



SECD-10IA-03

User's Manual V1.0

Summary

As a vehicle mounted display, SECD-10IA-03 can meet human-machine interaction, wireless communication and positioning, body control, video surveillance and other requirements under construction machinery, special machinery and other harsh conditions.

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Function and characteristics

1、 Integration of display, communication, control and video surveillance

- Show: 10.4 inch, resolution 600x800, industrial TFT LCD screen, resistance touch control
- Communication::
support GPRS wireless communication, support GPS positioning,
Support CAN communication, 2 channel, compatible J1939/CANOpen/CAN2.0B protocol
- control:
2 AI_V (or AI_I), 2 Road AI_R, 2 Road TI, 4 road PWM (reusable DO)
- Video:
Support 4, 4 single camera, segmentation, picture in picture display mode, NTSC/PAL self recognition

2、 pecial configuration program development environment

Man-machine interface: the DGUS configuration software is used to integrate the common interface display controls.

Control communication: integration of LM Studio integrated development environment to integrate common functional blocks

3、 Adapt to the harsh environment

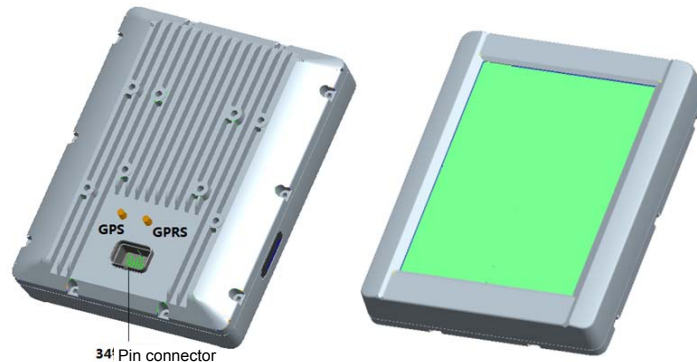
- Can be used in cold and hot environment: -25 degree at low temperature, 65 degree high temperature
- Anti - back design of power supply, more than 37V self protection, prevent burning
- Strong vibration, dusty rain, lightning and other environment for field operation

4、 Seamless connection with Rising remote monitoring system

- Support the remote unlocking machine to facilitate the management of creditor's rights

External interface function description

1、 External characteristics



2、 34 pin connector port definition

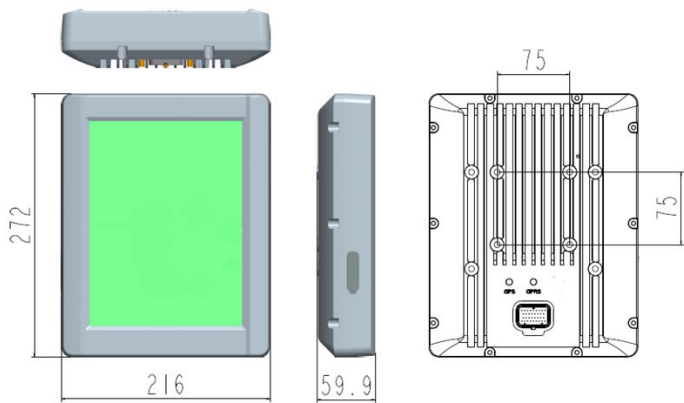
order	name	function	remark
1	CAN2_H	CAN High	
2	TI2		
3	RS	reset	
4	+12VOUT	12V ouput	
5	CAN1_L	CAN Low	
6	CAN1_H	CAN High	
7	CAMRA2_V-	Camera negative of Channel 2	
8	GND		
9	+5V OUT	5V ouput	
10	CAN2_L	CAN Low	
11	T11		
12	+12VOUT		
13	CAMRA1_V+	Camera positive of Channel 1	
14	CAMRA1_V-	Camera negative of Channel 1	
15	CAMRA2_V+	Camera positive of Channel 1	
16	CAMRA3_V-	Camera negative of Channel 5	
17	SMI		
18	AI_R1		
19	AI_1		
20	AI_2		
21	CAMRA4_V+	Camera positive of Channel 4	
22	CAMRA4_V-	Camera negative of Channel 4	
23	CAMRA3_V+	Camera positive of Channel 3	
24	GND	GND	

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25	24V in	Power input	range: 12~36VDC
26	AI_R_2		
27	PWM3	Pwm output	
28	PWM4	Pwm output	
29	PWM1	Pwm output	
30	PWM2	Pwm output	
31	reserved		
32	reserved		
33	GND	GND	
34	+24V in	Power input	

Installation of wiring

1、 size



2、 Installation method

4×M6 Screw (including a spring washer, a flat washer)

Description of product parameters and environmental indicators

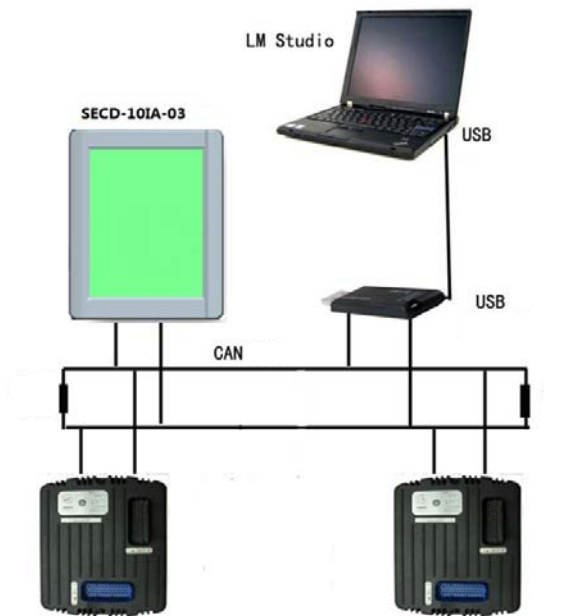
Serial number	Name	detailed
1	Video input	4, PAL / NTSC signal
2	+12V OUT output	2
3	Signal communication	CAN: 1circuit, Rate of optional, ISO11898 CAN 2.0B、J1939 GSM:1circuit, GPS link: 1 circuit
4	display	10.4inch

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		resolution: 800×600 (3RGB) TFT
5	touch	4Linear resistance touch
6	Conventional parameters	kernel: TMS320F28335 (32 bit DSP) , FGPA (video) Frequency: 150MHZ Power supply: 12~36 V.DC (Recommended voltage 24V. DC, 36 V Do not work for a long time) output voltage: 12 V.DC, 1A Consumption of current: 0.55 A. DC (24 V.DC) Power waste: ≤ 14W Video display: pip, 4 division / single
7	work environment	working temperature: - 25 ~ 65 ° C Storage temperature: - 30 ~ 80 ° C Overvoltage protection: 37.2 V Anti vibration: 4 - 300 HZ 10mm 5G Impact resistance: 50G 6ms & 11ms Relative temperature: 10%~95 % Protection grade: IP65
8	Anti-interference performance of electrostatic discharge	Power supply mode: air discharge + 15kV, contact discharge + 8kV No electricity mode: air discharge + 25kV, contact discharge 8kV
9	IS07637 anti-interference capability	Power line: IS07637 - 2 IV level Signal line: conforming to IS07637 -3
10	Anti surge grade	IEC61000 - 4 - 5 IV
11	size	272 X 216 X 59.9 (mm)

Three: development and debugging

1、 hardware development platform



Connect with the controller by CANBus. Support CAN2.0B, CanOpen, J1939 protocol

The LM USB emulator plug in PC by USB interface. And the USB emulator is connect with the display screen by CAN-bus. LM Studio (the software development environment) can be setup in PC. And the hardware development platform is completed.

2.、 software development environment

LM Studio is the platform for software project management, code editing, code compiling, code debugger, code downloading. We can use LM language to develop program.

User can develop HMI by the way of graphic user interface(GUI) . We only need to create some widget in the development environment. Then attach the value to the widget parameter. And write some LM script on the background program. Graphical show by LM studio GUI module is the same to one which is running in the device.

LM Studio (the software development environment) can be setup in PC. The user can create project, create page, add the widget, generate the script, download program, program debugger.

Appendix

《DGUS Screen development guide》
《LM Programming manual》

5、 The instructions on the camera :

1) Standard specification

This product can signal automatic identification both formats: NTSC, PAL. It is important to note when replacing different format cameras, need to install the screen after power.

For multiple display, please ensure that the camera used for unified format.

2) Installation Angle

Installed the camera at a vertical angle , please make sure that it can achieve the best effect of display. Actual situation, please according to the display effect the appropriate

adjustments.

6、Matters needing attention :

- besides controller shell with good grounding, all the sensors are connected to the controller, the load, and so on input and output points must connect into a closed loop, which all of the input and output must be connected with the controller corresponding to;
- GPRS 、GPS Antenna installation, pay attention to the antenna will tighten the joint after use.

FCC Statement

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Antenna gain including cable loss must not exceed 4.95dBi in GSM850/GPRS850, 2dBi in GSM1900/GPRS1900 for the purpose of satisfying the requirements of CFR47 2.1091. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operated in conjunction with any antenna or transmitter, except in accordance with FCC multi-transmitter evaluation procedure. Compliance of this device in all final product configurations is the responsibility of the Grantee.