HYPERCOM POINT-OF-SALE

900 MHz Wireless POS Terminal Interface System

Operation and Installation Manual

Draft Copy—Version1.0

HYPERCOM ®

December 5, 1997

Hypercom Corporation
2851 West Kathleen Road
Phoenix, Arizona 85023
USA

Corporate Telephone: (602) 504-5000
Corporate Fax: (602) 866-5380

TRADEMARKS: Hypercom has attempted throughout the *900 MHz Wireless POS Terminal Interface System Operation and Installation Manual* to distinguish proprietary trademarks from descriptive terms by following the capitalization style used by the manufacturer.

Every effort has been made to supply complete and accurate information. However, Hypercom assumes no responsibility for its use, nor any infringement of the intellectual property rights of third parties which would result from such use.

Table of Contents

List of Figures

Preface

Purpose

The *900 MHz Wireless POS Terminal Interface System Operation and Installation Manual* is a comprehensive guide to working with the Hypercom 900 MHz Wireless POS Terminals.

How This Book Is Organized

This book is designed to provide information relevant to the Hypercom equipment and is divided into the following chapters:

- **Chapter 1: General Product Description and Operation**—Information relevant to the use of Hypercom's 900 MHz wireless POS terminal
- **Chapter 2: Installation**—Installation procedures for the wireless terminal
- **Warranty Information**

General Product Description and Operation

Topics include:

- Functional Blocks
- Operation
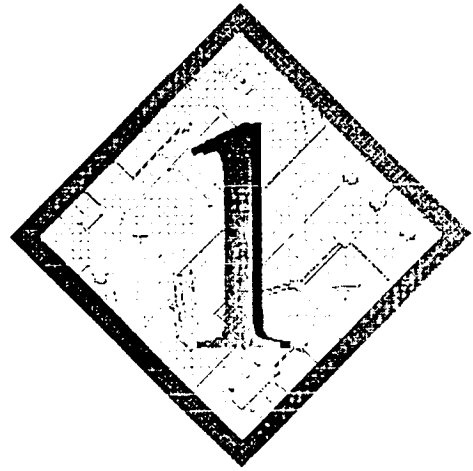
Function Blocks

The concept for Hypercom's 900 MHz wireless POS terminal interface system offers a high level of customer convenience and reduces the time required to process a POS transaction. Because customers see the process, they have control of the financial transaction and feel an added sense of security. The host POS terminal and peripheral POS terminal device(s) provide data encryption.

Hypercom's 900 MHz wireless POS terminal interface system consists of the following functional blocks:

- **Host Terminal**—This may be any of Hypercom's POS terminal products with a PIN pad port and an external communication port, such as a LAN or telephone, using the appropriate software such as T7, T7P, T77.
- **Terminal Transceiver Interface**—Hypercom model FTI 01 or for use with a single terminal transceiver, a Hypercom adapter cable, P/N 810170-001.
- **Terminal Transceiver(s)**—Hypercom model FXV 01.
- **Customer Premisis Wiring**—If required.
- **Peripheral Terminal Device**—This may be any of Hypercom's POS terminals or POS terminal accessory products such as a PIN pad or Signature Capture device, with a compatible optional wireless transceiver installed. An example is an I.C.E. POS terminal with an optional FXI 01 module and appropriate software installed.

OPERATION

Hypercom's 900 MHz wireless POS terminal interface system is designed to be transparent to the user. The peripheral POS terminal device operates with a wireless POS terminal interface system in the same way as when a cable connection exists between a peripheral POS terminal device and a host POS terminal.

Hypercom's 900 MHz wireless POS terminal system uses radio transmitters and receivers certified in accordance with Federal Communications Commission (FCC) regulations (CFR 47 Part 2 and Part 15) for use within the industrial, scientific, and medical band of frequencies between 902 MHz and 928 MHz.

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

The operating distance between a terminal transceiver and a peripheral POS terminal is greatly affected by their environment. Obstructions such as walls and furniture as well as outside interferring signals reduce the operational range. Hypercom software communication protocols have been implemented within the wireless POS terminal interface system that should reduce these effects.

Installation

Topics include:

- Basic System
- Basic System Installation
- Extending Basic Coverage Area
- Installing Extended Basic Coverage Area
- Large Area Coverage
- Installing Large Area Coverage
- Installation Examples

BASIC SYSTEM

The example in Figure 4-1 shows the basic configuration. The terminal transceiver should be less than 100 feet from the peripheral terminal device. This short range reduces the possibility of interference with other communication systems using the same radio spectrum. Causing such interference is a violation of FCC regulations.
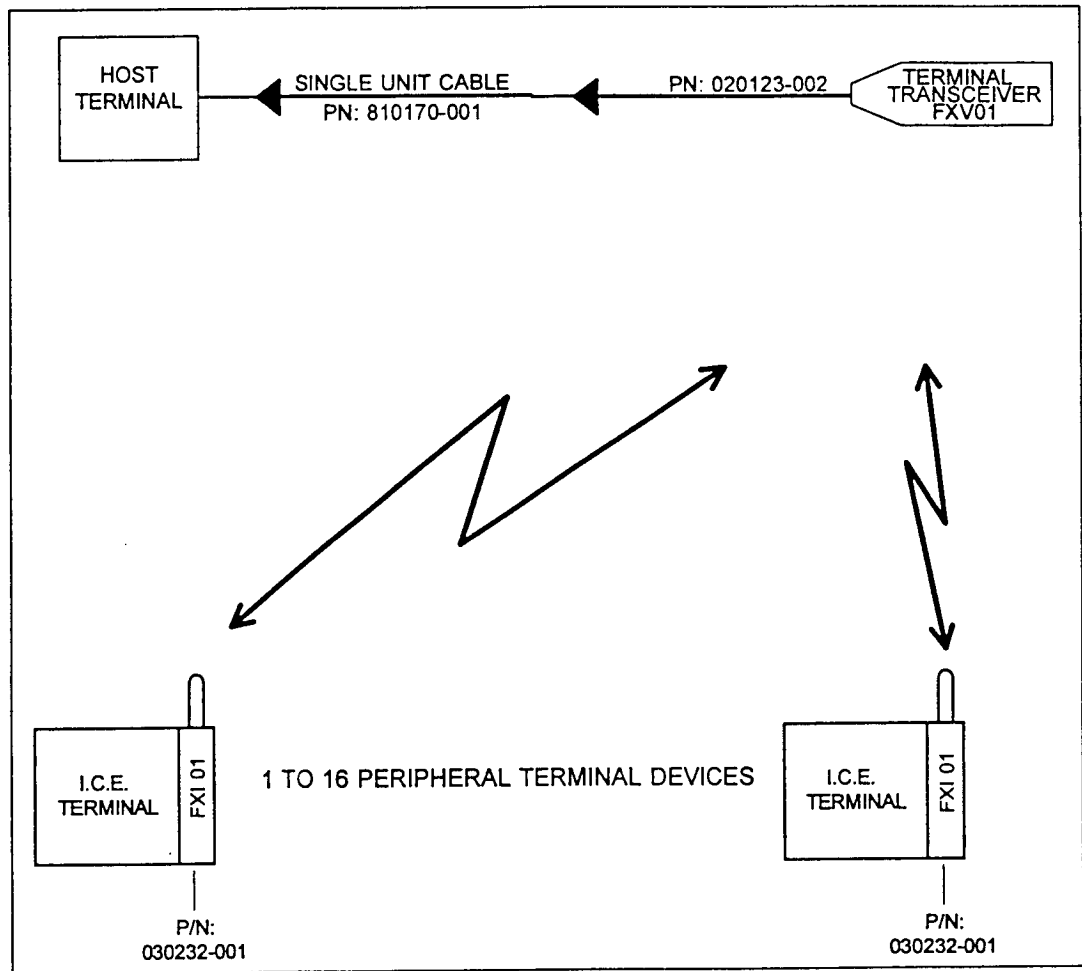

Figure 4-1. Basic configuration

Basic System Installation

The installation of the basic system wireless hardware is quite simple.

Step-by-Step

To install the basic wireless system:

1. Ensure the host terminal is properly configured and connected for use as a standard POS terminal.

    See the manual provided with the host POS terminal.

2. Insert the male end of the single unit Hypercom adapter cable, Hypercom P/N 810170-001, into the PIN pad port of the host terminal.

3. Mount the terminal transceiver, Hypercom P/N 020123-002, to a vertical surface. Place it as high as possible in an area that has the best visibility from the area where the peripheral terminal device(s) are used. Mounting may be accomplished by using the metal hook or the rubber suction cups provided. An alternate method is to remove the metal hook and the rubber suction cups replacing them with double-sided tape. The terminal transceiver must not be mounted on or next to metal objects.

4. Insert the male connector on the 12-foot cable from the terminal transceiver into the female connector on the single-unit adapter cable.

    If the 12-foot cable is not long enough, it may be extended up to 100 feet by using any six conductor, one-to-one standard telephone extender cable available at various retail outlets, such as Radio Shack® or Best Buy®. The cable may be extended up to 1000 feet by substituting a terminal transceiver interface for the single unit adapter cable.

WARNING:	Do not insert the cable connectors from the single unit adapter or the terminal transceiver into any receptacle designated for use with the premises telephone system to avoid damaging the terminal transceiver unit.

Extending Basic Coverage Area

If the basic system does not cover enough space or major gaps exist in the coverage, you can extend the area covered. The example in Figure 4-2 shows how to extend coverage or fill in gaps by adding a terminal transceiver interface and an additional terminal transceiver.
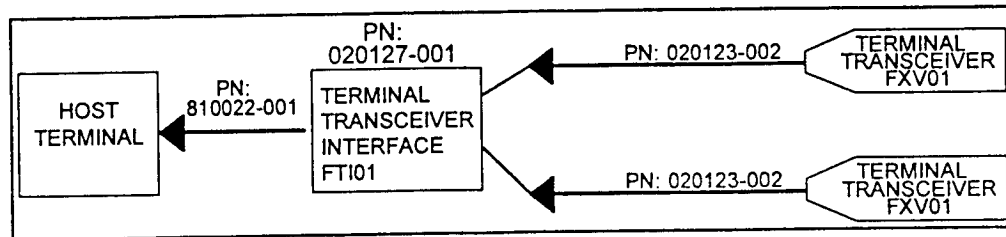

Figure 4-2. Extending basic coverage area

Installing Extended Basic Coverage Area

The installation of the extended basic coverage wireless hardware is simple.

Step-by-Step

To install the extended basic wireless hardware:

1. Ensure the host terminal is properly configured and connected for use as a standard POS terminal.

   See the manual provided with the host POS terminal.

2. If this is a system upgrade from the basic system, discard the single unit adapter cable. Insert one end of the PIN pad cable, Hypercom P/N 810022-001, into the PIN pad port of the host POS terminal. Insert the other end of the PIN pad cable into the connector marked **To Terminal** on the terminal transceiver interface, Hypercom P/N 020192-001.

3. Mount the two terminal transceivers, Hypercom P/N 020123-002, to a vertical surface. Place them as high as possible in an area that has the best visibility from the area(s) where the peripheral terminal device(s) are used. Separate the transceivers as far as possible from each other while still providing the required coverage. Mounting may be accomplished by using the metal hook or the rubber suction cups provided. An alternate method is to remove the metal hook and the rubber suction cups replacing them with double-sided tape. The terminal transceivers must not be mounted on or next to metal objects.

4. Insert the male connector of the 12-foot cable from the terminal transceivers into the female connectors on the terminal transceiver interface marked **Terminal Transceiver 1** or **Terminal Transceiver 2.**

If the 12-foot cable is not long enough, it may be extended up to 1000 feet by using any four conductor, one-to-one standard telephone extender cable available at various retail outlets, such as Radio Shack® or Best Buy®.

You can also have the premises wired for extending the cables. Firms that install telephone cabling in buildings can perform this task because the wiring is identical to a two-circuit telephone system.

WARNING:	Do not insert the cable connectors from the single unit adapter or the terminal transceiver into any receptacle designated for use with the premises telephone system to avoid damaging the terminal transceiver unit.

Large-Area Coverage

If the area to be serviced is too large for the extended basic coverage, configure the system for large-area coverage. (See Figure 4-3.) Add a power supply, Hypercom P/N 870003-001, to the terminal transceiver interface. The premise wiring may be expanded to support an additional eight terminal transceivers for a total of ten, maximizing the system for large areas or to fill in gaps in coverage.
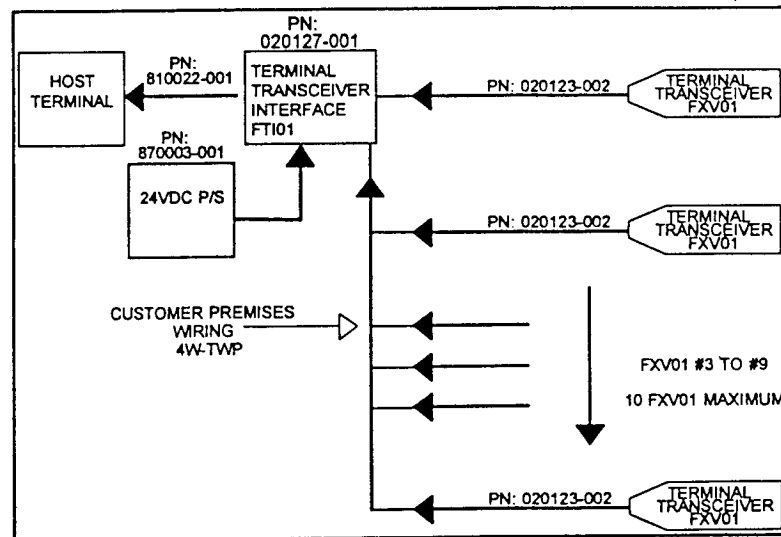
Figure 4-3. Large area coverage

Installing Large Area Coverage

Step-by-Step

To install the large area coverage:

1. Ensure the host terminal is properly configured and connected for use as a standard POS terminal.

    See the manual provided with the host POS terminal.

2. Insert one end of the PIN pad cable, Hypercom P/N 810022-001 :ɔ the : '
    pad port of the host POS terminal. Insert the other end of the PIN pad cable into
    the connector marked **To Terminal** on the terminal transceiver interface,
    Hypercom P/N 020192-001.

3. Mount the terminal transceivers, Hypercom P/N 020123-002, to a vertical
    surface. Place them as high as possible in an area that has the best visibility from
    the area(s) where the peripheral terminal device(s) are used. Separate the
    transceivers as far as possible from each other while still providing the required
    coverage. Mounting may be accomplished by using the metal hook or the rubber
    suction cups provided. An alternate method is to remove the metal hook and the
    rubber suction cups replacing them with double-sided tape. The terminal
    transceivers must not be mounted on or next to metal objects.

4. Insert the 24-Volt power cord from the power supply, Hypercom P/N 870003-001,
    into the terminal transceiver interface receptacle marked **Power**. Insert the AC
    power cord from the power supply into an appropriate AC receptacle.

5. Insert the male connector of the 12-foot cable from the terminal transceivers into
    the female connectors on the terminal transceiver interface marked **Terminal
    Transceiver 1** or **Terminal Transceiver 2**.

    If the 12-foot cable is not long enough, it may be extended up to 1000 feet by
    using any four conductor, one-to-one standard telephone extender cable
    available at various retail outlets, such as Radio Shack® or Best Buy®. You can
    also have the premises wired for extending the cables. Firms that install
    telephone cabling in buildings can perform this task because the wiring is
    identical to a two-circuit telephone system.

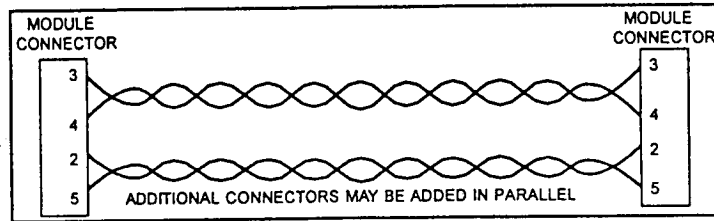| WARNING:	Do not insert the cable connectors from the single unit adapter or the terminal transceiver into any receptacle designated for use with the premises telephone system to avoid damaging the terminal transceiver unit.

Figure 4-4. Premises wiring diagram

Installation Examples

Figures 4-5 through 4-7 are installation examples.

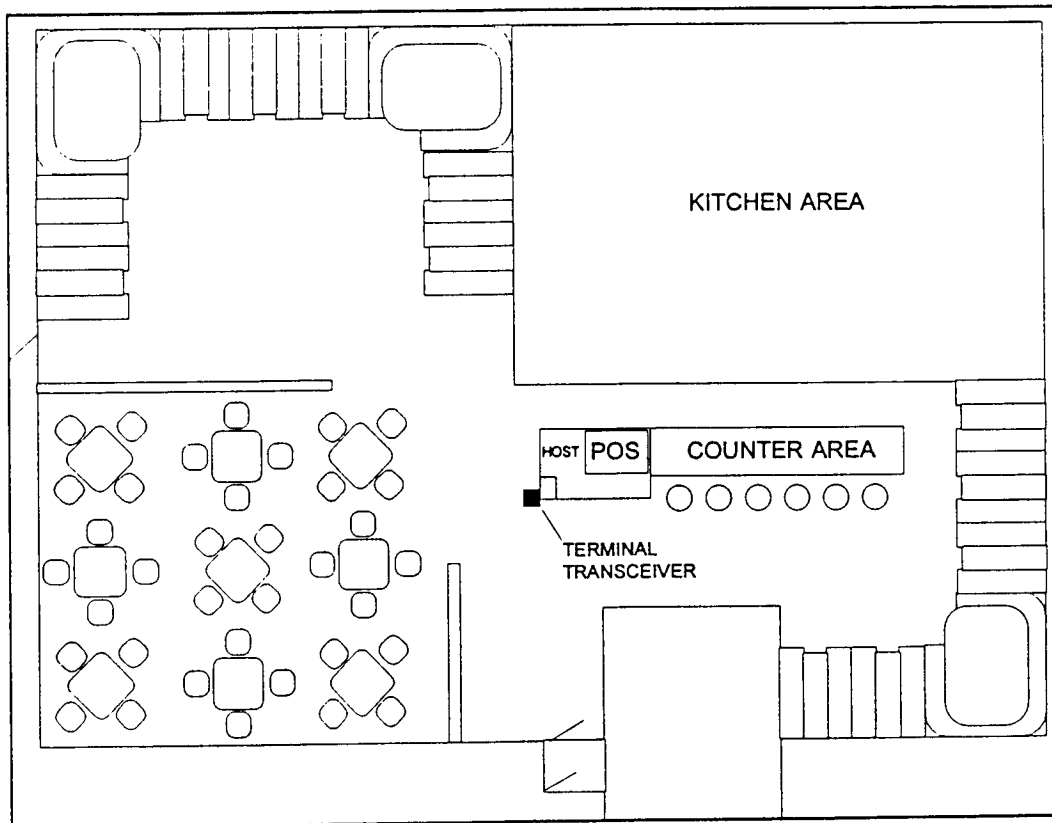Figure 4-5. Basic system example

KITCHEN AREA

TERMINAL
TRANSCEIVERS

PREMISIS
WIREING

HOST POS
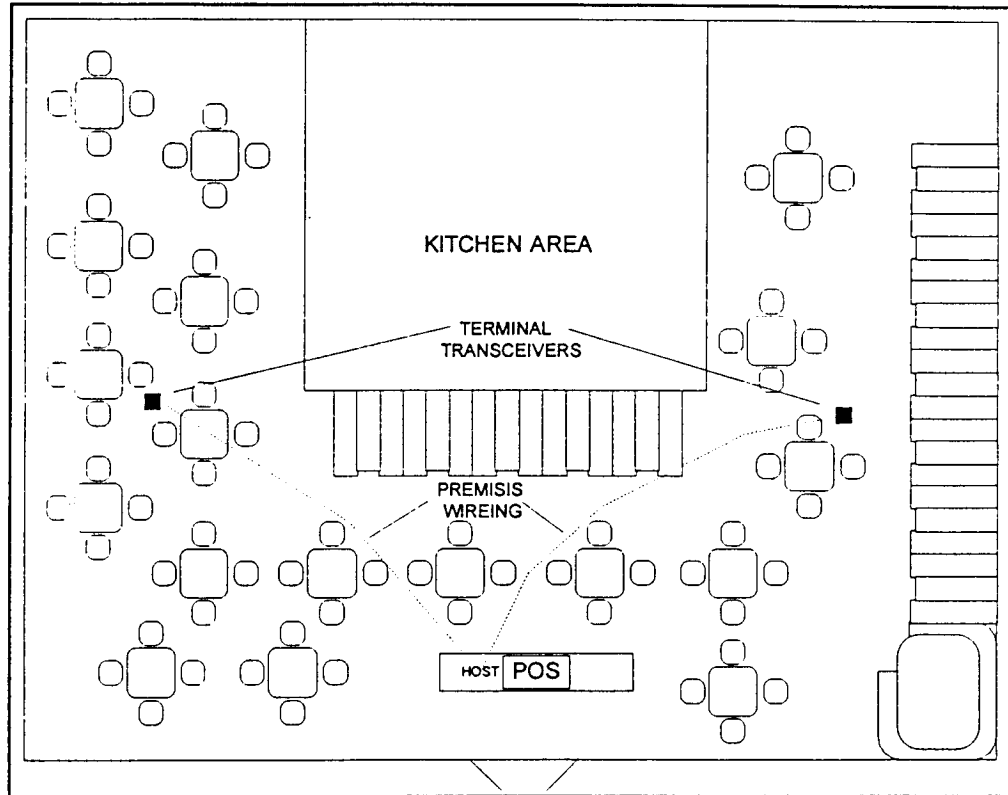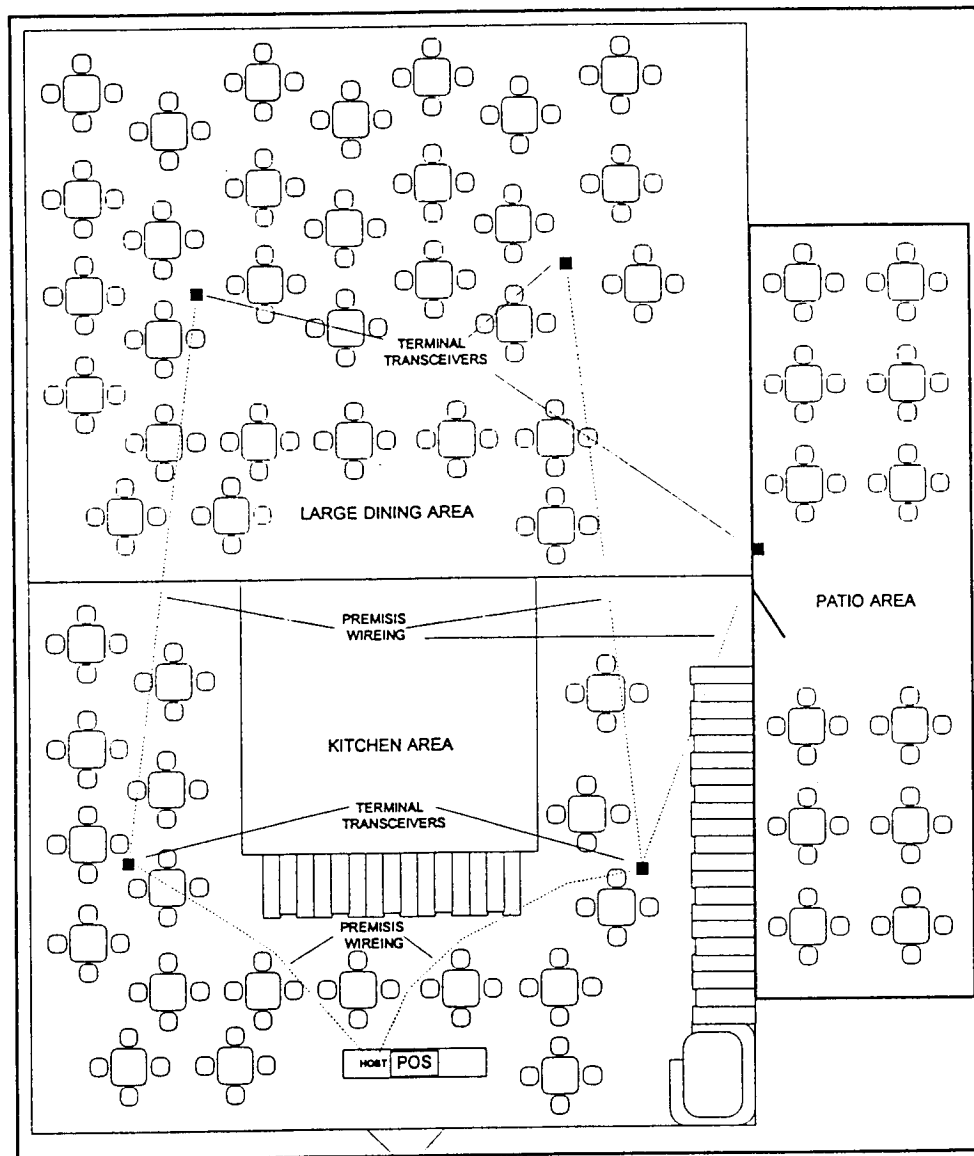
Figure 4-6. Extended basic example

Figure 4-7. Large area example

WARRANTY

(A)   Hypercom Corporation warrants that the equipment is free from defects in material or workmanship at the time of shipment and that it conforms to applicable specifications for such products for the period of time specified below.

The T7 Family of Terminals*	5 years
* Integrated printers contained within T7 Terminals	1 year
The P7 Family of Printers	1 year
The P8 Family of Printers	1 year
The S7 Family of PIN Pads	1 year
The S8 Family of PIN Pads	1 year
CS7 Family of Signature Capture PIN Pads	1 year
The NAC Family of Products	1 year
All other products not shown above	1 year
Software	90 days

The Customer shall exercise any and all warranty claims for a specific product within the specified time frame from the date of shipment. All warranty repairs will be performed at Hypercom's plant in Phoenix, Arizona, or at other repair facilities that Hypercom may designate from time-to-time. All Customers requesting warranty service must obtain a Returned Material Authorization (RMA) Number from Hypercom before returning products for service, and the RMA must be displayed on the exterior of the shipping container(s). An RMA number may be obtained by calling the Hypercom Service Department at (602) 504-5062. Hypercom shall, at its sole discretion, repair or replace the malfunctioning product. The Customer is solely responsible for returning all faulty equipment, freight, and insurance prepaid, to Hypercom at its designated repair facility. All risk of loss during shipment to Hypercom shall remain with the Customer. Hypercom shall return the repaired or replacement product to the Customer, freight prepaid. Repairs or replacements are usually provided within ten (10) business days from the date received by Hypercom.

Upon the request of Hypercom, the buyer shall return the equipment, transportation and all other costs prepaid, to a location designated by Hypercom. Hypercom's obligations under this warranty are limited to the repair or replacement of the returned equipment and shipment to the buyer of such repaired or replacement parts F.O.B. Hypercom's factory or warehouse. This warranty is subject to the following exceptions:

(1) The warranty does not apply to any part or product that has been installed, altered, repaired, or otherwise maintained by parties not authorized by Hypercom Corporation.

(2) The warranty does not apply if the equipment is operated or subjected to conditions outside the equipment specifications published by Hypercom Corporation.

(3) The warranty does not apply to any product or parts thereof if its serial number or the serial number of any of its part has been altered, defaced, or removed.

(4) The warranty does not cover damages or losses incurred in transportation.

(5) The warranty does not cover replacement or repair necessitated by loss or damage resulting from any cause beyond the control of Hypercom Corporation including, but not limited to, use of peripherals other than those certified by Hypercom or the use of non-Hypercom approved cables.

(6) The warranty does not include the furnishing of any labor involved or connected with the removal and/or reinstallation of warranted equipment or parts on site or any labor required to diagnose the necessity for replacement or repair.

(7) The warranty excludes any Hypercom responsibility for incidental or consequential damages arising from the use of the equipment or products, or for any inability to use them either separated from or in combination with any other equipment or products.

(8) This warranty does not cover reasonably required operating supplies, including but not limited to: receipt paper, printer ribbons, accessories, rechargeable batteries.

(9) Hypercom is not responsible for repainting or refinishing the equipment or furnishing materials for such purposes.

(B) THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND HYPERCOM EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE. Hypercom's sole liability and the Customer's sole remedy, whether in contract, tort, or otherwise, shall be limited to the repair or replacement of defective or faulty equipment. Hypercom shall not be liable for indirect or consequential damages or any damages resulting from loss of use, data, or profits arising out of or in connection with the use of the equipment.

(C) Should the Purchaser elect to have the system serviced on site rather than returned to Hypercom's plant as described above, the following provisions shall apply:

(1) Purchaser will be charged for the services of qualified Hypercom field personnel at standard labor rates plus reasonable travel and related expenses. Should Hypercom's field examination of the reasons for malfunction disclose defects in Hypercom's design, material or workmanship, the Purchaser will be billed only for those charges associated with the trip to and from the site (labor, reasonable travel and related expenses). Purchaser will not be charged for the time spent on site and correction of the defect.

(2) Should Hypercom's field examination determine the inoperability was not due to the design, material or workmanship on the part of Hypercom, the Purchaser will be charged for all labor, travel and related expenses associated with the trip.

(3) For service calls on equipment which is out of warranty, the customer will be charged for the services of qualified Hypercom personnel. The labor charges will be at standard daily labor rates plus reasonable travel and related expenses. Equipment replacement charges will be determined upon a case-by-case basis. (Extended warranty plans are available by separate agreement.)

(4) Since certain maintenance and/or warranty services cannot be properly performed in the field, it might become necessary to return the equipment to Hypercom's plant. Hypercom reserves the right to determine which services may or may not be performed in the field.

(5) All expenses are subject to a 10% administrative fee.

(D) Hypercom does not warrant uninterrupted or error-free operation of the software.

(E)   Hypercom does not warrant that the functions contained in the software will meet
        Customer's requirements; that it will operate in the combinations which Customer
        may select for use; that the operation of Software will be uninterrupted or error-
        free; or that all programming errors will be corrected.

Reader Comment Form

Please forward any comments about this document to:

Hypercom Corporation
Technical Information Development
2851 West Kathleen Road
Phoenix, Arizona 85023
http://www.hypercom.com

Document Number: 940139-001

HYPERCOM®