



T E C H 2 0 0 7

Ion Hardware

Motherboard: N-Force (ECS)

- CPU: AMD 1.2 GHz
- Memory: 128MB PC2700 DDR 333MHz (DDR – Double Data Rate)

Note: The motherboard does not emit an audio tone when DDR DIMM is defective or not seated correctly.

Note: No video or sound: Try reseating DDR DIMM and CPU on the motherboard.

I/O board: Titan I/O board: 4 LEDs: D1, D2, D3 & D8

- Setup and calibration buttons are located on the I/O board and OSD board.

Force Hardware:

Motherboard: ECS

CPU: Intel Celeron 533\566 MHz

Memory: DIMM – Dual inline memory module (PC133)

I/O Board: 3 in 1 I/O & USB I/O Board

3 in 1 I/O board:

- Used EVO, Edge, Walleto & Fusion and are not interchangeable with the USB I/O board.

USB I/O (square I/O board)

- Used in the Radion, Elite, Vibe, Classic, 19" Upright & Mr. VIPs.
- USB I/O jumper settings for the FORCE Series games:

J5B - USB Port setting for Elite & Upright games.

J5A - USB Port setting for Radion & Classic games.

J5B



JP6 JP5

J5A



JP6 JP5

Note: If the jumpers are not set correctly, the I/O board will display an "Invalid Key" error.

Note: Check I/O board LEDs for voltages: Diodes D1: +3vdc, D2: +5vdc, D4: VSS & D3: USB VCC.

All four LEDs should be lit red. If not, an "Invalid Key" error will appear.

Setup and calibration buttons are located on the I/O board and OSD board.

Maxx Hardware

Motherboard: Mitsubishi, Itox, Telco 586, & Unicorn.

- CPU: Windchip, Rise. 200 MHz
- Memory: DIMM – Dual inline memory module (PC100)

Note: Telco 586 requires SIMMs.

I/O boards: Three versions: I/O Heavy, I/O Lite & I/O Mini & Riser board.

Difference between the I/O boards:

- I/O Heavy has sockets.
- I/O Light does not have sockets.
- I/O Mini is not interchangeable with the I/O Heavy or Light.

Note: I/O heavy and I/O light are interchangeable.

XL Hardware

Motherboard: DeAmeritek 486 & Telco 486

- CPU: AMD 66 MHz
- Memory: SIMM – Single inline memory module (Fastpage)

I/O board: CRT500 Zeus I/O Board & Riser board.

U11 - NVRAM DS1230 – Non-Volatile RAM. Retains game information (hi score, bookkeeping, etc)

U12 - EPROM – This is the operating system for CD-ROM based games and is classified as Drive C:\

- ERROR READING DRIVE D: U12 EPROM does not match the CD software version.

Operating system errors:

- OPERATING SYSTEM NOT FOUND: Indicates a problem with the DeAmertek motherboard.
- DISC BOOT FAILURE: Indicates a problem with the Telco motherboard.
- Hard Drive based games: The motherboard not communicating with the hard drive.
- CD-based games: The motherboard not communicating with U12 EPROM on the I/O board.
Check U12 EPROM for bent pins or damaged traces under socket.

Note: All DIPswitches DS2 & DS3 must be in OFF position.

Note: Earlier XL I/O boards have DS1 DIPswitches: 1, 4 & 8 must be in the OFF position.

Note: XL I/O board has small volume control incorporated on it. (Small blue disc)

SOFTWARE:

ION SERIES

ION 2006

Version: V20.00 – V20.27

Software: SA3505-XX // SA35XX-XX

- V20.00 requires V21.05 for Graphics over clock problem.

ION 2006.5

Version: V21.05

Software: SA3505-XX // SA35XX-XX

ION 2007

Version: V22.00 – V22.03

Software: SA3522-XX // SA3523-XX

SOFTWARE:

FORCE SERIES

FORCE 2002

Version: V8.00 - V8.06

Security Key: SA3050-XX

- V8.01, V8.02 requires V9.01 CD for calibration, audio, and high score problems.

FORCE 2002.5

Version: V9.00 - V9.01

Security Key: SA3050-XX

FORCE 2003

Version: V10.00 - V10.09

Security Key: SA3059-XX

- V10.00 - V10.07 requires V11.05 CD for credit, reboot, and lockup problems.

FORCE 2003.5

Version: V11.00 - V11.05

Security Key: SA3059-XX

FORCE 2004

Version: V12.00 - V12.10

Security Key: SA3068-XX

- V12.00 – V12.11 requires V13.00 CD for reboots and lockups.

FORCE 2004.5

Version: 13.00 - V13.10

Security Key: SA3068-XX

FORCE 2005

Version: V14.00 - V14.22

Security Key: SA3083-XX

- V14.00-V14.21 requires V15.02 version for "local host login" reboot problem

FORCE 2005.5

Version: V15.02

Security Key: SA3083-XX

FORCE 2006

Version: V20.00 – V20.27

Security Key: SA3501-XX // SA3504-XX

FORCE 2006.5

Version: V21.05

Security Key: SA3501-XX // SA3504-XX

FORCE 2007

Version: V22.00 – V22.03

Security Keys: SA3526-XX

64 Meg of DIMM (64512K) required Force 2002(5), 2003(5), 2004(5) 2005(5), 2006(5) and 2007.

MAXX SERIES

MAXX – First release

Version: R00, R01 – R06, V3.01 - V3.07

Security Key: SA3022-XX, SA3031-XX

- V3.01 requires V3.06 and V3.07 kits for lockup problems.

2K

Version: V4.00 - V4.01

Security Key: SA3035-XX

- V4.00, V4.01 require V5.01 for a calibration problem.

2K PLUS

Version: V5.00 - V5.01

Security Key: SA3035-XX

DIAMOND

Version: V6.01 - V6.05

Security Key: SA3042-XX

- V6.00 requires V7.02 for the Golf game-pricing problem.

DIAMOND2

Version: V7.00 - V7.02

Security Key: SA3042-XX

EMERALD

Version: V8.01 - V8.06

Security Key: SA3048-XX

- V8.01, V8.02 requires V9.01 for calibration, audio, and high score problems.

EMERALD2

Version: V9.01

Security Key: SA3048-XX

RUBY

Version: V10.00 - V10.09

Security Key: SA3056-XX

- V10.00, V10.07 require V11.05 CD for credit, reboot, and lockup problems.

RUBY2

Version: V11.00 - V11.05

Security Key: SA3056-XX

SAPPHIRE

Version: V12.00 - V12.10

Security Key: SA3065-XX

- V12.00 – V12.11 requires V13.00 CD for reboots and lockups.

SAPPHIRE2

Version: V13.00 - V13.11

Security Key: SA3065-XX

JADE

Version: V14.00 - V14.22

Security Key: SA3079-XX

- V14.00-V14.21 requires V15.00 version for “local host login” reboot problem.

JADE2

Version: V15.xx

Security Key: SA3079-XX

CROWN

Version: V16.xx

Security Key: SA3511-XX

Memory Requirements:

32 Meg of DIMM (32768K) requires Maxx 1st release, 2K(+), Diamond(2) & Emerald(2).

64 Meg of DIMM (64512K) required Maxx Ruby(2) & Sapphire(2) Jade(2) & Crown.

XL SERIES

CD: R0, R0A, R0B, R0C, R0D, R1, R2, R3, R3A, R3B, R3C.

Security key: SA3008-XX - R001, R002, R003, R004, R005 – Square key

EPROM: U11, U12, U12-R2, SA3014-03 U12-R3 / U12-R4.

XL5000

CD: R5A, R5B, R5D, R5E, R5G, R5H, R5I.

Security Key: SA3008-XX R006 – Square Key

EPROM: SA3014-03 U12-R3 / U12-R4.

XL6000

CD: R02, R04, R05, R07

Security Key: SA3019-XX R00 – Square key

EPROM: SA3014-04 U12-R00

XL GOLD

CD – R00, R01.

Security Key: SA3033-XX-R00 – Square key

EPROM: SA3014-04 U12-R00

XL GOLD

Hard drive: R01.

Security Key: SA3033-XX R00 – Square key

SA3039-XX R00 – Button key

XL PLATINUM

CD: V1.01, V1.02, V1.03.

Security Key: SA3046-XX-R00 – Button key

EPROM: SA3014-04 U12-R00

XL DOUBLE PLATINUM

Hard drive: V1.01, V1.02, V2.00, V2.01.

Security Key: SA3046-XX R00 – Button key

XL TITANIUM

Hard drive: V3.00.

Security Key: SA3052-XX

XL TITANIUM2

Hard drive: V4.00.

Security Key: SA3052-XX

Note: XL Gold CD R00: Will not work with Button security key (SA3039-XX R00), square key only (SA3033-XX).

Note: XL Titanium2: Final release of software for the XL Series.

Memory Requirements:

8 Meg of SIMM (8192K) required for R3 Series & XL5000

32 Meg of SIMM (32768K) required for XL6000, XL Gold, XL Platinum, XL Double Platinum & XL Titanium(2).

XL SOFTWARE

R3 SERIES

- R3A CD - Pix Mix Babes lockup, requires R3C CD.

XL5000

- R5B CD - Checkers lockup, requires R5I CD.

XL6000

- “Invalid Key Error”: CMOS time and date need to be set to current time period.
- “Insufficient Disk Space”/“0 Files Copied”/“Bad Command or Filename”: Indicate a conflict with EPROM at U12.
- R02 CD – If the disc loads and responds slowly, the R07 CD is required.
- Game reboots at files copied: Try reseating the SIMMs. 32768K memory is required.

XL GOLD & PLATINUM CD VERSION

- XL Gold CD-R00: If screen calibration drifts and then locks up, the R01 CD is required.
- Logo picture remains on the screen without changing: Insufficient memory. 32768K memory is required.
- Logo picture comes up and changes to an “Operating system not found” 512K Video Dram is required at U38. (DeAmeritek motherboards)

XL GOLD & XL PLATINUM HD VERSION

- If the game logo appears on the screen, then resets:
There is insufficient memory. 32768K memory is needed and the year must be set to 2001 or later.
- “Invalid Key Error”: Insufficient memory. 32768K memory is needed.
- “No Sound Driver Loaded: Insufficient memory. 32768K memory is needed.
- “Invalid Drive Specifications” (with a D:\ prompt flashing). Jumper JP1 (EPROM ENABLE) must be removed.
- If “Free Play” appears on the screen and cannot be changed through setup options, the date and time must be set to present time period.

XL PLATINUM CD & HD VERSION

- HD version: A calibration problem requires CDs PA0022-01 & PA0022-02, V2.00
- CD version: A calibration problem requires CDs Rev B PG3004-02 V1.02.

Note: Newer versions of Platinum software have a three-point calibration.

Once the two-point calibration is complete:

1. Press the icon reading LOW COLOR CALIBRATION; a single dot will appear on the screen,
2. Touch the dot for two seconds and remove your finger. The screen will return to the normal menu.

**Current versions will have the third dot come up automatically after the second dot.

CMOS CONFIGURATIONS

N-Force (ION)

- 1 - Plug a keyboard into the **purple port** connector (PS2)
- 2 - Power the game on. Press **DEL** to enter **SETUP**.
- 3 - Arrow over and down to **Load Optimized Defaults**.
- 4 - Press **ENTER**. Press **Y** for “**Yes**”.
- 5 - Press **F10**, Press **Y** for Yes.
- 6 - The system should reboot. Unplug the keyboard.

ECS (FORCE)

- 1 - Plug a keyboard into the **purple port** connector (PS2)
- 2 - Power the game on. Press **DEL** to enter **SETUP**.
- 3 - Arrow over and down to **Load Fail-Safe Defaults**
- 4 - Press **Enter**, select **Y** for Yes
- 5 - Arrow over and down to **Load Optimized Defaults**.
- 6 - Press **ENTER**. Press **Y** for “**Yes**”.
- 7 - Press **ENTER**. Press **F10** and then press **ENTER**.
- 8 - The system will reboot. Unplug the keyboard.

Mitsubishi / ItoX (MAXX)

- 1 - Plug in a keyboard and turn on the game.
- 2 - Press **F2** to enter **Phoenix BIOS Setup Utility**.
- 3 - Press **F9** to load **Setup Default**.
- 4 - At Setup confirmation, press **ENTER** with YES shaded.
- 5 - Press **F10**, save and exit.
- 6 - Press **ENTER** for confirmation with **YES** shaded, then unplug the keyboard.
- 7 - The system should reboot.

Telco 486 (XL) & Unicorn 586 (MAXX) (Telco 586)

- 1 - Plug a keyboard into **J4** (Telco XL) or **purple port** (Unicorn Maxx).
- 2 - Press the **DELETE** button to enter Setup.
- 3 - Select “**LOAD SETUP DEFAULTS**” Press **Enter**.
- 4 - Press **Y** for Yes, then press **Enter**
- 5 - Select “**STANDARD CMOS SETUP**”
- 6 - Press **Enter**. The settings should be as follows:
 - Date: Set to current date.
 - Time: Set to approximate time.
 - Hard Disks: All “TYPE” and “MODE” fields set to “AUTO”
 - Drive A: 1.44M, 3.5 in
 - Drive B: None
 - Video: EGA/VGA
 - Halt On: All, But Keyboard
- 7 - After all settings have been changed or verified, press **Esc**.

8a through 8d for boot sequence for Unicorn 586 only, for Telco 486 continue to Line 9

- 8a - Arrow down to “**BIOS feature setup**” Press Enter.
- 8b - Arrow down to “**boot sequence**”
- 8c - Use the **Page Up** or **Page Down** keys to change the sequence to: **CD-ROM, C, A**
- 8d - After all settings have been changed or verified, press **Esc**.
 - 9 - Press the **F10** key. Press **Y** for Yes.
- 10 - Press **Enter** and unplug the keyboard. The system should reboot.

DeAmertek (XL) Has 2” fan in upper right hand corner.

- 1 - Plug keyboard into J4. Power On. Press **DEL** to enter SETUP.
- 2 - Use DOWN ARROW to “**Load ROM Default Values.**”
- 3 - Press **ENTER**. **NOTICE** message will appear on screen.
- 4 - Press **ENTER**. Use UP ARROW to “System setup.”
- 5 - Press **ENTER**. Use DOWN ARROW to **Diskette Drive A**.
- 6 - Press PAGE UP until “**Not installed**” appears.
- 7 - Press **ESC**. Main Menu appears on screen
- 8 - Use DOWN ARROW to highlight **Boot Options**.
- 9 - Press **ENTER**. Press PAGE UP to **C: ONLY**.
- 10 - Use DOWN ARROW to “**Post Errors**” PAGE UP to **Disabled**, then press **ESC**.
- 11 - Use DOWN ARROW to **Green PC** feature, then press ENTER.
- 12 - A customized gray box appears. PAGE UP to **Disabled**
- 13 - Press ESC Press F10, **WARNING!** Appears on screen. Press **Y** for Yes
- 14 - Press **ENTER**. Unplug keyboard from J4. System should reboot.

HARD DRIVES:

Drive designations

Ion \ Force \ Maxx \ XL

Hard drives: (HD) HDD

Drive C:\ Hard drive

XL - CD based only

Drive F:\ - CD-ROM drive.

Drive C:\ - U12 EPROM located on the I/O board.

HARD DRIVE ERROR MESSAGES

Ion \ Force \ Maxx \ XL

- **Disc Boot Failure:** Indicates a defective hard drive.
- **Operating System Not Found:** Check the IDE ribbon cable from HD to motherboard. May indicate a defective HD.
- **Critical Error, Abort, Retry, Fail:** Indicates a defective hard drive or IDE ribbon cable.
- **CRC Error Reading Drive C:** Indicates a defective hard drive.
- **Smart Failure:** Indicates a defective hard drive.
- **Bad Command or File Name:** This may indicate a corrupted hard drive or motherboard. (Corrupt CMOS)

Note: Reloading the CDs/DVD may help correct the "BAD COMMAND or FILE NAME" error.

Note: Performing a CMOS configuration may also help correct a "BAD COMMAND or FILE NAME" error.

Ion:

- **Kernel panic VFS unable to mount FS 30.5:** Hard drive is connected to the Secondary IDE port.
Needs to be connect Primary IDE port (light blue connector)

Force:

- **Interrupt 18H Check cable...:** Indicates a defective hard drive.

Ion: 2006 \ Force: 2003 \ 2004 \ 2005 \ 2006 & Maxx: Ruby \ Sapphire \ Jade \ Crown

- **Error 64:** Indicates a defective hard drive.
- **Error 67:** Indicates a defective hard drive.
- **Error 97:** Indicates a defective hard drive.
- **Error 94:** Indicates that the hard drive is connected to the Secondary IDE.
 - Hard drive** must be connected the Primary IDE connector.
 - CD/DVD-ROM drive** must be connected to Secondary IDE port.

Corrupted hard drive error messages.:

- **Checking for bad blocks:** Possible corrupted hard drive.
- **Mounting other file system – failed:** Possible corrupted hard drive.
- **Rebooting to perform maintenance:** Possible corrupted hard drive.

Note: Reloading the software will reformat the hard drive and restore to factory default level.

Note: Ion: DIPswitch 4 & 7 procedure may restore an Ion hard drive.

Hard Drive checksum test:

1. Turn power off.
2. Turn on Dipswitch DS2 - 8.
3. Power the game up.
4. The test will run for about 20-25 minutes.
5. If the test passed, the game will go into attract mode.
6. If the test failed, a "Checksum Error" message displays. This indicates a defective hard drive.

Note: A hard drive can still be defective, even if it passes the hard drive test.

XL: Invalid drive specifications: Possible problem with the IDE ribbon cable or CD-ROM drive.

DOWNLOADING

CD \ DVD:

- Make sure the CD\DVD is installed correctly, with the logo facing up.
- Check the CD\DVD for scratches or defects. Try a different set of CDs or DVD.
- Make sure the CDs are of the same revision.

CD \ DVD-ROM:

- Jumper setting on the back of the CD\DVD-ROM drive must be set to MASTER (MA).
- Try a different CD\DVD-ROM drive to determine whether the existing CD-ROM drive is a problem or defective.
- **Error 13.9:** This error can indicate either defective set CD\DVDs or CD\DVD-ROM drive.
- Rebooting after download: The game will reboot after Linux* software is loaded.

A questionable CD\DVD-ROM drive may have a problem by not reading the disc correctly. Try a newer drive.

Note: The age and condition of the CD\DVD-ROM drive are factors in downloading problems.

CMOS CONFIGURATION:

- A problem with CMOS configuration can cause the motherboard to not recognize the CD-ROM drive.
See CMOS Configuration Settings page.

CONNECTION PROBLEMS:

- Make sure that the Centronics cable is connected correctly and pushed all the way down in place.
Try another Centronics cable.
- IDE ribbon cable: Use IDE ribbon cable connected between the CD\DVD-ROM drive and the motherboard.
Use the fan power connector to power the CD-ROM drive.
The IDE ribbon cable going to the motherboard will go to the Secondary IDE connector on the CD\DVD-ROM drive.
- **CD-ROM error:** CD\DVD-ROM must be to Secondary IDE port.
 - Hard drive IDE ribbon cable must be connected to the Primary IDE Port (top port) on the motherboard.
 - CD\DVD-ROM drive IDE ribbon cable connects to Secondary IDE port (bottom port) on the motherboard.

SOFTWARE:

- **CD1:** Loads to 51% and detects a hard drive error. Defective hard drive.
- **CD2:** Loads to about 82-87% before asking again for CD2 to be installed, This indicates that CD2 is defective.
- **CD3:** Is installed and ejects, asking for CD4: This indicates that CD3 is defective. Being there is no CD4.

Note: CD3 problem is only seen with Linux OS: 2004(5)/2003(5) & Ruby(2)/Sapphire(2)

<u>Maxx</u>	<u>Force</u>	<u>Ion</u>
Emerald: 2 CDs	2002: 2 CDs	2006: 1 DVD
Ruby: 2 CDs	2003: 2 CDs	2007: 2 DVDs
Sapphire: 3 CDs	2004: 3 CDs	
Jade: 4 CDs	2005: 4 CDs	
Crown Edition: 3 CDs	2006: 1 DVD	
	2007: 1 DVD	

TOUCHSCREEN CONTROLLER – Microtouch controllers.

- The game displays the **MERIT SOFTWARE LICENSE AGREEMENT** on the screen without the “**Accept**” and “**not-accept**” icons being displayed.
 - 1 - Make sure the green LED on controller is lit. Orange wire to +12 vdc and gray wire to black wire (ground)
 - 2 - Touchscreen controller drivers may not match the software version being loaded.

Note: A Microtouch controller acquired through a non-Merit distributor may not have the same drivers as a Microtouch controller that was used in dedicated Merit games. The controller may have been replaced in the past.

LOCKUPS \ REBOOTS

All games

Fans: Make sure fans are clean and clear of dirt. On the CPU chip, power supply (if any) and hood, etc.

Ion: Screen messages:

- Screen displays “**Sub D disconnect**” or **No Input signal**, check connector” message. Try reseating DIMM.
- Game boot ups to the “**Merit Industries, Inc**” screen on power up:
A defective hard drive or Centronics IDE cable can cause this problem.
Disconnect IDE cables and power game up. Disc boot failure should appear on the screen.

Memory: Physical memory: Ion (DDR) \ Force & Maxx (DIMMs) \ XL (SIMMs)

- Defective DIMMs or SIMMs can cause games to lock up or reset and can also create graphics problems.
- Continuous repeating tone or tones may indicate a hardware memory problem with the DIMM.
Try reseating or replacing the DIMM(s)
- Check and reseat SIMMs. Check for good or bad SIMMs by reading the memory numbers.

Memory corruption: Corrupted Software or missing files on the hard drive.

- Corrupted software on a hard drive can also be responsible for games rebooting and locking up.
- Clearing memory or reloading the CDs may help correct the problem. *Refer to memory clear section.*
- Some software versions had problems with lockups and reboots. *Refer to Tech2007 for software revision.*

Hardware:

- Motherboard: A defective motherboard can be responsible for lockups and reboots.
- Hard drive: Problems with age and physical condition are factors. 24/7 operation.
- Power supply can create problems with lockups and reboots.

Note: If the fan in the power supply has failed, it is recommended that the power supply be replaced.

Voltage: Location / wall outlet / grounding.

- Heavy devices: A refrigeration unit (beer box) or compressors on the same line will cause lockups.
- Poor line voltage: The location may have a problem with poor wall voltage or grounding with electrical system.
- Reversed polarity at the wall outlet will effect game operation.
- Improper wall voltage or low voltage can be a factor.
- Neon Lights: Can produce disruptive line noise.
- Proper grounding is necessary for normal game and touchscreen operation. Proper grounding is also a safety issue.

Monitors & Touchscreens: Games with CRTs.

- Touchscreen cable should not be positioned under or on top of the yoke of the monitor.
- Touchscreen controller cable should not be positioned near the flyback transformer.

Maxx \ XL

Contact connection:

- Dirty edge pins on the I/O and riser boards.
- Dirty edge pins on SIMMs or DIMMs.
- IDE ribbon cable: Dirty pins or defective due to age.

XL – (Causeway Error 9 & 11)

- Check for scratched or faulty CDs.
- CD-ROM drive: Old and defective.
- Defective IDE ribbon cable.
- Dirty edge pins on the I/O and riser boards.
- Dirty edge pins or defective SIMMs.
- No sound driver loaded: Possible defective motherboard assembly or insufficient memory.
- Memory corruption: Try a two-button memory clear.
- Defective motherboard and/or I/O board.

Note: A causeway error does not refer to any direct problem, but only indicates that a problem exists.

MEMORY CLEAR PROCEDURE

DIPswitches – Linux operating system: Ruby, Sapphire, Jade, Crown, 2003, 2004, 2005, 2006 & 2007.

DS4 & 7: Complete memory clear. Resets the game to the factory defaults. Clears ALL memory on hard drive.

DS6: Hardware configuration: Identifies system hardware and reconfigures the device drivers for the motherboard.

DS1: Four selection icons: DS6, DS8, DS4 & 7, DS5 & 7 for 2006 and 2007 only.

Reloading software – CDs or DVD

Reloading the CDs will reformat the hard drive and restore the software to an original default level.

Keyboard clear – DOS operating system. Hard drive based games only.

XL: Gold, Platinum & Titanium(2) / Maxx: 1st release, 2K+, Diamond(2) & Emerald(2) / Force 2002(5)

Turn off the game.

Plug in the keyboard into the top port PS2 or purple PS2 port and then power the game up.

Allow the game to boot up into the first menu screen.

Press the **ESC** key. The screen should display **C: MERIT2**

Type in **cd..** And press **ENTER**. **C:\ prompt** will appear.

Type in **del nvram.dat** and press **ENTER**. **C:\ prompt** will reappear.

Turn off the game and unplug the keyboard, then turn the game back on.

Note: Bad Command or File name appears, the **del nvram.dat** was not typed correctly

SECURITY KEY: Copyright protection device.

Invalid key error:

All Games:

- Check for a defective security key.
- Invalid Key for version: Software does not match key version.
- Corrupted hard drive: Reload software CDs.
- Corrupted CMOS configuration: Reconfigure motherboard CMOS configuration and check time & date.
Check CMOS configuration section Tech 2007 notes.

Force & Ion 2006

- Missing or wrong security key: Error message: **ERROR 1: INVALID KEY FOR VERSION...**

Force & Ion 2007

- Force Key Detected in ION System for version PG3002-01 V22.XX
- ION Key Detected in Force System for version PG3002-01 V22.XX
- No Security Key detected for version PG3002-01 V22.XX - No security key present.
- Invalid Key for version PG3002-01 V22.00 - Software does not match key version.
- Key Range Mismatch: Key and software do not match completely.

Note: "Fatal I/O error cannot access I/O board" this indicates no communication between motherboard to the I/O board.

Ion & Force:

- LEDs: Check LEDs on the I/O board: All four LEDs must be lit in order for the I/O board to function correctly.
- USB cable: Make sure USB cable is seated all the way at the I/O board and motherboard.
- Check for a defective I/O board, or if the I/O board was replaced, check the jumpers.
Refer to FORCE Series on Tech 2007 notes for I/O board (USB port)
- DIPswitch DS4 & 7: Memory clear. Corrupted hard drive. *Check Memory Clear section / DIPswitches.*

Force: Maxx Loading: Force game displays "**Maxx loading**" then goes to invalid key. To test whether the I/O board is being detected by the motherboard, turn the game off and put DIPswitch 6 (DS6) to the ON position. Then turn the game back on. If "**Maxx loading**" followed by invalid key again, this would indicate that the motherboard is not detecting the I/O board.

- Check and reseal the USB cable.
- Check for the four red LEDs on the I/O board.
- Check power connector on the I/O board.
- Corrupted CMOS configuration on the motherboard.

Maxx (Unicorn)

- Audio board: Check to see if the audio board is seated or installed correctly.
The socket on the Unicorn motherboard is larger than audio board connector.

XL / Maxx

- Check for dirty edge pins on I/O & riser boards or a defective I/O board.

Note: Invalid key error occurs when attempting a download of newer software, chances are that the new security key was installed first and the attempted download failed. This would indicate a loading problem.

Refer to DOWNLOADING page of TECH2007 for possible solution.

TOUCHSCREENS: (TS)

Microtouch:

- SMT-3 Controller: XL & Maxx games (white box)
- SMT-4 Controller: Force games only. (black box)
- USB Controller: Ion only (open face)

Function

- Green LED on controller lit is at half brightness and goes to full brightness when the screen is touched.
- Overlay functions on capacitance.

Note: Green LED is flashing from 1 to 5 times, self-diagnostics detected an error or the controller may be defective.

Note: Green LED is not lit: Check +12 vdc. The touchscreen and/or controller may be defective.

ELO Graphics: (XL & early Blue Maxx countertop games only)

- Controller is in a silver box. Requires +5.0 vdc.
- Overlay functions on SAW/Sound Acoustic Waves. Sound waves are reflected across the screen.
- Normal Operation: The green LED will flash constantly; LED lights steadily when the screen is touched.
- Touchscreen overlay has ridges around the edge that must be kept clean for the screen to respond correctly.
- Touchscreen cable is on left side of CRT.

Green LED is steadily lit:

- Check for objects that may be attached to the screen and make sure the bezel is dry and not stuck to the screen
- Check the grooves etched around the outside edge of the screen for dirt.
- The controller may be defective.

Calibration:

1. Locate and press the **CALIBRATE** button.
2. Touch the first dot or center of 4 arrows that appears on the screen for 2 seconds, and then pull your finger away.
3. Touch the second dot or center of 4 arrows that appears on the screen for 2 seconds, and then pull your finger away.
4. During the touchscreen test, the cursor should follow your finger anywhere you touch the screen.

CALIBRATION \ LOCKUP PROBLEMS:

Touchscreen:

- Problem with the entire screen: Recalibrate the touchscreen. If calibration is still off, replace the touchscreen.
- Problem in one area of screen: check for scratches or nicks on the screen: Replace touchscreen
- Loses calibration: Check the ground pin on the line cord. Replace AC line cord. Check AC wall outlet.
- Calibration off: DS6 to reload the device drivers. For Linux operating system.

Grounding:

- Improper grounding will affect the operation of the touchscreen.
- Double-touch problem: Taking two or three cards away as in Tri Towers & 11-UP after only one touch.
Make sure the A/C plug and wall outlets are properly grounded.

CRT \ Monitor:

- The touchscreen cable should not be positioned under or on top of the yoke of the monitor.
- The touchscreen controller cable should not be positioned near the flyback transformer.

Note: If the cable is not properly installed, touchscreen response will be 180 degrees out of sync.

Note: Microwave ovens and neon lights can and will interfere with the calibration of the touchscreen and should not be within 6 feet or 2 meters of the game.

Removal: Waxed dental floss.

Cleaning: Use only soft a cloth with water or denatured alcohol.

TOUCHSCREEN OVERLAY CONNECTOR

