TRANSDUCTION

TR-LCD1900-RM Rack Mount Monitor

TR-LCD1900-PM Panel Mount Monitor

User Manual - Ver. 2

Important Information

The information in this document is subject to change without notice. All relevant issues have been considered in the preparation of this document. Should you notice an omission or any questionable item in this document, please feel free to notify Transduction.
Regardless of the foregoing statement, Transduction assumes no responsibility for any errors that may appear in this document nor for results obtained by the user as a result of using this product.

Return policy
Products returned for repair must be accompanied by a Return Material Authorization (RMA) number, obtained from Transduction prior to return. Freight on all returned items must be prepaid by the customer. The customer is responsible for any loss or damage caused by the carrier in transit. Double pack tight to prevent any damage.

To obtain an RMA number, call us at 905-625-1907. We will need the following information:

- Return company address and contract
- Model name, model number and serial number
- Description of the failure

Mark the RMA number clearly on the outside of each box, include a failure report and return the product to:
Transduction
23-5155 Spectrum Way
Mississauga, ON Canada L4W 5A1
Attn: RMA Department

Safety Precaution

When not used for extended periods of time, set your PC to DPMS. If using a screen saver, set it to the active screen mode.

Do not use a damaged or loose plug. This may cause an electric shock or fire.

Do not pull the plug out by the wire or touch the plug with wet hands. This may cause an electric shock or fire.

Use only a properly grounded plug or receptacle. An improper ground may cause electric shock or equipment damage.

Do not excessively bend the plug and wire or place heavy objects on them. This could cause damage and an electric shock or fire.

Do not place the monitor face down. The LCD surface may be damaged.

When cleaning, wipe with a slightly moistened, soft cloth. Do not spray any cleaner directly on to the monitor.

Do not remove housing. No serviceable parts inside. Refer servicing to Transduction.

Transduction

19” Rack Mount LCD Monitor
19” Panel Mount LCD Monitor

TR-LCD1900-RM-V2
TR-LCD1900-PM-V2

Features

- Viewable Area 14.90” x 12.00”
- Brightness 300cd/m$^{2.}$
- Optional brightness 1600cd/m$^{2.}$
- Contrast ratio 700:1.
- Viewing angle - Vertical = 75º, Horizontal = 80º.
- Response time 8ms.
- Pixel pitch 0.294mm.
- Maximum Resolution 1280 x 1024
- Choice of EETI or ELO touch controllers
- Input power 100-240VAC or 12VDC, optional 24V, 48V, 125V and 250VDC.
- Warranty 5 years

Reliable 19” TFT LCD SXGA module in industrial rack mount or panel mount enclosure. NEMA 4 epoxy coated finish over steel. Optional stainless steel version. Optional resistive touch screen. Optional brightness 1600cd/m^2.

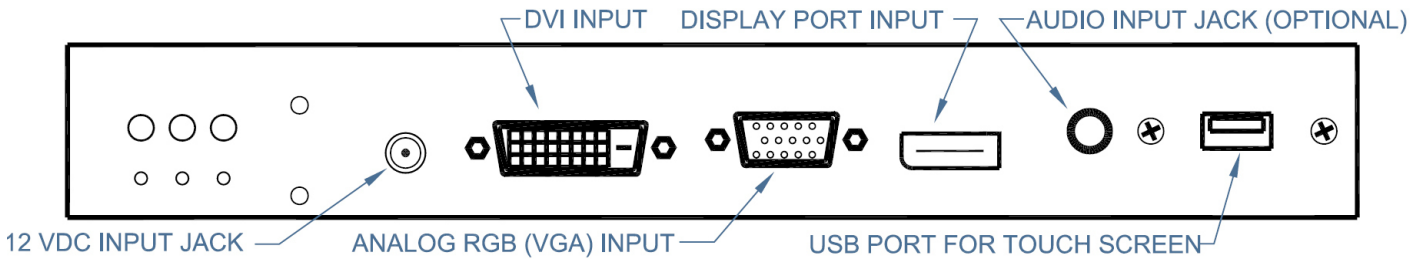
OSD (On-Screen Display) Controls: Allow you to quickly and easily adjust elements of your screen image with simple to use on-screen menus.

Full Scan Capability: Allows you to use the entire screen area.

Plug and Play: The Microsoft solution with the Windows 95/98/ME/2000/XP/7/10 operating systems facilitate setup and installation by allowing the monitor to send it’s capabilities (such as screen size and resolutions supported) directly to your computer, automatically optimizing display performance.

Input Signal: SVGA, DVI-D and DisplayPort.

Power Saving Mode: The monitor can be set to shift to a lower power consumption level when not in use. This will save useful life of backlight lamps.



TR-LCD1900-V2 SVGA, DVI-D, DisplayPort

TRANSDUCTION 5155 Spectrum Way, Bldg 23, Mississauga, ON L4W 5A1
1.800.268.0427 905.625.1907 Fax: 905.625.0531
www.transduction.com Email: sales@transduction.com

Transduction

19” Rack Mount LCD Monitor
19” Panel Mount LCD Monitor

TR-LCD1900-RM-V2
TR-LCD1900-PM-V2

TR-LCD1900-V2 SVGA, DVI-D, DisplayPort

Specifications:

Reliable LCD Module
- Diagonal: 19 inch
- Viewable Image Size: 14.90” x 12.00”
- Native Resolution (Pixel Count): 1280 x 1024
- Active matrix, thin film transistor (TFT) liquid crystal display (0.294mm dot pitch, 300cd/m^2 white luminence

Input Signal
- SVGA Analog RGB
- DVI-D
- DisplayPort

Display Colors
- Analog input 16,194,277

Maximum Viewing Angles
- Up/Down - 75º
- Left/Right - 80º

Synchronization Range
- Vertical - 15KHz to 80KHz
- Horizontal - 50Hz to 77Hz

Resolution
- Analog RGB - VGA/SVGA/XGA/SXGA/WXGA/ WUXGA 1280 x 1024 @ 60Hz max.
- DVI-D - VGA/SVGA/XGA/ SXGA/WXGA/WUXGA 1280 x 1024 @ 60Hz max.
- DisplayPort - VGA/SVGA/XGA/SXGA/WXGA/ WUXGA 1280 x 1024 @ 60Hz max.

Active Display Area
- Vertical - 301.056mm
- Horizontal - 376.32mm

Power Consumption
- 60W max.

Dimensions
- Rack mount: 18.96” (L) x 2.875” (W) x 14” (H) (8U) / 14.3lbs (48.16cm x 7.3cm x 35.56cm / 6.5kg)
- Panel mount: 17.75” (L) x 3.00” (W) x 15.25” (H) / 6.5kg - (45.09cm x 7.62cm x 38.74cm / 6.35kg)

Environmental Considerations
- Operating Temperature: 0 ~ 50ºC (32 ~ 122ºF), 60ºC (140ºF) for 2 hours
- Operating Humidity 10 ~ 90%, non-condensing
- Operating Altitude: 0 to 10,000 ft
- Storage Temperature: -20 ~ 60ºC (-4 ~ 140ºF)
- Vibration & Shock: 5G and 30G
- Storage Humidity: 5 ~ 40%, non-condensing

Regulatory Approvals
- CSA, CE, UL

Ordering Information
- TR-LCD1900-RM-V2 - Rack Mount version
- TR-LCD1900-PM-V2 - Panel Mount version

Warranty: 5 years

Options
- Brightness 1600cd/m^2
- TOUCH (Resistive USB)
- TOUCH EETI controller
- TOUCH ELO controller
- Safety glass, no touch
- 12V DC input power
- 24V DC input power
- 48V DC input power
- 125V DC input power
- 250V DC input power

TR-LCD1900 series monitors are often used with Novatech ORION series and SEL Inc. RTAC series of Linux based RTU’s. Make sure to specify your device when ordering monitor for the compatibility with touch screen controller.

Quick Start

Your new TR-LCD1900 monitor box should contain the following:

- TR-LCD1900 rack mount / panel mount monitor
- Power cord
- SVGA cable
- DVI cable
- DisplayPort cable
- USB cable if touch option included
- User's manual and driver installation CD

Remember to save your original box and packing material to transport or ship the monitor.

Quick Start

To attach the TR-LCD1900 monitor to your system, follow these instructions:

1. Turn off the power to your computer.

2. Connect the power cord for your monitor to the power port on the back of the monitor. Plug the power cord for the monitor into a nearby outlet.

3-1. Using the SVGA (analog) connector on the video card:
Connect the signal cable to the 15-pin, D-sub SVGA connector on the back of your monitor.

3-2. Using the DVI (digital) connector on the video card:
Connect the DVI cable to the DVI port on the back of your monitor.

3-3. Using the DisplayPort (digital) connector on the video card:
Connect the DisplayPort cable to the DisplayPort on the back of your monitor.

4. Connect to a Mac:
Use the D-sub connection cable.
(An older model Macintosh may require a special Mac adapter).

5. Turn on your computer and monitor. If your monitor displays an image, installation is complete.

NOTES:

- You may get a blank screen depending on the type of video card you are using, if you connect simultaneously both SVGA, DVI and/or DisplayPort cables to one computer.
- If the monitor is connected properly using the DVI connector but you get a blank or fuzzy screen, check to see if monitor status is set to analog. Press Source button to have the monitor double-check the input signal source.

Rear Panel Video Input Connectors

(The configuration at the back of the monitor may vary from product to product.)

1 Analog SVGA port

Connect the signal cable to the 15-pin, D-sub SVGA connector on the back of your monitor.

2 DVI port

Connect the DVI Cable to the DVI Port on the back of your Monitor.

3 DisplayPort

Connect the DisplayPort cable to the DisplayPort connector on the back of your monitor.

Note: See Quick Start on page 4 for further information regarding cable connections

Reference Data

Video Input Timing;

Supported vertical refresh rates for each modes are as follows:

640 x 350	70Hz
640 x 400	70Hz
700 x 560	55~75Hz
720 x 350	70Hz
720 x 400	70Hz
640 x 480	60~75Hz
800 x 600	60~75Hz
1024 x 768	60~75Hz
1152 x 864	60~75Hz
1280 x 1024	60~75Hz
1280 x 768	60~75Hz
1366 x 768	60~75Hz
1440 x 900	60~75Hz
1600 x1200	60~75Hz
1680 x1050	60~75Hz
1920 x1080	60Hz
1920 x1200	60Hz

Sync. : H/V Separated TTL, Composite Sync

- **Electrical Parameters**

Reference Cosmos, t_A 25 ° C

Symbol	Description	Min	Type	Max	Unit
V_{DD}	+12V (+24V) DC Power Supply	10.8	12.0	26.5	V
$V_{i(RGB)}$	Video Input Signal (w r t GND)	0.5	0.7	1.0	V_{PP}
f_S	Video Sample Rate			80	MHz
f_{HS}	Horizontal Sync. Frequency	30		60	KHz
f_{vs}	Vertical Sync Frequency	56		75	Hz
F_{SIH}	Sync Input High Level	2.5			V
V_{SIL}	Sync Input Low Level			0.8	VDC
I_{DD2}	Supply Current +12V (with LCD & Inverter)		**2.5**	**3**	A

Note 1. Power consumption measuring condition is 2 pixel check board pattern @ SXGA 75Hz and maximum brightness with Samsung LTM170E6 & inverter at t_A 25°C.

Supported Input Formats

TR-LCD1900 series monitor can support any video mode within the following input constraints:

- Signal sample frequency with the input ≤ 80MHz
- Horizontal sync frequency between 30KHz and 80KHz

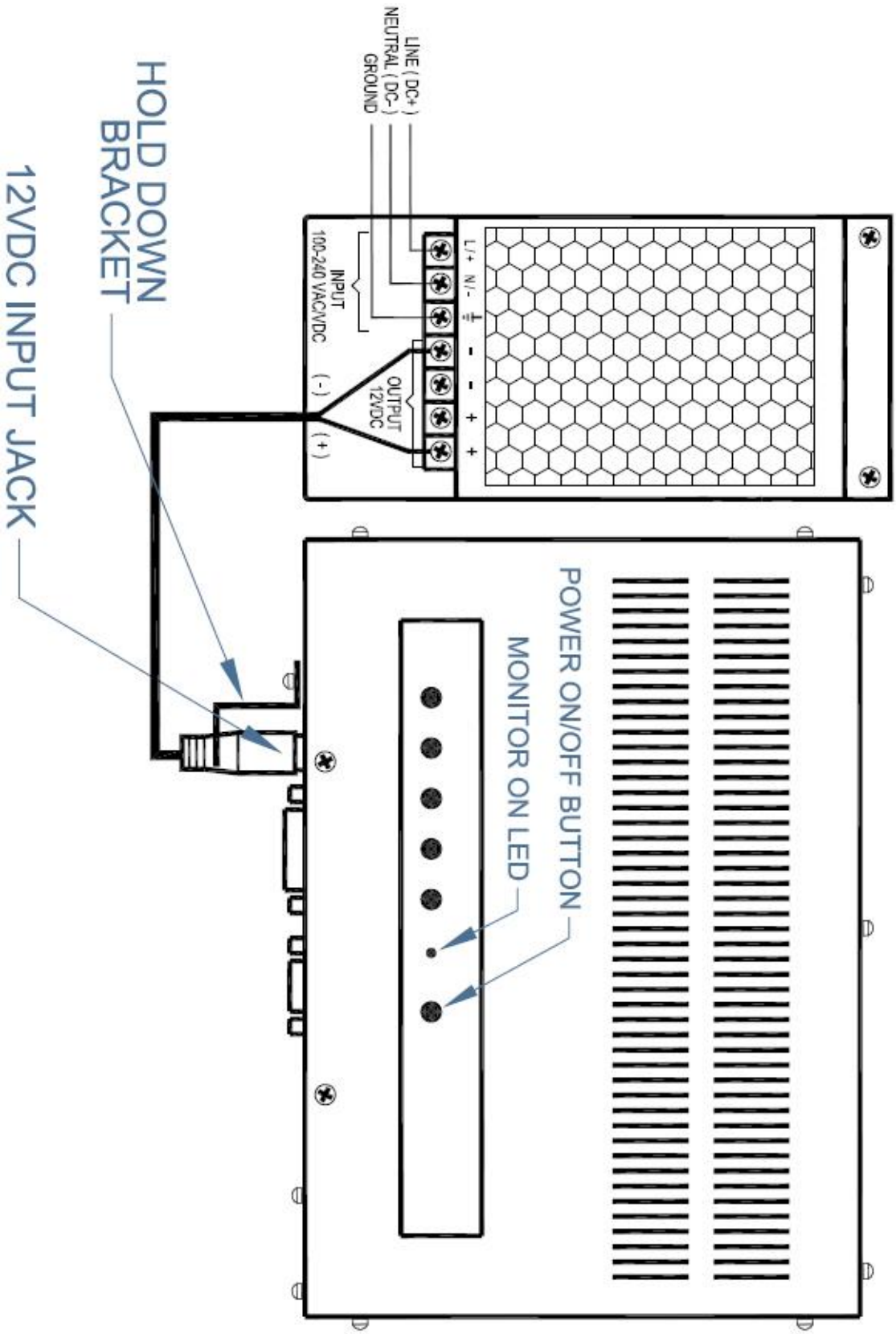
Modes are detected with the presentation of the input and previous alignments for setup are Automatically recalled. The emulation of a true multi-sync monitor is implemented.
The factory preset supported modes are as follows:

Mode	Resolution	Refresh rate	H-freq.	Pixel freq.	Remarks
VGA	640 x 350	70Hz	31.47KHz	25.175MHz	VESA Standard
VGA	720 x 400	59.940HZ	31.469KHZ	25.175MHZ	IBM VGA 3H
VGA	640 x 480	60Hz	31.5KHz	25.175MHz	Industry Standard
VGA	640 x 480	72Hz	37.9KHz	31.500MHz	VESA Standard
VGA	640 x 480	75HZ	37.5KHZ	31.500MHZ	VESA Standard
SVGA	800 x 600	60Hz	37.9KHz	40.000MHz	VESA Guidelines
SVGA	800 x 600	72Hz	48.1KHz	50.000MHz	VESA Standard
SVGA	800 x 600	75HZ	46.9KHZ	49.500MHZ	VESA Standard
XGA	1024 x 768	60Hz	48.4KHz	65.000MHz	VESA Guidelines
XGA	1024 x 768	70Hz	56.5KHz	75.000MHz	VESA Standard
XGA	1024 x 768	75HZ	60KHZ	78.750MHZ	VESA Standard
SXGA	1280 x 1024	60Hz	64KHZ	108.000 MHZ	VESA Standard
SXGA	1280 x 1024	75HZ	80KHZ	135.000 MHZ	VESA Standard
WXGA	1280 x 768	60~75Hz	47.7~65KHZ	80.140 MHZ	Not Standard
WXGA	1366 x 768	60~75Hz	47.7~65KHZ	80.000 MHZ	Not Standard
WSXGA	1440 x 900	60~75Hz	65KHZ	150.000 MHZ	Not Standard
WSXGA	1680 x1050	60Hz	70KHZ	150.000 MHZ	Not Standard
WUXGA	1920 x1080	60Hz	95KHZ	190.000 MHZ	Not Standard

Notes:

1. All mentioned modes are non-interlaced. The maximum and minimum frame rates are determined by the TFT-LCD.
2. Factory preset modes are overwritten by additional user alignments for automatic recall. The factory preset modes can be recalled at any time.

Monitor and Power Supply Wiring Diagram



Control Panel Buttons

The Control Panel Buttons give various and very easy graphic user interfaces. Users can easily access the function needed. Be sure that your system power and LED is turned on before operating the keyboard.

MENU / DOWN / DECREASE/ (LEFT) INCREASE/ (RIGHT) SOURCE/ POWER

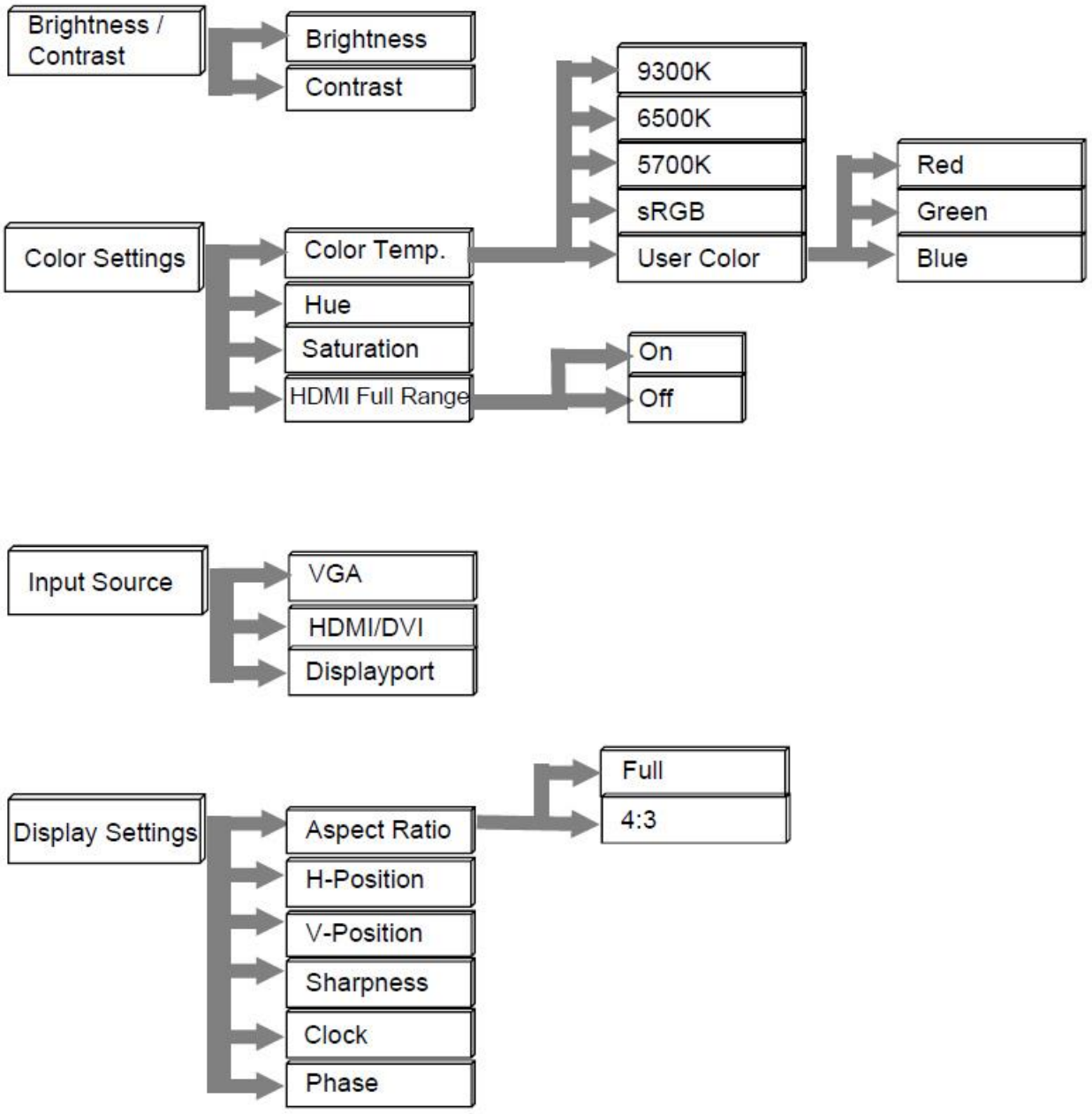
Key Name and Function

Key Name	Description
Power	Turns ON/OFF the system
Menu	Activates the OSD menu or goes to previous menu
Down	Moves the highlight icon up to the function that user wants
Left	Decreases the adjustment of the selected function
Right	Increases the adjustment of the selected function
Source	Selects the Input Signal among analog RGB, Digital DVI and DisplayPort

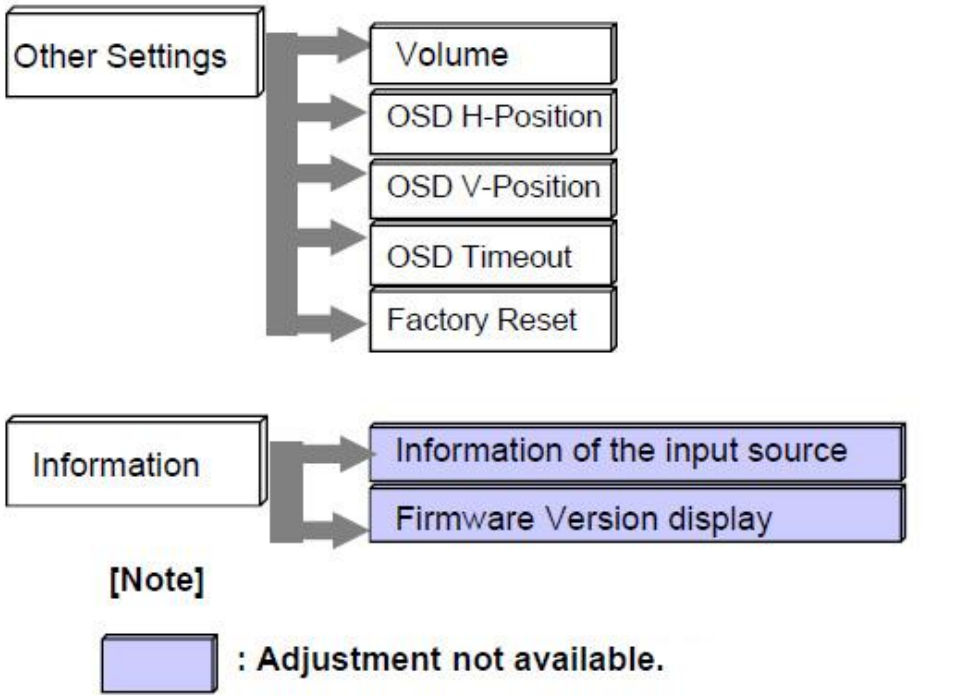
Hot Key and Function

Hot Key	Description
Menu	Menu popup and menu exit
Down	Auto adjustment – VGA ONLY
Left	Contrast menu
Right	Brightness menu

Summary of OSD Menu



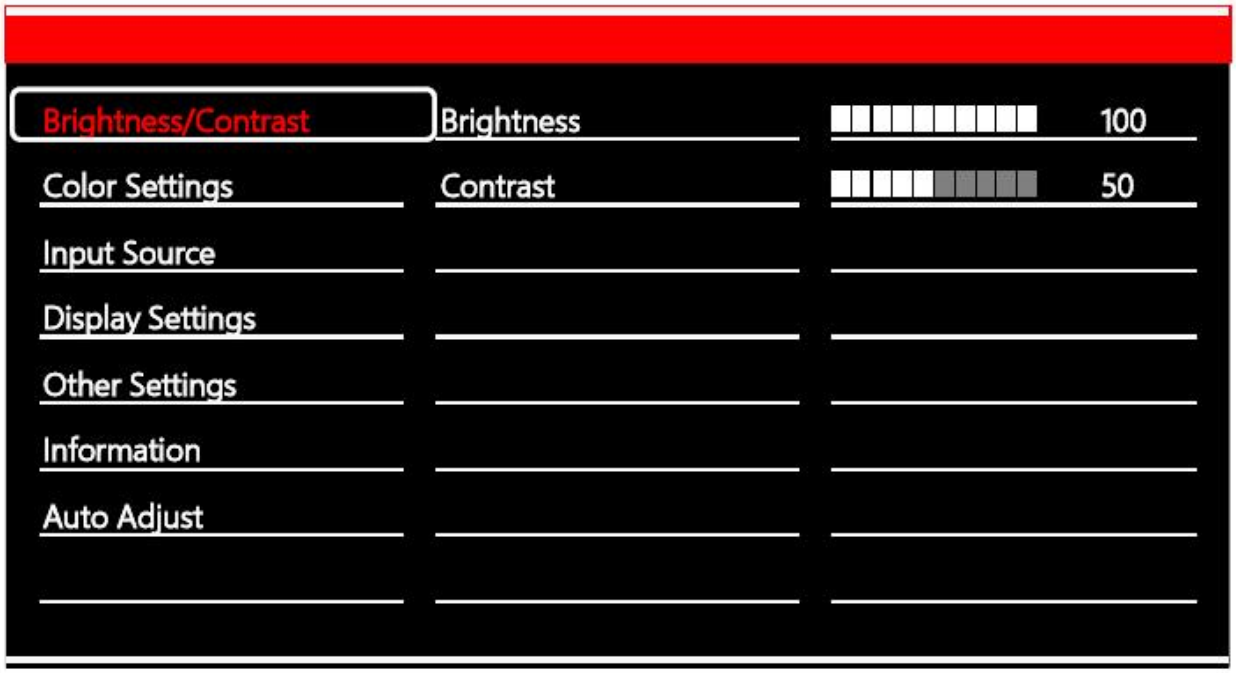
Summary of OSD Menu



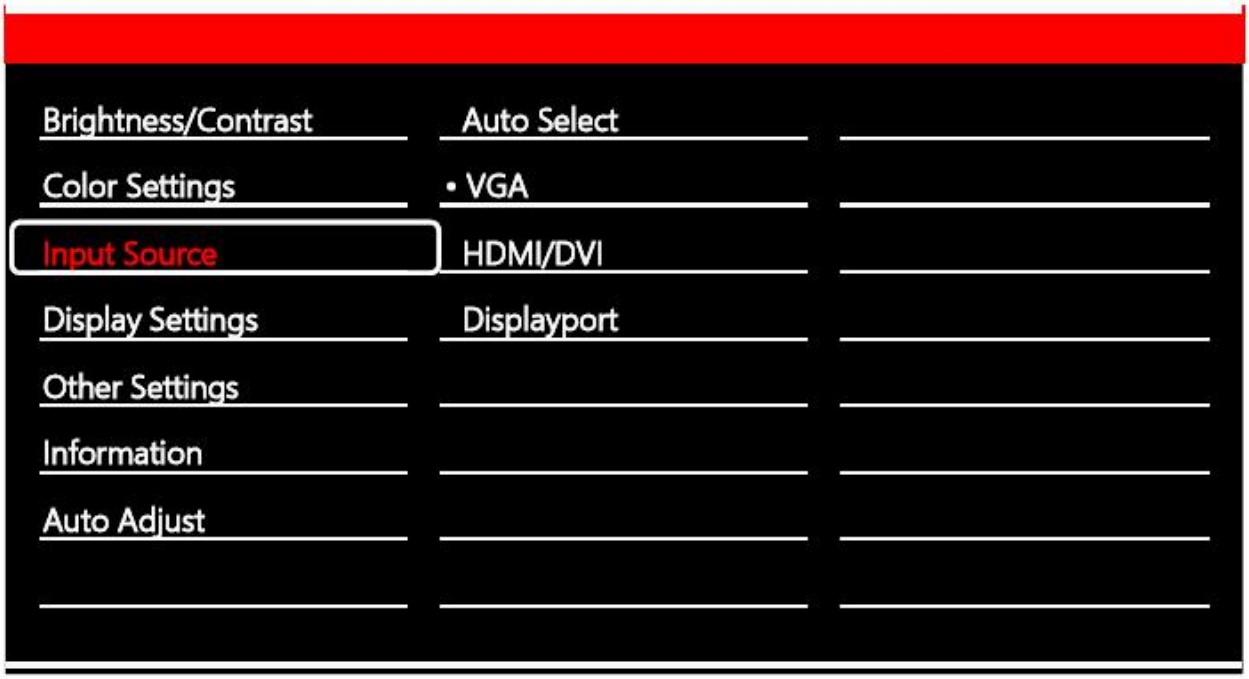
Change Video Input Type Without Video Signal Connected

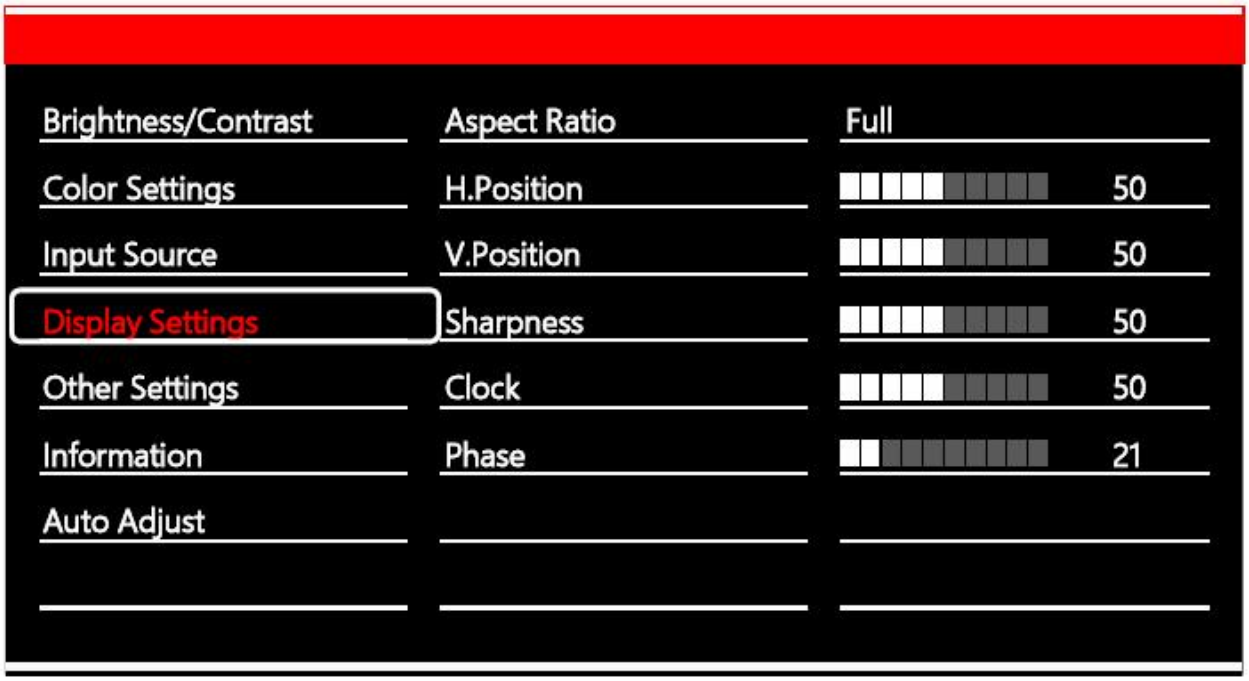
- Press the “SOURCE” button once to display current video input.
- If the displayed video signal is not the one required press the “SOURCE“ button twice to see menu with choices of the video input.
- Press “DOWN” button to scroll and select required video input
- Press “MENU” button to confirm selection of the video input.

OSD Menu Settings

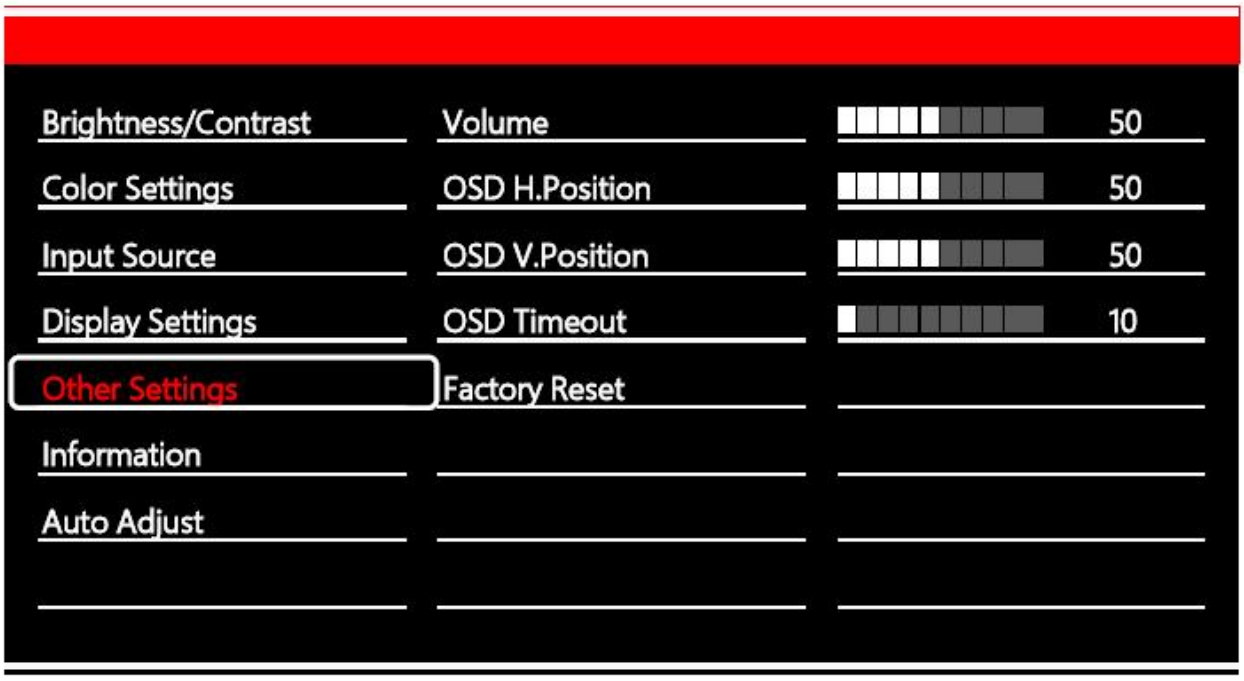


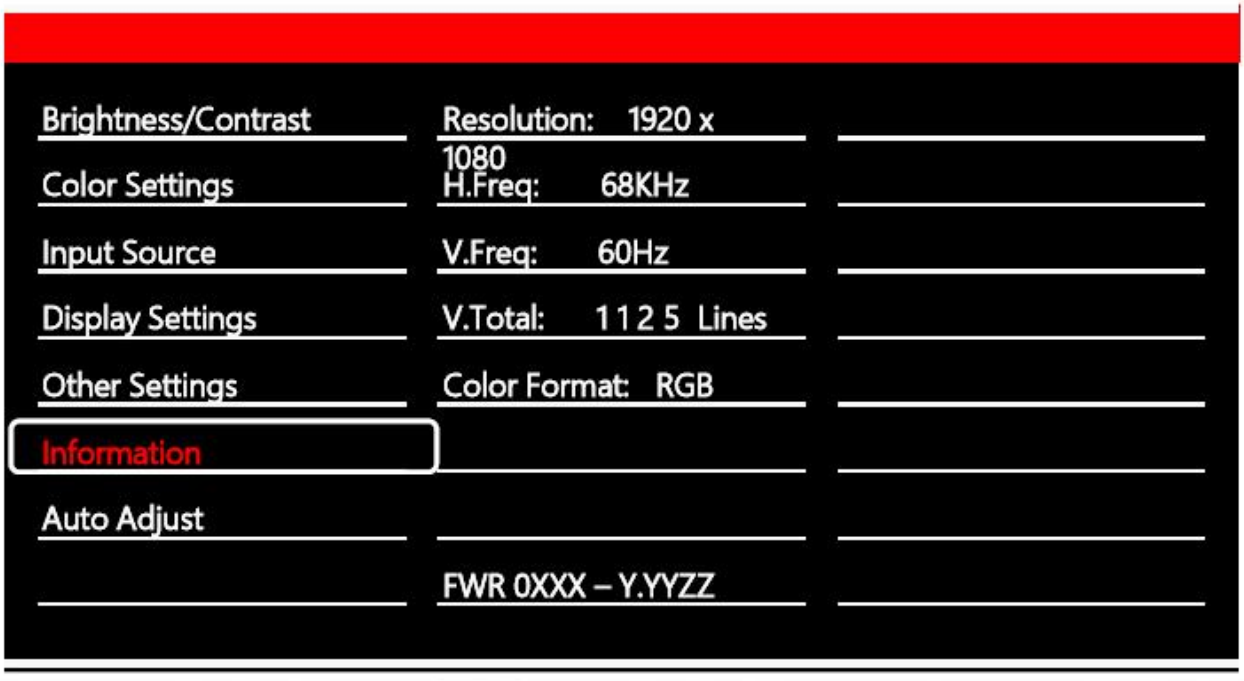
OSD Menu Settings



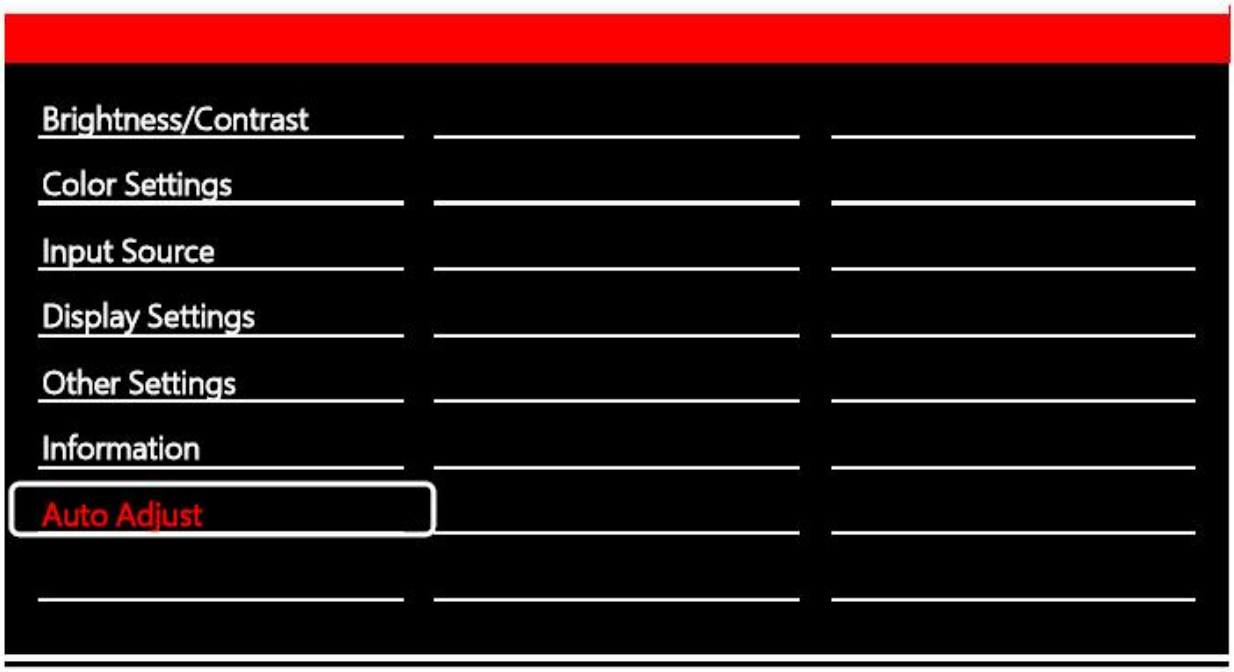


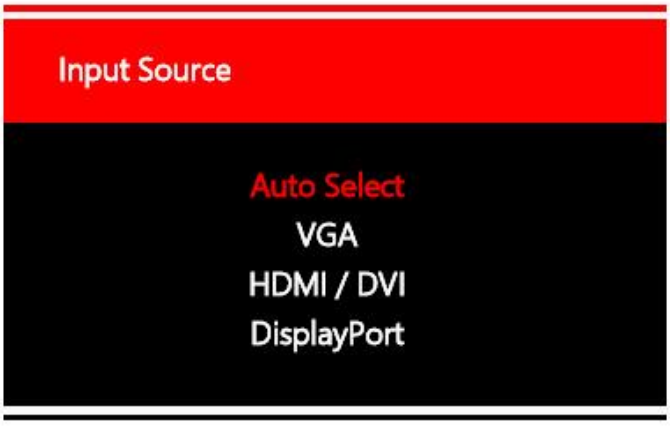
OSD Menu Settings





OSD Menu Settings

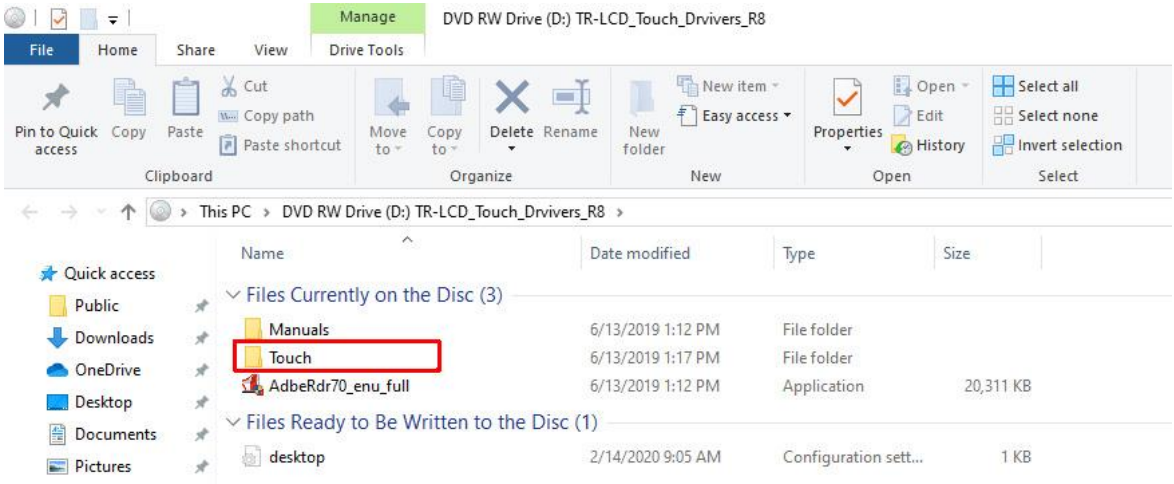




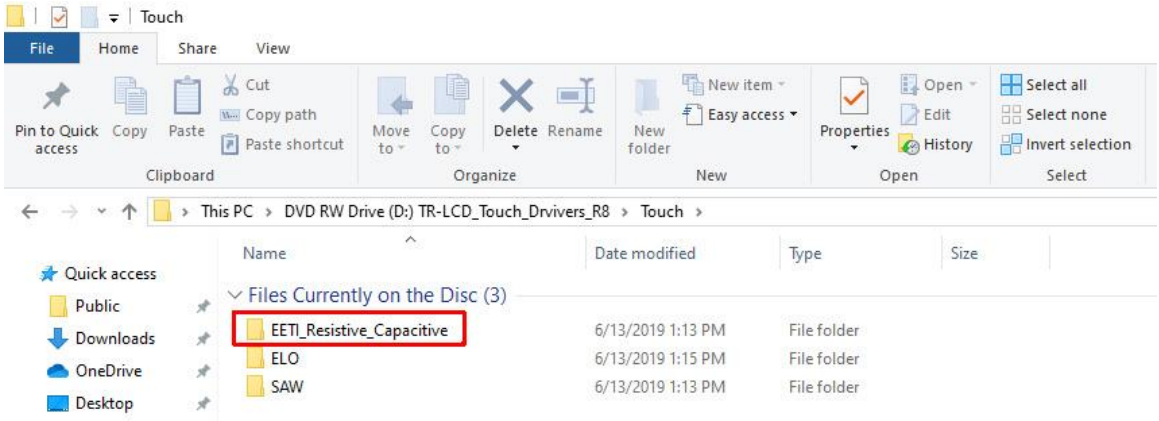
User has an option selectable Auto source function and Manual source function.
This pop up message will comes on when user press “Source” button on OSD board.

Touch Screen Calibration (If Option Included)

1. Insert the TR-LCD Touchscreen Drivers & User Manual CD into the CD-DVD-R/W drive.
2. Open the *Touch* folder.

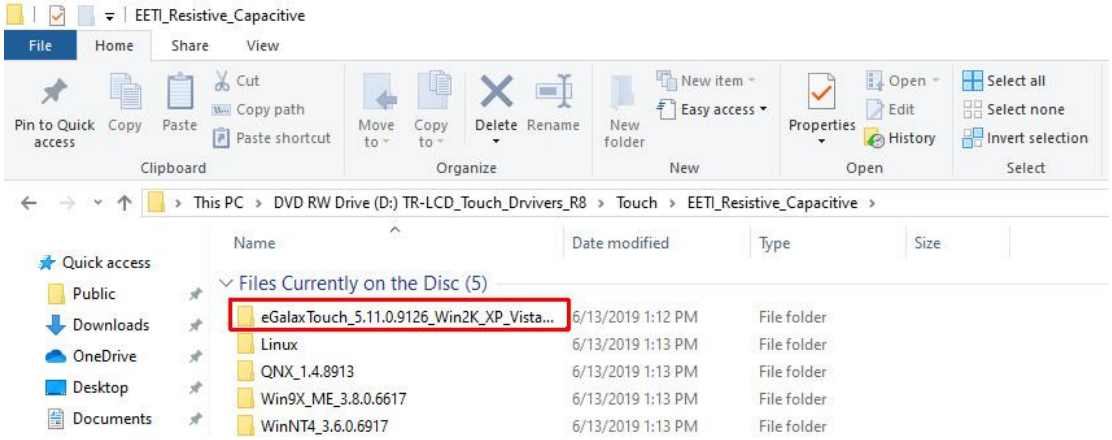


3. Open the *EETI_Resistive_Capactive* folder. ****(Open the ELO folder if monitor was ordered with ELO touch controller.)****

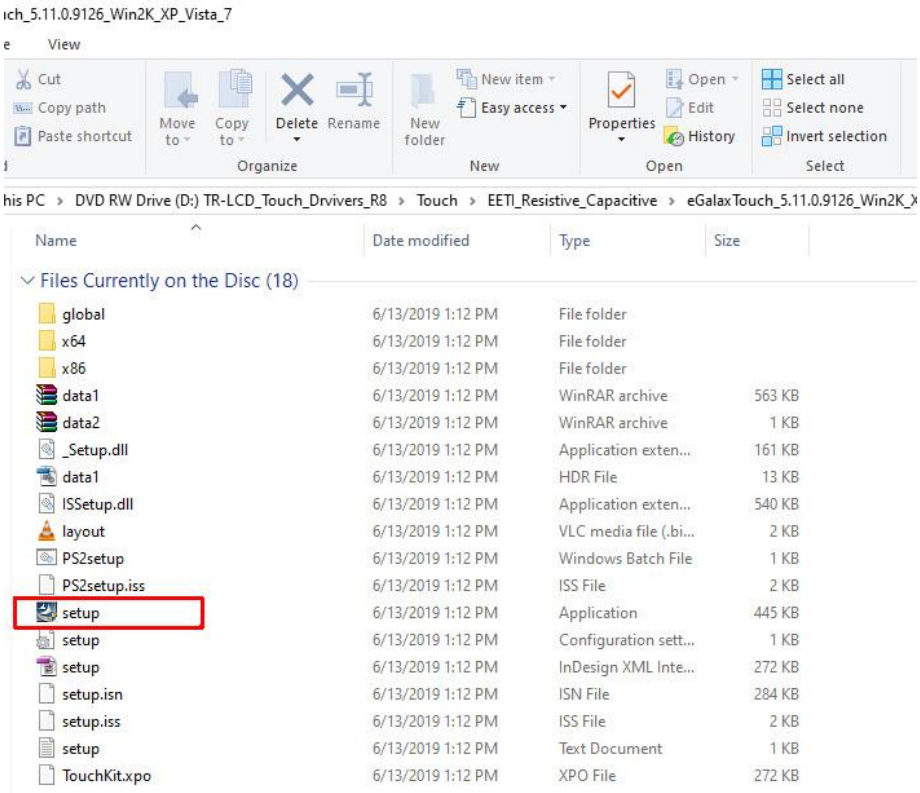


Touch Screen Calibration (If Option Included)

4. Open the *eGalaxTouch_5.11.0.9126_Win2K_XP_Vista_7* folder.

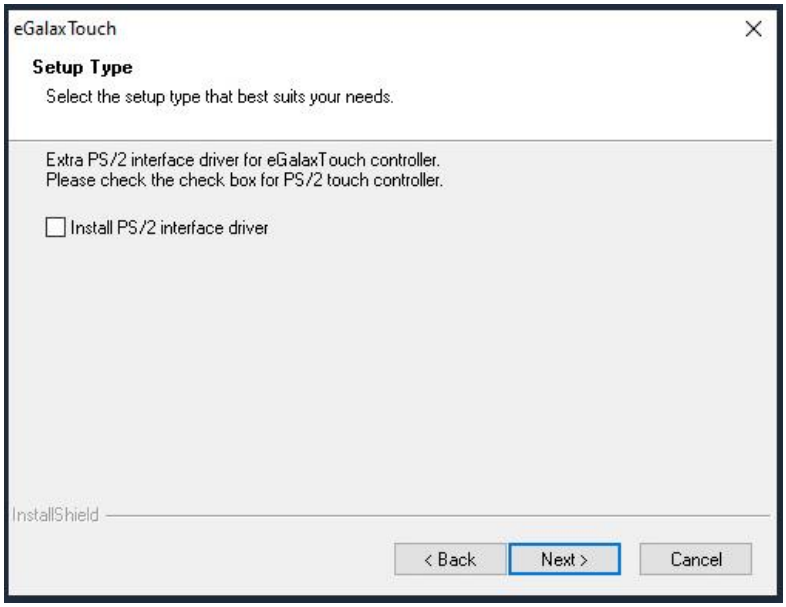


5. Double-click the **setup** icon.

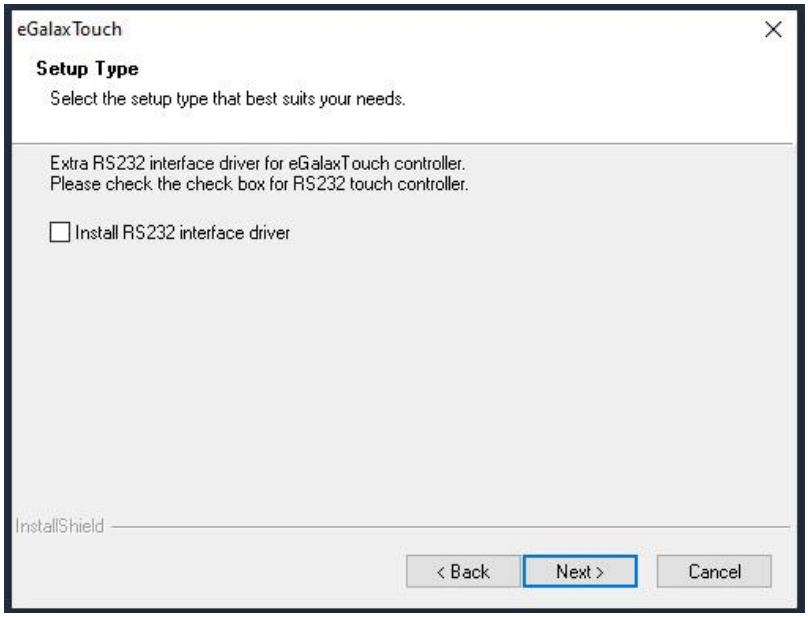


Touch Screen Calibration (If Option Included)

6. Leave the **Install PS/2 interface driver** box unchecked. Click **Next**.

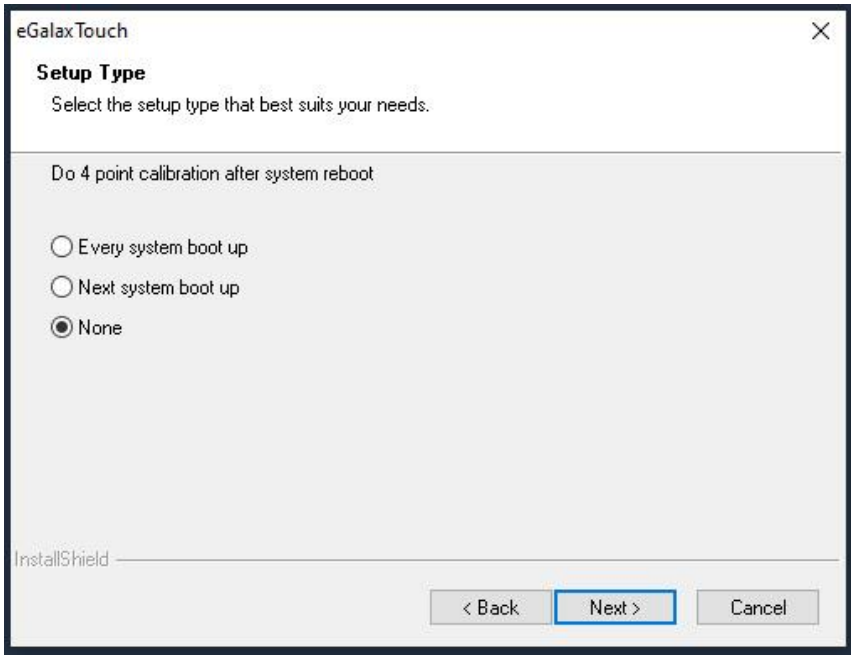


7. Uncheck the **Install RS232 interface driver** box. Click **Next**.

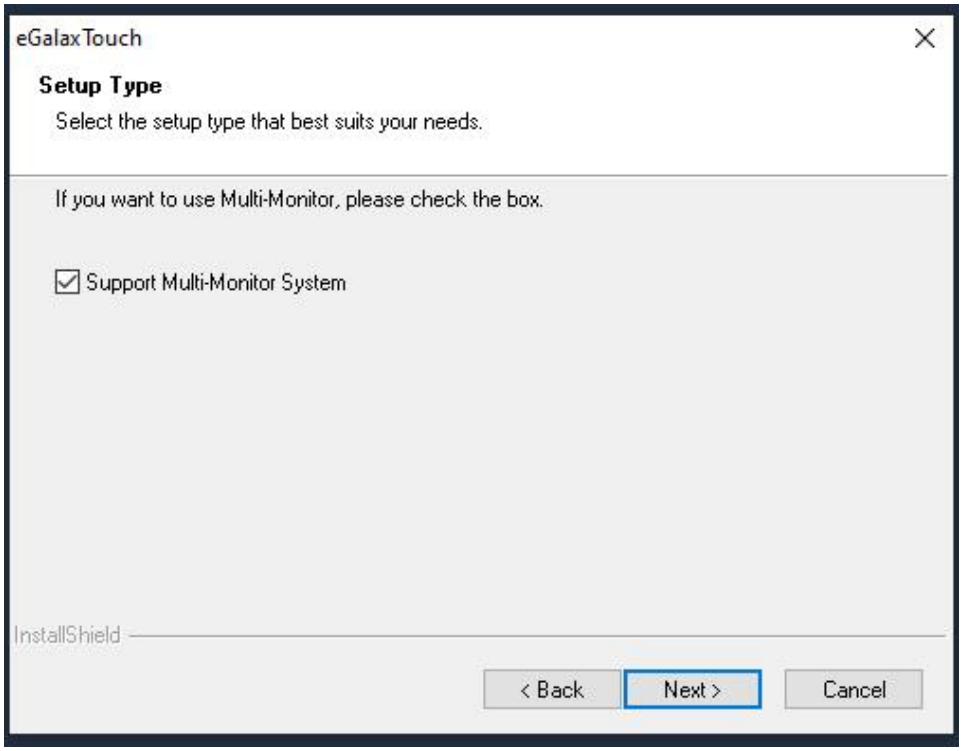


Touch Screen Calibration (If Option Included)

8. Leave **None** selected. Click **Next**.

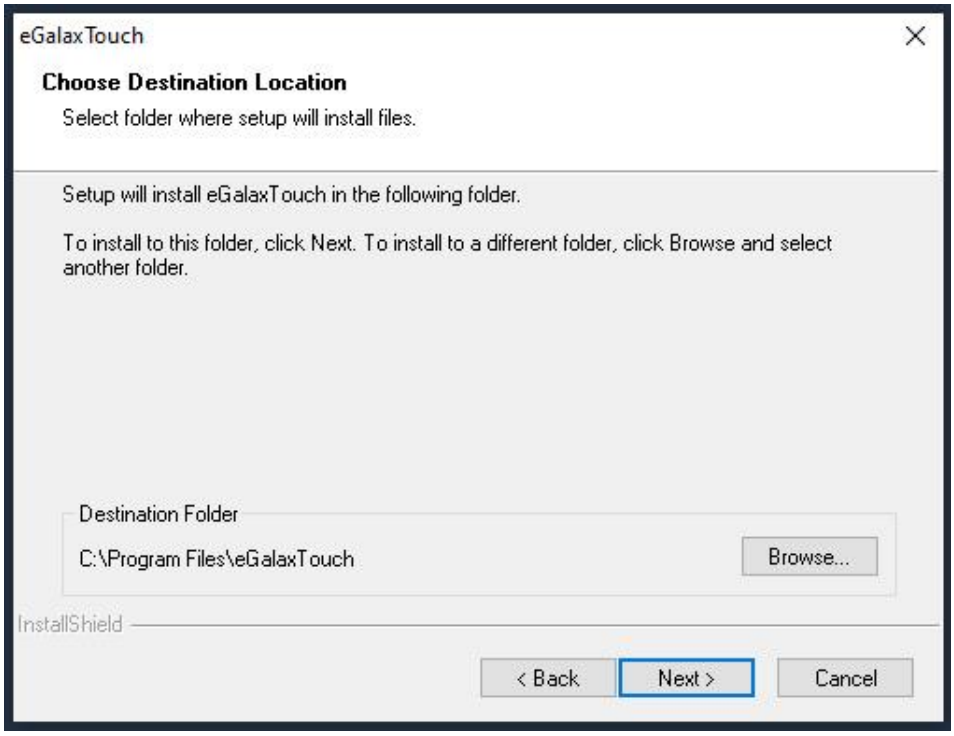


9. Leave **Support Multi-Monitor System** box check marked. Click **Next**.

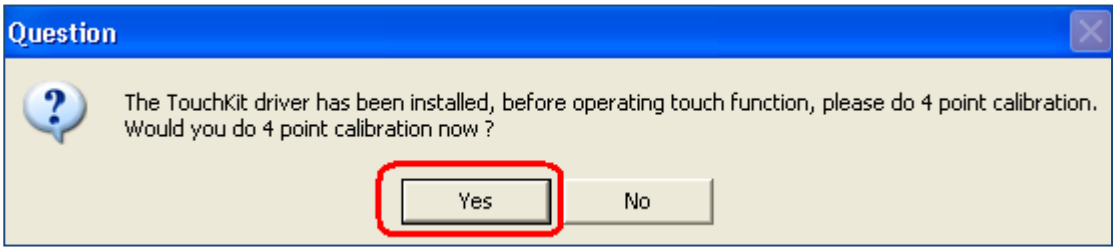


Touch Screen Calibration (If Option Included)

10. Choose destination location to install driver. Click **Next**.

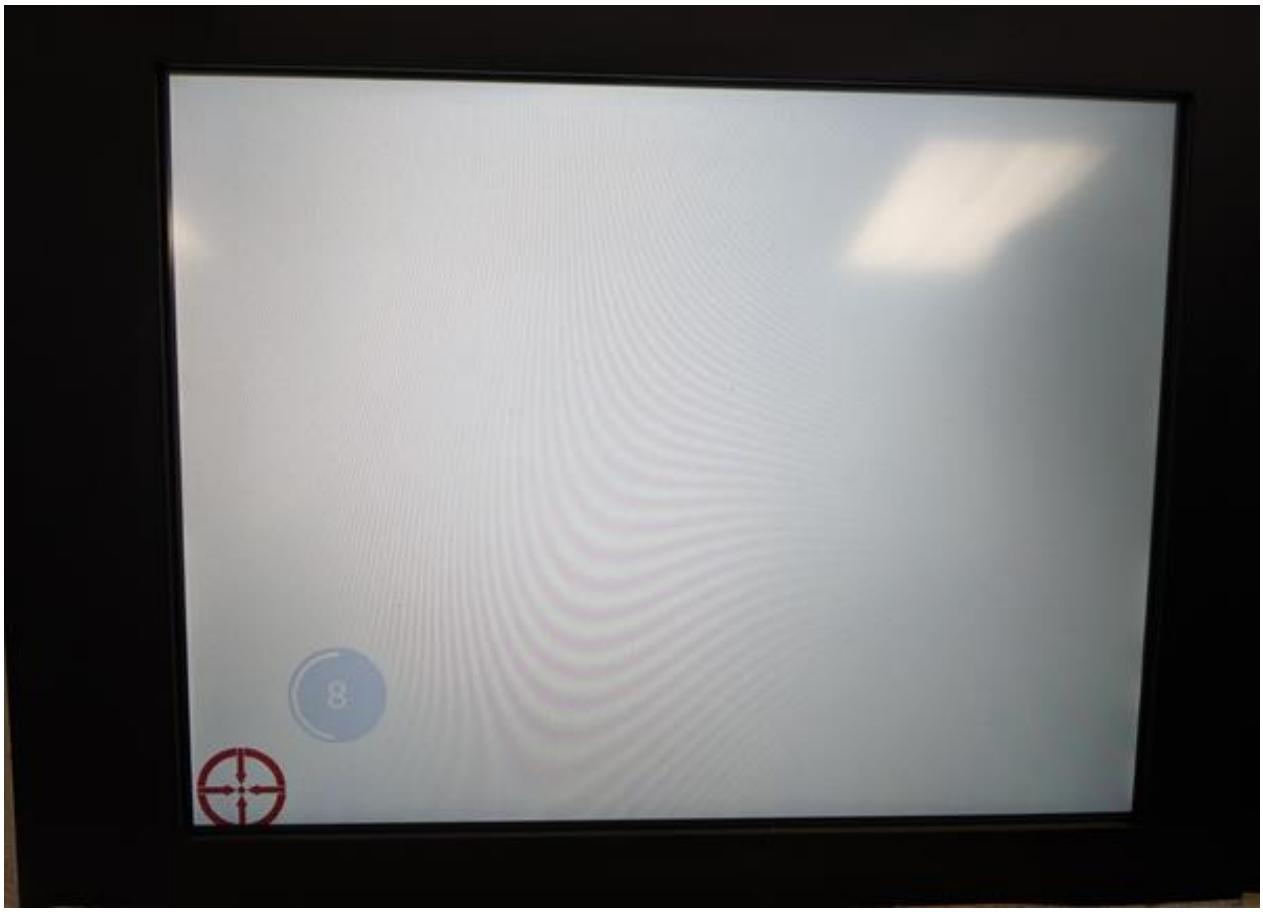


11. Click **Yes** to perform an initial four-point calibration.



Touch Screen Calibration (If Option Included)

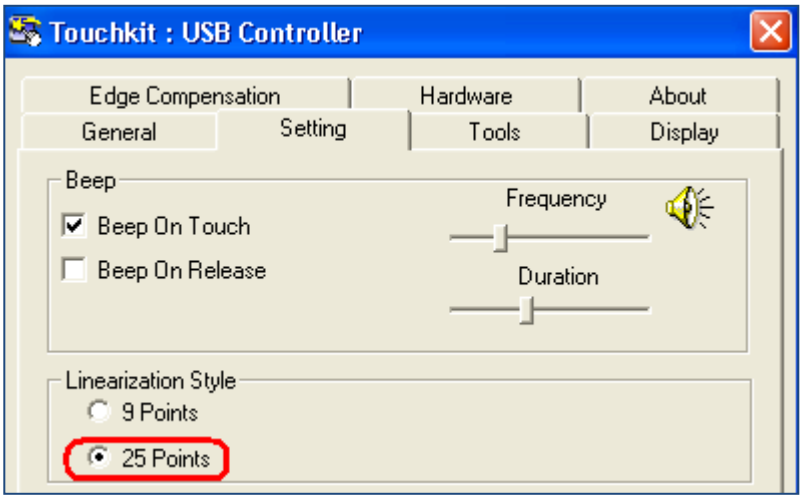
12. Touch the 4 red points (red dot inside circle within 4 pointing arrows) with a stylus and then click **OK**. You have 15 seconds to touch each point.



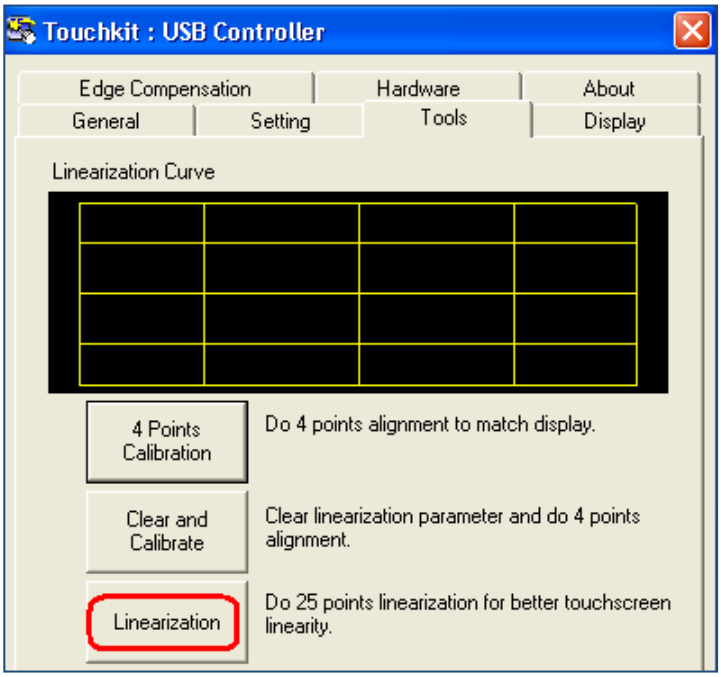
13. Open the Touch Screen software and select **Setting**.

Touch Screen Calibration (If Option Included)

14. Select **25 Points** calibration for **Linearization Style** and then click **Apply**.

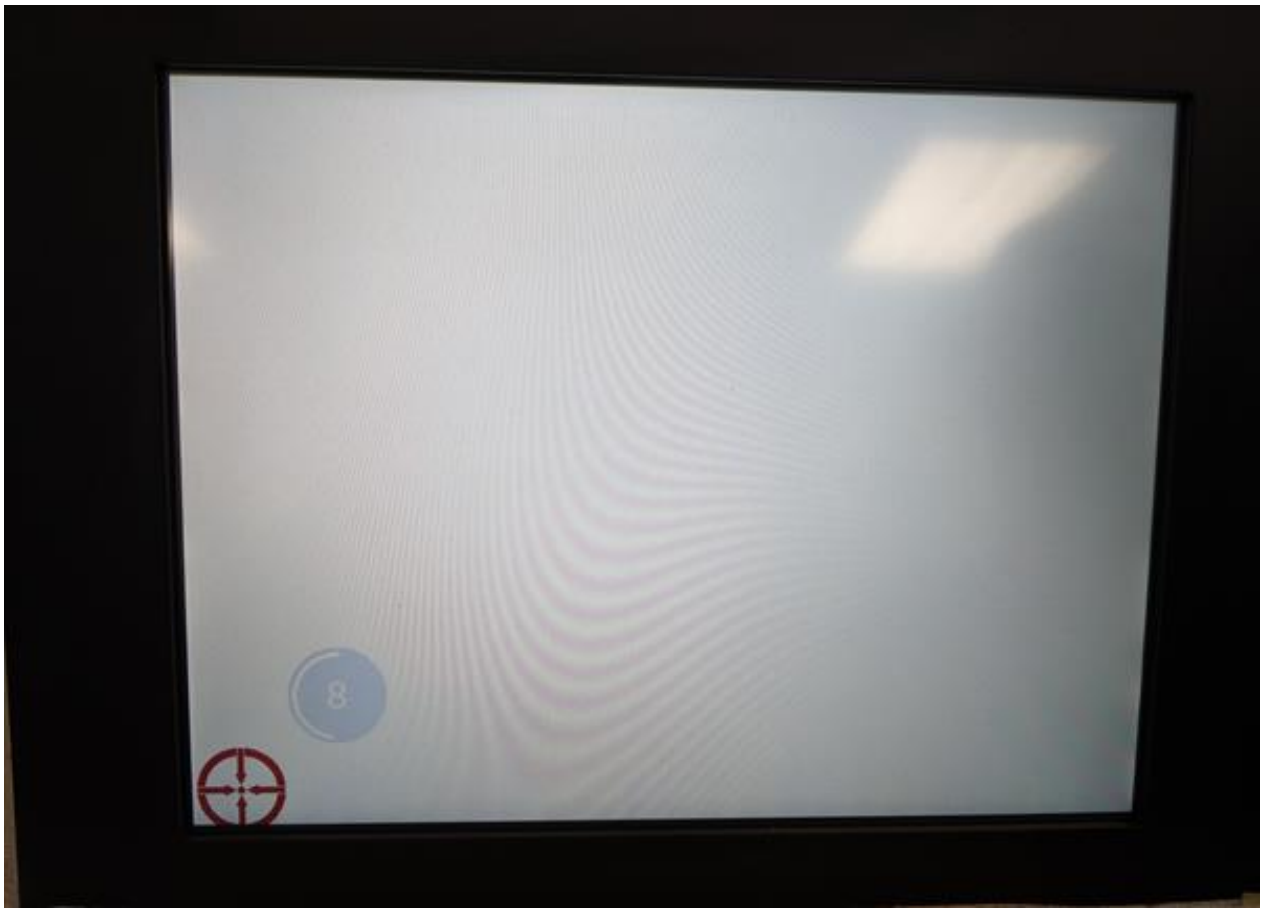


15. Under the **Tools** tab, select the **Linearization** button.



Touch Screen Calibration (If Option Included)

16. Touch all 25 red points (red dot inside circle within 4 pointing arrows) with a stylus and then click **OK**. You have 15 seconds to touch each point.



Troubleshooting Tips

Before calling for service, check the information in this section to see if you can remedy any problems yourself. If you do need assistance, please contact Transduction.

Symptom	Check List	Solutions
No images on the screen. I cannot turn on the monitor.	Is the power cord connected properly?	Check the power cord connection and supply.
	Can you see "No Connection, Check Signal Cable" on the screen?	(Connected using the D-sub cable) Check the signal cable connection. (Connected using the DVI cable) If you still see an (error) message on the screen when the monitor is connected properly, check to see if the monitor status is set to analogue. Press Source button to have the monitor double-check the input signal source.
	If the power is on, reboot the computer to see the initial screen (the login screen), which can be seen.	If the initial screen (the login screen) appears, boot the computer in the applicable mode (the safe mode for Windows ME/2000/XP7/8.1/10) and then change the frequency of the video card. (Refer to the Preset Display Modes page 32) Note: If the initial screen (the login screen) does not appear, contact a service center or your dealer.
	Can you see "Video mode not supported" on the screen?	You can see this message when the signal from the video card exceeds the maximum resolution and frequency that the monitor can properly handle. Adjust the maximum resolution and frequency that the monitor can properly handle.
	There is no image on the screen. Is the power indicator on the monitor blinking at 1 second intervals?	The monitor is in PowerSaver mode. Press a key on the keyboard or move the mouse to activate the monitor and restore the image on the screen. If there is still no image, press the 'Source' button. Then press any key on the keyboard or move the mouse again to activate the monitor and restore the image on the screen.
	Connected using the DVI cable?	You may get a blank screen if you boot the system before you connect the DVI cable, or disconnect and then reconnect the DVI cable while the system is running as certain types of graphic cards do not send out video signals. Connect the DVI cable and then reboot the system.
I cannot see the On Screen Display.	Have you locked the On Screen Display (OSD) Menu to prevent changes?	Unlock the OSD by pressing the MENU button for at least 5 seconds.
The screen shows strange colors or just black and white.	Is the screen displaying only one color as if looking at the screen through cellophane paper?	Check the signal cable connection. Make sure the video card is fully inserted in its slot.
	Have the screen colors become strange after running a program or due to a crash between applications?	Reboot the computer.
	Has the video card been set properly?	Set the video card by referring to the video card manual.
The screen suddenly has become unbalanced.	Have you changed the video card or the driver?	Adjust screen image position and size using the OSD.
	Have you adjusted the resolution or frequency to the monitor?	Adjust the resolution and frequency at the video card. (Refer to the Preset Display Modes page 32).
	The screen can be unbalanced due to the cycle of the video card signals. Readjust Position by referring to the OSD.	
The screen is out of focus or OSD cannot be adjusted.	Have you adjusted the resolution or frequency on the monitor?	Adjust the resolution and frequency of the video card. (Refer to the Preset Display Modes page 32).
LED is blinking but no images on the screen.	Is the frequency properly adjusted when checking the Display Timing on the menu?	Adjust the frequency properly by referring to the video card manual and the Preset Display Modes. (The maximum frequency per resolution may differ from product to product.)
There are only 16 colors shown on the screen. The screen colors have changed after changing the video card.	Have the Windows colors been set properly?	For Windows ME/2000/XP7/8.1/10: Set the colors properly at the Control Panel, Display, Settings.
	Has the video card been set properly?	Set the video card by referring to the video card manual.
There is a message that reads "Unrecognized monitor, Plug & Play (VESA DDC) monitor found".	Have you installed the monitor driver?	Install the monitor driver according to the Driver Installation Instructions.
	See the video card manual to see if the Plug & Play (VESA DDC) function can be supported.	Install the monitor driver according to the Driver Installation Instructions.

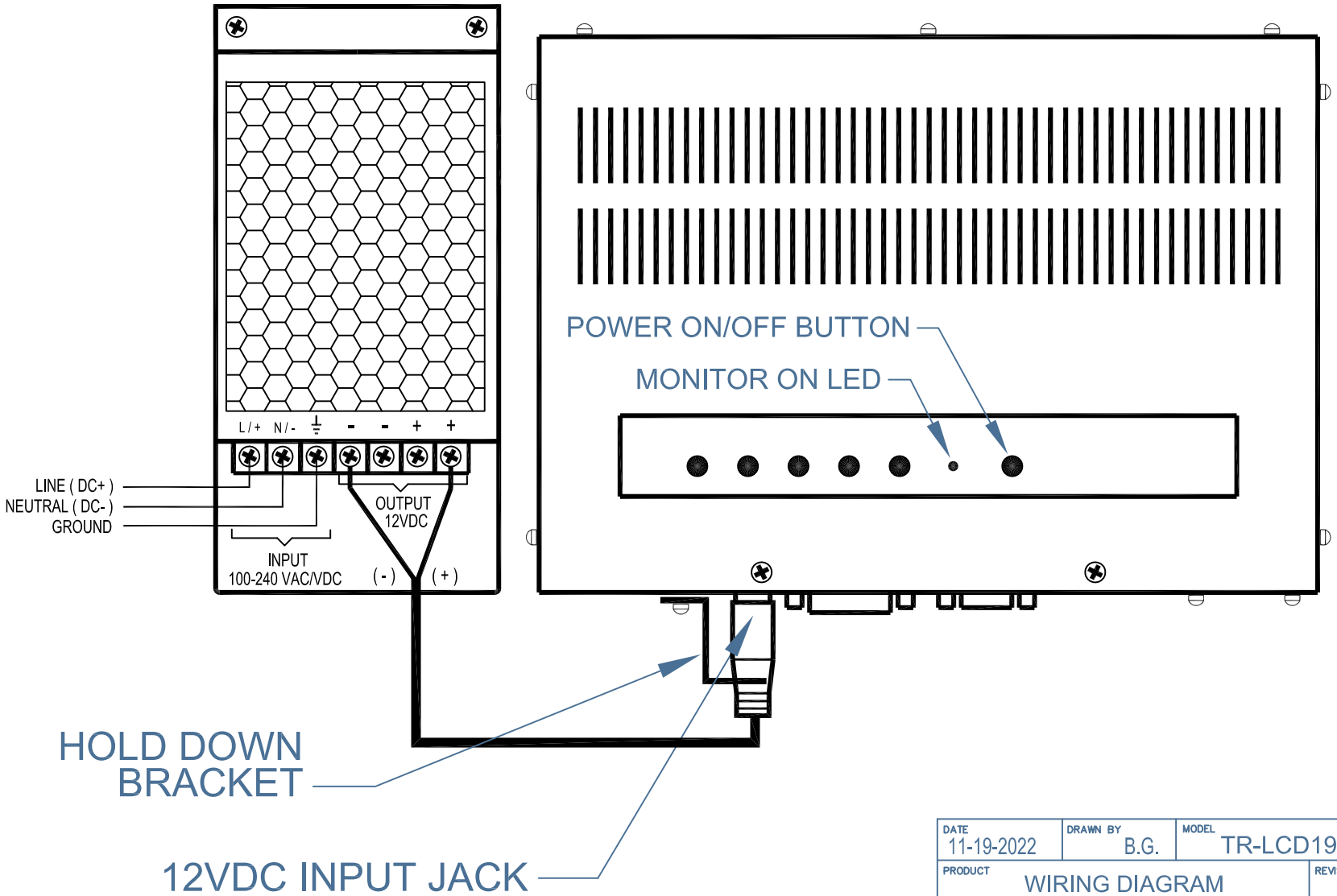
Troubleshooting Tips

Check the following items if there is trouble with the monitor.

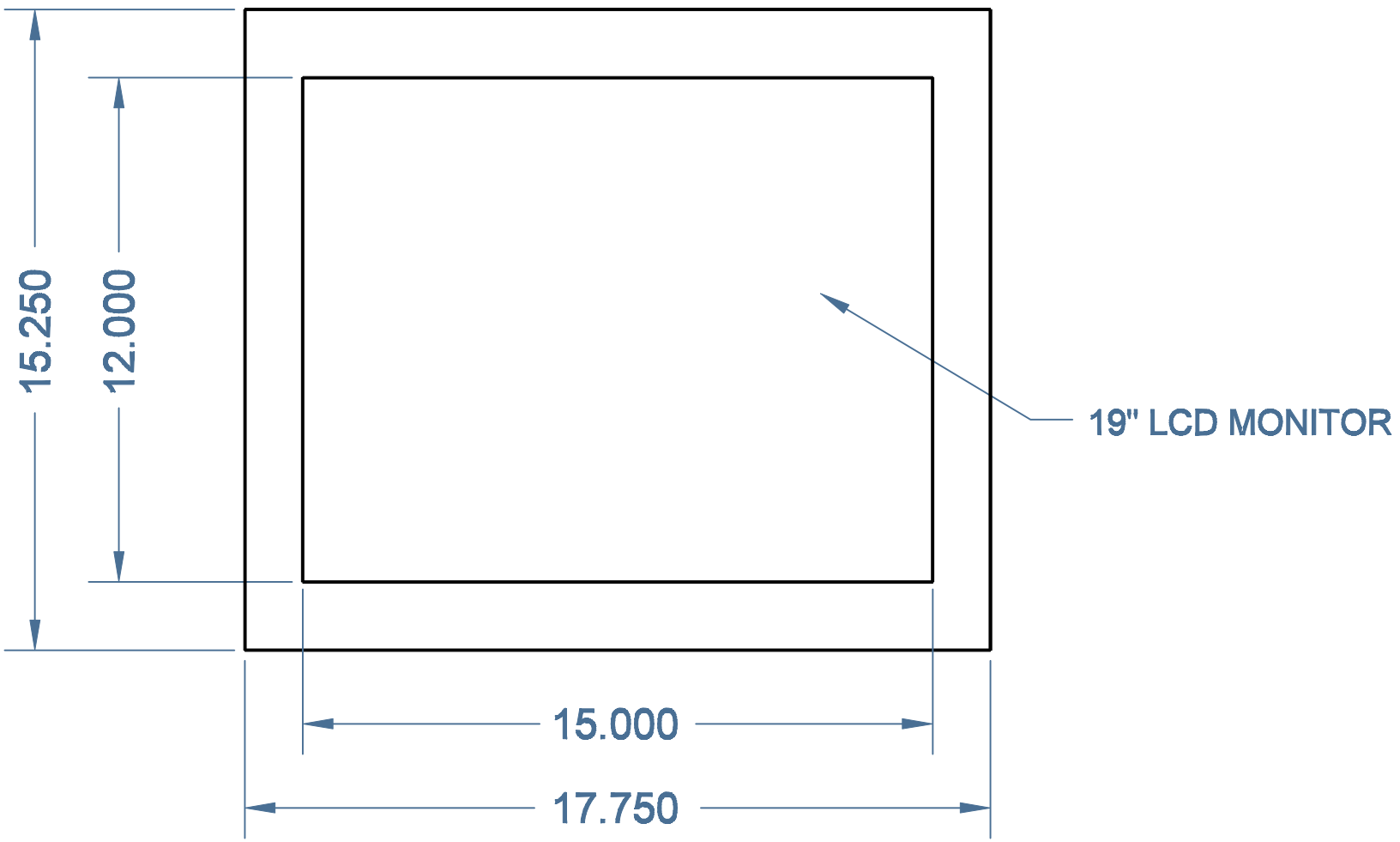
1. Check if the power cord and the cable are properly connected to the computer.
2. Check if the computer beeps more than 3 times when booting.
   (If it does, request an after-service for the main board of the computer.)
3. If you installed a new video card or if you assembled the PC, check if you installed the adapter (video) driver.
4. Check if the scanning ratio of the video screen is set at 75Hz.
   (Do not exceed 60Hz when using the maximum resolution.)
5. If you have problems in installing the adapter (video) driver, boot the computer in Safe Mode, remove the Display Adapter from the hardware profile and then reboot the computer and reinstall the adapter (video) driver.

Frequently Asked Questions

Question	Answer
How can I change the frequency?	Frequency can be changed by reconfiguring the video card. Note that video card support can vary, depending on the version of the driver used. (Refer to the computer or the video card manual for details.)
How can I adjust the resolution?	Windows ME/XP/20007/8.1/10: Set the resolution at **the Control Panel, Display, Settings.**
How can I set the Power Saving function?	Windows ME/XP/2000/7/8.1/10: Set the function from the **Control Panel, Display, Screen Saver.**
How can I clean the outer case / LCD Panel?	Clean the monitor with a soft cloth, using either a cleaning solution or plain water. Do not spray directly on to the monitor.

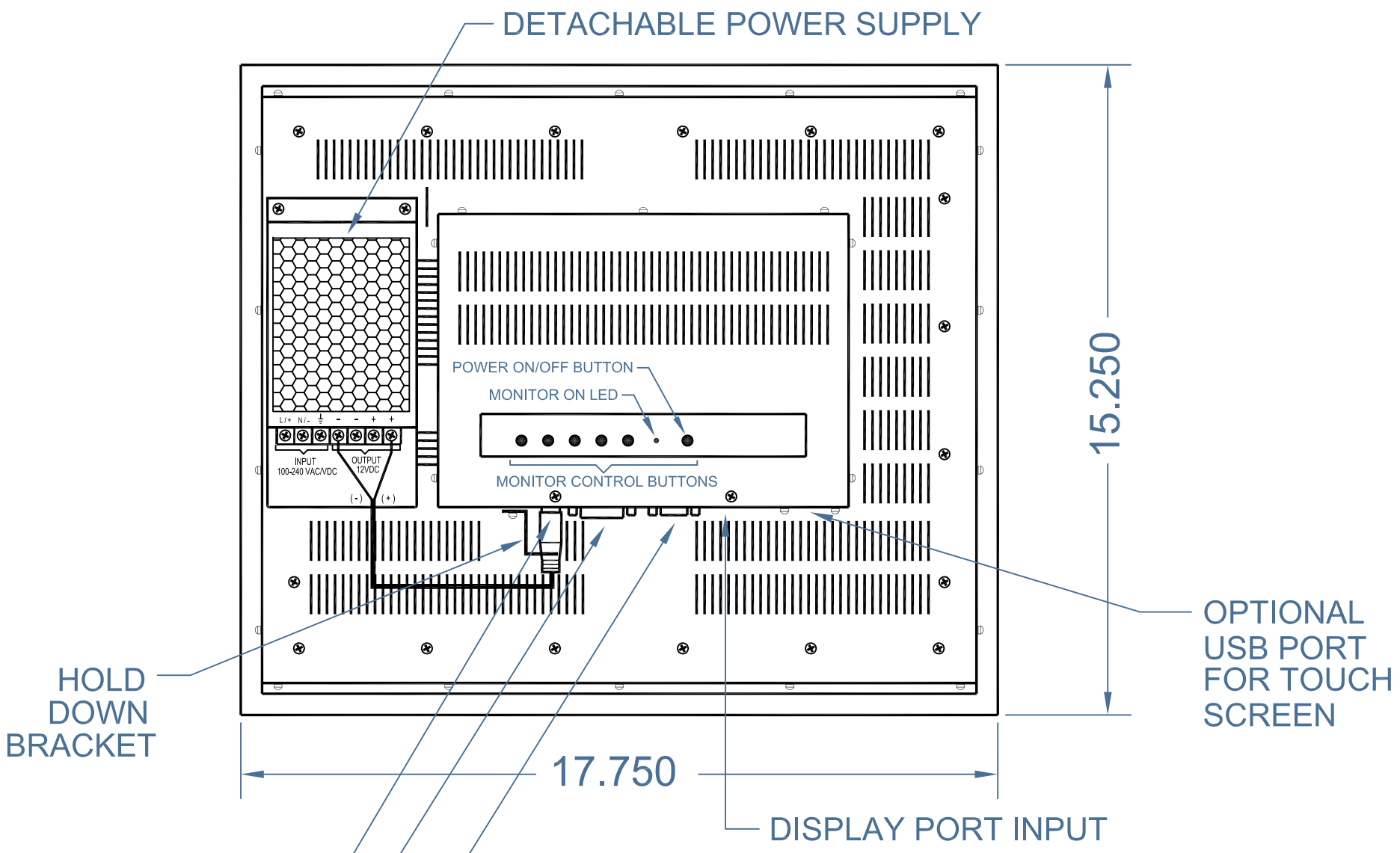


DATE 11-19-2022	DRAWN BY B.G.	MODEL TR-LCD1900 - V2	
PRODUCT WIRING DIAGRAM		REVISION 1	SCALE NTS
FINISH	Transduction	CHECKED BY	
TITLE LAYOUT		DRAWING No B-706	



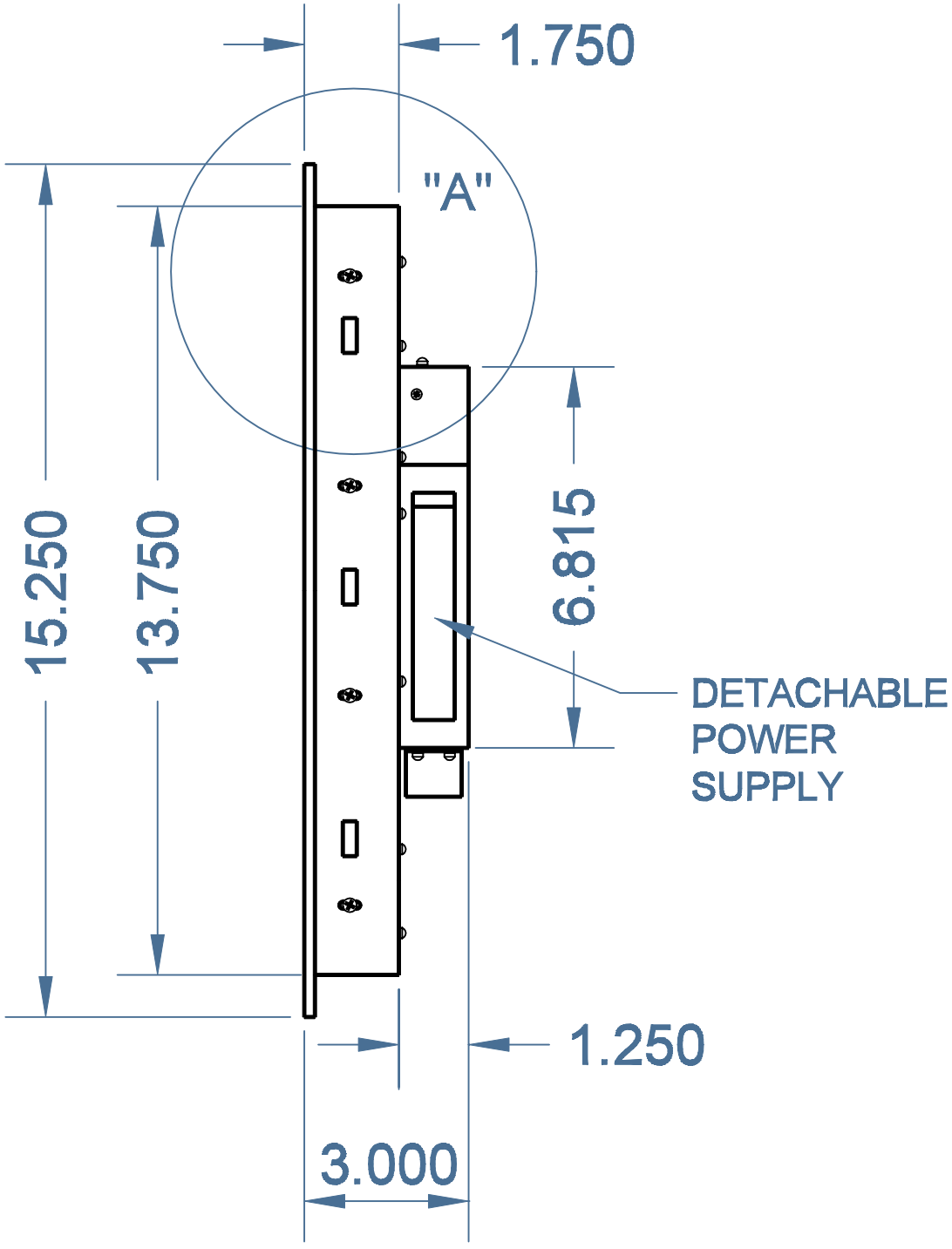
FRONT VIEW

DATE 03-08-2005	DRAWN BY B.G.	MODEL TR-LCD1900	
PRODUCT PANEL MOUNT VERSION		REVISION	SCALE NTS
FINISH CRINKLE BLACK POWDER PAINT	Transducton	CHECKED BY	
TITLE LAYOUT		DRAWING No B-368	



REAR VIEW

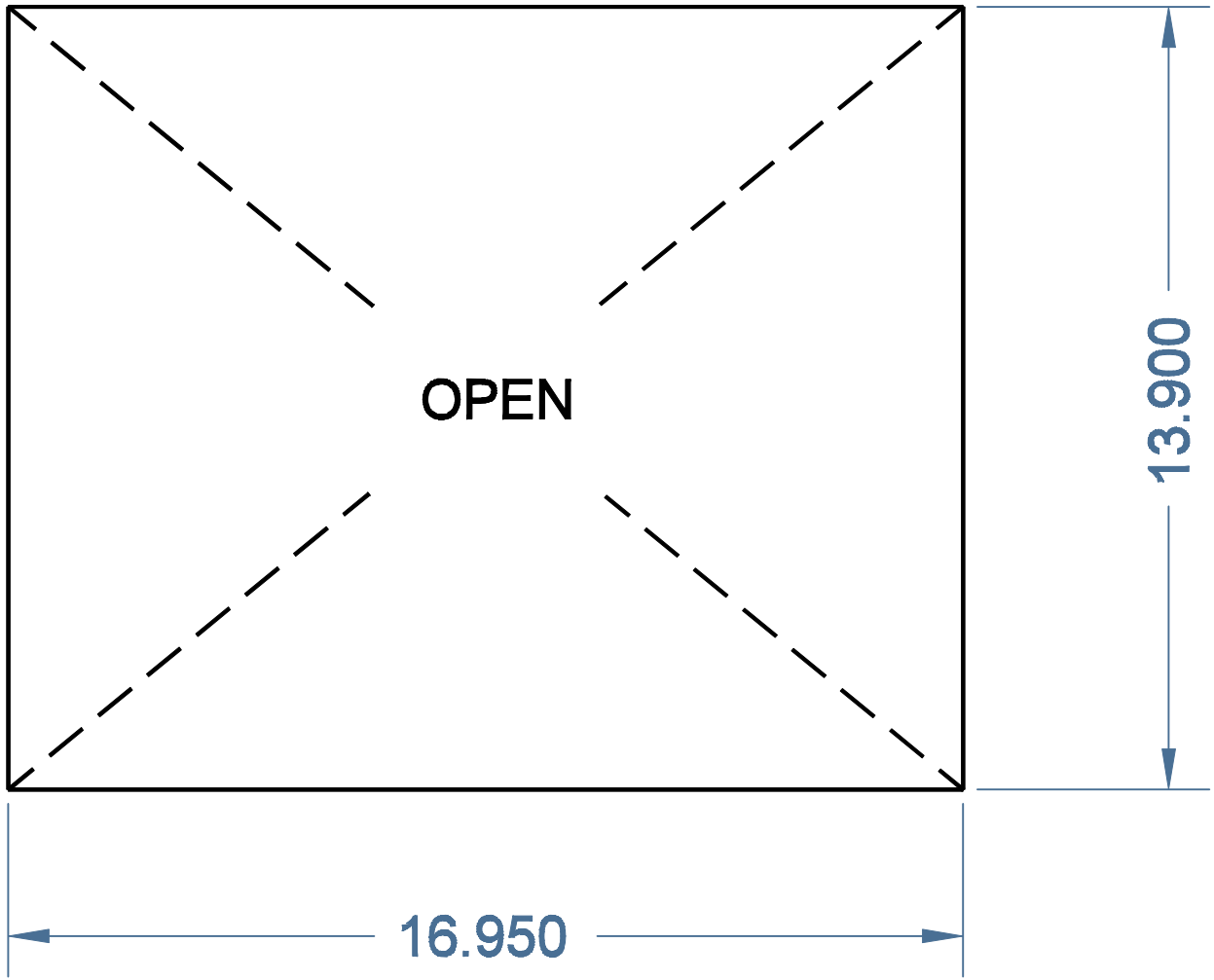
DATE 10-30-2022	DRAWN BY B.G.	MODEL TR-LCD1900 - V2	
PRODUCT PANEL MOUNT VERSION		REVISION 1	SCALE NTS
FINISH	Transduction	CHECKED BY	
TITLE LAYOUT		DRAWING No B-700	



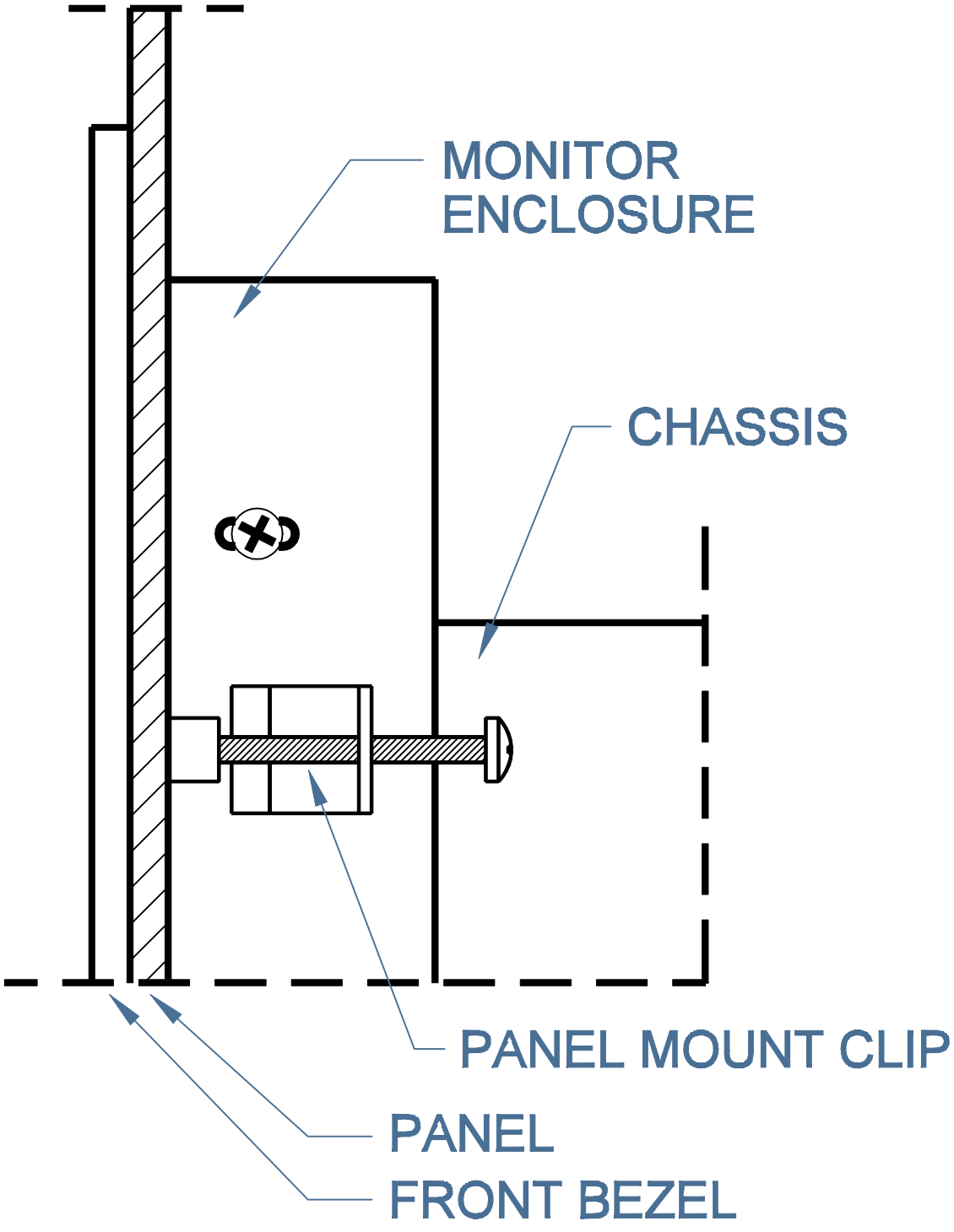
RIGHT SIDE VIEW

NOTE: FOR DETAIL "A" LOOK
DRAWING B-371

DATE 03-08-2005	DRAWN BY B. G.	MODEL TR-LCD1900	
PRODUCT PANEL MOUNT VERSION		REVISION	SCALE NTS
FINISH CRINKLE BLACK POWDER PAINT	Transducton	CHECKED BY	
TITLE LAYOUT		DRAWING No B-369	

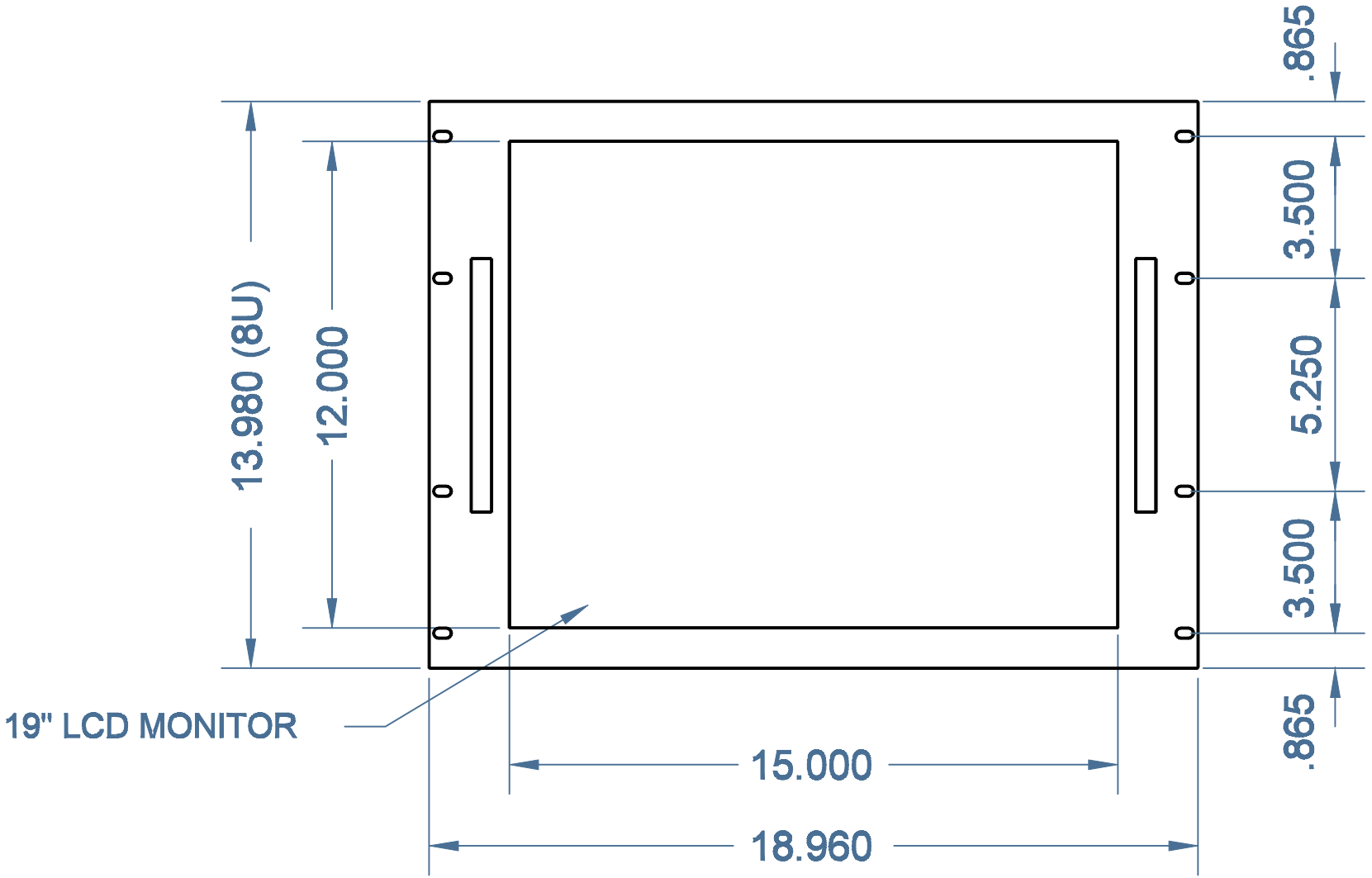


DATE 03-08-2005	DRAWN BY B.G.	MODEL TR-LCD1900	
PRODUCT PANEL MOUNT VERSION		REVISION	SCALE NTS
FINISH	Transducton	CHECKED BY	
TITLE CUTOUT		DRAWING No B-370	



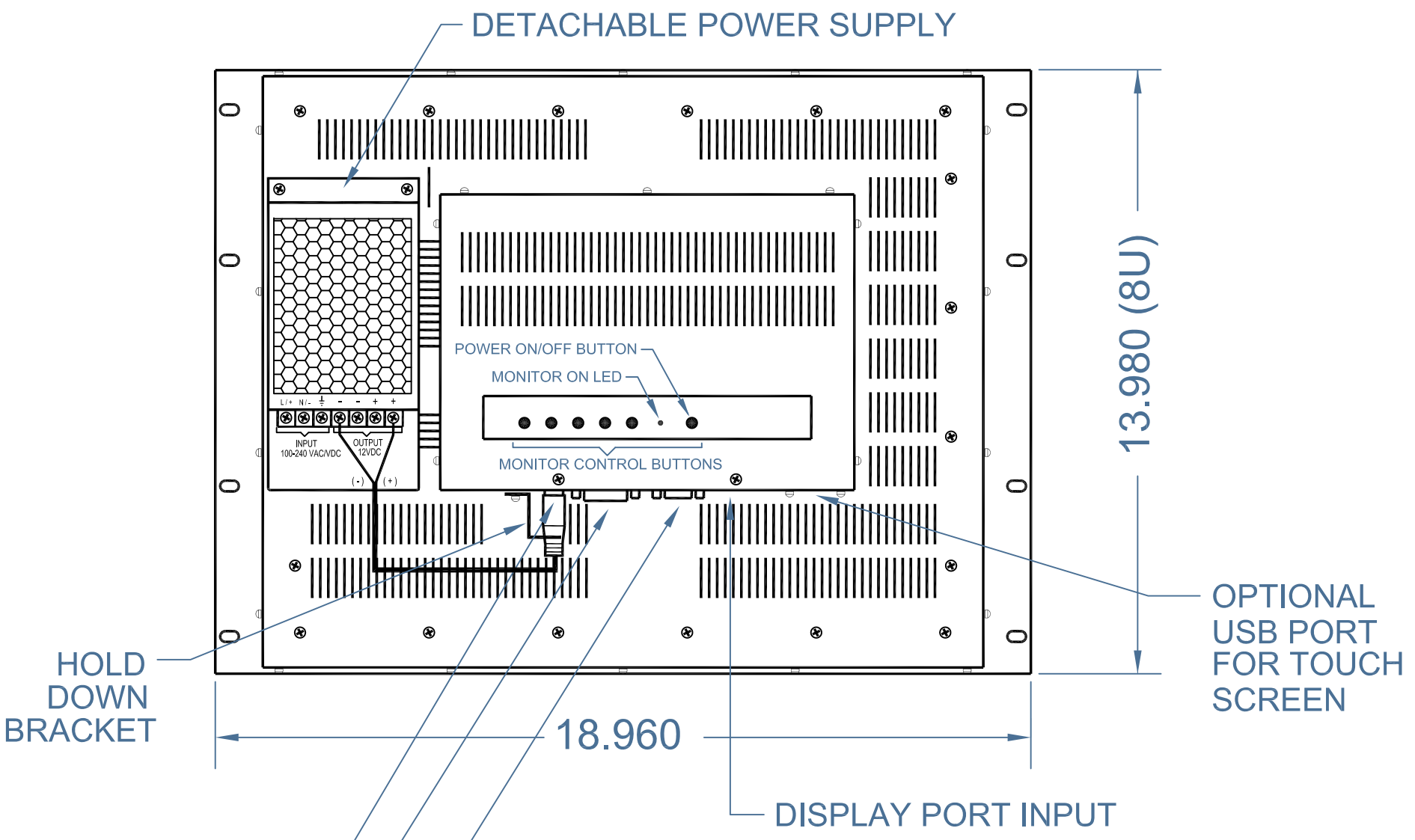
NOTE: CLIP ATTACHED FROM BEHIND AFTER CHASSIS PLACEMENT IN THE PANEL OPENING

DATE 03-08-2005	DRAWN BY B. G.	MODEL TR-LCD1900	
PRODUCT PANEL MOUNT VERSION		REVISION	SCALE NTS
FINISH	Transduction	CHECKED BY	
TITLE DETAIL "A"		DRAWING No B-371	



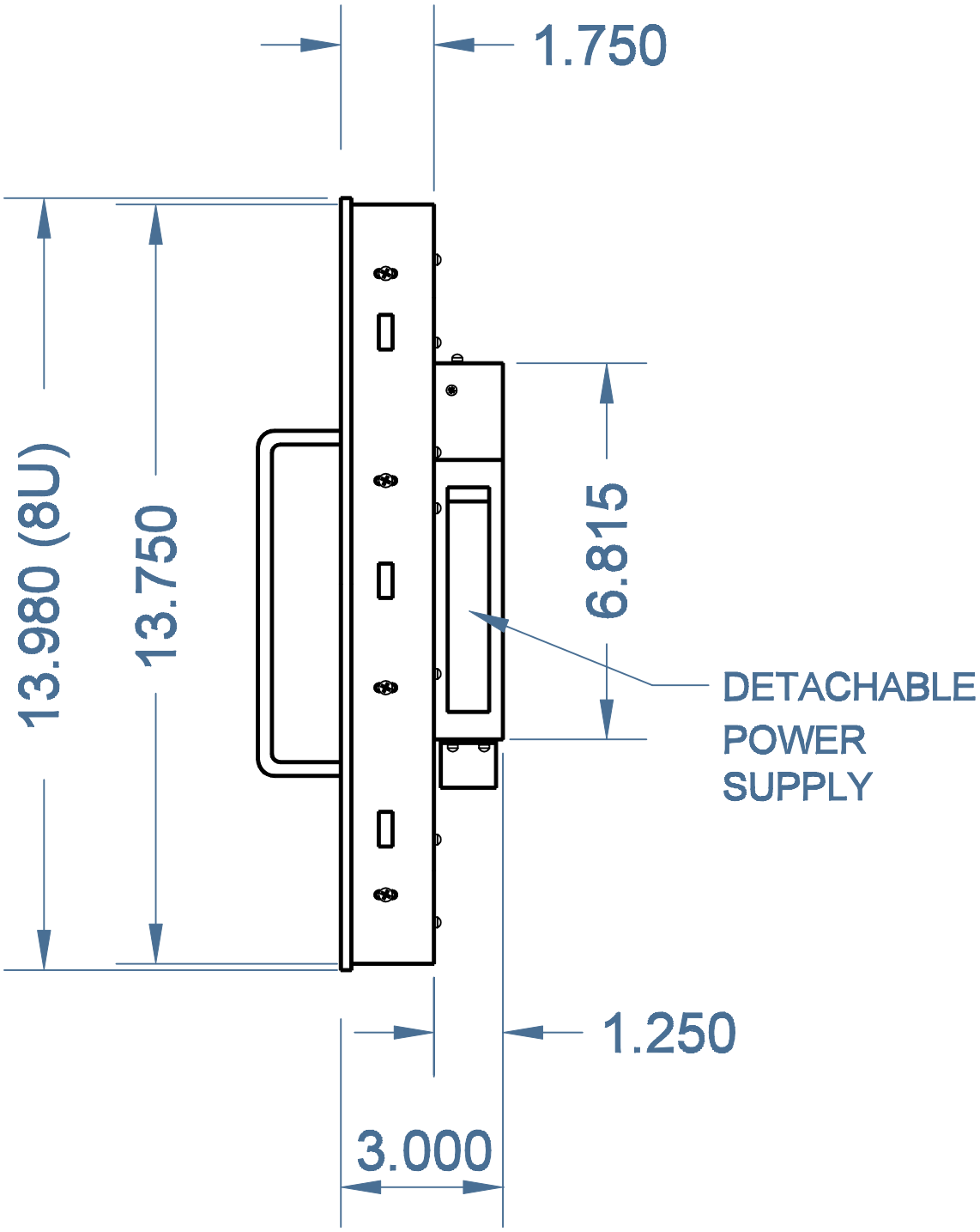
FRONT VIEW

DATE 03-08-2005	DRAWN BY B.G.	MODEL TR-LCD1900	
PRODUCT RACK MOUNT VERSION		REVISION	SCALE NTS
FINISH CRINKLE BLACK POWDER PAINT	Transduction	CHECKED BY	
TITLE LAYOUT		DRAWING No B-372	



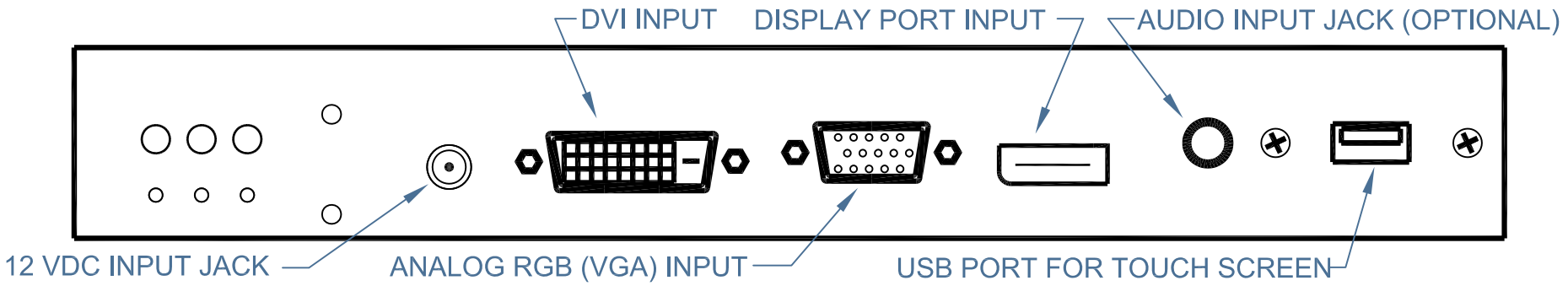
REAR VIEW

DATE 10-30-2022	DRAWN BY B.G.	MODEL TR-LCD1900 - V2	
PRODUCT RACK MOUNT VERSION		REVISION 1	SCALE NTS
FINISH	Transduction	CHECKED BY	
TITLE LAYOUT		DRAWING No B-701	



RIGHT SIDE VIEW

DATE 03-08-2005	DRAWN BY B. G.	MODEL TR-LCD1900	
PRODUCT RACK MOUNT VERSION		REVISION	SCALE NTS
FINISH CRINKLE BLACK POWDER PAINT	Transduction	CHECKED BY	
TITLE LAYOUT		DRAWING No B-373	



DATE 10-20-2022	DRAWN BY B.G.	MODEL TR-LCD1700/1900 - V2	
MATERIAL		REVISION 2	SCALE NTS
FINISH	Transduction	CHECKED BY	
TITLE CONNECTOR LAYOUT		DRAWING No B-702	