

EC2000 Basic Diagnostics

There is typically no diagnostic mode that can be accessed by the operator or a field engineer performing maintenance or repair operations on the EC2000. The unit is intended to operate as an integral part of a PC or terminal based system.

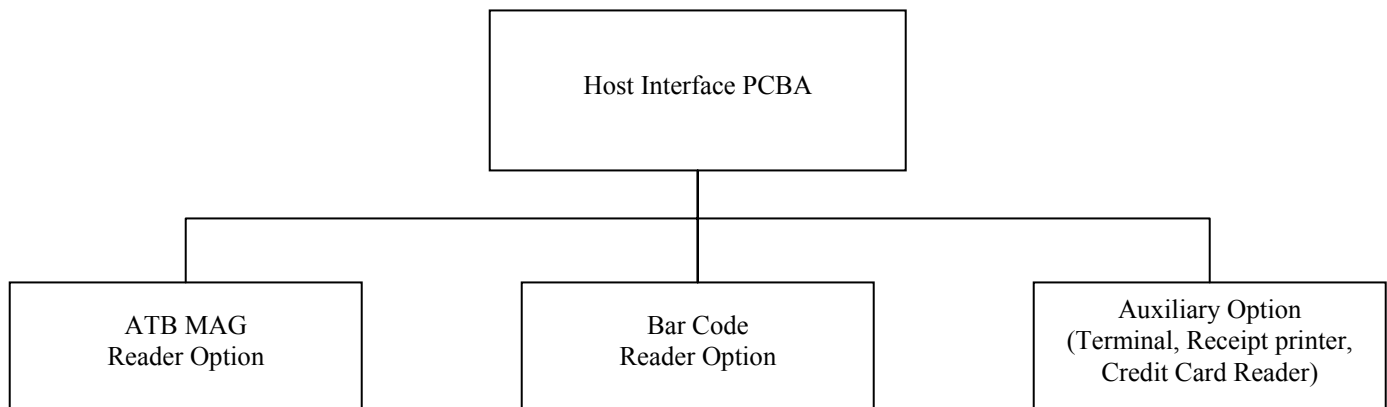
In addition, most firmware versions vary from customer to customer, and their particular host requirements determine how the unit will behave when reading ATB MAG and Bar Code based boarding passes.

This document describes the basic process of testing the EC2000 on a modular basis.

Refer to the trouble shooting section of the EC2000 Operator's manual for more diagnostic information.

Overview of unit architecture

The EC2000 is constructed so that multiple serial (RS-232) devices may be connected or integrated into the unit. The ATB MAG option connection is made via a logic level serial interface.



Host Interface PCBA

This PCBA controls unit operation, data processing, and communication functions with all options and the host system.

ATB MAG Reader Option

This option consists of the ATB mechanism and the MAG Decoder PCBA.

Bar Code Reader Option

This option consists of the Bar Code module or assembly, which is mounted above the ATB mechanism.

Auxiliary Option

This option can be a credit card reader, receipt printer, terminal, display, or any other compatible RS-232 serial interfaced device.

ATB MAG Reader Option Diagnosis

This option reads ATB MAG coupons, converts the magnetically encoded information into ASCII data, and transmits the data to the Host Interface PCBA. The Host Interface PCBA then transmits the data to the host system.

A PC and an appropriately configured terminal emulator program are required to view the data being returned when reading ATB MAG coupons. In addition, units operating in AEA PECTAB mode must have the appropriate PECTAB loaded to be able to read, decode, and format the data.

A **minimal diagnostic test** can be performed on the ATB MAG Reader Option **without the terminal emulator**.

1. Hold the ATB MAG coupon with the MAG stripe facing up.
2. Insert the coupon into the front chute of the unit.
3. The motor will start running as the coupon is inserted and it will be pulled into the mechanism.
4. With the coupon upside down, the unit will not be able to read the data from the MAG stripe:
 - The unit will indicate an ATB MAG coupon misread by flashing the red LEDs
 - The unit will also indicate an ATB MAG misread by sounding the internal audible alarm
5. Repeat this a few times and verify that the ATB MAG reader continues to process coupons and return to the ready state.

If these steps check out, you can assume that the ATB MAG Reader Option is working properly with the exception of data transmission back to the host system. You can assume that the MAG Decoder PCBA is communicating with the Host Interface PCBA properly because the Host Interface PCBA communication link is required for the MAG Decoder PCBA to operate.

Bar Code Reader Option Diagnosis

This option reads bar coded coupons, converts the encoded information into ASCII data, and transmits the data to the Host Interface PCBA. The Host Interface PCBA then transmits the data to the host system.

Both 1D and 2D symbology bar code scanner options are available.

A PC and an appropriately configured terminal emulator program are required to view the data being returned when reading bar coded coupons. The bar code data is typically passed directly through to the host via the Host Interface PCBA, but some versions require altering the data before transmission.

A **minimal diagnostic test** can be performed on the Bar Code Reader Option **without the terminal emulator**.

1. Hold the coupon with the bar code facing up.
2. Place the bar code in the scan area of the bar code reader (indicated by a target area label):
 - The 1D bar code scanner is typically configured for a minimum number of bar code symbologies, so it may be necessary to contact Unimark technical support for a test bar code for your specific configuration
 - The 2D bar code scanner has a wide range of 1D and 2D bar codes that can be scanned
3. Once the bar code is placed in the scan area it should indicate a successful read with an audible beep from the module.
4. The scanner is programmed to prevent multiple reads of the same bar code. To read the bar code again, remove the bar code from the scan area, wait 3 seconds, and place the bar code back in the scan area.

If these steps check out, you can assume that the Bar Code Reader Option is scanning properly.

It cannot be assumed that the scanner is transmitting data to the Host Interface PCBA or that the HOST Interface PCBA is transmitting data back to the host system

PC Terminal Emulator Diagnosis

To perform full diagnostics (similar to Unimark production testing) a PC terminal emulator may be requested from Unimark Technical Support.

The terminal emulator is configured specifically for the customer's communication parameters.

Requirements:

- A standard PC with at least one free serial port (COM1 or COM2).
- MS DOS PC operating system; emulator will work under Windows, although the communication port's functionality will be affected due to resource allocation between the terminal emulator window and other tasks that are running.
- A DB-9(M) to DB-9(F) 1:1 serial interface cable.

Special instructions will be provided from Unimark Technical Support when requesting the emulator for your specific version of the EC2000. These instructions will detail how to use the emulator to send messages to and receive messages from the unit.