

# MRA DIGITAL

## VGA-612 SD/SD+

### VGA OLED Driver Board Datasheet

#### Features and Benefits

##### Multiple Video Inputs

- HDMI
- NTSC/ PAL/ RS 170
- DVI
- Analog RGB

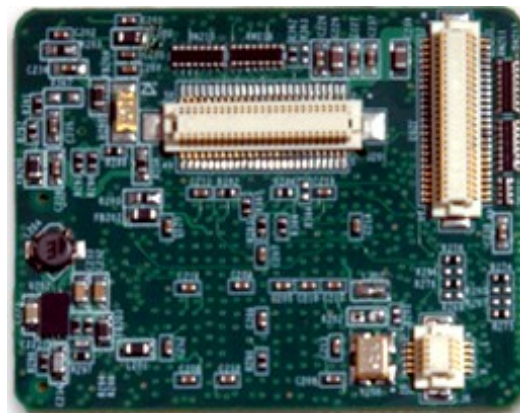
OLED Brightness and Color Control

Built in EDID

Built-in DC/DC Power Conversion

Low Input Voltage Range

USB Calibration Software Via PC



#### VGA OLED Driver

The VGA-612SD OLED driver board for the eMagin VGA OLED is designed for monocular, binocular and stereoscopic applications where each display engine must move independently and/or receive a different video signal.

The VGA-612SD is designed such that when the OLED is installed, the center of the OLED relative to the visible pixels is located exactly in the center of the PCB. This allows for a relatively simple mechanical board placement and mounting within the optical cavity. A 50 pin 3mm stacking height Hirose DF12 micro connector provides the input video and power signals.

The VGA-612 is also with a plus options which includes the following capabilities:

1. Image cropping and shifting
2. Content viewable screen saver
3. Video Scaling
4. Test Images

The VGA-612 driver is available with a micro controller to allow for custom applications features, such as the addition of dials, push buttons etc.

Our USB base PC application and configuration cable provides calibration adjustment for, color gain/offset, brightness, image orientation, firmware upgrades and other register values.

#### Power Consumption

Input Voltage	3.5 – 5.5 V DC
Power Consumption	350mW (Depends on Configuration)

#### Input Video Format

HDMI, DVI, Analog RGB, NTSC, PAL, RS170	640 x 480
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#### EDID

Default	640 x 480 @ 60Hz
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#### Software Configuration

USB - PC Application	Control Brightness
	Gamma Updates
	Firmware Upgrades
	Auxiliary Input/Outputs

#### Mechanicals

Dimension (L x W )	1.2 x 1.5 inches
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#### Auxiliary Features

6 Analog/ Digital Inputs/Outputs

Additional Software Features via On board Micro-controller

## VGA-612SD

Single HDMI Input	Mono (1 OLEDS)
Single DVI input	Mono (1 OLEDS)
Analog RGB input	Mono (1 OLEDS) (no audio)
HDMI Audio	No

## VGA-612SD+

Single HDMI Input	Mono (1 OLEDS)
Single DVI input	Mono (1 OLEDS)
Analog RGB input	Mono (1 OLEDS) (no audio)
HDMI Audio	No

## Video Input #1: DVI / HDMI

Pin #	Definition	Function
JST - SM20B-SRSS-TB		
1	Data 2M	Digital Red Negative
2	Data 2M	Digital Red Positive
3	Ground	Ground
4	Data 1M	Digital Green Negative
5	Data 1P	Digital Green Positive
6	Ground	Ground
7	Data 0M	Digital Blue Negative
8	Data 0P	Digital Blue Positive
9	Ground	Ground
10	CLK M	CLK Negative
11	CLK P	CLK Positive
12	Ground	Ground
13	DVI VCC	+5V
14	Hot Plug	Hot Plug Detect
15	SCL	DDC Clock
16	SDA	DDC Data
17	Input Power	4.5 – 5.5V DC
18	Ground	Ground
19	Ground	Ground
20	Reserved	Reserved

## Video # 2 (Composite)

NTSC	Coaxial Connection
PAL	Coaxial Connection
RS170	Coaxial Connection

## Video Input # 3: Analog RGB

Pin #	Definition	Function
JST - SM20B-SRSS-TB		
1	Reserved	Reserved
2	Red	Analog Red Video
3	Red Return	Analog Red Return
4	Reserved	Reserved
5	Green	Analog Green Video
6	Green Return	Analog Green Return
7	Reserved	Reserved
8	Blue	Analog Blue Video
9	Blue Return	Analog Blue Return
10	VSYNC	VSYNC
11	HSYNC	HSYNC
12	Ground	Ground
13	Reserved	Reserved
14	Reserved	Reserved
15	Reserved	Reserved
16	Reserved	Reserved
17	Input Power	4.5 – 5.5V DC
18	Ground	Ground
19	Ground	Ground
20	Reserved	Reserved

## Aux Connector : Power, UART, GPIO

Pin #	Definition	Function
JST - SM20B-SRSS-TB		
1,5-9	Reserved	Reserved
2	+3.3V	Power (300ma—max)
3	UART TX (3.3V)	TX from Micro
4	UART RX (3.3V)	RX from Micro
5-11	Reserved	Reserved
12	Ground	Ground
13	GPIO	GPIO pins
14	GPIO	GPIO pins
15	GPIO	GPIO pins
16	GPIO	GPIO pins
17	GPIO	GPIO pins
18	GPIO	GPIO pins
19-20	Reserved	Reserved

## Wireless Low Latency Video (WLLV)

Wireless Low Latency Video – Make your OLED based product wireless by using MRA Digital wireless video technology. Transmitting up to 1080p with 1-2 frame of latency at ranges over 100 meters with Wi-Fi and miles using microwave or Wi-Fi Max. Contact us for more info.

## Ordering Information

Part Number	Description
VGA-612SD	Single Input OLED Driver (HDMI/DVI inputs)
VGA-612SD-ARGB	Single Input OLED Driver (Analog RGB input)
VGA-ANALOG-C	Analog RGB Video & Power Cable
VGA-1001	USB Configuration Cable
VGA-DVI-C	DVI Video & Power Cable
VGA-HDMI-C	HDMI Video & Power Cable

## Contact Information

Telephone	443-224-8955 / 240-447-8803
Email	<a href="mailto:sales@mrادigital.com">sales@mrادigital.com</a>
Web	<a href="http://www.mradigital.com">www.mradigital.com</a>

[www.mradigital.com](http://www.mradigital.com) - [sales@mrادigital.com](mailto:sales@mrادigital.com) 443-224-8955

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