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## PC, DVI, HDMI, VIDEO INTERFACE CONTROLLER FOR TFT PANEL

**Model: SVX-1920**

Part number : 41721003X-3 or up

[Firmware version : V0.45.00.01 or up]

### INSTRUCTIONS

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**It is essential that these instructions are read and understood before connecting or powering up this controller.**

## Introduction

Designed for LCD monitor and other flat panel display applications, the SVX-1920 is a feature rich interface controller for :

- TFT (active matrix) LCD panels of 1920x1200, 1920x1080, 1600x1200, 1680x1050, 1440x900, 1366x768, 1280x1024, 1280x800, 1280x768 1024x768, 800x600, 800x480 and 640x480 resolutions.
- Computer video signals of VGA, SVGA, XGA, SXGA, WXGA, UXGA, WUXGA standard.
- Video signals of NTSC, PAL and SECAM standard.
- DVI input support up to 1920x1200 60Hz input signals
- Support HDMI input
- Support true 10 bits panel
- Support HDMI, DVI, VGA, S-Video, Composite Video input
- Support on screen marker

### Ordering information :

Controller	Part number	Ordering part number
SVX-1920	P/N 41721003X-3	P/N 4172100XX-3

### HOW TO PROCEED

- Ensure you have all parts & that they are correct, refer to:
  - Connection diagram

#### Controller Solution Generator

Full web resource matching controllers & panels with **connection diagrams** for download.  
See at : <http://www.digitalview.com/csg>

- Connector reference (in following section)
- Assembly notes
- Check controller switch & jumper settings (errors may damage the panel)
- Prepare the PC
- Connect the parts
- Understand the operation & functions

### IMPORTANT USAGE NOTE

This equipment is for use by developers and integrators, the manufacturer accepts no liability for damage or injury caused by the use of this product. It is the responsibility of the developer, integrators or other user of this product to:

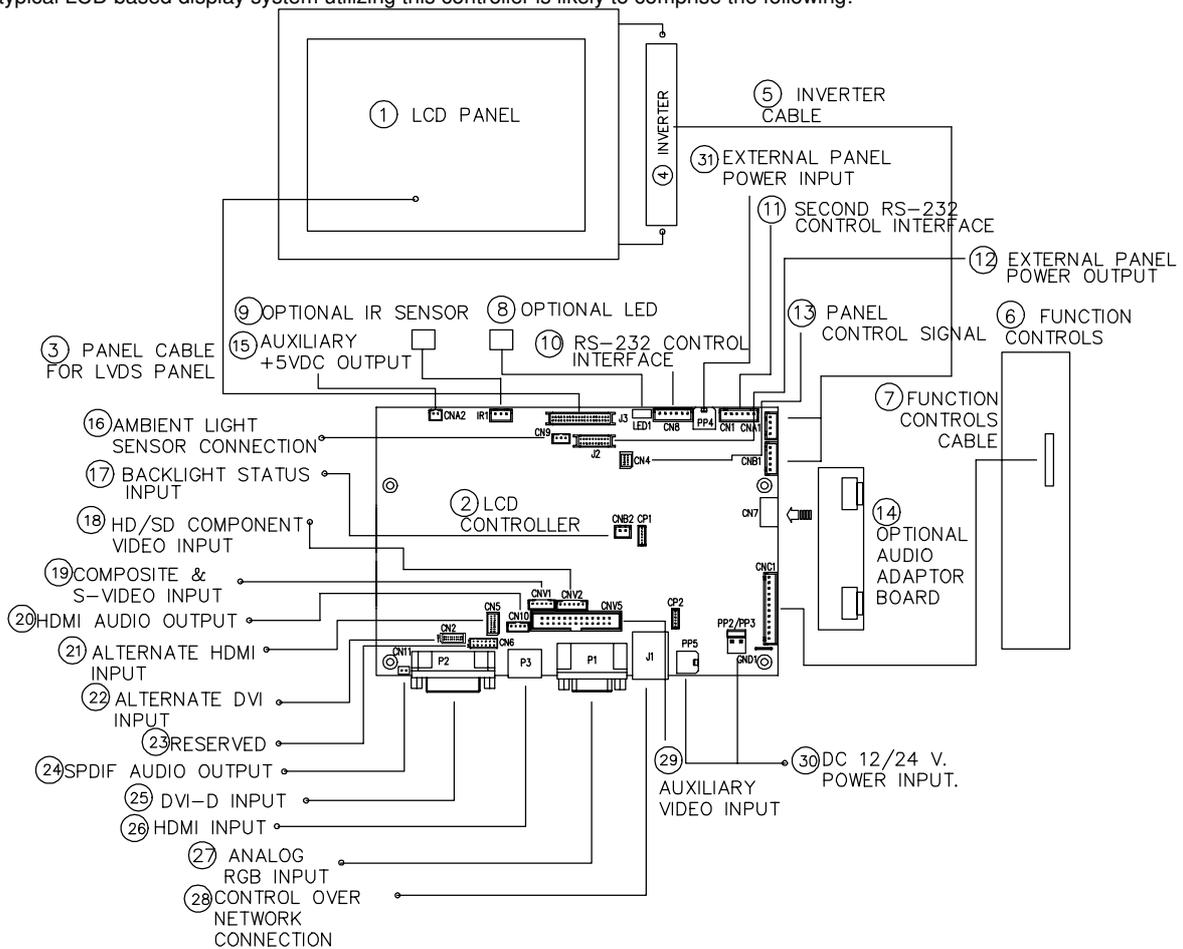
- Ensure that all necessary and appropriate safety measures are taken.
- Obtain suitable regulatory approvals as may be required.
- **Check power settings to all component parts before connection.**

### DISCLAIMER

There is no implied or expressed warranty regarding this material.

## SYSTEM DESIGN

A typical LCD based display system utilizing this controller is likely to comprise the following:



### Summary:

1. LCD panel
2. LCD controller card, SVX-1920
3. LCD signal cable (use for LVDS panel)
4. Inverter for backlight (if not built into LCD)
5. Inverter cable
6. Function controls
7. Function controls cable
8. Status LED (optional)
9. IR sensor (optional)
10. RS-232 control interface
11. Second RS-232 control interface
12. External panel power output
13. Panel control signal
14. Audio add-on board (optional)
15. Auxiliary +5VDC, max 500mA output
16. Ambient light sensor connection
17. Backlight status input
18. HD/SD Component video input
19. Composite & S-video input
20. HDMI audio output
21. Alternate HDMI input
22. Alternate DVI input
23. Reserved
24. SPDIF Audio output
25. DVI-D input
26. HDMI input
27. Analog RGB input
28. Control over network connection
29. Auxiliary video input
30. +12V / +24V DC power input
31. External panel power input

Digital View provides a range of parts, such as listed above, to make up complete display solutions.

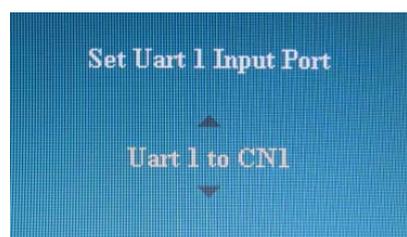
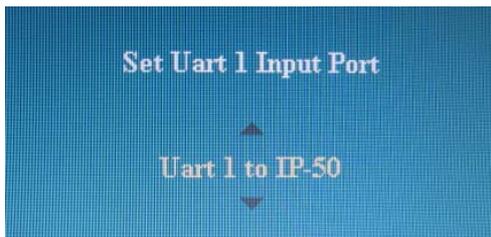
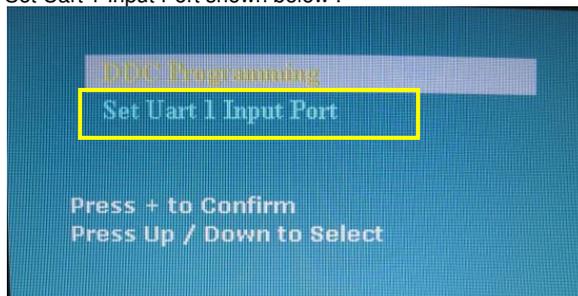
Specifications subject to change without notice

## ASSEMBLY NOTES

This controller is designed for monitor and custom display projects using 1920x1200 or 1920x1080 or 1600x1200 or 1680x1050 or 1440x900 or 1366x768 or 1280 x 1024 or 1024 x 768 or 800x600 or 640x480 resolution TFT panels with a VGA, SVGA, WXGA, XGA, SXGA, UXGA or WUXGA signal input. The following provides some guidelines for installation and preparation of a finished display solution.

**Preparation:** Before proceeding it is important to familiarize yourself with the parts making up the system and the various connectors, mounting holes and general layout of the controller. As much as possible connectors have been labeled. Guides to connectors and mounting holes are shown in the following relevant sections.

- LCD Panel:** This controller is designed for typical LVDS or TTL interfaced panels with panel voltage 3.3V, 5V or 12V, External for 12V~18V interface. Due to the variation between manufacturers of panels signal timing and other panel characteristics, factory setup and confirmation should be obtained before connecting to a panel. **(NOTE: Check panel power jumper settings before connection)**
- Controller:** Handle the controller with care as static charge may damage electronic components. Make sure correct jumper and dip switches settings to match the target LCD panel.
- LCD signal cable (LVDS panel):** In order to provide a clean signal it is recommended that LVDS signal cables are no longer than 46cm (18 inches). If those wire cabling is utilized these can be made into a harness with cable ties. Care should be taken when placing the cables to avoid signal interference. Additionally it may be necessary in some systems to add ferrite cores to the cable to minimize signal noise.
- Inverter:** This will be required for the backlight of an LCD, some LCD panels have an inverter built in. As LCD panels may have 1 or more backlight tubes and the power requirements for different panel backlights may vary it is important to match the inverter in order to obtain optimum performance. See Application notes page 25 for more information on connection.
- Inverter Cables:** Different inverter models require different cables and different pin assignment. Make sure correct cable pin out to match inverter. Using wrong cable pin out may damage the inverter.
- Function Controls:** The following section discusses the controls required and the section on connectors provides the detail. The controls are minimal: On/Off, Backlight Brightness (depends on inverter), OSD (5 momentary buttons) analog VR type or (8 momentary buttons) digital type.  
The 8 momentary buttons OSD switch mount P/N 416100520-3 or OSD membrane interface P/N 416100120-3 must be used when 24VDC input.
- Function controls cable:** The cables to the function switches should be of suitable quality and length so that impedance does not affect performance. Generally lengths up to 1 meter (3 feet) should be acceptable.
- Status LED:** The pin direction of the LED should be corrected for right colour indication. Red colour stands for standby. Green colours stands for signal on. The status LED is an optional part only, can be unconnected.
- IR sensor:** It is an optional part only, can be unconnected if not using IR remote control. See Appendix V in details.
- RS-232 control interface :** Firmware upgrade and serial control via this interface port.
- Second RS-232 control interface :** This interface support controlled under "Programming mode" .  
Press and hold "MENU" button on the OSD switch mount and turn on the controller to enter the "Programming mode".  
Choose "Set Uart 1 Input Port shown below :



Set "Uart 1 to IP-50" : Enable Ethernet network (J1) support and disable second RS-232 serial control (CN1) support  
Set "Uart 1 to CN1" : Enable second RS-232 serial control (CN1) support. Disable Ethernet network (J1) support

Specifications subject to change without notice

12. **External panel power output** : User for specific panel model.
  13. **Panel control signal** : Use for specific panel model.
  14. **Audio add-on board P/N 416940020-3**: Provide the interface for the audio add-on board P/N 416940020-3 to be connected. The audio add-on board gives the audio input and output signal connection. The volume can be controlled by the OSD menu on the controller. It is an optional part only, can be unconnected if not using audio.  
CAUTION : The Audio Add-on Board P/N 416940020-3 is only operate under 12VDC power input environment.
  15. **Auxiliary +5VDC output** : 2 ways connector provides +5VDC output.
  16. **Ambient light sensor connection** : 3 ways connector provides interface for ambient light sensor connection by using Kit 70220-3.
  17. **Backlight status input** : 2 ways connector provides interface for connection with the specific panel type which support the panel with backlight status monitoring function.
  18. **HD / SD Component video input** : Plug the component video input cable P/N 426000600-3 on CNV2 connector
  19. **Composite & S-video input** : Standard Composite cables can be used. Reasonable quality cable should be used to avoid image quality degradation.
  20. **HDMI audio output** : Support HDMI audio with stereo output.  
The HDMI audio output can be connected to Audio add-on board P/N 416940020-3 by using the audio cable P/N 426451800-3 (310mm) connected between SVX-1920 (connector : CN10) and Audio add-on board P/N 416940020-3 (connector : CN2).
  21. **Alternate HDMI input** : This port gives alternate HDMI input support. This port is not support when P3 connector is connected.
  22. **Alternate DVI input** : This port gives alternate DVI input support. This port is not supported when P2 connector is connected.
  23. **Reserved** : No function, reserved for future development.
  24. **SPDIF Audio output** : This port support SPDIF audio output from the HDMI audio source inputted.
  25. **DVI-D input cable** : Plug the DVI cable to the connector P3 on the controller board.
  26. **HDMI input** : Plug the HDMI cable to the connector P2 on the controller board. This port is not supported when CN5 is connected.
  27. **Analog RGB Input** : As this may affect regulatory emission test results and the quality of the signal to the controller a suitably shielded cable should be utilized.
  28. **Control over network connection** : This is a network device that allow to control RS-232 enable devices over a TCP/IP based Ethernet and the Internet using a web browser. Please refer to Appendix VIII in details.
  29. **Auxiliary video input** : This port provides Composite video 1 & 2, S-video 1 & 2, Component 1 & 2. The video input selection can be switched via RS-232 command (0x98) or OSD menu.
  30. **Power Input**: 12V/24VDC is required, this should be a regulated supply. The power rating is depending on the panel and inverter used. Normally, power supply with 3.5Amp current output should enough for most of 4x CCFT panels. Although the controller provides power regulation for the LCD power this does not relate to the power supplied to the backlight inverter. If an unregulated power supply is provided to an inverter any fluctuations in power may affect operation, performance and lifetime of the inverter and or backlight tubes.
  31. **External panel power input** : Allow to supply external power to the panel separately for max 3.3V (7A) or 5V (7A) or 12V (5A) or 18V (3.5A) via PP4 power input connector. Corresponding jumper setting of JA3, JA5 & JA6 are required for each panel power input by referring to page 17.
- **Power output**: Note the controller has an overall 3Amp current limit and the current available from the auxiliary power output will be dependent on the power input and other system requirements.
  - **Power Safety**: Note that although only 12V / 24VDC is required as 'power-in' a backlight inverter for panel backlighting produces significantly higher voltages (the inverter does not connect to the ground plane). We strongly advise appropriate insulation for all circuitry.
  - **EMI**: Shielding will be required for passing certain regulatory emissions tests. Also the choice of external Controller to PC signal cable can affect the result.
  - **Ground**: The various PCB mounting holes are connected to the ground plane.
  - **Servicing**: The board is not user serviceable or repairable. Warranty does not cover user error in connecting up to the controller and is invalidated by unauthorized modification or repairs.

- **Controller Mounting:** It is recommended that a clearance of at least 10mm is provided above and 5mm below the controller when mounted. Additionally consideration should be given to:
  - Electrical insulation.
  - Grounding.
  - EMI shielding.
  - Cable management. Note: It is important to keep panel signal cables apart from the inverter & backlight cables to prevent signal interference.
  - Heat & Ventilation: Heat generated from other sources, for example the backlight of a very high brightness panel may generate significant heat which could adversely affect the controller.
  - Other issues that may affect safety or performance.
- **PC Graphics Output:** A few guidelines:
  - Signal quality is very important, if there is noise or instability in the PC graphics output this may result in visible noise on the display.
  - Refer to graphics modes table in specifications section for supported modes.
  - Non-interlaced & interlaced video input is acceptable.

**IMPORTANT: Please read the Application Notes section for more information.**

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## CONNECTION & OPERATION

**CAUTION:** Never connect or disconnect parts of the display system when the system is powered up as this may cause serious damage.

### CONNECTION

Connection and usage is quite straight forward (it is useful to have the relevant connection diagram available at this time):

1. **LCD panel & Inverter:** Connect the inverter (if it is not built-in the panel) to the CCFT lead connector of the LCD panel.
2. **LVDS type panels:** The controller board has the built-in LVDS transmitter driver. Plug the LVDS cable to J3. Insert the panel end of the cable the LCD panel connector.
3. **Inverter & Controller:** Plug the inverter cable to CNB1 and CNA1 (if necessary). Plug another end to the connector on the inverter.
4. **Function switch & Controller:** Plug the OSD switch mount cable to CNC1 on the controller board and another to the OSD switch mount.
5. **LED & Controller:** Plug in a 3-way with dual colour LED to connector LED1 on the controller board.
6. **IR & Controller:** Plug in a 3-way with IR sensor to connector IR1 on the controller board.
7. **Jumpers & Switches:** Check all jumpers and switches (SW3, SW4) are set correctly. Details referring the connection diagram (a separate document) or the jumpers and switches setting table (in the following section).
8. **Jumpers & Inverter & Panel voltage:** Particularly pay attention to the settings of JA3, JA5, JA6, JB2 and JB3. JB2 & JB3 are used for inverter control (read inverter specification and information on the jumper table to define the correct settings). JA3 & JA5 & JA6 is used for panel voltage input (read panel specification and information on the jumper table to define the correct settings).
9. **VGA cable & Controller:** Plug the VGA cable to the connector P1 on the controller board.
10. **Power supply & Controller:** Plug the DC 12V/24V power in to the connector PP5 or PP2/3. You can consider to use DigitalView mating power cable P/N 426013800-3, 160mm for PP5 connection.
11. **External panel power input :** Plug power cable : P/N 426013700-3 for external panel power input (3.3 (max 7A) / 5V (max 7A) / 12V (max 5A) / 18V (max3.5))
12. **Power on:** Switch on the controller board and panel by using the OSD switch mount.
13. **Audio Board :** The Audio Add-on Board P/N 416940020-3 is only operate under 12VDC power input environment.
14. **HDMI audio output :** The HDMI audio output can be connected to Audio add-on board P/N 416940020-3 by using the audio cable P/N 426451800-3 connected between SVX-1920 (connector : CN10) and Audio add-on board P/N 416940020-3 (connector : CN2).
15. **RM-DN5 connection :** This controller can support to drive with RM-DN5 Assembly version E1.16.10. Please refer to Appendix IX in details.

General:

- If you are using supplied cables & accessories, ensure they are correct for the model of panel and controller.
- If you are making your own cables & connectors refer carefully to both the panel & inverter specifications and the section in this manual, "Connectors, Pinouts & Jumpers" to ensure the correct pin to pin wiring.

### PC SETTINGS

The controller has been designed to take a very wide range of input signals however to optimize the PC's graphics performance we recommend choosing 60Hz vertical refresh rate – this will not cause screen flicker.

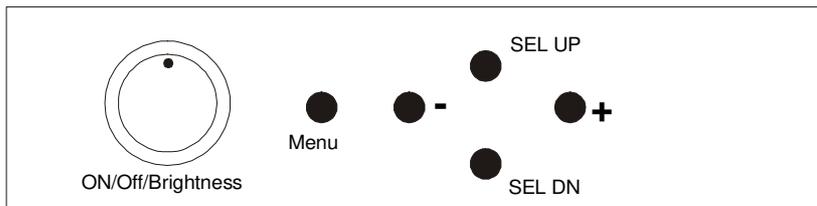
### OPERATION

Once the system has been connected and switched on there are a number of functions available to adjust the display image as summarized in the following sections. The settings chosen will be saved for each mode independently.

## LCD DISPLAY SYSTEM SETTINGS

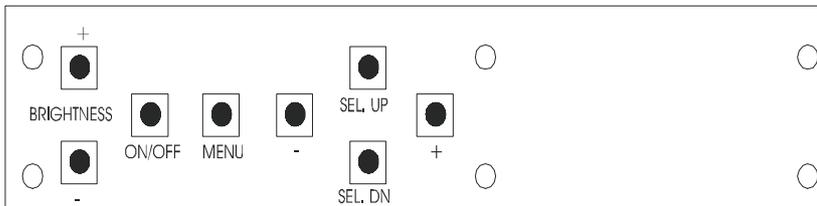
NOTE: By way of explanation the following refers to a set of sample buttons that may be obtained as an option. In addition to power on/off and connection for backlight brightness the controller provides an On Screen Display of certain functions which are controlled by 5 momentary type buttons (analog VR type) or 8 momentary type buttons (digital type):

Controls	Analog VR type	Digital type
On/Off – turns controller board power on	VR toggle switch	On/Off button
Brightness – controls backlight brightness	Rotary VR	Brightness +/- buttons
Menu – Turns OSD menu On or Off (it will auto time off) – Back to previous OSD menu page	Menu button	Menu button
Select down – Moves the selector to the next function (down)	SEL DN	SEL DN
Select up – Moves the selector to the previous function (up)	SEL UP	SEL UP
+ – Increase the OSD parameter values – Go into the sub-menu page from the top – Confirm to select the OSD function	+	+
- – Decrease the OSD parameter values – Go into the sub-menu page from the bottom	-	-
Reset to Factory Defaults	Press and hold SEL DN button, then power on the controller	Press and hold SEL DN button, then power on the controller
Access "Programming Mode"	Press and hold MENU button, then power on the controller	Press and hold MENU button, then power on the controller



Analog VR type

**12V / 24VDC power input :**  
Analog 10K VR Type OSD  
switch mount uses  
P/N 410680550-3 or up



Digital type

**12V / 24VDC power input :**  
Digital 10K Type OSD  
switch mount uses  
P/N 416100520-3 or up

**12VDC power input :**  
Digital 10K Type OSD  
switch mount uses  
P/N 416100510-3

## OSD functions



### Picture :

- Volume<sup>###</sup>  Increase/decrease volume level, total: 100 steps
- Brightness  Increase/decrease panel brightness level, total: 100 steps
- Contrast  Increase/decrease panel contrast level, total: 100 steps
- Saturation  Increase/decrease saturation, total: 100 steps
- Hue <sup>\*\*</sup>  Increase/decrease Hue level, total: 100 steps
- Sharpness<sup>\*</sup>  Increase/decrease sharpness, total: 30 steps
- Backlight  Backlight brightness adjustment (Functions when light detector sets OFF)

### Position<sup>#</sup>



Move the image position upward



Move the image position downward



Move the image position to the left



Move the image position to the right

### Aspect / Size ▶

- Fill Screen : Enable full screen expansion for lower resolution Image
- Fill to Aspect Ratio: Enable fill screen expansion for lower resolution image according to aspect ratio
- 4 : 3 : scaling format in 4:3
- 16 : 9 : scaling format in 16:9
- 16 : 10 : scaling format in 16:10
- 2.35 : 1 : scaling format in 2.35:1
- 2 : 1 : scaling format in 2:1
- 1 : 1 : Display the exact image resolution on the screen without image expansion.
- Custom Sizing<sup>####</sup> : (The name will change depends on the scaling mode selected.)
  - Overscan
  - Normal
  - Custom/Underscan Sizing ▶

H Size 

V Size 

H Pan 

V Pan 

### Blue Only



ON / OFF : Turn off the "Red" & "Green" channel (i.e. output all zero to Red & Green channel)

[This function will display on OSD menu when JP4 – 5-6 closed]

\* : DISPLAY IN VIDEO MODE ONLY

\*\* : FUNCTION IN ARGB/ DVI / VIDEO NTSC MODE ONLY

# : DISPLAY IN ARGB / DVI MODE ONLY

## : FUNCTION IN ARGB MODE ONLY

### : DISPLAY WHEN AUDIO ADD-ON BOARD CONNECTED

#### : DISPLAY IN VIDEO / HD/SD SDI 1 / HD/SD SDI 2 MODE ONLY



**Source** : Select the input video signal

**Main Port Change** ▶

- VGA
- DVI
- HDMI<sup>+</sup>
- HD/SD SDI 1<sup>++</sup>
- HD/SD SDI 2<sup>++</sup>
- Composite 1
- Composite 2<sup>\*\*\*</sup>
- S-Video 1
- S-Video 2<sup>\*\*\*</sup>
- Component 1
- Component 2<sup>\*\*\*</sup>

**PIP Port change** ▶

PIP Off / Composite 1 / S-Video 1 / Component 1 / DVI / HDMI<sup>+</sup> / HD/SD SDI 1<sup>++</sup> / HD/SD SDI 2<sup>++</sup>)

PIP Size ▶ : Off / PIP Size/ 1~18 / Size by Size / Size by Size Tall

The PIP capability on display input sources refer to Appendix VII – PIP mix table

PIP Position :



Move the PIP position upward



Move the PIP position downward



Move the PIP position to the left



Move the PIP position to the right

PIP Blend Level : 6.25% ~ 100%

PIP Swap : Swap between the main window and PIP window

PIP Auto Turn off :  OFF  ON : OFF / ON

ON : When PIP is no signal input after 30 seconds, the PIP window will turn off automatically.

OFF : PIP window keeps on

\*\*\* DISPLAY WHEN SETTING ON UNDER SETUP → AUTO SOURCE SEEK  
+ FUNCTION DISABLE WHEN KIT 70600-3 CONNECTED  
++ DISPLAY WHEN KIT 70600-3 CONNECTED



**Utilities** :

**Setup** ▶

Auto Picture Setup<sup>#</sup> : Auto adjust the image position, phase and size

Auto Color Gain<sup>#</sup> : Auto Color Calibration (See appendix IV)

Wide Screen Mode detection<sup>#</sup> ▶ : Recognize the wide screen mode coming from ARGB port

- Off
- 1280x768
- 1360x768
- 1366x768

Manual Clock<sup>#</sup> :  Adjust the image horizontal size

Manual Phase<sup>#</sup> :  Fine tune the data sampling position (adjust image quality)

Auto Source Seek :

- Auto :  OFF  ON : OFF / ON

ON – Auto source select always enable

OFF – Disable auto source select function

- Setup ▶ Selection for the corresponding input sources detection

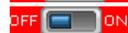
VGA  OFF  ON

DVI  OFF  ON

HDMI<sup>+</sup>  OFF  ON

HD/SD SDI 1<sup>++</sup>  OFF  ON

HD/SD SDI 2<sup>++</sup>  OFF  ON

Composite 1  OFF / ON  
 Composite 2  OFF / ON  
 S-Video 1  OFF / ON  
 S-Video 2  OFF / ON  
 Component 1  OFF / ON  
 Component 2  OFF / ON  
 The corresponding input port name display on OSD menu will disappear once setting "OFF".

Auto Power :  OFF / ON  
 ON – Enable soft power off function if absence of input signals  
 OFF – Disable soft power function

De-interlacing Mode\* ▶  
 AFM  : Auto Film Mode  
 TNR  : Temporal Noise Reduction  
 MADi  : Motion Adaptive De-interlacing  
 DCDi  : Low Angled De-interlacing  
 [See Appendix VI for AFM, TNR, MADi, DCDi function description]

Video Wall Setup ▶  
 Video Wall  OFF / ON  
 Video Wall Size : Choose the video wall size (Number of panel for horizontal [max 4] x Number of panel for vertical [max 4]).  
 Video Wall ID Setup : Set the matching ID number same as the ID number shown on screen. For details, please refer to the application note of the video wall setup.

Bezel Compensation ▶  
 Bezel Compensation  OFF / ON  
 Active Area (H) (mm) : Type in the active area in horizontal with reference to the panel specification  
 Active Area (V) (mm) : Type in the active area in vertical with reference to the panel specification  
 Bezel Opening Area (H) (mm) : Type in the bezel opening area in horizontal with reference to the panel specification.  
 Bezel Opening Area (V) (mm) : Type in the bezel opening area in vertical with reference to the panel specification.

Enable RGB SOG:  OFF / ON  
 Video Standard (SD)\* : Auto / NTSC / NTSC 4.43 / PAL / PAL M / SECAM  
 Gamma : 0.6 / 0.7 / 0.8 / 1.0 / 1.6 / 1.8 / 1.9 / 2.0 / 2.1 / 2.2 / 2.3 / 2.4 / 2.5 / 2.6 / User Setting

**OSD ▶**  
 OSD position :  
 H POS  : Move the OSD menu image horizontally  
 V POS  : Move the OSD menu image vertically  
 OSD Timeout (sec) : ON – 60 : Adjust the OSD menu timeout period in a step of 5 seconds (max 60 seconds)  
 ON = Continuous to display OSD menu.  
 60 = 60 seconds later will turn off the OSD menu.

Screen Marker ▶  
 Screen Marker : On/Off  
 Center Marker : On/Off  
 Safe Area Enable : On/ Off  
 Aspect Marker Enable : On/Off  
 Safe Area Market : 80%~99%  
 Aspect Marker : 4:3 / 16:9  
 Transparency Level : 0% / 25% / 50% / 75% / 100%  
 Exit menu

Language : English / Spanish / French / German / Chinese :Select OSD menu language display  
 Transparency :  OFF / ON : Set OSD transparency  
 Display Input :  OFF / ON : Display input source info after switching source.  
 Real time clock ▶ show and edit the real time clock (This function is valid when "Display Input" sets ON.)  
 DATE : DD/MM/YYYY : Date/Month/Year  
 TIME : HH/MM/SS (AM/PM): Hour/Minute/Second  
 SETUP ▶  
 Month / Day / Year  
 Hour / Minute / AM/PM  
 Display Clock  : Disable or enable to display the real time clock when display video source info after switching source.

**Freeze** : Freeze the image (use “+” button)

**Zoom** ▶

Zoom level :  : Enable the zoom in function on the image displayed.  
Use “+” button to zoom in the image  
Use “-” button to decrease the zoomed image

Horizontal pan :  : Pan the image horizontally

Vertical pan :  : Pan the image vertically

Factory Reset

Note : Freeze state will be cleared when you using zoom function.

**Color Temperature** ▶

5000K

Red Gain : 

Green Gain : 

Blue Gain : 

Red Offset : 

Green Offset : 

Blue Offset : 

Reset to Defaults : Resume to the default values

6500K

Red Gain : 

Green Gain : 

Blue Gain : 

Red Offset : 

Green Offset : 

Blue Offset : 

Reset to Defaults : Resume to the default values

8000K

Red Gain : 

Green Gain : 

Blue Gain : 

Red Offset : 

Green Offset : 

Blue Offset : 

Reset to Defaults : Resume to the default values

9300K

Red Gain : 

Green Gain : 

Blue Gain : 

Red Offset : 

Green Offset : 

Blue Offset : 

Reset to Defaults : Resume to the default values

User setting :

Red Gain : 

Green Gain : 

Blue Gain : 

Red Offset : 

Green Offset : 

Blue Offset : 

Reset to Defaults : Resume to the default values

Reset All to Defaults : Resume all color temperature settings to the default values.

**Hot Key** ▶

Hot key 1 : Volume / Brightness / Contrast / Inputs / Aspect Ratio/ Zoom / Freeze / PIP Size / PIP Swap / Saturation / Hue / Backlight / Auto Picture Setup / No Function

Hot key 2 : Volume / Brightness / Contrast / Inputs / Aspect Ratio / Zoom / Freeze / PIP Size / PIP Swap / Saturation / Hue / Backlight / Auto Picture Setup / No Function

**Monochrome Mode** ▶

- Color
- Red Monochrome
- Green Monochrome
- Blue Monochrome
- Red Only
- Green Only
- Blue Only

**Backlight Setup** ▶

- B/L Invert :  : Invert for the backlight brightness
- B/L Control : D/A / PWM : Selection for voltage level dimming control / PWM dimming control
- Backlight Frequency :  100 ~ 440Hz in a step of 20
- Light Detector :  : Enable ambient light detector function by using KIT 70220-3

**Default Setting** ▶

- Reset to Factory Defaults ▶ (Activate when JC1 position 4 sets open)  
Are you sure ? Yes/No
- Reset to Factory Defaults with (Color Temp.) ▶ (Activate when JC1 position 4 sets open)  
Are you sure ? Yes/No
- Save Current Settings as Calibrated Values ▶ (Activate when JC1 position 2 sets closed)  
Are you sure ? Yes/No
- Recall Stored Calibrated Values ▶  
Are you sure ? Yes/No

\* : DISPLAY IN VIDEO MODE ONLY

# : DISPLAY IN ARGB MODE ONLY

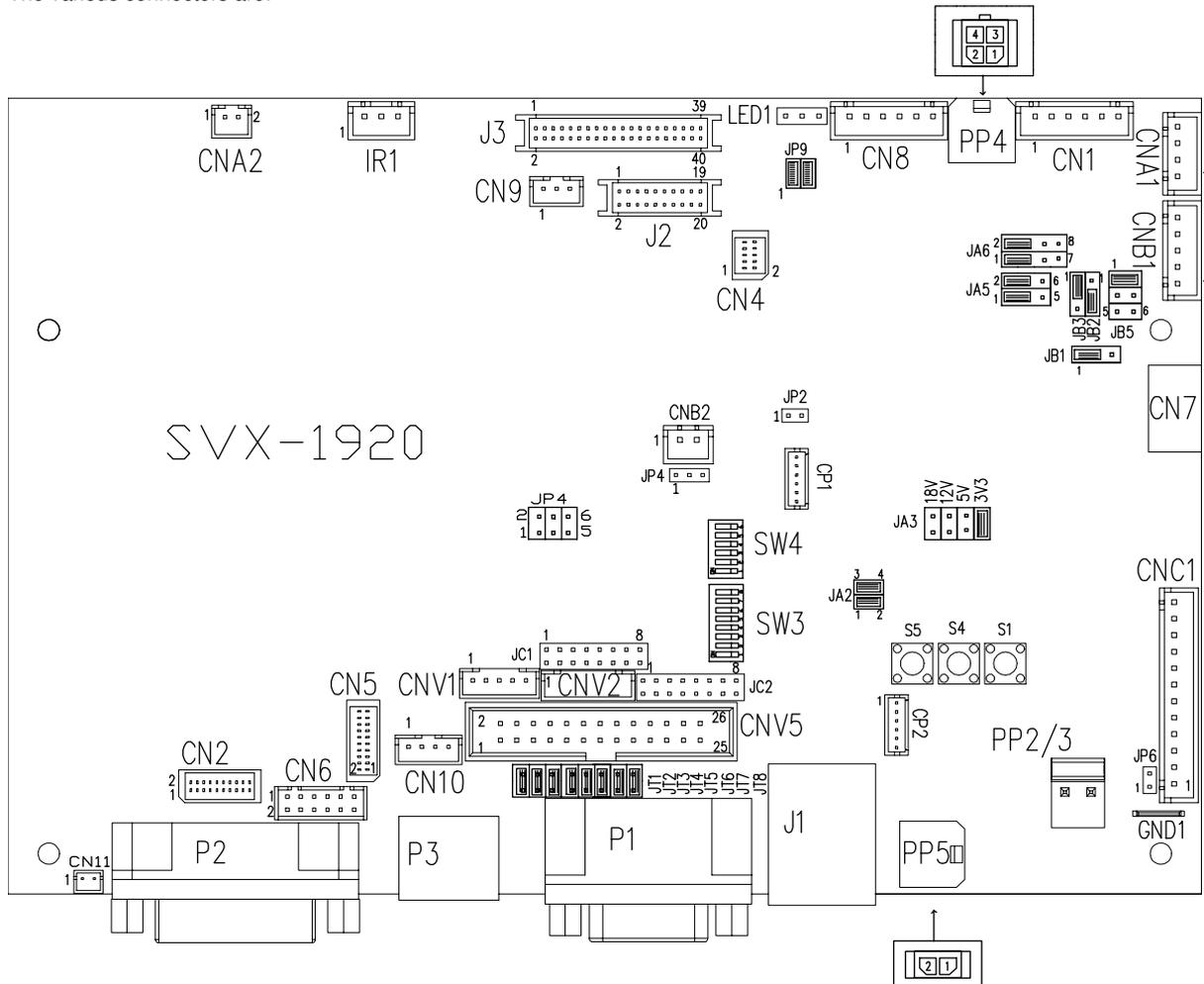
+ FUNCTION DISABLE WHEN KIT 70600-3 CONNECTED

++ DISPLAY WHEN KIT 70600-3 CONNECTED

Firmware V0.45.00.01 or up

## CONNECTORS, PINOUTS & JUMPERS

The various connectors are:



### Summary: Connectors

Ref	Purpose	Description
CN1	Second RS-232 serial control	JST 6-way, B6B-XH-A (Matching type : XHP-6)
CN2	Alternate DVI connector	JST BM20B-SRDS (Matching type : SHDR-20V-S-B)
CN4	Panel control signal connector	Hirose 10-pin, DF20G-10DP-1V (Matching type : DF20A-10DS-1C)
CN5	Alternate HDMI connector	JST BM20B-SRDS (Matching type : SHDR-20V-S-B)
CN6	Reserved	Hirose DF11-12DP (Matching type : DF11-12DS)
CN7	Audio board connector	DIL socket header 5x2 right angle (Matching audio Add-on Board P/N 416940020-3)
CN8	RS-232 serial control	JST 6-way, B6B-XH-A (Matching type : XHP-6)
CN9	Ambient light sensor connector	JST 3-way, B3B-PH-K (Matching type : PHR-3)
CN10	HDMI audio (Stereo) output	JST 4 way, PHD-4 (Matching type : PHR-4) (Matching audio cable P/N 426451800-3 for connection to audio add-on board P/N 416940020-3 (connector : CN2))
CN11	SPDIF Audio output	JST B2B-ZR (Matching type : ZHR-2) (Matching extend cable P/N 426007400-3)
CP1	Reserved for engineering use	Reserved
CP2	Reserved for engineering use	Reserved
CNA1	Auxiliary power output	JST 4-way, B4B-XH-A (Matching type : XHP-4) (Matching cable P/N 426040200-3)
CNA2	Auxiliary +5VDC output	JST 2 way, B2B-PH-K (Matching type : PHR-2)
CNB1	Backlight inverter	JST 5-way, B5B-XH-A (Matching type : XHP-5) (Matching cable P/N 426058300-3)
CNB2	Backlight status input connector	JST 2 way, B2B-XH-A (Matching type : XHP-2) (Matching cable P/N 426020800-3)
CNC1	OSD controls	JST 12-way, B12B-XH-A (Mating type : XHP-12)
CNV1	Composite and S-video in	JST 5-way, B5B-PH-K (Matching type : PHR-5) (Matching video cable P/N 426000500-3)
CNV2	HD / SD Component video in	JST 6-way, B6B-PH-K (Matching type : PHR-6)

Specifications subject to change without notice

		(Matching video cable P/N 426000600-3)
CNV5	Auxiliary video input	Header pin 13x2 (Matching video cable P/N 426000800-3)
J1	Ethernet for network connection	RJ45 connector
J2	Additional panel power output	Hirose 20-pin, DF13-20DP-1.25 (Matching type : DF13-20DS-1.25C)
J3	Panel signal for LVDS panel	Hirose 40 pin, DF13-40DP-1.25DSA (Matching type : DF13-40DS-1.25C)
IR1	Infra-Red sensor connector	JST 3-way, B3B-XH-A (Matching type : XHP-3)
LED1	Dual color LED connector	Header pin 3x1
P1	VGA analog input	DB-15 way high density 3 row
P2	DVI-D input	DVI-D connector
P3	HDMI input	HDMI connector
PP2/PP3	Power input (alternative)	DC power Molex 2 pin 0.156" pitch
PP4	External panel power input	Molex 43045-0400 compatible (Matching connector type : Molex 43025-0400 compatible) (Matching power cable : P/N 426013700-3)
PP5	Power input	Molex 43650-0200 compatible (Matching connector type : Molex 43645-0200 compatible) (Matching power cable : P/N 426013800-3)
SW3	Panel selection	8-way DIP Switch
SW4	Function selection	6-way DIP Switch

**Summary: Jumpers setting**

Ref	Purpose	Note
JA2	On board +3.3V logic power enable	1-2 & 3-4 closed, factory set, do not remove
JA3	Panel power voltage select <b>CAUTION:</b> Incorrect setting can damage panel	See panel voltage setting table 1
JA5	Panel power voltage select <b>CAUTION:</b> Incorrect setting will cause panel damage	See panel voltage setting table 1
JA6	Panel power voltage select <b>CAUTION:</b> Incorrect setting will cause panel damage	See panel voltage setting table 1
JB1	Backlight brightness voltage range	1-2 closed = 5V max 2-3 closed = 3.3V max
JB2	Backlight inverter on/off control – signal level	2-3 = On/Off control signal 'High' = +5V 1-2 = On/Off control signal 'High' = +3.3V Open = On/Off control signal 'High' = Open collector <b>CAUTION:</b> Incorrect setting can damage inverter.
JB3	Backlight inverter on/off control – polarity	1-2 = control signal 'high' = CCFT ON 2-3 = control signal 'low' = CCFT ON
JB4	GPIO pins voltage selection	1-2 = 3.3V 2-3 = 5V
JB5	Backlight control type selection	1-2 = VR/Digital switch mount control 3-4 = Analog backlight brightness - voltage range 0~5V 5-6 = PWM (Pulse Width Modulation) brightness
JC1	Custom configuration	Position 1 : Closed = Disable B/L setup menu  Position 2 : Closed = Enable save Current Settings as Calibrated Values on OSD menu  Position 3 : Closed = Enable baud rate selection function in programming mode  Position 4 : Closed = Hide "Reset to Factory Defaults" and "Reset to Factory Defaults with (Color Temp.)" from OSD menu.  Position 7 : Closed = Enable for selection of the "RM-DN5 Assembly" menu on Programming mode.
JC2	Custom configuration	Position 1 : Enable J3 – pin 5 (OP1) controlled by JB4 Position 2 : Enable J3 – pin 6 (OP2) controlled by JB4 Position 3 : Enable J3 – pin 21 (OP3) controlled by JB4 Position 4 : Enable J3 – pin 22 (OP4) controlled by JB4
JP4	Custom configuration	1-2 closed = Reserved 3-4 closed = On-board programming 5-6 closed = Display "Blue only" function on OSD menu
JP6	Input power control	Short = External switch control Open = Switch mount control
JP9	Factory use	Default Open
JT1	S-Video Chroma -in terminator enable	Open = S-video chroma input is not terminated Close = S-video chromainput is terminated with 75Ω
JT2	S-Video luma-in terminator enable	Open = S-video luma input is not terminated Close = S-video luma input is terminated with 75Ω
JT3	Composite video-in terminator enable	Open = composite input is not terminated Close = composite input is terminated with 75Ω
JT4	Component luma-in terminator enable	Open = component luma input is not terminated Close = component luma input is terminated with 75Ω
JT5	Component Cb/Pb-in terminator enable	Open = component Cb/Pb input is not terminated Close = component Cb/Pb input is terminated with 75Ω
JT6	Component Cr/Pr-in terminator enable	Open = component Cr/Pr input is not terminated Close = component Cr/Pr input is terminated with 75Ω
JT7	Composite video 2-in terminator enable	Open = composite video 2 input is not terminated Close = composite video 2 input is terminated with 75Ω
JT8	Reserved	Reserved
S1	Reserved	Reserved
S4	Reserved	Reserved
S5	Reserved	Reserved
SW3	Panel & function selection	See table 2
SW4	Panel & function selection	See table 3

Specifications subject to change without notice

**Table 1 : Panel voltage setting table :**

Input voltage via PP2/PP3, PP5	Panel Voltage	JA3	JA5	JA6	Jumper on board
12VDC	3.3V	3V3 closed	1-3 & 2-4	1-3 & 2-4	
	5V	5V closed	1-3 & 2-4	1-3 & 2-4	
	12V	OPEN	1-3 & 2-4	5-7 & 6-8	

**CAUTION: Incorrect setting can damage panel & controller**

Input voltage via PP2/PP3, PP5	Panel Voltage	JA3	JA5	JA6	Jumper on board
24VDC**	3.3V	3V3 closed	1-3 & 2-4	1-3 & 2-4	
	5V	5V closed	1-3 & 2-4	1-3 & 2-4	
	12V	12V closed	1-3 & 2-4	3-5 & 4-6	
	18V	18V closed	1-3 & 2-4	3-5 & 4-6	

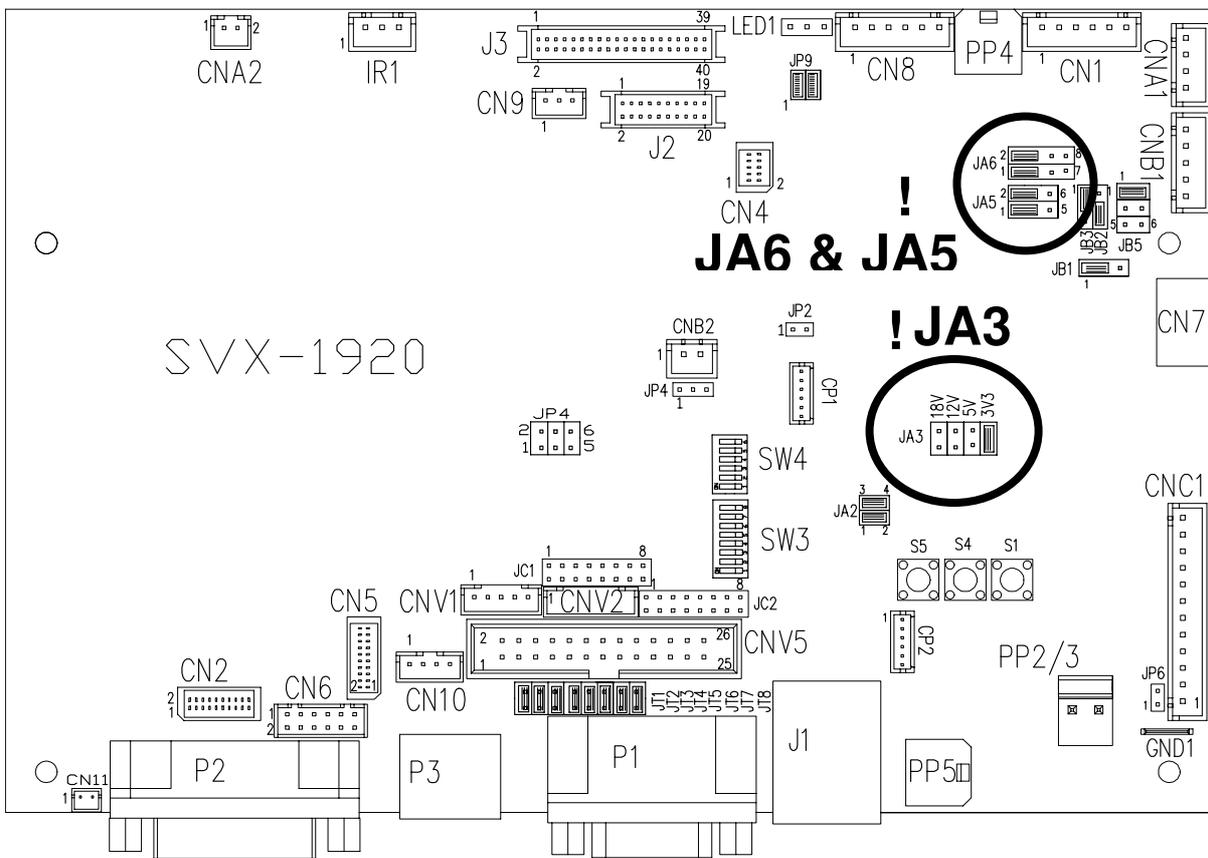
**CAUTION: Incorrect setting can damage panel & controller**

**\*\* Ensure that the backlight inverter supports 24V operation prior to connecting a 24VDC input. Because CNA1 pin 1 and CNB1 pin 2 will output 24VDC if input 24VDC via PP2/PP3 or PP5.**

Input voltage via PP4	Panel Voltage	JA3	JA5	JA6	Jumper on board
3.3 / 5 / 12 / 18VDC*	3.3V	OPEN	3-5 & 4-6	1-3 & 2-4	
	5V	OPEN	3-5 & 4-6	1-3 & 2-4	
	12V	OPEN	3-5 & 4-6	3-5 & 4-6	
	18V	OPEN	3-5 & 4-6	3-5 & 4-6	

\* Maximum current for 3.3V, 5V = 7A, Maximum current for 12V = 5A, Maximum current for 18V = 3.5A

JA3, JA5 & JA6 location on board : (Please pay attention to the jumper settings on JA3, JA5 & JA6 which are red in color)



**Table 2 : DIP Switch selection – SW3**

Pos #1	Pos #2	Pos #3	Pos.#4	Description	Panel resolution
<b>For WUXGA panels</b>					
OFF	ON	ON	OFF	LG LM260WU1-SLB1	1920x1200
ON	ON	ON	OFF	LG LM240WU2-SLA1	1920x1200
OFF	OFF	OFF	OFF	Sharp LQ445D3LZ19	1920x1080
ON	OFF	OFF	OFF	Samsung LTA460H2-L02	1920x1080
OFF	ON	OFF	OFF	Sharp LQ170M1LZ04	1920x1200
ON	ON	OFF	OFF	Samsung LTA700HH-LH1 (1 <sup>st</sup> trial testing)	1920x1080
OFF	OFF	ON	OFF	Samsung LTA700HH-LH1 (2 <sup>nd</sup> trial testing)	1920x1080
OFF	OFF	ON	ON	AU Optronics P645HW03 V0 <sup>#</sup>	1920x1080
<b>For UXGA panels</b>					
OFF	OFF	OFF	OFF	Fujitsu FLC59UXC8V-02A	1600x1200
ON	OFF	OFF	OFF	Samsung LTM213U6-L01	1600x1200
<b>For WXGA panels</b>					
OFF	OFF	OFF	OFF	LG LC420W02-A4	1366x768
ON	OFF	OFF	OFF	Sharp LQ315T3LZ24	1366x768
ON	ON	OFF	OFF	Samsung LTA320W2-L01 / LTA230W1-L02	1366x768
ON	ON	ON	ON	NEC NL12876BC26-21 / Samsung LTM170W1-L01	1280x768
OFF	ON	ON	ON	CHI MEI N15414-L01	1280x800
OFF	OFF	ON	OFF	AU Optronics M190PW01	1440x900
OFF	OFF	ON	ON	Sharp LQ072K1LA03	1280x768
<b>For SXGA panel</b>					
OFF	OFF	OFF	OFF	Sharp LQ181E1LW31	1280x1024
ON	OFF	OFF	OFF	AU Optronics M170EN05	1280x1024
<b>For XGA panel</b>					
OFF	OFF	OFF	OFF	Sharp LQ150X1LGN2A Sharp LQ150X1LGB1	1024x768 1024x768
<b>For SVGA panel</b>					
OFF	OFF	OFF	OFF	Sharp LQ121S1DG11/41 Toshiba LTM08C351	800x600 800x600
<b>For WVGA panel</b>					
OFF	OFF	OFF	OFF	NEC NL8048BC24-01	800x480
ON	OFF	OFF	OFF	Kyocera TCG085WV1AB-G00	800x480
<b>For VGA panel</b>					
OFF	OFF	OFF	OFF	Sharp LQ104V1DG51	640x480
ON	OFF	OFF	OFF	Sharp LQ104V1DG21 Kyocera TCG075VG2AC-G00	640x480 640x480
<b>Others</b>					
OFF	OFF	ON	OFF	Samsung LTI430LA01	1920x480
OFF	ON	OFF	OFF	AU Optronics M201EW02 V8	1680x1050
ON	ON	ON	OFF	AU Optronics M200RW01 V1 <sup>#</sup>	1600x900
OFF	ON	ON	OFF	NEC NL10260BC19-01D <sup>#</sup>	1024x600
ON	OFF	ON	OFF	Sharp LQ070Y3LG4A <sup>#</sup>	800x480

Remark :

\* Effective on V0.45.00.01 version or up.

**Remark : The above panel timings are copy the panel data direct from SVX-1920. Some of the panel timings settings may not exactly to match the panel model we specified in this table.**

Pos #5	Pos #6	Pos #7	Description
OFF	OFF	OFF	WUXGA
ON	OFF	OFF	UXGA
OFF	ON	OFF	SXGA
ON	ON	OFF	WXGA
OFF	OFF	ON	XGA
ON	OFF	ON	SVGA
OFF	ON	ON	VGA
ON	ON	ON	WVGA / Others

Pos. #8	Video lock	ON – Disable : Always fix the output be 60Hz.  OFF – Enable : The output refresh rate locks to the input for 50Hz / 60Hz mode (other resolution lock the output be 60Hz. )
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**Table 3 : DIP switch selection – SW4**

Pos. #	Function	Description
1	Reserved	
2	Panel pixel format	OFF : Double Pixel ON : Single Pixel
3	Panel selection	ON : LVDS panel OFF : Reserved
4	LVDS data mapping select (Refer to Table 2)	If SW4 position 5 = OFF (8 bit) OFF : Mapping B ON : Mapping A Please adjust to get the correct picture. See as Appendix I for details of mapping of A and B. If SW4 position 5 = ON (10 bit) OFF : JEIDA (LVDS panel) ON : VESA (LVDS panel) Please adjust to get the correct picture. See as Appendix I for details of mapping of VESA and JEIDA.
5	Output LVDS display mode selection	OFF : 8 bit ON : 10 bit
6	Reserved	

**CN1 – Slave RS-232 serial control: JST B6B-XH-A (Matching type : XHP-6)**

PIN	SYMBOL	DESCRIPTION
1	SDATA	Reserved
2	SCLK	Reserved
3	VCC	+5V
4	TXD	RS-232 Tx data
5	GND	Ground
6	RXD	RS-232 Rx data

**CN2 – Alternate DVI connector: JST BM20B-SRDS (Matching type : SHDR-20V-S-B)**

PIN	SYMBOL	DESCRIPTION
1	GND	Digital Ground
2	GND	Digital Ground
3	RXC	TMDS Clock+
4	/RXC	TMDS Clock-
5	RX0	TMDS Data 0+
6	/RX0	TMDS Data 0-
7	RX1	TMDS Data 1+
8	/RX1	TMDS Data 1-
9	RX2	TMDS Data 2+
10	/RX2	TMDS Data 2-
11	GND	Ground (+5, Analog H/V Sync)
12	GND	Digital Ground
13	EXT_MSTR2_SCL	Reserved
14	EXT_MSTR2_SDA	Reserved
15	DDC_5V	+5V power supply for DDC (optional)
16	HPD	Hot plug detect
17	DDC_CLK	DDC Clock
18	DDC_DAT	DDC Data
19	HS_IN	Analog horizontal sync
20	GND	Ground

**CN4 – Panel connector: HIROSE DF20G-10DP-1V (Matching type : DF20A-10DS-1C)**

PIN	SYMBOL	DESCRIPTION
1	OP1	Reserved
2	OP2	Reserved
3	OP3	Reserved
4	OP4	Reserved
5	IP1	Reserved
6	IP2	Reserved
7	IP3	Reserved
8	IP4	Reserved
9	EXT_MSTR2_SDA	Reserved
10	EXT_MSTR2_SCL	Reserved

**CN5 – Alternate HDMI connector: JST BM20B-SRDS (Matching type : JST SHDR-20V-S-B)**

PIN	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	Ground
3	RXC+	TMDS Data C+
4	RXC-	TMDS Data C-
5	RX0+	TMDS Data 0+
6	RX0-	TMDS Data 0-
7	RX1+	TMDS Data 1+
8	RX1-	TMDS Data 1-
9	RX2+	TMDS Data 2+
10	RX2-	TMDS Data 2-
11	GND	Ground
12	GND	Ground
13	MSTR2_SCL	Reserved
14	MSTR2_SDA	Reserved
15	DDC_5V	+5V power supply for DDC (optional)
16	HPD	Hot plug detection
17	DDC_SCL	DDC serial clock
18	DDC_SDA	DDC Data
19	VCC1	VCC 5V output
20	VCC2	VCC 5V output

**CN7 - Audio connector: DIL socket header 5x2 right angle [OPERATE UNDER 12VDC POWER INPUT ENVIRONMENT]**

PIN	SYMBOL	DESCRIPTION
1	VCC	Audio board logic power supply, +5V
2	VOLSELO	Reserved
3	VOLSEL1	Reversed
4	TUNAUDSEL	Reserved
5	CLK/CNT	Reserved
6	GND	Ground
7	+12V/+24V	Audio board power supply, +12V/+24V
8	NC	No connection
9	NC	No connection
10	GND	Ground

**CN8 – RS-232 serial control: JST B6B-XH-A (Matching type : XHP-6)**

PIN	SYMBOL	DESCRIPTION
1	SDATA	Reserved
2	SCLK	Reserved
3	VCC	+5V
4	TXD	RS-232 Tx data
5	GND	Ground
6	RXD	RS-232 Rx data

**CN9 – Ambient light sensor connector : JST B3B-PH-K (Matching type : PHR-3)**

PIN	SYMBOL	DESCRIPTION
1	GND	Ground
2	VCC_5V	VCC 5V
3	ALSF	Ambient light sensing feedback

**CN10 - HDMI Audio out (Matching type : XHP-4)**

PIN	SYMBOL	DESCRIPTION
1	GND	GND
2	AUDIO LOUT	HDMI LEFT OUT
3	GND	GND
4	AUDIO ROUT	HDMI RIGHT OUT

**CN11 – SPDIF audio output connector : JST B3B-PH-K (Matching type : PHR-3)**

PIN	SYMBOL	DESCRIPTION
1	SPDIF	SPDIF Digital audio output
2	GND	Ground

**CNA1 - Auxiliary power output: JST B4B-XH-A (Matching type : XHP-4)**

PIN	SYMBOL	DESCRIPTION
1	AUX 12V / 24V	+12V / +24V DC, 500mA max
2	GND	Ground
3	GND	Ground
4	AUX 5V	+5V DC, 500mA max

**CNA2 - Auxiliary power output: JST B2B-PH-K (Matching type : PHR-2)**

PIN	SYMBOL	DESCRIPTION
1	Vcc_5V	+5V DC, 500mA max with fuse
2	GND	Ground

**CNB1 – Backlight inverter connector: JST B5B-XH-A (Matching type : XHP-5)**

PIN	SYMBOL	DESCRIPTION
1	GND	Ground
2	VBKL	+12V / +24V DC, backlight power supply
3	BLCTRL	On/Off control (enable) – see JB2 & JB3
4	BVR_WIP	Brightness VR – WIP
5	BVR_A	Brightness VR A

**CNB2 – Backlight status input inverter connector: JST B2B-XH-A (Matching type : XHP-2)**

PIN	SYMBOL	DESCRIPTION
1	BL_STATUS	Backlight status (Normal = High)
2	GND	Ground

**CNC1 – Function controls connector: JST B12B-XH-A (Matching type : XHP-12)**

PIN	SYMBOL	DESCRIPTION
1	PSWIN	Power switch A
2	SW_ON	Power switch B
3	BVR_A	Backlight brightness VR pin A

Specifications subject to change without notice

4	BVR_WIP	Backlight brightness VR pin WIP
5	BVR_B	Backlight brightness VR pin B (470Ω resistor to +5V Vcc)
6	GND	Ground
7	MENU	OSD menu button
8	-/LEFT	OSD -/Left button
9	+ /RIGHT	OSD +/Right button
10	SEL_DN	OSD Select down button
11	SEL_UP	OSD Select up button
12	NC	No connection

The VR for brightness depends on the inverter. The main power load for On/Off is handled by a relay on the controller.

**CNV1 – Alternate Video in input, JST B5B-PH-K (Matching type : PHR-5)**

PIN	DESCRIPTION
1	S-Video 1 : Chroma in
2	S-Video 1 : Luma in
3	Ground
4	Ground
5	Composite video 1 in

**CNV2 – Component Video in input, JST B6B-PH-K (Matching type : PHR-6)**

PIN	DESCRIPTION
1	Y in_1 /Green in
2	Ground
3	Cb/Pb in_1 / Blue in
4	Ground
5	Cr/Pr in_1 / Red in
6	Ground

**CNV5 – Auxiliary Video input connector, DIL socket header 13x2**

PIN	DESCRIPTION
1	S-Video 1 : Chroma in
2	Ground
3	S-Video 1 : Luma in
4	Ground
5	Composite video 1 in
6	Ground
7	Y in_1
8	Ground
9	Cb/Pb in_1
10	Ground
11	Cr/Pr in_1
12	Ground
13	S-Video 2 : Chroma in
14	Ground
15	S-Video 2 : Luma in
16	Ground
17	Composite video in 2
18	Ground
19	Cr/Pr in_2
20	Ground
21	Y in_2
22	Ground
23	Cb/Pb in_2
24	Ground
25	NC
26	Ground

**IR1 – Infra-Red sensor connector: JST B3B-XH-A (Matching type : XHP-3)**

PIN	SYMBOL	DESCRIPTION
1	GND	Ground
2	STDBY_Vcc	Stand by voltage
3	IR Data	IR data

**J2 – Additional panel power input connector : HIROSE D13-20DP-1.25 (Matching type : DF13-20DS-1.25C)**

PIN	SYMBOL	DESCRIPTION
1	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
2	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
3	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
4	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
5	VDD (3,3V/5V)	Panel power supply (3,3V/5V)

Specifications subject to change without notice

6	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
7	GND	Ground
8	GND	Ground
9	GND	Ground
10	GND	Ground
11	GND	Ground
12	GND	Ground
13	GND	Ground
14	GND	Ground
15	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)
16	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)
17	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)
18	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)
19	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)
20	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)

**J3 – LVDS Panel connector: Hirose, DF13A-40DP-1.25DSA (Matching type : DF13-40DS-1.25C)**

PIN	SYMBOL	DESCRIPTION
1	TXA0+	Positive differential LVDS data bit A0
2	TXA0-	Negative differential LVDS data bit A0
3	TXA1+	Positive differential LVDS data bit A1
4	TXA1-	Negative differential LVDS data bit A1
5	OP1	-
6	OP2	-
7	TXA2+	Positive differential LVDS data bit A2
8	TXA2-	Negative differential LVDS data bit A2
9	TXA3+	Positive differential LVDS data bit A3
10	TXA3-	Negative differential LVDS data bit A3
11	TXA4+	Positive differential LVDS data bit A4
12	TXA4-	Negative differential LVDS data bit A4
13	TXAC+	Positive LVDS clock for A channel
14	TXAC-	Negative LVDS clock for A channel
15	TXB4+	Positive differential LVDS data bit B4
16	TXB4-	Negative differential LVDS data bit B4
17	TXB0+	Positive differential LVDS data bit B0
18	TXB0-	Negative differential LVDS data bit B0
19	TXB1+	Positive differential LVDS data bit B1
20	TXB1-	Negative differential LVDS data bit B1
21	OP3	-
22	OP4	-
23	TXB2+	Positive differential LVDS data bit B2
24	TXB2-	Negative differential LVDS data bit B2
25	TXB3+	Positive differential LVDS data bit B3
26	TXB3-	Negative differential LVDS data bit B3
27	GND	Ground
28	GND	Ground
29	TXBC+	Positive LVDS clock for B channel
30	TXBC-	Negative LVDS clock for B channel
31	GND	Ground
32	GND	Ground
33	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
34	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
35	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
36	VDD (3,3V/5V)	Panel power supply (3,3V/5V)
37	NC	No connection
38	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)
39	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)
40	VDD +12V / +18V	Panel power supply (+12V/18V) (selected by JA3, JA5 & JA6)

**LED1 – Status LED connector: 3-pin header**

PIN	DESCRIPTION
1	Green LED pin (anode)
2	LED pin common (cathode)
3	Red LED pin (anode)

**P1 - Analog VGA in - 15 way connector**

PIN	SYMBOL	DESCRIPTION
1	PCR	Red, analog
2	PCG	Green, analog
3	PCB	Blue analog

Specifications subject to change without notice

4	ID2	Reserved for monitor ID bit 2 (grounded)
5	DGND	Digital ground
6	AGND	Analog ground red
7	AGND	Analog ground green
8	AGND	Analog ground blue
9	DDC_5V	+5V power supply for DDC (optional)
10	DGND	Digital ground
11	ID0	Reserved for monitor ID bit 0 (grounded)
12	DDC_SDA	DDC serial data
13	HS_IN	Horizontal sync or composite sync, input
14	VS_IN	Vertical sync, input
15	DDC_SCL	DDC serial clock

**P2 – DVI-D in**

PIN	SYMBOL	DESCRIPTION
1	/RX2	TMDS Data 2-
2	RX2	TMDS Data 2+
3	GND	Digital Ground
4	NC	No connection
5	NC	No connection
6	DDC_CLK	DDC Clock
7	DDC_DAT	DDC Data
8	NC	No connection
9	/RX1	TMDS Data 1-
10	RX1	TMDS Data 1+
11	GND	Digital Ground
12	NC	No connection
13	NC	No connection
14	DDC_5V	+5V power supply for DDC (optional)
15	GND	Ground (+5, Analog H/V Sync)
16	NC	No connection
17	/RX0	TMDS Data 0-
18	RX0	TMDS Data 0+
19	GND	Digital Ground
20	NC	No connection
21	NC	No connection
22	GND	Digital Ground
23	RXC	TMDS Clock+
24	/RXC	TMDS Clock-
C1	NC	No connection
C2	NC	No connection
C3	NC	No connection
C4	HS_IN	Analog horizontal sync
C5	GND	Ground
C6	NC	No connection

**PP2/PP3 – Alternate 12V/24VDC power supply**

PIN	DESCRIPTION
1	+12VDC / 24VDC in
2	Ground

**PP4 – External panel power input**

PIN	DESCRIPTION
1	External panel power
2	Ground
3	External panel power
4	Ground

**PP5 - 12VDC power supply**

PIN	DESCRIPTION
1	+12V / +24VDC
2	Ground