3M™ MicroTouch™ Display M1700SS User Guide

Please read, understand and follow all safety information contained in the Quick Start Guide found at www.3m.com/touch prior to the use of this device. Retain the Quick Start Guide for future reference.

MicroTouch™

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Contents

OVERVIEW

Intended Use
The 3M™ Touch Systems Touch Displays are designed for touch input and tested to replace an existing display. These displays are intended for professional installation and use in an indoor environment. They are not designed or tested for use in hazardous locations. Use in any other application has not been evaluated by 3M and may lead to an unsafe condition.

Important Notes

- Plug power cord into appropriate power source.
- Plug power cord into a grounded receptacle.
- When unplugging power supply cord, pull on plug not cord.
- Do not connect or disconnect this product during an electrical storm.
- Install the display in a well-ventilated area. Always maintain adequate ventilation to protect the display from overheating and to ensure reliable and continued operation.
- Do not expose this display to heat. Passive heat may cause damage to the case and other parts.
- Do not install this display in areas where extreme vibrations may be generated. For example, nearby manufacturing equipment may produce strong vibrations. The vibrations may cause the display to exhibit picture discoloration or poor video quality.
- Product weight varies from 18 to 24 pounds depending on the packaging, use caution when lifting.
- Ensure that metal does not contact the touch sensor.
- To avoid ergonomic concerns:
  Do not install the display in a manner or location with awkward accessibility.
  Extended use may result in muscle, tendon, or fixed posture strains. It is recommended you take periodic breaks from continuous use.

Service and Repair Indicators

Do not attempt to service this unit yourself. Removing the display cover may expose you to dangerous voltage or other risks and will void the warranty.

Unplug the display from the power outlet and refer servicing to qualified service personnel in the event that:

- Liquid is spilled into the product or the product is exposed to rain or water.

- The product does not operate properly when operating instructions are followed.
- The product has been dropped or the case has been damaged.
- The product shows a distinct change in performance, indicating a need for service.
- The power cable or plug is damaged or frayed.

3M Touch Systems Support Services

Visit the 3M Touch Systems website at www.3m.com/touch to download MT 7 software, drivers and obtain technical documentation.

- Hot Line: 978-659-9200
- Fax: 978-659-9400
- Toll Free: 1-866-407-6666 (Option 3)
- Email: US-TS-techsupport@mmm.com

Contact 3M Touch Systems

Contact information for all offices can be found at: www.3m.com/touch.

CHAPTER 1

Setting Up Your M1700SS Display

System Requirements

The M1700SS Display requires a personal computer (PC).

The requirements for your PC are as follows:

- Your PC must have an available RS-232 serial communication (COM) port or USB port. Connect the touch sensor to this port.
- Your PC must have a video card and video driver already installed for the display.
- Your PC must have a unique interrupt request (IRQ) available to the touch sensor COM port. The touch sensor cannot share an IRQ with another device.

When choosing your workspace, select a sturdy, level surface. Also, make sure you can easily access the back of the display and the computer.

Note: Before setting up your M1700SS Display, refer to the Important Safety Information section at the beginning of this document.

Unpacking Your M1700SS Display

Carefully unpack the carton and inspect the contents. Your M1700SS Display comes with most of these cables already connected as well as a touch software CD.

Note: It is not necessary to store the power supply in the base of the display.

**DVI-I to 15-pin video cable
or DVI to DVI cable if applicable**

**9-pin RS-232 serial communication
cable (if applicable)**

**AC/DC power supply
(12V DC output)**

AC power cable


USB Cable (if applicable)


Multimedia audio cables

Alternative Mounting Options

The unit has a 100 mm VESA mounting pattern on the back to allow for different mounting capabilities. Follow the manufacturer's instructions included with the mounting device to properly attach your monitor.

In order to arm-mount the M1700SS Display, you will need to remove the display head from the stand. Begin by removing the cable management covers.

Figure 2. Removing the Base Cover
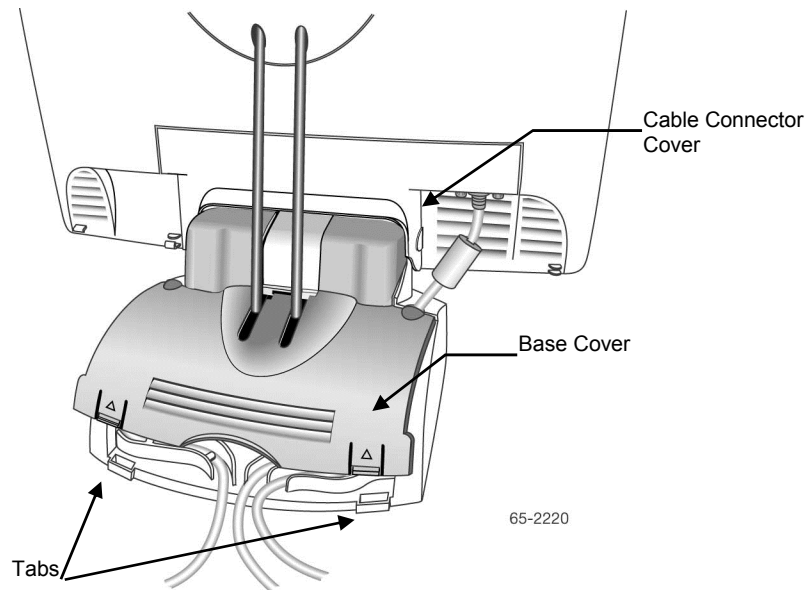
1. Make sure the display is in its full upright position.
2. Push in and lift up on each of the two tabs located on the left and right sides of the base cover. This action will release the base cover.
3. Slide the cover back towards you to remove.

Figure 3. Releasing the Cable Connector Cover
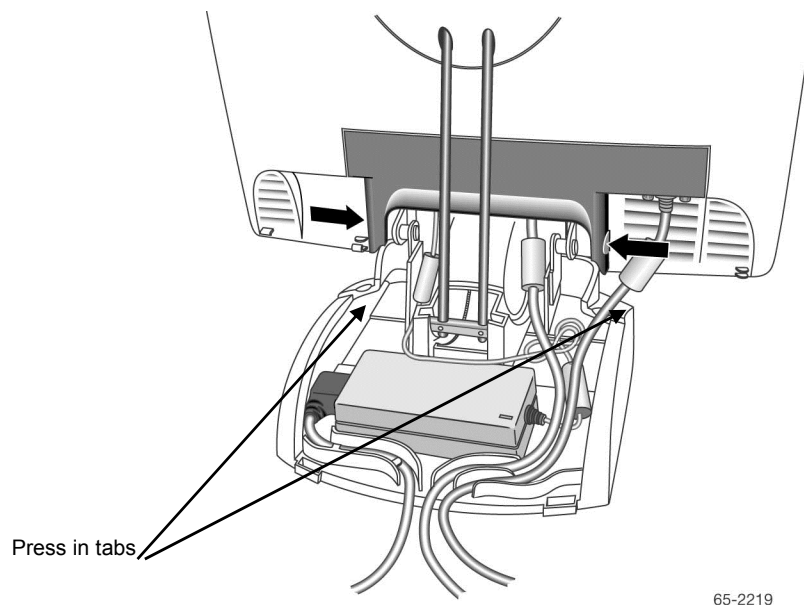
4. Push in on the cable connector tabs as shown above to release from display back. Gently pull down to release tabs.

Figure 4. Removing the Cable Connector Cover

Keep tabs against
display
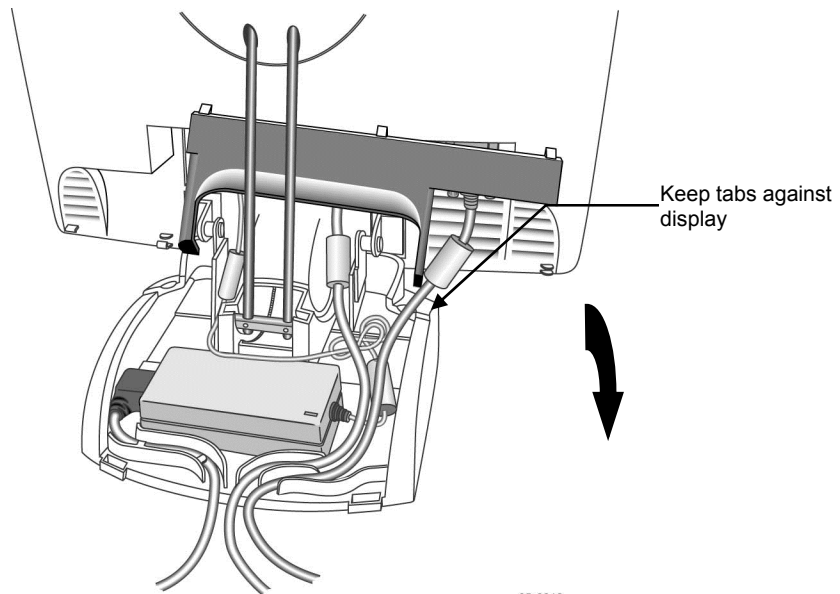
65-2218

5. Lift this cover slightly so that the tabs are up against the rear of the display to keep
    them from catching on the cables below. Tilt the cover down as you slide the cover
    out from behind the support rods.

Figure 5. Uncovered Cable Connections
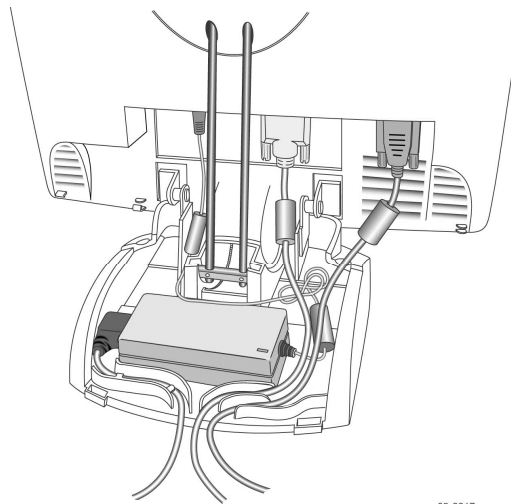
65-2217

Figure 6. Disassembling the Display from Its Base for Arm Mounting
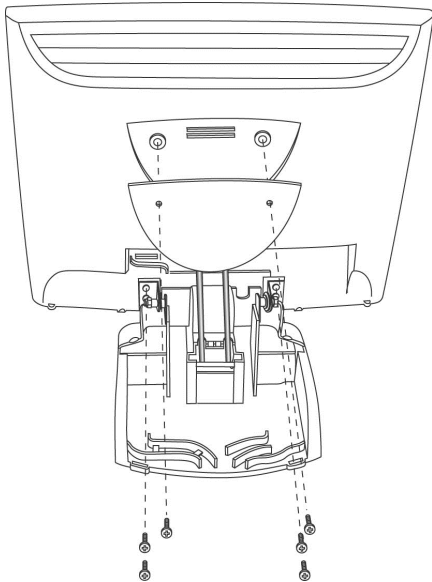
Step 1 – Unlock front mechanism and disconnect all cables from the display.

Step 2 -- With the unit laying face down safely and securely on a nonabrasive surface, remove the two screws connecting the name plate and support rods to the display. Lift the support rods out of the base and set aside.

Step 3 -- Then remove the four screws holding the hinge in place and gently remove the base.

M1700SS Display Wall-Mount Locking Mechanism

To lock the M1700SS Display in place for wall mounting, use the locking mechanism included in a separate bag with your display. Position the monitor to 90° flat and lock the front latch in place. As an extra measure, insert the U-shaped metal retention clip into the holes in the base as indicated in the drawing below. Tighten the screw in place and your display is ready to hang securely on the wall.

Figure 7. Wall-Mount Locking Mechanism

65-2202
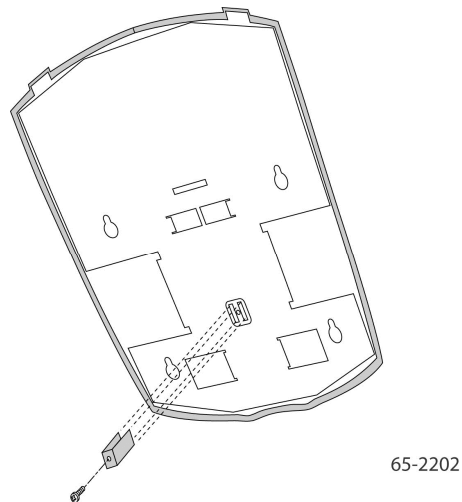
Countertop Base Mounting Option

Keyhole slots in the bottom of the base plate enable you to secure the unit to a desktop or countertop. Use standard screws in the desktop or countertop and then slide the base plate on for a secure fit.

Note: A full size template has been included in the back of this manual for your convenience.

Adjusting the Viewing Angle

The base and support rods were designed with touch stability in mind. This design keeps the monitor face stable during touch. The unit can be adjusted to any locked position from -5 up to 90 degrees from vertical.

Always maintain adequate ventilation to protect the display from overheating and to ensure reliable and continued operation.
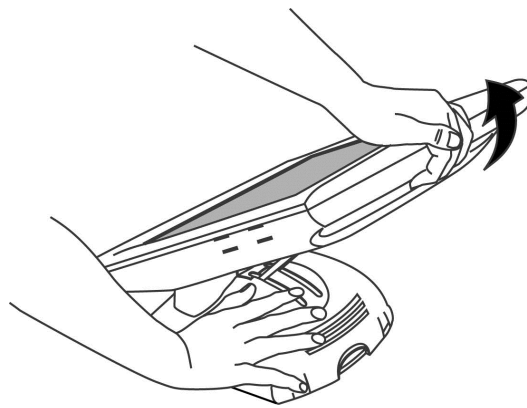
Figure 8. Adjusting the Viewing Angle
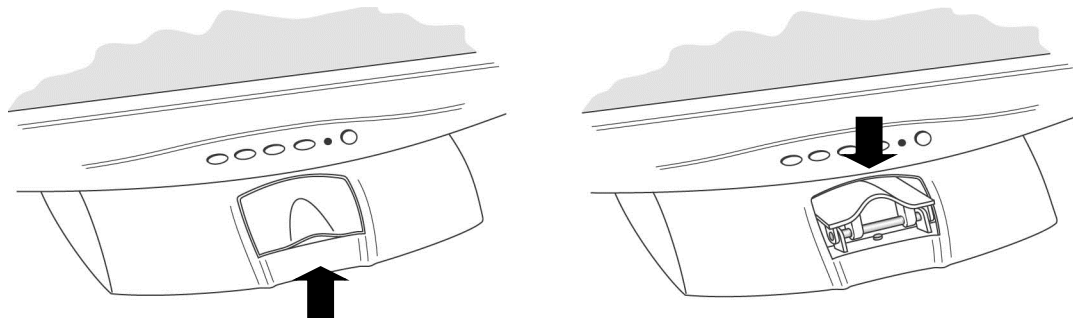
Lift up latch to release lock and raise
or lower display to suit your needs.

Push down latch to engage lock
and stabilize display position.

65-2214

Lift up on the latch to release lock. Adjust the M1700SS
Display by pushing or pulling on the top front of the display
until the screen is at the best viewing angle for you. Then
push down on latch to engage locking mechanism and
stabilize display position.

Installing the Video Card and Video Driver

Before you can connect your display, make sure your computer has a video card and
driver already installed for the display.

Supported Video Display Modes and Refresh Rates

Your video card should support one of the display modes specified in Table 1. If you
select an unsupported video mode, the monitor may stop working or display
unsatisfactory video image.

Table 1. Applicable Display Mode and Refresh Rate

Display Mode	Refresh Rate
DOS	720 x 400 at 70Hz
VGA	640 x 480 at 60Hz
	640 x 480 at 72Hz
	640 x 480 at 75Hz
SVGA	800 x 600 at 56Hz
	800 x 600 at 60Hz
	800 x 600 at 72Hz
	800 x 600 at 75Hz
XGA	1024 x 768 at 60Hz
	1024 x 768 at 70Hz
	1024 x 768 at 75Hz
	1152 x 864 at 75Hz
SXGA	1280 x 1024 at 60Hz

Configuring the Display Settings

After you connect your M1700SS Display and turn on your computer, you may need to configure one or more of these display settings. The ideal settings for this display are:

- Display mode (also called desktop area or video resolution) 1280 x 1024

- Refresh rate (also called vertical scan rate or vertical sync) 60 Hz

- Color depth (also called color palette or number of colors) at least 16-bit (high color)

Multimedia Features

The M1700SS Display comes with speakers built into the display bezel. The multimedia cable can be connected to the rear of the display for input.

Figure 9. Multimedia Cable

Optional Card Reader Bracket

The M1700SS Display is available with an optional card reader bracket (and (2) M3 screws) that supports IDTech and MagTech brand electronic card readers. The black version is part number 5013923. The M1700SS Display has been designed with slots on either side of the bezel to accommodate this card reader bracket. Simply slide the bracket into the appropriate holes and pull down slightly to lock in place. Refer to the illustration below for wiring suggestions. Note that 3M Touch Systems does not supply the card readers.

Figure 10. Card Reader Mounting and Cable Management


65-2205R
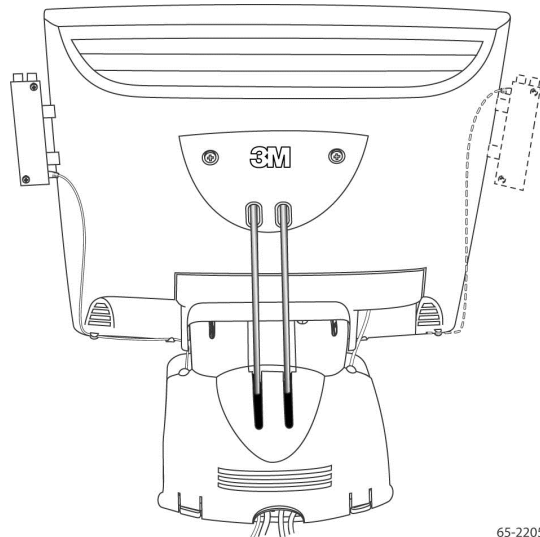
Connecting the Display

The M1700SS Display comes with the cables already connected (with the exception of the audio cable), however, there may be times when you need to reconnect these cables for some reason. To connect the M1700SS Display:

1. Turn off the computer before connecting or disconnecting any device.

Figure 11. Identifying Your Display Connections
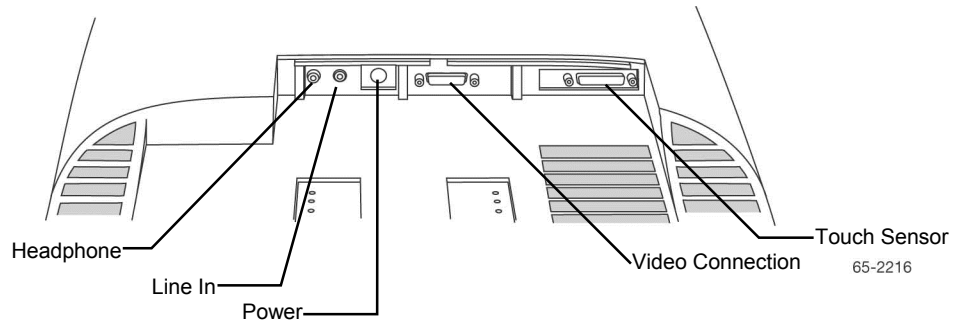
2. Connect the video cable to the video connector on the display and the other end to the video card in your computer.

3. Connect the touch sensor cable (either serial or USB) to the display and the other end to an available port on the back of your computer. If you are using a USB connection, make sure you have installed the Touch Software drivers before connecting the touch sensor cable.

4. Plug the AC/DC power supply into the M1700SS Display. Be sure to use the power supply included with the display.

5. Connect the power cable to the AC/DC supply. Connect the other end to the appropriate AC outlet.

Figure 12. Connecting the M1700SS Display Cables to your Computer
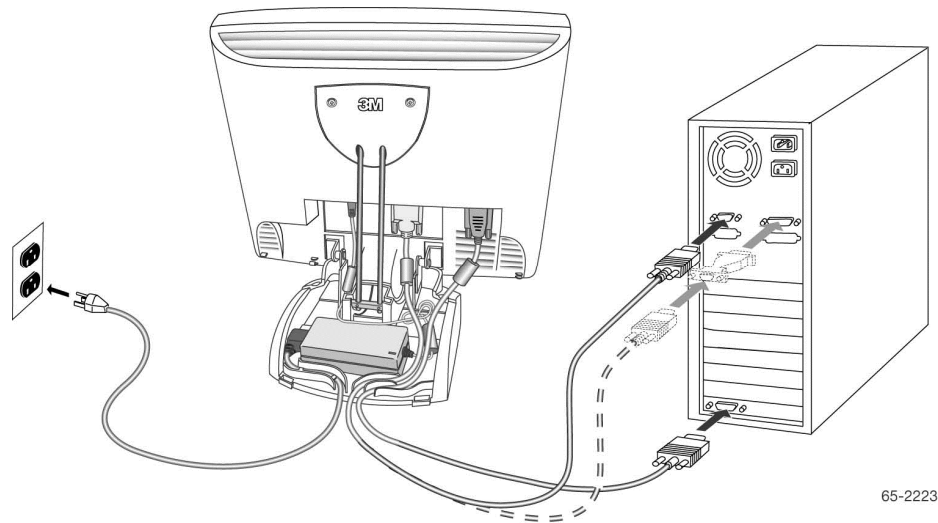
You should be sure all cable connections are secure -- tighten all cable screws.

Route all wiring and cabling away from heat sources and sharp metal edges to avoid damage. Also, keep the touch sensor cable away from sources of electromagnetic and radio frequency interference.

Testing the M1700SS Display

Note: The M1700SS Display has a power status LED located on the front of the bezel.

After connection, turn on the power switch located on the front bezel.

1. Turn on your computer.
2. Make sure the video image is displayed. If it is not, turn on your display. Ensure the LED is green – orange indicates power but no signal.
3. Make sure the video image is centered within the sensor area. Refer to Chapter for more information on using the on-screen menu to adjust the video display.

Installing Touch Software

A 3M™ MicroTouch™ touch driver is required to operate your M1700SS Display. Refer to the *MT 7 Software User Guide* for complete instructions. These drivers and relevant technical documentation can be found on the enclosed 3M Touch Solutions CD (31197) and are also available for download from our website at www.3m.com/touch. After the software is installed, restart your computer to load and activate the touch driver.
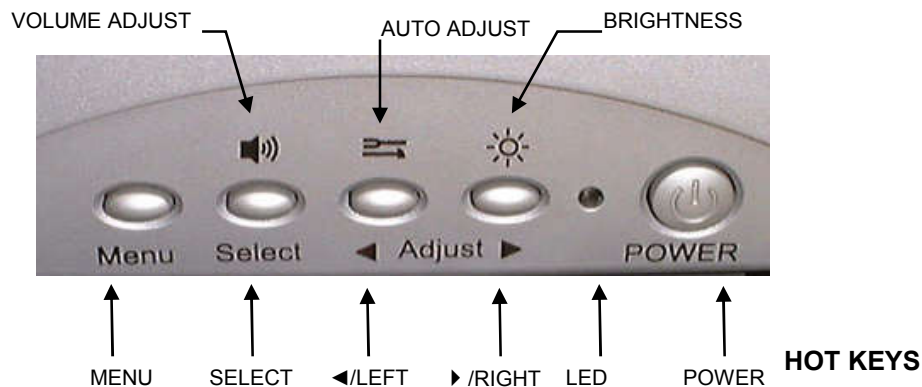
CHAPTER 2

Video Display Options

Adjusting the M1700SS Video Display

Your M1700SS Display has four main controls to adjust the video display. Three of these buttons are actually hot keys meaning that if the MENU key is *not* pressed first, these buttons control VOLUME, AUTO ADJUST, and BRIGHTNESS instantly.
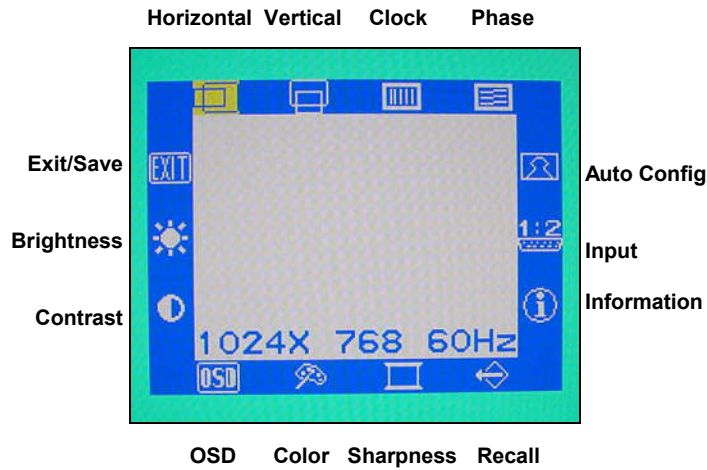
Figure 13. Video Display Controls
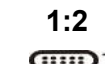
- MENU – Shows or hides the menu.
- SELECT -- Highlights the current menu option or saves the current setting. Press ► or ◄ to change the value.
- ◄/Left -- Scroll backwards through items on the menu or decrease value.
- ►/Right -- Scroll forward through items on the menu or increase value/

Pressing MENU will pull up the On Screen Display (OSD) menu, as shown below.

Figure 14. M1700SS Display Main Menu Options

Icon	Description
	H POSITION (Horizontal Position) Moves image horizontally on screen either left (◄) or right (►).
	V POSITION (Vertical position) Moves images vertically on screen either up (▲) or down (▼).
	CLOCK If the clock setting of your image is not fine-tuned, you may observe periodic vertical bars of video noise on your image. Autoconfig will typically solve these issues. If you are not satisfied with the auto adjustment, fine-tune the clock manually.
	PHASE If the phase of your display is not fine-tuned, you may observe unstable horizontal noise lines and cross-talk stretching from the edge of small windows on your display. Autoconfig will typically solve these issues. If you are not satisfied with the auto adjustment, fine-tune the phase manually.

Icon	Description
	AUTO CONFIG Perform the following functions. **AUTO ADJUST** Performs automatic configuration of the Phase, Clock, vertical, and horizontal position. **AUTO TRACKING** Tunes the clock and phase to the best condition automatically. **AUTO POSITION** Centers the image automatically. Both horizontal and vertical position is adjusted such that the image is centered on the panel. **AUTO COLOR** Adjusts the gain and offset of the Red, Green and Blue channels on the ADC automatically.
1:2	**INPUT LEVEL** Selects the applicable input source analog input (D-sub), or digital input (DVI-D).
	INFORMATION Provides the user with detailed information regarding the current input format and version.
	RECALL Resets the control functions back to the original factory preset values. In order for the Recall function to work, the timing must fall under one of the factory preset timing modes.
	SHARPNESS Adjusts the video quality to be sharp or blurry (special for text mode).
	COLOR TEMPERATURE Adjusts color temperature to PRESET 1 (9300 color temperature) or PRESET 2 (6500 color temperature). Or, for a custom color mode, select USER and push the select button to activate the RGB submenu. Using the select button activate the Red (Red Gain), Green (Green Gain) or Blue (Blue Gain) and change color strength for a customized color mode.
OSD	**OSD** Adjust the OSD image horizontally or vertically by pressing the Select button. **OSD BLENDING:** To adjust the brightness of the OSD MENU. **LANGUAGE** Selects a language among English, German, French, Spanish, Italian, Simplified Chinese or Traditional Chinese.
	CONTRAST Selecting the Contrast option increases (▲) or decreases (▼) the strength (lightness or dimness) of the image. Adjust the contrast using the ◄/left and ►/right arrow buttons, and press SELECT to confirm the new setting.

Icon	Description
☀	**BRIGHTNESS** Selecting the Brightness option will allow you to adjust the brightness of the display. Adjust the brightness using the ◄/left and ►/right arrow buttons, and press SELECT to confirm the new setting.
EXIT	**EXIT** Exits the OSD menu and choose to save any settings (or not).

Lock Out Feature

To restrict users from making changes follow this simple "Lock-Out" procedure. Repeat the procedure to restore access.

1. Press MENU and SELECT. Hold both keys for 10 seconds. DO NOT RELEASE.
2. Then press the POWER key to turn the display off.
3. Release MENU and SELECT.
4. Press the POWER key to turn the display back on.

CHAPTER 3

Maintenance and Troubleshooting

Maintaining Your Touch Display

To maintain your display and keep your display operating at peak performance:

- Keep your display and sensor clean.
- Adjust the display video controls. Refer to Chapter for more information.
- Do not install the display in a place where ventilation may be hindered. Always maintain adequate ventilation to protect the display from overheating and to ensure reliable and continued operation.

Touch Sensor Care and Cleaning

The touch sensor requires very little maintenance and should be periodically cleaned.

Typically, an isopropyl alcohol and water solution ratio of 50:50 is the best cleaning agent for your touch sensor.

- Apply the cleaner with a soft, lint-free cloth.
- Spray the cleaning liquid onto the cloth, not the sensor, so that drips do not seep inside the display or stain the bezel.
- Always handle the touch sensor with care. Do not pull on or stress cables.

Monitor Installation Problems

Problem	Possible Causes and Solutions
No image displayed (blank screen)	**Is the display receiving power?** • Check that the display's power cable is connected properly and securely in a grounded electrical outlet. • Check that the AC/DC power supply is firmly plugged into the display. • Check that the green light appears on the bezel indicating the display is powered on and receiving a signal. • Check that the AC/DC power supply cable is connected properly and securely to an electrical outlet. Check that the LED is showing green on the AC/DC power supply. • Try using another power cable. • Try using another electrical outlet. **Is the display receiving a valid video signal from the PC?** • Check that the computer is powered on. • Check that the video cable is connected properly and securely to the display and the computer. • Check that no pins are bent in the video cable connector both ends. • Check that the video card is firmly seated in the card slot in your computer. • Check that the video input from the video card falls within the refresh rate of the display. Refer to **Table 1** for details. • Check that your computer is using a supported display mode. Refer to **Table 1** for details. **Is the display in Power Management mode?** • Touch the sensor, press any key on the keyboard, or move the mouse to restore operation. **Are the brightness and contrast settings too low?** • Use the display controls to adjust these values.
Abnormal image	• Check that the video input from the video card falls within the refresh rate of the display. Refer to **Table 1** for details. • Check that the video cable is connected properly and securely to the display and the computer. • Perform an Auto Config.
Colors of image are abnormal	• Check that the video cable is connected properly and securely to the display and the computer. • Check that no pins are bent in the video cable connector both ends.
Disturbances on the sensor	• The video display adjustments are incorrect. Refer to Chapter for adjusting procedures.

Troubleshooting the Touch Sensor

If you are experiencing problems with the touch sensor, check the following list of common installation errors.

Table 3. Common Touch Sensor Installation Issues

Common Installation Issues	Possible Solutions
Touch sensor does not respond to touch	• Review the installation procedures. Are all cables connected properly? • After you installed Touch Software, did you restart your PC to activate the touch sensor driver? • Are the communication settings correct? Is the touch sensor trying to use the COM port or IRQ of another device (for example, a mouse)? If so, a hardware device conflict will result and the touch sensor will not work.
Touch sensor is not accurate	• Calibrate the touch sensor for the current video resolution and operating system.
Cursor does not follow finger movement or does not reach the edges of the sensor	• Calibrate the touch sensor for the current video resolution and operating system.
Cursor is not located directly underneath your finger	• Open the touch sensor control panel and make sure all cursor offsets (vertical, edge/horizontal) are turned off. • Calibrate the touch sensor for the current video resolution and operating system.
Cursor is extremely jittery or erratic	• Stabilize the cursor by adjusting the operating frequency of the touch controller using the touch sensor control panel.

M1700SS Display Regulatory Agency Approvals

Your product complies with the following regulatory standards:

- FCC-B
- CE
- UL/cUL
- CCC
- RCM

This equipment has been tested and found to comply within limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television equipment reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Move the equipment away from the receiver.
- Consult the dealer or an experienced radio/television technician for additional suggestions.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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.

FCC Warning

To assure continued FCC compliance, the user must use grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. If a BNC cable is going to be used, use only a shielded BNC(5) cable. Also, any unauthorized changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

3M Touch Systems is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment.

CE Conformity for Europe

The device complies with the requirements of the EU RoHS Directive 2011/65/EU, the ECC directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC Art.5 with regard to "Electromagnetic compatibility", and 73/23/EEC as amended by 93/68/EEC Art.13 with regard to "Safety".

M1700SS Base Plate Mounting Template
(Drawn actual size)
3M Touch Systems Proprietary Information

Rear Edge of
Base Not Shown

Drill 4 Mounting Holes
0.178" (4.5 mm) Dia.

5.71" (145 mm)

Place this template on mounting surface and drill four holes as shown for mounting screws.
The screw heads must be smaller than 0.39" (10 mm) and larger than 0.21" (5.5 mm).
Adjust height of screw heads to securely lock monitor in place. This height is about 0.178" (4.5 mm).

3.74" (95 mm)

0.21" (5.5 mm)

Locking
Mechanism
Receptacle

0.39" (10 mm)

0.70" (17.8 mm)

Front Edge
of Base