactive, the message is likely a terminal message.

Typically the host transmits response codes which cause the terminal to display appropriate stored messages.

Call Help—XX indicates an abnormal condition which requires a transaction retry or a call to the help desk for assistance. The two-character error code indicates the type of error condition. The operator then will determine the appropriate action.

Programming for Hypercom T7 Series terminals includes the following test response code messages listed below in Table 3-1.

Table 2-1. Response code messages

Message	Description
`APPROVAL CODE 000000`	A two-digit to six-digit code number indicates that the transaction was approved. The number on the right side of the display is the approval code.
`CALL HELP – AM`	Invalid transaction amount.
`CALL HELP – CM`	Invalid card. The card number contained in the transaction is not recognized as a valid card or contains an error.
`CALL HELP – FE`	Format error. The transaction received from the terminal cannot be processed. The message indicates terminal or system problem.
`CALL HELP – NA`	Host application program is not available to process the transaction. This message is generated by the Network Access Controller, which is located between the dial-up terminal network and the host. The message indicates that while communications between the terminal and NAC are okay, the NAC has no session with the host.
`CALL HELP – NT`	No terminal parameters. The terminal ID is not recognized by the host as a valid terminal ID, or the host terminal records are incomplete.
`CALL HELP – PC`	Invalid Product Code. The terminal is loaded with incorrect Product Codes. Re-initialization is required.
`CALL HELP – RE`	Card Read Error - Retry card swipe.
`CALL HELP – SE`	System error. All other non-specific system errors.
`CALL HELP – SQ`	Sequence number is duplicate. Indicates terminal or system error.
`CALL HELP – TR`	Invalid transaction.
`ERR CALL HELP – SN`	The terminal is programmed with the wrong merchant number.
`PLEASE CALL –`	A call to the authorizer is required to complete the transaction. The terminal automatically dials the pre-programmed authorizer number when the handset is lifted if the referral dial option is set.
`PLEASE CALL – CC`	Stolen card. Card has been reported stolen.
`PLEASE CALL – LC`	Lost card. Card has been reported lost.

The following messages indicate conditions that arise from incorrect user or cardholder actions and need correction at the point of sale.

Table 2-2. User messages

Message	Description
DECLINED	Transaction has been declined by bank or bank network.
EXPIRED CARD	Expiration date on magnetic stripe or manually entered number indicates expired card.
INCORRECT PIN	Incorrect Personal Identification Number.
INVALID TRANSACTION	Transaction is not allowed at the terminal.
PLEASE WAIT	Terminal is waiting for further instructions from the host.

T7PRA Troubleshooting

Cell Configuration in the System Software

Step-by-Step

To configure a T7PRA:

Step	Action	Terminal display
1	Press the key sequence: Function 1, 1, Enter.	`0 - CELL CONFIG` `1 - CELL TEST`
2	Press 0 to begin configuring the terminal.	`0 - CELL CONFIG` `1 - CELL TEST`
	This display shows the cellular terminal current configuration.	`PHONE #  1234567890` `ESN - 214/00/000000`
3	Type the cell phone number and press Enter.	`CELL CONF` `CELL PHONE NUMBER?`
4	Type the system ID and press Enter.	`CELL CONF` `SYSTEM ID ?0000`
5	Type the number corresponding to the desired system and press Enter.	`SYSTEM   0/1-B/A   ONLY` `2-NORMAL   3-HOME ?1`

Electronic Serial Number

Step-by-Step

To change the Electronic Serial Number (ESN or EIN):

Step	Action	Terminal display
1	Press the key sequence: **Function**, **9**, **9**, **Enter**.	`ENTER PASSWORD`
2	Type the password, **028510**, and press **Enter**.	`ENTER PASSWORD` `                        ******`
3	Type the key sequence: **Function 9**, **0**, **Enter**.	`PROGRAM FUNCTION` `                            90`
4	Press **Enter**.	`PHONE #        1234567890` `ESN  -  214/00/000000`
5	Type cell serial number and press **Enter**.	`                    CELL CONF` `CELL SERIAL NUMBER?`

The customer should enter the number on the bottom of the terminal. The label is a four-digit EIN, such as 0116. After entering the number, the customer can view it by going back into **Function 11** and reviewing the initial screen under cell config.

The 214 in the ESN number indicates which cell manufacturer created the cell modem. Hypercom uses Standard Communications to manufacture its cell boards. The cellular provider needs to know this information.

Cell Test

Step-by-Step

To perform a cell test:

Step	Action	Terminal display
1	Press the key sequence: **Function**, **1**, **1**, **Enter**.	`0 - CELL CONFIG` `1 - CELL TEST`
2	Press **1** to begin configuring the terminal.	`0 - CELL CONFIG` `1 - CELL TEST`
3	Press # 2 to initialize the cell service for the terminal.	`0 - INIT      1 - CMD LINE` `2 - SYSTEM INFO QUERY`

Step	Action	Terminal display
	When looking at the cell information, the terminal should display this data. 0825 indicates a successful test of the cell terminal's ability. AA indicates radio mode. It always should be 04. BBBB indicates cellular channel. It is a hexadecimal value that displays the channel to which the terminal has locked. CCCC indicates cell strength. It is the terminal's cell strength the specific channel. 0000 shows the terminal is not locked onto a channel. Anything over a 0025 in hexadecimal is a good cell strength.	`0825AABBBBCCCC`
4	Press Cancel to return to the idle prompt.	`DATE            TIME` `SWIPE CUSTOMER CARD`

Cellular Hardware

This chapter provides instructions for connecting a cellular bag phone or cellular flip phone to a T7E or T7P terminal.

You can connect a Motorola Bag phone to a T7E or T7P terminal using the certified hardware listed below. The cellular bag phone configuration has been certified by Hypercom. See Figure 4-1 on page 4-2.

You can also connect a flip phone to a T7E or T7P terminal using some of the certified hardware listed below. *The flip phone configuration is not a certified configuration by Hypercom*. See Figure 4-2 on page 4-3.

Certified Cellular Hardware

Certified cellular hardware is:

- T7E/T7P Hypercom Terminal
- Motorola Bag Phone—Type: SCN2394A, S/N GUQ (33)
- Motorola Cellular Connection Box—Part # S1936C
- Optional Cigarette Lighter Adapter—Hypercom Part #870025-001

Connecting a Cellular Bag Phone

Step-by-Step

To connect a cellular bag phone:

1. Plug the handset of the phone into the connection box.

2. Connect the connection box to the base of the phone.

3. Plug the RJ11 into the phone jack that is, the other end of the connection box.

4. Power on the telephone.

5. Power on the connection box.

6. Go into the Boot level, press **Function 99**, **3** and change the Hook Delay setting to **00**.

    NOTE: When you are not using the terminal with a cellular phone, you must change the Hook Delay setting back to the default **01** setting for normal terminal dialing out operation.
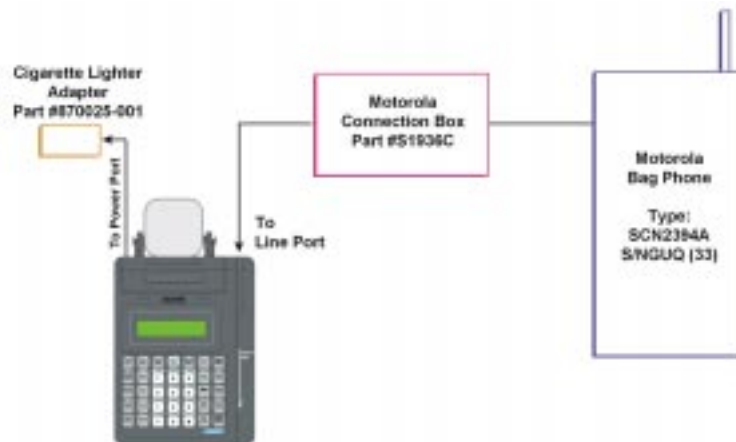
Figure 4-1. Certified cellular bag phone configuration

Connecting a Cellular Flip Phone

Step-by-Step

To connect a cellular flip phone:

1. Plug the cellular flip phone into the connection box.

2. Connect the connection box to the back of the terminal using the line port.

3. Power up the terminal by using the Hypercom AC power adapter that came with the terminal or use the optional cigarette lighter, Hypercom Part #870025-001.

4. Go into the Boot level, press **Function 99, 3** and change the Hook Delay setting to **00**.

   NOTE: When you are not using the terminal with a cellular phone, you must change the Hook Delay setting back to the Default **01** setting, for normal terminal dialing out operation.
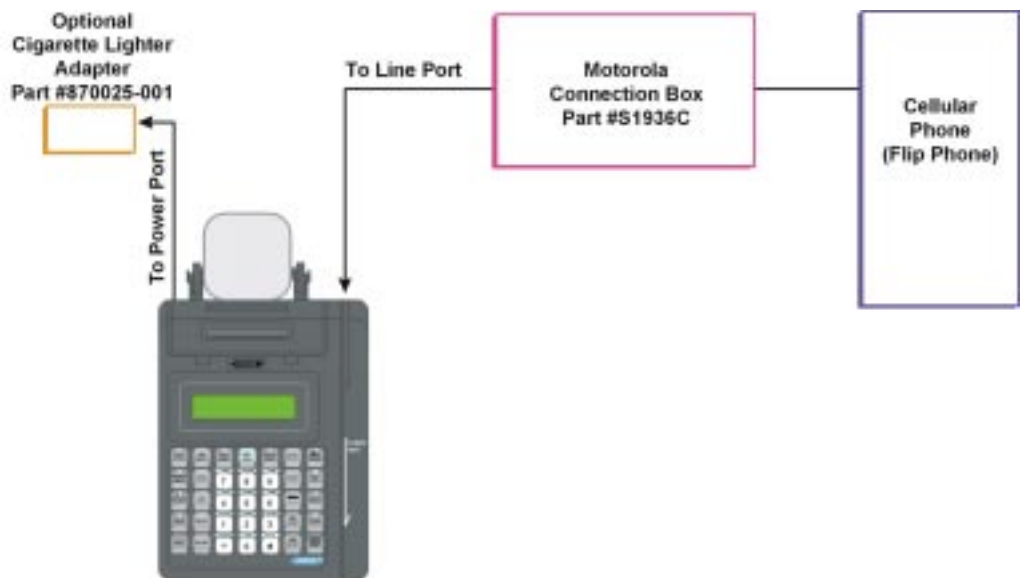
Figure 4-2. Non-certified cellular flip phone configuration

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