

C40W

Product Specification



Preface

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Please read this manual first to use it correctly and to ensure that the functions to be realized are working properly.

	WARNING: Situations that may involve the safety of, or injury to, the user of the equipment
	Special Note: There may be a risk of corrupting the integrity of the data, damaging the device firmware and hardware
	Description: Annotations, terminology, etc.

dates	Revised version	Modify description	author
2023/7/13	V0.1	first draft (of writing)	Bill Callahan
2023/7/19	V0.2	Update product boundaries, 2D dimensional drawings, power consumption; remove product weights	Bill Callahan
Feb 28, 2024	V1.0	ADAS and height limiting functions are described separately	Bill Callahan

catalogs

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1. Products

C40W is an intelligent IPC installed in the front windshield of the vehicle, used to monitor the road conditions in front of the vehicle's driving direction, and can support the identification of bridge holes and high limit signs, road sign recognition detection and standard ADAS functions. the device has a built-in MIC and speakers, and when the device is composed of a solution with the MDVR, it can realize the recording of the driver's compartment and the alarm alerts on the road conditions in the forward direction; C40W also supports stand-alone work, and when working on its own, the device can be connected to the car's power supply. C40W also supports stand-alone operation, when working, the device can be connected to the vehicle electric power, through the external power box to access the vehicle status signal, GPS signal and R-watch reminder, can realize real-time road condition detection and alarm reminder.

For bridge height limit detection scenarios, the device also supports external keyboard input, for vehicle height variable scenarios (such as agricultural machinery, warehouse trucks, vehicle height will change with the load), you can query and modify the real-time vehicle height value of the vehicle through the keyboard. The product quality is reliable, easy to install, simple to use and cost-effective.

2. functional characteristic

- Supports standard ADAS and bridge tunnel height limit detection
- Resolution: 2688* 1520@25fps or 30fps
- supports H.264/H.265 encoding and N9M 2.0 protocol
- Single-machine version (vehicle electric power supply) and slave version (PON power supply) optional, ADAS function only supports slave
- Intelligent black light solution, the night image effect is significantly better than similar products

- A variety of lens specifications are available; The default lens is 8.5mm with HFOV≈52°
- Height limit function can be applied to the car with the front windshield tilt of 43°~90° (depending on the specific lens may be different)
- Standard ADAS models are suitable for vehicles with a front windshield tilt of 20° to 95°
- Built-in MIC and speaker to achieve in-car audio acquisition and voice alarm reminder
- Supports upper and lower exit cables, and can be flexibly adapted to various models
- For the bridge height limit detection scenario: supports an external keyboard to query and modify the vehicle height value in real time, and supports the fusion and comprehensive judgment of map data and images
- Typical application: bridge height limit alarm, ADAS scenario

3. Specification

Product Model:C40W

systems	Embedded Linux
multilingualism	Support English, Chinese

video

video recording	1 line
Maximum resources	2688*1520 @ 30fps
Image Settings	Brightness, chroma, contrast, color saturation, sharpness are all adjustable
video encoding	H.264/H.265 optional, default H.264
CBR/VBR	VBR/CBR optional, default VBR

Camera parameters

Sensor type	1/1.8" 4MP CMOS Sensor
shutter speed	1/20s-1/100000s

	Focal length 8.5mm
camera shot (in a movie etc)	HFOV: 52°; VFOV: 29.5°; ±5° error
	Focal length 3.7mm
	HFOV: 125°; VFOV: 68°; ±5° error
minimum illumination	Color: 0.01Lux/F1.6
Lens Interface Type	M12
wide dynamic range	Digital Wide Dynamic
Backlight Compensation	Support
Signal-to-Noise Ratio S/N	≥45dB

transducers

Six-axis sensors	Supports rapid acceleration, rapid deceleration, rapid turn detection
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Interface (slave version)

IPC interface	RS765-6 aviation female connector
keypad interface	Little 5559-4P
R-Watch Interface	Little 5559-6P

Interface (stand-alone)

keypad interface	Little 5559-4P
R-Watch Interface	Little 5559-6P
GPS interface	Little 5559-4P
MDVR	RS765-6 aviation female connector
Vehicle power input	3pin bulk wire (DC IN+, DC IN-, ACC)
Other Expandable	BMW Male connector with Pin 10P
Interfaces	(CAN-H, CAN-L; SPEED A, SPEED B; GND; SENSOR IN1, SENSOR IN2)

pact

network protocol	HTTP,TCP,ARP,UDP,FTP,DHCP,DNS,IPV4,NTP
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Power supply related

electric power source	Standalone: 9-36V
	Slave version: 9-16V

Power Consumption Stand-alone power consumption: approx. 4.6W @24V
 Slave power consumption: approx. 3.6W @12V

Environment

operating temperature -40°C~+70°C
 humidity level 15% - 90%
 protection class IP5X

Size & Weight

sizes L126mm*Wm78m*H48.6mm Error ±2.5mm

*Actual dimensions and weights may vary depending on configuration, manufacturing process, and measurement method.

Packing list (stand-alone)

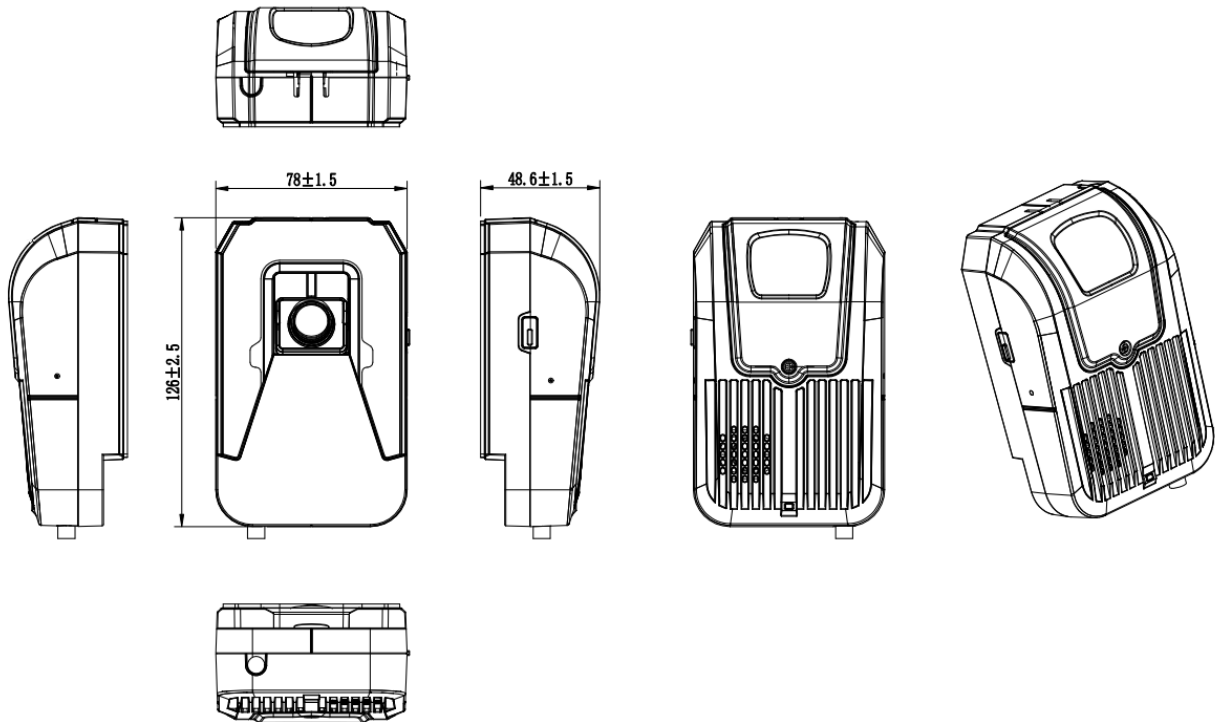
C40W*1, power box*1, 10P BMW male bulk cable*1, Alcohol cotton*1, Plastic plug for outlet hole

Packing list (slave version)

C40W*1, Tail Adapter*1, Alcohol Cotton*1, Plastic Plug for Outlet Hole

*Because the configuration varies from region to region, the final results will be based on the unboxing results

4. Dimensional drawings (in mm)



5. Special note

A description of the product boundary for the bridge height limit alarm scenario:

The device is based on the image detection and recognition of the actual scene, the installation of the set vehicle parameters and alarm conditions to generate or not to generate alarms, due to the lack of necessary key information or beyond the normal boundaries of the device at the time of the following scenarios, our products will not be able to provide you with an accurate and effective alarm reminder:

1. Excepted scenes:

- ① Super-high bridges: super-high bridges of 5 meters and above;
- ② Inadequate infrastructure: including, but not limited to, scenarios such as limit sign filler lights that do not illuminate and limit signs that are obscured and broken;
- ③ Unusual weather made it impossible to photograph the bridge and the limit sign scene;

2. Speed limits:

The speed of the vehicle shall be less than or equal to 40 Km/h when approaching and passing through the bridge during the daytime and less than or equal to 25 Km/h when approaching and passing through the bridge at night.

3. Based on the standard ADAS function and the bridge height limit detection function, the weight of the camera for the two different scenes to capture the video target is different, the image will be realized by two different sets of algorithms, and the final performance is that two different software packages are used to correspond to the two functions respectively.