AVA-610AP

10.1” In-Vehicle Management Fanless
Total IP65 NXP® i.MX8M Plus Quad Panel PC

User Manual

Release Date	Revision
Jun 2025	V1.2

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Revision History

Reversion	Date	Description
1.0	2024/02/21	Official Version
1.1	2024/09/03	Modify Aplex LOGO and add E-mark cautions Modify 1.3 dimension drawing
1.2	2025/06/10	Add Trademark Warning in P2

Warning!

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

Caution

Risk of explosion if the battery is replaced with an incorrect type.
Batteries should be recycled where possible. Disposal of used batteries must be in accordance with local environmental regulations.

The unmanaged Gigabit PoE Ethernet switch is equipped with P.S.E capability. It is designed for data communication within vehicles, to facilitate data transfer to the operation center, and to offer Ethernet connectivity and expandability. It's important to note that these features have no impact on the safety of driving and passenger well-being and the device does not possess any immunity-related functionalities.

Disclaimer

This information in this document is subject to change without notice. In no event shall Aplex Technology Inc. be liable for damages of any kind, whether incidental or consequential, arising from either the use or misuse of information in this document or in any related materials.

Packing List

Accessories (as ticked) included in this package are:
☐ Adaptor ☐ Driver & manual CD disc ☐ Other._____(please specify)

Safety Precautions

Follow the messages below to prevent your systems from damage:

- Avoid your system from static electricity on all occasions.
- Prevent electric shock. Don‘t touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
- Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

Table of Contents

Chapter 1 Getting Started

1.1 Features

- NXP®i.MX8M Plus Quad Processor
- Total IP66 with ISOBUS or M12 I/O connectors
- 10.1” 1280x800 LCD Panel with projected capacitive touch screen
- High Brightness LED backlight LCD
- Operate System: Android 11
- Wide range -20~60°C operating temperature
- 9~60V wide-rage power input

1.2 Specifications

	AVA-610AP
System	
CPU	NXP®i.MX8M Plus Quad, 4 x Cortex-A53 1.6GHz
Memory	Onboard 4GB LPDDR4-1200MHz SDRAM
Outside IO Port – I/O Connector at front	
LED	1 x LED (LED BOARD/DUAL/RED_GREEN/TB-568)
Light Sensor	1 x Ambient light sensor (TB-50)
USB Camera	1 x USB 5MP Camera (option)
NFC Module	1 x NFC Module(option)
Function Keys	F1~F6 Programmable Function Keys (option)
Outside IO Port – Standard M12 I/O Connector on the Rear Side	
ISOBUS (Default SKU)	1 x ISOBUS 4-pin DT15-4P connector for 9~60V DC input, w/1.5KV isolation protection 1 x ISOBUS 12-pin for 1x J1939+1xRS232/422/485(COM1), w/1.5KV isolation protection 1 x ISOBUS 12-pin DT15-12PB connector for 1*GbE LAN + 1*USB2.0, w/1.5KV isolation protection 4 x SMA connectors for optional Wi-Fi/BT/LTE/GPS antennas, one of the SMA connectors can be optional for 3.5mm phone jack.
M12 Connectors (2nd)	1 x M12 8-pin for 1*GbE LAN 1 x M12 8-pin for 2* USB2.0 1 x M12 8-pin for RS-232/422/485(COM1) 1 x M12 8-pin for 2-ch J1939 1 x M12 3-pin for 9~60VDC Power Input 1 x M12 8-pin for 1*RS-232(Tx/Rx) (COM2)

	1 x M12 8-pin for 2 x GPO, 2 x GPI (optional)
USB	1 x USB2.0 Type A Connector
Storage Space	
Storage	1 x Micro SD slot 1 x 32GB eMMC(default)
Expansion	
Expansion Slot	1 x Full-size mini-PCIe socket (USB2.0) for HSUPA/LTE(option) Module 1 x Full-size mini-PCIe socket (PCIe+USB2.0) for WIFI/BT (option) Module 1 x Micro SIM slot
Function Keys	
Function Keys	3 x Rear side buttons: 1 x Power on/off, 2 x Programmable(+/-)
Audio	
Audio	2 x 2W IP66 Speaker 1 x Line-out by 3.5mm Audio Jack (option) shared with 1 x SMA Connector
GPS	
GPS	1 x USB GPS Module, optional
Display – Standard LCD	
Display Type	10.1” TFT LCD
Max. Resolution	1280 x 800
Max. Color	16.7M
Luminance (cd/m^2)	500
Contrast Ratio	1000:1
Viewing Angle(H/V)	170/170
Backlight Lifetime	50,000hrs
Option	Optical bonding
Display – High Brightness LCD (option)	
Display Type	10.1” TFT LCD
Max. Resolution	1280 x 800
Max. Color	16.7M
Luminance (cd/m^2)	1000
Contrast Ratio	1000:1
Viewing Angle(H/V)	170/170
Backlight Lifetime	50,000hrs
Option	Optical bonding
Touch Screen	

Type	Projected capacitive touch screen
Interface	USB
Light Transmission	Over 90%
Glass Type	
Type	AR
Light Transmission	Over 90%
Power	
Power Input	DC 9~60V
Power Consumption	MAX:24.9W
Power Management	● 1 x Power On/Off button ● 1.5KV isolation protection ● Reverse Protection/ over voltage protection ● Power On/Off delay timing by software: Power on delay: 04 seconds(default)/ 08 seconds/ 16 seconds Power off delay: 30 seconds(default)/ 60 seconds/ 90 seconds ● Under voltage protection: System shut down when battery power below 10V/21V. (others by request) ● Optional ACC Isolated power input then make power button to be deactivate.
Mechanical	
Color	Front/Rear: Black
Construction	Engineering Plastics
Mounting	Panel Mount VESA mount 75 x 75 RAM Mount (2.25” Rubber Ball “D” size) Yoke mount(option)
IP Rating	Total IP65
Dimension (mm)	269 x 210 x 42
Net Weight	2.06 Kg
Environmental	
Operating temperature	0~50°C (-20~60°C for option)
Storage temperature	-30~70°C
Storage humidity	10 to 90% @ 40°C, non- condensing
Certification	Meet CE / FCC Class A, E-Mark
Vibration	Operating: MIL-810H Method 514.8 category4., common carrier US highway truck vibration exposure
Shock	Operating: MIL-810H Method 516.8, Procedure I, functional shock=20g

ESD	ESD with ±8KV contact, ±15KV air, class B *IEC 61000-4-2 *ISO 10605:2008
Operating System Support	ANDROID 11

1.3 Dimensions

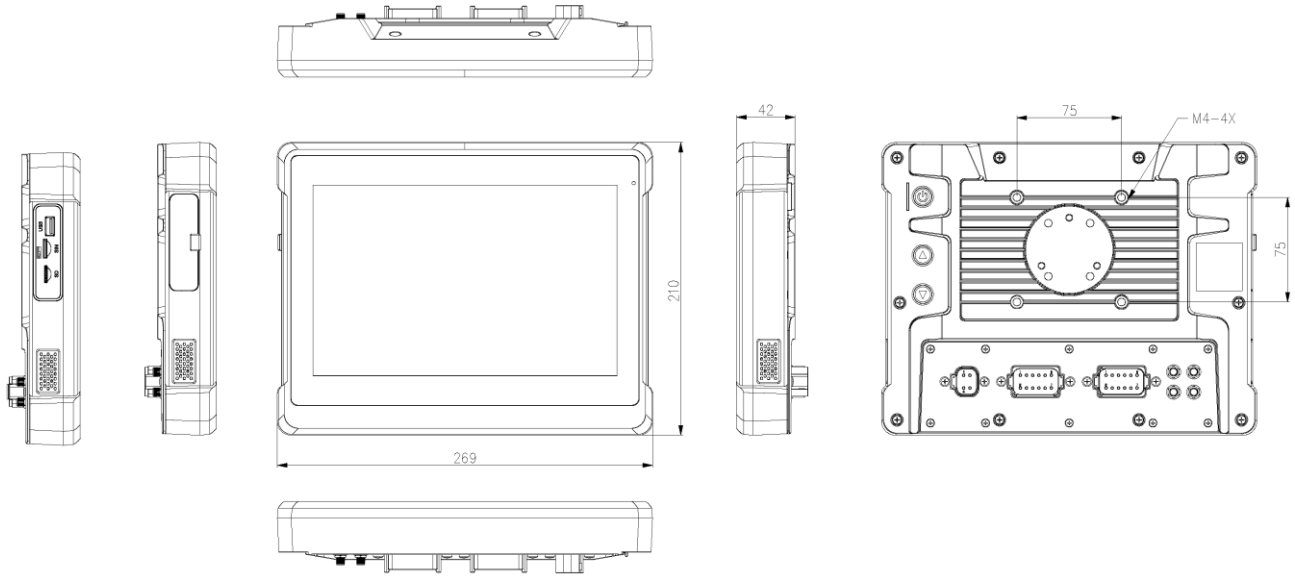


Figure 1.1: Dimensions of AVA-610API

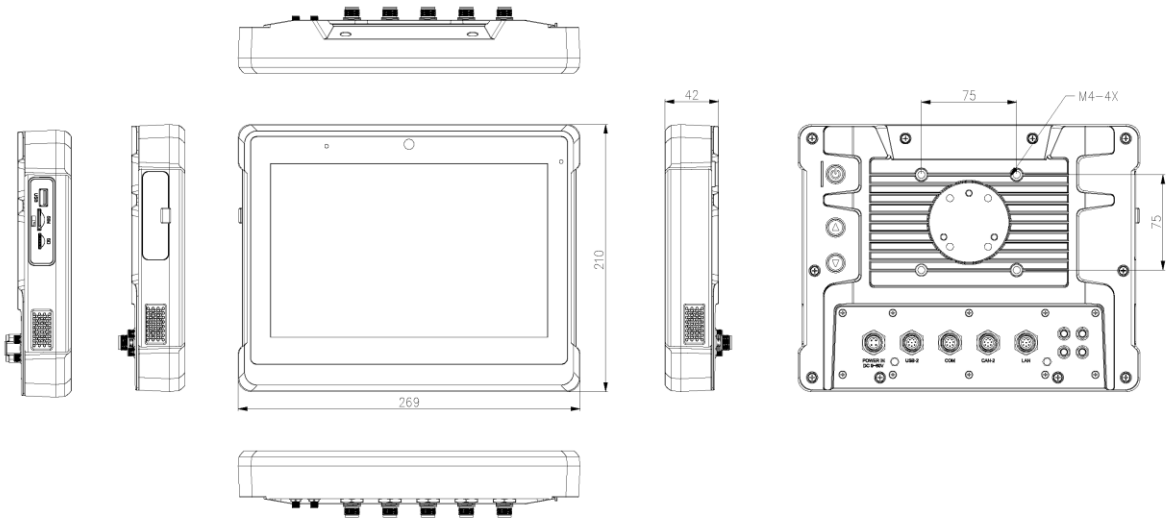


Figure 1.2: Dimensions of AVA-610APM

1.4 Brief Description of AVA-610AP

AVA-610AP adopts Engineering Plastics housing, which comes with 100% dust and waterproof guarantee, and the all-in-one fanless design. It is powered by NXP® i.MX8M Plus Quad Processor, 1 x 4GB onboard SDRAM LPDDR4 1200MHz memory, and 1 x onboard 32GB eMMC for storage. AVA-610AP is wide range DC 9~60V power input and total IP65 rated with ISOBUS or M12 connectors for either choice. Furthermore, this model support projected capacitive touch, and can be high brightness LCD and optical bonding designed for option. It supports power on/off button on the rear side for power management. AVA-610AP supports Panel Mount, space-saving VESA mounting 75 x 75mm, RAM mount and ergonomic versatile mounting: Yoke mounting for option, it can fit all kinds of industrial scenario.

Figure 1.3: Front View of AVA-610API

Figure 1.4: Rear View of AVA-610API

1.5 VESA Mounting

AVA-610AP can be VESA mounted as shown in Picture below.

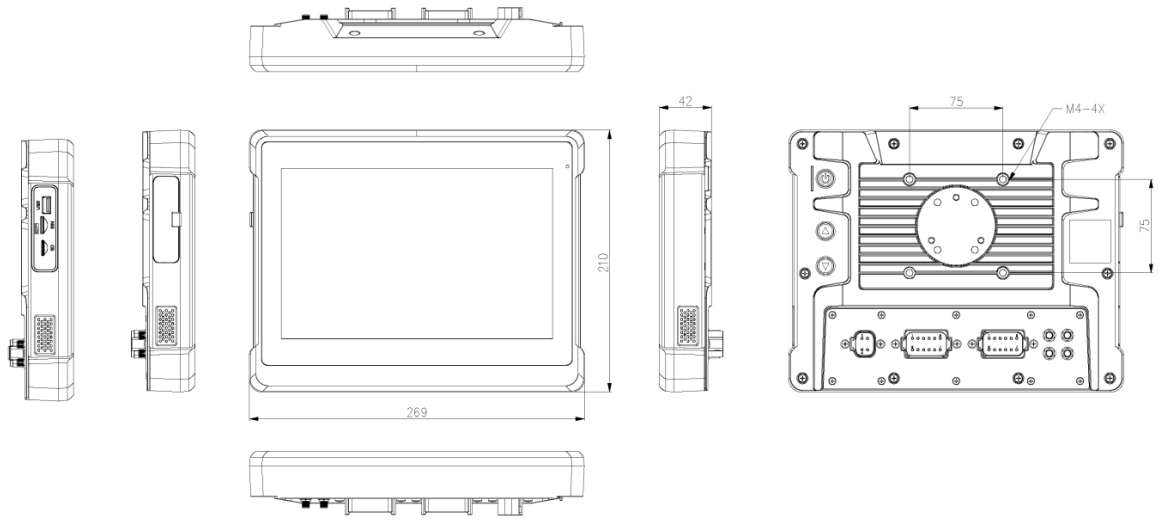


Figure 1.5: VESA mounting of AVA-610API

Chapter 2 Hardware

2.1 Motherboard Introduction

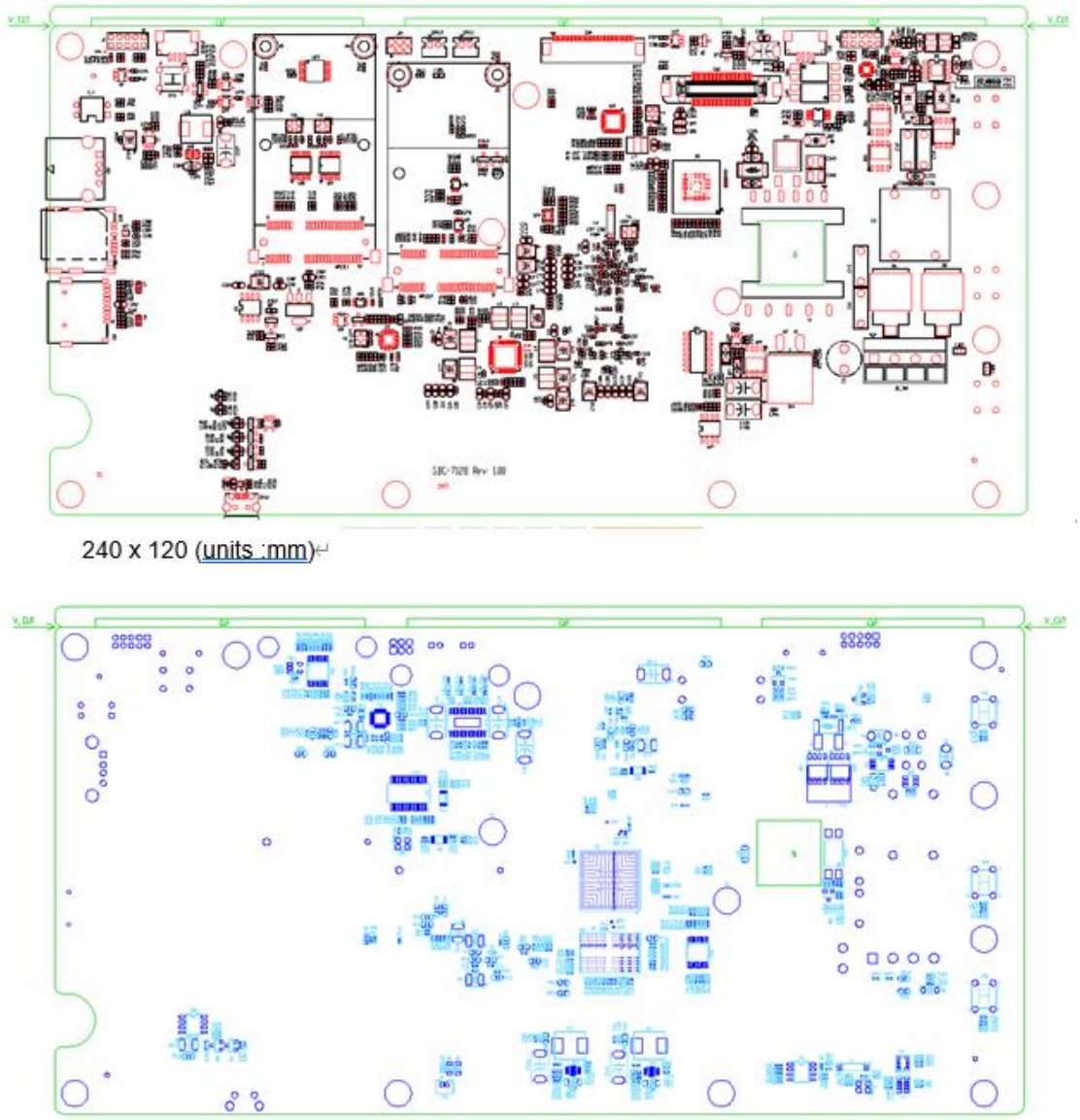
SBC-7128 is an industrial motherboard developed on the basis of Intel NXP i.MX8M plus Processor, which designed for the vehicle application system AVA-610AP.

2.2 Specifications & Dimensions

Specifications	
Form Factor	240mm x 120mm
CPU Support	NXP® i.MX8M Plus Quad, 4x Cortex-A53 up to 1.6GHz
Memory Support	Onboard 4GB LPDDR4-4000 DRAM
Storage	Onboard 32GB eMMC Flash 1 x Micro SD slot
CN3 (For TB-599)	
LVDS	1 x 18/24-bits Dual Channel LVDS
I/O	1 x USB2.0 1 x Dual Color LED 1 x SMBus for Dimming Setting 6-key programmable function keys (Reserve)
CN4 (For TB-601/TB-602)	
I/O	1 x GbE LAN 2 x USB2.0 1 x RS-232/422/485, COM1 1 x RS-232 (Tx/Rx) (COM2) 2 x CAN Bus (Support J1939) 4 x GPIO (2 x GPO, 2 x GPI)
Onboard I/O	

TB-599 Front Panel Daughter Board Specifications	
Form Factor	80mm x 30mm
Signals From SBC-7128	
Connector	Hirose Electric FX23L-60S-0.5SV, 60-pin connector (CN1)
Signals	1 x 18/24-bits Dual Channel LVDS Backlight Power 1 x USB2.0 1 x Dual Color LED 1 x SMBus for Dimming Setting 6-key programmable function keys (Reserve)
Signals to Front Panel	
I/O	3 x USB2.0(USB1/USB2/USB3) 1 x LVDS 1 x Backlight power & control (INVT1) 6-key Programmable function keys (CN2) (Reserve) 1 x Dual color LED (LED1) 1 x Ambient light sensor (ALS1)

TB-602 Rear I/O Board Specifications	
Form Factor	81mm x 165mm
Signals Between SBC-7128	
Connector	40-pin FPC connector (CN1)
Signals	1 x GbE LAN 2 x USB2.0 1 x RS-232/422/485, COM1 1 x RS-232 (Tx/Rx) (COM2) 2 x CAN Bus (Support J1939) 2 x GPO, 2 x GPI
Power Output	DC9~60V Output via 5.04mm Pitch ELK508S-04P (+-GND ACC) (DC_IN2)
Signals to Front Panel	
I/O	1 x TE Connectivity_DT15-4P (DC_IN1) DC9~60V Power Input w/1.5KV Isolation (+-GND ACC) 1 x TE Connectivity_DT-12PB (CN2) 1 x USB2.0 1 x GbE LAN 1 x TE Connectivity_DT15-12PA (CN3) 1 x COM (RS-232/422/485 w/1.5KV Isolation) 1 x CAN Bus (Support J1939) w/1.5KV Isolation



(Unit: mm)

Figure 2.1: Motherboard Dimensions

2.3 Jumpers and Connectors Location

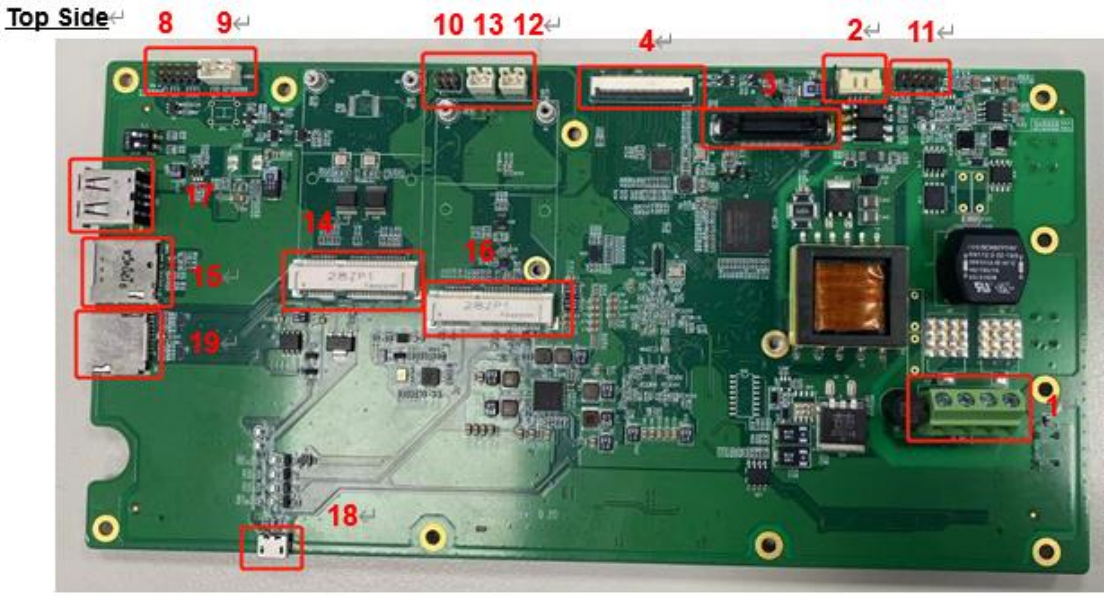
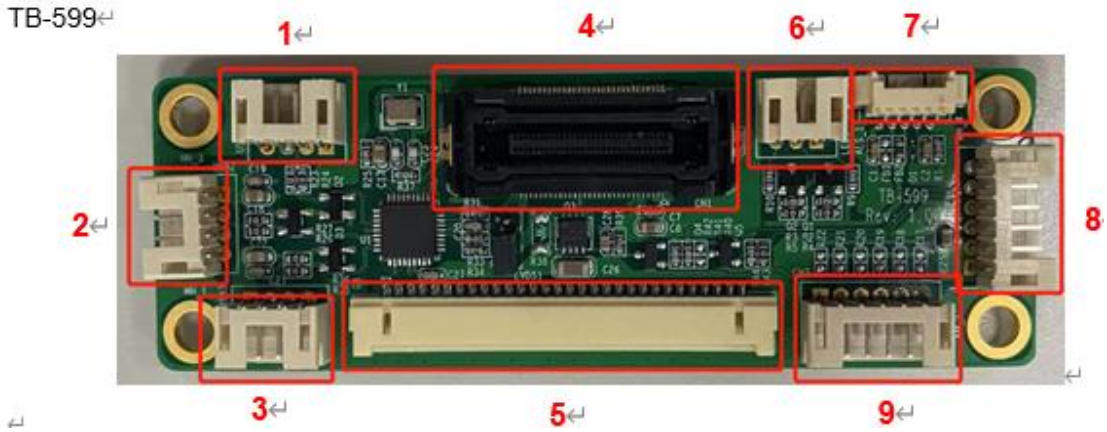


Figure 2.2: Jumpers and Connectors Location- Board Top

Figure 2.3: Jumpers and Connectors Location- Board Bottom



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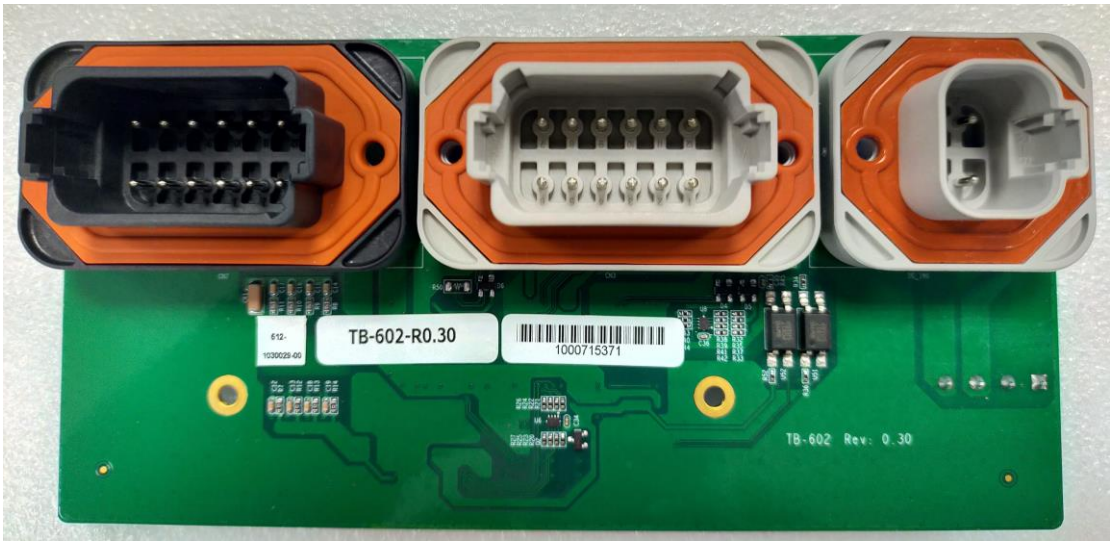
Top Side



Bottom Side

2.4 Jumpers Setting and Connectors

SBC-7128

1. DC_IN1:

(5.08mm Pitch 1x4 Pin Connector), DC9V~60V System power input with ACC

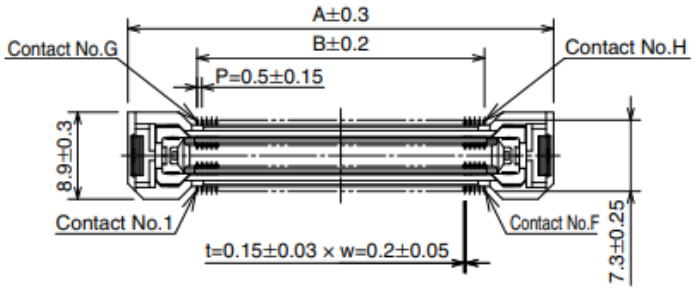
Pin#	Power Input
Pin1	DC_IN+ (DC+9V~60V)
Pin2	DC_IN
Pin3	FG
Pin4	ACC

2. CN1:

(Hirose_DF14-4P-1.25H), Internal USB2.0

Pin#	Signal Name
Pin1	5V
Pin2	USBDN_DM6
Pin3	USBDN_DP6
Pin4	GND

3. CN3:



(Hirose_FX23L-60P-0.5SV10), Board to board connector, provide 18/24-bits dual channel LVDS, LCD backlight power and control, system LED control, auto dimming control and 6-key programmable function keys for TB-599.

Signal Name	Pin#		Signal Name
VCC_EXT_3V3	1	31	VCC_EXT_3V3
VCC_EXT_3V3	2	32	VCC_EXT_3V3
VCC_EXT_3V3	3	33	VCC_EXT_3V3
USBDN_DM1	4	34	USBDN_DP1
VCC_12V0	5	35	VCC_12V0
VCC_12V0	6	36	VCC_12V0
GND	7	37	GND
LA_D0_P	8	38	LA_EN
LA_D0_N	9	39	LA_BKLTCTRL
LA_D1_P	10	40	EXT_KEY1
LA_D1_N	11	41	EXT_KEY2
LA_D2_P	12	42	EXT_KEY3
LA_D2_N	13	43	EXT_KEY4
LA_D3_P	14	44	EXT_KEY5
LA_D3_N	15	45	EXT_KEY6
LA_CLKP	16	46	NC
LA_CLKN	17	47	NC
GND	18	48	GND
LB_D0_P	19	49	NC
LB_D0_N	20	50	NC
LB_D1_P	21	51	NC
LB_D1_N	22	52	GLED_CTRL
LB_D2_P	23	53	RLED_CTRL
LB_D2_N	24	54	LIGHT_SDA
LB_D3_P	25	55	LIGHT_SCL
LB_D3_N	26	56	LIGHT_INT_B
LB_CLKP	27	57	NC
LB_CLKN	28	58	VCC_PER_5V0
VCC_PER_5V0	29	59	VCC_PER_5V0
VCC_PER_5V0	30	60	VCC_PER_5V0

4. CN4:

(40 pin FPC Connector), FPC connector, provide 1 x GbE LAN, 2 x USB2.0, 1 x RS-232/422/485, 1 x RS232, 1 x RS485, 2 x CAN bus, 4 x GPIO (2 x DI, 2 x DO) for TB-601/TB-602.

Signal Name	Pin#		Signal Name
UART3_TXD	1	2	UART3_RXD
UART3_RTS	3	4	UART3_CTS
NC	5	6	NC
UART1_TXD	7	8	UART1_RXD
3.3V_VCC	9	10	3.3V_VCC
5V_VCC	11	12	GPIO1_IO06
GPIO1_IO05	13	14	GPIO1_IO01
GPIO1_IO00	15	16	GND
CAN0_TX	17	18	CAN0_RX
CAN1_TX	19	20	CAN1_RX
GND	21	22	USBDN_DM5
USBDN_DP5	23	24	5V_VCC
5V_VCC	25	26	USBDN_DM4
USBDN_DP4	27	28	GND
485_422_S	29	30	232_422_S
GND	31	32	TXRXM_D
TXRXP_D	33	34	TXRXM_C
TXRXP_C	35	36	TXRXM-B
TXRXP_B	37	38	TXRXM_A
TXRXP_A	39	40	GND

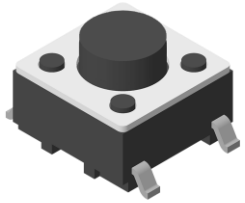
5. BT1:

(1.25mm Pitch, 2 Pin Wafer), for RTC battery

Pin#	Signal Name
Pin1	VBAT_VRTC
Pin2	GND

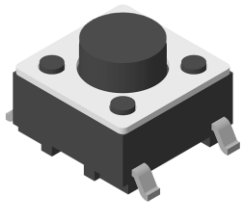
6. BT2/BT3:

(Tact Switch), for function key



7. BT4:

(Tact Switch), for function key



8. J1:

(2.0mm Pitch 2x3 Pin Header)

Signal Name	Pin#		Signal Name
JTAG_VTREF	1	2	JTAG_TMS
GND	3	4	JTAG_TCK
GND	5	6	JTAG_TDO
RTCK	7	8	JTAG_TDI
JTAG_TRST_B_CONN	9	10	JTAG_SRST_B

9. DEBUG1:

(1.25mm Pitch, 4Pin Wafer), for debug

Pin#	Signal Name
Pin1	3.3V_VCC
Pin2	TX
Pin3	RX
Pin4	GND

10. JP1:

(2.0mm Pitch 2x3 Pin Header), provide Line-out and Mic-in

Signal Name	Pin#		Signal Name
LINE_OUT_DET	1	2	LINE_OUT_L
MIC_IN	3	4	LINE_OUT_R
GND_AUD	5	6	GND_AUD

11. JP2：

(2.0mm Pitch 2x5 Pin Header), reserved for MCU debug

Signal Name	Pin#		Signal Name
TEST1	1	2	3P3V_MCU

TEST2	3	4	TICEDAT
NC	5	6	TICECLK
UART0_TX	7	8	nRST
UART0_RX	9	10	GND_MCU

12. SPKL1:

(2.0mm Pitch 2 Pin Wafer), support 1st 2W speaker output

13. SPKL2:

(2.0mm Pitch 2 Pin Wafer), support 2nd 2W speaker output

14. MPCIE1:

USB2.0 signal only, for optional 4G LTE module, support full-sized mini-PCIe card

15. SIM1:

Micro-SIM card holder for MPCIE1

16. MPCIE2:

With PCIex1 and USB2.0 signal, support full-sized mini-PCIe card

17. CN2:

Provide USB2.0 signal via right angle USB type-A connector

18. OTG1:

Provide USB OTG via micro USB connector

19. SD1:

Push-push type micro SD card holder, support for SDXC

TB-599

1. USB1:

(2.0mm Pitch 2Pin Wafer), provide USB2.0 signal

Pin#	Signal Name
Pin1	5V_S0
Pin2	USB2_N
Pin3	USB2_P
Pin4	GND

2. USB 2:

(2.0mm Pitch 2Pin Wafer), provide USB2.0 signal

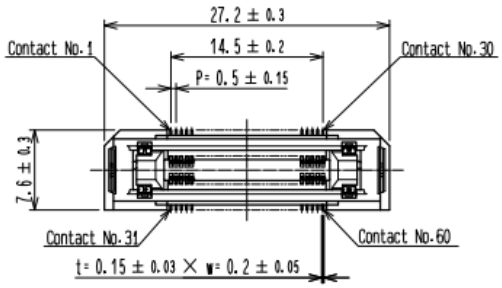
Pin#	Signal Name
Pin1	5V_S0
Pin2	USB2_N
Pin3	USB2_P
Pin4	GND

3. USB3:

(2.0mm Pitch 2Pin Wafer), provide USB2.0 signal

Pin#	Signal Name
Pin1	5V_S0
Pin2	USB2_N
Pin3	USB2_P
Pin4	GND

4. CN1:



(Hirose_FX23L-60P-0.5SV), board-to-board connector, received the signals from SBC-7128 CN3

Signal Name	Pin#		Signal Name
12V_S0	1	16	LB_D2_N
12V_S0	2	17	LB_D1_P
GND	3	18	LB_D1_N
GND	4	19	LB_D0_P
VCC_LVDS0	5	20	LB_D0_N
VCC_LVDS0	6	21	LA_D3_P
GND	7	22	LA_D3_N
GND	8	23	LA_CLKP
BKLT_EN_OUT	9	24	LA_CLKN
BKLT_CTRL	10	25	LA_D2_P

LB_D3_P	11	26	LA_D2_N
LB_D3_N	12	27	LA_D1_P
LB_CLKP	13	28	LA_D1_N
LB_CLKN	14	29	LA_D0_P
LB_D2P	15	30	LA_D0_N

5. LVDS1:

(Hirose_DF14-30P-1.25H), provide LVDS, backlight power and backlight control signals

Signal Name	Pin#		Signal Name
VCC_EXT_3V3	1	31	VCC_EXT_3V3
VCC_EXT_3V3	2	32	VCC_EXT_3V3
VCC_EXT_3V3	3	33	VCC_EXT_3V3
USBDN_DM1	4	34	USBDN_DP1
VCC_12V0	5	35	VCC_12V0
VCC_12V0	6	36	VCC_12V0
GND	7	37	GND
LA_D0_P	8	38	LA_EN
LA_D0_N	9	39	LA_BKLTCTRL
LA_D1_P	10	40	EXT_KEY1
LA_D1_N	11	41	EXT_KEY2
LA_D2_P	12	42	EXT_KEY3
LA_D2_N	13	43	EXT_KEY4
LA_D3_P	14	44	EXT_KEY5
LA_D3_N	15	45	EXT_KEY6
LA_CLKP	16	46	NC
LA_CLKN	17	47	NC
GND	18	48	GND
LB_D0_P	19	49	NC
LB_D0_N	20	50	NC
LB_D1_P	21	51	NC
LB_D1_N	22	52	GLED_CTRL
LB_D2_P	23	53	RLED_CTRL
LB_D2_N	24	54	LIGHT_SDA
LB_D3_P	25	55	LIGHT_SCL
LB_D3_N	26	56	LIGHT_INT_B
LB_CLKP	27	57	NC

LB_CLKN	28	58	VCC_PER_5V0
VCC_PER_5V0	29	59	VCC_PER_5V0
VCC_PER_5V0	30	60	VCC_PER_5V0

6. LED1:

(2.0mm Pitch 3Pin Wafer), provide dual color system LED indicator

Pin#	Signal Name
Pin1	GND
Pin2	GLED_CTRL
Pin3	RLED_CTRL

7. ALS1:

(1.25mm Pitch 5Pin Wafer), connector to ambient light sensor board TB-50.

8. INVT1:

(2.0mm Pitch 6Pin Wafer), backlight power and control for high-brightness LCM.

Pin#	Signal Name
Pin1	12V_S0
Pin2	12V_S0
Pin3	GND
Pin4	GND
Pin5	BKLT_EN_OUT
Pin6	BKLT_CTRL

9. CN2:

(2.0mm Pitch 6Pin Wafer), provide 3 x function keys

Pin#	Signal Name
Pin1	EXT_KEY1
Pin2	EXT_KEY2
Pin3	EXT_KEY3
Pin4	EXT_KEY4
Pin5	EXT_KEY5
Pin6	EXT_KEY6

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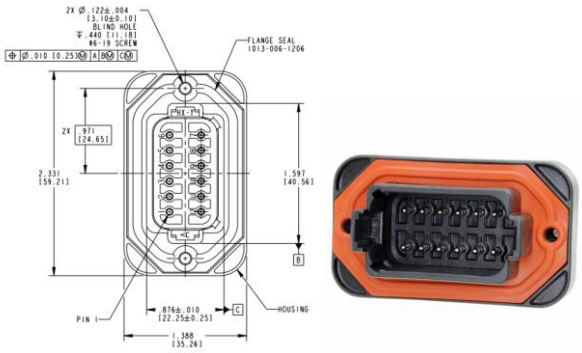
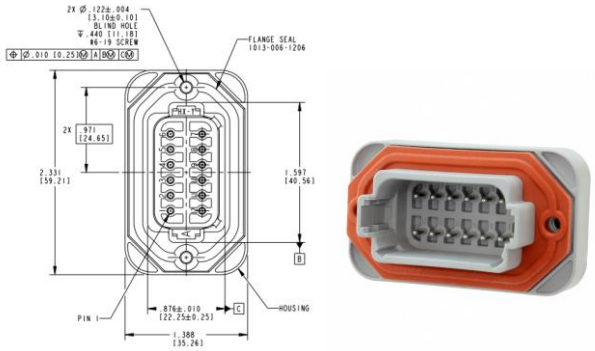
1. CN2:



(TE Connectivity_DT15-12PB), provide

Signal Name	Pin#		Signal Name
VCC_PER_5V0	1	12	USBDN_DM4
GND	2	11	USBDN_DP4
LAN1_MD1-	3	10	LAN1_MD3-
LAN1_MD1+	4	9	LAN1_MD3+
LAN1_MD0-	5	8	LAN1_MD2-
LAN1_MD0+	6	7	LAN1_MD2+

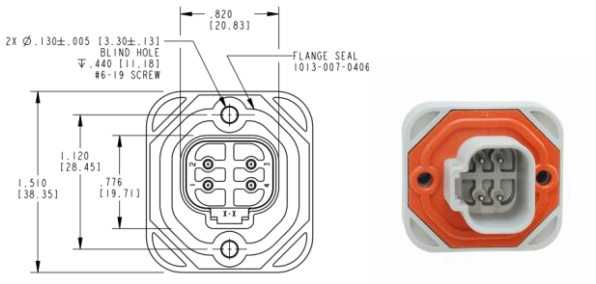
2. CN3:



(TE Connectivity_DT15-12PA), provide 1 x COM(RS232/422/485 w/1.5KV isolation), 1 x CAN Bus (Support J1939) w/1.5KV isolation

Signal Name	Pin#		Signal Name
COM1_CTS	1	12	485-_422TX-
COM1_RTS	2	11	485+_422TX+_COM1_RX
NC	3	10	422_ISO_RX+_COM1_TX
GND_IO_C	4	9	422_ISO_RX-
CAN0_L-	5	8	GND_IO_1
CAN0_H	6	7	GND_IO_1

3. DC_IN1:



(TE Connectivity_DT15-4P), DC9V~60V System power input with ACC

Pin#	Power Input
Pin1	DC_IN+ (DC+9V~60V)
Pin2	DC_IN-
Pin3	FG
Pin4	ACC

4. DC_IN2:

(5.08mm Pitch 1x4 Pin Connector), receive the power input from DC_IN1 and connect to SBC-7128 DC_IN1

Pin#	Power Input
Pin1	ACC
Pin2	FG
Pin3	DC_IN-
Pin4	DC_IN+ (DC+9V~60V)

5. CN4:

(40Pin FPC Connector), FPC connector, receive the signals from SBC-7128 CN4

Signal Name	Pin#		Signal Name
GND	1	2	TXRXP_A
TXRXM_A	3	4	TXRXP_B
TXRXM_B	5	6	TXRXP_C
TXRXM_C	7	8	TXRXP_D

TXRXM_D	9	10	GND
232_422_S	11	12	485_422_S
GND	13	14	USBDN_DP4
USBDN_DM4	15	16	VCC_PER_5V0
VCC_PER_5V0	17	18	NC
NC	19	20	GND
NC	21	22	NC
BB_CAN0_RX	23	24	BB_CAN0_TX
GND	25	26	NC
NC	27	28	NC
NC	29	30	VCC_PER_5V0
VCC_PER_3V3	31	32	VCC_PER_3V3
NC	33	34	NC
NC	35	36	NC
UART1_RTS	37	38	UART1_CTS
UART1_RX	39	40	UART1_TX

Chapter 3 Vehicle Function Test App for Android11

3.1 Features

You can use RockON to configure the device for your demo or test. We also provide the corresponding SDK for your application development. RockON will auto run in background while the system turns on. This section is to brief you on what function s are included in RockON and how to set up based on Android OS.

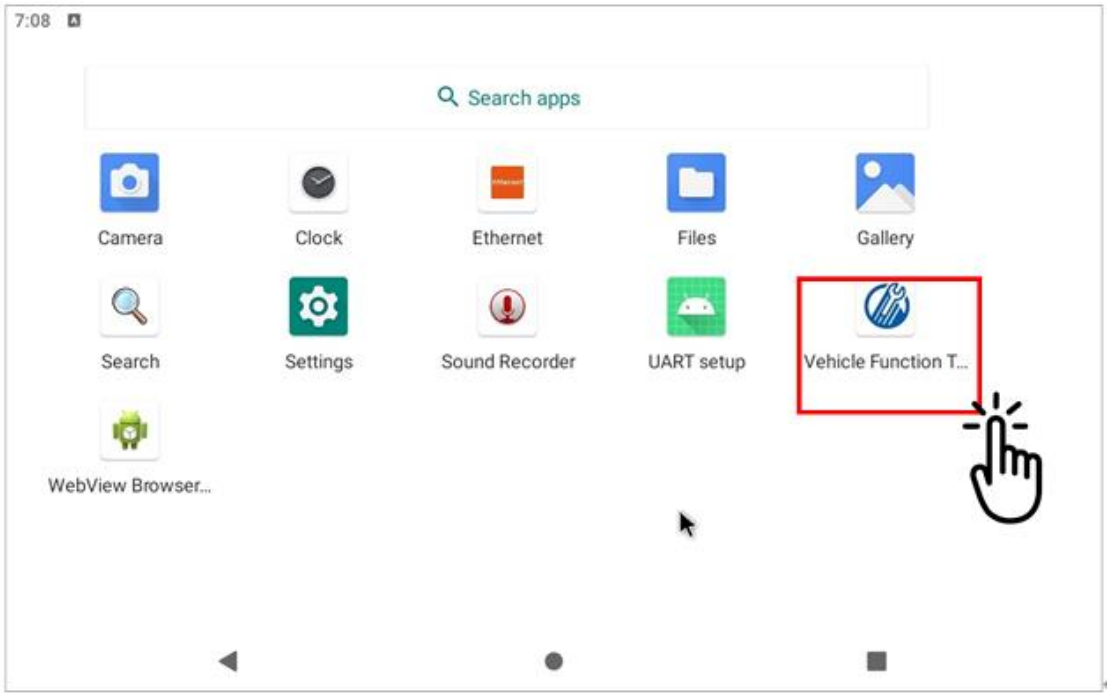
1. Device Information: It provide s information of the system hardware, software, and firmware version.
2. Vehicle Status: This section is to demo how to read the vehicle information such as vehicle battery
voltage, fuel, speed and so on while connecting with vehicle SAE J1939. We use a simulator to run the
demo.
3. Communication Setting: This is to enable/disable Wi-Fi/BT/WWAN and configure the related setting.
4. System Status & Setting: This section contains the major configuration of the system device. Power
management, wake up event, IO configuration, brightness and watchdog timer setting are included.
5. Location & Sensor GPS : module setting

3.2 RockON Architecture

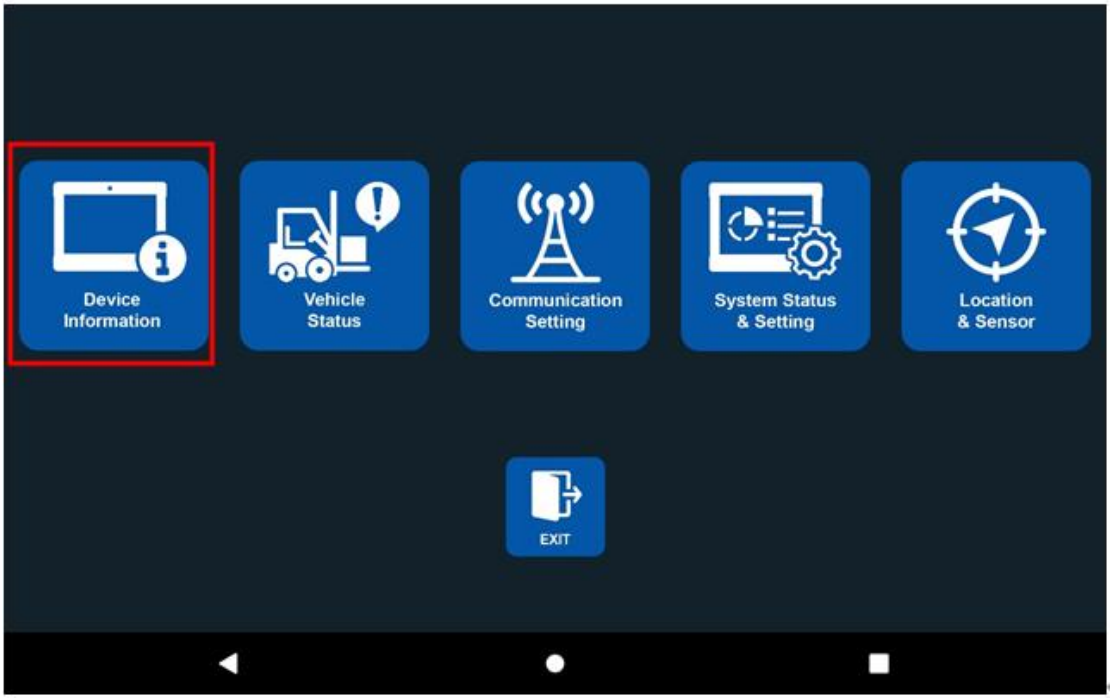
Main Category	Detailed Items			
Device Information	Model Name	AVA-610AP		
	MCU Version	Rx.x		
	Utility Version	Rx.x		
Vehicle Status	Protocol	J1939		
	Battery voltage	11.xx / 22.xx V		
	Speed	xxx KM/H		
	Engine Speed	xxx RPM		
	GPS Setting	X=xxxxx Y=xxxxx Z=xxxxx		
	Fuel Load	xxx L		
	Fuel Temperature :	xxx ℃		
	Coolant Temperature :	xxx ℃		
Communication Setting	WWAN	Module on		
		Module off		
	Wi-Fi	Module on		
		Module off		
	Bluetooth	Module on		
		Module off		
System Status	Power Management	ACC Status	ON	
			OFF	
		Power Input Settings	9~60V	
			12V	
			24V	
		Start and shut down	12V	11.5V/10.5V

		voltage settings		12V/11V
				13.V/11.5V
			24V	25V/21V
				26V/22V
				27V/22V
		Power on delay	04 sec (default)	
			08 sec	
			16 sec	
		Power off delay	30 sec (default)	
			60 sec	
			90 sec	
	IO Configuration	Serial Port Setting	RS-232 (default)	
			RS-422	
			RS-485	
	Brightness Setting	Auto Dimming	ON	
			OFF	Manual Dimming Bar
Location and Sensor	GPS Module	ON		
		OFF		

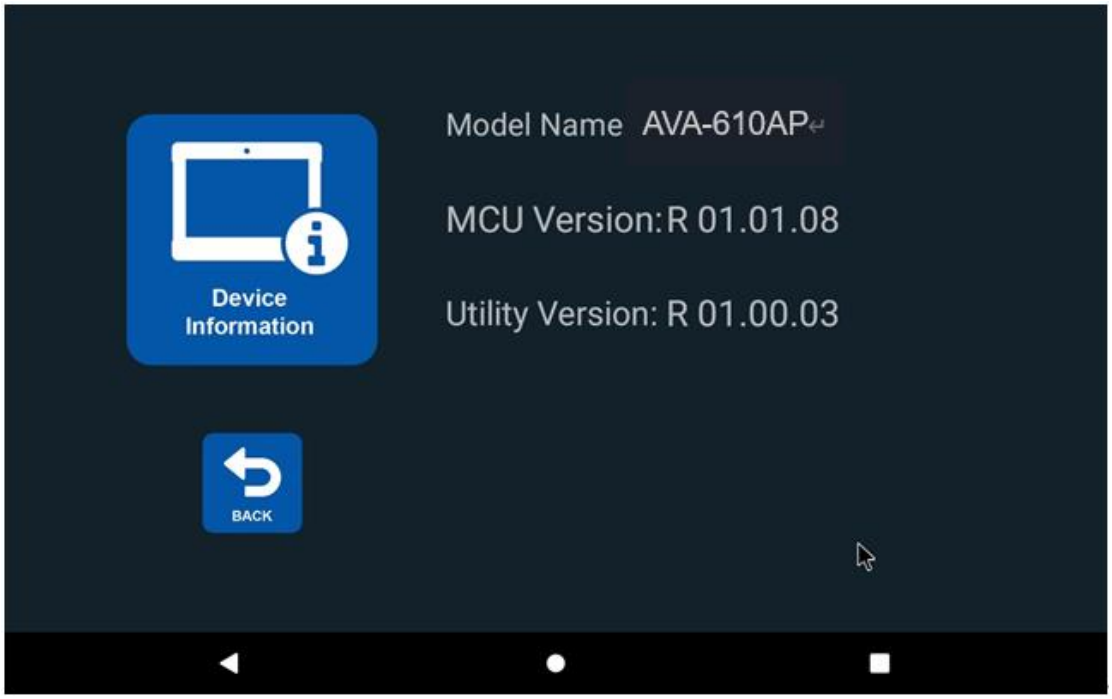
3.3 Double Click the “RockON” icon if RockON is not running



3.4 Device information

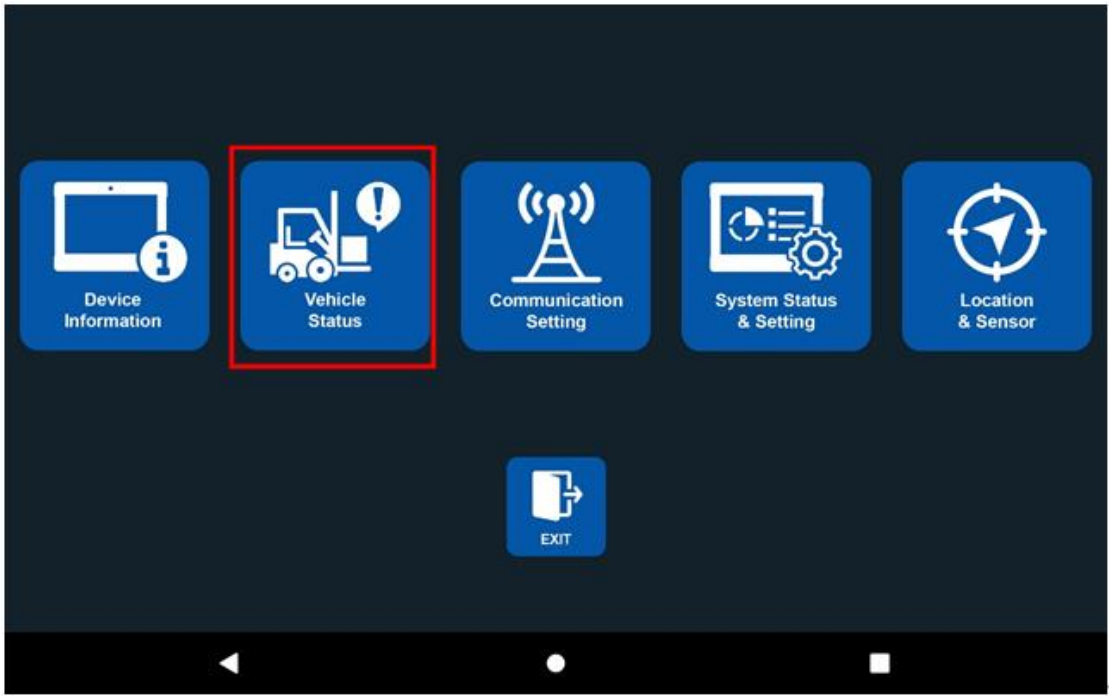


In **Device Information**, you can check the MCU firmware version, utility version and system model name.



3.5 Vehicle Status

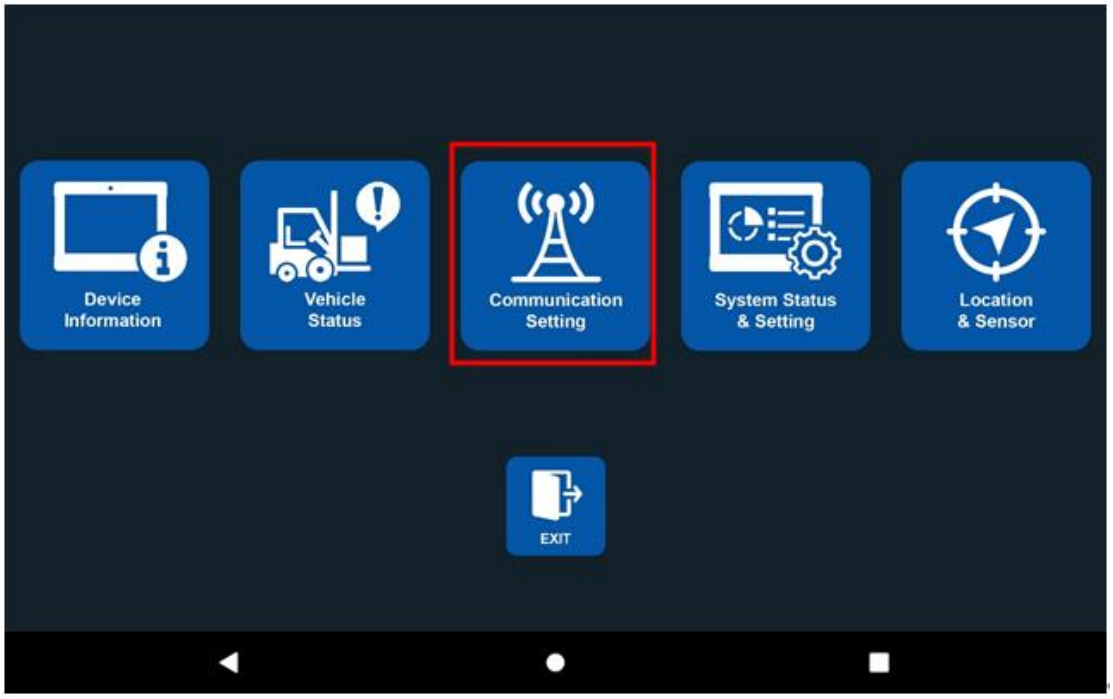
Vehicle Status shows some vehicle information from the simulator



The related CANBus protocol J1939 is available upon request. Please contact local sales representatives or login to the support website.

3.6 Communication Setting

Communication Setting allows you to enable/ disable Wi Fi/WWAN/Bluetooth via RockON utility. Please click on the "**Communication Setting**".



Enable/ Disable Module

Item1. Click on the switch bar to Enable/ Disable WWAN fuction

Item2. Click on the switch bar to Enable/ Disable Wi-Fi fuction

Item3. Click on the switch bar to Enable/ Disable Bluetooth fuction

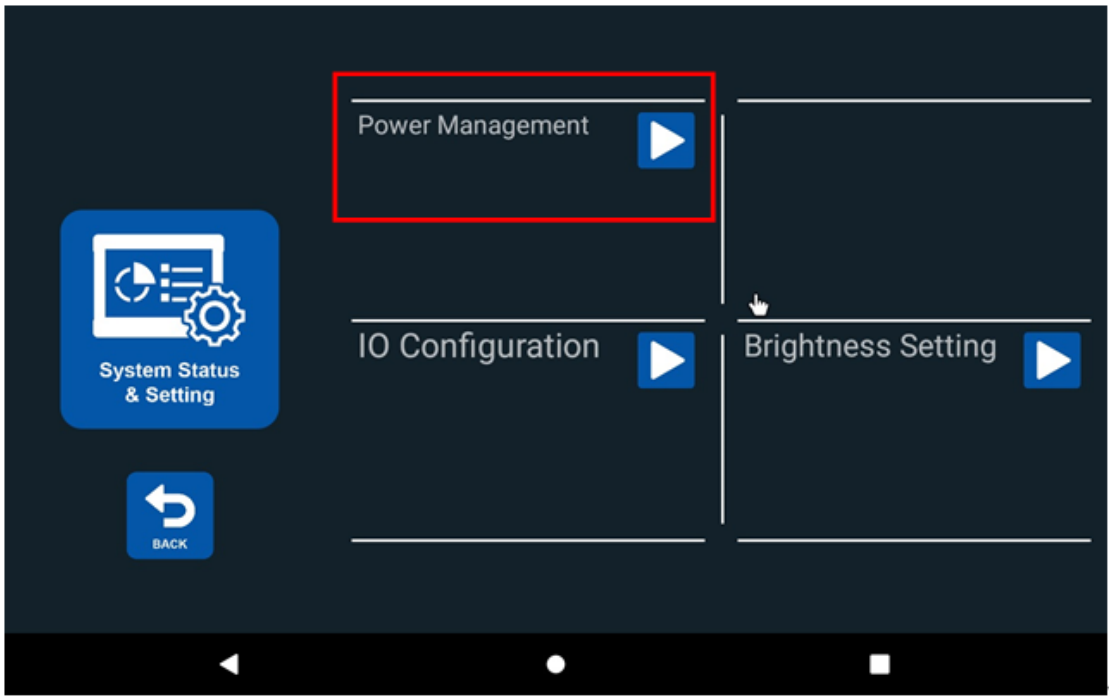

Communication Setting
BACK
WWAN RF:
OFF
WLAN RF:
OFF
Bluetooth RF:
OFF

3.7 System Status & Setting

This section is to set and read the system status. It covers power management, I/O configuration, and wake up event and so on.

3.7.1 Power Management Setup

Please click on the “Power Management”

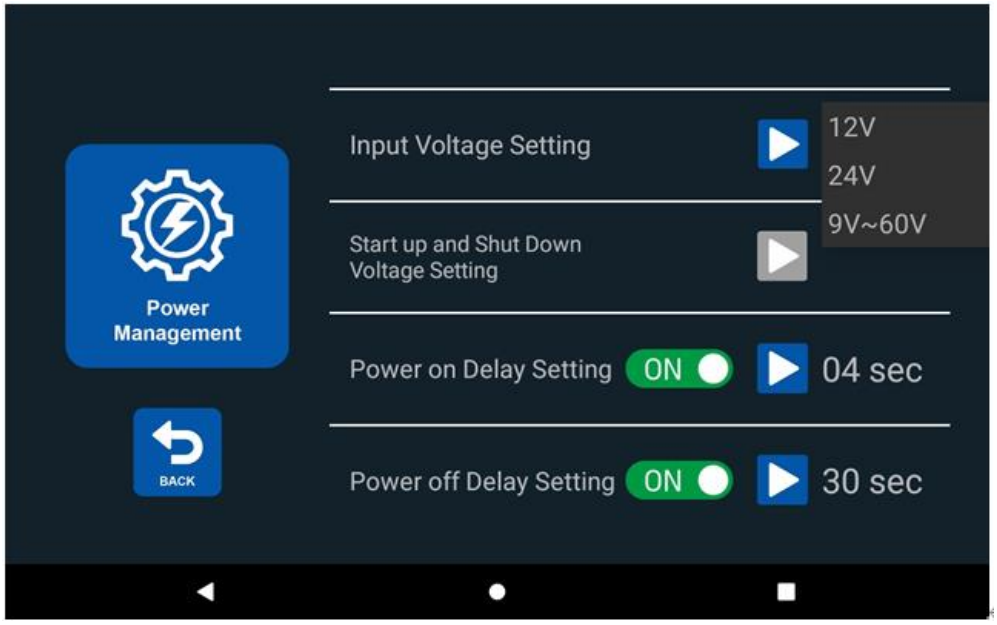


Input Voltage Setting

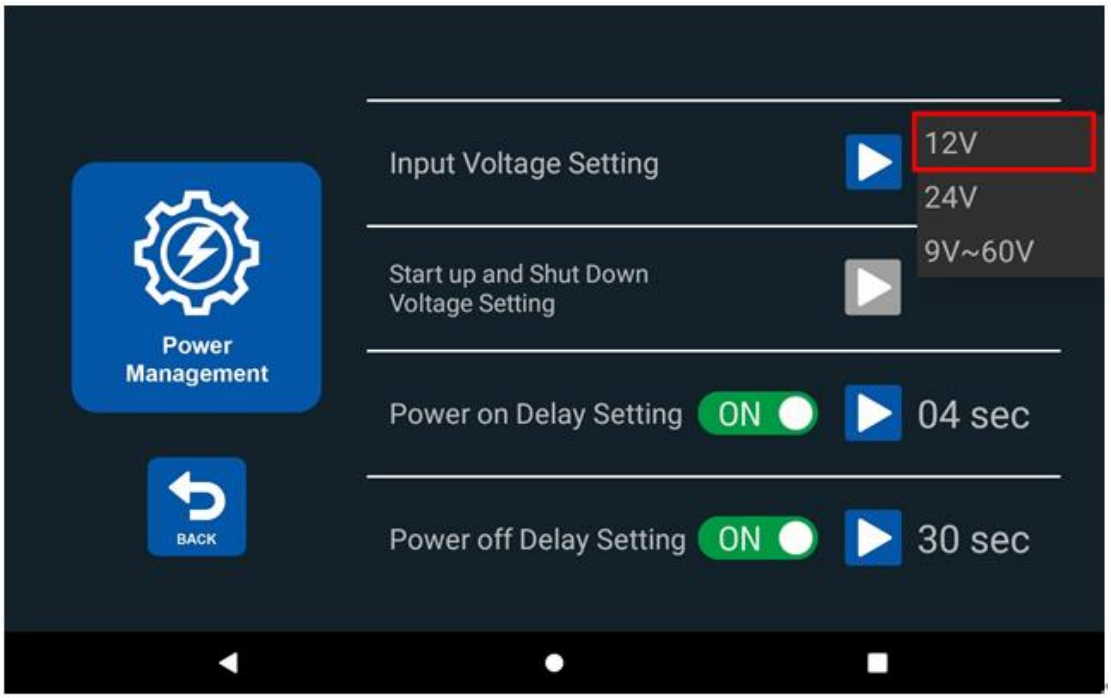
Click on the Input Voltage Selection.

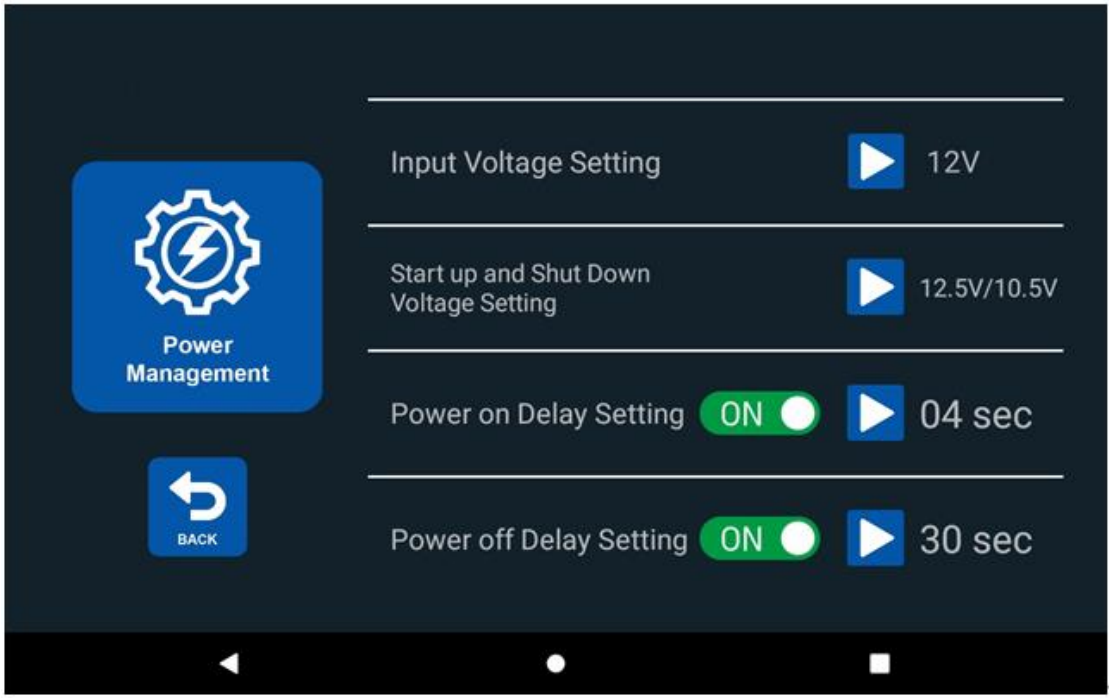
You can select the power input voltage either 9~60V or 12V or 24V. If 9~60V is selected, it means the system can be powered on while the voltage ranges from 9~60V.

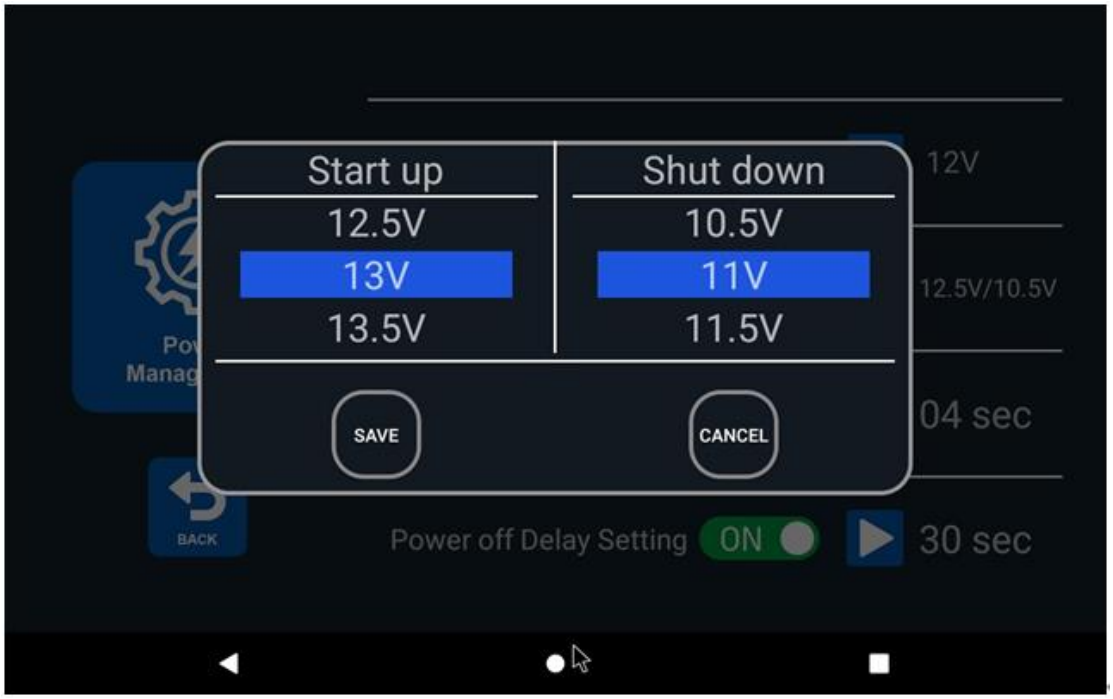
Please note if you use a 19/24V power adapter, the input voltage must be selected to 9~60V.



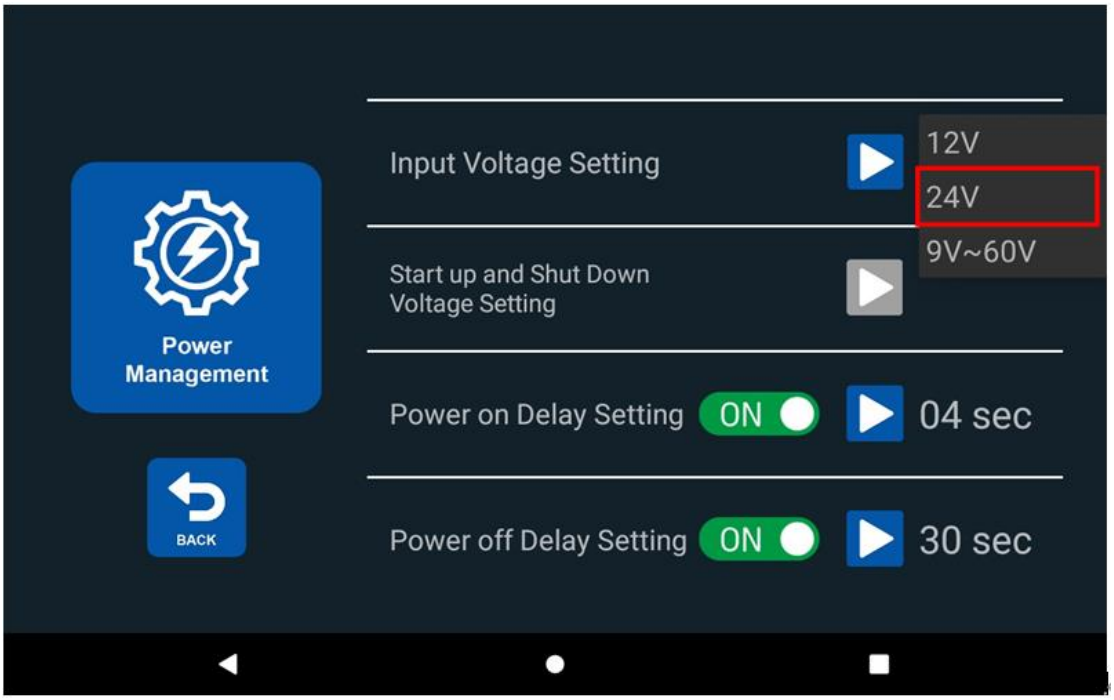
If 12V is selected, you can also select the startup and shut down voltage setting.

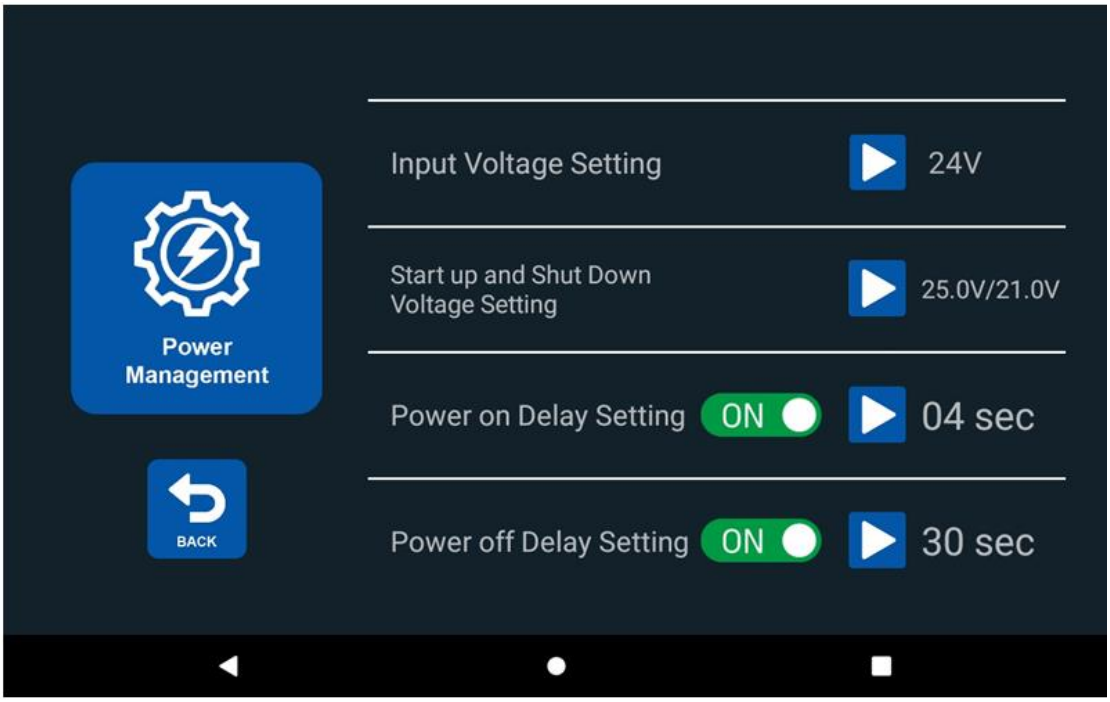


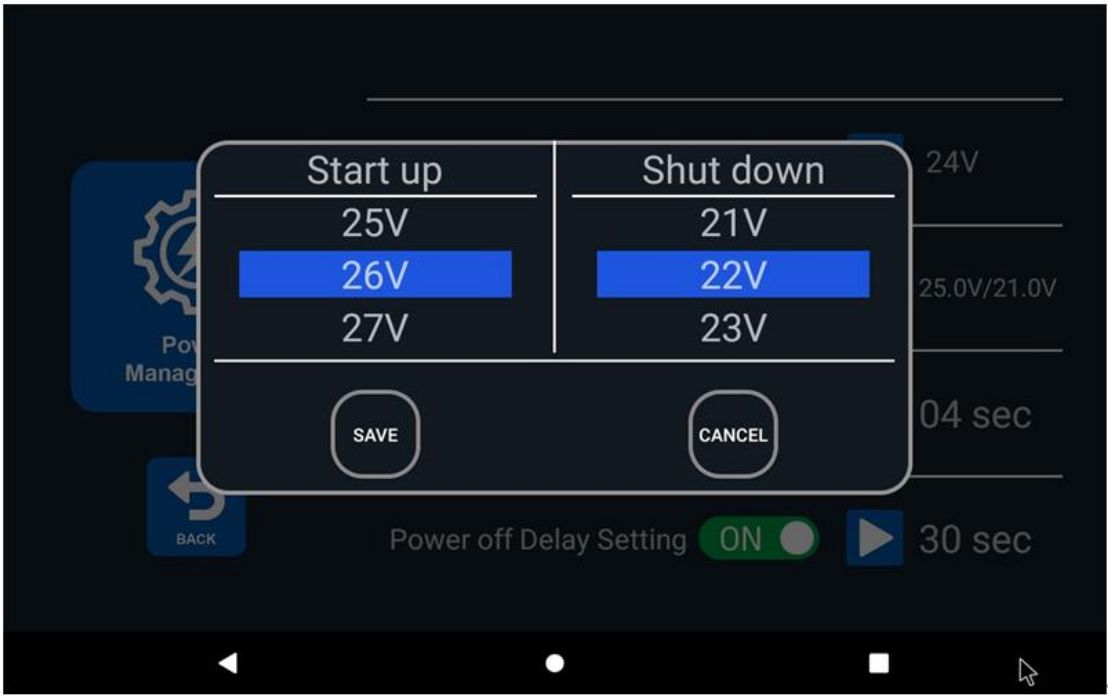




If 24V is selected, you can also select the startup and shut down voltage setting.


Power Management
BACK
Input Voltage Setting
12V
24V
9V~60V
Start up and Shut Down Voltage Setting
Power on Delay Setting
ON
04 sec
Power off Delay Setting
ON
30 sec


Power Management
BACK
Input Voltage Setting
24V
Start up and Shut Down Voltage Setting
25.0V/21.0V
Power on Delay Setting
ON
04 sec
Power off Delay Setting
ON
30 sec



Power On/Off Delay Setting

Power on delay function enables you to power on the device after the ACC is on for a specified period.

Enabled power off delay function lets the device remain on until the ACC is off for a specified period.

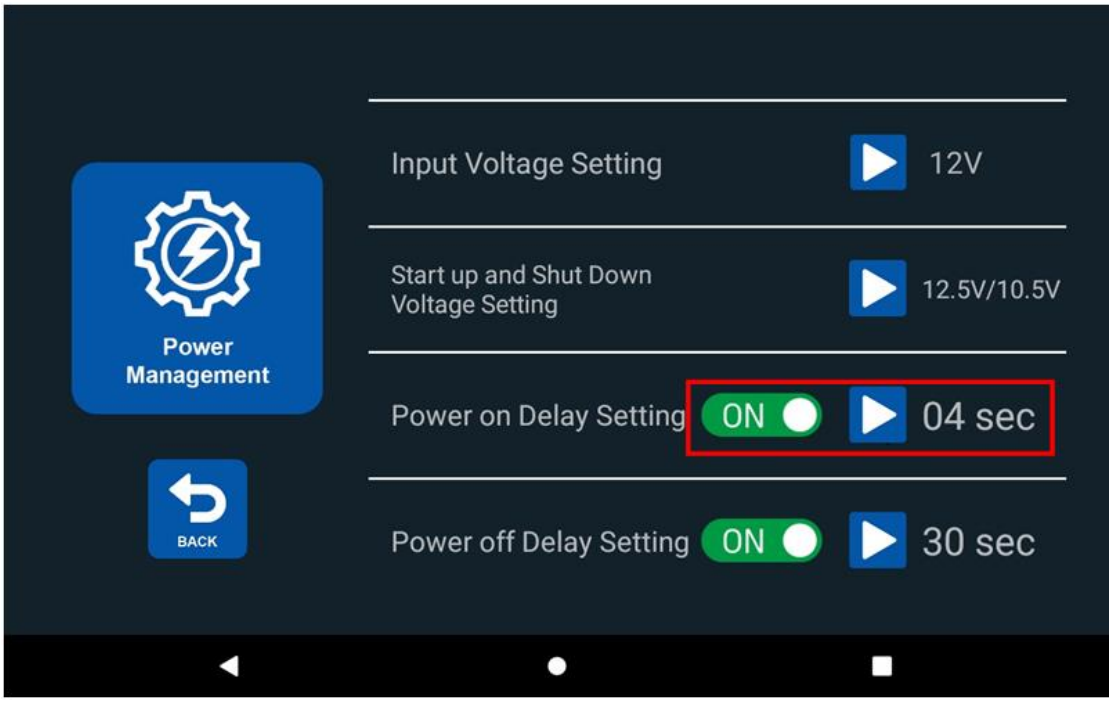
- **Power On Delay**

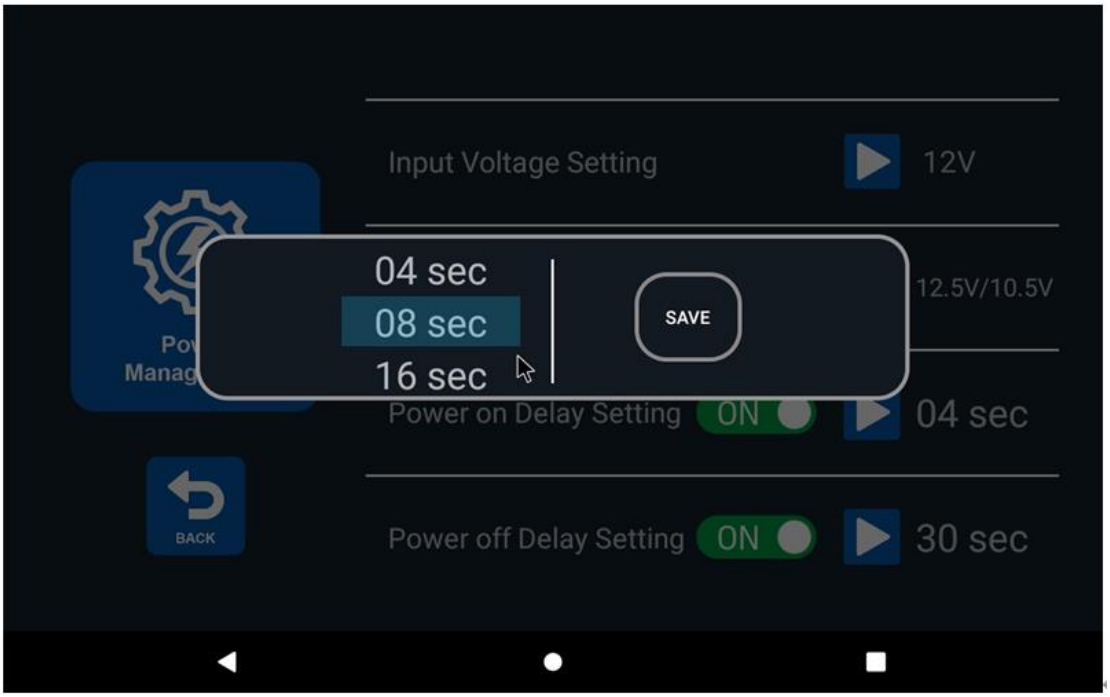
Switch the 

to 

, click on the  , and you will see the selection list.

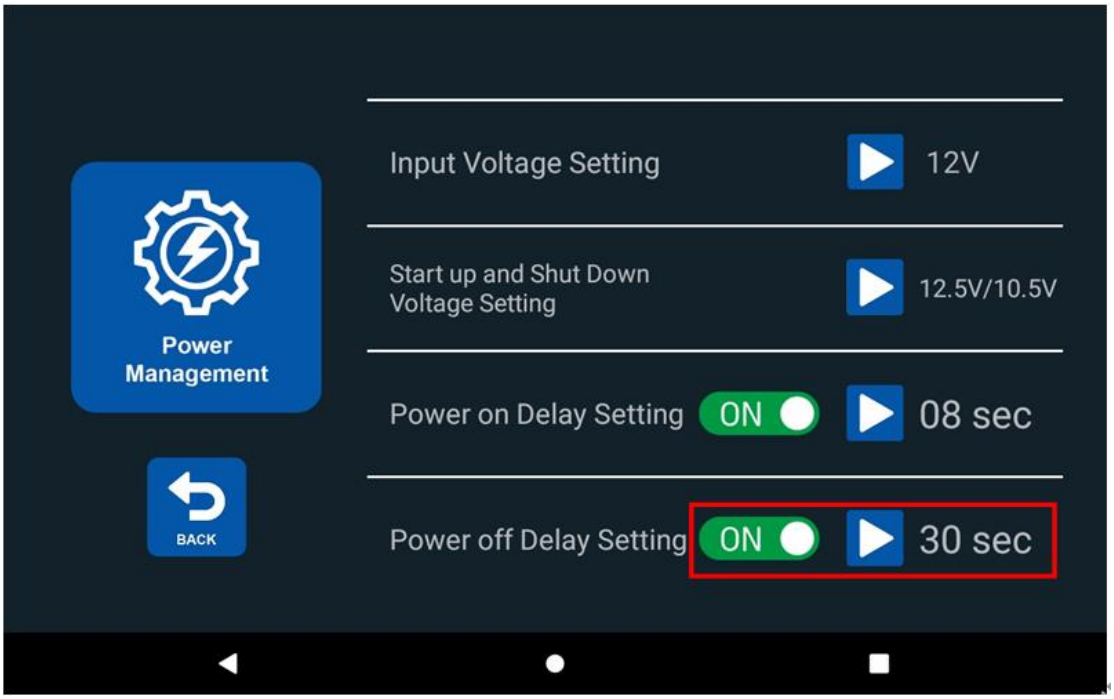
Delay time can be set at 04sec(default)/08sec/16sec.

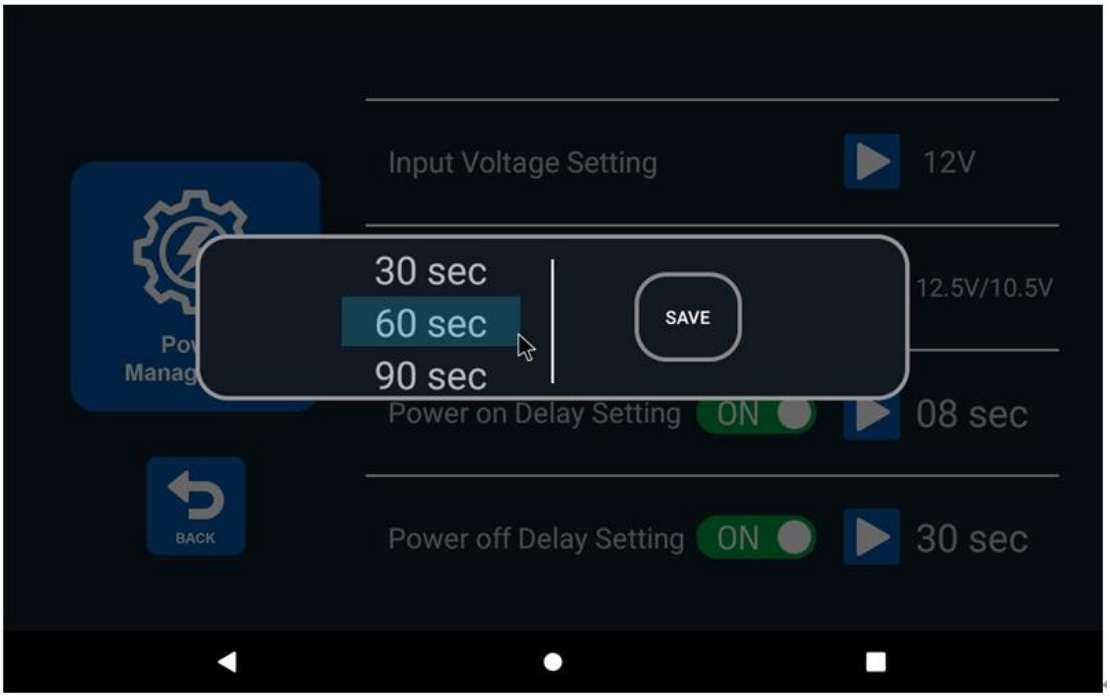




- **Power Off Delay**

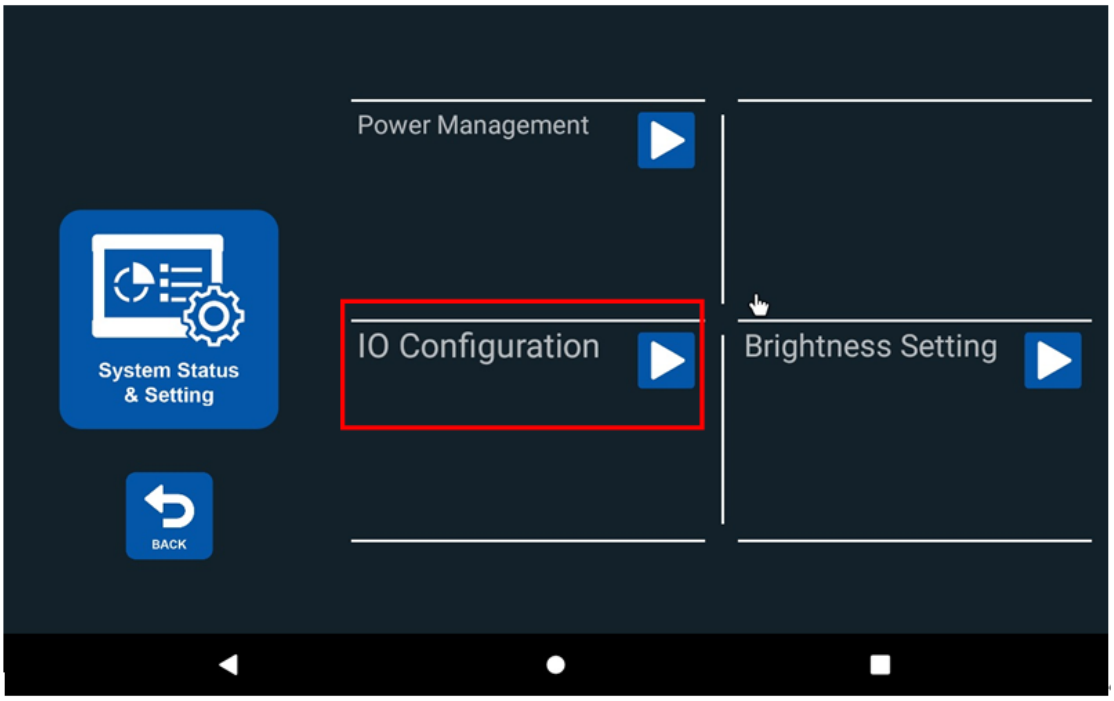
Same as power on delay setting process; you can also set the power off delay. Delay time can be set at 30sec(default)/60sec/90sec.

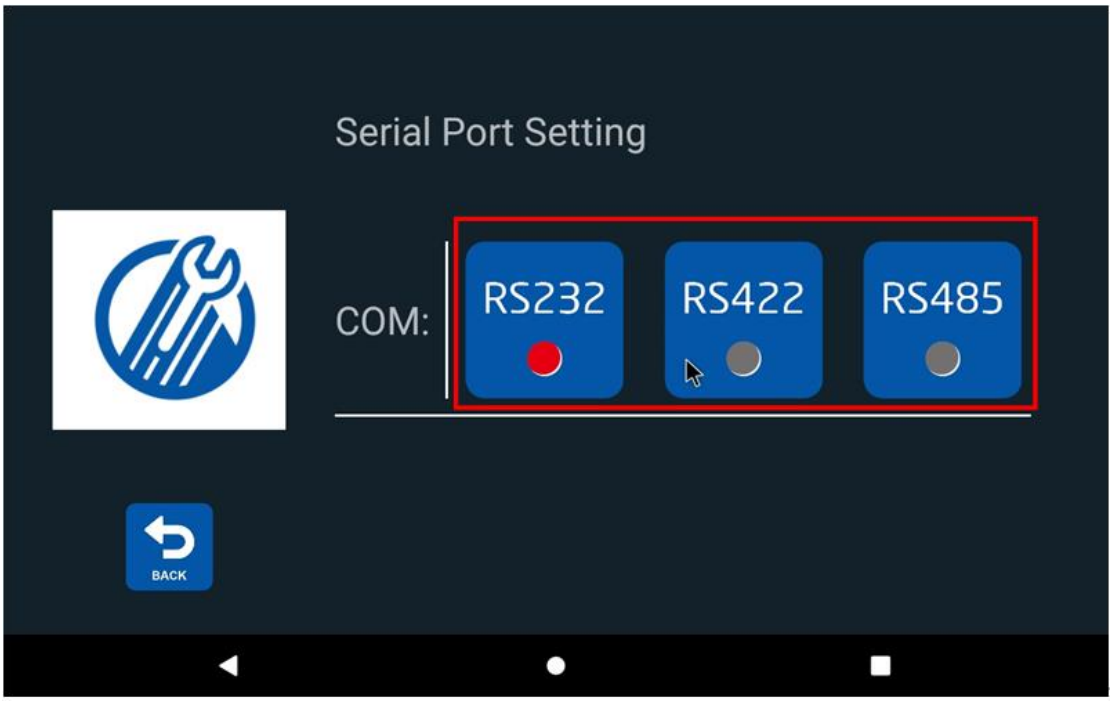




3.7.2 IO Configuration

In this section, you can modify the signal of serial port COM1, from RS-232(default) to RS-422 or RS-485.

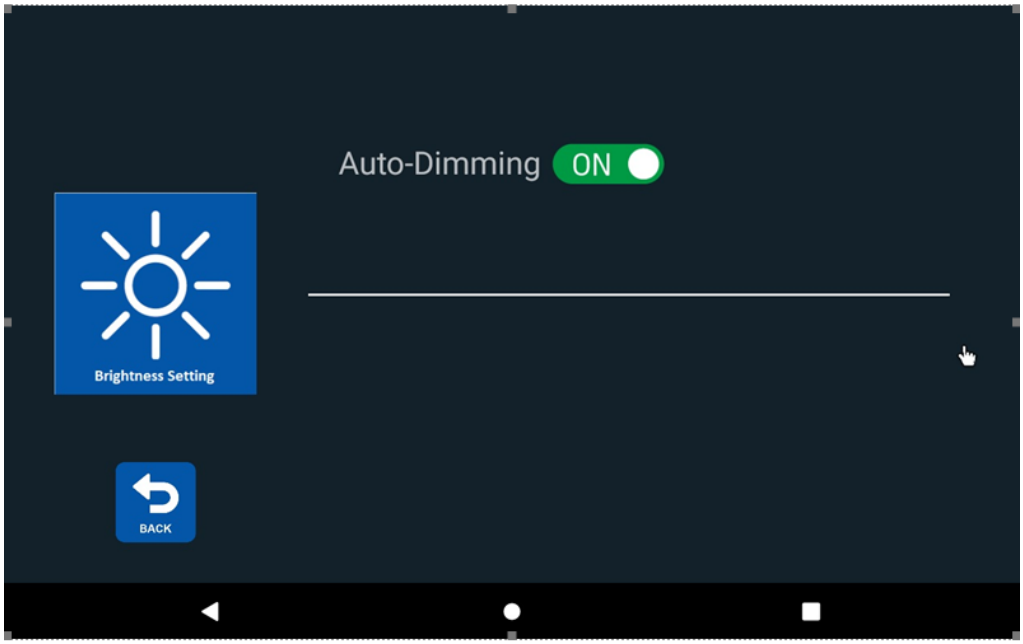




3.7.3 Brightness Setting

Brightness adjustment is to optimize the operation of the backlight LEDs under a variety of daylight

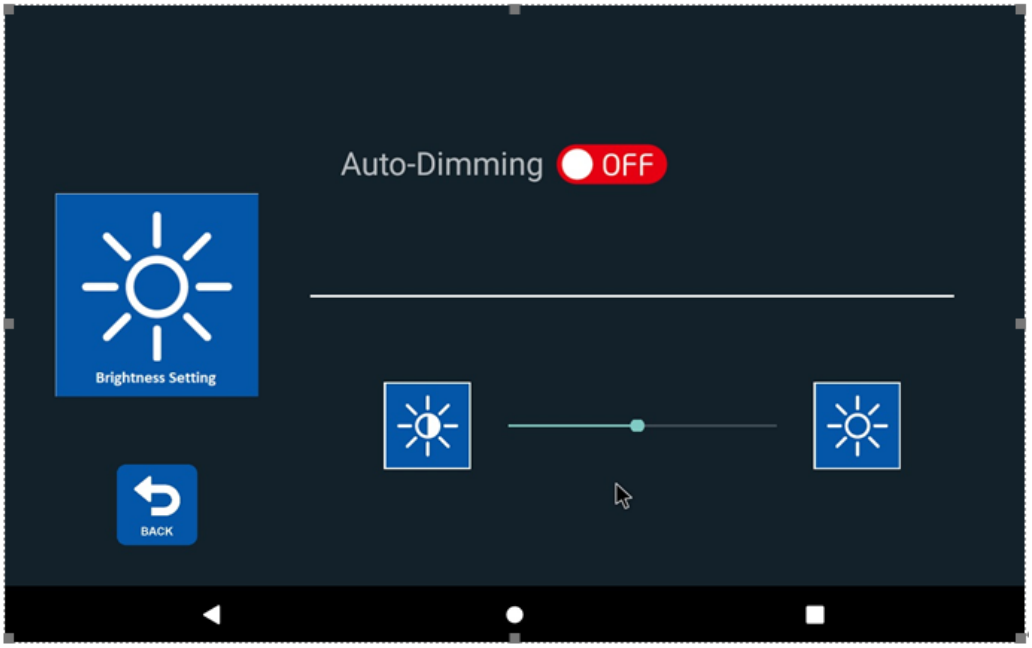
conditions. AVA-610AP supports auto-dimming and manually adjusts the brightness.



If auto-dimming is enabled, the brightness is auto-adjusted along with the changes of environmental light. You can also manually change the display brightness via programmable buttons or the bar adjustment in RockON.

For programmable button setting, please see “Programmable Button “section.

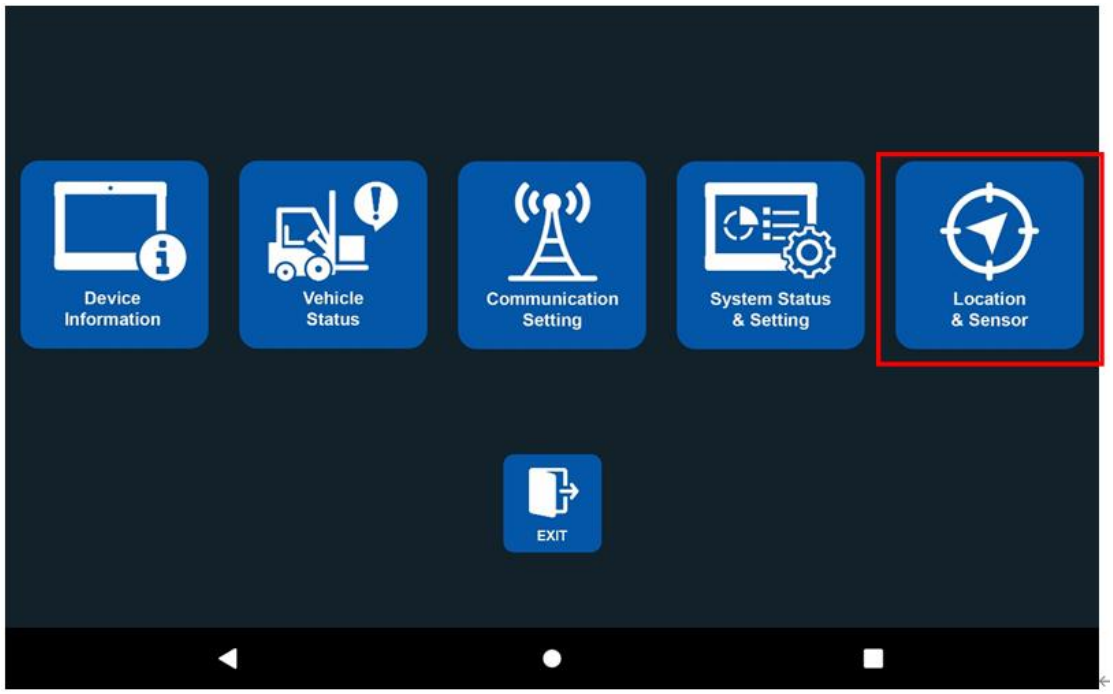
AVA-610AP’s display brightness is set to automatic adjustment. You can also turn off “Auto-Dimming” and drag the scroll bar to adjust display brightness.



3.8 Location and Sensor

AVA-610AP provides the GPS receiver and G-Sensor built in. RockON provides both setting and information and also links to the Google map locations for demo applications.

You can also use the general freeware GPS viewer to set GPS setting. Click on the "Location and Sensor".



Enable/ Disable GPS Receiver

The default GPS receiver is enabled in AVA-610AP. If you want to disable the receiver, switch "Module RF" to 

.