

**IMAGE ENHANCER ADD-ON BOARD
FOR 120Hz PANEL**

Model: IE-1000

Part number : 417190021-3 or up

[Firmware version : V1.80.00]

INSTRUCTIONS

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It is essential that these instructions are read and understood before connecting or powering up the IE-1000

Introduction

The IE-1000 is a Digital View add-on board providing:

- 10 bit panel support and 120Hz panel support with motion compensation frame interpolation for smoother motion

The IE-1000 can currently be matched with the Digital View SVH-1920 and upcoming SVX-1920 controllers to provide support for:

- Displays up to 1920x1200, 10 bit, 120Hz.

HOW TO PROCEED

- As most panels require different connection settings and cables it is important to have the relevant Digital View Connection Diagram before assembly begins. This is obtainable from the Digital View website as follows:

Controller Solution Generator

A web based resource matching controllers & panels with **connection diagrams** for download. Visit : <http://www.digitalview.com/controllers/csg.php>

- Ensure all parts are on hand.
- Check controller and add-on board switch & jumper settings (errors may damage the panel)
- Prepare the source
- Connect the parts
- Understand the operation & functions

IMPORTANT USAGE NOTE

This equipment is for use by system manufacturers, developers and qualified 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:

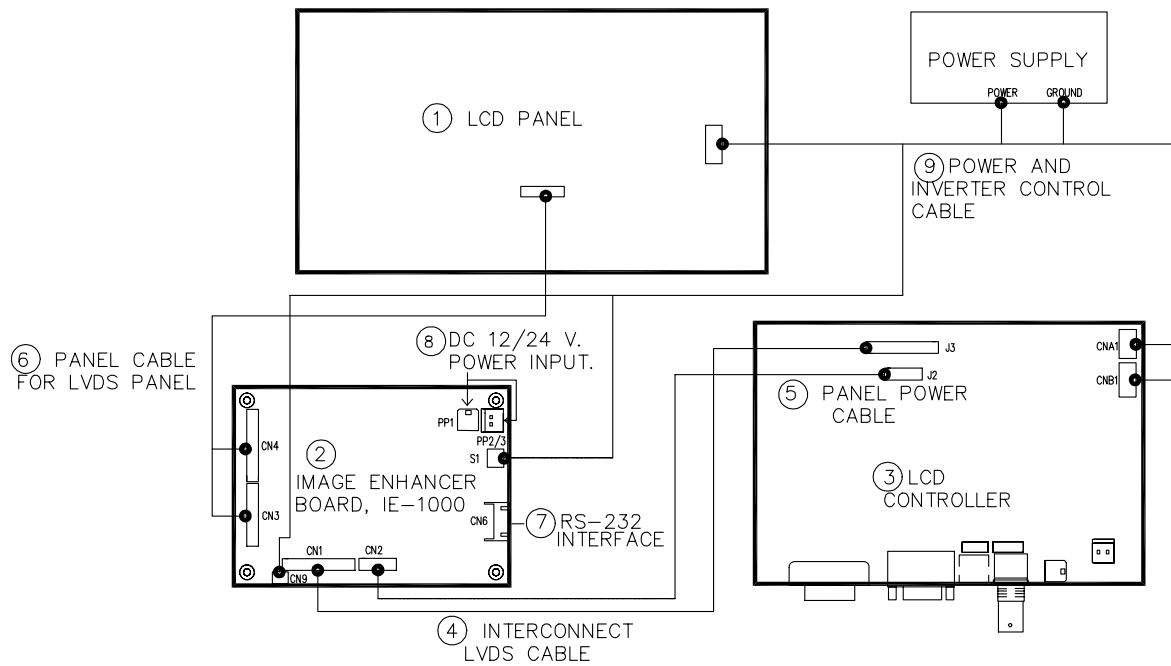
- Ensure that all necessary and appropriate safety measures are taken.
- Obtain suitable regulatory approvals as may be required.
- Check power settings to all component parts before connection.

DISCLAIMER

There is no implied or expressed warranty regarding this material.

SYSTEM DESIGN

A typical LCD based display system utilizing the IE-1000 is likely to comprise the following:



Summary:

1. LCD panel
2. Image Enhancer board, IE-1000
3. LCD controller card
4. Interconnect LVDS cable (P/N 426497600-3, 200mm)
5. Panel power cable (if required)
6. Panel cable for LVDS panel
7. RS-232 interface (for firmware upgrade only)
8. +12V / +24V DC power input
9. Power and inverter control cable

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

ASSEMBLY NOTES

The IE-1000 is designed for monitor and custom display projects using 1920x1200 or 1920x1080 resolution 10 bit 120Hz TFT panels with connection with compatible Digital View controllers. 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 IE-1000. As much as possible connectors have been labeled. Guides to connectors and mounting holes are shown in the following relevant sections.

1. **LCD Panel:** The IE-1000 is designed for driving 10 bits 120Hz up to 1920x1200 LVDS panels. Due to the variation between manufacturers of panels signal timing and other panel characteristics it is important to use the correct Digital View Connection Diagram (which can be downloaded from the Digital View Controller Solution Generator at www.digitalview.com/controllers/csg.php) before connecting to a panel.
2. **Image Enhancer board, IE-1000 :** With reference to the Connection Diagram ensure correct jumper and dip switches settings to match the target LCD panel. Caution: Handle with care as static charge may damage electronic components.
3. **LCD main controller, eg SVH-1920 :** With reference to the Connection Diagram ensure correct jumper and dip switches settings to match the target LCD panel. Caution: Handle the controller with care as static charge may damage electronic components.
4. **Interconnect LVDS cable :** This cable connects between the IE-1000 and DigitalView controllers for transmission of LVDS signal and panel power to IE-1000 board. It is recommended to organize loose wires 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.
5. **Panel power cable :** This cable connects between IE-1000 and DigitalView controllers for panel power.
6. **Panel cable for LVDS panel :** In order to provide a clean signal it is recommended that LCD signal cables should not be longer than 61cm (24 inches). It is recommended to organize loose wires 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.
7. **RS-232 interface :** This port is relevant for firmware upgrade only.
8. **Power Input:** 12V/24VDC is required, this should be a regulated supply. The power rating depends on the panel and inverter used. Normally a power supply with at least 15W power output should be adequate. 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.
9. **Power and inverter control cable :** Different inverter models require different cables and different pin assignments. Using the wrong cable may damage the inverter.

IMPORTANT NOTES

- **Power Safety: We strongly advise using appropriate insulation for all circuitry.**
- **EMI: Shielding will be required for passing certain regulatory emissions tests.**
- **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 IE-1000 and is invalidated by unauthorized modification or repairs.
- **Board Mounting:** It is recommended that a clearance of at least 10mm is provided above and 5mm below the board 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 IE-1000.
 - Other system design issues that may affect safety or performance.

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

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. **Connect the LCD panel & IE-1000** : Use the appropriate panel cable as indicated in the relevant Digital View Connection Diagram.
2. **Connect the Digital View main controller & IE-1000:** Use LVDS cable P/N 426497600-3, 200mm, this carries both the LVDS signal and panel power.
3. **Connect a suitable OSD switch mount kit** : Digital View offer a number of ready made options.
4. **Check all Jumpers & Switches:** Refer to the relevant Digital View Connection Diagram or the jumpers and switches setting table (in the following section).
5. **Connect the Power supply** : Plug a DC 12V/24V power source to the connector PP1 or PP2/PP3. You can consider to use Digital View mating power cable P/N 426013800-3, 160mm for PP1 connection.
6. **Power on** : Switch on the controller board and panel by using the OSD switch mount.

Power status on LED5A :

State	LED color
Power on state	Green

Board status LED on LED1A :

State	LED color
Board in operation with valid signal.	GREEN
No signal state	RED
Valid signal detected and board setup in progress	ORANGE

General:

- If you are using supplied cables & accessories, ensure they are correct for the model of panel and controller and IE-1000.
- 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.

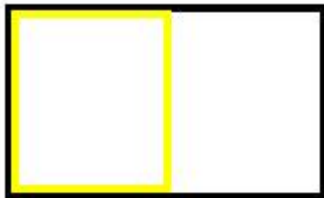
IE-1000 BUTTONS & DEMO MODES

- **Button switch – TS1** : Board reset : Reset the IE-1000 board.
- **Button switch – TS2** : Push TS2 to cycle between the 4 different demo modes while LED1A is GREEN.

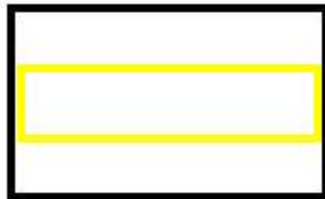
Mode 1 (default) = whole screen with smoothed motion (LED2 GREEN);



Mode 2 = LEFT demo mode, left side of screen with smoothed motion while right side without (LED2 GREEN, a box with yellow border appear on LEFT hand side of screen);



Mode 3 = CENTRE demo mode, centre part of screen with smoothed motion while other areas without (LED2 GREEN, a box with yellow border appear in the CENTRE of the screen);



Mode 4 = whole screen without smoothed motion (LED2 RED)

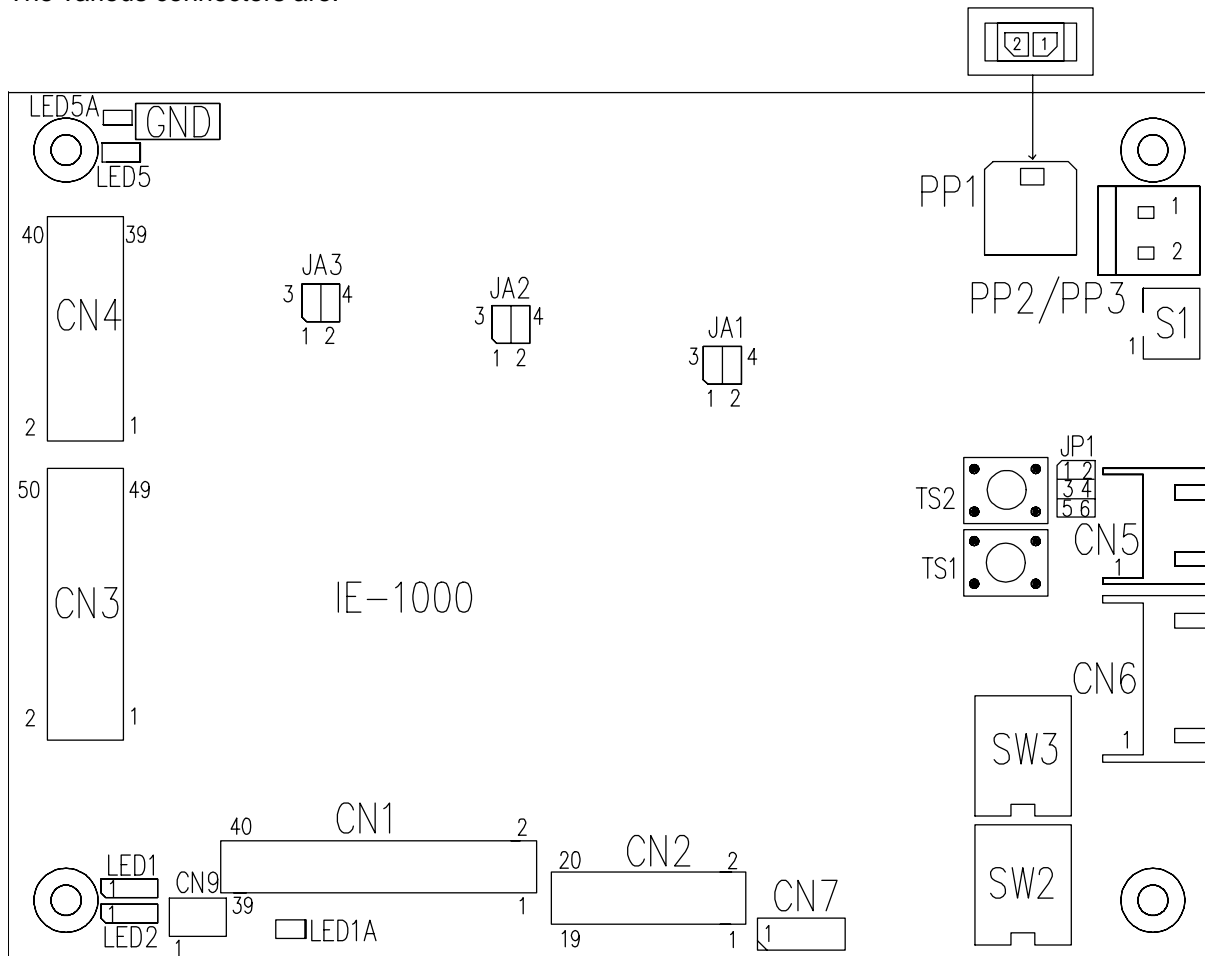


IE-1000 will not memorize the demo mode after you turn off the IE-1000. It will resume back to mode 1 always.

* This function will not activate in static text mode (SW2 position 4 sets ON).

CONNECTORS, PINOUTS & JUMPERS

The various connectors are:



Summary: Connectors

Ref	Purpose	Description
CN1	LVDS signal input	Hirose 40-pin, DF13A-40DP-1.25DSA (Matching type : DF13-40DS-1.25C) (Matching panel cable : P/N 426497600-3, 200mm)
CN2	Additional panel power input	Hirose 20-pin, DF13-20DP-1.25 (Matching type : DF13-20DS-1.25C)
CN3	LVDS signal output 1	JST 50-pin, BM50B-SRDS (Matching type : SHDR-50V-S-B or compatible)
CN4	LVDS signal output 2	JST 40-pin, BM40B-SRDS (Matching type : SHDR-40V-S-B or compatible)
CN5	Reserved	JST 4-pin, S4B-XH-A (Matching type : XHP-4)
CN6	Serial control (for firmware programming use only)	JST 6-pin, S6B-XH-A (Matching type : XHP-6)
CN7	Reserved	Hirose 6 ways, DF13-6PV
CN9	Panel backlight control	JST 2-way, B2B-XH-A (Matching type : XHP-2)
S1	Power on/off control	JST 2-way, B2B-PH-K (Matching type : PHR-2)
PP1	Main input power	Molex 43650-0200 compatible (Matching connector type : Molex 43645-0200 compatible) (Matching power cable : P/N 426013800-3, 160mm)
PP2/PP3	Alternative power input	DC power Molex 2 pin 0.156" pitch

Summary: Jumpers setting

Ref	Purpose	Note
JA1	On board +5V logic power enable	1-2 & 3-4 closed, factory set, do not remove
JA2	On board +2.5V logic power enable	1-2 & 3-4 closed, factory set, do not remove
JA3	On board +1V logic power enable	1-2 & 3-4 closed, factory set, do not remove
JP1	Reserved	Factory sets Open
LED1	Reserved	Factory sets Open
LED2	Reserved	Factory sets Open
SW2	Function selection	See table 1
SW3	Panel selection	See table 2

Table 1 : DIP switch selection – SW2

Pos. #	Function	Description
1	Input signal color bit selection	OFF : 8 bit (for SVH-1920) ON : 10 bit (for SVX-1920 (Coming soon))
2	Input LVDS display mode selection	If SW2 position 1 = OFF (8 bit) OFF : Mapping B ON : Mapping A
		If SW2 position 1 = ON (10 bit) OFF : JEIDA mode ON : VESA mode
3	Output LVDS display mode selection	OFF : JEIDA mode ON : VESA mode Please adjust to get the correct picture. See as Appendix I for details of mapping of VESA and JEIDA.
4	Motion compensation mode	OFF : Enable (for film mode ^(a)) ON : Disable (for static text mode ^(b))

Remark :

- (a) Film mode – Image with motion pattern
- (b) Static text mode – Image with static pattern

Table 2 : DIP Switch selection – SW3

Pos #1	Pos #2	Pos #3	Pos.#4	Description	Panel resolution
For WUXGA panels					
OFF	OFF	OFF	OFF	LG LC370WUD-SAB1	1920x1080
ON	OFF	OFF	OFF	NEC NL192120AC25-02	1920x1200

For additional and recent added panels, see panel support table at <http://www.digitalview.com/controllers/csg.php>

CN1 – LVDS signal input connector: Hirose, DF13A-40DP-1.25DSA (Matching type : DF13-40DS-1.25C)

PIN	SYMBOL	DESCRIPTION
1	LVDS_IN_A0+	Positive differential LVDS data bit A0
2	LVDS_IN_A0-	Negative differential LVDS data bit A0
3	LVDS_IN_A1+	Positive differential LVDS data bit A1
4	LVDS_IN_A1-	Negative differential LVDS data bit A1
5	OP1	Reserved
6	OP2	Reserved
7	LVDS_IN_A2+	Positive differential LVDS data bit A2
8	LVDS_IN_A2-	Negative differential LVDS data bit A2
9	LVDS_IN_A3+	Positive differential LVDS data bit A3
10	LVDS_IN_A3-	Negative differential LVDS data bit A3
11	LVDS_IN_A4+	Positive differential LVDS data bit A4
12	LVDS_IN_A4-	Negative differential LVDS data bit A4
13	LVDS_IN_AC+	Positive LVDS clock for A channel
14	LVDS_IN_AC-	Negative LVDS clock for A channel
15	LVDS_IN_B4+	Positive differential LVDS data bit B4
16	LVDS_IN_B4-	Negative differential LVDS data bit B4
17	LVDS_IN_B0+	Positive differential LVDS data bit B0
18	LVDS_IN_B0-	Negative differential LVDS data bit B0
19	LVDS_IN_B1+	Positive differential LVDS data bit B1
20	LVDS_IN_B1-	Negative differential LVDS data bit B1
21	OP3	Reserved
22	OP4	Reserved
23	LVDS_IN_B2+	Positive differential LVDS data bit B2
24	LVDS_IN_B2-	Negative differential LVDS data bit B2
25	LVDS_IN_B3+	Positive differential LVDS data bit B3
26	LVDS_IN_B3-	Negative differential LVDS data bit B3
27	GND	Ground
28	GND	Ground
29	LVDS_IN_BC+	Positive LVDS clock for B channel
30	LVDS_IN_BC-	Negative LVDS clock for B channel
31	GND	Ground
32	GND	Ground
33	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
34	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
35	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
36	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
37	NC	No connection
38	VLCD_HV	Panel power supply (+12V/18V) from front end controller
39	VLCD_HV	Panel power supply (+12V/18V) from front end controller
40	VLCD_HV	Panel power supply (+12V/18V) from front end controller

CN2 – Additional panel power input connector : HIROSE D13-20DP-1.25 (Matching type : DF13-20DS-1.25C)

PIN	SYMBOL	DESCRIPTION
1	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
2	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
3	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
4	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
5	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
6	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
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	VLCD_HV	Panel power supply (+12V/18V) from front end controller
16	VLCD_HV	Panel power supply (+12V/18V) from front end controller
17	VLCD_HV	Panel power supply (+12V/18V) from front end controller
18	VLCD_HV	Panel power supply (+12V/18V) from front end controller
19	VLCD_HV	Panel power supply (+12V/18V) from front end controller
20	VLCD_HV	Panel power supply (+12V/18V) from front end controller

CN3 – LVDS signal output connector : JST BM50B-SRDS (Matching type : SHDR-50V-S-B)

PIN	SYMBOL	DESCRIPTION
1	LVDS_OUT1_B0+	Positive differential LVDS data bit B0
2	LVDS_OUT1_B0-	Negative differential LVDS data bit B0
3	LVDS_OUT1_B1+	Positive differential LVDS data bit B1
4	LVDS_OUT1_B1-	Negative differential LVDS data bit B1
5	OP1	Reserved
6	OP2	Reserved
7	LVDS_OUT1_B2+	Positive differential LVDS data bit B2
8	LVDS_OUT1_B2-	Negative differential LVDS data bit B2
9	LVDS_OUT1_BC+	Positive LVDS clock for A channel
10	LVDS_OUT1_BC-	Negative LVDS clock for A channel
11	LVDS_OUT1_B3+	Positive differential LVDS data bit B3
12	LVDS_OUT1_B3-	Negative differential LVDS data bit B3
13	LVDS_OUT1_B4+	Positive differential LVDS data bit B4
14	LVDS_OUT1_B4-	Negative differential LVDS data bit B4
15	LVDS_OUT1_A0+	Positive differential LVDS data bit A0
16	LVDS_OUT1_A0-	Negative differential LVDS data bit A0
17	LVDS_OUT1_A1+	Positive differential LVDS data bit A1
18	LVDS_OUT1_A1-	Negative differential LVDS data bit A1
19	LVDS_OUT1_A2+	Positive differential LVDS data bit A2
20	LVDS_OUT1_A2-	Negative differential LVDS data bit A2
21	OP3	Reserved
22	OP4	Reserved
23	LVDS_OUT1_AC+	Positive LVDS clock for A channel
24	LVDS_OUT1_AC-	Negative LVDS clock for A channel
25	LVDS_OUT1_A3+	Positive differential LVDS data bit A3
26	LVDS_OUT1_A3-	Negative differential LVDS data bit A3
27	GND	Ground
28	GND	Ground
29	LVDS_OUT1_A4+	Positive differential LVDS data bit A4
30	LVDS_OUT1_A4-	Negative differential LVDS data bit A4
31	GND	Ground
32	GND	Ground
33	GND	Ground
34	GND	Ground
35	GND	Ground
36	GND	Ground
37	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
38	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
39	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
40	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
41	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
42	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
43	NC	No connection
44	VLCD_HV	Panel power supply (+12V/18V) from front end controller
45	VLCD_HV	Panel power supply (+12V/18V) from front end controller
46	VLCD_HV	Panel power supply (+12V/18V) from front end controller
47	VLCD_HV	Panel power supply (+12V/18V) from front end controller
48	VLCD_HV	Panel power supply (+12V/18V) from front end controller
49	VLCD_HV	Panel power supply (+12V/18V) from front end controller
50	VLCD_HV	Panel power supply (+12V/18V) from front end controller

CN4 – LVDS signal output connector : JST BM40B-SRDS (Matching type : SHDR-40V-S-B)

PIN	SYMBOL	DESCRIPTION
1	LVDS_OUT2_B0+	Positive differential LVDS data bit B0
2	LVDS_OUT2_B0-	Negative differential LVDS data bit B0
3	LVDS_OUT2_B1+	Positive differential LVDS data bit B1
4	LVDS_OUT2_B1-	Negative differential LVDS data bit B1
5	OP1	Reserved
6	OP2	Reserved
7	LVDS_OUT2_B2+	Positive differential LVDS data bit B2
8	LVDS_OUT2_B2-	Negative differential LVDS data bit B2
9	LVDS_OUT2_BC+	Positive LVDS clock for A channel
10	LVDS_OUT2_BC-	Negative LVDS clock for A channel
11	LVDS_OUT2_B3+	Positive differential LVDS data bit B3
12	LVDS_OUT2_B3-	Negative differential LVDS data bit B3
13	LVDS_OUT2_B4+	Positive differential LVDS data bit B4
14	LVDS_OUT2_B4-	Negative differential LVDS data bit B4

15	LVDS_OUT2_A0+	Positive differential LVDS data bit A0
16	LVDS_OUT2_A0-	Negative differential LVDS data bit A0
17	LVDS_OUT2_A1+	Positive differential LVDS data bit A1
18	LVDS_OUT2_A1-	Negative differential LVDS data bit A1
19	LVDS_OUT2_A2+	Positive differential LVDS data bit A2
20	LVDS_OUT2_A2-	Negative differential LVDS data bit A2
21	OP3	Reserved
22	OP4	Reserved
23	LVDS_OUT2_AC+	Positive LVDS clock for A channel
24	LVDS_OUT2_AC-	Negative LVDS clock for A channel
25	LVDS_OUT2_A3+	Positive differential LVDS data bit A3
26	LVDS_OUT2_A3-	Negative differential LVDS data bit A3
27	GND	Ground
28	GND	Ground
29	LVDS_OUT2_A4+	Positive differential LVDS data bit A4
30	LVDS_OUT2_A4-	Negative differential LVDS data bit A4
31	GND	Ground
32	GND	Ground
33	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
34	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
35	VLCD_LV	Panel power supply (3,3V/5V) from front end controller
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37	NC	No connection
38	VLCD_HV	Panel power supply (+12V/18V) from front end controller
39	VLCD_HV	Panel power supply (+12V/18V) from front end controller
40	VLCD_HV	Panel power supply (+12V/18V) from front end controller

CN6 – RS-232 serial control (for firmware programming use only) : 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 - Panel backlight control : JST 2-way, B2B-XH-A (Matching type : XHP-2)

PIN	DESCRIPTION
1	Ground
2	Backlight status control

S1 - Power on/off selection : JST 2-way, B2B-PH-K (Matching type : PHR-2)

PIN	DESCRIPTION
1	+5V logic signal
2	+5V logic signal

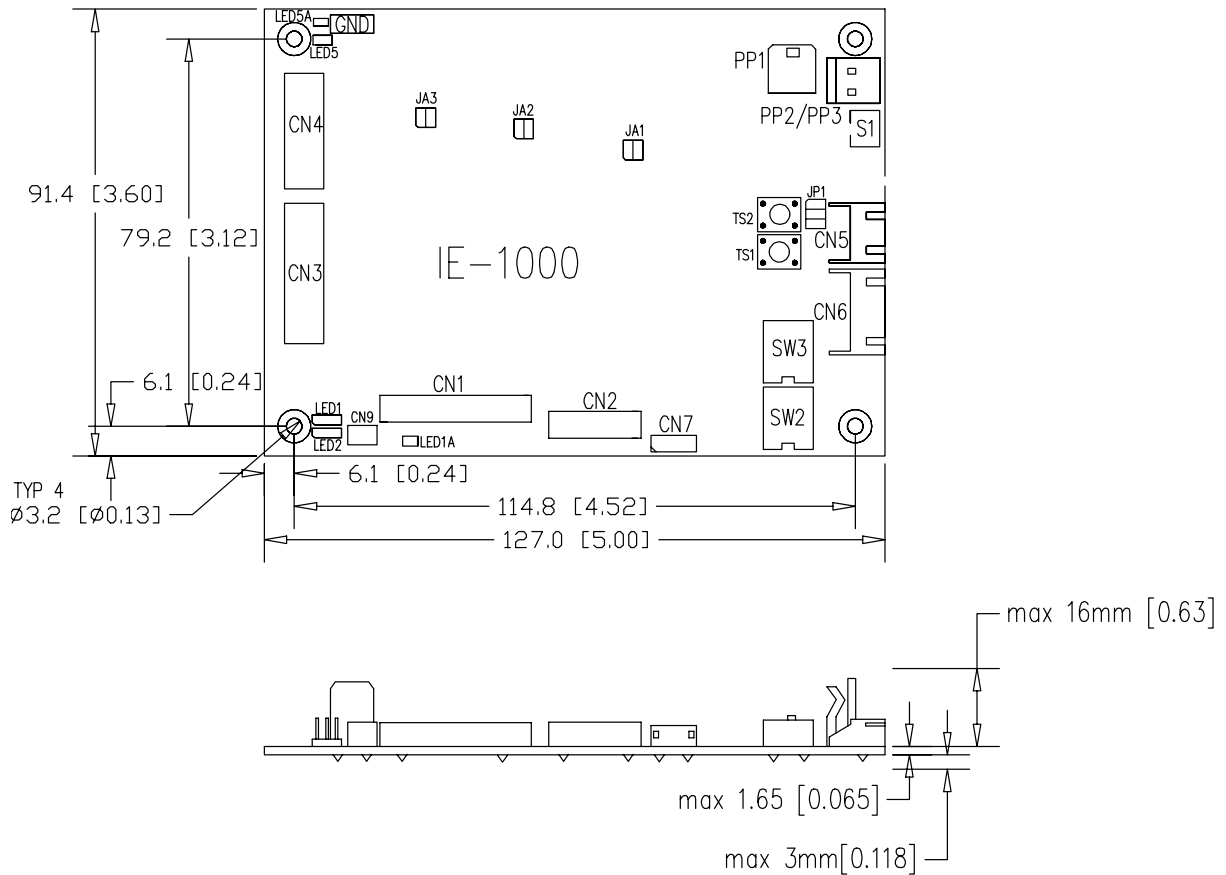
PP1 - 12VDC power supply

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

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

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

BOARD DIMENSIONS



The maximum thickness of the IE-1000 is 20.65mm with or without video add-on board (measured from bottom of PCB to top of components, including any underside components & leads). We recommend clearances of:

- 5mm from bottom of PCB - if mounting on a metal plate we also recommend a layer of suitable insulation material is added to the mounting plate surface.
- 10mm above the components
- 3~5mm around the edges

Any of the holes shown above can be used for mounting the PCB, they are 3.2mm in diameter.

CAUTION: Ensure adequate insulation is provided for all areas of the PCB with special attention to high voltage parts such as the inverter.

TROUBLESHOOTING

General

A general guide to troubleshooting a flat panel display system it is worth considering the system as separate elements, such as:

- Controller (jumpers, PC settings)
- Panel (Cabling, connection, panel, PC settings)
- Backlight (inverter, cabling, backlight tubes)
- Cabling
- Computer system (display settings, operating system)

Through step by step cross checking with instruction manuals and a process of elimination to isolate the problem it is usually possible to clearly identify the problem area.

No image:

- If the panel backlight is not working it may still be possible to just see some image on the display.
- A lack of image is most likely to be caused by incorrect connection, lack of power, failure to provide a signal or incorrect graphic card settings.

Image position:

If it is impossible to position the image correctly, i.e. the image adjustment controls will not move the image far enough, then test using another graphics card. This situation can occur with a custom graphics card that is not close to standard timings or if something is in the graphics line that may be affecting the signal such as a signal splitter (please note that normally a signal splitter will not have any adverse effect).

Image appearance:

- A faulty panel can have blank lines, failed sections, flickering or flashing display
- Incorrect graphics card refresh rate, resolution or interlaced mode will probably cause the image to be the wrong size, to scroll, flicker badly or possibly even no image.
- Incorrect jumper settings on the controller & IE-1000 may cause everything from total failure to incorrect image. CAUTION: Do not set the panel power input incorrectly.
- Sparkling on the display: faulty panel signal cable.

Backlight:

Items to check include: Power input, Controls, Inverter and Tubes generally in this order.

If half the screen is dimmer than the other half:

- Check cabling for the inverter.
- For a specific backlight tube check the AC pins orientation (CAUTION: Never reverse any DC power pins).

Also:

- If adjusting brightness control has no effect the chances are that the VR rating or method of adjusting brightness is not compatible or correctly connected to the inverter.
- If system does not power down when there is a loss of signal

Continued failure:

If unit after unit keeps failing consider and investigate whether you are short circuiting the equipment or doing something else seriously wrong.

Generally after common sense issues have been resolved we recommend step by step substitution of known working parts to isolate the problem.

SPECIFICATIONS

Panel compatibility	Compatible with 120Hz panel with 1920x1200, 1920x1080 resolutions. A specified BIOS and some factory adjustment may be required for individual panel timings.
No. of colours	Up to 10 bit per color, providing 1.07 billion colours.
Panel signal	LVDS
Board dimensions	127mm x 91.4mm (5" x 3.6")
Power consumption	15W approx. (not including panel power consumption)
Input voltage	12V/24VDC +/- 5%
Storage temperature limits	-40°C to +70°C
Operating temperature limits	0°C to +60°C

NOTES

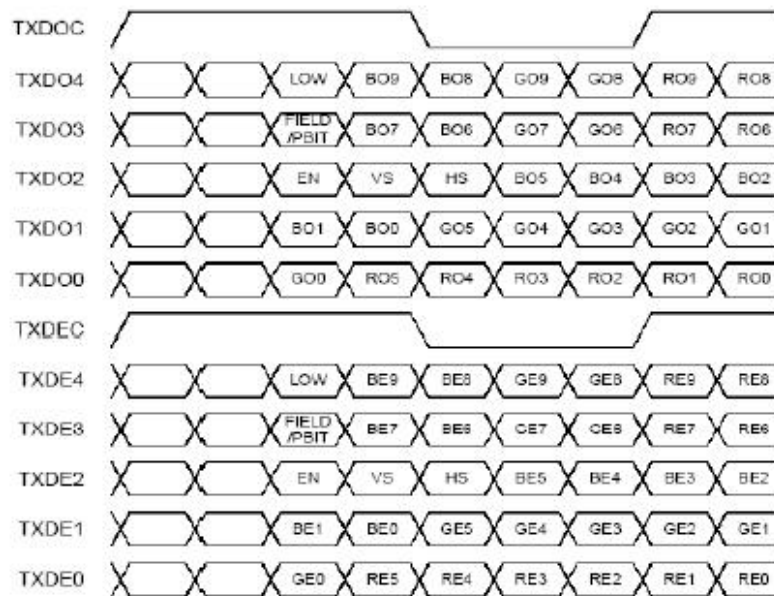
Please note the following:

- For specific panel setup a sample of an LCD may be required (this will be returned) and a copy of the full technical specifications for the panel from the manufacturer.
- Re-layout and custom development services are available.

Appendix I – Mapping definition

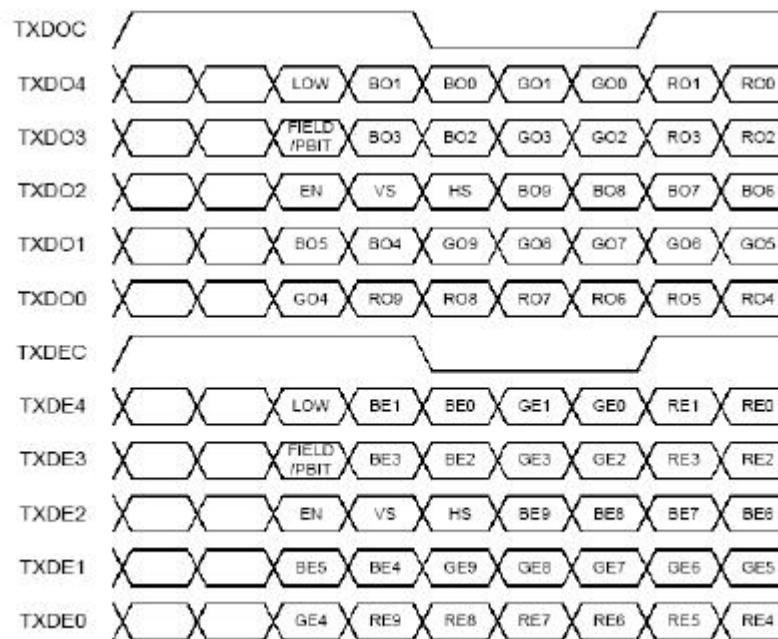
- Definition of VESA :

DPort Output Pair	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
DB[7:6] / TXDEC							
DB[3:2] / TXDE0	GE0	RE5	RE4	RE3	RE2	RE1	RE0
DB[5:4] / TXDE1	BE1	BE0	GE5	GE4	GE3	GE2	GE1
DB[9:8] / TXDE2	EN	VS	HS	BE5	BE4	BE3	BE2
DG[3:2] / TXDE3	field/prg	BE7	BE6	GE7	GE6	RE7	RE6
DG[5:4] / TXDE4	low	BE9	BE8	GE9	GE8	RE9	RE8
DG[7:6] / TXDO0	GO0	RO5	RO4	RO3	RO2	RO1	RO0
DG[9:8] / TXDO1	BO1	BO0	GO5	GO4	GO3	GO2	GO1
DR[5:4] / TXDO2	EN	VS	HS	BO5	BO4	BO3	BO2
DR[7:6] / TXDO3	field/prg	BO7	BO6	GO7	GO6	RO7	RO6
DR[9:8] / TXDO4	low	BO9	BO8	GO9	GO8	RO9	RO8
DR[3:2] / TXDOC							



- Definition of JEIDA :

DPort Output Pair	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
DB[7:6] / TXDEC							
DB[3:2] / TXDE0	GE4	RE9	RE8	RE7	RE6	RE5	RE4
DB[5:4] / TXDE1	BE5	BE4	GE9	GE8	GE7	GE6	GE5
DB[9:8] / TXDE2	EN	VS	HS	BE9	BE8	BE7	BE6
DG[3:2] / TXDE3	field/prg	BE3	BE2	GE3	GE2	RE3	RE2
DG[5:4] / TXDE4	low	BE1	BE0	GE1	GE0	RE1	RE0
DG[7:6] / TXDO0	GO4	RO9	RO8	RO7	RO6	RO5	RO4
DG[9:8] / TXDO1	BO5	BO4	GO9	GO8	GO7	GO6	GO5
DR[5:4] / TXDO2	EN	VS	HS	BO9	BO8	BO7	BO6
DR[7:6] / TXDO3	field/prg	BO3	BO2	GO3	GO2	RO3	RO2
DR[9:8] / TXDO4	low	BO1	BO0	GO1	GO0	RO1	RO0
DR[3:2] / TXDOC							



WARRANTY

The products are warranted against defects in workmanship and material for a period of three (3) year from the date of purchase provided no modifications are made to it and it is operated under normal conditions and in compliance with the instruction manual.

The warranty does not apply to:

- Product that has been installed incorrectly, this specifically includes but is not limited to cases where electrical short circuit is caused.
- Product that has been altered or repaired except by the manufacturer (or with the manufacturer's consent).
- Product that has subjected to misuse, accidents, abuse, negligence or unusual stress whether physical or electrical.
- Ordinary wear and tear.

Except for the above express warranties, the manufacturer disclaims all warranties on products furnished hereunder, including all implied warranties of merchantability and fitness for a particular application or purpose. The stated express warranties are in lieu of all obligations or liabilities on the part of the manufacturer for damages, including but not limited to special, indirect consequential damages arising out of or in connection with the use of or performance of the products.

CAUTION

Whilst care has been taken to provide as much detail as possible for use of this product it cannot be relied upon as an exhaustive source of information. This product is for use by suitably qualified persons who understand the nature of the work they are doing and are able to take suitable precautions and design and produce a product that is safe and meets regulatory requirements.

LIMITATION OF LIABILITY

The manufacturer's liability for damages to customer or others resulting from the use of any product supplied hereunder shall in no event exceed the purchase price of said product.

TRADEMARKS

The following are trademarks of Digital View Ltd:

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- IE-1000

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