

# DH-MV-A5051M/CG200E Area Scan Cameras



- 1Gbps Ethernet interface , max 100m transmission
- 128MB on-board frame buffer
- Supports software trigger /external trigger/mixed mode / free run mode
- Supports several image data formats output /ROI /binning , decimation /mirror etc
- Supports POE and DC 6-26V wide-range power supply
- Conforms to GigE vision V2.0 protocol and GenICam standard



## System Overview

As we all know machine vision is a mature technology widely used in condition monitoring and product inspection. It not only provides more consistent and reliable consequents resulting in improved product quality but also higher yields and lower production cost. As the core component of the machine vision system, industrial camera requires high image quality, high transmission rate, standard interface and reliable & stable performance. As one of the worlds' best security product suppliers, Dahua is able to provide serialized industrial cameras with excellent image, high frame rate and related software. Our area scan cameras portfolio includes matrix cameras in color and monochrome versions as well as with 0.5 megapixel resolution, which enables customers to flexibly integrate the camera with general standard interfaces with GigE vision.

## Functions

### CMOS sensor

Dahua A5051M/CG200E area scan camera embeds 0.5MP global shutter and 4.8X4.8 pixel size CMOS sensor that can provide high quality and original image. Every pixel in CMOS sensor has its own amplifier and there are multiple A/D converters so each picture element can be read out individually, which means that pixels can be randomly addressed and accessed with AOI (automated optical inspection) and realize lower power dissipation than the CCD cameras. Combined with the advantage of the words' leading image processing technology we can effectively overcome the noise issue and output excellent picture equivalent to CCD camera.

### GigE vision

GigE vision is a camera interface standard which is developed based on Gigabit Ethernet communication protocol that provides secure and cost-effective transmission of image data. In the field of industrial application, GigE vision supports high quality image fast transmission for up to 100m with general Ethernet cable (CAT-5 or higher grade). And with this kind of port the camera can work compatibly with various hardware and software from different manufacturers.

### Global Shutter

An imaging sensor is consisting of lots of pixels. For knowing the whole image all of them have to be readout via A/D conversion by the ADC in once shutter. By global shutter mode all of the pixels will be readout simultaneously instead of in parallel. This difference makes the output from a industrial camera with global shutter sensor will not change with the fluctuating environmental brightness and capture the high speed moving object easily.

### Multi trigger modes

In the application field of the machine vision, Dahua industrial camera is capable of capturing image via signal trigger and exposure frequency set on SDK. Besides, image capture will not be affected in case of induced network load and processing time of machine vision system.

### High capacity buffer

With the stable 128MB on-board frame buffer, the camera leaves more time for the host computer to process pictures and realizes no frame loss. 128MB buffer is able to store different number of pictures according to specific sensor.

### Rich SDK functions

Embedded with industry leading SDK software programming and debugging capability, original pictures can still be clearly captured even in harsh and low light industrial environment by adjusting the sharpness /noise reduction/ gamma correction /LUT (look-up-table: make adjustments to the picture within the camera)/black level correction/brightness/contrast and other ISP functions which are set in the SDK.

### POE and wide-range power supply

The camera supports DC 6-26V wide-range power supply makes it suits even the most unstable power supply conditions. Meanwhile power over Ethernet (POE) technology can ensure the safe operation of the existing network without another power cable to reduce the total cost.

### Several image formats output

Dahua industrial cameras output raw data with wide spectral range such as mono, color and RGB8 packed etc. Different types of format is equipped with corresponding data capacity which makes it suit various application scenarios.

## Camera

| Specification        | Model | A5051MG200E   | A5051CG200E   |
|----------------------|-------|---|---|
| Lens Interface       |       | C-mount   |   |
| Sensor               |       | Onsemi<br>PYTHON 500  |   |
| Sensor Spec          |       | CMOS<br>1/4" Global shutter   |   |
| Resolution           |       | 0.5MP<br>800(H)x600(V)  |   |
| Framerate            |       | 200fps  |   |
| Pixel Size           |       | 4.8X4.8   |   |
| Interface            |       | GigE,POE  |   |
| Mono/Color           |       | Mono  | Color   |
| S/N Ratio            |       | >38db   |   |
| WDR                  |       | 60db  |   |
| GPIO Interface       |       | 6-pin Hirose connector;1 channel opto-isolated input;1 channel opto-isolated output |   |
| Image Format         |       | Mono:Mono8/10/10 Packed   | Color:Mono8,BayerRG8/10/10Packed,BayerGB8/10/10Packed,RG<br>B8Packed,YUV422Packed |
| Gain                 |       | 0db ~ 18db  |   |
| Gamma                |       | Range:0~4,Supports LUT  |   |
| Exposure time        |       | 16μs~1s   |   |
| Image Buffer         |       | Supports 64MB   |   |
| User Set             |       | Supports two sets of user-defined configurations                                    |   |
| Dimension            |       | 29mmx29mmx42mm(Not including the lens mount and the rear case connectors)           |   |
| Net Weight           |       | 88g(0.19lb)   |   |
| Power Supply         |       | POE/DC power supply by Hirose connector , with voltage range from 6V to 26V         |   |
| Power Consumption    |       | 12V=3.3w  |   |
| Operating Conditions |       | -30° C ~ +50° C (-22° F ~ +122° F) / Less than 95% RH                               |   |
| Storage Conditions   |       | -30° C ~ +80° C (-22° F ~ +176° F) / Less than 95% RH                               |   |

**Ordering Information**

| Type                          | Part Number       | Description  |
|-------------------------------|-------------------|--|
| A5051M/CG200E<br>GigE Cameras | DH-MV-A5051MG200E | 0.5Megapixel Mono 200 framerate GigE Area Scan Camera  |
|                               | DH-MV-A5051CG200E | 0.5Megapixel Color 200 framerate GigE Area Scan Camera |

**Dimensions (mm)**

