Solutions for Demanding Applications

VarTech Systems Inc.

Industrial CRT and Flat Panel Displays

Tray Mount

Flush Mount

In Honeywell Bezel

VT181CH · VT181CH-IR
VT181CHE-IR
18.1" Flat Panel for Honeywell Applications

User's Guide

Read these instructions completely before attempting to operate your new Color Display.

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1.1 VT181CH Display Family

The VT181CH, VT181CH-IR, and VT181CHE-IR are part of a series of LCD replacement displays for the Honeywell TDC Universal Stations (US) Classic Style furniture.

The VT181CH displays are offered as chassis tray mount models and as flush mount models. The flush models mount to the Vartech Systems replacement console bezels or the Honeywell replacement console bezel for systems which have been upgraded to the 19" Sony monitor. The chassis tray models mount in the same method as the original CRT displays.

The VT181CH and VT181CH-IR displays are for stations that have EPDG video board and EPDG I/O Adapter board. These displays replace the 20" Aydin or Intecolor CRT displays. The VT181CH-IR is supplied complete with a replacement console bezel and new flat IR touch frame which is compatible with the original 20" touch frame being replaced.

The VT181CHE-IR displays are for stations that have PDG video board and PDG I/O Adapter board. The PDG I/O Adapter board must be Honeywell PN 51109394-100. The VT181CHE-IR replaces the 20" Electrohome and Aydin CRT displays. The VT181CHE-IR is supplied complete with a replacement console bezel and new flat IR touch frame which is compatible with the original 20" touch frame being replaced.

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1.2 Product Safety Precautions

⇒ Ensure that sufficient space is available around the display to provide the circulation necessary for cooling.

⇒ Ensure that the ambient air temperature will not exceed the specified maximum temperature.

⇒ Do not attempt to service this display yourself. The rear chassis has a seal so that non qualified personal will not expose themselves to dangerous voltages or other risks.

⇒ To protect from electrical shock, unplug the display power supply from the console before moving.

⇒ Do not expose the display to excessive heat.

⇒ Do not use this display near water.

⇒ Unplug the power supply from the console or unit if one of the following conditions exists.
  ⇒ Power cord or plug is damaged or frayed
  ⇒ Liquid is spilled into the display or the display is exposed to rain or water.
  ⇒ The display does not operate normally when the operating instructions are followed.
  ⇒ The display has been dropped or the enclosure has been damaged.
  ⇒ The display exhibits a distinct change in performance, indicating a need for service.

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2.1 VT181CH Series Display Features

⇒ Capable of displaying unlimited colors in a continuous spectrum. The high contrast LCD enhances the image with no geometric distortion.

⇒ The Displays come with a HD15 Input Connector. The VT181CH also includes an HD15 to DB9 Video Adapter Cable. The VT181CHE-IR also includes an HD15 to 5BNC Video Adapter Cable.

⇒ The Displays are supplied with a remote membrane switch assembly that mounts to the front of the console bezel for OSD controls.

⇒ The Display is supplied with an Anti-Reflective Screen.

⇒ The Display has an integrated 115/220VAC supply as standard on all models.

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2.2 Unpacking and setting up your display

Your LCD monitor package will consist of the basic components listed below. Depending on the display configuration, additional components are supplied.

2.3 What is included with your display

⇒ 18.1" LCD Monitor
⇒ Video adapter cable (HD15 to DB9 or HD15 to 5BNC)
⇒ Accessory Kit: 2-Chassis stops; OSD Membrane Kit; Optional Chassis Brackets; IR touch frame cable; VT181CH includes a HD15 to DB9 Video Adapter Cable; VT181CHE includes a HD15 to 5BNC Video Adapter Cable.
⇒ Users Guide (Printed or on CD)

2.4 Connecting the Display

1. Connect all cables to the station first. This would include the video adapter cable and the optional IR touch screen cable.

2. After connecting the cables between the LCD monitor and the station, plug the power cord into the display.

3. Switch on the display power switch.

4. Reboot the station.

5. Your display should now operate showing the station video information.

Note: The displays are factory OSD adjusted for each configuration. However, additional OSD adjustments may be required (See section 3).

2.5 Signal Connections

To avoid irregular operation and /or damage to the display, please insure correct video is being supplied as shown on the following page.

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Signal Connections Cont.

Use the HD15 to DB9 video adapter cable to connect the flat panel display to the EPDG I/O adapter board.
Use the HD15 to 5BNC video adapter cable to connect the flat panel display to the original Red, Green, and Blue coax cable connected to the PDG I/O adapter board. The 2 extra BNC cables on the video adapter are not used.

Note: The following figure is the view looking into the pin end of the male connector or solder term end of the female connector.

HD15 Connector
The following table provides the pin numbers and corresponding pin assignments for the HD-15 video connector.

Pin	Signal
1	Red Video
2	Green Video (SOG PDG only)
3	Blue Video
4	Not Used
5	Not Used
6	Red Video Ground
7	Green Video Ground
8	Blue Video Ground
9	Not Used
10	Ground
11	Ground
12	Not Used
13	Horizontal Sync (EPDG only)
14	Vertical Sync (EPDG only)
15	Not Used
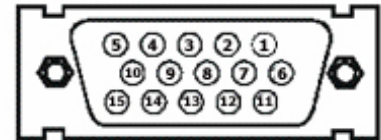
HD15 Connector
Female

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3

GETTING STARTED

3.1 Adjusting the display
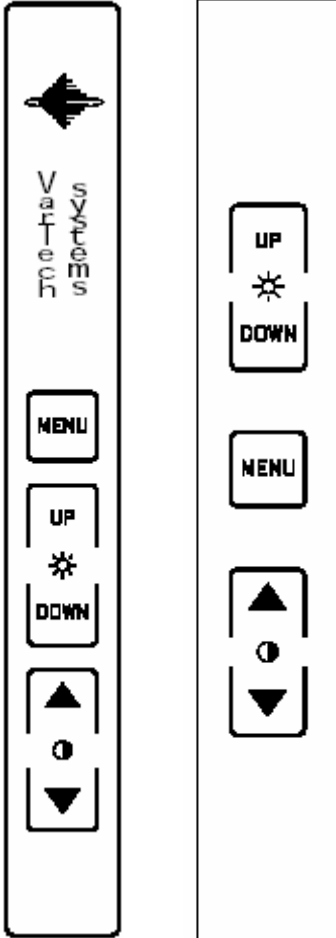
On Screen Display	
Button	**Description**
MENU	**Invokes OSD or** **Next Function Level**
▲	**Increase Contrast or** **Increment Selected Parameter**
▼	**Decrease Contrast or** **Decrement Selected Parameter**
UP ☀	**Increase Backlight Brightness or** **Increment Selected Parameter**
☀ DOWN	**Decrease Backlight Brightness or** **Decrement Selected Parameter**

3.3 User Controls

Direct Brightness Adjustment	
OSD Agent	**Description**
Brightness	Controls the intensity of the backlight. After adjustment, the new Brightness value is displayed on the screen until the OSD timeout period expires. The new setting is then stored and the display returns to normal.

Direct Contrast Adjustment	
OSD Agent	**Description**
Contrast	Controls the contrast (video gain) of the picture. After adjustment, the new contrast value is displayed on the screen until the OSD timeout period expires. The new setting is then stored and the display returns to normal.

Menu Select	
OSD Agent	**Description**
Menu Select	Displays picture identification information together with a menu of icons. To access lower-level functions, use the brightness up and down or the contrast up and down buttons to toggle through the menus available for the currently displayed signal type, then press MENU again to select that function. The MENU button has a similar function to the ENTER key on a computer keyboard. Exit from a menu by selecting BACK which returns to the previous level. When leaving the main menu you will be prompted to save any changes, if you do not wish to save any changes select NO.

OSD Menu	
OSD Agent	**Description**
OSD Menu	At the top of the menu is a line which identifies the type of signal currently displayed. For computer signals the same section displays the signal resolution, together with horizontal and vertical frequencies. If its setup has been saved, the user number of the signal is also displayed. (These figures are for guidance only).

Brightness and Contrast	
OSD Agent	**Description**
Brightness and Contrast	These perform the same functions as the direct brightness and direct contrast button operations listed above.

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3.3 Adjustment Procedure Cont.

The Geometry Menu	
OSD Agent	**Description**
Edge Adjustment	Adjusts Picture Size and Position Controls. The four "Edge" controls shift each edge within available limits. Note that the maximum available shift depends on the incoming video standard and the display panel type, and may be restricted vertically. This provides very flexible and easy to use image size an position control.
Moire	Corrects Moire. Choose from one of four correction tables.
Clock	Sets the total number of input pixels per line to correspond with the input source, and will normally require adjustment for unusual signals.
Phase	Adjusts the internal clock to sample each pixel as near as possible to the centre. Phase will normally require adjustment for unusual types of signal.
Aspect Ratio	Selects the displayed aspect ratio where the signal input is at variance with the display panel's natural aspect ratio. The format may be adjusted to either "Letter Box" or "Overscan". "Letter Box" effectively adjusts the height of the displayed image and "Overscan" effectively adjusted the width to achieve the desired 4:3 aspect ratio.

Input Select: Configures the preferred input selections. (If a facility is not fitted, it will be displayed but not selectable.)	
OSD Agent	**Description**
Signal Type Priority	Video-graphics or Graphics-video
Video Priority Search Order	CVBS -Y/C - SDI - Component Y/C - CVBS - SDI - Component SDI - Component - CVBS - Y/C Component - SDI - CVBS - Y/C
Graphics Search	RGB-DVI or DVI-RGB **Note:** DVI not available
Component Video Type	RCB or YUV. Incorrect colors may be due to wrong selection here.

The Color Menu	
OSD Agent	**Description**
Video Inputs	Adjusts the contrast (video gain) and brightness (black level) parameters, also color saturation for PAL, NTSC and SECAM inputs can be accessed from this menu. For NTSC signals, there is an additional HUE option.
Computer Inputs- Individual Color Adjustments	Red, green and blue levels can be thought of as individual brightness controls for each of red, green and blue. They should be adjusted for the desired color balance and to minimize noise on low intensity colors and greys. Color tints can be added as required.

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3.3 Adjustment Procedure Cont.

The System Menu: Contains functions which are more applicable to system operation than to picture adjustment.

OSD Agent	Description
Esc	Returns to the last saved setup. It is useful if an adjustment has been made in error.
Save	Saves all the user adjustments for the displayed signal type. The new adjustments are stored in non-volatile memory and so are still valid from a power down—power up cycle.
Reset	1) Restores the user adjustable parameters for the signal currently being display back to the factory defaults. 2) Press the [▲] [▼] [UP] [DOWN] buttons simultaneously to restore to factory default state all the user adjustments for the signal currently being displayed. This is useful if a picture set-up has become lost or confused. The Reset option can also be accessed even if the OSD has been lost.
OSD Timeout	Controls the time after which the OSD display is cancelled. It can be adjusted in 15-sec increments from 1 (=15 sec) to 4 (=1 min) approximately.
OSD X and OSD Y	Controls the position of the OSD display on the screen. Its default settings such as to place the OSD in the center of the screen, but the user can adjust its position with these functions.
Auto Centering	Yes/No. If an input signal changes, it is first measured and compared with stored selections. If its parameters are already stored, they are installed. If they are stored, the "Auto Centering" selection is checked and if set to "No" the best fit is displayed. The user can then center the picture using OSD auto setup. If Auto Centering is set to "Yes", centering is performed automatically, which may take more than 15 seconds. This could cause a problem if using Windows, wherein a resolution change is displayed only for 15 seconds and reverts to its previous selection if no acknowledgement is entered. For this reason, the default state is "No". NOTE this control only configures Analog Graphics inputs.

The Miscellaneous Menu

OSD Agent	Description
Image Flip Horizontal	Flips the output image horizontally.
Image Flip Vertical	Flips the output image vertically. Can only be used if the Frame Store option is fitted and the input signal resolution is either video or computer graphics (SVGA or lower).
Text Enhance / Normal	Improves the appearance of fine text from a computer generated analog input signal. Please note this function will only be effective if the signal resolution is close to the resolution of the panel, no harm will be done to the unit by trying the enhanced and normal text options for other input resolutions.

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4.1 Touch Screen Introduction

The VT181CH-IR and VT181CHE-IR are supplied with a new flat IR touch frame which is compatible with the original monitor IR touch frame.

Connect the DB9 cable connector to the DB9 connector on the new IR touch frame.
Connect the 10 position (2x5) connector to J1 on the I/O Adapter board.
Connect the 7 position (1x7) connector to J4 of the I/O Adapter board.

It will be necessary to reboot the system for the new touch frame to be activated.

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Troubleshooting Tips	
Problem	**Troubleshooting Tip**
No image on display screen	1. Check that the power cord of the station has been connected to the display. 2. Check that the power switch of the Display has been turned to the on position. 3. Check that the Video (Signal) Cable from the Display has been securely and correctly connected to the I/O adapter board. 4. Check that the Video Card and the I/O adapter card are firmly seated in the card slots of the stations.
Abnormal image	1. Check that the correct display model is being used for the station. VT181CHE for PDG, VT181CH for EPDG. 2. Check that the Video (Signal) Cable from the Display has been securely and correctly connected to the connectors on the I/O adapter board.
Colors of image on screen are abnormal	1. Check that the Video (Signal) Cable from the display has been securely and correctly connected to the I/O adapter board. 2. Adjust the OSD control for correct color balance.
Disturbances on Screen	1. OSD adjustment is incorrect. Please consult section 3 for OSD screen adjustment procedures.

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CLEANING AND MAINTANENCE

Cleaning
Occasionally clean the display panel and cabinet with a soft cloth dampened (not soaked) with a mild (non-abrasive) glass cleaner. Keep turning a fresh side of the cloth toward the screen surface to avoid scratching it with accumulated grit.

Note:
The solvent should be applied only to the cloth, and not directly on the monitor screen.

Do not use paper products as they may scratch the surface. To minimize the risk of abrasion, allow the screen to stand dry.
Special care should be taken when cleaning a touch screen or polycarbonate shield that is installed over the screen. Abrasive and certain chemical cleaners can easily damage the surface.
Never use alcoholic or ammoniac cleaners to clean the polycarbonate shield or a touch screen.

Note:
For best results cleaning a monitor with the optional antireflective tempered glass display shield, a solution of denatured alcohol is recommended to thoroughly clean the display.

Other Maintenance
Qualified service personnel should perform all maintenance, except for the power cord replacement described above.

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MOUNTING INSTRUCTIONS

Mechanical Drawings		
Model	**Description**	**Page(s)**
VT181CH/CHE	Tray Mount	14-15
VT181CH/CHE	Flush Mount	16-17

7.1 Mounting Procedure - Tray Mount

1. Remove the original CRT display monitor. Keep the two "L" shaped brackets.
   These brackets will be used to mount the flat display.
   Included with the display are a set of brackets for both upper and lower tier mounting.
2. Remove the original front console bezel and 20" curved IR touch frame.
3. Install the new replacement console bezel with the original four screws.
   The new console bezel is complete with the new flat IR touch frame.
4. Connect the new touch cable per section 4.1
5. Mount the display to either the lower tier slide tray or the upper tier fixed tray using the supplied
   brackets. Position the display to the rear of the flat IR touch frame. For lower tier applications,
   replace the tray stop bolts with the longer supplied stop tubes and bolts and secure.
6. Connect the membrane extension cable to the membrane tab that projects through the console bezel.
7. Connect the video cable per section 2.5
8. Connect the power cord to the display and select the power switch to ON
9. Turn on the station main power switch and boot the system
10. Make any OSD adjustments if required per section 3.1

7.2 Mounting Procedure - Flush Mount

1. Remove the original CRT display monitor.
2. Remove the original front console bezel and 20" curved IR touch frame.
3. Install the new replacement console bezel with the original four screws.
   The new console bezel is complete with the new flat IR touch frame.
4. Connect the new touch cable per section 4.1
5. Mount the display to the rear of the lower tier or upper tier replacement console bezel using the
   supplied screws.
6. Connect the membrane extension cable to the membrane tab that projects through the console bezel.
7. Connect the video cable per section 2.5
8. Connect the power cord to the display and select the power switch to ON
9. Turn on the station main power switch and boot the system
10. Make any OSD adjustments if required per section 3.1

Note:
For display upgrade only when replacing the flat screen Sony monitor, omit step 2, step 3, and step 4.

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SPECIFICATIONS

ENGINEERING SPECIFICATIONS	
Panel Size	18.1"
Type	TFT Bright Active matrix AR / AG Protective Faceplate
Resolution Capabilities	PDG and EPDG
Pixel Pitch	0.2805mm
Active Display Area	14.315" x 11.308/" 359.04mm x 287.23mm
Viewing Angle (Left/Right)	80/80º
Viewing Angle (Up/Down)	80/80º
Contrast Ratio	350:1
Brightness	300 Nits
Response Time	T_R = 15ms typical T_F = 15ms typical
Back Lights	Cold Cathode 50,000 Hrs. Half Life
Video Connector	HD15(F) VT181CH Includes: HD15 to DB9 Video Adapter Cable VT181CHE Includes: HD15 to 5BNC Video Adapter Cable
Colors Supported	16.7M
Video Input	RGB Analog (0.7V p-p / 75ohm) / Digital
Sync	Separate H&V, (EPDG) SOG (Sync On Green) (PDG)
Input Voltage	AC 100-240V 50/60Hz 1.0A
Power consumption	Normal: 55Watts DPMS: < 3Watts
Operating Temperature	0 to 50ºC
Storage Temperature	-20 to 60ºC
Operating Humidity	0 to 95%NC
Storage Humidity	0 to 95%NC
Operating Altitude	Up to 10,000 ft
Storage Altitude	Up to 40,000 ft

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