

# **LI-OV5640-MIPI-AF SPECIFICATION**

**Rev 2.2  
Leopard Imaging Inc.**

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## Version History

| Version | Description                           | Release Date  |
|---------|---------------------------------------|---------------|
| 1.0     | First Release.                        | 9. Mar. 2014  |
| 2.0     | Updated Module to V2.0.               | 13. Oct. 2017 |
| 2.1     | Updated Module to V2.1.               | 20. Dec. 2019 |
| 2.2     | Deleted info quoted from sensor spec. | 20. May. 2022 |

# LI-OV5640-MIPI-AF SPECIFICATION

## Key Information

| Module Part#                |              | LI-OV5640-MIPI-AF                                                                                                                      |
|-----------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Module Size                 |              | 36.25 (L) x 8.50 (W) x 5.50 (H) mm                                                                                                     |
| Sensor Type                 |              | OV5640                                                                                                                                 |
| Array Size                  | QSXGA        | 2592 (H) x 1944 (V)                                                                                                                    |
| Power Supply                | Core         | 1.5V +/- 5% (with embedded 1.5V regulator)                                                                                             |
|                             | Analog       | 2.6 ~ 3.0V (2.8V typical)                                                                                                              |
|                             | I/O          | 1.8V / 2.8V                                                                                                                            |
| Lens                        |              | 1/4"                                                                                                                                   |
| Focus (F.NO)                |              | 2.6                                                                                                                                    |
| View Angle                  |              | 65° +/- 3°                                                                                                                             |
| Image Area                  |              | 3673.6 x 2738.4 μm                                                                                                                     |
| Object Distance             |              | 10 cm ~ Infinity                                                                                                                       |
| Sensitivity                 |              | TBD                                                                                                                                    |
| Pixel Size                  |              | 1.4 x 1.4 μm                                                                                                                           |
| IR Cut Filter               |              | 650 nm                                                                                                                                 |
| Sensor Temperature Range    | Operating    | -30°C to 70°C                                                                                                                          |
|                             | Stable Image | 0°C to 50°C                                                                                                                            |
| Output Formats              |              | 8-bit / 10-bit RGB RAW output                                                                                                          |
| Maximum Image Transfer Rate |              | QSXGA (2592 x 1944): 15 fps; 1080P: 30 fps;<br>1280 x 960: 45 fps; 720P: 60 fps;<br>VGA (640 x 480): 90 fps; QVGA (320 x 240): 120 fps |
| Dynamic Range               |              | TBD                                                                                                                                    |
| Substrate                   |              | FPC                                                                                                                                    |
| IC Package                  |              | 71-pin CSP3                                                                                                                            |
| Power Requirement           | Active       | TBD                                                                                                                                    |
|                             | Standby      | TBD                                                                                                                                    |
| Fixed Pattern Noise         |              | TBD                                                                                                                                    |
| Shutter                     |              | Rolling shutter / Frame exposure                                                                                                       |
| Dark Current                |              | TBD                                                                                                                                    |
| Package Dimensions          |              | 5985 x 5835 μm                                                                                                                         |

**Pin Assignment**

| No. | Name           | Pin Type | Description                                                     |
|-----|----------------|----------|-----------------------------------------------------------------|
| 1   | STROBE         | I/O      | Strobe output or scan chain test mode input                     |
| 2   | AGND           | Ground   | Ground for analog circuit                                       |
| 3   | SDA            | I/O      | SCCB data                                                       |
| 4   | AVDD           | Power    | Analog power                                                    |
| 5   | SCL            | Input    | SCCB input clock                                                |
| 6   | RESET          | Input    | Reset (active low with internal pull-up resistor)               |
| 7   | NC             |          |                                                                 |
| 8   | PWDN           | Input    | Power down (active high with internal pull- down resistor)      |
| 9   | NC             |          |                                                                 |
| 10  | DVDD1.5V       | Power    | Power for digital core                                          |
| 11  | DOVDD1.8V/2.8V | Power    | Power for I/O circuit                                           |
| 12  | MDP1           | I/O      | DVP data output port 9/MIPI TX second data lane positive output |
| 13  | XCLK           | Input    | System input clock                                              |
| 14  | MDN1           | I/O      | DVP data output port 8/MIPI TX second data lane negative output |
| 15  | DGND           | Ground   | Digital Ground                                                  |
| 16  | MCP            | I/O      | DVP data output port 7/MIPI TX clock lane positive output       |
| 17  | NC             |          |                                                                 |
| 18  | MCN            | I/O      | DVP data output port 6/MIPI TX clock lane negative output       |
| 19  | NC             |          |                                                                 |
| 20  | MDP0           | I/O      | DVP data output port 5/MIPI TX first data lane positive output  |
| 21  | NC             |          |                                                                 |
| 22  | MDN0           | I/O      | DVP data output port 4/MIPI TX first data lane negative output  |
| 23  | AF-VCC2.8V     | Power    | Power for analog circuit                                        |
| 24  | AF-AGND        | Ground   | Ground for analog circuit                                       |

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## Mechanical Diagram

