# MERCURY&MERCURY2 QuickGuide

Thank you for choosing DAHENG IMAGING products! This guide will help you get started as quickly as possible with our products. For more information(e.g. detailed manuals, CAD/3D drawings, driver software, etc.), please visit: www.daheng-imaging.com/en.

This guide applies to the following products:

**MERCURY**
- MER-U3(-L) Series
- MER-G(-P) Series

**MERCURY2**
- MER2-U3(-L) Series
- MER2-G(-P) Series

**MERCURY2 Pro**
- ME2P-U3 Series
- ME2P-G-P Series

**MERCURY2 Super**
- ME2S-U3 Series
- ME2S-G-P Series

**MERCURY2 Lite**
- ME2L-U3(-L) Series

**MERCURY2 China**
- ME2C-G(-P) Series

**China Daheng Group, Inc. Beijing Image Vision Technology Branch**
Website: www.daheng-imaging.com/en
Sales Email: isales@daheng-imaging.com
Sales Tel: +86 10 8282 8878
Support Email: isupport@daheng-imaging.com

## I. Download and Installation (Driver/Software)

### ■ Download

Please visit our website www.daheng-imaging.com/en and download the latest driver and software from [Downloads] → [Software].

### ■ Installation

After uncompressing the download file, please run the setup program(.exe file). You can choose the components which you need during the installation process.
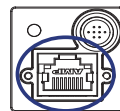
If you have any problems during the installation, please contact our technical support engineer for more detailed instructions: isupport@daheng-imaging.com.
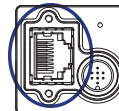
## II. Power
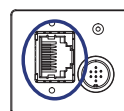
### ■ GigE Interface Camera

• Via PoE (only for PoE Camera )

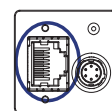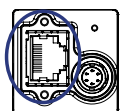The power provided must adhere to the requirements specified in IEEE 802.3af.

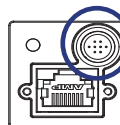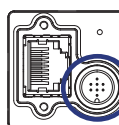| MER-G-P | MER2-G-P | ME2P-G-P | ME2S-G-P | ME2C-G-P |
|---|---|---|---|---|

• Via external DC power supply

MER: +12VDC(±10%)

MER2/ME2P/ME2S/ME2C: +12VDC~+24VDC (±10%)

Camera can get power via a standard I/O cable.
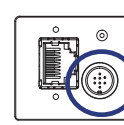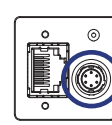
| MER-G(-P) | MER2-G(-P) | ME2P-G-P | ME2S-G-P | ME2C-G(-P) |
|---|---|---|---|---|

⚠ Voltage outside of the specified range or use of connectors that do not match the IO port may cause camera damage.

ⓘ When you supply power to the camera both via the camera's RJ45 jack and via the I/O port, the camera will get power via the I/O port. And if you cut off the I/O port, the camera will get power via PoE and may restart.

### ■ USB3.0 Interface Camera

• Power supply through USB3.0 interface: 5VDC



MER-U3    MER-U3-L    MER2-U3    MER2-U3-L    ME2P-U3    ME2L-U3    ME2L-U3-L    ME2S-U3

• Via external DC power supply

ME2S-1610/2020/2440 is recommended : +12VDC~+24VDC (±10%)

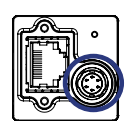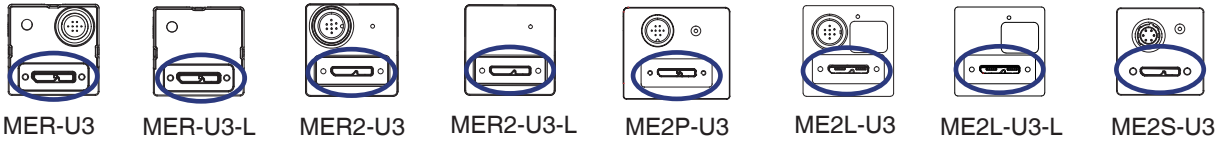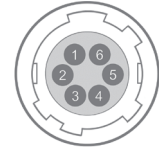Camera can get power via a standard I/O cable.



ME2S-1610/2020/2440

⚠ Cameras that require an external power supply will only work if the USB3.0 cable and the external power supply are properly connected to the camera at the same time.

## III. I/O Port



**Available for ME2L-U3 Series**

| Pin | Definition | Description |
|---|---|---|
| 1 | Line 0+ | Opto-isolated input + |
| 2 | GND | GPIO GND |
| 3 | Line 0- | Opto-isolated input - |
| 4 | NC | NC |
| 5 | Line 2 | GPIO input/output |
| 6 | NC | NC |
| 7 | NC | NC |
| 8 | NC | NC |

**Available for other 8-pin cameras except ME2L-U3 Series**

| Pin | Definition | Color | Description |
|---|---|---|---|
| 1 | Line 0+ | Green | Opto-isolated input + |
| 2 | GND | Blue | PWR GND & GPIO GND |
| 3 | Line 0- | Gray | Opto-isolated input - |
| 4 | POWER_IN/ NC | Purple | GigE: Camera external power USB3.0: NC |
| 5 | Line 2 | Orange | GPIO input/output |
| 6 | Line 3 | Pink | GPIO input/output |
| 7 | Line 1- | White green | Opto-isolated output - |
| 8 | Line 1+ | White blue | Opto-isolated output + |

**Available for 6-pin camera**

| Pin | Definition | Description |
|---|---|---|
| 1 | POWER_IN | Camera external power +12VDC(-10%)~+24VDC(+10%) |
| 2 | Line0+ | Opto-isolated input + |
| 3 | Line2 | GPIO input/output |
| 4 | Line1+ | Opto-isolated output + |
| 5 | Line0-/1- | Line0-: Opto-isolated input - Line1-: Opto-isolated output - |
| 6 | GND | PWR GND & GPIO GND |

## IV. Running the Acquisition Program

### ■ Connecting the camera

After the camera is connected properly, the LED on the back panel of the camera shows green continuous, it indicates that the camera has been ready for acquiring images or other operations.

### ■ GigE IP Configuration

(USB3.0 interface camera does not require IP configuration)

If the camera is first used, Please run the GxGigEIPConfig  by the following ways: "Desktop\GxGigEIPConfig" or "Start\Galaxy Devices\GxGigEIPConfig"

IP address, configuration modes, user-defined name of the cameras, reset and reconnection of cameras can be operated in the software.

## ■ Running the Acquisition program

Run the Demo (demonstration program). You can open the demo  by the following ways: "Desktop\Galaxy Viewer" or "Start\Galaxy Devices\Daheng Galaxy Viewer"

In the Demo, you can adjust the cameras' parameters, acquire and save images.

## V. Precautions

### Usage

| | |
|---|---|
| ⚠️ **Warning** | 1) Do not install and operate the product in extreme environments with vibration, high temperature, humidity, dust, strong magnetic fields, explosive/corrosive smoke or gases, as it may damage the camera, cause a fire or electric shock.<br>2) Do not aim at the product with high intensity light sources directly, as it may damage the sensor.<br>3) If the device damaged, emits smoke, odor or noise, please turn off the power and unplug the power cord immediately, and contact our technical support engineer.<br>4) Unauthorized disassembly, repair, or modification of products is prohibited as it may damage the camera or cause a risk of electric shock.<br>5) In the use of the device, you must be in strict compliance with the electrical safety regulations of the nation and region.<br>6) Please use the power supply provided by reputable manufacturers that meets the camera power limit requirements, otherwise, it will damage the camera. |
| ⚠️ **Caution** | 1) Check whether the device's package is in good condition, whether there is damage, deformation, etc. before unpacking.<br>2) After unpacking, please carefully inspect the quantity and appearance of the product and accessories for any abnormalities.<br>3) Please store and transport the product according to the specified storage and transportation conditions, ensure that the storage temperature and humidity meet the requirements. |

### Personal Safety

| | |
|---|---|
| ⚠️ **Warning** | 1) It is strictly prohibited to perform device wiring, dismantling, maintenance and other operations while powered on, otherwise there may be a risk of electric shock.<br>2) It is prohibited to touch the camera directly during using, otherwise there may be a risk of burns.<br>3) Please install and use the camera in accordance with regulations, otherwise there may be a risk of falling and get injured.<br>4) The edges of the lens mount and fan are relatively sharp, so pay attention to the risk of scratches during installation or use. |

## Guidelines for Avoiding EMI and ESD

■ CAT-5e cables or above with S/STP shielding are recommended for GigE interface cameras

■ USB cables certificated by USB IF with lock screw are recommended for USB3.0 interface cameras

■ Using shielded cable can avoid electro-magnetic interface. Shielding layer of the cable should conduct to ground nearby and not until stretched too long. When many devices need conduct to ground, using single point grounding to avoid earth loop

■ Try to use camera cables that are the correct length. Avoid coiling camera cables. If the cables are too long, use a meandering path rather than coiling the cables

■ Keep your cameras away from equipment with high voltage, or high current (as motor, inverter, relay, etc.). If necessary, use additional shielding

■ ESD (electro-static discharge) may damage cameras permanently, so use suitable clothing (cotton) and shoes, and touch the metal to discharge the electro-static before operating cameras

## Environmental Requirements

■ Housing temperature during operation: 0°C ~ 45°C, humidity during operation: 10% ~ 80%

■ Storage temperature: -20°C ~ 70°C

■ To avoid collecting dust in the optical filter, always keep the plastic cap on cameras when no lens is mounted

■ PC requirement: Intel Core 2 Duo, 2.4GHz or above, and 2GB memory or above

■ NIC requirement for GigE interface cameras: Intel Pro 1000 NIC or higher performance Gigabit LAN confirming to IEEE802.3af standard, CAT-5e or CAT-6 cables, less than 100m, Gigabit Switch confirming to IEEE802.3af standard

■ USB3.0 host controller requirement for USB3.0 interface cameras: Intel controller integrated in mainboard is recommend. Select Renesas controller if external frame grabber is needed

■ The cable must have a locking screw at the end of the device for USB3.0 interface cameras

■ Make sure that cameras are transported in the original factory packages

## Camera Mechanical Installation Precautions

■ The M3 screw and the camera should have a screw length between 2.5 and 2.7mm, and the M2 screw and the camera should have a screw length between 3 and 3.3mm

■ The M3 screw assembly torque $\leq$ 1N·M, and the M2 screw assembly torque $\leq$ 0.5N·M. If the screw assembly torque is too large, it may cause the camera thread stripping.