



## E-MAX™ GAMING UNIT MANUAL

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**Manual part number: TBA**  
**Revision 1.0**  
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**This manual should not be reproduced without prior consent from EGC.**

**FCC Statement:**

The United States Federal Communications Commission (FCC) has specified that the following notice be brought to the attention of users of this product:

FCC rules part 15, subpart A, class A devices.

Information to User (section 15.105)

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.

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. The user will be required to remedy the interference at their expense. However, any changes or modifications to the E-max product not clearly defined in the instruction manuals and not expressly approved by EGC could void the user's authority to operate this equipment and would also void the product warranty.

EGC FCC ID for this product: SVO20101904

**Lithium Ion Battery Pack Statement:**

EGC P/N HH217

These batteries can be shipped as non-hazardous materials.

**IN THE EVENT OF ANY CONFLICT BETWEEN THE TERMS OF THIS MANUAL AND ANY DISTRIBUTION, PLACEMENT OR OTHER WRITTEN AGREEMENT TO WHICH EGC AND YOU ARE A PARTY, SUCH DISTRIBUTION, PLACEMENT OR OTHER AGREEMENT SHALL CONTROL.**

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## A P P E N D I X B

Specifications

## A P P E N D I X C

Dome Light Chart

This manual contains the information you will need to maintain your E-Max Gaming Unit. Inside you will find procedures, tool lists, diagrams, and maintenance tables. Should you encounter any problems with your unit please contact the EGC Technical Assistance Center at: 1-800-277-6214

## Set up

EGC designed your E-max™ gaming unit to provide maximum flexibility to meet your gaming needs. The product is designed for easy installation and use.

### **1.1 E-max™ Gaming Unit Models**

There are two methods of powering the E-max product:

1. A battery pack
2. An AC line adapter with a 9 V battery backup module.

In both situations, the parts for one of the above configurations are included with the E-max unit, but not assembled in the unit. Note that any E-max automatically senses what type of power source is installed.

There are also two platform base configurations for the product:

1. A short base without a keyboard
2. A longer base with a keyboard

Both items pivot from the flat (transporting) position to the down (game playing) position by depressing a plastic button on the base.

#### **Unpacking:**

E-max units are shipped in bulk, 6 units to a carton. **Each E-max unit within the carton is packaged in an individual box.** This carton is to be used when returning E-max units to EGC. Each carton contains an E-max™ Instruction sheet (also included in this manual) and power supply parts - battery packs or AC line power adapters.

Remove the E-max and the power supply parts from the container. Inspect for appropriate quantities and any damage. If your unit is damaged, please refer to the damage action process in section 1.2.

## **1.2 Damage Action Process**

Your E-max Unit contains delicate electronic equipment. It is imperative that you thoroughly inspect the contents of each package before accepting product delivery from the carrier.

In case of severe damage, refuse the equipment from the carrier. Contact your distributor or EGC for immediate replacement.

In case of damage, make a note on the bill of lading before accepting, take a photo of the damage, and keep the packaging to aid in recovering the amount of claim against the carrier.

If the product is damaged but acceptable, take a photo before and after unpacking as a record of the damage and contact the carrier's agent immediately for inspection. Be sure to obtain a copy of the inspection report for your records.

If these precautions are not taken, we cannot assist you in recovering the amount of the claim against the carrier.

# 1.3 E-max™ Instruction Sheet



## E-max™ INSTRUCTIONS



### E-max Models:

There are two methods of powering the E-max product:

1. A battery pack
2. An AC line adapter with a 9V battery backup module.

In both situations, the parts for one of the above configurations are included with the E-max unit, but not assembled in the unit as shipped. Note that any E-max automatically senses what type of power source is installed.

There are two platform base configurations for the product:

1. A short base without a keyboard
2. A longer keyboard base

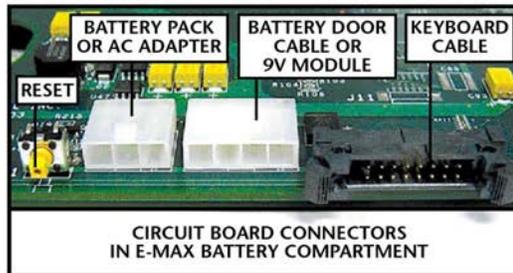
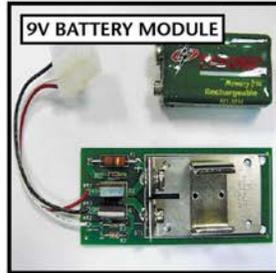
Both items pivot from the flat (transporting) position to the down (game playing) position by depressing a plastic release button on the base.

**Unpacking:** Remove the E-max and the power supply parts from the container. Inspect for any damage. Report damage to Arrow Technical Assistance at 1-800-277-6214 between 8 AM and 12 Midnight EST.

**Installing the power supply parts:** Remove the two battery door screws from the back of the E-max unit with a #10 torx screwdriver. Depress the plastic button on the base or keyboard to deploy the base or keyboard to the down position. Slide the battery door (or AC power door) off from the back of the E-max unit. The E-max connectors and the reset button are located in the battery compartment as pictured below.

**Battery pack:** The battery door cable is already plugged into the 4-pin connector. The keyboard cable, if present, is already plugged into its connector. Plug the battery pack into the 3-pin connector, orient as pictured upper right, and insert the pack into the battery compartment. Replace the battery door and secure with the two screws.

Instructions continued on back



[www.arrowinternational.com](http://www.arrowinternational.com)

HH997 Instruction Sheet



# E-max™ INSTRUCTIONS



SHORT BASE

HH750V\*\*\*\*

## Instructions continued:

**AC power:** The 9V battery module is already plugged into the 4-pin connector. The keyboard cable, if present, is already plugged into its connector. **CAUTION:** Install the 9 volt battery into the holding bracket on the module observing proper polarity of the battery terminals. Plug the AC adapter into the three-pin connector. Replace the AC power door while feeding the AC adapter cord into the small notch at the bottom of the AC power door and secure the door with the two screws.

**Powering the Unit on:** When the battery pack is inserted, as in the previous procedure, the unit will promptly power on if the keyboard or base is left in the down position. If it does not power on, place the keyboard or base in the up position, leave it there for a few seconds, then place it in the down position. If the unit still fails to power on, consult the E-max Maintenance Manual.

If the unit is AC powered, plug the AC adapter into the AC outlet. After several seconds, the unit should power on. If it fails to power on, consult the E-max Maintenance Manual.

Refer to the E-max System Administration Manual to load gaming programs and game packages.

**Touch screen calibration:** The touch screen should not need calibration. Refer to the E-max Maintenance Manual for details of this procedure.

**Reset Switch:** Normally, it is not necessary to use this switch. **CAUTION: LOSS OF PURCHASED GAMING INFORMATION WILL OCCUR IF THE RESET SWITCH IS DEPRESSED.**

**Battery Charging:** The battery pack must be fully charged with the E-max Charger before placing the unit into service. Inadequate battery charge may prevent the unit from downloading gaming data.

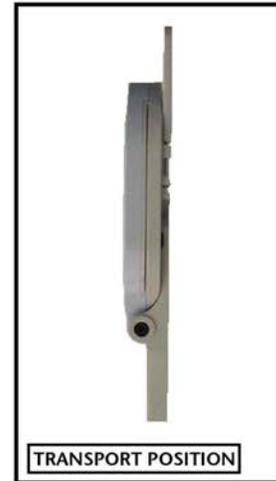
**Returning the E-max for repair or shipping the E-max unit by common carrier:** **CAUTION:** Federal and international safety regulations require that the E-max battery pack or the 9V battery be removed from the product prior to shipment. **NEVER SHIP VIA COMMON CARRIER WITH THE BATTERIES INSTALLED.**

An original E-max shipping box should be used to ship the product since it contains a separate compartment for the batteries. If the E-max box is not available, wrap the battery pack in a separate plastic bubble wrap to prevent the pack from shorting during transportation. Also adequately wrap the E-max unit in plastic bubble wrap to prevent any new or further damage to the touch panel and display.

HH997 Instruction Sheet



GAMING POSITION



TRANSPORT POSITION

Please contact your local authorized Arrow Distributor for more information about this or any of our many related products!

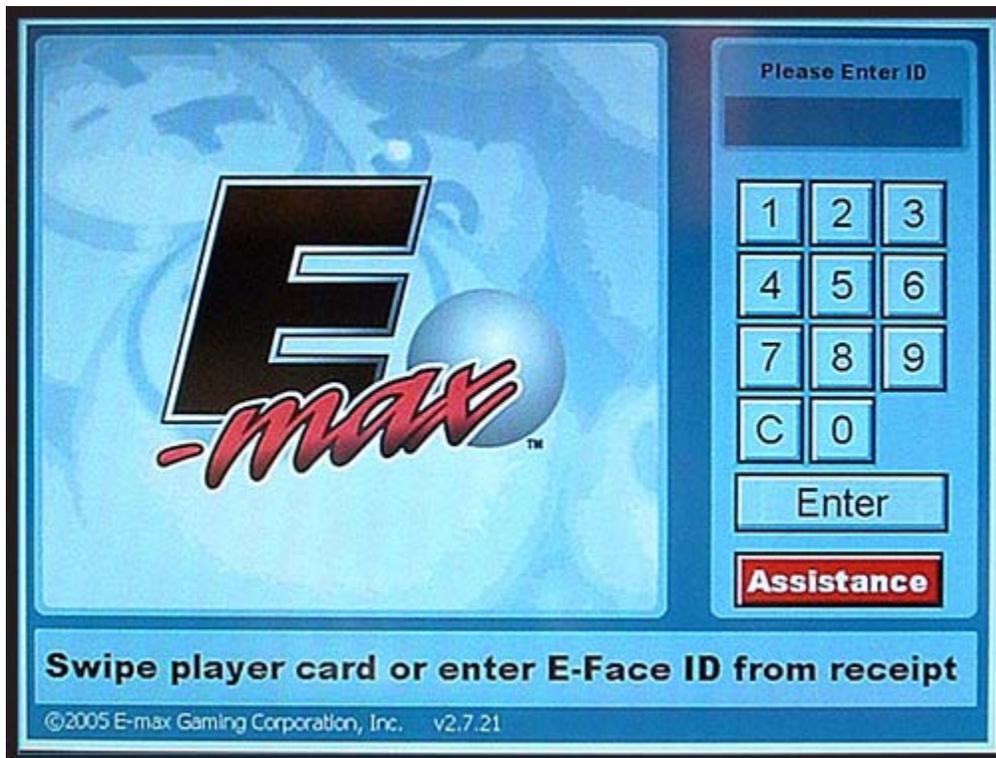


Capitol® Electronic  
Bingo Equipment  
From Arrow®

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The E-max Instruction Sheet describes connecting the power option to the unit.

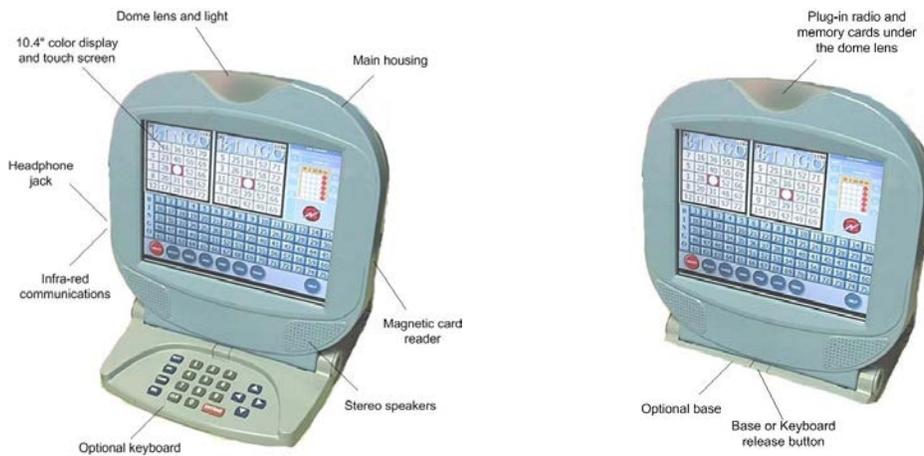
Once the power source has been connected, the E-max will display a Log-in screen.



From this screen, hardware diagnostics can be performed as described in this manual or consult the System Administration Manual and Charging System Operator Manual for additional details and information on the set up, programming, charging, and operation of E-max™.

## 1.4 Product Description

The E-max™ unit features a large, high quality color display. The flexible design of E-max™ allows it to be used in battery powered, portable applications, with or without radio (RF) communications, **OR** in AC line powered, fixed station operations, with RF or Ethernet communications (Future). (Figure 1.1)



**Figure 1.1**

**Features:**

- EGC family software – familiar format to the E-max Bingo Console
- Integrated with EGC software security systems
- Intel computer and underlying Microsoft operating system
- Fast 10.4” color display with high definition and large viewing angles
- Display angle designed to reduce glare from overhead lighting
- Touch screen on all units
- Very bright, red and green dome light that can be seen in large rooms
  - Quickly indicates the location of the winning player to the floor assistant
  - Player can quickly alert the floor assistant that help is needed
  - Used as a battery charging indicator
- Internal magnetic card reader for the player tracking system and security system
- Infra-red optics communications port for game package loading and unit tracking
- RF or Ethernet (Future) network loading of game packages and unit tracking
- Stereo speakers and headphone jack with audio sound chip
- High quality, safe, Lithium Ion, rechargeable battery pack
- Built in diagnostics
- Options: (All options are easily replaced or upgraded in the field)
  - Standard base with no keys or a 20 key keyboard
  - Plug in radio card
  - Plug in memory card
  - Powered from a rechargeable battery pack or an AC adapter

Model variation: (Special Factory ordered) Ethernet communications

## **1.5 General Operations**

The E-max unit is factory ordered for specific hardware options and configurations, but comes with a standard software package loaded. Out of the box, the E-max contains all software for the unit to perform diagnostics, and is capable of receiving new program downloads, upgrades, and gaming data. However, gaming data to play a specific or demo Bingo session is not loaded.

There are three classes of software elements in an E-max:

1. Operating system and diagnostics
2. Bingo application and background graphic themes
3. Gaming package loaded for a specific Bingo session

At this time, the only means to upgrade the E-max Operating System (which includes diagnostic software) is by removing the dome lens and using a special program upgrade memory card. The memory card inserts into a slot on the main circuit board. The optional plug-in RF card is also accessible by removing the dome lens and a second slot is available for this card.

The E-max bingo application and theme software can be loaded via RF or Ethernet communications using the E-max Bingo Console.

Gaming packages can be downloaded via Infra-red optics, RF, or Ethernet communication links using the E-max Bingo Console. Gaming packages must be loaded each time for a specific bingo session and will expire at the conclusion of the session, with timers, or charger insertion.

All E-max units have a touch panel. Some bingo hall tables are small and the E-max can be ordered with a shorter base to fit this application. For halls with larger tables or players that prefer keyboard entry over touch panel, an optional keyboard can be ordered.

The base and keyboard pivot to two positions

1. Up or flat for transporting and insertion into the charger
2. Down for game play and battery pack replacement

There is a release button on the base and the keyboard. It should always be depressed when moving the base or keyboard to its new position. **Always hold the side of the E-max main housing with one hand while pressing the button with the other hand.** If the release button is not used, eventually, damage will occur to the plastic housings.

The E-max unit can sense the position of the base or keyboard and when in the up position, the unit will suspend gaming, blank the display, and go into a low power mode for transporting or charging.

The E-max also incorporates a pivoting handle that is used to carry the E-max™ unit when in the up position. When in the down position, it is a stabilizing support for the

display during gaming. The handle interlocks with the base or keyboard during gaming to establish a non-glare angle on the display and a solid surface for touch screen operations.

The E-max utilizes a custom, high quality, Lithium Ion battery pack with an internal safety circuit to secure a safe environment for all users of the product. The life expectancy of the battery pack is on the order of 2-3 years **and should not be removed** from the E-max during this time frame. It should not be casually replaced and discarded while troubleshooting the product.

Although not recommended as a common practice, the battery pack can be replaced during gaming without loss of gaming data. The more common practice is to void the E-max, give the player a new unit, and replace the battery at your convenience. The gaming data is backed up for approximately 60 seconds after the battery pack is unplugged from the unit. (see sec. 5.5)

When line powered, the E-max protects itself from flickering or momentary power outages and will preserve gaming data for up to 1 hour after a power failure. When power fails, the display will blank and the unit will enter into Suspend mode. When the power returns, it automatically resumes gaming at the point where the power failed. Although not recommended as a common practice, if the AC adapter that line powers the unit fails during gaming, it can be replaced without loss of gaming data.

## **1.6 Preparing for Gaming**

Prior to placing the E-max into gaming operations for the first time, it is suggested that the resident diagnostic be executed to verify product performance. Out of the box, the battery pack has approximately a 30% to 50% charge and has enough energy to run the Diagnostics program. Refer to the **DIAGNOSTICS** section of this manual for detailed instructions. However, please review the **MAINTENANCE** section of this manual to become more familiar with the E-max product and the types of repairs that can be accomplished prior to running Diagnostics.

Following Diagnostics, the E-max product should be fully charged prior to playing a gaming session. Refer to the Charging System Operator Manual for further details.

Following charging, the unit is ready for gaming.

## Maintenance

### **2.1 Periodic Cleaning and Sanitizing**

The E-max unit requires periodic surface cleaning because of constant, multi-player use and dirt accumulation. How often it is cleaned or sanitized is determined by your own company policies or regulatory requirements. EGC is not liable for any damage or injury resulting from the failure to adequately clean the E-max product between uses.

**CAUTION:**

For all cleaning procedures, a clean, soft cloth should be *dampened* with the cleaning solution, not saturated or dripping with cleaning solution. The dampened cloth is then used to wipe down and sanitize the E-max unit. Do not use paper towels in lieu of the soft cloth. Paper towels can scratch surfaces.

NEVER pour cleaning solution directly on the E-max unit because it could damage the unit and the product warranty would be void.

Do not use cleaning solutions other than what is recommended in the following paragraphs. Other solutions may contain any of the following substances that would damage the surface of the E-max product - Acids, Amines, Aromatic Hydrocarbons, Esters, Keytones, and oils.

**Touch screen cleaning**

The touch screen can be cleaned with a soft cloth dampened with rubbing alcohol. Do not use excessive force. Rub the screen lightly, no harder than you would touch the screen with your finger when playing the unit during gaming. The alcohol will degrease the fingerprints and sanitize the touch panel.

**Plastic housing parts and logo label cleaning**

The plastic housing should be cleaned with a soft cloth dampened with rubbing alcohol. The alcohol will degrease the fingerprints and sanitize the plastic.

**Rubber Keypad cleaning**

The rubber keypad should be cleaned with a soft cloth dampened with rubbing alcohol. The alcohol will degrease the fingerprints and sanitize the plastic.

## **Cleaning the Magnetic Card Reader**

You will need to order special cleaning card HH1058 for this procedure.

If the magnetic card reader is operational, but the card read rate performance is undesirable, verify the card being swiped is not worn out. Try another known-good or new player tracking card. If read performance is unsatisfactory with the new card, use the special cleaning card and the **DIAGNOSTICS, Micro, Magnetic Card Reader** section of this manual to conduct further testing. Swipe the cleaner card through the track several times and then re-test performance with a known-good or new player tracking card. If the read performance is still not up to par, the E-max unit should be returned for EGC Factory repair.

## **2.2 Types of Repair**

There are two types of repair for the E-max unit:

1. **EGC Factory repair:** Repair of items contained within the main housing of the unit. There is nothing internal to the main housing that is field serviceable and spare parts are not offered for sale.
2. **Field repair:** Performance of certain product upgrades and the replacement of external parts to the main housing that are commonly damaged.

**CAUTION: DO NOT OPEN THE MAIN HOUSING SINCE IT WILL VOID ANY WARRANTY AND ANY OBLIGATION ON EGC'S PART TO REPAIR THE UNIT AND MAY CAUSE SERIOUS DAMAGE TO INTERNAL COMPONENTS.**

### **Types of failures requiring EGC Factory repair:**

1. Any malfunction of the internal computer or associated electronics
2. Infra red communications malfunction with the IR Cradle
3. Broken or malfunctioning touch panel or display glass
4. Magnetic card reader malfunction
5. Dome light malfunction
6. Audio or speaker malfunction, or broken headset jack
7. Failure of a battery-powered unit to recognize the base or keyboard is in the up or down position.
8. Broken connector on the main circuit board in the battery compartment
9. Significant crack in the main housing plastic
10. Stripped screw threads on the battery compartment door, dome lens, or handle mounts
11. Broken rubber-retaining strap for the radio and memory cards

**Authorized field service operations, repairs, and upgrades are as follows:**

1. Execute diagnostics including touch screen calibration
2. Cleaning of the magnetic card reader
3. Handle replacement
4. Battery door replacement
5. AC door replacement
6. Battery pack replacement
7. AC power modules replacement
8. 9V Backup module replacement
9. Base replacement
10. Keyboard replacement
11. Dome lens replacement
12. Radio card replacement or upgrade
13. Memory card replacement or upgrade
14. Upgrade of E-max Operating System software
15. Reset Unit

## **2.3 Diagnostics and Touch Screen Calibration**

Out of the box, a System Administrator magnetic card is required to access the E-max diagnostic program. After the E-max unit has been set up and used in a system, an E-max Support Manager card will allow periodic diagnostics to be performed. Refer to the E-max Bingo Console Operator Manual for more details on E-max security and magnetic card systems.

Touch screen calibration is one of the test programs offered in the diagnostic package. Refer to the **DIAGNOSTICS, Touch Panel** procedure in this manual for further details. If the touch screen does not calibrate properly while performing diagnostics, or repetitively goes out of calibration in less than several weeks to a month, the E-max unit should be returned for EGC Factory repair.

The touch screen will become scratched from constant usage and is considered to be normal wear and tear. Surface scratches will not affect performance of the touch panel or its calibration. The E-max unit should not be returned to EGC for surface scratches on the touch panel unless they are in large numbers and severe enough to impede player visibility of the display. If the “scratch” is very deep and large enough to cause a malfunction of the touch panel, then the E-max unit should be returned for EGC Factory repair.

## Diagnostics

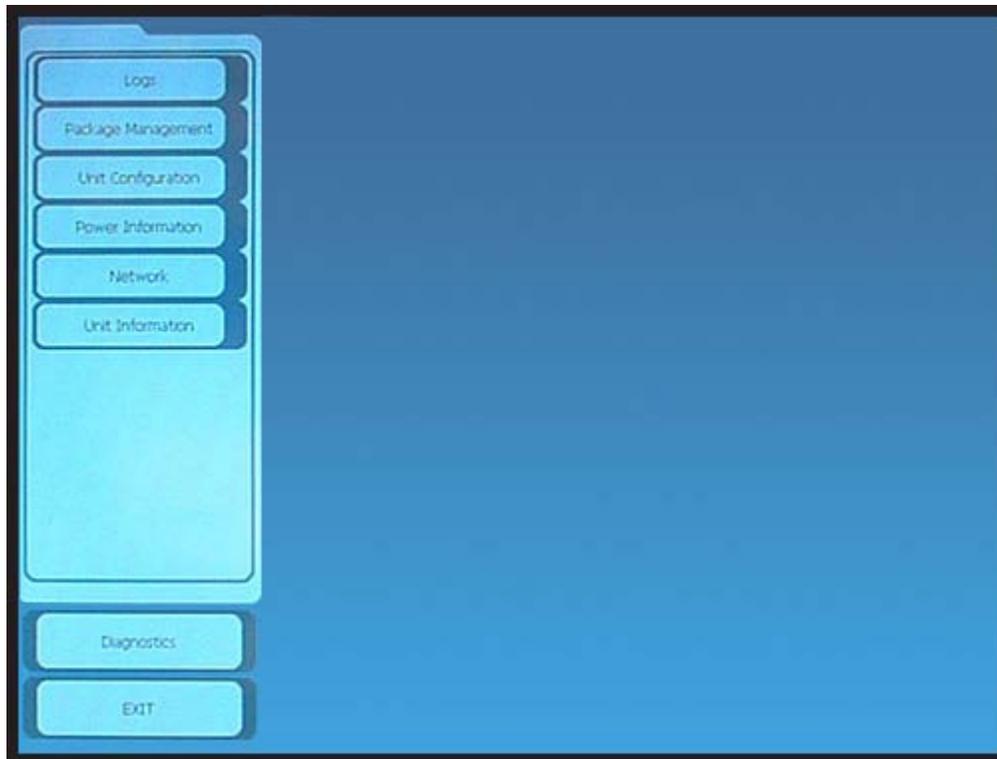
The following diagnostic procedures can be used to isolate specific items that are marginal or defective. These tests can be conducted when you first receive the E-max product to verify proper performance before using the unit for gaming.

### **3.1 Accessing Diagnostics:**

Out of the box, to enter the diagnostic program you need a System Administrator level magnetic card and must enter a password. After the E-max unit has been set up and used in a system, an E-max Support Manager card will allow periodic diagnostics to be performed. Note that periodic diagnostics cannot be performed if:

1. The touch panel or internal computer is defective
2. A legitimate gaming package is loaded in the E-max.

From the E-max Log-in screen, swipe your System Administrator magnetic card, using the touch panel, key in your password, and then touch Enter. An Administration screen will appear with the following controls: (Figure 3.1)



**Figure 3.1**

**Logs:**

Displays error logs, game action logs, and balls called during gaming

**Package Management:**

Displays gaming package information and allows you to manually expire the package

**Unit Configuration:**

Displays current user settings associated with the loaded gaming package. The options relate to Audio level, Theme, Anniversary, and Birthday screens.

**Power Information:**

Displays the type of power source, Battery or AC Line, and associated information.

**Network:**

Displays the RF network settings, current operating status, and channel (SSID) options.

**Unit Information:**

Displays the software revisions, unit serial number and mass download (MDL) level.

**Diagnostics:**

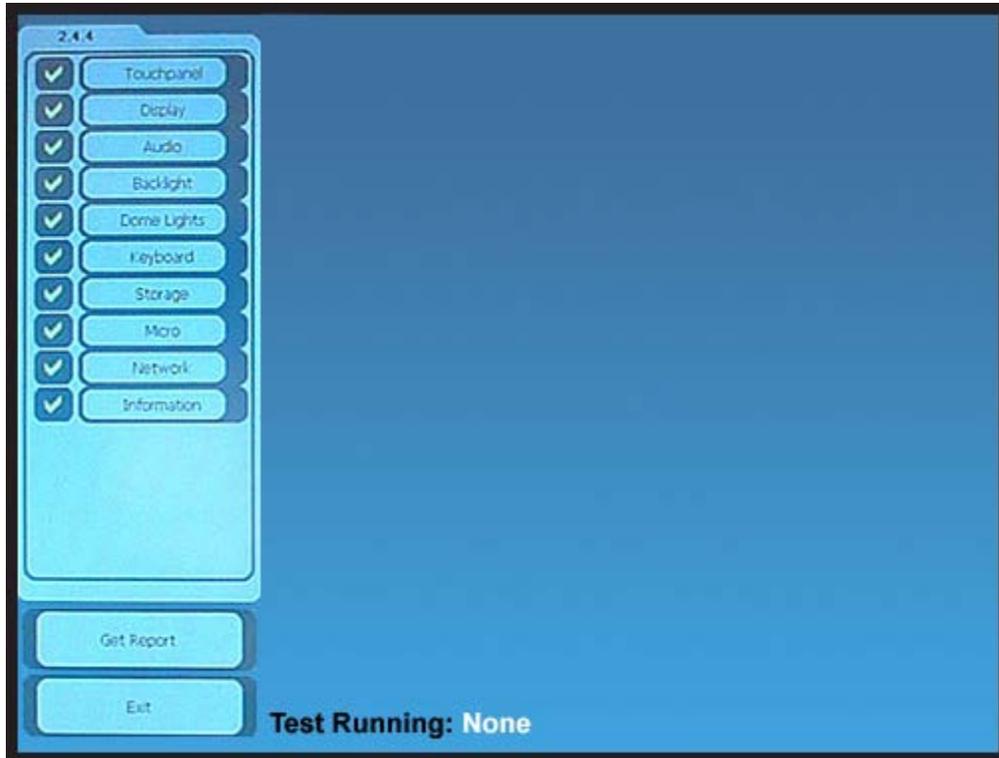
This control button will only be shown if there is no bingo package loaded. If it does not appear, you must use **Package Management** to manually expire the package. When the diagnostics control button is present it allows testing of the units features and interfaces.

**Exit:**

Exit from the Administration screen back to the Log-in screen.

### **3.2 Executing Diagnostics:**

To enter the Diagnostic mode touch the **Diagnostics** button, the diagnostic screen appears as follows: (Figure 3.2)



**Figure 3.2**

The tests are run by manually advancing through each test function and each button within the test. Any or all tests may be run. Order of operation is not relevant.

If the Get Report button is activated, ONLY those tests run since leaving the Login screen, can appear as successfully completed. This is due to when the diagnostic program is invoked, all tests initialize to a “**failed**” state denoted by a **red X**. The test must be executed properly to toggle the test result to the “**passed**” state denoted by a **green** check mark. The quality of the test report is highly dependent on the correctness of the operator’s observations and entries.

### 3.3 Touch Screen Diagnostics:

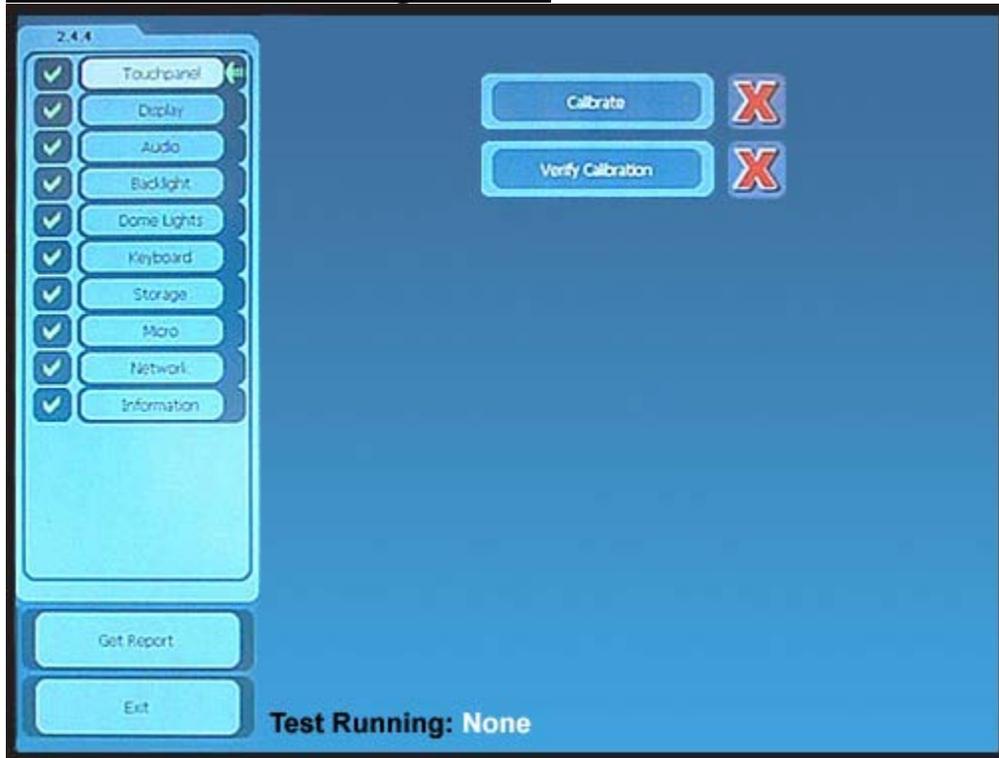


Figure 3.3

#### Calibrate

Allows you to calibrate the screen and store the settings.

Upon entering, you need to complete this task or hard reset the unit.

Use a sharp plastic stylus or pencil point, not your finger, to calibrate the screen.

Do not rest the palm of your hand on the screen when trying to touch the screen with the stylus.

#### Verify Calibration

Checks your input against the values just acquired in the Calibrate screen.

**NOTE:** On failure, rerun the above sequence. A repetitive failure of the touch panel test requires EGC Factory repair.

### 3.4 Display Diagnostics:

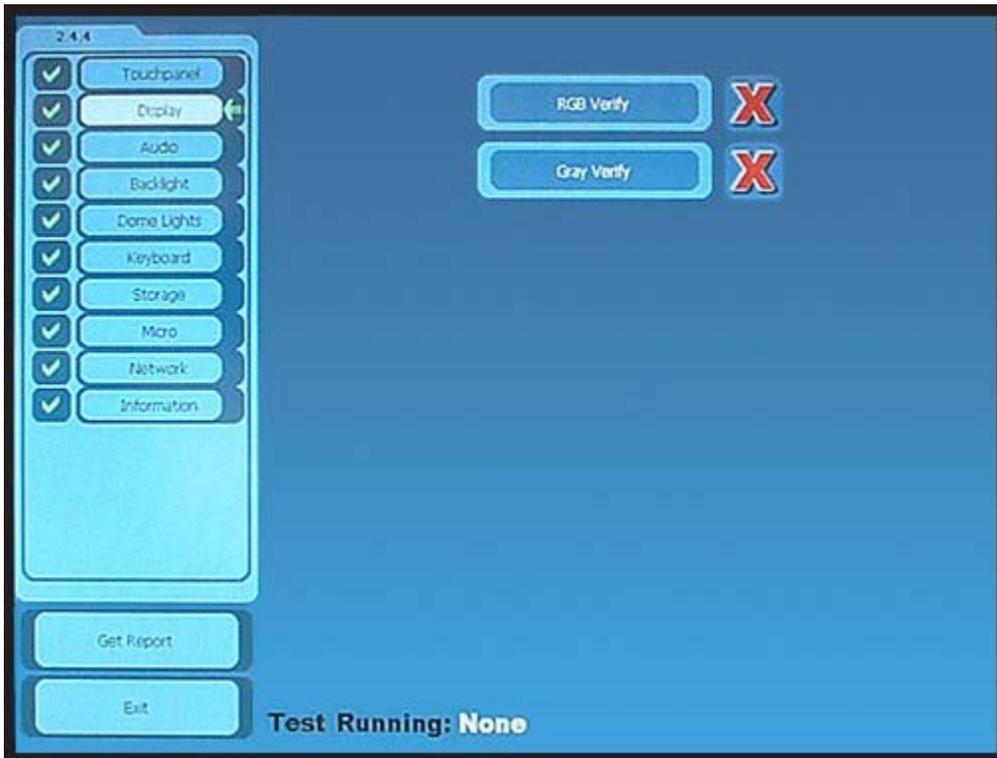
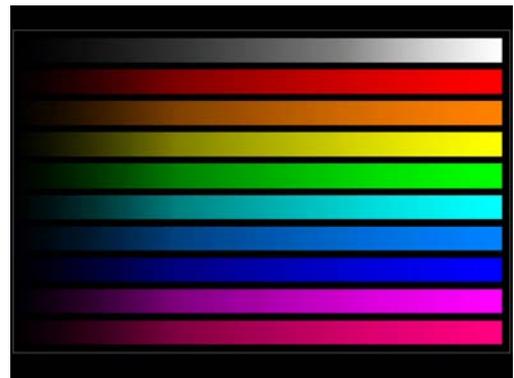


Figure 3.4

#### **RGB Verify**

Displays a saturated horizontal color bar pattern fading to black on the left side of the screen to demonstrate common colors and color intensity level controls. Also look for sharpness of bar edges, solid black between bars, and missing pixel rows or columns.



### Gray Verify

This test displays a gray; black; and white shaded pattern. Look for sharp edges between each pattern change, smooth transitions **between within** the shades, solid black and solid white areas, and missing pixel rows or columns.



**NOTE:** Small variations in the absolute shade of each color are normal. Depending on the age of the unit, a few pixels may no longer be active, or the backlight may become slightly dimmer. The unit can still be used for gaming. However, if the display image is inadequate for player use during gaming, or fails the test, the unit requires EGC Factory repair.

### 3.5 Audio Diagnostics:



Figure 3.5

#### **Left Speaker**

Emits sound from left speaker

#### **Right Speaker**

Emits sound from right speaker

#### **Both Speakers**

Speakers should mute when headphones are used

#### **Left Headphone**

Emits sound from left headphone

#### **Right Headphone**

Emits sound from right headphone

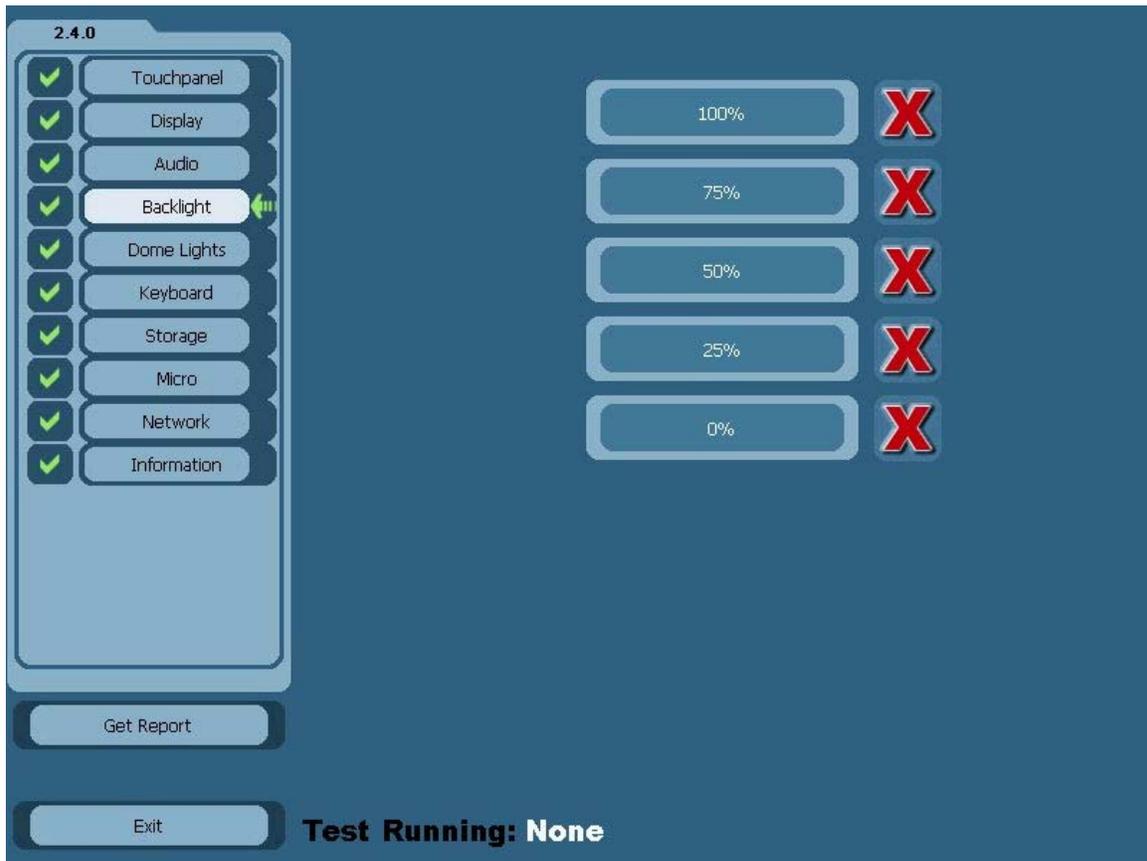
#### **Both Headphones**

#### **Speakers Muted**

Verify no sound from the speakers when the headphones are plugged in.

**Note:** If the organization has disabled the audio feature or headsets are never used, and the audio test is the only test that failed diagnostics, the unit can still be used for gaming. Otherwise, failure of the audio test requires EGC Factory repair.

### 3.6 Backlight Diagnostics:



**Figure 3.6**

**100%**

Places the backlight at this level (starting point)

**75%**

Places the backlight at this dimmer level

**50%**

Places the backlight at this dimmer level

**25%**

Places the backlight at this dimmer level

**0%**

Blanks the screen momentarily then returns the screen to 100% brightness

**Note:** The E-max uses 75% for gaming. If this setting is working, and the backlight test is the only test that failed diagnostics, then the unit can still be used for gaming. Otherwise, failure of the backlight test requires EGC Factory repair.

### 3.7 Dome light Diagnostics:



Figure 3.7

**Red solid**

Turns on all the red LEDs

**Red Blink**

Turns all of the red LEDs on, then off, and repeats.

**Green solid**

Turns on all the green LEDs

**Green blink**

Turns all of the green LEDs on, then off, and repeats.

**Yellow solid**

Turns on all the red and green LEDs

**Yellow blink**

Turns all of the red and green LEDs on, then off, and repeats.

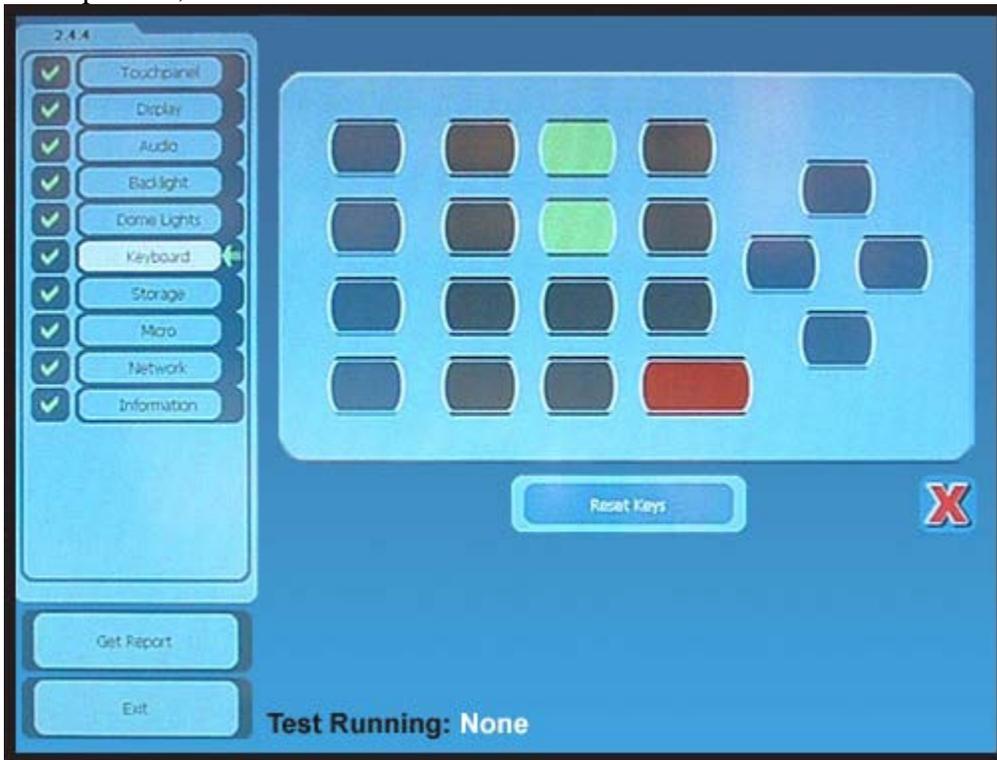
**Dome off**

Turns off all LEDs

**NOTE:** There are multiple LEDs, both red and green, that generate the dome light. If just a few of the LEDs are not functional, but the dome light brightness and color are still acceptable, then the unit can still be used for gaming. Otherwise, failure of the dome light test requires EGC Factory repair.

### **3.8 Keyboard Diagnostics:**

This test is not active if the keyboard is not present on the E-max. The test requires you to depress each key on the keyboard, one at a time. The test program looks for all keys being depressed successfully and then automatically sets the Passed state. If all keys are not depressed, the failed state remains.



**Figure 3.8**

Some keys may work, but may require excessive force and multiple tries to get them to activate. You should fail a keyboard that has this characteristic.

One at a time, depress each rubber key on the actual keyboard and get a visual indication of the depression on the display. The order of key depression or multiple depressions of a key are not important. The test will automatically exit with a Pass when all keys have been depressed successfully.

### Reset Keys

Resets visual indication on all keys.  
Also resets this test to the failed state.

**Note:** If running the test manually and one or more keys fail, just exit the Keyboard test to leave the test in the Failed state. The system will save the keys that were not depressed successfully and include them in the test report.

A failure of the keyboard test can possibly be resolved by following the procedures in the **FIELD REPAIR, Keyboard Replacement** section of this manual. If this does not remedy the problem, then the unit requires EGC Factory repair.

### 3.9 Storage Diagnostics:



Figure 3.9

This test exercises the memory on the plug-in memory card and the internal flash drive memory. The flash drive is a logical drive using only a portion of the total E-max solid-state flash memory.

For both types of memory-

- Displays status of presence or absence
- Displays amount of free memory space
- Displays size of memory

For a memory card-

If present

**Test**

Will run memory test

If not present-

**Skip test**

Depress this button so test report does not show a failure

**NOTE:** A failure of the memory card can possibly be resolved by following the procedures in the **FIELD REPAIR, Memory Card Replacement** section of this manual. If this does not remedy the problem, then the unit requires EGC Factory repair.

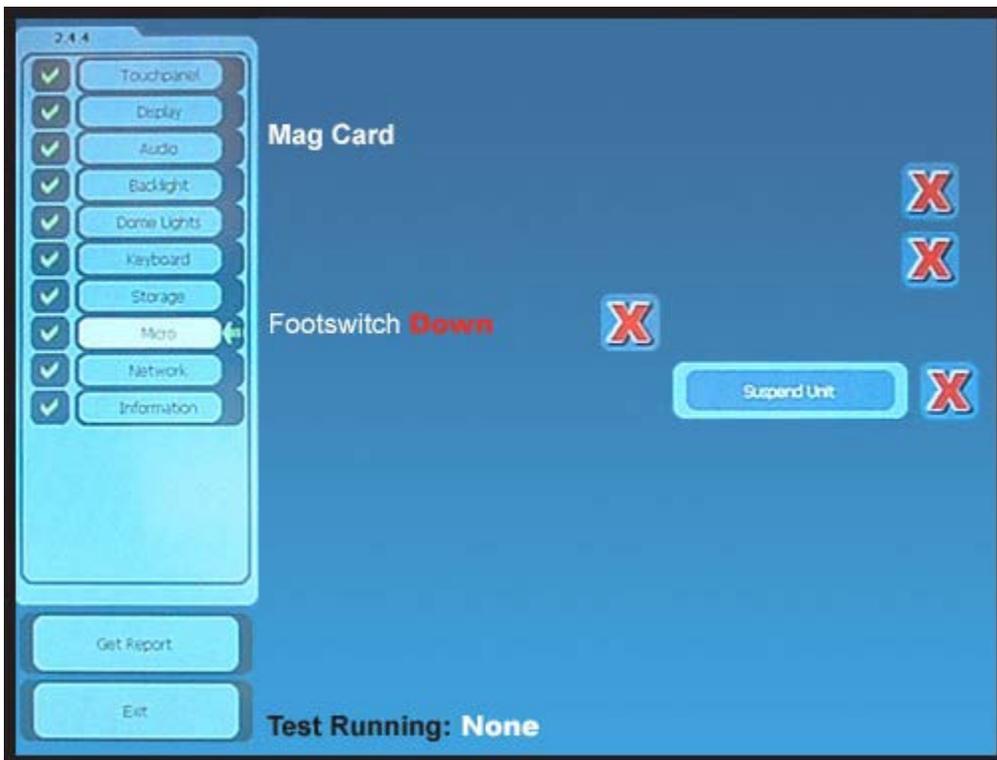
For the system flash drive-

**Test**

Will run memory test

A failure of the flash drive test requires EGC Factory repair.

**3.10 Micro Diagnostics:**



**Figure 3.10**

**Mag Card**

Swipe any EGC player tracking or management card

e.g. a SYSTEM ADMIN TEST CARD

Displays:

Track 1 Read Successfully

Track 2 Read Successfully

Test program verifies that the card is an EGC card

Test will fail if a non-EGC card was used

If the card reader is functional, but the read rate performance is marginal, try using the special cleaning card and procedure described in the **MAINTENANCE, Cleaning the Magnetic Card Reader** section of this manual. If the reader test failed, or the cleaning did not improve performance, then the unit requires EGC Factory repair.

NOTE: This test will only pass when the unit is running off of Battery power. A unit operating off of an AC Power Brick ignores the status of the base.

#### **Base/keyboard**

Displays current position – Up or Down

Should indicate Down

Move base or keyboard to Up position.

Should indicate Up

Move base or keyboard to the down position.

Should indicate Down.

NOTE: a failure of the base or keyboard position can possibly be resolved by following the procedures in the **FIELD REPAIR, Base Replacement, or Keyboard Replacement** sections of this manual. (Double check the test is not being run off of an AC Power Brick. The footswitch will always display a Down status unless it is run off of a battery pack.) If this does not remedy the problem, then the unit requires EGC Factory repair.

#### **Suspend Unit**

Suspends the E-max computer, the display blanks for a few seconds, then the test image returns to the display

NOTE: failure of Suspend can possibly be resolved by following the procedures in the **FIELD REPAIR, Reloading the Operating System** section of this manual. If this does not remedy the problem, then the unit requires EGC Factory repair.

### 3.11 Network Diagnostics:



Searches for a valid EGC RF or Ethernet network and then displays the information of the network found or indicates if no network could be found.

If the unit cannot find a valid EGC network, verify the network is actually active and configured to the correct network address and SSID.

**Figure 3.11**

**NOTE:** a failure of the RF card can possibly be resolved by following the procedures in the **FIELD REPAIR, Radio Replacement** section of this manual. If this does not remedy the problem, then the unit requires EGC Factory repair.

A failure to connect to an Ethernet network requires EGC Factory repair.

## 3.12 Information Screen:

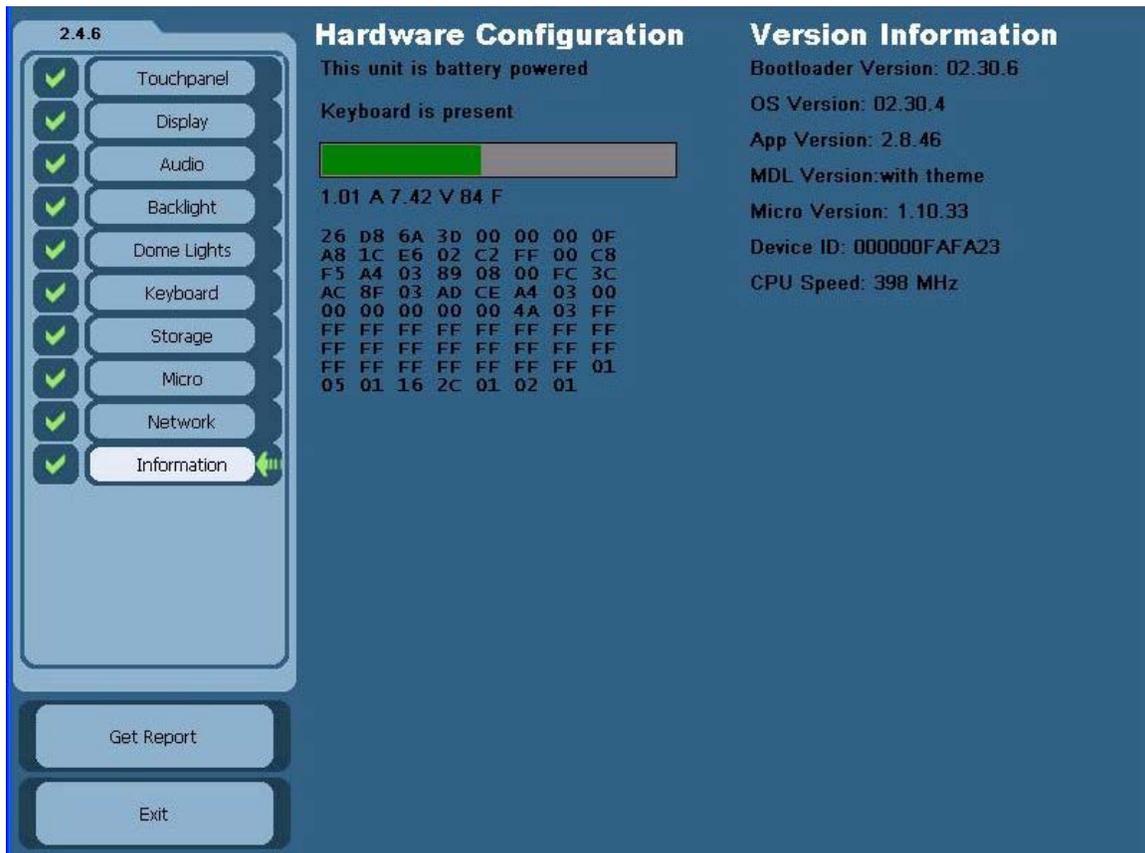


Figure 3.12

### Hardware Configuration

Displays battery powered or line powered

Verify information is correct

Displays if keyboard is present

Verify information is correct

Displays battery data

Bar graph indicates approximate battery charge level

Current, Voltage, Temperature

Typical ranges of the numbers are:

**Current-** 0.70 to 1.25 A

**Voltage-** 6.10 to 8.50 V

**Temperature-** current battery pack temperature

Raw battery data table:

This is used only by EGC TAC center

If the display of battery or line power information is incorrect, verify the proper EGC battery pack or AC adapter is being used. If the correct equipment is being

used, then press the Reset button in the battery compartment. (Location is illustrated on the E-max Instruction sheet) and rerun the Diagnostics. If this does not remedy the problem, follow the procedures in the **FIELD REPAIR, Battery Pack Replacement, and/or AC power Modules Replacement, and/or Reloading the Operating System** section of this manual. If those procedures do not remedy the problem, then the unit requires EGC Factory repair.

If the display of keyboard presence information is incorrect, it can possibly be resolved by replacing the base or keyboard. Follow the procedures in the **FIELD REPAIR, Base Replacement or Keyboard Replacement** section of this manual. If this does not remedy the problem, then the unit requires EGC Factory repair.

If the display of battery pack data does not appear to be normal, it can possibly be resolved by replacing the battery pack. Follow the procedures in the **FIELD REPAIR, Battery Pack Replacement** section of this manual. If this does not remedy the problem, then the unit requires EGC Factory repair.

### **Version Information**

- Displays software revision levels for boot loader software

  - Verify it is the latest version used for your hall

- Displays software revision levels for Operating System (OS) software

  - Verify it is the latest version used for your hall

- Displays software revision levels for the bingo Application software

  - Verify it is the latest version used for your hall

- Displays software revision levels for Mass Down Load software

  - Verify it is the latest version used for your hall

- Displays software revision levels for Micro software

  - Verify it is the latest version used for your hall

- Displays Device ID

  - Each E-max unit ever produced has a unique serial or ID number.

  - Verify that the 12 digit (alpha-numeric) number displayed matches the bar coded serial number on the manufacturing label located on the back of the E-max unit.

- CPU Speed: 398 MHz

If the versions of software are not of the correct level for the E-max unit to perform in your hall environment, update the software by following procedures in the **FIELD REPAIR, Reloading the Operating System** section of this manual. If this does not remedy the problem, then the unit requires EGC Factory repair.

If the Device ID does not match the manufacturing label, the unit may have been tampered with and should be removed from gaming. Immediately inform the EGC TAC center. The unit requires EGC Factory repair.

At the conclusion of the Diagnostics:

**Get Report**

This generates a detailed listing of all tests not run or failed.

Note: All tests initialize to Failed and will be shown in the report unless they have been successfully completed. A test must be completed between: when the user leaves the login screen for the admin screen, and when a return from the Admin screen to the Login screen occurs.

**Exit**

This returns you to the Administration screen.

## Troubleshooting

The procedures discussed in the **DIAGNOSTIC** section of this manual are an effective means of isolating specific problems when the core hardware of the E-max unit is already functioning. Some repair and troubleshooting recommendations were made in that section of this manual. This section of the manual addresses other types of failures and what tests to perform to determine the type of repair needed.

This troubleshooting guide does not address problems associated with E-max performance at the system and network levels. Please refer to the System Administration Manual for more assistance.

Troubleshooting is broken down into three areas:

1. Battery Powered E-max
2. Line Powered E-max
3. Common to a Battery or Line Powered E-max

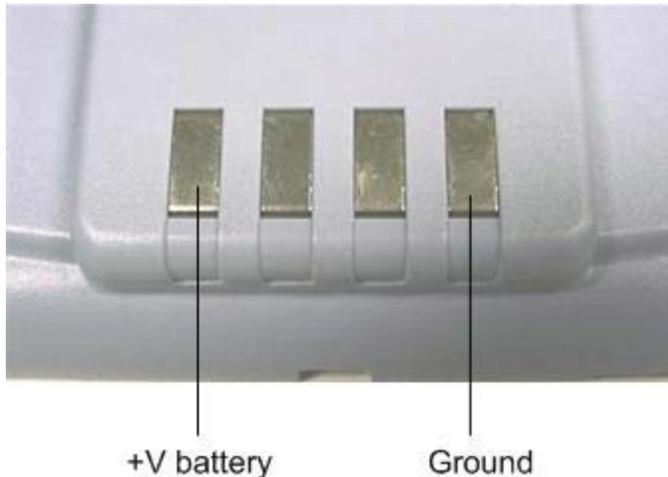
**General notes:**

The details of how to replace parts and reload the Operating System software are described in the **FIELD REPAIR** section of this manual.

The abbreviation EFR denotes the unit must be returned for EGC Factory Repair.

## **4.1 Battery Powered E-max:**

An easy way to measure the battery voltage without disassembly of the unit is to place a voltmeter across the two contacts on the battery door as shown below.



Typical readings:

Fully charged pack coming out of the charger: 8.2 to 8.45 VDC

After 4 hours of gaming: 7.3 to 7.7 VDC

Unit goes into power fail and screen goes black: 4.8 to 6.1 VDC

Minimum voltage required for unit to resume gaming or boot into bingo app: 6.9VDC

(Once started, the unit will run down to 6.1V. The difference is required because the unit must have sufficient voltage so as to not shut down again immediately, thus the 6.9V value.)

Battery is fully discharged or becomes shorted: 0 to 4.6 VDC

(The internal protection circuit disconnects the battery. The unit must be inserted into the charger to recover.)

### **Troubleshooting the E-max unit:**

1. Unit will not turn on (display is black)

A. Place the unit in the charger

If dome LEDs blink red normally

And charge complete is successful (blinks green), try again

If charging does not remedy, go to 1-B

And charge complete is not successful (blinks or steady red after 13 hours)

Replace battery pack, try again

If battery does not remedy, replace battery door, try again

If door does not remedy, EFR

If dome LEDs do not work immediately (within 15 seconds)

Wait 5 minutes (unit self-recovers from some errors)

If dome LEDs or display not on

Check voltage is above 6.9V or place unit in powered charger for 20 minutes, then remove

Place unit in gaming position

If display is black, open battery door and press the reset button (as in 1B), then try again

Replace battery pack, try again

If battery does not remedy, replace battery door, charge for 20 minutes, try again

If door does not remedy, EFR

B. Open the battery compartment and press the reset switch (to the left of the power connector).

The unit should boot up to the E-max login screen.

If the unit does not recover, go to 1C.

C. Re-load the Operating System

If reload is not successful or does not remedy, EFR

2. When charging the unit, the charge complete state (blinking green) is never achieved

A. Verify temperature of the battery pack is above 5C (41F) and below 40C (104F). Charge is inhibited until the battery is in this range.

B. Replace battery pack, try again

If battery does not remedy, replace battery door, try again

If door does not remedy, EFR

3. Battery will not hold charge during gaming, or unit randomly goes into Suspend during gaming, or loading of gaming packages is frequently inhibited because of low battery capacity

A. Replace battery pack, try again

If battery does not remedy, EFR (assumes charger is good)

4. Gaming data is lost during battery replacement interval

A. EFR

## **4.2 Line Powered E-max:**

1. Unit will not turn on (display is black)

A. Verify AC power source is within requirements for the system

If not, Replace AC adapter, try again

B. Open the battery compartment and press the reset switch (to the left of the power connector). **Caution: This will cause loss of any gaming package that was loaded.**

- The unit should boot up to the E-max login screen.
- C. Re-load the Operating System, try again  
If reload is not successful or does not remedy, EFR
2. Unit randomly powers down into Suspend mode during gaming, then resumes
- A. Verify clean AC power source is within system requirements
- B. Replace AC adapter, try again  
If adapter does not remedy, Re-load the Operating System, try again  
If reload is not successful or does not remedy, EFR
3. Gaming data is lost because of AC power outages (System had to be awake for 20 minutes prior to power outage)
- A. Replace the 9V battery on the backup card  
If battery does not remedy, replace battery card and battery, try again  
If card does not remedy, EFR

### **4.3 Common to Battery Powered or Line Powered E-max**

Items such as faulty keyboards, dirty magnetic card reader, backlight is dim, audio does not work, touch screen calibration, etc., are easily found using the **DIAGNOSTICS** section of this manual. More uncommon problems and items not covered in the Diagnostics are discussed in the following section. Also, additional information can be found in the E-max System Administration manual, especially when dealing with networks.

1. Only this one unit won't download via the Infrared port and IR cradle
- A. Verify the dark red lens on the left side of the unit is clean  
If clean lens does not remedy, EFR
2. Radio performance on this one unit is marginal or stops working during gaming or does not program properly over the RF link.
- A. Verify the location of the unit is within normal distances to the system Access Point
- Replace a player's unit prior to any further diagnosis activities.**
- B. **Caution: This will cause loss of any gaming package that was loaded.** Open the battery compartment and press the reset switch (to the left of the power connector).
- C. Replace radio card  
If radio does not remedy, EFR
3. Ethernet performance on this one unit is marginal or stops working during gaming or does not program properly over the Ethernet link.
- A. Replace Ethernet cable to the unit  
If cable does not remedy, EFR

4. Assume diagnostics run normal, gaming runs normal, the display has a normal image, power input source is normal, but the E-max unit appears to be “locked up” or won’t respond to operator entry, use the Reset switch in the battery compartment. **Caution: This will cause loss of any gaming package that was loaded.**

A. If Reset does not remedy or unit runs for awhile and then locks up again, reload the Operating System

If reload is not successful or does not remedy, EFR

5. If a battery powered E-max unit was placed into Suspend mode for a very long period of time (battery pack discharges over days), or a line powered E-max unit has been several hours without AC power, the Dome lights may flicker randomly for 30 seconds or so. Consider this as normal. This is an indication that the E-max has no more energy to backup the data that was loaded. When normal AC power returns or the battery is charged, the E-max will basically reset and has no prior knowledge of gaming or data loaded.

#### **4.4 Returning for EGC Factory Repair**

Before retuning an E-max unit for repair, please perform all necessary diagnostics, maintenance, and repair procedures described in this manual.

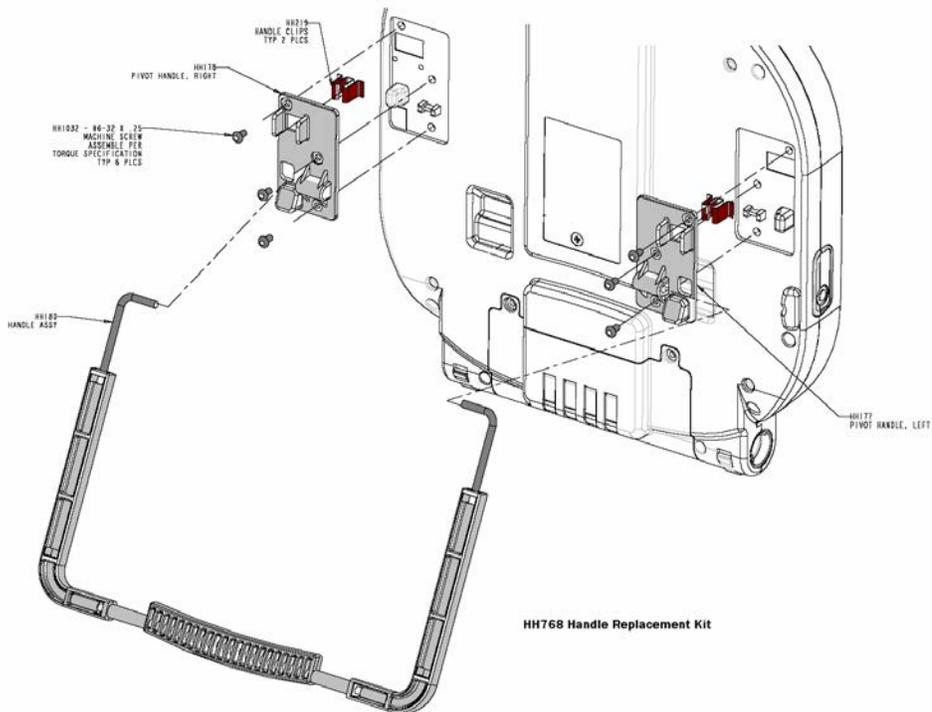
Each E-max has a unique serial number located on the manufacturing label on the back of the product. It is a 12-digit alpha-numeric number that is also bar coded on the label. To request a Return Material Authorization (RMA) you must have this number ready before calling the EGC TAC center. This number will help the TAC center to quickly access the warranty and service contracts for the unit. In addition, please have diagnostic test result information available so the root cause for the return can be readily defined.

When packing the E-max for return, use an E-max original shipping box, **disconnect the battery**, and follow directions listed in the E-max Instruction sheet to insure safety regulations are met and no further damage to the unit will occur. Make sure the RMA number is visible on the outside of the box.

## Field Repair

### **5.1 Required Tools:**

1. Standard T-10 TORX driver
2. ¼” Allen Head Key Wrench



**Figure 5.1**

## **5.2 Handle Replacement:**

Handle replacement kit HH768

Refer to Figure 5.1

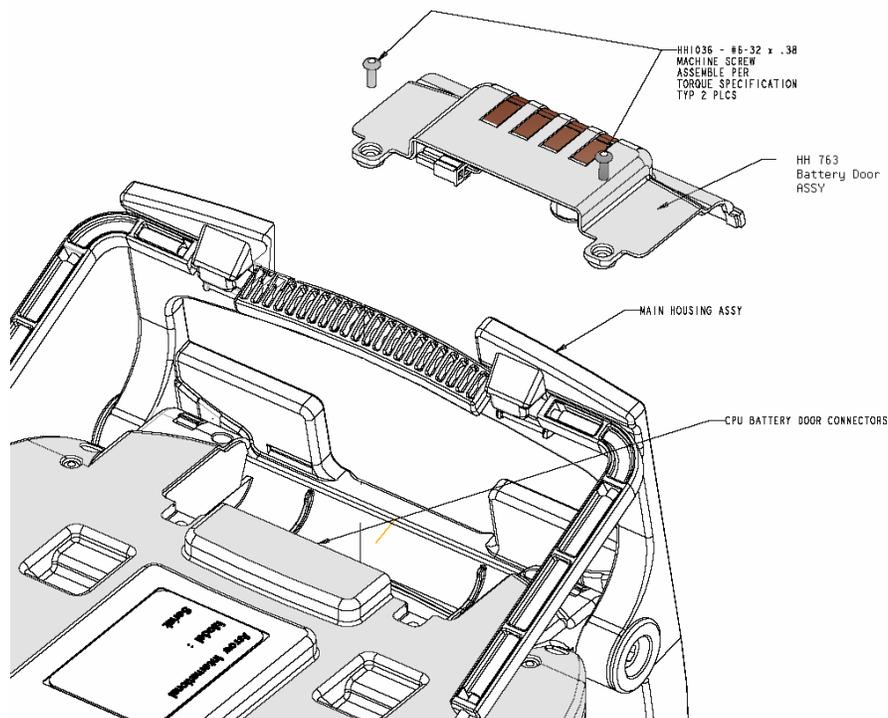
1. Place the base or keyboard in the up position.
2. Lay the E-max unit with the display face down on a smooth surface that will not scratch the display.
3. On the backside of the E-max, remove the three screws from each of the right and left side pivots.
4. Remove the entire handle assembly and the two metal handle clips and discard all items.
5. Lay the two new handle clips on the back of the E-max in their proper locations.
6. Insert the new handle ends into the new left and right side pivots (they are physically different parts).
7. Insert each of the pivot openings over each handle clip.
8. Secure each pivot to the back of the E-max with three screws. Do not over tighten screws as damage to the main housing could occur.

## **5.3 Battery Door Replacement:**

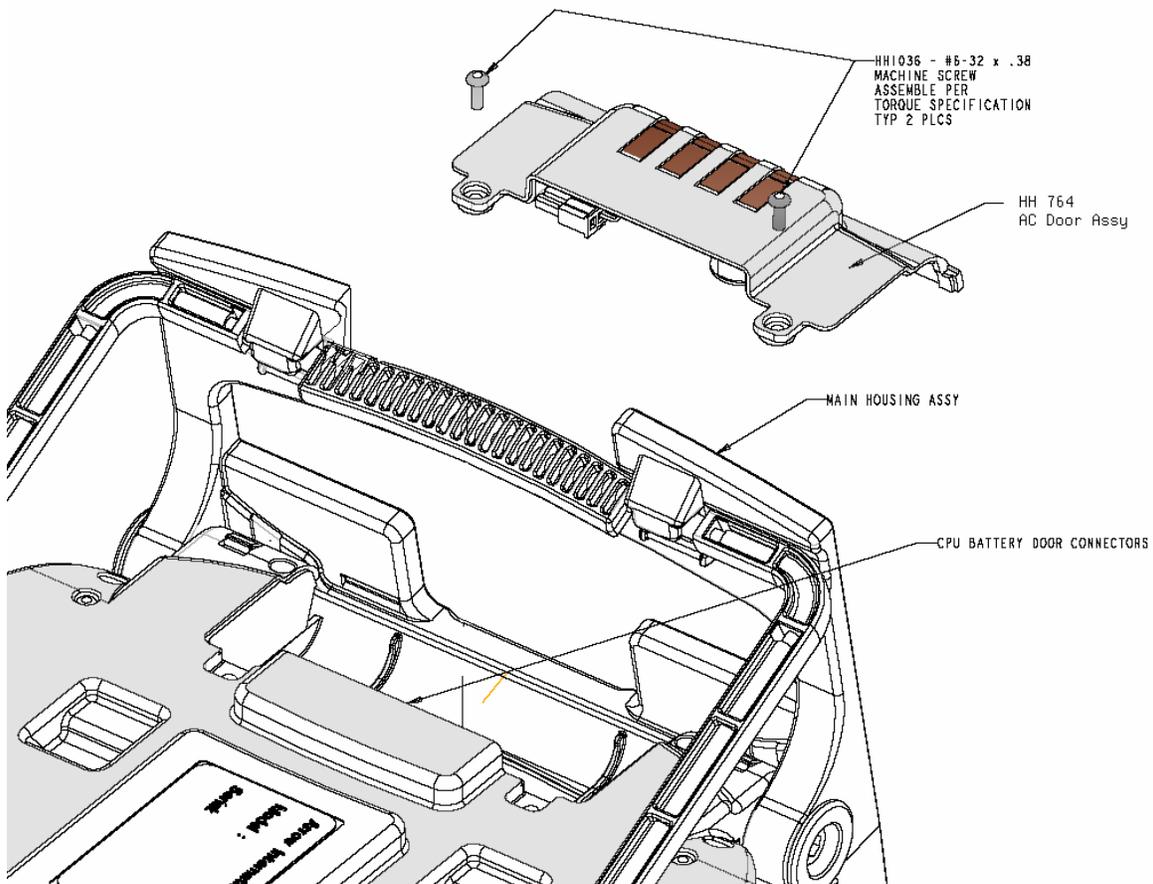
New door HH763

Refer to Figure 5.2

1. Place the base or keyboard to the down position.
2. Lay the E-max unit with the display face down on a smooth surface that will not scratch the display.
3. Remove the two screws in the battery door and slide the door towards the base of the E-max to remove it.
4. Disconnect the cable from the door going to the 4-pin connector on the E-max circuit board by firmly pressing down on the connector latch while pulling it away from the circuit board. Discard the old door.
5. Plug in the cable on the new door to the circuit board 4-pin connector.
6. Slide the door onto the main housing and secure with the two screws. Do not over tighten screws as damage to the main housing could occur.



**Figure 5.2**



**Figure 5.3**

## **5.4 AC Door Replacement:**

New door HH764

Refer to Figure 5.3

1. Place the base or keyboard to the down position.
2. Lay the E-max unit with the display face down on a smooth surface that will not scratch the display.
3. Remove the two screws in the door and slide the door towards the base of the E-max to remove it. Discard the old door.
4. Slide the door onto the main housing while feeding the AC Adapter cord into the small notch at the bottom of the door. (Some models of the E-max may also require an Ethernet communication cable to be located in the door slot)
5. Secure with the two screws. Do not over tighten screws as damage to the main housing could occur.

## **5.5 Battery Pack Replacement:**

Battery pack HH1168

### **CAUTION:**

Use only EGC supplied E-max battery packs. The use of other battery packs voids the product warranty. The E-max product design requires a Lithium Ion battery pack of the correct voltage and capacity, communications with a fuel gauge chip, and a mandatory safety protection circuit. In addition, the E-max battery pack is designed for large charging currents that could create a safety hazard when charging other types of battery packs.

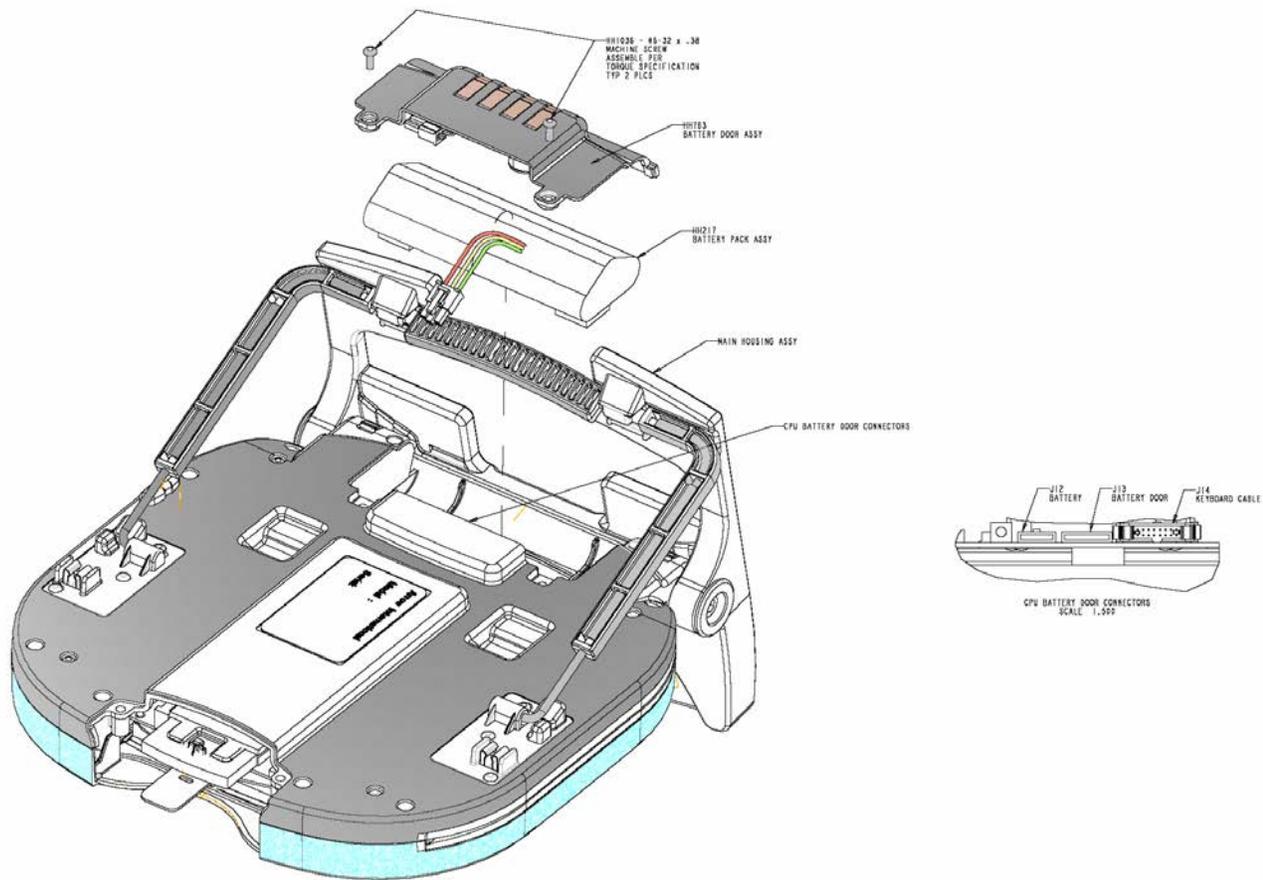
Never tamper with or disassemble the battery pack and never dispose of it in a fire. Call 1-800 277 6214 (EGC TAC center) for proper procedures to discard the old battery pack.

The E-max battery pack can be unplugged at any time and replaced with a new one. This action most likely will reset the E-max and the program will start all over with no historical data.

However, to avoid a reset and loss of gaming data, the E-max unit can be manually placed into a Suspend mode just prior to unplugging the battery pack.

Although not recommended as a common practice, this procedure can be done during gaming. The more common practice is to void the E-max, give the player a new unit, and replace the battery at your convenience.

To preserve gaming data, apply the following procedure and be prepared with a fully charged battery pack at hand such that when the old pack is unplugged from the E-max, the new one can be immediately plugged onto the E-max. Allowable time from the point of unplugging the old battery pack to plugging on a new one is 60 seconds. The entire replacement procedure is accomplished in 5 minutes.



**Figure 5.4**

Refer to Figure 5.4

1. Place the base or keyboard to the down position. (Already in this position if gaming)

2. Get the unit back to the Log-in screen by using the Lock button (if gaming).
3. Swipe your manager or higher level magnetic card and enter your password.
4. The Manager Administration screen will appear.
5. Have the new battery pack at hand.
6. Touch the Replace Battery button on the touch panel.
7. The display will go blank and the unit will go into Suspend for 5 minutes.
8. Lay the unit with the display face down on a smooth surface that will not scratch the display.
9. Remove the two screws in the door and slide the door towards the base or keyboard of the unit to remove it.
10. Position the door out of your way or disconnect the cable from the door going to the 4-pin connector on the E-max circuit board by firmly pressing down on the connector latch while pulling it away from the circuit board.
11. Disconnect the battery pack cable going to the 3-pin connector on the E-max circuit board by firmly pressing down on the connector latch while pulling it away from the circuit board. You now have 1 minute to plug on the new battery pack.
12. Plug in the cable on the new battery pack to the circuit board 3-pin connector.
13. At this point the gaming data is preserved.
14. Plug the battery door cable back onto the 4-pin connector of the E-max circuit board or put the door back into position.
15. Slide the door onto the main housing and secure with the two screws. Do not over tighten screws as damage to the main housing could occur.
16. Set the unit upright on the base or keyboard.
17. When a total of 5 minutes has elapsed, the unit will resume and restore the display to the Manager screen.
18. Exit the Replace Battery function.
19. Exit the Manager screen to the Log-in screen.
20. The player can now log back in and continue play without loss of data.
21. If the E-max is networked, any new balls called during the procedure will be automatically updated on the unit. If the unit is non-networked, the player must manually enter the balls that were called during the procedure.
22. Before discarding the old battery pack, try to recharge the old battery pack in another E-max unit. Discarding of the old battery pack can be adverse to the environment. Call 1-800 277 6214 (EGC TAC center) for proper procedures to discard the old battery pack.

## **5.6 AC Power Modules Replacement**

There are several components that are associated with AC power.

1. AC adapter HH1011
2. Battery backup card with 9V Battery HH1071
3. 9V Battery Service Part, that attaches to and plugs into card, HH1171

### **CAUTION:**

**Use only EGC supplied 9V batteries. The use of other batteries voids the product warranty. They are special, high capacity, rechargeable batteries. DO NOT USE ALKALINE BATTERIES. They could create a safety hazard since they are continuously being charged.**

The following procedure describes the replacement of all parts. You can also use sections of the procedure to replace only a single item.

1. Place the base or keyboard to the down position.
2. Lay the E-max unit with the display face down on a smooth surface that will not scratch the display.
3. Remove the two screws in the door and slide the door towards the base of the E-max to remove it.
4. To replace the AC adapter:
  - a. Although not recommended as a common practice, if the AC adapter that line powers the unit fails during gaming, it can be replaced without loss of gaming data.
  - b. Unplug the cable going to the 3-pin connector on the E-max circuit board by firmly pressing down on the connector latch while pulling it away from the circuit board.
  - c. Discard the old AC adapter.
  - d. Plug in the cable on the new AC adapter to the circuit board 3-pin connector.
5. To replace the 9v battery:
  - a. **This procedure should not be performed when the AC adapter is present. Any gaming data present will be lost.**
  - b. Unplug the 9v battery from the card by lifting it to where the connector to the 9V battery may be removed. Completely remove the battery and existing tape.
  - c. Discard the old battery.
  - d. **CAUTION: Install the 9 volt battery into the connector cable on the card observing proper polarity of the battery terminals.** Remove backing from tape on the new battery. Press tape and battery to board. Replace the AC adapter.
  - e. Note that it will take several hours for the battery to charge to proper levels. Power the unit for at least that amount of time before placing back into gaming.
6. To replace the entire battery backup card with battery:

- a. **This procedure will cause loss of gaming data.**
  - b. Disconnect the cable going to the 4-pin connector on the E-max circuit board by firmly pressing down on the connector latch while pulling it away from the circuit board.
  - c. Discard the old card and battery. There is no EGC Factory repair available for this card.
  - d. Plug in the cable on the new card to the circuit board 4 pin connector.
7. Slide the door onto the main housing and secure with the two screws. Do not over tighten screws as damage to the main housing could occur.

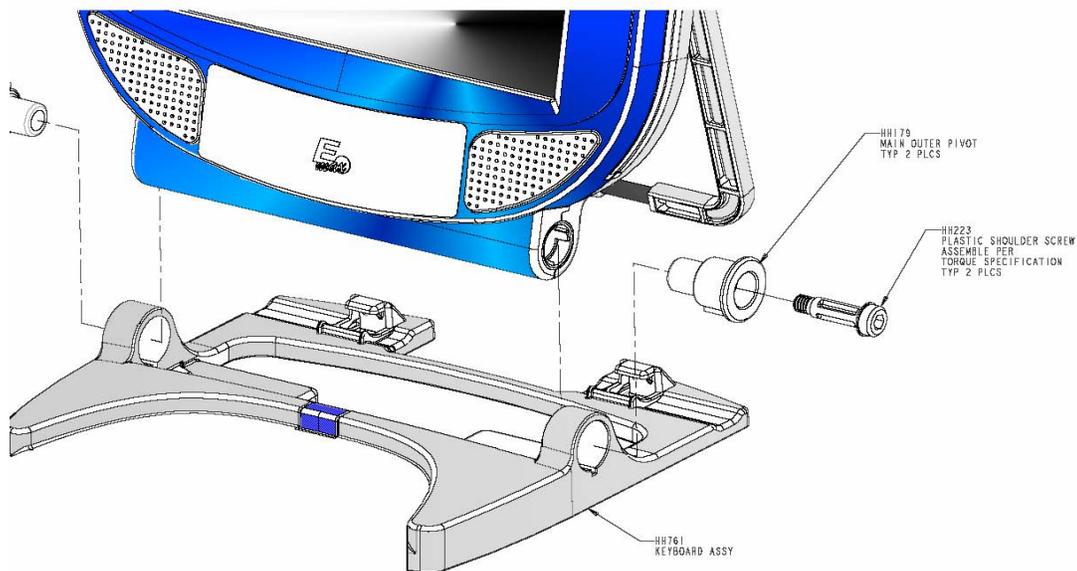
## **5.7 Base Replacement**

There are several components that are associated with base replacement.

1. New base HH760
2. Optionally, 2 outer pivots HH179, if needed.
3. Optionally, 2 shoulder screws HH223, if needed.

Refer to Figure 5.6

1. Place the base in the down position.
2. Place the handle in the up or carrying position.
3. Using the Allen wrench, remove the two plastic shoulder screws from the left and right sides of the base.
4. Remove the left and right side outer pivots by sliding them straight out of the base.



**Figure 5.6**

5. Slide the base off of the main housing.
6. Discard the old base. There is no EGC Factory repair or internal spare parts available.
7. Slide the new base onto the main housing.
8. Insert the two outer pivots into the base by placing the pivot keyway into the keyway slot on the base.
8. Screw in the two plastic shoulder screws. Do not over tighten screws as damage to the screw could occur.

## 5.8 Keyboard Replacement

The characters on the rubber keypad are coated with a hard, clear material. The characters will become scratched from constant usage and is considered to be normal wear and tear. The keyboard should not be replaced for casual surface scratches unless they are in large numbers and severe enough to impede player visibility of the characters.

There are several components that are associated with keyboard replacement.

1. Keyboard HH761 with self adhesive cable tape
2. Optionally, 2 new outer pivots HH179 if needed.
3. Optionally, 2 new shoulder screws HH223 if needed.

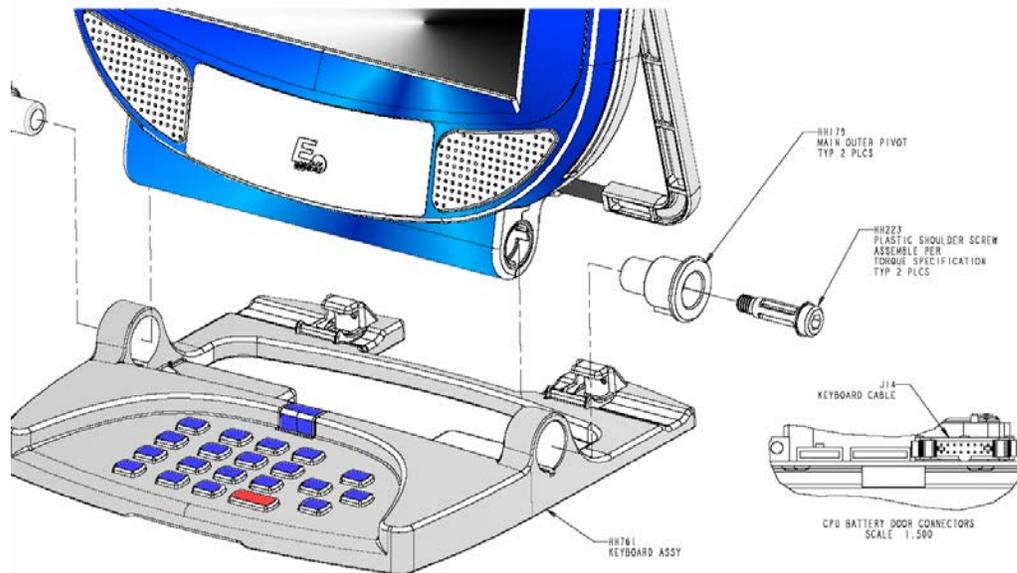


Figure 5.7

Refer to 5.7

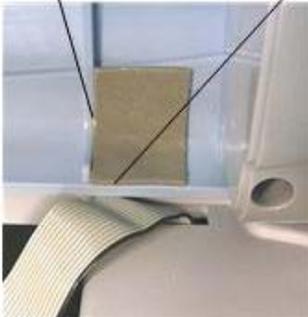
1. Place the base in the down position.
2. Place the handle in the up or carrying position.
3. Remove the battery or AC door using procedures already described above.
4. Remove the battery pack or AC modules from the main housing using procedures already described above.
5. Observe the ribbon cable orientation and routing within the main housing then unplug the keyboard ribbon cable from the circuit board connector by pushing outward on the two plastic tabs of the connector.
6. Peel away the cable and self adhesive tape attaching it to the main housing. Discard the tape.
7. Using the Allen wrench, remove the two plastic shoulder screws from the left and right sides of the keyboard.
8. Remove the left and right side outer pivots by sliding them straight out of the keyboard.

9. Slide the keyboard off of the main housing.
10. Discard the old keyboard. There is no EGC Factory repair or internal spare parts available.
11. Slide the new keyboard onto the main housing.
12. Insert the two outer pivots into the keyboard by placing the pivot keyway into the keyway slot on the keyboard.
13. Screw in the two plastic shoulder screws. Do not over tighten screws as damage to the screw could occur.
14. The next step of attaching the cable with the self adhesive tape to the main housing is very important or the cable will quickly become damaged:
  - a. Refer to Figure 5.7A below for locating and placement of the self adhesive tape.
  - b. Push the cable into the keyboard assembly as far as it will go. Place the tape on the housing starting at the edge of the housing and along the edge of the plastic rib. Firmly press the cable and tape into the plastic with your thumb.
  - c. Fold the cable to the left then fold it upwards observing proper cable connector orientation and routing of the cable within the main housing as previously observed prior to disassembly.
15. Plug in the keyboard ribbon connector onto the circuit board
16. Replace the battery pack or AC modules from the main housing using procedures already described above.
17. Replace the battery or AC door using procedures already described above.

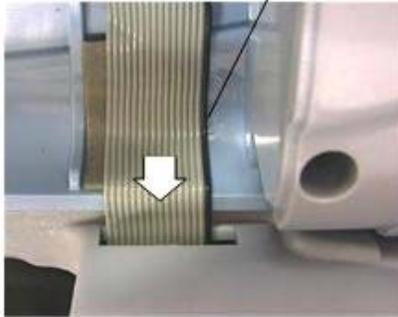
Update Graphics below to match description in step 14. (Tape is premounted to cable. Reference Step 1 below, but start with Step 2.

Figure 5.7 A

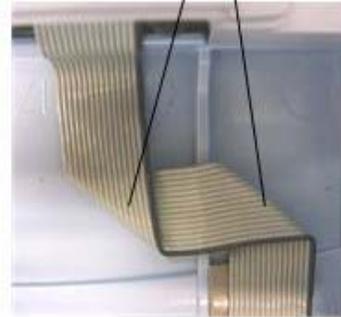
Step 1:  
Align tape to top edge of housing and side of rib in housing



Setp 2:  
1. Push cable into keyboard as far as possible  
2. Align cable edge to edge of tape, press cable to tape



Step 3:  
Fold cable in two places



**CAUTION:**

The next four repair procedures, **Dome Lens Replacement, Radio Card Replacement, Memory Card Replacement, and Software Upgrade**, involve the removal of the dome lens which exposes sensitive electronics internal to the E-max unit.

**SERIOUS DAMAGE CAN OCCUR IN THE PRESENCE OF STATIC ELECTRICITY (ESD) OR BY DROPPING METAL SCREWS OR OTHER ITEMS INTO THE MAIN HOUSING VIA THE DOME LENS OPENING. THE E-MAX UNIT TYPICALLY HAS POWER APPLIED DURING THE REPAIR PROCEDURES.**

**MANDATORY REQUIREMENTS TO MAINTAIN PRODUCT WARRANTY:**

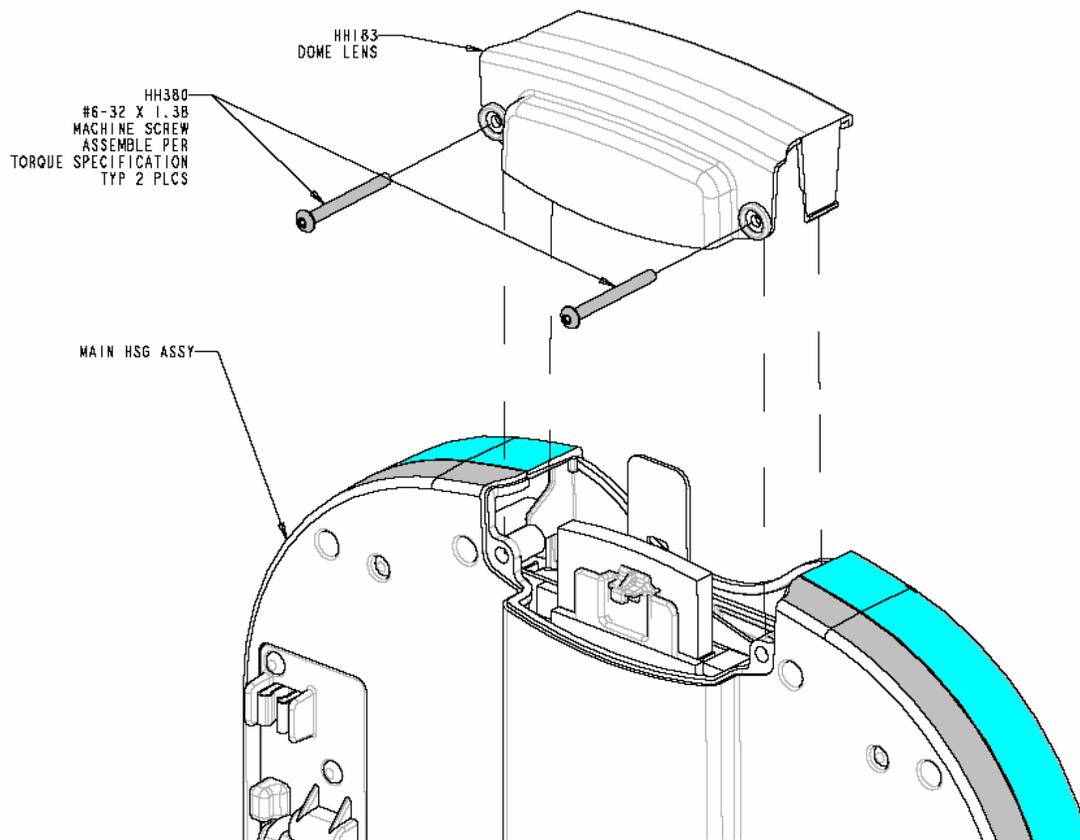
1. USE WRIST GROUND STRAPS, AND COMPLETELY AND SIMULTANEOUSLY DISCHARGE YOURSELF AND THE E-MAX UNIT TO A METAL SURFACE PRIOR TO REMOVING THE DOME LENS.
2. DO NOT WEAR STATIC PRODUCING SWEATERS OR BE IN CONTACT WITH STATIC PRODUCING CHAIRS OR CARPETS.
3. DO NOT TOUCH OR ATTEMPT REPAIR OF ANY INTERNALLY EXPOSED COMPONENTS. THERE ARE NO SPARE INTERNAL COMPONENTS OFFERED FOR SALE.
4. DO NOT DROP SCREWS (OR OTHER OBJECTS) OR SPILL DRINKS INTO THE MAIN HOUSING VIA THE DOME LENS OPENING.
5. FOLLOW REPAIR PROCEDURES AND USE TRAINED PERSONNEL.
6. ALWAYS REPLACE THE DOME LENS AT THE END OF THE REPAIR. DO NOT LEAVE THE E-MAX UNIT FOR LONG PERIODS OF TIME WITH THE DOME LENS OFF.

## **5.9 Dome Lens Replacement – ESD CAUTION!!**

Dome lens HH769

Refer to Figure 5.8

1. Place the base or keyboard and the handle in the down position and place the unit upright on the base or keyboard.
2. Discharge yourself and the E-max to a common metal surface.
3. Remove the two, very long screws from the dome lens.
4. Remove the dome lens and discard.
5. Install the new dome lens and secure with the two long screws. Do not over tighten the screws as damage to the main housing could occur.



**Figure 5.8**

## **5.10 Radio Replacement or Upgrade – ESD CAUTION!!**

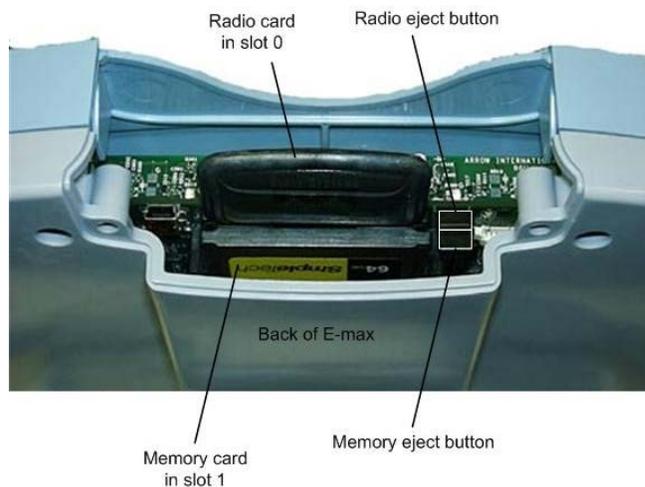
Radio card HH677

**Do not perform this procedure while a gaming package is loaded in the E-max.**

Refer to Figure 5.9

1. Place the handle and the base or keyboard in the down position and place the E-max unit upright on the base or keyboard. (Already in this position if gaming)
2. Discharge the new radio card, the E-max, and yourself to a common metal surface.
3. Remove the two, very long screws from the dome lens.
4. Remove the dome lens.
5. Unhook the rubber-retaining strap from the white nylon support.
6. If replacing the radio card, push the small black eject button for the radio card (there are two buttons, one for the memory card and one for the radio card) and remove the old radio card from the connector housing.
7. Orient the new radio card with the manufacturer's serial number label towards the main circuit board and insert it into the connector, which is closest to the circuit board (slot 0). The radio card and connector housing are polarized. Make sure it is fully seated.
8. Stretch the rubber-retaining strap over the radio card and hook it onto the white nylon support.
9. Install the dome lens and secure with the two long screws. Do not over tighten the screws as damage to the main housing could occur.

**Failure to use the rubber-retaining strap can result in the cards becoming unseated and erratic E-max behavior.**



E-max will auto-detect the insertion of the card and automatically locate a valid EGC network and identify itself to the network.

**Figure 5.9**

## **5.11 Memory Card Replacement or Upgrade – ESD**

### **CAUTION!!**

Memory card HH770 (64 MB)

Do not perform this procedure while a gaming package is loaded in the E-max.

Refer to figure 5.9 for Radio Replacement

1. Place the handle and the base or keyboard in the down position and place the E-max unit upright on the base or keyboard.
2. Discharge the new memory card, the E-max, and yourself to a common metal surface.
3. Remove the two, very long screws from the dome lens.
4. Remove the dome lens.
5. Unhook the rubber-retaining strap from the white nylon support.
6. If replacing the memory card, pull back on the nylon support, and push the small black ejector button for the memory card (there are two buttons, one for the memory card and one for the radio card) and remove the old memory card from the connector housing. Note: It may be easier to remove both radio and memory cards at the same time.
7. Insert the new memory card into the connector, which is farthest from the circuit board (slot 1). The memory card and connector housing are polarized. Make sure it is fully seated.
8. Stretch the rubber-retaining strap over the memory card and hook it onto the white nylon support.
9. Install the dome lens and secure with the two long screws. Do not over tighten the screws as damage to the main housing could occur.

Failure to use the rubber-retaining strap can result in the cards becoming unseated and erratic E-max behavior.

The memory card can fit between Slot 1 and the back plastic of the E-max. Use care not to place the memory card down inside the E-max unit.

## **5.12 Reloading or Upgrade of the Operating System – ESD**

### **CAUTION!!**

Order memory upgrade card for the O.S., HH770V0001 (P/N may change due to revisions)

**This procedure can erase all gaming packages and existing software in the E-max.**

Refer to figure 5.9

1. Place the handle and the base or keyboard in the down position.
2. Discharge the new memory card, the E-max, and yourself to a common metal surface.
3. Remove the battery door or AC door using procedures already described above.
4. Place the E-max unit in its normal upright position sitting on the base or keyboard.
5. Remove the two, very long screws from the dome lens.
6. Remove the dome lens.
7. Unhook the rubber-retaining strap from the white nylon support.
8. If a memory card already exists, push the small black ejector button for the memory card (there are two buttons, one for the memory card and one for the radio card) and remove the memory card from the connector housing. Note: It may be easier to remove both radio and memory cards at the same time.
9. Insert the O.S. Software upgrade memory card into the connector, which is farthest from the circuit board (slot 1). The memory card and connector housing are polarized. Make sure it is fully seated.
10. Press the Reset button in the battery compartment. (Location is illustrated on the E-max Instruction sheet)
11. The display should show the EGC logo screen and the software will indicate on the display when it is done reading programs from the upgrade card, and then instructs you to remove the upgrade card.
12. Remove the software upgrade memory card by pushing the small black ejector button for the memory card (there are two buttons, one for the memory card and one for the radio card) and remove the memory card from the connector housing.
13. When the card is ejected, the screen will display the button Clear Flash for a few seconds. Push the button and the program will automatically proceed to build an operational environment the same as what was loaded from the EGC factory. If the button is not pushed, the program will use what is already loaded in flash memory.
14. The Log-in screen should be displayed.
15. If there was a previously installed memory card, insert the original memory card back into the connector, which is farthest from the circuit board (slot 1). The memory card and connector housing are polarized. Make sure it is fully seated.
16. Stretch the rubber-retaining strap over the memory card and hook it onto the white nylon support.
17. Install the dome lens and secure with the long screws. Do not over tighten screws as damage to the main housing could occur.

Failure to use the rubber-retaining strap can result in the cards becoming unseated and erratic E-max behavior.

Refer to the System Administration Manual to reload or upgrade to bingo applications other than what is loaded as a default in the O.S. upgrade card.

## Audit Information

This chapter describes E-max operations concerning:

- Package loading
- Modes of play and RF network failure
- Player controls
- Gaming logic
- Caller's Choice
- Special player feature
- Voids
- Reloads
- Deleting of packages
- Game logging
- Security
- Charger operations
- Routed system

Also refer to the E-max Bingo Console and Load & Track manuals for further information.

### 6.1 Package loading

1. When the unit powers on, it is at a log in screen and contains no bingo faces or other data that is related to being purchased for the bingo session.
2. It can not exit the log in screen for play unless all of the following conditions have been met:
  - a. A bingo session has been activated on the E-max Bingo Console
  - b. A sale of an electronic package to a player has been made on the E-max POS or Load & Track.
  - c. The player that the package was sold to swipes his magnetic player card or keys in the number of his magnetic card or keys in the E-Face ID from the receipt.
  - d. The E-max unit sends a request to the Console for the purchased package for the player and it also sends its Device ID with the request.
  - e. The Console sends that player's specific package to the specific E-max with that Device ID.

- f. The E-max unit receives the information, confirms no data errors, checks the Device ID for a match, and successfully extracts the data from the package and builds the bingo session.
- g. The E-max checks the session duration against its available battery capacity and decides that it can complete the session.
- h. At this point, the main bingo play screen appears

## 6.2 Modes of play and RF network failure

There are three modes of play, all supported by an RF network:

- 1. Auto daub
- 2. Semi-Auto daub
- 3. Manual key entry

The RF network communications opens the session, loads packages, calls balls, jumps to proper game number, does voids and reloads, specifies dynamic changes to the game, and closes the session.

The unit plays **only one mode** specified by the package that was downloaded.

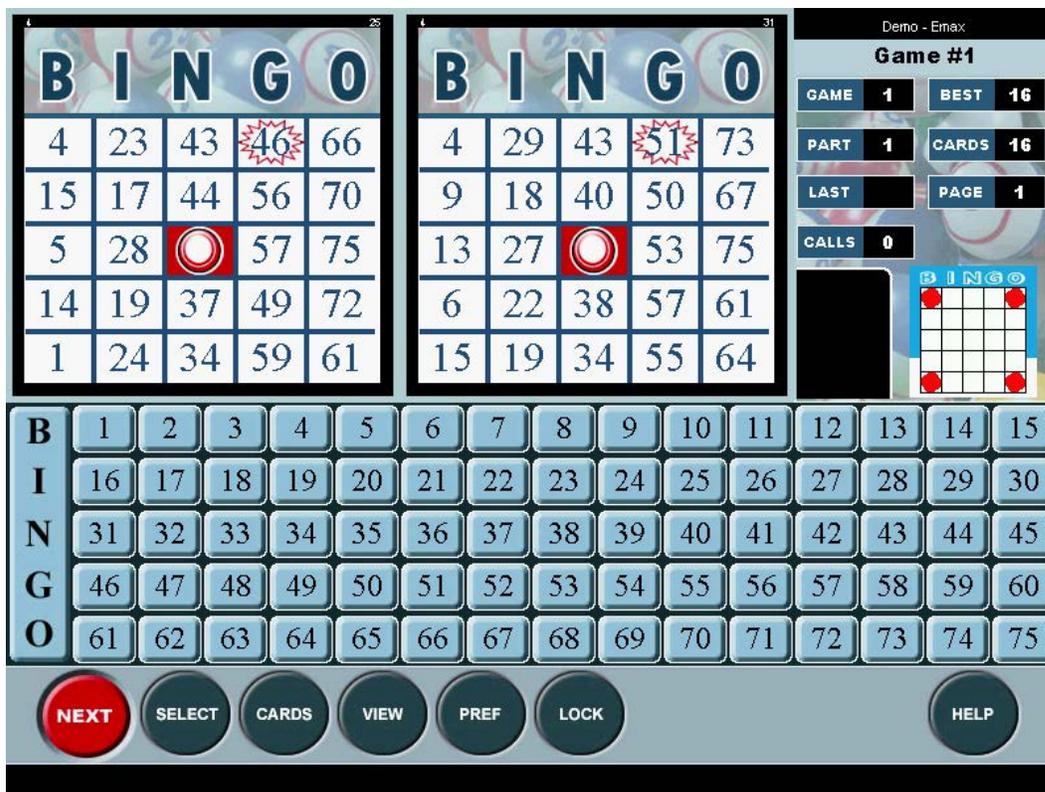
- 1. In Auto mode
  - a. The player cannot daub balls or change game numbers.
- 2. In Semi-Auto mode
  - a. The player cannot change game numbers but is expected to manually daub balls.
  - b. Each ball as called by the RF network must be daubed using the touch panel or keypad
  - c. If not daubed and another ball is called, the un-daubed balls stack up and must eventually be daubed, one at a time. A player stacking un-daubed balls runs the risk of not winning a game when the system is using last ball called win logic.
- 3. In Manual mode
  - a. Unit will recognize open session, void, reload, and close session network commands
  - b. Packages can be downloaded via the RF network
  - c. Balls are not called by the RF network
  - d. Player must manually daub Console operator called balls using the touch panel or the keypad
  - e. Unit does not respond to dynamic game changes such as callers choice
  - f. Player must manually advance to the next game or manually jump to a specific game number.

Depending on the complexity of the win pattern and number of cards loaded on the unit, the entire E-max system in Auto mode can call a new ball at the Console and the E-max gaming unit will finish daubing, sorting, and displaying cards in a 1 to 2 second timeframe. The system can play coverall Speed ball games and provide the player with a valid win indication before the next call.

If the RF network fails in Auto or Semi-Auto modes, after approximately 30 seconds, the unit automatically reverts to Manual mode play. The player is alerted of this change in mode by a message displayed on the screen, a red blinking dome light, and an audible alarm sound. The unit will remain in Manual mode until the **Next** game button is pressed. At that moment, the unit will check for restoration of the RF network, and if good, will return to its previous mode of Auto or Semi-Auto and automatically update its gaming state and called balls to match the state of the Console. If the network is still disabled when the **Next** button is pressed, it remains in Manual mode.

### 6.3 Player Controls

The player's main screen appears as follows:



**Next** button- advances game to next game. Disabled in Auto and Semi-Auto modes.

**Select** button- allows player to select a game number and jump directly to that game. Disabled in Auto and Semi-Auto modes.

**Cards** button- allows player to cycle through and view all cards that are loaded.

**View** button- allows player to select the view of 1, 2, or 8 cards on the display.

**Pref** button- allows the player to select dauber images, adjust sound volume, and change theme images. The button is grayed out and disabled when the unit is one ball away from a win to prevent missing a win while selecting preferences. A Preference pop up screen is shown below.

**Lock** button- this returns the player to the log in screen and prevents anyone from tampering with the unit. The player must enter the E-Face ID or swipe his player card to unlock the unit and return to the player's main screen. While in lock, the unit does continue to play Auto mode bingo and will alert the player of a win condition.

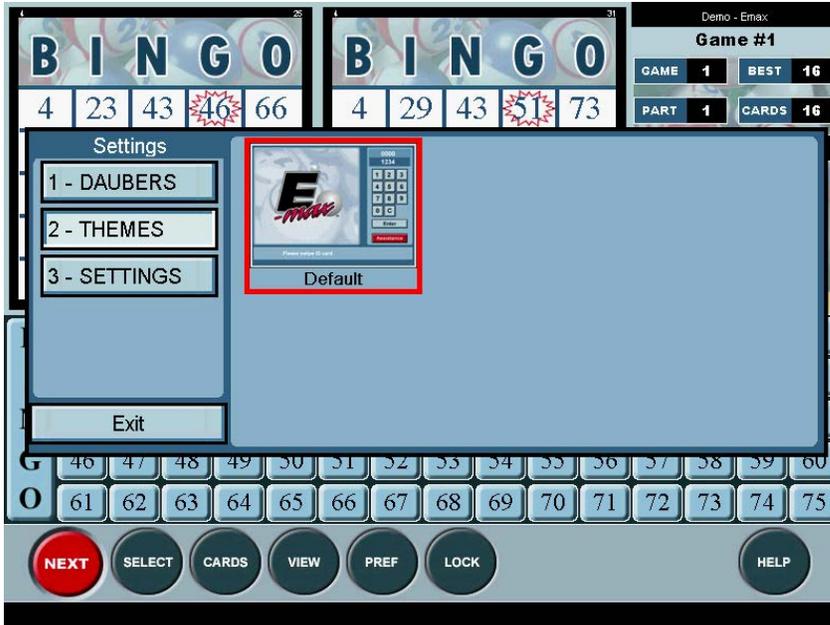
**Help** button- this button turns on the red dome light for player assistance.

In Manual mode, the player can touch the number on the displayed flashboard to daub or un-daub the number. However, this is disabled in Auto and Semi-Auto modes.

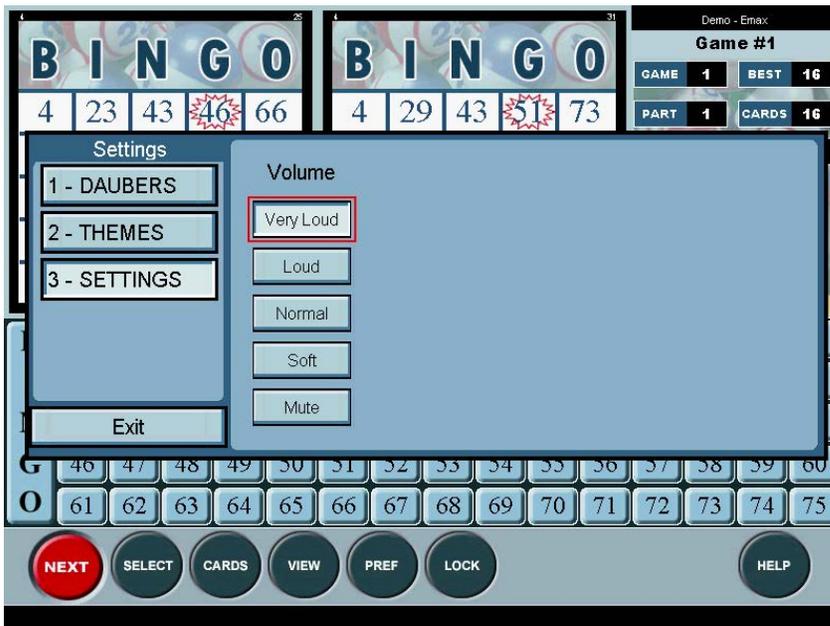
Also, on Wild games, the BINGO button on the far left will be red and say WILD instead of BINGO. Player touches the WILD button to daub to wild balls.

Preference pop up screens:





Other thumbnail pictures of themes may be present depending on how your system is setup.



Note that the Console max setting of audio volume is downloaded with the package. The unit prevents the player from adjusting the volume above the maximum setting that the Console specified.

In addition to the above touch panel controls, the player can also use the keypad.



**NEXT**, **SEL**, and **CARD** are identical in functionality to the touch panel buttons.

**DEL** is used to un-daub a ball or delete an entry.

**CLR** deletes an entry

**ENT/DAB** terminates the entry of characters or daubs the ball

The four **CURSER** keys position the video curser on the display. If **ENT/DAB** is then used, it will perform the function that the curser was on.

#### 6.4 Gaming logic

1. When a ball is called, the unit automatically daubs all cards in play, ranks and sorts all cards for best possible chance of winning the pattern, then displays the best of the cards.
2. The unit will Auto daub all balls associated with Wild ball games of several different types.
3. The unit supports games with multiple parts such that the flashboard is not cleared after a win on the first part and ball calling continues until another win occurs on the next part.
4. When the win pattern for a game is composed of a combined pattern, the Console setup can specify in the download package a mode that allows the gaming unit to automatically delete the one portion of the combined pattern that won and then proceed to the next part of the game using only the remaining portion(s) of the combined pattern. If the number of game parts exceeds the number of items combined within the pattern, the unit always defaults to one of the portions of the combined pattern to eliminate the possibility of having no pattern for the game part.
5. The unit has ball memory retention for any game in the session. The unit can automatically jump to any game having pre-called balls at any point in the schedule and the balls called and the win state of the game will be exactly the same as when the game was last exited. This mode supports Bonanza pre-calls and going back to verify a contested win.

6. If a card(s) is only 1 ball away from winning the pattern, the unit will provide an audible sound and display the list of numbers needed to win on any of these cards in a window near the rotating pattern.
7. If there is a win on the pattern, it checks to see if last ball logic win is enabled or disabled.
8. If still a win, the unit will provide an audible win sound (if Console setup allows), turns the green dome light on (if Console setup allows), and displays a Win screen with a list of the free space number(s) of the face(s) that won.
9. If the player presses the Verify button on the Win screen, the unit will display the image of the winning face(s) and free space number(s).
10. On the Verify screen, if the player presses the Winner (1) button, that exact winning pattern will be deleted on the winning card face to prevent a same win again and the game returns to the player's main screen. The (1) indicates the equivalent keypad number to use for the button. Normally the Winner button is only used in Manual mode since in Auto and Semi-Auto modes, the system automatically advances gaming from the Win or Verify screen back to the player's main screen.
11. On the Verify screen, if the player presses the No Winner (3) button, the pattern will not be deleted and the game returns to the player's main screen. If last ball logic is not being used, on the next ball called, the old pattern will win again. The (3) indicates the equivalent keypad number to use for the button. Normally the Winner button is only used in Manual mode since in Auto and Semi-Auto modes, the system automatically advances gaming from the Win or Verify screen back to the player's main screen.
12. In Auto mode, for Second Chance bingo, the Console sends a command to the unit functionally equivalent to the Winner button to allow returning to the player's main screen and calling additional balls such that another person is allowed to win that game.
13. In Auto mode, if the last ball called caused a win and the last ball, or any other ball called in the winning pattern, was then cancelled at the Console, the unit will automatically cancel the win and return to the player's main screen.
14. In Semi-Auto mode, if the last ball is cancelled, the player must manually acknowledge it. If any ball, other than the last ball, is cancelled the unit automatically un-daubs the ball.
15. By use of color types in the border area of the winning face, the Verify screen does indicate the payout level (not dollar amount) for special perms such as Spectrum.
16. The unit also displays special number positions such as the Starburst perm. If the last ball called causing a win is also on a special number position, the color of the square changes to indicate there may be a special payout involved.

### **6.5 Caller's Choice**

Caller's Choice involves special gaming logic in that the predetermined win pattern downloaded in the package will be changed by the caller for a specific game. The Console allows the caller to change the win pattern for certain games containing a combined pattern. When the pattern is changed by the caller, the Console sends the new win pattern information to the unit and it dynamically changes to the new win pattern. Rules concerning auto delete of portions of a combined pattern are still in effect when advancing to the next part.

### **6.6 Special player feature**

The E-max Player Tracking system on the E-max POS or E-max Load & Track may have information on a player's birth date or anniversary date. If the player purchases a package and one of these two dates are valid, the Console will include in the package download, an indication that for this player only, on his E-max unit only, a congratulatory birthday or anniversary picture is to be displayed during gaming. The actual picture is not included in the package download.

### **6.7 Voids**

When the unit needs to be taken out of service after a package has been downloaded, the original sales receipt must be taken to the POS or Load & Track station. The operator will select that receipt and execute a void. The void command is sent over the network to the specific E-max Device ID that held the package belonging to that receipt. The unit will automatically delete the package and return to the log in screen with no knowledge of previous gaming remaining in memory. If the unit becomes non functional during gaming, place it in the charger, reset the unit, or repair the unit.

### **6.8 Reloads**

The POS and Load & Track stations allow the same identical package already loaded on one unit to be transferred to another unit. The original sales receipt must be taken to the POS or Load & Track station. When Reload is executed at the station, the delete package command is sent over the network to the specific E-max Device ID that held the package belonging to that receipt. The unit will automatically delete the package and return to the log in screen with no knowledge of previous gaming remaining in memory. The exact same package is then enabled to be loaded on another unit.

## 6.9 Deleting of packages

There are several ways to delete a package from a unit

1. Void as described above
2. Reload as described above
3. When the Console sends a network End of Schedule command
4. When the unit is put into a charger
5. When the Package Expiration Time has elapsed. (Defined by Console setup and downloaded with the package)
6. Use the Lock button, Swipe an Administration card on the unit, enter a password, and via the Manager screen, under Package Management, use the Expire Package button. Note that the password is defined by Console setup and downloaded with the package.
7. When the unit is routed and in the transport position for more than 10 minutes (see discussion below in section 6.11)

## 6.10 Management information screens

These screens can be used to verify what software revisions the unit is running, what has been loaded into the machine from mass downloads and purchased packages, network information, power source status, and logging of gaming data such as ball calls and game actions.

### 6.10.1 Game logging

Entering the Manager screen as noted above allows access to the Logs screen containing the following information:

#### **Ball Calls** button

Time stamp, how ball was called/uncalled (keyed or network) and last ball number

**Clear** button (Console can also broadcast Clear command with no active schedule)

#### **Game Actions** button

Time stamp, activity jump trace, unit locked, mag card swiped, etc

**Clear** button (Console can also broadcast Clear command with no active schedule)

#### **System Errors** button

Time stamp, error issue

**Clear** button (Console can also broadcast Clear command with no active schedule)

### **6.10.2 Package management**

Displays most all of the information downloaded in the package and allows manual deletion of the package.

#### **Package info:**

Expire Package button  
Time remaining to expiration of the package  
E-Face ID  
Player Card number  
Schedule length

#### **Player info:**

Player ID  
Player name  
If celebrating anniversary and picture number to display  
If celebrating birthday and picture number to display

#### **Hall info:**

Package download time stamp  
Package expiration time  
Max cards allowed in unit  
Max volume setting allowed  
Last ball win enabled/disabled  
Win Dome light enabled/disabled  
Win Sound enabled/disabled  
Marquee speed  
Default theme and dauber  
Backlight brightness  
Routed unit or not

#### **Session info:**

Name  
Description  
Number of activities loaded  
A list of each game number with  
    Game ID  
    Game color  
    Boarder style  
    Number of cards in play  
    Game Parts  
        Number of Pattern combinations in play  
        Wild game or not

### **6.10.3 Unit configuration**

- Audio setting
- Theme thumbnails
- Anniversary pictures
- Birthday pictures

### **6.10.4 Power information**

- Indicate if AC line powered
- If battery power
  - Remaining battery charge
  - Power consumption and temperature data
  - Other internal battery pack data

### **6.10.5 Network information**

- SSID Network number
  - Default standard is the Control network
  - Allows customization of the network ID for specific halls
  - Behind each high level number shown is a 64 bit network ID that is unique to EGC networks
- Gateway 10.250.250.250
  - This is a fixed gateway to an E-max Console that the gaming unit is forced to talk to
- IP Address
  - The gaming unit has a fixed IP address. The E-max system does not use DHCP services as part of the security measures.
- Mac address
  - Internal address of the radio
- Radio firmware version
  - Internal manufacture's driver software revision level
- Signal strength
- Signal quality

### **6.10.6 Unit information**

- Bootloader software version
- Operating System software version
- Application software version
- Mass downloader (MDL) software version
- Micro controller software version
- Device ID

## 6.11 Power and transport conditions

The E-max gaming unit can transition into and out of three different power states:

1. Full power, run mode, everything active, gaming unit in normal upright playing position
2. Reduced power, run mode, display off, responsive to gaming, unit in folded up flat transport position
3. Near zero power, Suspend mode, not responsive to gaming, unit in folded up flat transport position
4. Unit in charger (folded up flat in transport position)

### Typical use of the unit:

When the unit is removed from the charger, it is in a near zero power, Suspend state.

1. Placing the unit in the upright normal playing position quickly wakes up the unit and transitions it into a full power run mode. The unit can be downloaded and play games in this position.
2. Once a package is loaded, the unit will not go into Suspend state unless put into a charger.
3. If a package is loaded and the unit is placed in the transport position, the display will power off but the unit remains responsive to the network and will continue to Auto daub and alert the player of a win. If the unit is returned to its normal playing position, the display will quickly turn back on.
4. If there is no package loaded and the unit is placed in the transport position, the display will power off. After 10 minutes in this state, the unit will transition to the Suspend state. If the unit is returned to its normal playing position within the 10-minute window, the display will quickly turn back on.
5. Routed unit exception- if the Console specified in the downloaded package that the E-max unit was to be routed, the following applies: If a package is loaded and the unit is placed in the transport position, the display will power off but the unit remains responsive to the network and will continue to Auto daub and alert the player of a win for a period of 10 minutes. If the unit remains in the transport position for more than 10 minutes, the package is deleted and the unit transitions to the Suspend state for transporting to another bingo hall. If the unit is returned to its normal playing position within the 10-minute window, the display will turn back on.

## 6.12 Charger operations

When charging, the unit dome light blinks red and the main computer in the unit is in a power off state. When fully charged, the dome light blinks green. When the charger has detected the battery is fully charged and transitions from red to green on the dome light, the unit does a cold, power on boot to reset the entire unit while in the charger.

After booting, the unit reports itself to the network and logs onto the Console. The unit then goes into Suspend for a period of 10 minutes. Every 10 minutes thereafter, the unit wakes up in the charger and reports to the Console.

If the unit is fully charged and blinking green when it periodically wakes up, it also checks the network for an active schedule. If the schedule is active, it will blink yellow until the schedule is deactivated. It will then return to blinking green.

### **6.13 Security**

1. Other than the Infra red (IR) port used specifically for download of the package data, there are no other communication ports exposed on the gaming unit to minimize intrusion points. The IR uses a rigid protocol that does not allow access to internally stored programs and the communication program checks the data received for specific format and errors before used for gaming.
2. There is no power on/off switch or reset switch exposed to the player, or player removable battery pack that may cause packages to be deleted or corrupted.
3. The network radio card is secured internally and not accessible by the player
4. Player has Lock button function and player magnetic card or receipt E-Face ID to access the play screen on the unit
5. Player can not view or use any management functions provided on the unit
6. Management can not access the unit during play except from the Lock screen where the player has relinquished control of the unit.
7. Management must have a special magnetic card and a password to acquire the management control and display screens
8. The EGC Easy ID player and manager magnetic cards have unique numbers and data format designed specifically for EGC. The unit checks every card swipe for these special numbers before allowing access to the unit. Common credit cards, driver license cards, fun park admission cards, and etc are rejected.
9. There are no pre-loaded faces or other pre-loaded gaming information stored on the unit. That includes NO perms, faces, patterns, game numbers, and payout information. A schedule must be activated, all gaming data must be purchased, and then the package is downloaded into the unit. There is no secret password or codes that the player or manager can key into the unit to enable more gaming capability than what the player purchased at that specific, active schedule.
10. Once a schedule is activated, the system broadcasts a unique schedule ID to all gaming units. Any package that gets downloaded or any ball called must have this schedule ID present in the network communication for the gaming unit to execute any gaming action with the command or data provided over the network.
11. Once a package has been downloaded into a unit, the system disables the package from being downloaded again unless the reload function is invoked at the POS. Also, once a package is loaded, the gaming unit does not present a method to load additional packages.
12. Here is a summary of the E-max system and network security features:
  - a. RF network:
    - i. Uses 802.11 network protocol
    - ii. Uses 128 bit WEP encryption
    - iii. Uses EGC specific network SSID
  - b. Each gaming unit has a unique fixed IP address and must be within a range of IP addresses for EGC operations (no DHCP services in the system)

- c. Each E-max Console, POS or Load & Track, printer, and RF Access Point (AP) must be on a fixed, specific, pre-assigned IP address
- d. The E-max Console, the E-max Load & Track or E-max POS, and the E-max RF Access Point (AP) are on a single, isolated, wired Ethernet network. The wiring is accomplished by using E-max Net Switch boxes that have the network switches and the AP power supply and injectors securely housed in a metal box. All network connections are clearly labeled indicating what they are connected to. This results in visually verifiable network connections and is considerably different than a bundle of unmarked network cables going between unmarked multiple devices typically found at installed bingo hall sites.
- e. The single, wired Ethernet network does not connect to any other system devices that allow external access to the network such as modems, or other PCs.
- f. The network gateway is a 10.xx.xx.xx which means it is not a routable network
- g. Use of a Console or POS other than those manufactured by EGC, and not an integrated part of the E-max system, will not be able to download packages into the gaming unit.
- h. Of all the E-max system elements, only the E-max Console has a dedicated phone line modem port that connects to the external world. The phone line software is dedicated to report retrieval only and does not allow and is not vulnerable to external control of or hacking into the E-max Console programs or data base. There are no standard or custom programs such as PC Anywhere resident on the system.
- i. The network setting and configuration of the AP is protected by an EGC password. The AP must also be disconnected from the network to alter its settings.
- j. Multiple APs installed in the system are ALL wired back to the EGC Net Switch boxes for clear visual indication of how many APs are wired to the network.
- k. The Net Switch boxes are powered from the E-max Console UPS system such that the network remains active during momentary power interruptions.
- l. The POS and Load & Track also have UPS backups
- m. The E-max magnetic card and password security system, common to all products of the E-max system, provides a consistent and secure means to prevent operators or other unauthorized personnel from changing important system settings that could affect gaming.
- n. All E-max system products have an EGC program shell above the Operating System environment. From this shell, users and intruders can not get to Explorer or other similar programs or the hard drives to add or alter programs or the database.



## Spare Parts

### Battery power unit:

|        |                                     |
|--------|-------------------------------------|
| HH217  | Battery pack* (Not for future use.) |
| HH763  | Battery compartment door            |
| HH1168 | Battery pack                        |

### Line powered unit:

|        |                                     |
|--------|-------------------------------------|
| HH1011 | AC Adapter                          |
| HH764  | AC door for the battery compartment |
| HH1071 | 9v battery backup card              |
| HH1171 | 9v replacement battery              |

### Common to both battery and line power units:

|       |  |
|-------|--|
| HH768 | Handle kit                                   |
| HH769 | Dome lens                                    |
| HH760 | Base   |
| HH761 | Keyboard                                     |
| HH677 | Radio card                                   |
| HH770 | Memory card – 64MB                           |
| HH179 | Outer pivot (need 2 per base or keyboard)    |
| HH223 | Shoulder screw (need 2 per base or keyboard) |

## Accessories

|            |   |
|------------|---|
| HH770V0001 | Memory card for Operating System software upgrade |
| HH1058     | Cleaning card for the magnetic card reader        |
| HH759      | Stereo headphones                                 |
| HH920      | Charger Module for 6 units                        |
| HH922      | Charger Cabinet for 36 units                      |
| HH936      | Transportation cover for Charger Module           |
| HH982      | Plastic tote bin, hold 6 units                    |

## Related Manuals

|        |   |
|--------|---|
| HH997  | E-max Instruction Sheet                             |
| HH951  | E-max Charging System Operator / Maintenance Manual |
| HH1137 | E-max Charger Module Instruction Sheet              |
| HH813  | E-max Electronic Bingo Console Operator Manual      |
| HH1213 | Load & Track Operator Manual                        |
| HH1230 | E-max System Network Installation Manual            |

# Model Part Number Matrix

Define the desired E-max options, locate all of the options (X) where they exist on a single horizontal row, and read the correct E-max P/N on that row.

Example:

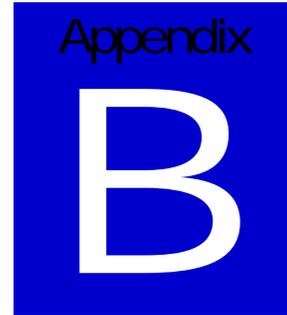
E-max with keyboard, battery, and radio is a HH750V0007.

For E-max units that are RF networked or no network:

| P/N        | STD Base | Keyboard | Battery | Line | Radio | Memory |
|------------|----------|----------|---------|------|-------|--------|
| HH750V0001 | X        |          | X       |      |       |        |
| HH750V0002 | X        |          | X       |      | X     |        |
| HH750V0003 | X        |          | X       |      | X     | X      |
| HH750V0004 | X        |          |         | X    | X     |        |
| HH750V0005 | X        |          |         | X    | X     | X      |
| HH750V0006 |          | X        | X       |      |       |        |
| HH750V0007 |          | X        | X       |      | X     |        |
| HH750V0008 |          | X        | X       |      | X     | X      |
| HH750V0009 |          | X        |         | X    | X     |        |
| HH750V0010 |          | X        |         | X    | X     | X      |

For E-max units on an Ethernet network:

| P/N        | STD Base | Keyboard | Memory |
|------------|----------|----------|--------|
| HH751V0001 | X        |          |        |
| HH751V0002 | X        |          | X      |
| HH751V0003 |          | X        |        |
| HH751V0004 |          | X        | X      |



## Specifications

Computer: Intel, 400 MHz with WinCE Operating System  
Display: 10.4" TFT color display, 800 x 600, with 5 wire touch screen  
Memory: 64 MB dynamic data memory, 32 MB flash program memory  
Expansion memory: PCMCIA memory card, 64 MB, Optional  
Dome light: Multiple Red and Green LEDs  
Communications:  
    Infrared port, approx 1 Mbps  
    RF, 802.11, 1 Mbps to 11Mbps, PCMCIA card, Optional  
    Ethernet, 10baseT throughput with 100baseT network compatibility, Model variation  
Magnetic card reader: Integrated in the main housing, reads tracks 1 and 2.  
Audio: Stereo speakers with stereo headphone jack, microphone input, sound chip  
Base: Short base for small playing tables, no keys, Optional  
Keyboard: 20 key, rubber keypads, Optional  
Power source: (use EGC custom parts only)  
    Lithium Ion battery pack, 7.5V, 9.6 AHR, Optional  
    AC line adapter, 10VDC output, 90-240VAC, 50-60Hz, 0.2A input, Optional  
    AC 9V backup card, Optional  
Battery Life: 9 hours minimum, continuous play, all features  
Charge time: 9 hours or less  
AC line loading: 150 AC powered E-max units per 115VAC, 20A circuit  
Suspend time with loss of power:  
    Battery powered: Approximately 60 seconds  
    Line powered: Approximately 1 hour  
Housing: Rugged Lexan  
Operating and battery charge temperature range: 5C (41F) to 40C (104F)  
Table top footprint:  
    9.5" wide x 6.3" deep without keyboard  
    9.5" wide x 9.5" deep with keyboard  
Height: 12.6"  
Weight: less than 6 lbs with battery, all features  
Approvals:  
    FCC Part 15, Class A  
    FCC ID: SVO20101904  
    Gaming Regulatory: Call EGC TAC center to get the latest information

All specifications are for reference and are subject to change without notification.



## Dome Light Chart

| Condition or Event   | State of Dome Light                    |
|--|--|
| <b>In Charger:</b>   |  |
| Charging   | Red - slow blink rate (quick flash)    |
| Completely charged   | Green - slow blink rate (quick flash)  |
| Completely charged and schedule active                     | Yellow - slow blink rate (quick flash) |
| <b>During Play:</b>  |  |
| Idle   | Off                                    |
| Player hits Assistance button on touch panel               | Red - - medium blink rate              |
| Player hits Assistance button on touch panel a second time | Off                                    |
| While attempting to download package                       | Yellow - medium blink rate             |
| Download successful  | Off                                    |
| Error when downloading                                     | Red - medium blink rate                |
| Player wins, on win screen                                 | Green - medium blink rate              |
| Player on Verify screen                                    | Green - solid                          |
| RF link failure or other types of failures                 | Red - solid                            |
| <b>During Device Test:</b>                                 |  |
| Start of test  | Yellow - medium blink rate             |
| Successful completion of registering with the Console      | Yellow - solid                         |
| Register Error   | Red - solid                            |
| <b>During Mass Download:</b>                               |  |
| Start of test  | Yellow - medium blink rate             |
| Successful completion of registering with the Console      | Yellow - solid                         |
| Register Error or other errors                             | Red - solid                            |
| Got all data packets, ready for reboot and install         | Green - solid                          |