



# **MPC-MLR MIL-Spec LCD Displays**



# **User Manual**

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

## Owner Record

Here is an easy-to-locate form to record the unit's serial number, and from the invoice, record the invoice date. The unit's serial number is located on the back panel.

If the unit ever requires service, please refer to this information when contacting the MarinePC Service Center.

Product	Serial Number					Invoice Date
MPC-ML__R	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	___/___/___

www.marinepc.com

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**MPC-MLR**

**Professional Grade  
All-Weather  
LCD Displays**

**User Manual**

**[www.MarinePC.com](http://www.MarinePC.com)**

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# Welcome.

With this purchase of an All-Weather Monitor, MPC-MLR Series, we welcome you to MarinePC's family of ruggedized professional marine grade products.

You shall soon become familiar with the quality difference in this bright sunlight-readable (<1nit to 1,000 nits) Monitor, specifically designed for use in harsh marine environments. MarinePC has incorporated the latest LED backlighting to increase brightness and super-low dimming without increased heat, and extends temperature shock and vibration specifications.

The MPC-MLR handles a wide-range of severe environments, making it the first choice of serious mariners for their demanding applications. Designed to be rugged, the 800x600 SVGA ( or 1024x768 XGA) High Resolution Flat Panel Display is engineered to thrive in the marine environment where you will put it to work.

Housed in a milled billet aluminum case, the slim-profile MPC-MLR is light weight and water-tight, with fully sealed (IP67) case and connectors. Engineered to be low-power to conserve power, the MPC-MLR has one RGB computer input and three Composite Video inputs, with a source select button that lets you quickly move between inputs.

You may have purchased the MPC-MLR with the optional Analog Resistive Touch Screen; within this User Manual are instructions for configuring this feature. Also available is a pass-through USB port.

Our MarinePC Service and Support Team is prepared to assist you – we are MarinePC.

# SAFETY

## General Safety Instructions

- Before operating the MPC-MLR Monitor, read this User Manual thoroughly
- Retain this User Manual for future use
- Verify the computer system capability (see System Set-up) to insure operation of the Monitor
- For expeditious installation, follow these User Manual instructions in the sequence presented
- Adhere to all Caution and Warnings on system parts and as stated in this User Manual
- All User Manual instructions for installation and operation must be followed precisely
- Adjust only those controls covered by the User Manual's operating instructions; improper adjustment of other controls voids the unit's warranty and may result in unit damage, and
- Adhere to local installation codes.

## Safety Icons



Warning! Shock Hazards

This icon is intended to tell you of a potential risk of electrical shock.



Caution! Instructional

This icon is intended to tell you of important operating and/or maintenance instructions.

## General Unit Safety

- Always disconnect the unit from the power source before cleaning
- Do not operate the unit with a damaged cord
- Do not operate if the unit has been dropped or damaged. The unit needs inspected by qualified MarinePC Service Personnel
- Position the power cord so it shall not be in contact with hot surfaces
- Do not allow anything to rest on the power cord, and
- Do not place the power cord where there shall be foot traffic.



## General Safety Precautions

- Power cord must be connected to a properly wired and grounded power source
- Any equipment to which the unit shall be attached must also be connected to properly wired and grounded power sources
- Do not connect or disconnect the unit during an electrical storm
- Do not remove the unit covers – there are no user serviceable parts in the unit
- Do not disassemble or modify the unit to avoid the possibility of electrical shock, damage to electrical components or scratching the Display surface, and
- Disassembly of the unit voids the warranty.



## Fluids from LCD Display

CAUTION!

- If the Monitor should ever become shattered, do not touch fluids from an LCD Display
- If fluid should get on hands or clothing, immediately wipe off with liquid soap or rubbing alcohol; wash with water; consult with a doctor, and
- If fluid gets in the eyes, flush eyes immediately with water for a minimum of 15 minutes; consult with a doctor.

## Electrical

### Connecting Cables

- Disconnect the power to the computer when the Monitor is being installed, and
- Upon installation, verify the power connector is securely seated on the unit.

### Ratings and Grounding

This unit may be operated from a 12-36 VDC power source (external AC optional).

- Use the correct power cable, and
- Always connect to a properly grounded power source.

## Protection on Servicing

### Servicing - User

- User care is limited to cleaning the exterior of the unit.
- Do not disassemble or modify the unit or cables to avoid the possibility of an electrical shock, damage to electrical components or scratching the Display surface, and
- Disassembly or modification voids the warranty.

## Servicing - MarinePC

MarinePC Qualified Service Personnel may be required if the unit:

- Does not operate normally when installation instructions are followed
- Does not operate normally when operating instructions are followed
- Has been dropped or damaged, or
- Exhibits a distinct change in performance, indicating a need for service.

## Shipping

If the unit should need to be shipped to the MarinePC Service Center, the original packing material should be used to insure safety in shipping. Repack the unit as it would have originally been received from MarinePC.



## Radio Frequency Interference

CAUTION!

This equipment generates, uses and can radiate radio frequency energy. If not installed with the unit's accompanying cables, it may cause harmful interference to radio communications.

# PRODUCT CARE AND MAINTENANCE

## Product Care

This MPC-MLR Monitor has been designed to provide optimum performance and service without any required scheduled maintenance other than occasional cleaning.



WARNING!

Turn off the Monitor power before cleaning the Monitor, optional Touch Screen or unit's enclosure.



CAUTION!

- Do not use abrasive cleaners or solvent-based (flammable) cleaners on the Flat Panel or Touch Screen Display, its enclosure or any other electrical device (cables, power cord, etc)
- Do not use paper products as they may scratch the Display screen, and
- Do not directly apply cleaning solutions to the Display screen.

## Display Screen Cleaning

- A vinegar-based cleaner is preferred to prevent streaking and degradation of the coatings, or
- A non-abrasive glass cleaner such as a professional foam glass cleaner
- Apply the cleaning solution to a soft clean cloth, dampening slightly
- Keep a fresh side of the cleaning cloth towards the screen surface to avoid scratching it with accumulated grit, and
- To minimize the risk of abrasion to the screen, air drying is recommended.



USER TIP

In marine or similar environments, an added benefit of a vinegar-based cleaner is its effectiveness in dissolving salt deposits.

## Optional Touch Screen



WARNING!

Disconnect cabling from the Touch Screen Display before cleaning. A Touch Screen Display will be activated by cleaning the Display. This may create a potentially dangerous condition.

## Optional Touch Screen Cleaning

- Follow cleaning directions above, or use a special screen cleaning tissue or a solution specifically formulated for antistatic coatings.
- Lightly dampen a soft clean cloth with water, vinegar based cleaner or a general purpose mild detergent solution
- Keep a fresh side of the cleaning cloth towards the screen surface to avoid scratching it with accumulated grit, and
- To minimize the risk of abrasion to the screen, air drying is recommended.

## Monitor Enclosure

- Clean the unit enclosure with a soft clean cloth lightly dampened with a general purpose mild detergent solution
- To rinse, wipe down with clean water, and
- Dry with a soft clean cloth.





To avoid risk of electrical shock, do not disassemble the unit's enclosure. Users cannot service the Monitor. User maintenance is restricted to cleaning, as explained. Disassembling the unit voids the warranty.

## Long-term Storage

- For long-term storage, it is suggested the unit be stored in a normal indoor environment and the Display glass be protected from accidental damage.
- For pedestal mount units, disconnect the cable(s) and loosen the arm adjustment to a point where the ball can be removed from the arm, or
- For Flush or Panel Mount units, cover the product with a protective covering that shall not scratch or transfer any dyes to the Display screen.

## Maintenance

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### Power Cord

To avoid shock and fire hazards, replaced the unit's power cord if:

- Insulation becomes damaged, or
- A loose connection is suspected.

## Other Maintenance

Only MarinePC Qualified Service Personnel shall perform all maintenance except for the power cord replacement described above.

# SYSTEM SET-UP

## System Requirements

The computer the MPC-MLR shall be connected to must have this capability:

- Video card setting with a minimum resolution of 640 x 480 pixels, and
- If the optional Touch Screen Display is ordered, an available USB or COM port for the connector is required.

## Shipping Box Contents

The MPC-MLR is shipped in a custom box with custom foam packaging. We recommend you save the box and all packaging materials in case the unit would need to be returned to the MarinePC Service Center.

## In the shipping box you shall find:

- MPC-MLR unit
- Power Cable (if ordered)
- VGA Cable (if ordered)
- Mounting System and Hardware (if ordered)
- Touch Screen Cable if the optional Touch Screen is ordered

# INSTALLATION

The MPC-MLR is designed to be mounted with a universal ball-and-socket mounting kit, in a Flat Panel or optional Flush Mount configuration.

## Pedestal Mount

The MPC-MLR is shipped with a RAM® universal ball-and-socket system mounting kit (Figure 1). By installing the Monitor with this kit, the user can quickly adjust the viewing angle to improve viewability in changing environments. This ball-and-socket system has proven to be successful in supporting an extreme amount of weight in high vibration and difficult-mount applications.

Locate the ball-and-socket system in the shipping box. The kit consists of two RAM balls on mounting plates and a RAM arm, with an adjustable T-knob and a packet of three (3) M4 x 10 counter-sunk stainless screws for mounting to the MPC-MLR.



Figure 1



Figure 2

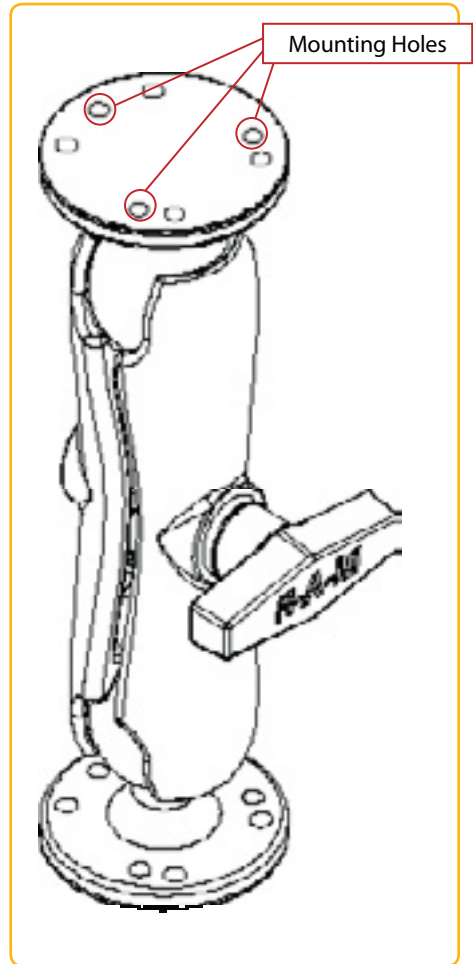


Figure 3

There are three mounting holes in the back of the Monitor for the ball mounting plate. Take care not to strip the screw holes or over tighten. (Figure 3)

- Line up one of the ball mounting plates on these three holes (Figure 4)
- With three (3) M4 x 10 counter-sunk stainless screws attach this mounting plate to the back of the MPC-MLR.
- Mount the second ball mounting plate where the Monitor shall be installed
- Insert each ball into the RAM arm
- Lightly tighten the arm around the balls using the T-knob on the arm (Figure 1, 3)
- Adjust the Monitor to the viewing preference, and
- Tighten the T-knob to hold the Monitor in position.

It is recommended the remaining ball be mounted on a flat surface. Because of the various surface substrates the Monitor shall be mounted on, the installer shall provide the screws to mount the other ball.

## Panel Mount

The Panel Mount installation should be specified at the time of order; the ball-and-socket mount system will not be included in the shipping box. (Figure 2)

The mounting hardware packet is included with the unit accessories in the shipping box. This packet includes four (4) threaded screws (approximately 7.6 cm [3"] long), four (4) Nylock nuts and four (4) flat washers. For installation, there are four tapped mounting holes on the four corners of the unit's rear panel. The 15" contains 6 each.

It is recommended the installer refer to the mount drawings on MarinePC's web site, with (link address listed in Appendix A) for the exact measurements of the unit's rear panel pod. These should be helpful when the installer cuts the required space for the Panel Mount installation.



CAUTION!

Take care not to strip the screw holes or over tighten as the enclosure is aluminum.

## Flush Mount with Optional Bezel

With the optional Flush Mount Bezel, the MPC-MLR Flat Panel Display may be mounted flush with the mounting surface; the ball-and-socket mount system will not be included in the shipping box. (Not shown)

For the mount diagram of the optional Flush Mount Bezel, refer to the mount drawings on MarinePC's web site. When the placement site has been decided, it is recommended the installer use the measurements listed in the mount diagram of the optional Flush Mount Bezel when cutting the opening for the Monitor's installation.

Note the locations of the milled holes in the Flush Mount Bezel. Drill corresponding holes into the substrate where the Monitor shall be mounted. The installer shall need to supply screws for this type of installation.



CAUTION!

Take care not to strip the screw holes or over tighten as the enclosure is aluminum.

# CABLE CONNECTIONS

There are two (2) MIL -DTL connectors on the MPC-MLR: Power Input and Video Input. (Figure 4). Connectors are located on bottom of Display housing. From left to right: (J1) Power Input, a 3-Pin Connector and (J2) Video Input, a 13-Pin Connector.



J1 Power Input  
J2 VGA Input

Figure 4

## POWER CABLE 3-pin Plug MIL-C-26482 Series I

PIN	SIGNAL
A	+ DC
B	- DC
C	CHASSIS_GND
Amph #	71-533721-33P
Mate	PT06E833SSR
Strain	Include



CAUTION!

Confirm the DC connections are made to the correct polarity.

## VGA CABLE 13-pin Plug MIL-C-38999 Series I

PIN	SIGNAL
1	Red Video Signal
2	Red Video Gnd
3	Green Video Signal
4	Green Video Gnd
5	Blue Video Signal
6	Blue Video Gnd
7	H-SYNC
8	V-SYNC
9	H/V-SYNC Gnd
10	USB+/RS-232 RXD
11	USB-/RS-232 TXD
12	Digital Ground
13	RI-OUT
Amph#	88-569722-35P
Mate	MS27467E11B35S
Strain	Include

# COMPUTER HOOK-UP

## Computer Display Properties - XGA or SVGA

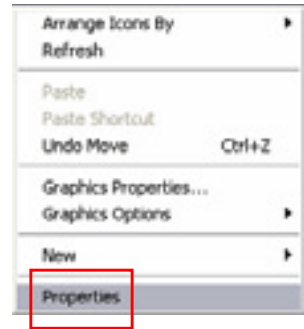
Prior to connecting the MPC-MLR to the computer, with another monitor, verify the computer display properties are set to between 640x480 and 1280x1024 in 4:3 aspect ratio.



- The optimum setting for viewing is 800 x 600 (8.4") or 1024x768 pixels (all other sizes).
- The refresh rate must be set between 60-75Hz to eliminate screen flicker.
- Pixel settings different from the native resolution may exhibit less precise images, and
- Pixel settings over 1280 x 1024 flash "out of range", with no display.

### Setting the Display Settings

1. Right mouse click on an open area of the desktop screen to bring up the Desktop Menu.
2. Left mouse click on Properties to open the Display Properties menu.
3. Connect to a CRT monitor to establish the computer display properties.

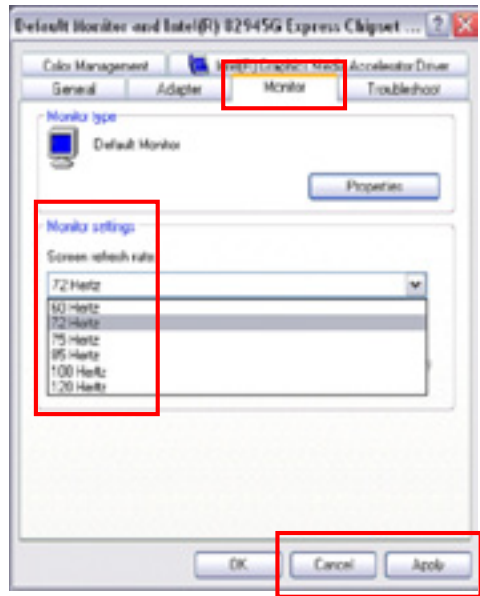


4. Select the Settings tab.
5. Under Screen Resolution, verify or slide the bar until the Screen Resolution is at 800 x 600 pixels (SVGA) or 1024x768(XGA).
6. Select the Advanced button to go to the next menu to verify the Hz refresh rate.

7. Select the Monitor tab.

8. Under Monitor Settings, verify the Screen Refresh Rate is between 60 and 75Hz.

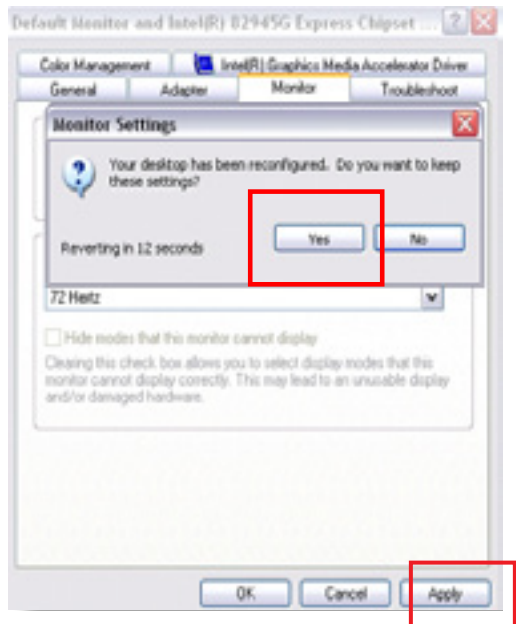
- If so, select the Cancel button and go to step 9.
- If not, select a setting within the 60 – 75Hz range
- Select the Apply button.



9. At the Monitor Settings dialog box, select "Yes" to accept the new desktop view settings.

10. In the Display Properties dialog box, verify the Screen Resolution is at 800 x 600 (SVGA) or 1024x768 (XGA).

11. Select the Apply button.





## Signal Quality

- The strength of the video signal provided to the MPC-MLR Monitor has a direct bearing on the quality of the images displayed
- The cable supplied with the unit shall provide the optimum image if proper wiring practices are followed
- Install the cable properly and keep it away from sources of EMI such as electric motors, or unshielded RF sources such as radar and microwaves
- Splitting the video signal also splits the strength of the signal
- If your installation requires more than one Monitor to be driven from a single video source, it is highly recommended that a video signal booster (line driver) be used in the circuit, and
- Some splitters are available with an integral line driver. Whether or not a line driver is used, single cable lengths in excess of our standard cable length should be of high quality shielded VGA cable.

## Power on the Monitor

- The Windows Operating System should automatically apply the best generic driver for this connection, and
- Follow the instructions under section Computer Display Properties for optimum display quality.

# OPERATOR CONTROLS

On the right hand side of the Monitor bezel are seven Operator Control buttons.

## Power Button

Note: Monitor defaults to an AUTO-OFF state when power is applied.

- The Power On/Off button is marked with the I/O (Input/Output) symbol
- Momentarily pressing this button shall turn ON or turn OFF the unit, and
- Blue LEDs glow behind the buttons when the unit is powered on.

**Optional Feature:** Monitor defaults to an AUTO-ON state when power is applied. This feature must be ordered when the Monitor is ordered. It is not an add-on after the unit is built.

## Brightness Toggle

This toggle controls the brightness of the LCD Panel Display.

- The large sun toggle side, when repeatedly pressed or held down, shall cause the Display's backlight brightness to increase
- The small sun toggle side, when repeatedly pressed or held down can be stepped down in increments to the lowest setting, which is just above total black and suitable in very subdued light, as in night time operations, and
- The Monitor shall revert to a mid-range setting when the unit is powered off.



Adjust the brightness of the Display to the lowest possible setting for a given set of conditions and display characteristics. Doing so shall provide the best viewing of the image, extend the lamp life of the backlight and reduce the internal heat of the Display.

## Select Button

The Select Button is the access point to the On-Screen Display (OSD) Source Screen Menu. (See On-Screen Display.)

## Up Button

The Up Button is an adjustment tool in the OSD Source Screen Menu. (See OSD Screen Menu Parameters.)

## Down Button

The Down Button is an adjustment tool in the OSD Source Screen Menu. (See OSD Screen Menu Parameters.)

## Source Button

This button switches between Day (Bright) Setting and Night (Dim) Settings\_





# ON-SCREEN DISPLAY

The On-Screen Display (OSD) user interface is the path to all display signal source adjustments. The Source Screen Menu, with its user-friendly graphical interface, provides access to fine-tuning the Display.

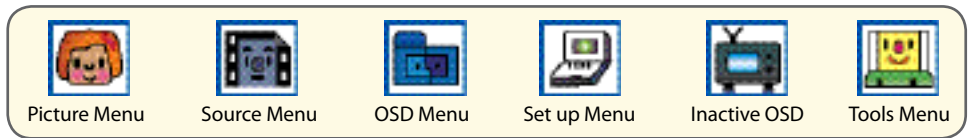
## OSD Source Screen Menu Activation

To activate the OSD menu in the current video source, press and release the SELECT button.

Note: OSD Source Screen Menu shall close after 15 seconds of inactivity. This setting can be adjusted in the OSD Source Screen Menu (OSD Menu icon), under OSD Duration.

## OSD Source Screen Menu Parameters

The Source Screen Menu is comprised of six icons, each representing distinct source screen categories and their corresponding functions menu with adjustable settings.



## Parameter Adjustments

- To choose a Display Parameter Category, use the UP (right) or DOWN (left) buttons to move across the Source Screen Menu
- As each Category icon is highlighted, its related Functions Menu appears in a drop-down box
- To activate a Display Parameter Category, move the highlight box over its icon and single press the SELECT button
- In the Functions Menu, a highlight bar is superimposed over the first function
- Press the UP or DOWN buttons to move the highlight bar through the related Functions Menu
- Single press the SELECT button to choose a Related Functions Menu item when it is highlighted
- A smiley face appears to the left and a new color bar appears on the Function, indicating the Category is active; its parameters can be adjusted
- The adjustment controls are the UP and DOWN buttons, which increase or decrease the value of the parameter as noted in the percentage bar
- Create the new parameter value
- Single press the SELECT button to save the new value; this returns the user to the Source Screen Menu
- Exit from the Function Menu
- To choose another Display Parameter Category, use the UP (right) or DOWN (left) buttons to move across the Source Screen Menu and follow the above instructions, or
- Single press the SELECT button again to exit from the OSD Source Screen Menu, or
- Close the main menu; all changes are saved.

# OSD Source Screen Menu Parameter Selections



- New settings shall be stored in memory upon pressing the SELECT button to exit the Source OSD Source Screen Category's Function Menu.
- If SELECT is not pressed, or inactivity is detected within the 15 second factory default OSD duration, any function adjustments made shall not be saved.



It is recommended to adjust the LED back light brightness to maximum before fine-tuning the OSD Source Screen Menu Picture Menu Parameter: Brightness.



## Picture Menu Parameters

### Brightness

Before adjusting the Brightness function parameters, set the LCD panel backlight brightness using the control toggle (large sun/small sun); set to its brightest (large sun button) in the ambient light source.

- Open the "Brightness" function
- Press the UP or DOWN buttons to set the Display's desired brightness, and
- Adjustments go from very dim (black) to 100%, very bright (dazzling white).

### Contrast

Contrast is the difference in brightness between the light and dark areas of the pixels of a picture.

- Open the "Contrast" function
- Press the UP or DOWN buttons to set the Display's desired contrast, and
- Predefined minimum to maximum is in the display bar.

### Saturation

Saturation is the vividness or intensity of the hue or color.

- Open the "Saturation" function, and
- Press the UP or DOWN buttons to set the Display's desired saturation.

### Tint

Tint is the pinks, blues and greens of the Display.

- Open the "Tint" function
- Press the UP or DOWN buttons to set the Display's desired tint, and
- Ranges on the Display bar are: low – pinks; mid-range – blues and upper – greens.

### Sharpness

- Open the "Sharpness" function
- Press the UP or DOWN buttons to select a desired sharpness for the Display, and
- Sharpness choices in the Display bar are preset at - 0, 33, 66 and 100%.

### Auto Color

- Auto Color is best calibrated from an all-white background. From the VGA video source, create an all-white background
- Open the "Auto Color" function
- Press the SELECT button to run the Auto Color Setup. Repeat twice, and
- When complete, press the SELECT button to save the changes and exit.



## Source Menu Parameters

A check in a box indicates an enabled signal source attached to the Monitor. Deselecting the box disables the Monitor's ability to display the signal.

### Video 1 - Composite

- Open the "Video1" function, and
- Press the UP or DOWN buttons to enable (ON) or disable (OFF) the Video 1 source.

Video 2 – INACTIVE or, if connected, as above.

Video 3 - INACTIVE or, if connected, as above.

### PC - VGA

- Open the "PC" function, and
- Press the UP or DOWN buttons to enable (ON) or disable (OFF) the PC source.



## OSD Menu Parameters

### OSD H-Position

- Open the "OSD H-Position" function, and
- Press the UP or DOWN buttons to adjust the horizontal position for the OSD menu on the Display.

### OSD V-Position

- Open the "OSD V-Position" function, and
- Press the UP or DOWN buttons to adjust the vertical position for the OSD menu on the Display.

### OSD Duration

- Open the "OSD Duration" function, and
- Press the UP or DOWN buttons to adjust the time elapse between the last menu activity and when the menu disappears. The range is between 0 and 100 seconds; factory default is 15 seconds.



## Set-up Menu Parameters

### AUTO Power

- Select "AUTO Power" function if user wants system data (channel, signal source) saved when the system is powered off.

### Reset

- Select "Reset" function, and
- Select "YES" to automatically adjust picture data to default such as: brightness,

contrast, saturation, tint and sharpness.

## System

- Select “System” function to select the source signal type: NTSC, PAL and AUTO
- Video 1 - Composite - NTSC
- Video 2 - Inactive
- Video 3 - Inactive
- PC – RGB, and
- AUTO - Recommended selection. Automatically assigns the correct video signal source association.



TV Category Parameters - **INACTIVE**



Screen Menu Parameters

NOTE: Source Screen Menu Category is enabled when the input signal is VGA.

## H-Position

- Open the “H-Position” function, and
- Press the UP or DOWN buttons to adjust the horizontal position of the screen display.

## V-Position

- Open the “V-Position” function, and
- Press the UP or DOWN buttons to adjust the vertical position for the screen display.

## Phase

- Open the “Phase” function, and
- Press the UP or DOWN buttons to adjust phase (analog to digital) for the screen display.

## Clock

- Open the “Clock” function, and
- Press the UP or DOWN buttons to adjust clock (horizontal stretch) for the Display.

# OPTIONAL TOUCH SCREEN

## MPC-MLR Optional Touch Screen Installation



If you are installing a new operating system (O/S), do not install the Touch Screen Controller Driver CD until you have installed the O/S and verified the computer's monitor display is working properly. The Touch Screen Controller Driver uses the computer's O/S display driver software settings to accurately configure the Touch Screen Controller Driver files.

## Previous Versions of Touch Screen Controller Drivers



Previous versions of ANY Touch Screen Controller Driver must be removed before installing the latest version of the TSHARC™ Touch Screen Controller Driver.

## Uninstall TSHARC Utility

### Uninstall a Previous Version of TSHARC

The uninstall utility "TSUN10.exe" is included on the TSHARC Touch Screen Controller Installation CD, in the shipping box with the product accessories. This utility uninstalls TSHARC drivers only.

### From the Product CD

To uninstall: install the CD > go to My Computer (desktop) > Left double mouse click > Locate the drive with the Installation CD > Left mouse click to open > Left double mouse click on the Uninstall Drivers folder > Left double mouse click on "TSUN10.exe" to execute the uninstall utility > Follow the instructions.

Note: The dialog box stating it is removing all Touch Screen Drivers from the computer means it is removing all TSHARC drivers. Other Touch Screen Drivers must be uninstalled with their manufacturer's uninstall utility.

### From the MarinePC Web Site

The TSHARC uninstall utility may be download from [www.marinepc.com](http://www.marinepc.com). Go to the Support tab > Downloads > Uninstall TSHARC Drivers > TSUN10.exe.

To download the utility, left double mouse click on the file name > At the File Download dialog box, select Save > Save the file to the computer's program files > Make a new folder, "TSHARC Uninstall" > Select Open > Save the TSUN10.exe file > At the dialog box "Download is complete", select Open Folder > Left double mouse click on "TSUN10.exe" to execute the utility > At the dialog box "Do you want to remove", select Yes > At the dialog box "Press OK to complete the uninstall", select OK > At the uninstall confirmation screen, select OK. Follow the instructions.

Note: The dialog box stating it is removing all Touch Screen Drivers from the computer means it is removing all TSHARC drivers. Other Touch Screen Drivers must be uninstalled with their manufacturer's uninstall utility.



## Uninstall a Previous Version of Other Touch Screen Drivers

If a version of a different Touch Screen Controller Driver (not TSHARC) is on the computer, it must be completely removed before installing the TSHARC. Note: The typical driver uninstall program or Microsoft's® remove program utility does not remove all tracks of the Touch Screen Driver program. Contact the manufacturer of the previously installed driver program to learn how to completely uninstall their product. These instructions may be available from the manufacturer's web site.

## Touch Screen Installation

### TSHARC Touch Screen Controller Driver

A TSHARC Touch Screen Controller Installation CD is included in the shipping box with the product accessories. The driver is compatible with these O/S: Windows®, XP Pro, Vista and 7Pro.



CAUTION!

Before loading Touch Screen Controller drivers, verify the COM ports are enabled (especially if using a laptop computer).

### Installation

1. Attach the Touch Screen Cable connector to the MPC-MLR 4-pin connector
2. Attach the Touch Screen Cable RS-232 connector to a computer serial port, or
3. Attach the Touch Screen Cable USB connector to a computer USB port.

Note: For Multi-monitor applications, all Touch Screens must be connected to the computer before installing the TSHARC driver.



CAUTION!

- If installing RS-232 connectors, the driver has to be installed for each Touch Screen, or
- If installing USB connectors, the driver is installed one time for multiple Touch Screens.
- If the Touch Screen connector is USB, Window shall load a temporary USB driver. Wait for the driver to load.

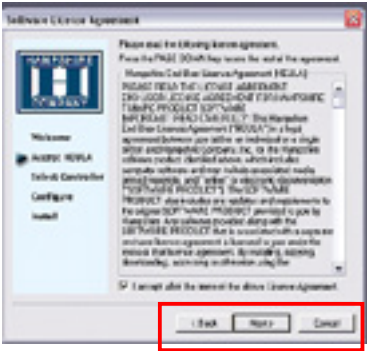
1. Boot up the computer
2. Insert the TSHARC Controller Driver CD
3. On the desktop, left double mouse click on the My Computer icon
4. Locate the drive with the TSHARC Touch Screen Controller Drivers Installation CD
5. Left mouse click to open
6. Left mouse double click to open the Resistive Touch Driver file
7. Left mouse double click to open the file for your O/S, and
8. Left mouse double click to run "set-up.exe".



# TSHARC Installation



If you need to cancel this driver installation at any time, select the Cancel button on the driver installation dialog screen.

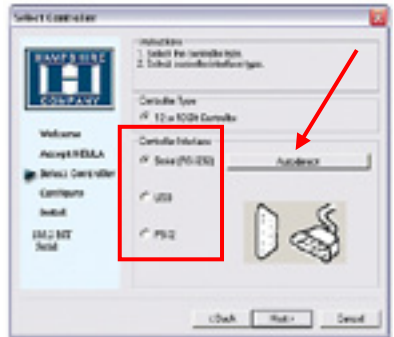


1. At the Welcome screen, select Next to go to the Software License Agreement (EULA)
2. After reading the EULA, if in agreement, check the box "I accept all of the terms..."
3. Select Next.

Note: Any unlawful use of the TSHARC driver is a strict violation of the United States and International copyright laws. Using a TSHARC driver with any third party Touch Screen is strictly prohibited.

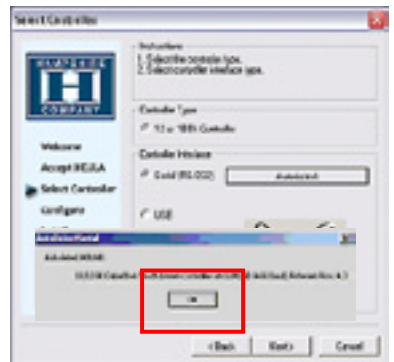
## Select Controller

1. The TSHARC Driver is a 12-bit controller; the radio button is selected by default  
Note: A PS/2 controller interface is not available.
2. Select the controller interface matching the cable used to install the MPC-MLR
3. Select the Autodetect button if installing the Touch Screen through a RS-232 (serial) interface
4. There are two options for RS-232 installation: Auto-detect and Manual. Manual instructions are found in section Manual RS-232 Controller Set-up
5. If connecting through a USB interface, select the USB radio button
6. Select Next
7. Following installation, select Finish, and
8. Reboot the computer when prompted.



## Autodetect RS-232 Controller Set-up

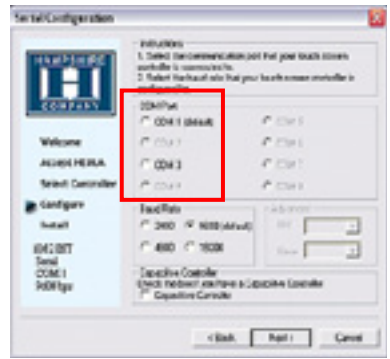
1. Select the Autodetect button
2. The "AutoDetect Serial" dialog box lists the detected RS-232 controller information. Select OK
3. "Installing Touch Screen Driver" text box pops up, indicating the progress of the installation
4. Following installation, select Finish, and
5. Reboot the computer when prompted.



## Manual RS-232 Controller Set-up

1. Select the Controller Interface RS-232 radio button
  2. Select Next
- Note: Do not select Autodetect
3. Follow the instructions, entering the COM port selection
  4. The Touch Screen Controller baud rate default is 9600

- Note: Capacitive Controller option is not available.
5. Select Next
  6. Following installation, select Finish, and
  7. Reboot the computer when prompted.



## TSHARC Calibration Program

Upon reboot, the Touch Screen is functional, but not calibrated. Calibration must be configured for the Touch Screen to work properly. The TSHARC Control Panel initiates the calibration process.

- Go to Start > Programs > Hampshire TSHARC Control Panel. The Control Panel has five tabs. Each tab provides links to tools that can modify the TSHARC Drivers to meet specific needs.
- Touch Screen Display Selection
- Calibration
- Click Settings
- Touch Settings
- Capacitive Settings

Note: This feature is disabled; MPC-MLR is a Resistive Touch Screen.

## TSHARC Control Panel

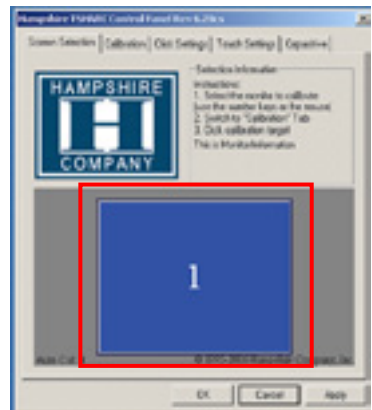
### Screen Selection

Note: If this is not a Multi-monitor installation, skip to section Calibration.

### Configuring a Multi-monitor Installation

Note: Microsoft does not support a Multi-monitor installation in Windows.

1. The controller installation program opens to the Screen Selection tab. Note the graphic representation of the Monitors installed on the system
2. Using the keypad or the mouse, select the Monitor to calibrate
3. Switch to the Calibration tab. Go to the next section: Calibration
4. When complete, return to the Screen Selection tab; select the next Monitor. Repeat the process until all Monitors are calibrated.

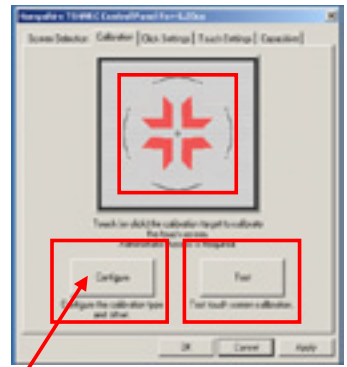




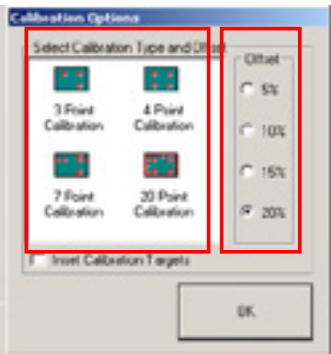
## Calibration

The calibration process aligns the Touch Screen overlay to specific points on the Display screen.

1. Select the Calibration tab or, in ten seconds, the calibration program launches, unless a Multi-monitor situation is present, then go to section Configuring a Multi-monitor Installation
2. There are three buttons: Graphic, Calibration and Test. For default Four-point calibration, select the Graphic square. This is the best known general calibration; it compensates for skew and some edge linearity anomalies, and
3. Go to section Calibration Process.



## Custom Calibration Settings

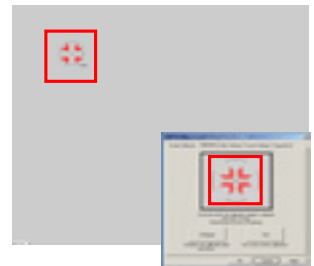


1. To customize the calibration process, select the Calibration button to bring up Calibration Options and the Offset menu
2. Select OK when calibration and/or offset selections are made:
  - Three-Point Calibration: Quick calibration of a known good Touch Screen overlay. No correction is applied
  - Four-Point Calibration: Compensates for skew and some edge linearity anomalies
  - Seven-Point Calibration: More accurate than three-point calibration. No correction is applied
  - Twenty-Point Calibration: Provides the highest level of Touch Screen linearization and skew correction, and
  - Offset: Varied linearity exists between Touch Screen types; user may want to calibrate the edges of the Touch Screen more precisely. Default is 20%.

## Calibration Process

1. Press the Center Graphic to start calibration
2. Targets are used to calibrate the Touch Screen. Follow the on-screen instructions - "Touch" the target center, "hold" until it shrinks, then "release" the target, and
3. Repeat the process for all targets.

Note: the calibration screen shall time-out and return to the Calibration tab if the first point is not touched within 10 seconds.



## Calibration Verification Test

1. Touch the screen in several places to verify the calibration target is displayed under the finger, and
2. Select the Accept button to apply and record the calibration data.

Note: If the calibration target is not displayed under the finger, select the Cancel button, repeat Custom Calibration Settings, then Calibration Process.



## Calibration Drawing Test

1. Select the Test button on the Calibration tab
2. Using a finger or stylus, draw or write, and
3. Observe if the screen displays the drawing accurately. If it does not, repeat the Custom Calibration Settings and Calibration Process instructions



## Click Settings

### Right Click

1. If desirable for Touch Screen application, check the "Enable Right Click" box to set the right click option

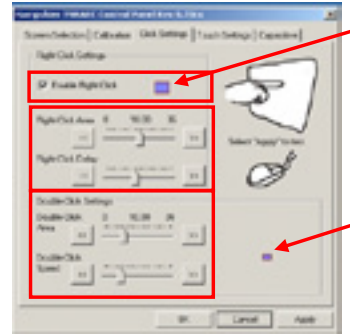
### Right Click Area

2. Use the slide bar to set the Touch Screen event area to a size slightly larger than the activator  
– larger for a finger tip, smaller for a stylus; the box displays the activator size

### Right Click Delay

The timed-hold right click mouse event allows the user to initiate a right click by holding down a touch point for a specific period of time.

3. Use the slide bar to set the Right Click Delay value to the time necessary to produce a right click event



### Double Click Area

This step sets the area that shall allow for a double click event. Limit this to areas that can be accurately touched several times.

4. Use the slide bar to set the double click area; the box displays the activator size

### Double Click Speed

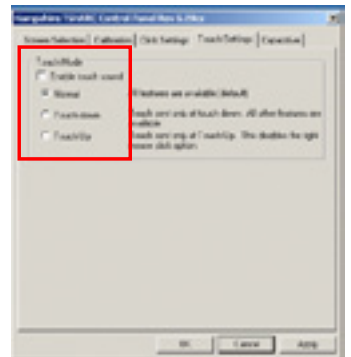
5. Use the slide bar to set sufficient time to perform a double touch in the specified area
6. Select the Apply button to enter the selection, and
7. Select the OK button to apply all Click Settings.

## Touch Settings

1. Normal: Emulates a standard mouse, allowing a single click, double click, drawing, dragging and right click option (if enabled)
2. Touch Down: Allows for a click event to take place at touch down. No draw or drag is available
3. Touch Up: Touch only. Double click is disabled. If right click was earlier enabled, it shall be disabled.

## Touch Sound

1. Check the Enable Touch Sound to enable a tonal beep when the screen is touched
2. Select the Apply button to enter the selection, and
3. Select the OK button to apply all Touch Settings.

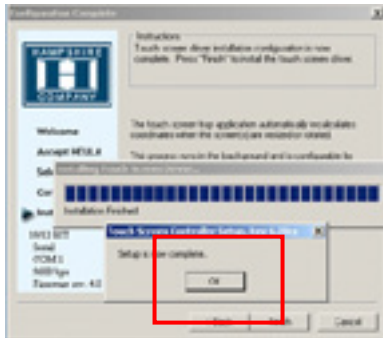


## Capacitive Tab – Disabled

The Touch Screen is a resistive type; the Capacitive Tab shall be disabled.

## Touch Screen Tray Icon

1. If you do not want a Touch Screen Controller Icon to display in the toolbar tray, go to step 3, or
2. If you want a Touch Screen Controller Icon to display in the toolbar tray, select the box, and
3. Select the Finish button; the TSHARC drivers shall be installed.



## Installation Complete

1. At the dialog box, "Setup is now complete", select OK, exiting the TSHARC Touch Screen Controller installation
2. **Congratulations!** The MPC-MLR Touch Screen is ready to go to work.

# APPENDIX A

## Mechanical Drawings

Mount diagrams of the MPC-MLR and its dimensions may assist you in installation of the Monitor. You may find them on our website at:

[http://www.marinepc.com/products/purchased\\_model\\_and\\_size](http://www.marinepc.com/products/purchased_model_and_size)

Mount diagrams of the optional Flush Mount Bezel and its dimensions may assist you in installation of the Monitor. You may find them on our website at:

[http://www.marinepc.com/products/purchased\\_size](http://www.marinepc.com/products/purchased_size)

# APPENDIX B

## Display

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### Symptom: No light behind button LEDs

Possible Problem	Solution
No power, loose power connection	Confirm the Monitor is properly connected to a DC or AC power source.  Verify the power source is live or try another battery or AC power outlet.  Verify the Monitor is powered on.
Reverse Polarity	Check polarity of the power connection.

### Symptom: Light behind button LEDs, no display, or “No Signal” error message and/or no image on the display

Possible Problem	Solution
Power on, no video signal	Verify the video cable is plugged into the VGA video connector.  Verify a video signal is coming out of the computer (i.e., plug into a known good display source).  Verify the incoming signal source selected matches the Monitor signal source (Composite, S-Video, VGA).  Check the Brightness front panel setting on the Monitor. This may be set too low.  Check the Brightness and Contrast controls in the OSD. These may be set too low.  Computer may have gone into power management stand-by. Press any key on the keyboard, move the mouse or cursor, or if there is the Touch Screen option, touch the screen to wake up the computer.

**Symptom: Display has rolling “bars” across the screen or vertical shaded bars on the image.**

Possible Problem	Solution
VGA video display is not set to view at 800 x 600 pixels, or 1024x768 pixels.	Verify the computer video display settings of the signal are set to match the display and 60 - 75Hz refresh rate.
Defective video cable	On a known good display source, confirm the video cable is not defective.
Interference from adjacent equipment	For proper grounding and shielding, verify use of a proper video cable.  Keep the cable away from sources of EMI such as electric motors, or unshielded RF sources such as radar and microwave.
Horizontal size is not adjusted	In the OSD, adjust the horizontal size controls.

**Symptom: Picture quality, image stability is distorted.**

Possible Problem	Solution
Not working in 800 x 600 or 1024x768 pixel resolution	Press the arrow down button one time to auto adjust the display.  Verify the video display settings match the monitor, and 60 – 75Hz refresh rate.
Proper cable grounding and shielding	Verify the use of a proper video cable with suitable grounding and shielding. Keep the video cable away from sources of EMI and RF.
Improper video display settings	Check signal source for proper signal.  Check for proper display properties selection of the display pixel setting.  Verify the display refresh rate: 60 – 75Hz.
Display unit is farther than 3 m (10 ft) from signal source	Single cable lengths in excess of the standard 3 m (10 ft) cable should be of high quality shielded VGA cable. Contact MarinePC for information on custom cables.
Multiple Monitors are driven from the same signal source.	Splitting the video signal divides the strength of the signal. A video signal booster (line driver) is recommended if installation requires more than one Monitor driven from a single video source.
Monitor has incorrect or bad sync signals.	Check for proper video cable installation, or replace suspected faulty cable.  Check the video source is within the display's operating range: max. 1280x1024 pixels, and 60 – 75Hz.

## Symptom: Display image is not properly sized

Possible Problem	Solution
OSD adjustments need to be made	Adjust the vertical and horizontal size controls through the OSD.
Improper video display settings	Check for proper display properties selection of the display settings. Monitor autosize will only display full screen if source is 4:3 aspect ratio.
VGA signal source "Auto Adjust" needs activated	The VGA source is able to auto adjust the Monitor to its optimum viewing setting. Press the arrow down button one time to auto adjust the display.

## Symptom: Touch Screen (T/S) does not respond

Possible Problem	Solution
T/S cable is not plugged in	Verify the connections between the T/S and the computer.
T/S cable is installed in a different COM port than installed by the software	Install the T/S into another COM port. If using a laptop, verify the COM port(s) is enabled.
T/S controller driver has not been installed	Install the TSHARC controller driver.
Hardware failure	Contact a MarinePC Technical Support Technician (480.515.1838).

## Symptom: T/S moves, but does not follow a finger or stylus

Possible Problem	Solution
Controller is not calibrated	Run the calibration in the TSHARC Control Panel software.
T/S Controller Driver is not installed	Install the TSHARC Controller Driver.
T/S cable is not installed correctly	Verify the T/S cable is installed correctly.

## Symptom: "Error in Calibration" message appears

Possible Problem	Solution
The T/S Controller Driver is not installed correctly	Uninstall the driver using "TSUN10.exe". If a previous T/S Controller Driver was installed, all footprints must be removed. Go to the T/S manufacturer's web site or contact the manufacturer for instructions to uninstall drivers.  Reinstall the TSHARC Driver software.

# APPENDIX C

## Technical Specifications

	8.4"	10.1"	12.1"	15.1"
Display	TFT AM, SVGA, LCD, 256K Colors. 800 x 600 pixels	256K Colors, 800x600 pixels	256K Colors, 800x600 pixels	16.8M Colors, 1024 x 768 pixels
Sunlight Readable	800 nits, LED Backlighting System	800	550	800
Dimming Ratio	1,100:1			
Video Input	VGA (640x480, 800x600, 1024x768, 1280x1024)			
Connectors	Power: MIL-C-26482 Series I VGA: MIL-C-38999 Series I			
Housing	Milled Aluminum, Black Anodized, UV Clear Coat			
Mounting	Panel Mount or RAM Mount			
Power Consumption	6 Watts Min - 15 Watts Max	17 Watts Max	20 Watts Max	36 Watts Max
Wide Range DC Power Input	12-36 VDC (12, 24, 28 VDC nominal)			
Power Conditioning	Internal Short Circuit Protection Load Dump Protection Over Voltage Protection Reverse Polarity Protection			

# Environmental Specifications

	8.4"	10.1"	12.1"	15.1"
Operating Temperature	-40°C to 70°C (-40°F to 158°F)			
Storage Temperature	-40°C to 75°C (-40°F to 167°F)			
Shock	60 G			
Vibration	6 G (5-500 Hz)			
IP Rating	IP67 (NEMA 6P Submersible)			
Humidity	0-100%			