VARTECH
SYSTEMS INC.

VT320X Display

32" OUTDOOR User manual

FEDERAL COMMUNICATIONS COMMISSION REQUIREMENTS

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.

SAFETY INSTRUCTIONS

Scope
This document includes safety considerations of the display. Throughout this manual, the term **SERVICE PERSONNEL** refers to persons having appropriate technical training and experience necessary to be cognisant of potential hazards to which they are exposed (including, but not limited to HIGH VOLTAGE ELECTRIC and ELECTRONIC CIRCUITRY) in performing a task, and of measures to minimize the potential risk to themselves or other persons. The term **USER** and **OPERATOR** refers to any person other than **SERVICE PERSONNEL**, AUTHORIZED to operate the installed digital video distribution system.
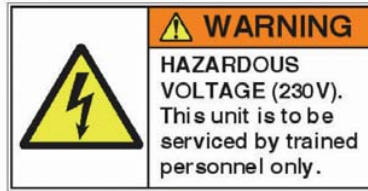
General safety instructions
• DO NOT install the display inside of Hazardous Areas and/or Explosives Areas.
• DO NOT leave the display unattended while cover opened and connected to the mains
• Before operating your display, please read this manual thoroughly, and retain it for future use.
• Installation and preliminary adjustments should be performed by qualified service personnel or authorized service dealers.
• All warnings on the system parts and in the documentation manual should be adhered to.
• All instructions for operating and use of this equipment must be followed precisely.
• All local installation codes should be adhered to.
• Do not allow anything to rest on the power cord which may cause damage. Do not locate this product where persons will walk on the cord.
• Always unplug appliance from electrical outlet before cleaning and servicing and when not in use for an extended period. Never yank cord to pull plug from outlet.
• Grasp plug and pull to disconnect.
• Do not operate appliance with a damaged cord or if the appliance has been dropped or damaged until it has been examined by a qualified serviceman.
• Position the cord so that it will not be tripped over, pulled, or contact hot surfaces.
• If an extension cord is necessary, a cord with a current rating at least equal to that of the appliance should be used. Cord rated for less amperage than the appliance may overheat.
• Let appliance cool completely before storing.
• Never push objects of any kind into the product through cabinet vents slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
• Lightning - For added protection for this video product during a lightning storm, or when it is left unattended or unused for long periods of time, unplug it from the wall outlet. This will prevent damage due to lightning and AC power-line surges.
• Slots and openings in the cabinet and the back and bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

Shock Hazard

The lightning flash with an arrowhead within a triangle is intended to tell the user that parts inside this product are risk of electrical shock to persons.

The exclamation point within a triangle is intended to tell the user that important operating and/or servicing instructions are included in the technical documentation for this equipment.

Ratings & Grounding

These products should be operated from an AC power source. Check if the mains voltage and the load matches the product electrical ratings.

A grounded three-core power cable has to be used. Connect the power cord by inserting it in a grounded electrical outlet, making sure that the cord is properly grounded.

If you are unable to install the AC Requirements, contact your electrician. Do not defeat the purpose of the grounding.

Always connect this appliance to an electrically grounded outlet. Never use a ground bypass (cheater) adapter.
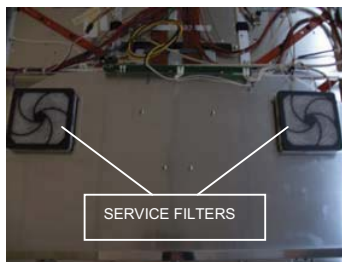
Protection on Servicing

WARNING:

Attempts to alter the factory-set internal controls or to change other control settings not specially discussed in this manual can lead to permanent damage to the Unit and cancellation of the warranty

Servicing:

In case of opening of the module, always unplug appliance from electrical outlet.

Fit the Service Filters provided within the product.

Remove the Service Filters before closing and operate the module.

Never spill liquid of any kind on the product. Should any liquid or solid object fall into the cabinet, unplug the set and have it checked and cleaned by qualified service personnel before resuming operations.

The equipment is provided with a locking key that must be kept by Service Personnel and not rendered available to the operator.
Do not attempt to service the installed modules yourself, as opening or removing covers may expose you to dangerous voltage potential and risk of electric shock! Refer all service to a qualified service center.
Call for service in the following conditions :
When the power cord or plug is damaged or frayed.
If liquid has been spilled into the modules.
If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation;
If the product has been dropped or the cabinet has been damaged;
If the product exhibits a distinct change in performance, indicating a need for service.

Replacement Parts
When replacement parts are required, be sure the service technician has used original replacement parts or authorized replacement parts which have the same characteristics as the original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.

Safety Check
Upon completion of any service or repairs to these modules, ask the service technician to perform safety checks to determine that the modules are in proper operating condition.

Protection
Please do not disassemble or modify the LCD module to avoid the possibility of electric shock, damage of electronic components, scratch at display surface and invasion of foreign particles. In addition, such activity may result in fire accident due to burning of electronic component. LCD modules disassembled or modified by customer is out of warranty.

Please be careful in handling of display with broken glass. When the display glass breaks, please pay attention not to injure your fingers. The display surface has the plastic film attached, which prevents dispersion of glass shards, however touching the broken edges of shards will injure your fingers. Also Lamp (Cold Cathode Fluorescent Lamp) is made of glass, therefore please pay attention in the same way.

Please do not touch the fluid flown out of broken display glass. If the fluid should stick to hand or clothes, wipe off with soap or alcohol immediately and then wash it with water. If the fluid should get in eyes, wash eyes immediately with pure water for more than 15 minutes and then consult the doctor.

Lamp contains mercury inside. Please follow regulations or rules established by local autonomy at its disposal.

In case of opening of the display, cover the front frame to prevent over-heating of the TFT panel when exposed directly to the sun.

Safety on Cleaning

Cabinet
Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning. To keep the cabinet looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with mild detergent solution. Never use strong solvents, such as thinner or benzine, or abrasive cleaners, since these will damage the cabinet.

Display surface

Contamination of display surface.
When display surface needs to be cleaned, please wipe the surface softly with cotton swab
or clean cloth. If it is not enough, please take it away with cellophane tape or wipe the surface with cotton swab.

Safety on Shipping

Original Shipping package
Save the original shipping packing material; they will come in handy if you ever have to ship one of your installed modules. For maximum protection, repack your set as it was originally packed at the factory.

On installation site

Building Installation - Disconnect Device and Branch Circuit Protection

A readily accessible and suitable disconnect device **must** be provided as part of the building installation. The purpose of the disconnect device is to provide an easy and accessible means for removing power from the product for servicing.

A readily accessible and suitable branch circuit protection device **must** be provided as part of the building installation. The purpose of branch circuit protection is to limit current in the case of a fault.

The disconnect device may also provide branch circuit protection (for example, a circuit breaker). Alternately, separate disconnect and branch circuit protection devices (fuses and a disconnect switch) may be employed.

The devices must be rated based on the plate rating of the product in accordance with the applicable local codes and specific customer requirements.

Branch circuit protection is commonly selected based on 125% of the product input rating. Such derating is to avoid nuisance tripping due to load surges or power transients and to meet code requirements. Applicable codes and customer requirements will vary.

Warning! Failure to provide an appropriate disconnect device and branch circuit protection may endanger service personnel. Serious injury and equipment damage may result if this warning is not observed.

A suitable **support** must be provided as part of **Building Installation**. The **support** must sustain the display weight without overturning when the front is open.

This is an excerpt from UL 60950-1 which helps the architect with the design criteria of the support bracket for the display.

"4.2.10 Wall or ceiling mounted equipment
The mounting means of equipment intended for wall or ceiling mounting shall be adequate.
Compliance is checked by inspection of the construction and of available data, or where necessary,
by the following test. The equipment is mounted in accordance with the manufacturer's
instructions. A force in addition to the weight of the equipment is applied downwards through the
geometric centre of the equipment, for 1 min. The additional force shall be equal to three times the
weight of the equipment but not less than 50 N. The equipment and its associated mounting means
shall remain secure during the test."

Transportation
Any movement or lifting of the unopened unit in its packaging should be done by two persons. The unit is very
heavy, 2 man lift and carry required.
For transportation or storage of units in the original packaging, observe the warnings and instructions on the side
of the carton. NEVER stack more than the number stated on the side of carton box.

Nearby equipment
If air conditioning ducts or lamps, etc. are located near the installation site, the particles from the exhaust, extreme
temperatures, humidity, and condensation may become sources of trouble. Please take sufficient steps to avoid
this.

Safety locations
Do not install the unit where it may be easily touched or leaned against. Avoid locations subject to high vibrations
or severe impacts.

Mechanical stress.
Please be careful not to apply strong mechanical stress like dropping or mechanical shock to LCD module. Such
stress may cause the breaking of display glass and Lamp or may be the cause for failure.

Pressure to display surface.
Please be careful not to apply strong pressure to display surface. Such pressure may cause scratches at surface
or may be the cause of failure.

Protection against scratch.
Please be careful not to hit, press or rub the display surface with hard materials like tools. In addition, please do
not put heavy or hard material on display surface, and do not stack displays. The glass at front surface
can be easily scratched.

Temperature dependence of display.
Response speed (optical response) of LCD display is dependent on temperature. Under low temperature,
response speed is slower. Also brightness and chromaticity change slightly depending on temperature.

Image retention.
Displaying the same pattern for long time may cause image retention even after changing the pattern. This is not
a failure and will disappear with time.

Lightning conditions
Consider existing lightning and sunlight angles when creating the installation layout. Extremely bright lightning can
reduce the visibility and the quality of the displayed image.
In extremely bright surroundings, adjusting screen intensity may not result in perceptibly brightener images. Keep
in mind that extreme intensity settings can reduce system service life.
Reflections are less visible on images with a bright background and dark text.

If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional
instructions.

Packaging

Way of Packaging
The display is packed in a carton box. To provide protection during transportation, the unit is surrounded with foam. The packaging is secured with banding and fastening clips.
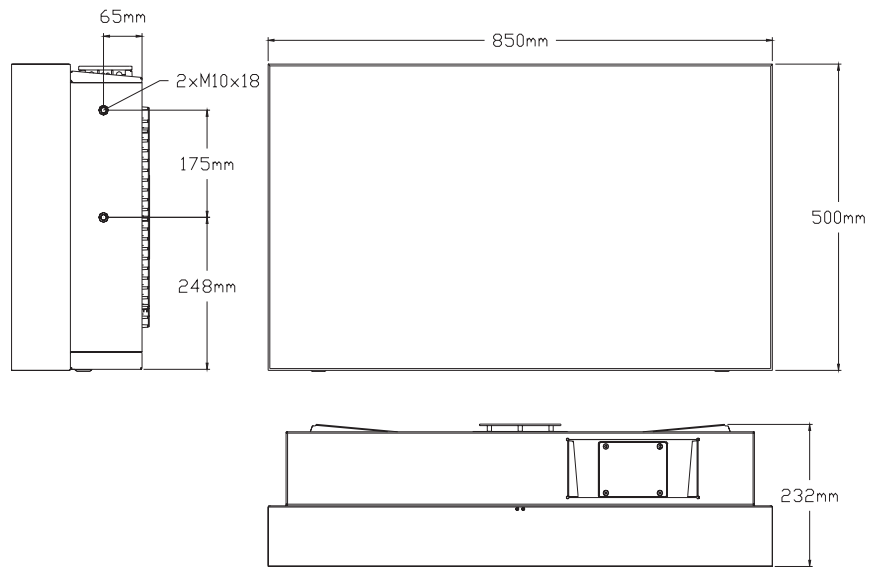
To unpack.
Release the fastening clips.
Remove the banding.
Take the display out of its shipping carton.
Save the original shipping carton and packing material, they will be necessary if you ever have to ship your panel. For maximum protection, repack your panel as it was originally packed at the factory.

32" Dimensions and fixing points :

Weight

32" - 143 Lbs (65 Kg)

INSTALLATION GUIDELINES
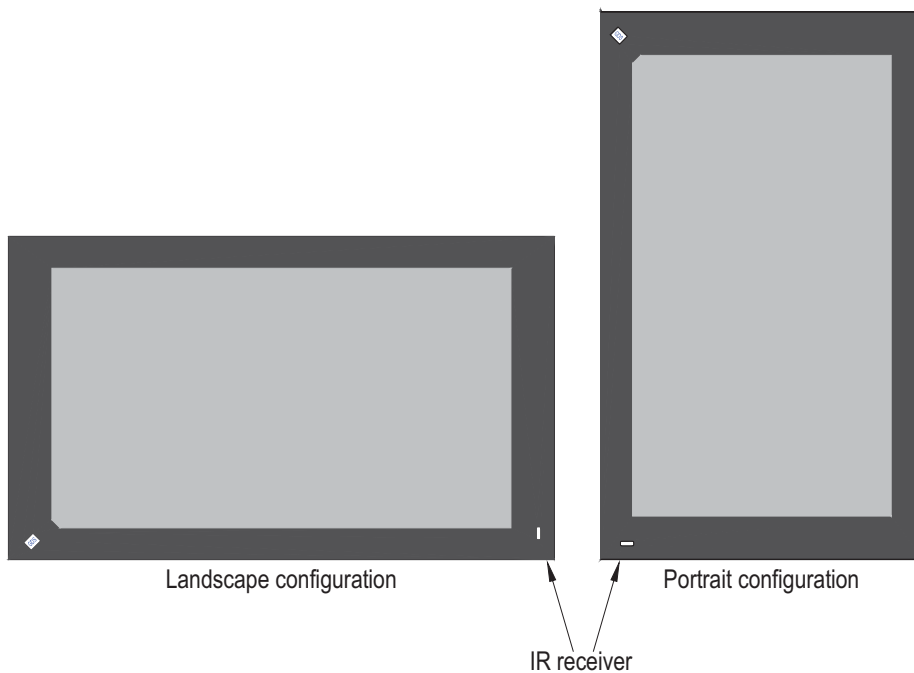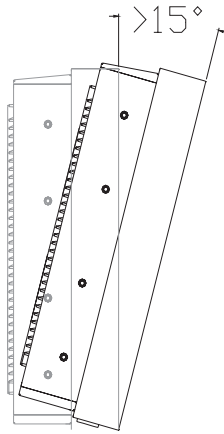
Environmental conditions
Operating temperature : - 20°C to 45°C (-4° to 113°F) with direct sun light
Operating temperature : - 20°C to 50°C (-4° to 122°F) without direct sun light
Humidity : max 90%

Display configurations
The display can be used in two different configurations, landscape and portrait.
When using in landscape, the infrared receiver must be in the lower right corner.
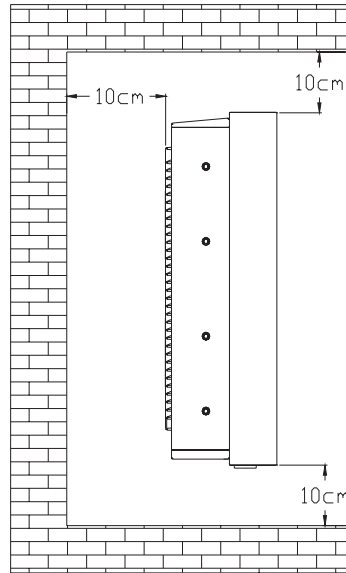When using in portrait, the infrared receiver must be in the lower left corner.

Tilting
The display must be tilted 15° minimum to avoid overheating, or must be under direct cover.

Landscape configuration   Portrait configuration

IR receiver

Wall mount or Ceiling mount

The display is equipped with cooling fans located on the backside and bottom of unit which requires 10cm
of spacing to provide adequate cooling. These areas must be free of any structure that may restrict the air flow.

*Note: The mounting means of equipment intended for wall or ceiling mounting shall be adequate. Compliance is
checked by inspection of the construction and of available data, or where necessary, by the following test.*

*The display must be installed by qualified, experienced people and wherever applicable are licensed by
the appropriate authorities. It is very important to carefully follow all local, state and national building and electrical
codes. (especially the latest revision of the National Electrical Code) and standard safety procedures for installing
and working with this type of equipment. Improper procedures or installation can result in void the warranty,,
damage to the equipment or the building, and injury to you.*

*"The equipment is mounted in accordance with the manufacturer's instructions. A force in addition to the weight of
the equipment is applied downwards through the geometric centre of the equipment, for 1 min. The additional
force shall be equal to three times the weight of the equipment but not less than 50 N. The equipment and its
associated mounting means shall remain secure during the test."*

All national and local regulations must be followed by the Installer
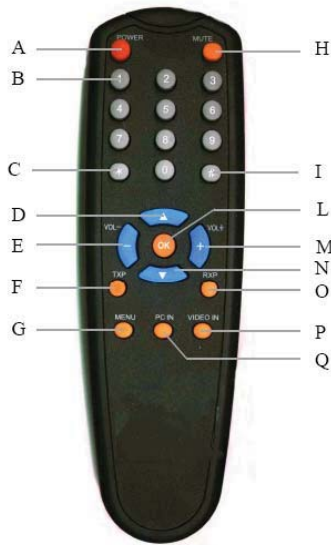
Remote control

KEYS:

A – POWER

B - NUMBERS

C - FUNCTION "* "

D - FUNTION "UP"

E - FUNCTION "-"

F - TXP

G – MENU

H - MUTE

I   - FUNCTION "#"

L - OK

M   - FUNCTION "+"

N   - FUNCTION "DOWN"
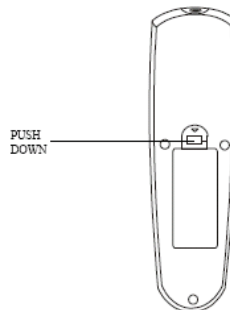
O - RPX

P   - VIDEO IN

Q - PC IN

Battery Insertion in the Remote Control

The batteries are not placed in the remote control to avoid remote control operation in its package, resulting in a shorter battery life time.

How to install the batteries

- Push the cover tab with the fingernail a little backwards and pull upwards the cover top
- Slide the cover forwards to remove.
- Push the battery body towards the spring and lift it up to remove.
- Insert two AAA size batteries, making sure the polarities match the + and –marks inside the battery compartment.
- Insert the lower tab of the battery cover in the gap at the bottom of the remote control, and press the cover until it clicks in place

Note:
The remote control must be pointing towards the IR sensor of the monitor.
When the remote control doesn't work, make sure that the batteries are in the correct position according to the "+" and "-" indicators of the remote control. If the batteries are inserted correctly and still do not work, replace them with new batteries.

Caution:
Risk of explosion if the batteries are replaced by an incorrect type.
Dispose of used batteries according to the instructions:
- Please dispose of exhausted batteries to authorized centre.
- The new batteries must be type 2x1.5V type AAA alkaline.
Other remote controls will not work with this monitor, use the original remote control only.
If the remote control is not used for long time, it is recommended to remove the batteries from housing to prevent acid losses.

CONNECTIONS

AC power (mains) cord connection
Use the supplied power cord to connect your display to the wall outlet.
The power supply input is auto-ranging from 90 to 240 VAC.

The power requirements are:

32": standby 16W/typical 216W/max 700W/max with additional Heaters 1150W

Input source connections
On the RCU press the key "Video IN" to select the desired video input
This video input slot is NOT hot-pluggable. Make sure the system is switched off before inserting or removing a video cable input connector.

Communication Connections RS232 IN/OUT
The RS232 IN connection allows the display to communicate with a computer.

Applications of the RS232 connection
• easy adjustment of LCD panel via IBM PC (or compatible) or MAC connection.
• RS232 address range from 0 to 255.
• Diagnostics

GETTING STARTED

From standby to a real image with the RCU
Press the POWER key, the VGA source will be displayed as default source.

Switching to Standby with the RCU
Press the POWER button on the RCU.
The VGA source will be displayed as default source when restart.

Power off
The display is showing an image.
Go first to standby and then switch off with the main switch.
The VGA source will be displayed as default source when switching on.
The display will always start up in VGA mode as default.

Warning: Do not attempt to service the installed modules yourself, as opening or removing covers may expose you to dangerous voltage potentials and the risk of electric shock! Refer all service to a qualified service centre.

Pointing to the IR sensor.
When using the wireless remote control, make sure you are within the effective operating distance. The remote control unit will not function properly if strong light strikes the sensor window or if there are obstacles between the remote control unit and the display IR sensor.

Display serial addressing

As more than one display can be installed in the same area network, every display may require an individual address between 1 to 255 which can be set in the Utilities OSD menu.

When the address is set, the display can be controlled by the remote control software via RS232:

Press the Menu button on the RCU

Select UTILITIES tab

Select "Serial ID" value in the range between 1 to 255.

The Factory default value of the display is ID2.

Display RCU Addressing.

As more than one display can be installed in the same area, the separate display should be separately addressable with an RCU. Therefore each display has its own RCU ID in the range of 00 to 31.

Press the "TXP" key for more than 1 second

Enter the first digit (A) from "0" to "3".

Enter the second digit (B) from "0" to "1".

Press OK

The default value for the remote-control is "00".

Press the "RXP" key on the RCU for 5 seconds.

The window that displays the current "System code ID" appears on the screen.

Press OK button on the RCU to deliver the new code to the display

OSD menu

Note: considering the possibility to install the monitor in "portrait" (vertical), the OSD will be rotated by 90°.

The OSD menu allows the user to quickly and easily adjust the display parameters

Supported Video Mode Resolutions

Resolution	Frequency		Quantum tested	Matrox 450MMS
	Vert. (Hz)	Hor. (KHz)		
720x400	85Hz 37.9Khz		OK	
	87Hz 39.4Khz		OK	
640x480	60Hz 31.5Khz		OK	
	72Hz 37.9Khz		OK	
	75Hz 37.5Khz		OK	
	85Hz 43.3Khz		OK	
	72Hz 48.1Khz		OK	OK
	75Hz 46.9Khz			OK
	85Hz 53.7Khz		OK	OK *
800x600	56Hz			OK
	60Hz			OK
	72Hz			OK
	75Hz			OK
	85Hz			OK *
1024x768	60Hz 48.4Khz		OK	OK
	70Hz 56.5Khz		OK	OK
	75Hz 60.0Khz		OK	OK
	85Hz 68.7Khz		OK	OK *
1152x864	75Hz 67.5Khz		OK	OK
	70Hz 63.8Khz		OK	OK
	85Hz 77.1Khz		OK	OK *
1280x720 60Hz				OK
1280x960	60Hz 60.0Khz		OK	OK
	85Hz 85.9Khz		OK	OK *
	75Hz 75.0Khz		OK	
1280x1024	60Hz 64.0Khz		OK	OK
	75Hz 80.0Khz		OK	OK
	85Hz 91.1Khz		OK	OK *
1600x1200 60Hz		75.0Khz	OK	OK *
640x400 85Hz		37.8Khz	OK	
1360x768 (1366x768)	60Hz	47.7KHz	OK	OK
1920x1080 60Hz		67.5Khz	OK	OK

Troubleshooting Guide

- **Screen is blank and power indicator is off**
- **Screen remains black or blank**
- **Powering Off message**
- **Screen flickers**
- **Text or lines have blurry edges**
- **The image is very unstable**
- **Changing the display resolution to the displays native resolution**
- **To run Factory Default**
- **To run Auto Adjust**
- **Setting the display resolution to a 1:1 ratio**
- **Troubleshooting the remote control**

Screen is blank and power indicator is off

The monitor is possibly not receiving power. Perform the following steps to fix the problem:

- Ensure the monitor is operating within the required power range
- Ensure that the electrical outlet and the monitor are both switched on.
- Check that the power cord is firmly plugged into the electrical outlet.
- Try another electrical outlet.

Screen remains black or blank

If the monitor power light is ON and the screen remains black, the monitor and video hardware were probably unable to sync the graphics mode.

To bring back the picture, do the following steps until the picture comes back:

- Verify that the monitor is firmly connected to the correct video output connector.
- Check that no pins are bent in the signal cable connector.
- Select the desired video input acting the VIDEO IN button on the remote control (i.e. VGA)
- Move the mouse and press the spacebar on the keyboard.
- Press ALT + TAB.
- Press the Suspend (or Standby) button on the keyboard.
- Press the Suspend (or Standby) button on the keyboard again (once to place the system in suspend mode, and once to bring the system out of suspend mode).
- Check the cable connection between the display and the computer. The cable connectors must be pushed in all the way.
- If the screen is still blank, turn off the monitor and then turn it on again.
- If the screen is still blank, the computer has probably stopped responding. Press and hold the Power button on the computer for five seconds, then turn the computer on again.

Powering OFF message

POWERING OFF messages appear when the PC display settings for screen resolution and refresh rate are set to values that do not work with the display. Sometimes, restarting the PC will resolve this error. If the error persists, start the PC in Safe Mode and adjust the display resolution as follows:

- Turn on the computer and press the F8 key repeatedly after the first startup screen appears.
- A Startup menu appears.
- Enter the selection for Safe Mode.

- Windows starts in Safe Mode.
- Click Start, Settings, and then Control Panel.
- Double-click the Display icon and select the Settings tab.
- Move the slider bar under Screen Area until the native resolution for the monitor is set, and click OK.
- The native resolution of the display are 1366x768@60Hz, 1920x1080@60Hz .
- If these steps failed to resolve the message, use the steps in the preceding section.

Screen flickers

If the screen flickers, make sure the display size is set to the native display of the monitor (for best performance).

- Click   **Start**, **Settings**, and then **Control Panel**.
- Double-cli   ck the **Display** icon and select the **Settings** tab.
- Move the slider bar under Screen Area until the native resolution for the monitor is set, and click **OK**.

NOTE: If the screen continues to flicker, the refresh rate on the video card may not match the refresh rate of the monitor. This normally cannot be changed for flat panel displays using Plug and Play settings. However, if special video software is being used to increase or decrease the refresh rate, change the refresh rate to match the refresh rate specification to match the native display resolution.

Text or lines have blurry edges

The display resolution is set to something other than the native display resolution. The flat panel display hardware has to scale the image. When it does this, sharp lines become slightly blurred in order to enlarge or reduce the entire image. To fix this, set the resolution to its native resolution (preferred 1360x768@60Hz), or set the monitor itself to display the resolution at a **1:1 pixel ratio**.

The image is very unstable

If you are experiencing an unstable image on the display screen try the following:

- Set your PC to the native supported resolution and frequency setting of the display The native resolution of a flat panel display can be found in the printed material that came with the monitor. Some common native resolutions are 1360x768@60Hz, 1366x768@60Hz, 1920x1080@60Hz
- Restore the original factory settings by choosing Factory Defaults on the OSD main window.
- Run the Auto Adjust routine.
- Setting the display resolution to a 1:1 ratio

Change the display resolution to the displays native resolution

- Right-click on an open area of the Windows desktop and select **Properties**.
- Click   the **Settings** tab.
- Move the slider bar under Screen Area until the native resolution for the monitor is set, and click **OK**.
- If you are unable to select the suggested native display resolution with the above steps, update your video card drivers.

To run Factory Default

- Press the Menu button on the remote control to open the OSD main window.
- Press the **+** and **–** buttons to select the UTILITIES tab
- Scroll down to select the **Factory Defaults** option

To run Auto Adjust

- Press the Menu button on the remote control to open the OSD main window.
- Press the **+** and **–** buttons to select the PICTURE tab
- Scroll down to select the **Auto Adjust** option
- This function not available in the DVI mode

Setting the display resolution to a 1:1 ratio

- Setting a 1:1 pixel ratio and using a smaller display setting (640 x 480, 800 x 600) may make the image smaller but clearer.
- Press the Menu button on the remote control to open the OSD main window.
- Press the **+** and **–** buttons to select the UTILITIES tab
- Scroll down to select the **Scaling mode** option
- Select the **One to One** option

Troubleshooting the remote control

Use the following items to troubleshoot when the remote control does not respond or when the remote control does not work properly.

- Make sure that the batteries for the remote control are installed correctly and charged.
- Make sure the front of the remote sensor on the display is not blocked or in direct sun light.
- Point the remote control at the display within a 45-degree angle range and less than 13 feet (4 meters) away.

Note: The **Serial ID** setup requires a five second wait before carrying out any actions on the display. It allows the setup to be stored into the NV-RAM.

Product limited warranty:

Vartech Systems warrants that the products it manufactures will be free from defects in materials
and workmanship for a period of one (1) year subject to the conditions set forth below.

The limited warranty is extended to the original user and is not transferable. The limited warranty term begins on the
date of shipment to the original user of the product. The limited warranty does not apply to any product or part
therefore damaged by a) alteration or disassembly, b) accident or abuse, c) corrosion, d) lightning, e) reverse
polarity, f) repair or service provided by an unauthorized repair
facility, g) operation or installation contrary to instructions pertaining to the product.

Vartech's liability for any defective product or any part thereof shall be limited to the repair or replacement of the
product, at Vartech's discretion. Vartech does not warrant or guarantee the workmanship performed by any person or firm
installing its products.

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