

# Datasheet

## PrismaMINI-H

### Simplistic TFT-LCD controller with HDMI Input

PR-01-410

PR-01-410\_A1



Version 1.18

**27.07.2017**

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## 1 Revision History

Date	Rev.No.	Description	Page
05.04.2013	0.8	Initial version	All
11.04.2013	0.9	CEC note	
17.04.2013	0.99	Description, options, features, connectors	
08.05.2013	1.0	SAP number added	
10.06.2013	1.1	Electrical specification updated	
15.07.2013	1.2	3D Drawing added	
19.07.2013	1.3	Updated PCB sketch	
22.07.2014	1.4	Redefined as a generic Board	
09.10.2014	1.5	Two adapted panel models added	5
29.01.2015	1.6	One adapted panel model added	5
24.03.2015	1.7	Two adapted panel models added, Changed some PR-xx-xxx to PA-xx-xxx	5
31.03.2015	1.8	Resolution 1280x800 added; Some PA-xx-xxx numbers added	4; 5
22.04.2015	1.9	Changed 3D Drawing	10
16.12.2015	1.10	Changed Operating Temperature to -20°C..+80°C	7
		Changed Storage Temperature to -35°C..+85°C	7
		Changed Permissible Panel Current to 1.2A	7
		Changed Contact information	12
13.01.2016	1.11	Changed Operating Supply Voltage (3,3V) to 3,2V..3,45V	7
18.02.2016	1.12	Ordering Information added	6
		Operating Temperature Range for PR-01-410 added	7
25.04.2016	1.13	Company logo updated	All
		HDMI version updated	2
		Reference KIT added	10
21.07.2016	1.14	3 adapted panel models added (Ampire); Features updated	5
16.05.2017	1.15	Changed resolution from 1900x1200 to 1920x1200	4
		Added Ordering Status	10
		Removed Chapter 12 News and Updates	12
22.05.2017	1.16	Added Chapter 10 Supported Panels and Backlights	9
		Renamed Chapter 12 to Mechanical Dimensions	11
		Added a Mechanical Dimensions Table	11
24.05.2017	1.17	Renamed Ordering Information to Hardware Information	10
		Removed all panels and ordering codes	5
27.07.2017	1.18	Added reference to the remote OSD control description	5



## 2 Description

PrismaMINI-H is Data Display Group's new TFT-Controller board based on the STDP6038 (Chandler) graphic-chip. It is a cost efficient solution designed for cost sensitive applications up to 1920x1200 and no need for different inputs or other additional functionalities. PrismaMINI-H is focused on the essential: one panel - and one input type.

## 3 Input

PrismaMINI-H has HDMI input connection because of its wide adoption in industrial and consumer markets. It is also handy to use with DVI inputs using an adapter.

STDP6038 (Chandler) chip has an ultra-reliable HDMI 1.4 receiver

Other key features are

- Single Link TMDS Rx for up to 12-bit 1080p
- Captures up to 225MHz
- Direct connect to all HDMI compliant TMDS transmitters
- Option: HDCP
- No CEC

Supported Input Resolutions
640 x 480 @ 60 Hz (VESA)
800 x 600 @ 60 Hz (VESA)
720 x 480 @ 60 Hz (Video)
720 x 576 @ 50 Hz (Video)
1024 x 768 @ 60 Hz (VESA)
1280 x 720 @ 50 Hz (Video)
1280 x 720 @ 60 Hz (Video)
1280 x 768 @ 60 Hz
1280 x 800 @ 60 Hz
1280 x 1024 @ 60 Hz (VESA)
1360 x 768 @ 60 Hz
1366 x 768 @ 60 Hz
1368 x 768 @ 60 Hz
1600 x 1200 @ 60 Hz (VESA)
1920 x 1080 @ 50 Hz (Video)
1920 x 1080 @ 60 Hz
1920 x 1200 @ 60 Hz



## 4 Output

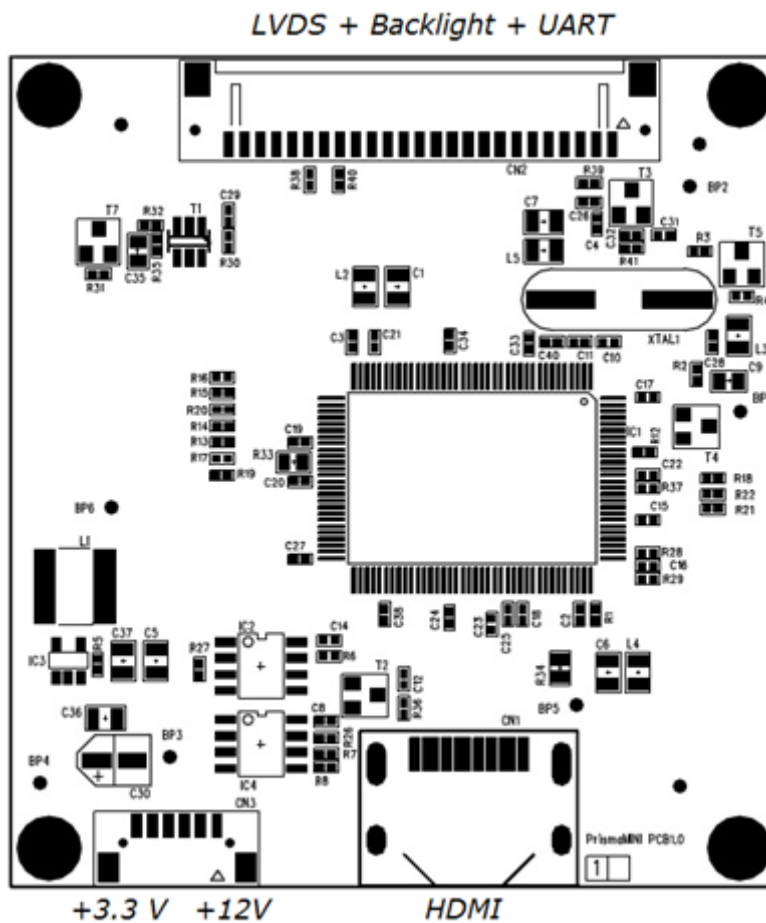
Output is single channel LVDS. To simplify installation one connector is used for panel, backlight and UART (serial) connections.

Brightness controlled by PWM and value is fixed in firmware. It can be changed over serial port or by firmware update. Please refer to Remote\_OSD\_Description.doc for remote OSD-Control description.

## 5 Features

- No OSD menu usability due to no buttons, but full remote control OSD (all commands; please request command set file)
- Remote control via RS-232 interface (TTL level)
- Firmware update over serial port
- Other versions: PrismaMINI-HDMI/DisplayPort

## 6 Interfaces





## 7 Electrical Characteristics

All measurements done at 25°C ambient temperature.

Item	Condition	MIN.	TYP.	MAX.	Unit	Note
Supply Voltage (12V)		11.7	12.0	12.3	VDC	
Supply Voltage (3.3V)		3.2	3.3	3.45	VDC	
Current Consumption (12V)	Board Only	-	290	360	uA	
Current Consumption (3.3V)	Board Only	-	180	225	mA	

## 8 Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit	Note
Supply Voltage	$V_{in(12V)}$	0	14	VDC	1, 2,3
Permissible Backlight Current	$I_{out(12V)}$		2	A	
Supply Voltage	$V_{in(3.3V)}$	0	3.6	VDC	1, 2,3
Permissible Panel Current	$I_{out(3.3V)}$		1.2	A	
Storage Temperature	$T_{St}$	-35	+85	°C	
Operating Temperature	$T_{Op}$	0 -20	+70 +80	°C	PR-01-410 PR-01-410_A1

**Note (1)** Within operating temperature range.

**Note (2)** Supply voltage limits are for the PrismaMINI-H. The backlight of the panel is to be powered through the PrismaMINI-H board.

**Note (3)** Permanent damage to the device may occur if maximum values are exceeded.



## 9 Connectors

### 9.1 Connector Overview

CN	DESCRIPTION	TYPE	MANUFACTURER
CN1	HDMI Input	2203H-18-T-R	Nexus
CN2	LVDS	DF14-25P-1.25H	Hirose
CN3	Power input	DF13-6P-1.25H	Hirose

### 9.2 Power Connector – CN3

POWER CONNECTOR CN3		
Pin	Signal	Description
1	VIN_12V	Power in +12V
2		
3	GND	Ground
4		
5	VIN_3V	Power in +3,3V
6		

### 9.3 Input Connector – HDMI – CN1

HDMI CONNECTOR CN1		
Pin	Signal	Description
1	HDMI_HP	Source Hot Plug Detection
2	HDMI_VCC	+5V
3	HDMI_PLUG	Sink cable plug detection*
4	HDMI_SDA	DDC Data
5	HDMI_SCL	DDC Clock
6	CEC	Optional HDMI CEC
7	HDMI_RXC-_IN	Differential TMDS Clock-
8	GND	Ground
9	HDMI_RXC+_IN	Differential TMDS Clock+

Pin	Signal	Description
10	HDMI_RX0-_IN	Differential TMDS Data 0-
11	GND	Ground
12	HDMI_RX0+_IN	Differential TMDS Data 0+
13	HDMI_RX1-_IN	Differential TMDS Data 1-
14	GND	Ground
15	HDMI_RX1+_IN	Differential TMDS Data 1+
16	HDMI_RX2-_IN	Differential TMDS Data 2-
17	GND	Ground
18	HDMI_RX2+_IN	Differential TMDS Data 2+

\* Connect to standard HDMI connector pin-17 or standard DVI connector pin-15 (both are ground)



## 9.4 Output Connector – LVDS – Backlight - CN2

LVDS CONNECTOR CN2		
Pin	Signal	Description
1	SVCC	Switched panel power supply +3,3V
2		
3	GND	Ground
4		
5	TXA3+	LVDS data
6	TXA3-	LVDS data
7	TXACLK+	LVDS clock
8	TXACLK-	LVDS clock
9	TXA2+	LVDS data
10	TXA2-	LVDS data
11	TXA1+	LVDS data
12	TXA1-	LVDS data
13	TXA0+	LVDS data
14	TXA0-	LVDS data
15	LVDS_OPT	LVDS Option
16	GND	Ground
17	U_TX	UART TX
18	U_RX	UART RX
19	GND	Ground
20	BKL_EN	Backlight Enable
21	BKL_ADJ	Backlight PWM
22	GND	Ground
23		
24	BKL_VCC	+12V Backlight Power supply
25		

## 10 Supported Panels and Backlights (Inverter/Converter)

Panels and Backlights Options (Note 1)	Hardware Options
Panel Voltage (SVCC) (Note 1)	3,3V (Ext. Source)
Pixel Per Clock	1
Backlight Voltage (BKL_VCC)	12V
Backlight Control Type	PWM
Voltage Level of PWM Signal (BKL_ADJ)	3,3V
Voltage Level of Backlight Enable Signal (BKL_EN)	3,3V

**Note (1):** The Panel Power Supply Input (VIN\_3V) is switched through to the Panel SVCC.





## 11 Hardware Information

Part Number	Operating Temperature Range	Status
PR-01-410	0..+70°C	Obsolete
PR-01-410_A1	-20..+80°C	Active

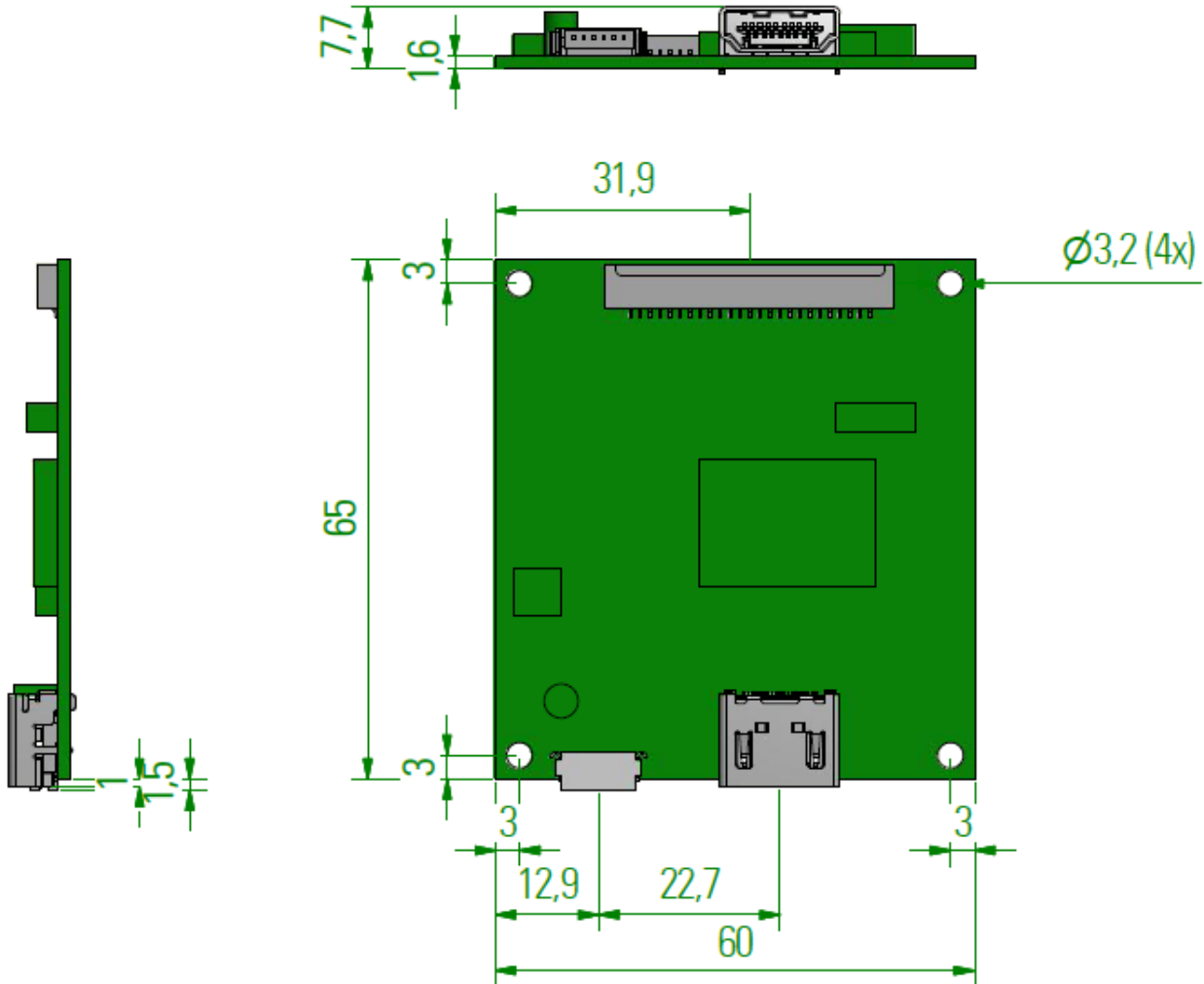
### 11.1 Reference KIT

Please note the serial programming interface on PrismaMini is shared with CN2 LVDS connector.

Ordering Code	Description	Comment
CH-01-023R1.1	G070Y2-L01 Rev.C2 7,0/WVGA/500cd+C	
PA-03-100	PrismaMINI-H-00/G070Y2-L01	
KA-30-409	Cable PrismaMini/G070Y2-L01 300mm	Including programming interface connector.
KA-30-408	Cable Power PrismaMini/open end 500mm	
ZU-02-370	IF370-00-R10programingadap.Pris./Art.NET	optional
ZV-90-026	Software ChandlerRover Windows	optional



## 12 Mechanical Dimensions



Item	Description	Remarks
Length	60 mm	$\pm 0.2$ mm
Width	65 mm	$\pm 0.2$ mm
Height	7.7 mm	+ 0.3 mm
Weight	21 g	

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