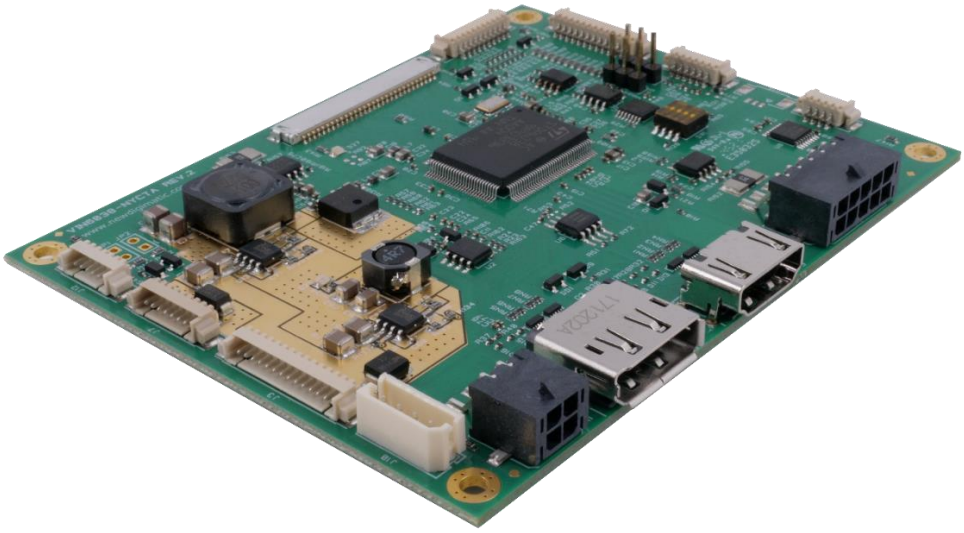
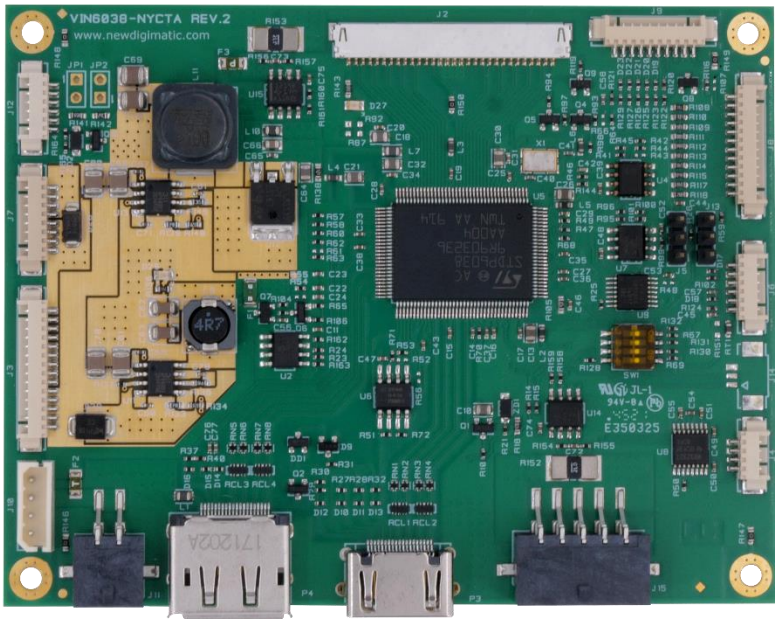
User Manual VIN6038 – NYCTA – RV2

Revision History

Revision	Description	Date	Approved by
0	First Release	27/07/2023	Antonio Galli

Product Photos





Preface

This User Manual gives information about VIN 6038 – NYCTA - RV2's electrical and mechanical specifications, configuration, environmental and reliability specification.

Intended Audience

This manual is intended for technically qualified personnel. It is not intended for general audiences.

Document Organization

The chapters in this Manual are arranged as follows:

- General product description
- Environmental, transportation and storage conditions
- Electrical specifications with connectors PIN assignment and positions
- Mechanical specifications
- Operation guide to configure the OSD and access the menu.

Terminology

Term	Description
ADC	Analog to Digital Converter
DVI	Digital Visual Interface is a video display interface developed by the Digital Display Working Group (DDWG). This interface is designed to transmit uncompressed digital video and can be configured to support multiple modes. The DVI specification is compatible with the VGA interface.
DP	DisplayPort is a digital display interface standardized by the Video Electronics Standards Association (VESA). DisplayPort was designed to replace VGA, FPD-Link, and Digital Visual Interface
HDCP	High-bandwidth Digital Content Protection is a form of digital copy protection to prevent copying of digital audio and video content as it travels across connections. Types of connections include DP, DVI, and HDMI.
HDMI	High-Definition Multimedia Interface is a proprietary audio/video interface for transmitting uncompressed video data and compressed or uncompressed digital audio data from an HDMI-compliant source device.
WUXGA	WUXGA stands for Widescreen Ultra Extended Graphics Array and is a display resolution of 1920 × 1200 pixels (2,304,000 pixels) with a 16:10 screen aspect ratio. It is a wide version of UXGA, and can be used for viewing high-definition television (HDTV) content, which uses a 16:9 aspect ratio and a 1280 × 720 (720p) or 1920 × 1080 (1080i or 1080p) resolution
VGA	Video Graphics Array is a graphics standard. The VGA analog interface standard has been extended to support resolutions of up to 2048×1536

Contents

General Description

The VIN6038-NYCTA-RV2-RV2 is a highly integrated board that interfaces digital HDMI and DisplayPort video inputs in virtually any format to a flat-panel display.

The VIN6038-NYCTA-RV2-RV2 is optimized for high-performances, value line, flat panel monitors and is equipped with advanced highly integrated Image processor with internal HDMI and DisplayPort.

The HDMI and DisplayPort inputs are HDCP compliant.

Computer, from VGA to WUXGA (1920X1200), and Video images can be resized to fit on a target display device with any resolution, up to WUXGA.

The optimized circuitry creates sharp and clear images, centered on the screen, without user intervention.

The VIN6038-NYCTA-RV2 includes light sensor for automatic backlight control, temperature sensor for programmable fan control and faulty backlight alarm.

The VIN6038-NYCTA-RV2 has innovative abilities to self-diagnosis with capability to communicate its state via RS232.

The use of the VIN6038-NYCTA-RV2 increases the reliability of the monitor and reduces drastically the down-time.

General Specification

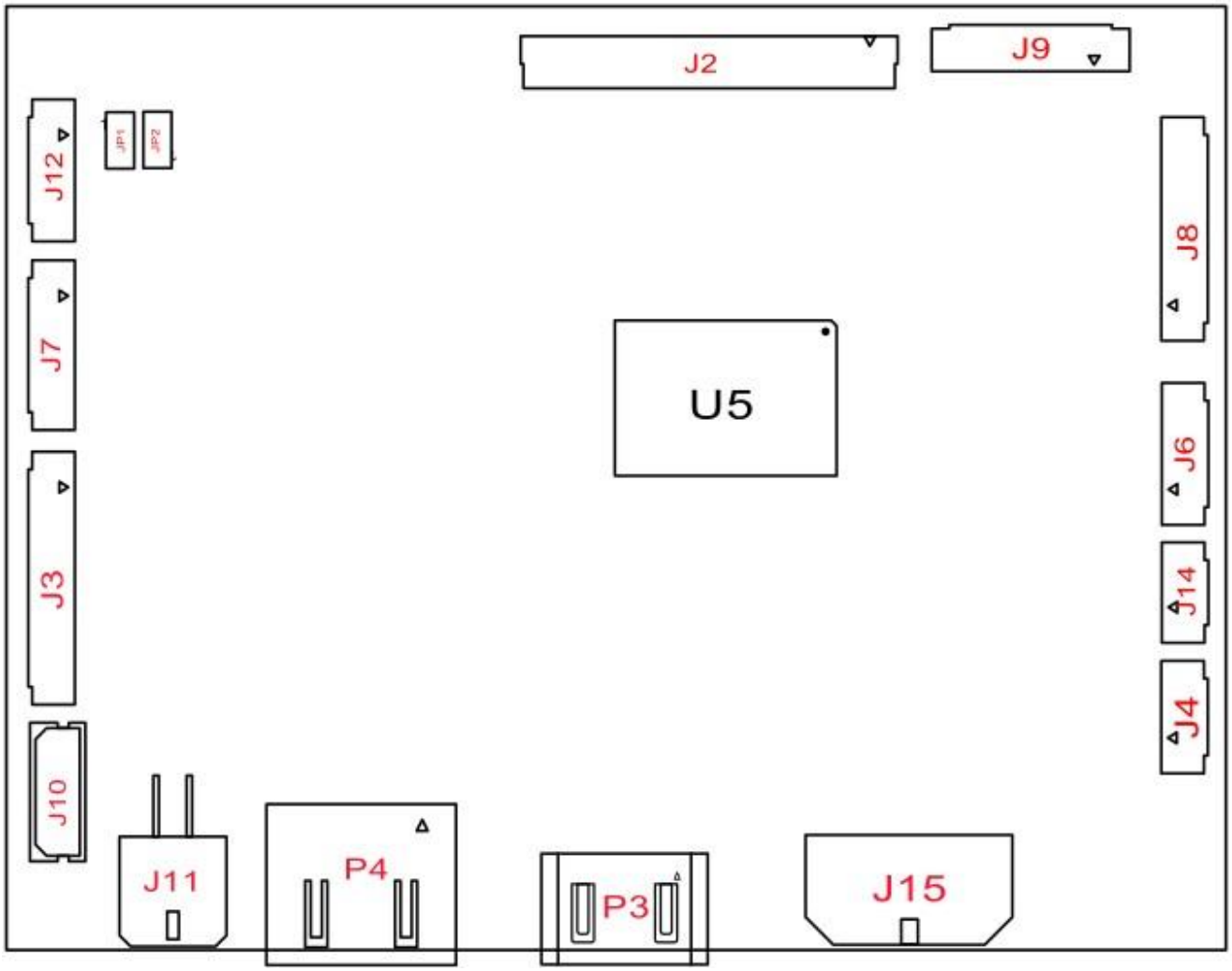
Chip Set	STPD 6038
Panel Connectivity	All LCD TFT panels up to 1920x1200
HDMI	- 1 X HMDI Standard Connector - HMDI 1.3 compliant Rx - Supports resolutions up to 1080p/WUXGA 1920X1200@60Hz - Deep color and wide gamut support: 12-bit HDMI input at YCC 4:4:4 - Backwards compatible with DVI - Supports integrated HDCP
DisplayPort	- 1 X DisplayPort Standard Connector - 4-lane DisplayPort 1.1a compliant Rx - 1 X auxiliary channel - Supports integrated HDCP
DVI	- Digital Single Link DVI connector - Support integrated HDCP 1.1 - TMDS receiver compliant with DDWG DVI 1.0 specification - Supports data transfer rates up to 162 MPixels/S input rate - Scalable bandwidth from VGA to WUXGA 1920x1200@60Hz - High inter-pair skew tolerance up to one full clock cycle
On-Screen Display Pages	- Brightness (Backlight adjustment) - Contrast - Sharpness - Colour Temperature - Audio Control (External Audio Amplifier) - LVDS Output Mapping National/JEIDA - LVDS Pixel Order Swapping Odd/Even - Set-up Temperature Fan ON - Auto Backlight ON/OFF
Control Modes	- Seven push-Keys - Infrared (Optional) - One Serials RS232
Analog and Digital I/O	- 1 x Analog in 0-3,3V 10-KOhm - 1 x TTL in 10-KOhm P.U. - 2 x LVTTL out 25mA T.P.
Output Panel Signal	18/24bit Single or Dual LVDS
Panel Power Supply	3,3 – 5 – 12 VDC / 3A Max
Inverter Support	- 12/24 VDC Power - Enable pin signal - Dimmer Adjust pin Analog signal 0 – 3.3 VDC or Digital PWM
Measurement	- Inverter Current 0-15 ADC Max - Inverter Voltage 0-26 VDC Max - Panel Current 0-3 ADC Max - Panel Voltage 0-12 VDC Max - On board temperature -40°C to 85°C - Ambient Light Dark to 10.000 Lux (Relative measure)
Fan Control	1 line setup via OSD 12-24VDC 2A
Power Requirements	12 –24VDC Max 2,5 W only VIN6038 - NYCTA-RV2 Control Board

Operating Environment and Reliability

Operating conditions	- Temperature: 0°~ 60° - Humidity: 10% ~ 90%, non-condensing - Altitude: maximum 3,000m
Transportation conditions	- Temperature: -25°~ 85° - Humidity: 5% ~ 95%, non-condensing - Altitude: maximum 15,000m
Storage conditions	- Temperature: -25°~ 85° - Humidity: 5% ~ 95%, non-condensing - Altitude: maximum 3,000m
Reliability specifications	MTBF: more than 200,000 hours at 90% confidence level, excluding LCD panel

Electrical Specification

Connectors Position



Connectors Pin Assignment

P3 – Digital HDMI Input Standard type A	
Pin	Functions
1	TMDS Data 2+
2	TMDS Data 2 Shield
3	TMDS Data 2-
4	TMDS Data 1+
5	TMDS Data Shield
6	TMDS Data 1-
7	TMDS Data 0+
8	TMDS Data Shield
9	TMDS Data 0-
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock-
13	Consumer Electronics Control
14	Not Connected Reserved
15	Serial Clock for DDC
16	Serial Data for DDC
17	Ground for DDC CEC
18	5V for EDID (Un-Powered Monitor)
19	Hot Plug Detect

P4 – DP Input Standard DP Connector	
Pin	Functions
1	Lane 0+
2	Lane 0 Shield
3	Lane 0-
4	Lane 1+
5	Lane 1 Shield
6	Lane 1-
7	Lane 2+
8	Lane 2 Shield
9	Lane 2-
10	Lane 3+
11	Lane 3 Shield
12	Lane 3-
13	CONFIG1
14	CONFIG2
15	AUX CH+
16	AUX CH Shield
17	AUX CH-
18	Hot Plug Detect
19	GND
20	DP_PWR

J11 – DC Input Molex 4302 - 0400	
Pin	Functions
1	GND
2	GND
3	VCC (12-24V/5A)
4	VCC (12-24V/5A)

J10 – Auxiliary DC Input Molex 50-37-5043	
Pin	Functions
1	VCC 12-24V/5A
2	VCC 12-24V/5A
3	GND
4	GND

J15 – Backlight V/A Measurement Molex 43025 - 1000	
Pin	Functions
1	12 – 24 VDC Load
2	12 – 24 VDC Load
3	12 – 24 VDC Load
4	12 – 24 VDC Load
5	12 – 24 VDC Load
6	12 – 24 VDC Source
7	12 – 24 VDC Source
8	12 – 24 VDC Source
9	12 – 24 VDC Source
10	12 – 24 VDC Source

J8 – OSD Key Control Molex 51021 - 1200	
Pin	Functions
1	MENU
2	LEFT/MINUS
3	RIGHT/PLUS
4	UP
5	DOWN
6	SOURCE
7	DISPLAY MODE
8	STAND-BY
9	5/3,3V
10	LED
11	IR RECEIVER
12	GND

J6 – Front Panel Board Molex 51021-0600	
Pin	Functions
1	5/3,3VDC OUT 100mA
2	Led
3	IR Receiver
4	GND
5	GND
6	Light Sensor

J7 – Fans Connector molex 51021 - 0800	
Pin	Functions
1	12-24 VDC
2	12-24 VDC
3	12-24 VDC
4	12-24 VDC
5	GND
6	GND
7	GND
8	GND

J3 – Output to Inverter Molex 51021 - 1400	
Pin	Functions
1	GND
2	Backlight Dimming Analog 0 ~ 3.3 V Digital PWM
3	Fan Control PWM
4	ON 3.3 V – OFF 0 V
5	GND
6	GND
7	GND
8	GND
9	GND
10	12/24 VDC
11	12/24 VDC
12	12/24 VDC
13	12/24 VDC
14	12/24 VDC

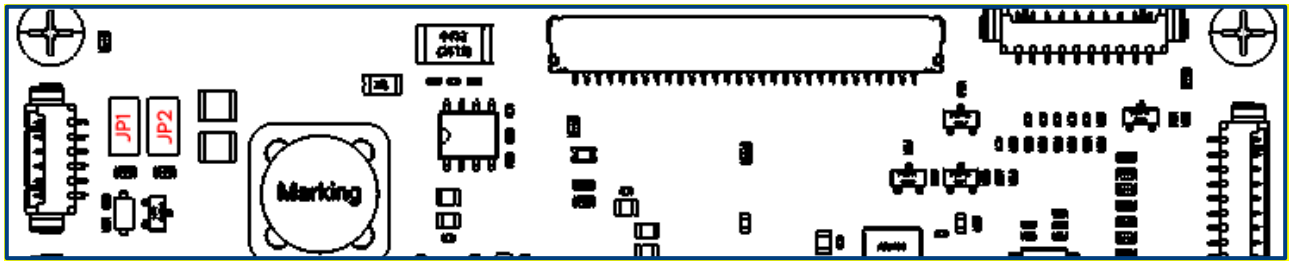
J12 – Auxiliary LCD Panel Power Supply Molex 51021 - 0600	
Pin	Functions
1	LCD_Power_Supply
2	LCD_Power_Supply
3	LCD_Power_Supply
4	GND
5	GND
6	Main Power_Supply Enable*
Note: * "0" or NC = MPS Enable, "1" = MPS Disable	

J4 – Serial Com1 Molex 51021-0400	
Pin	Functions
1	RX RS232 Level
2	TX RS232 Level
3	GND
4	GND

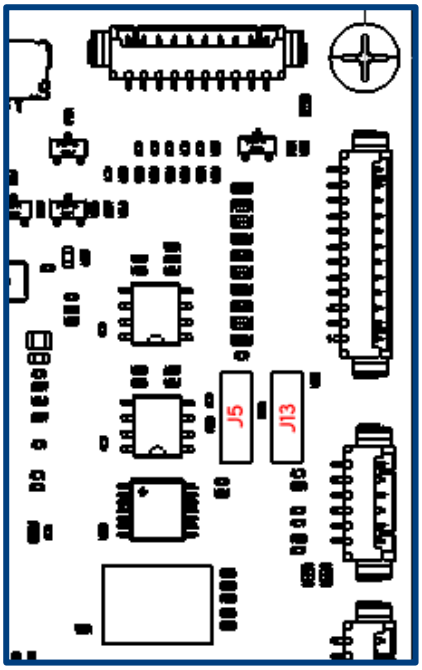
J9 – Analog and Digital I/O 51021 - 1210	
Pin	Functions
1	NTC10K@25°C
2	GND
3	3.3 VDC 300 mA MAX
4	DRIVER TO GND 200 mA
5	AUX I/O LVTTL
6	I2CBUS SCL
7	I2CBUS SDA
8	NTC10K@25°C
9	BPW77 COLLECTOR
10	GND

J2 – Output to Panel Data (LVDS) Hirose DF19-30S-1C	
Pin	Functions
1	GND
2	TXE3+
3	TXE3-
4	TXEClock+
5	TXEClock-
6	TXE2+
7	TXE2-
8	TXE1+
9	TXE1-
10	TXE0+
11	TXE0-
12	GND
13	GND
14	LCD_Power_Supply
15	LCD_Power_Supply
16	LCD_Power_Supply
17	LCD_Power_Supply
18	LCD_Power_Supply
19	GND
20	TXO3+
21	TXO3-
22	TXOClock+
23	TXOClock-
24	TXO2+
25	TXO2-
26	TXO1+
27	TXO1-
28	TXO0+
29	TXO0-
30	GND

Jumper settings



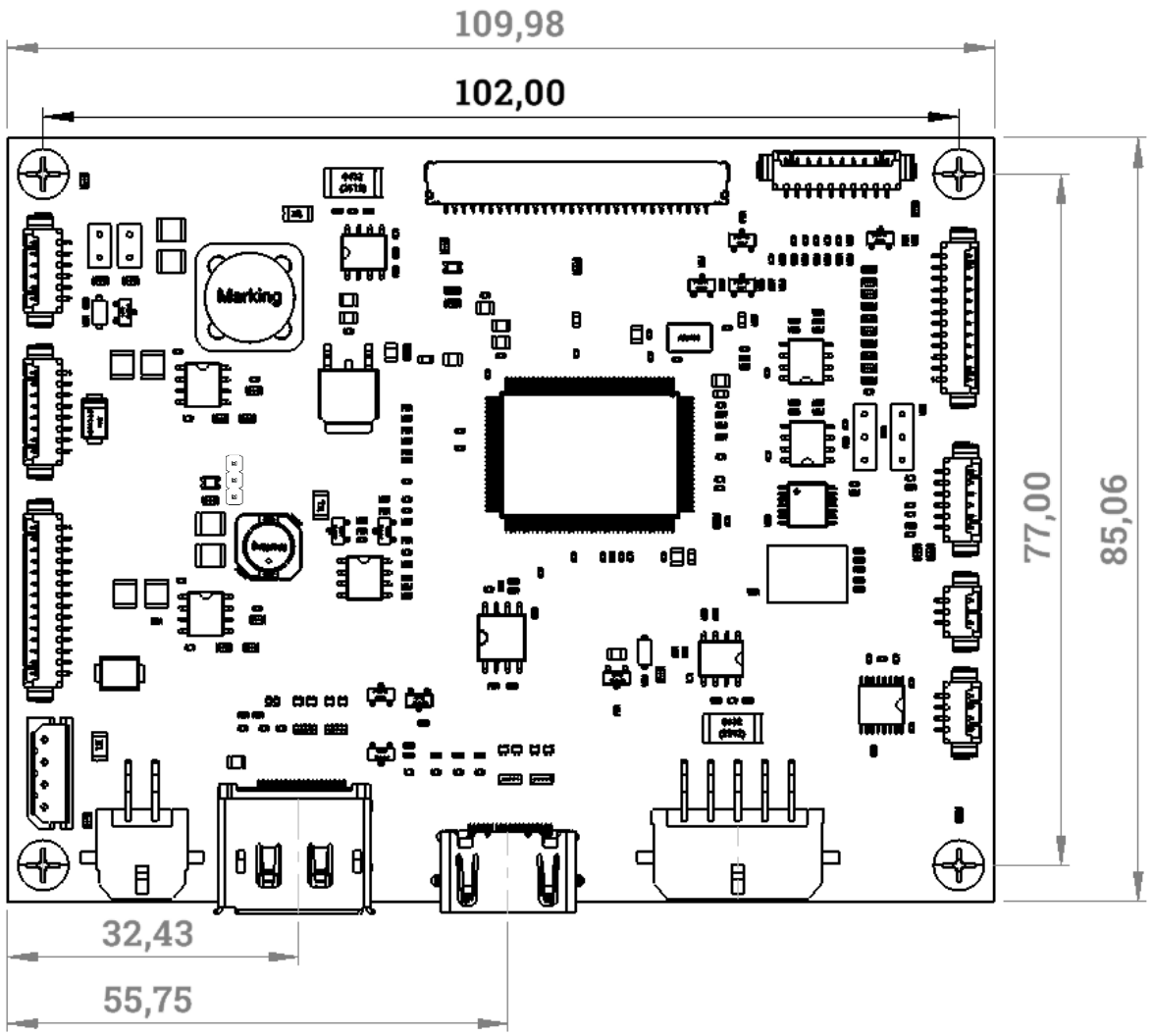
LCD Power Supply	JP1	JP2
3,3 VDC (Default)	SOLDERING	SOLDERING
5 VDC	CUT	SOLDERING
12 VDC	CUT	CUT

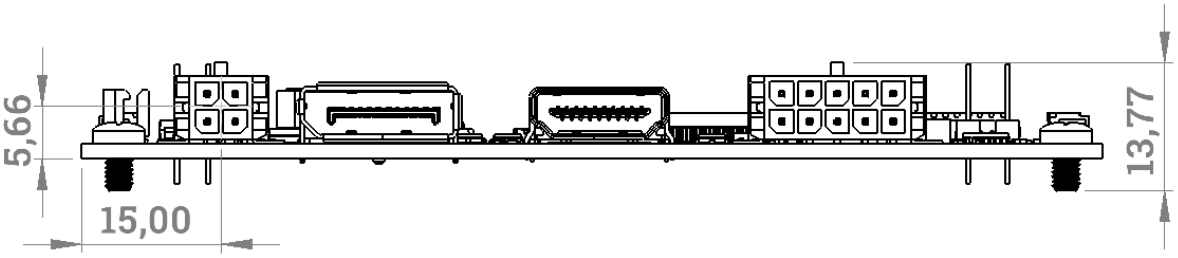


Backlight Dimming			
J5		J13	
	Analog 0 ~ 3.3 V		100 – 0 Inverted
	Digital PWM		0 – 100 Normal

Mechanical Specification

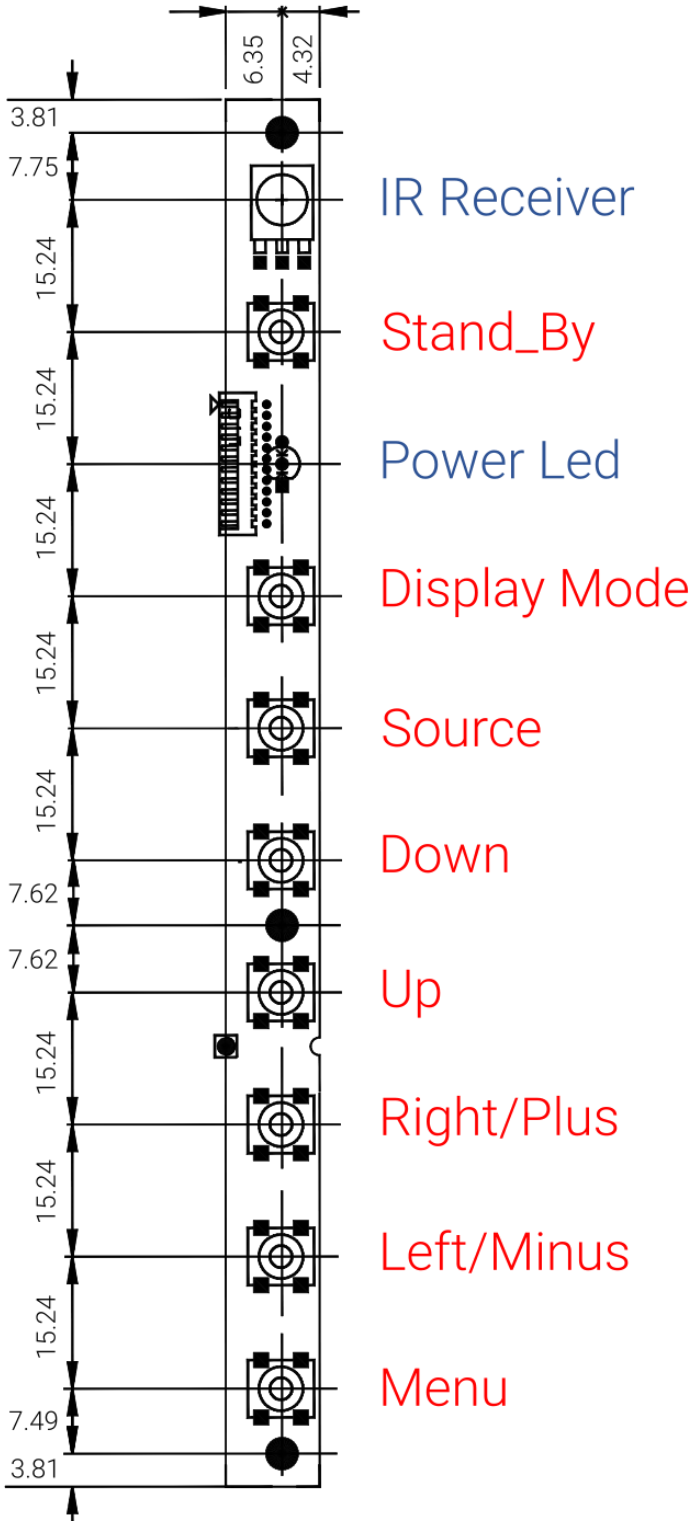
Main board dimensions





All measurements are in millimeters

OSD Keybord dimensions and functions



Operation guide
OSD Adjustment

VIN 6038 – NYCTA gives various and easy to use graphic interface. User can easily access to all the functions.
Be sure that your system power and LED is turned on (Green) before operating with the keyboard.

Key name and functions

Key Name	Description
STAND BY	Turn ON/STAND_BY the system
MENU	Activates the OSD menu or goes to next menu
UP	Moves the highlight icon up to the page and function that user wants
DOWN	Moves the highlight icon down to the page and function that user wants
LEFT/MINUS	Decreases the adjustment of the selected function
RIGHT/PLUS	Increases the adjustment of the selected function
SOURCE	Select video input
DISPLAY MODE	Select the display mode
IR	Receives the signal form Remote Control (Optional)

Accessing the menu system by keyboard

1. With the OSD off, push the **Menu** Key to activate the main OSD menu

2. Use the **Up** or **Down** Keys to move from one page to another. As you move from one function to another the function is highlighted.

3. Press the **Right** Key once to activate the highlighted function, use the **Up** or **Down** Keys to select the function.

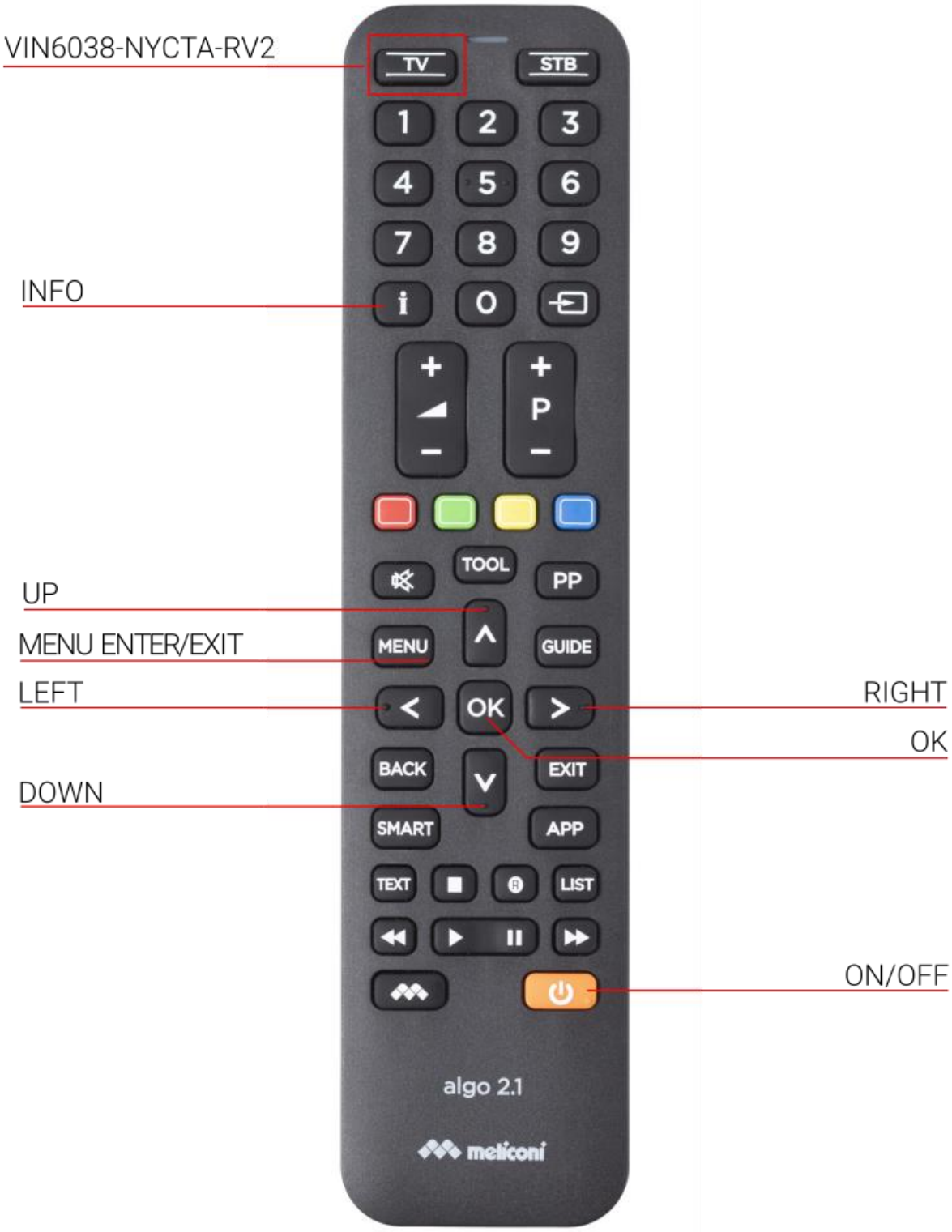
4. After selecting a function, use the **Minus** or **Plus** Keys to make optimum adjustments. The setting bar moves and the numeric value indicator changes to reflect your adjustments.
(*Note: the numeric value indicator is provided as a point of reference only and has nothing to do with a real measurement.)*

5. Press the **Menu** Key once to return to the main menu to select another function or press twice to exit from the OSD.

6. Press the **Source** key to select the Video Input.

7. Press the **Display Mode** button to select the Display Mode type.

IR Remote Control keys functions

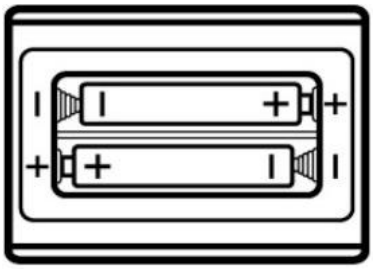


Accessing the menu system by IR Remote Control

Inserting the batteries

The device has a permanent memory and does not lose the programmed codes when the batteries are removed.

The remote control requires 2 new 1.5V AAA/LR03 alkaline batteries, not included in the package. Insert with the correct polarity as shown in figure. DO NOT use rechargeable batteries.



Navigation command

1. Press the **TV** button to let the remote control configure on that specific board.
2. With the OSD off, push the **Menu** Key to activate the main OSD menu.
3. Use the **Up** or **Down** Keys to move from one page to another. As you move from one function to another the function name changes to reflect the function or group of functions represented by that icon.
4. Press the **Menu** Key once to activate the highlighted function, use the **Up** or **Down** Keys to select the function.
5. After selecting a function, use the **Right** or **Left** Keys to make optimum adjustments. The setting bar moves and the numeric value indicator changes to reflect your adjustments. (*Note: the numeric value indicator is provided as a point of reference only and has nothing to do with a real measurement.)*
6. Press the **Menu** Key once to return to the main menu to select another function or press twice to exit from the OSD.
7. Press the **Source** button to select the Video Input.
8. Press the **Display Mode** button to select the Display Mode type.
9. Press the **Info [i]** button to show the diagnostic of the sensor.

Appendix

Information Technology Video Timing Chart

VIN6038-NYCTA-RV2 - IT Video Format Supported						
Pixel Format	Refresh Rate	Hor. Frequency	Pixel Frequency	Reference Standard	HDMI	DP
640 x 350	85 Hz	37.9 kHz	31.500 MHz	VESA Standard	X	X
640 x 400	85 Hz	37.9 kHz	31.500 MHz	VESA Standard	X	X
720 x 400	85 Hz	37.9 kHz	35.500 MHz	VESA Standard	X	X
640 x 480	60 Hz	31.5 kHz	25.175 MHz	Industry Standard	X	X
640 x 480	72 Hz	37.9 kHz	31.500 MHz	VESA Standard	X	X
640 x 480	75 Hz	37.5 kHz	31.500 MHz	VESA Standard	X	X
640 x 480	85 Hz	43.3 kHz	36.000 MHz	VESA Standard	X	X
800 x 600	56 Hz	35.2 kHz	36.000 MHz	VESA Guidelines	X	X
800 x 600	60 Hz	37.9 kHz	40.000 MHz	VESA Guidelines	X	X
800 x 600	72 Hz	48.1 kHz	50.000 MHz	VESA Standard	X	X
800 x 600	75 Hz	46.9 kHz	49.500 MHz	VESA Standard	X	X
800 x 600	85 Hz	53.7 kHz	56.250 MHz	VESA Standard	X	X
848 x 480	60 Hz	31.0 kHz	33.750 MHz	VESA Standard	X	X
1024 x 768	43 Hz (Int.)	35.5 kHz	44.900 MHz	Industry Standard	X	X
1024 x 768	60 Hz	48.4 kHz	65.000 MHz	VESA Guidelines	X	X
1024 x 768	70 Hz	56.5 kHz	75.000 MHz	VESA Standard	X	X
1024 x 768	75 Hz	60.0 kHz	78.750 MHz	VESA Standard	X	X
1024 x 768	85 Hz	68.7 kHz	94.500 MHz	VESA Standard	X	X
1152 x 864	75 Hz	67.5 kHz	108.000 MHz	VESA Standard	X	X
1280 x 768	60 Hz(RB)	47.4 kHz	68.250 MHz	CVT Red. Blanking	X	X
1280 x 768	60 Hz	47.8 kHz	79.500 MHz	CVT	X	X
1280 x 768	75 Hz	60.3 kHz	102.250 MHz	CVT	X	X
1280 x 768	85 Hz	68.6 kHz	117.500 MHz	CVT	X	X
1280 x 800	60 Hz(RB)	49.3 kHz	71.000 MHz	CVT Red. Blanking	X	X
1280 x 800	60 Hz	49.7 kHz	83.500 MHz	CVT	X	X
1280 x 800	75 Hz	62.8 kHz	106.500 MHz	CVT	X	X
1280 x 800	85 Hz	71.6 kHz	122.500 MHz	CVT	X	X
1280 x 960	60 Hz	60.0 kHz	108.000 MHz	VESA Standard	X	X
1280 x 960	85 Hz	85.9 kHz	148.500 MHz	VESA Standard	X	X
1280 x 1024	60 Hz	64.0 kHz	108.000 MHz	VESA Standard	X	X
1280 x 1024	75 Hz	80.0 kHz	135.000 MHz	VESA Standard	X	X
1280 x 1024	85 Hz	91.1 kHz	157.500 MHz	VESA Standard	X	X

1360 x 768	60 Hz	47.7 kHz	85.500 MHz	VESA Standard	X	X
1400 x 1050	60 Hz(RB)	64.7 kHz	101.000 MHz	CVT Red. Blanking	X	X
1400 x 1050	60 Hz	65.3 kHz	121.750 MHz	CVT	X	X
1400 x 1050	75 Hz	82.3 kHz	156.000 MHz	CVT	X	X
1400 x 1050	85 Hz	93.9 kHz	179.500 MHz	CVT		
1440 x 900	60 Hz(RB)	55.5 kHz	88.750 MHz	CVT Red. Blanking	X	X
1440 x 900	60 Hz	55.9 kHz	106.500 MHz	CVT	X	X
1440 x 900	75 Hz	70.6 kHz	136.750 MHz	CVT	X	X
1440 x 900	85 Hz	80.4 kHz	157.000 MHz	CVT	X	X
1600 x 1200	60 Hz	75.0 kHz	162.000 MHz	VESA Standard	X	X
1680 x 1050	60 Hz(RB)	64.7 kHz	119.000 MHz	CVT Red. Blanking	X	X
1680 x 1050	60 Hz	65.3 kHz	146.250 MHz	CVT	X	X
1920 x 1200	60 Hz(RB)	74.0 kHz	154.000 MHz	CVT Red. Blanking	X	X

VIN6038 - NYCTA-RV2 CE Video Format Supported						
Pixel Format	Refresh Rate	Hor. Frequency	Pixel Frequency	Reference Standard	HDMI	DP
640 x 480	59,940 Hz	31,469 kHz	25,175 MHz	VESA DMT	X	X
720 x 480	59,940 Hz	31,469 kHz	27,000 MHz	CEA-770.2-D	X	X
720 x 576	50,080 Hz	31,250 kHz	27,000 MHz	ITU-R BT.1358	X	X
1280 x 720	24.000 Hz	18.000 kHz	59.400 MHz	SMPTE 296M	X	X
1280 x 720	25.000 Hz	18.750 kHz	74.250 MHz	SMPTE 296M	X	X
1280 x 720	30.000 Hz	22.500 kHz	74.250 MHz	SMPTE 296M	X	X
1280 x 720	50,000 Hz	37,500 kHz	74,250 MHz	SMPTE 296M	X	X
1280 x 720	60,000 Hz	45,000 kHz	74,250 MHz	CEA-770.3-C	X	X
1920 x 1080	24.000 Hz	27.000 kHz	74.250 MHz	SMPTE 274M	X	X
1920 x 1080	25.000 Hz	28.125 kHz	74.250 MHz	SMPTE 274M	X	X
1920 x 1080	30.000 Hz	33.750 kHz	74.250 MHz	SMPTE 274M	X	X
1920 x 1080	50,000 Hz (Int.)	31,250 kHz	72,000 MHz	AS 4933.1-2005	X	X
1920 x 1080	50,000 Hz (Int.)	28,125 kHz	74,250 MHz	SMPTE 274M	X	X
1920 x 1080	50,000 Hz	56,250 kHz	148,500 MHz	SMPTE 274M	X	X
1920 x 1080	60,000 Hz (Int.)	33,750 kHz	74,250 MHz	CEA-770.3-C	X	X
1920 x 1080	60,000 Hz	67,500 kHz	148,500 MHz	SMPTE 274M	X	X

Warranty

The products are warranted against defects in workmanship and material for a period of one (1) year from the date of purchase provided only if 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.