Xnergy

Autonomous Power Technologies

Application instructions

HMI 7-Wireless charging smart module

FCC ID:2BDDT-XG-HIMI7
Contains FCC ID:XMR201903EG25G

Version: 1.0

Date: November, 2023

abstract

catalog listing

1. Overview

XG-HMI 7 smart screen module is an industrial IPC, Linux system microhost, RK3566 series processor, 1GB DDR4 + 8GB eMMC, can run Python 3, and can match various operation software. The sample diagram is as follows:

Main application

· Human-machine interface (HMI)

· process control

· Process monitoring

·LOT panel point

· environmental monitoring

· Automotive application (charging pile)

· Automated selling equipment

· automation equipment

The installation method can be selected, and the design can be customized according to the actual requirements.

2. Main configuration specifications

unit type	The XG-HMI 7 smart screen module	
major dispositions	C P U	RK3566 Qu ad -core ARM Cortex -A 55 max 1.8Ghz
	internal storage	1GB DDR4
	memory	8G eMMC
	display screen	7 Inch 16:9 1024 * 600 IPS Panel, optional capacitive touch version
	system	Linux Debian 11
joggle	RJ 45	10 / 100M quantity 100
	WI-F I	2.4G / 5G, 802.11 a / b / g / n number 1
	mi niPCIe Slots	1 number of 4G / LTE modules (Default cat 1)
	USB 3.0	Number of the 1
	USB 2.0	Number of 1, and support for OTG
	The TF card slot	Compatible SD 3.0, MMC ver 4.51
	RS 485	Support for automatic orientation, the number of 2
	GPIO	Output 5 and input 3
	buzzer	Number of buzzer: 1
	The DC power supply interface	The DC-005 power supply input interface
	MICRO -SIM	One
source	input voltage	Support the input voltage from 12 V to 30 V
	joggle	DC-005 connector, support 2.1mm power interface
	power dissipation	Six watts
	Current (12V)	.50 Amps
other	working temperature	From-10℃ to + 60℃
	humidity	≤80%
	Machine size	197mm X 131mm X 30.5mm
	weight	450g

For all Class A Digital Devices, a statement like the following is needed:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

For all Class B Digital Devices, a statement like the following is needed:

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 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.

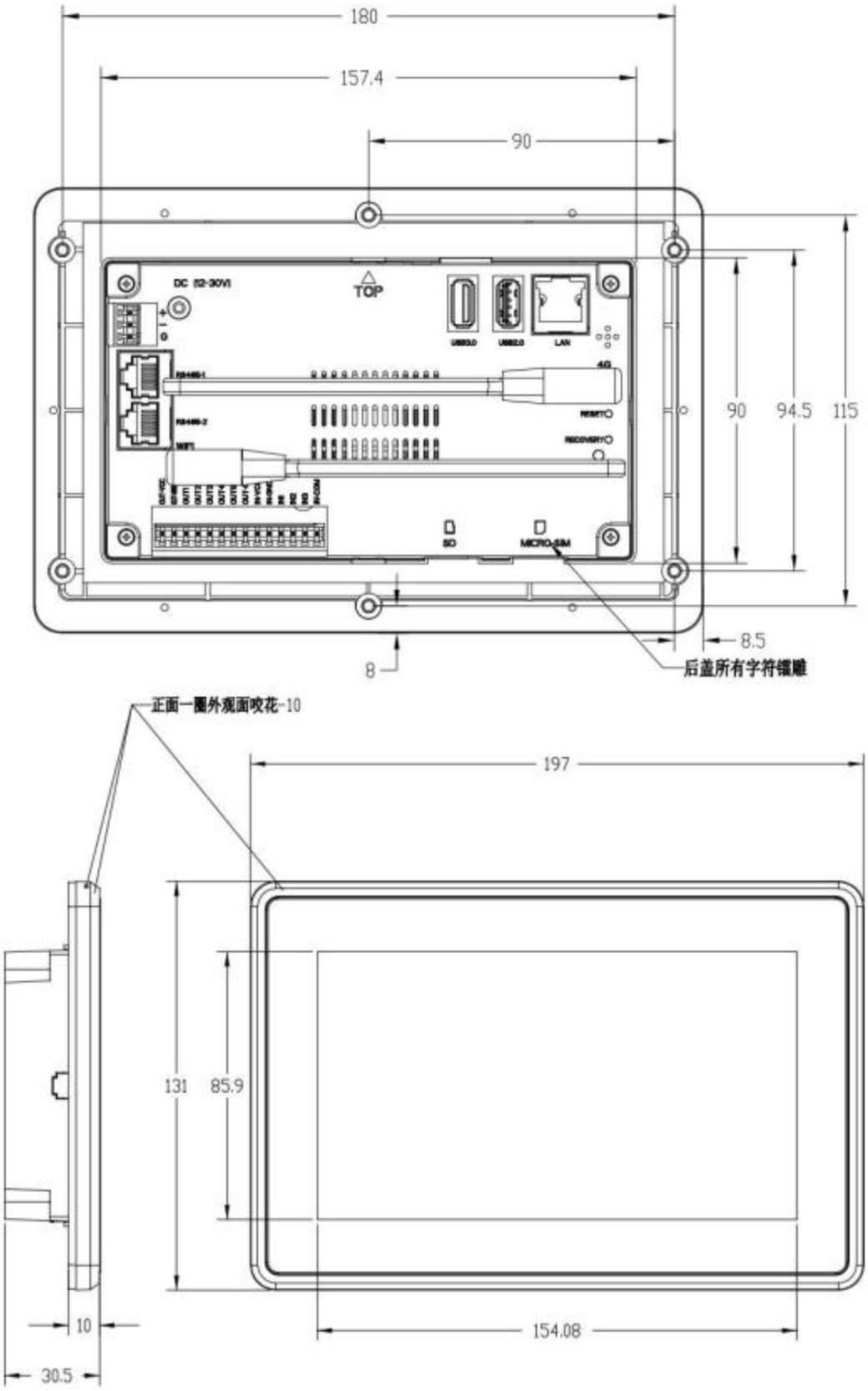
“Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment”.

“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.”

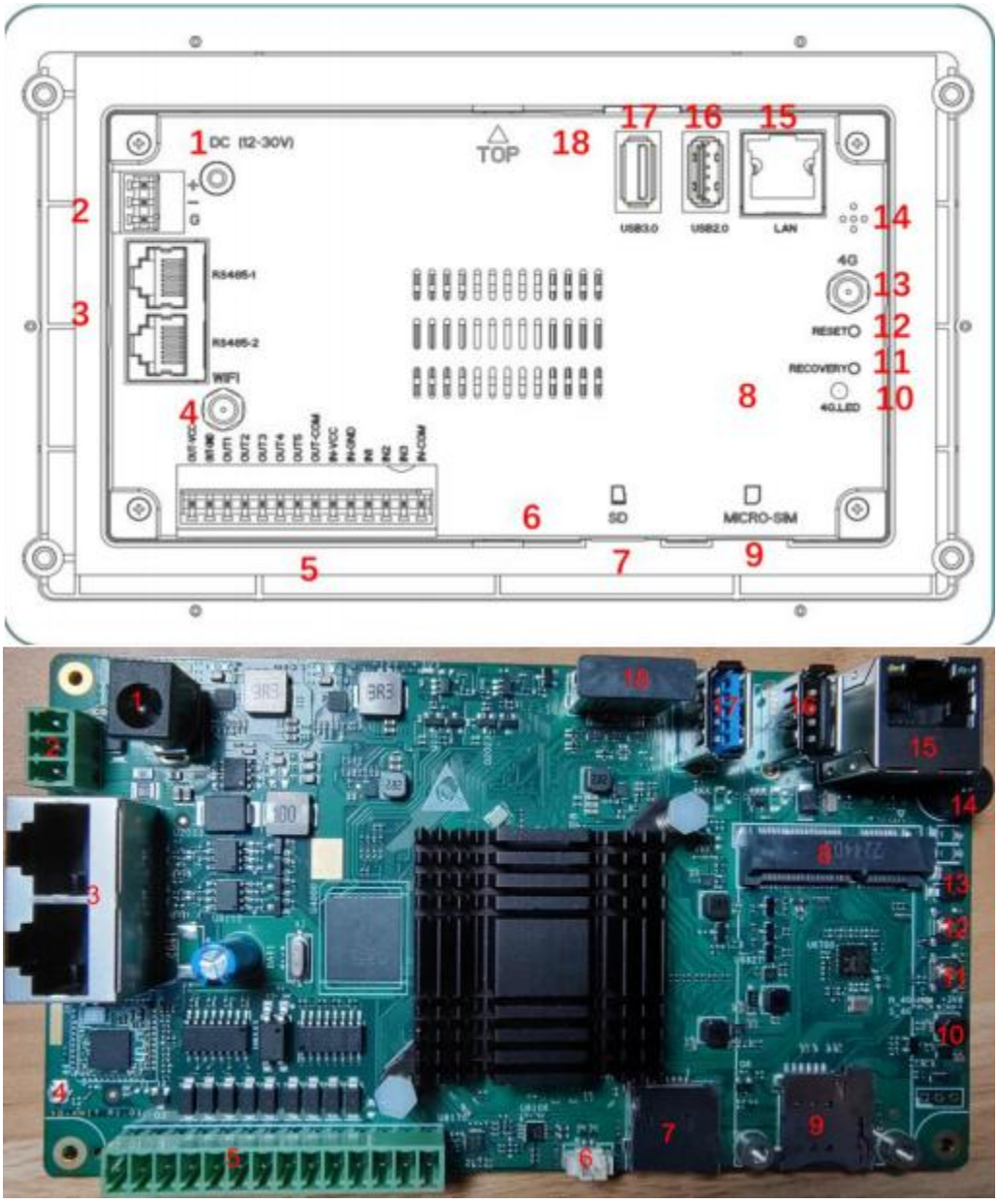
The device has been evaluated to meet general RF exposure requirement

3. Smart screen module layout diagram

(The above product appearance diagram only makes functional description and remarks, and the specific physical objects shall be subject to the production requirements)



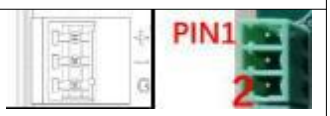
4. I / O interface description



Order 1, power input DC-005 power interface

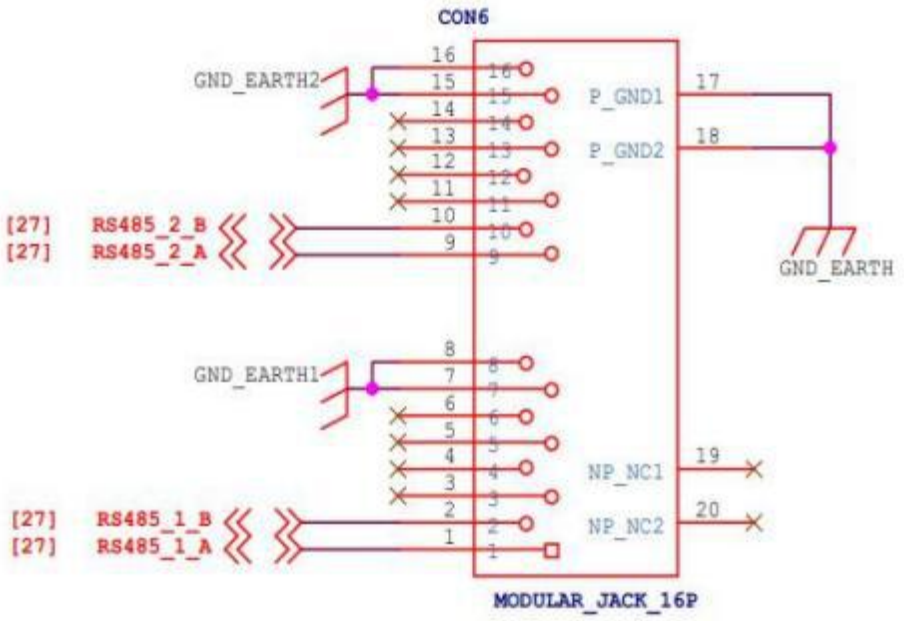
Foot serial number	definition	description	graph
1	+	DC power supply input positive electrode, 12V 30V	
2	GND	DC power supply input negative electrode, ground	
Suitable plug specifications: outer diameter 5.5mm, inner diameter 2.1mm installation depth 9mm			

Order 2, the power supply connector

Foot serial number	definition	description	graph
1	+	Direct current power supply input positive electrode	
2	-	The DC power supply input is the negative electrode	
3	Groun d	by the numbers	
Systems is connected inside the device to the DC Power Input Negative			

Order 3, the RS485 interface x 2

Foot serial number	definition	description	graph
1	A	RS 4851 + (A) signal	
2	B	RS 4851 + (B) signal	
3~6	N C	throw out of gear	
7~8	GND	landing	
RS 485, Connect to the SOC serial port of 4			
1	A	The RS 485-2 + (A) signal	
2	B	The RS 485-2 + (B) signal	
3~6	G	throw out of gear	
7~8	N C	landing	
RS 485, Connect to the SOC serial port of 7			

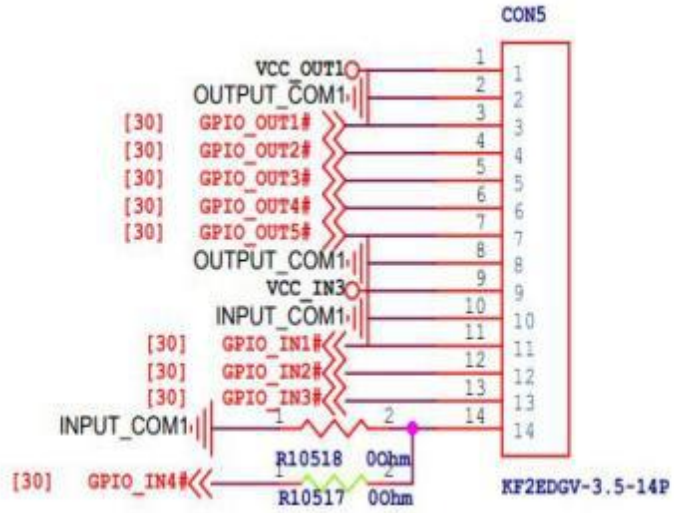


◆ 4, the WIFI antenna interface

Interface definition	description	graph
WIFI antenna	WIFI 2.4G 5G dual-frequency antenna interface The SMA outer thread and inner hole 	 

Order 5, the universal input and output interface

Foot serial number	definition	description	graph
1	O UT -VCC	Specification of isolated power supply for general output interface: + 5V ~ + 24V	
2	OUT -GND	Isolation ground # 1 for the universal output interface	
3	OUT 1	Isolation output is 1=> SOC GPIO3 D6=> gpi ochip 3=> line 30	
4	OUT 2	Isolation output 2=> SOC GPIO 3 D 7=> gpiochip 3=> line 31	
5	OUT 3	Isolation output 3=> SOC GPIO 4 A 0=> gpiochip 4=> line 0	
6	OUT 4	Isolation output is 4=> SOC GPIO 4 A 1=> gpiochip 4=> line 1	
7	OUT 5	Isolation output 5=> SOC GPIO 4 B 1=> gpiochip 4=> line 9	
8	OUT -COM	Isolation ground # 2 for the universal output interface	
9	IN -VCC	Specification of isolated power supply for general input interface: + 5V ~ + 24V	
10	IN -GND	Isolation ground # 1 for the general input interface	
11	IN 1	Isolate the input for 1=> SOC GPIO 3 D 0=> gpiochip 3=> line 24	
12	IN 2	Isolate the input for 2=> SOC GPIO 3 D 1=> gpiochip 3=> line 25	
13	IN 3	Isolate the input for 3=> SOC GPIO 3 D 2=> gpiochip 3=> line 26	
14	IN-COM	Isolation ground # 2 for the general input interface	

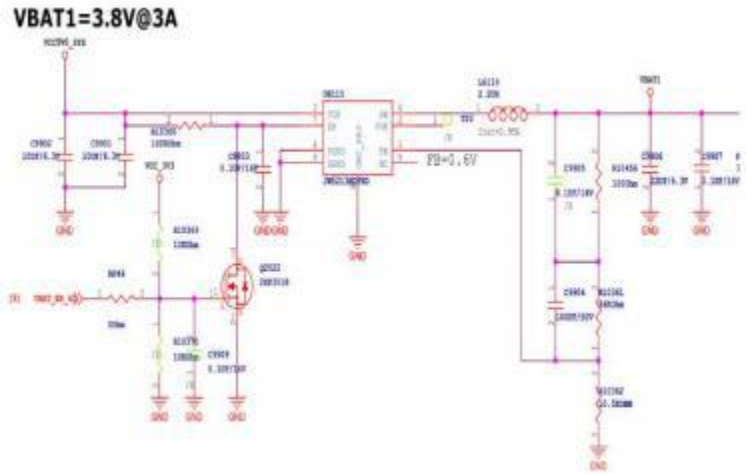


◆ 6, SD, card socket

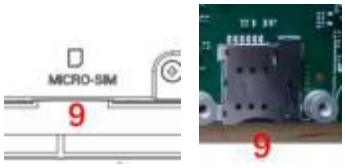
Interface definition	description	graph
SD card socket	Compatible SD 3.0, MMC ver 4.51 Support for the Micro SD (TF) card	

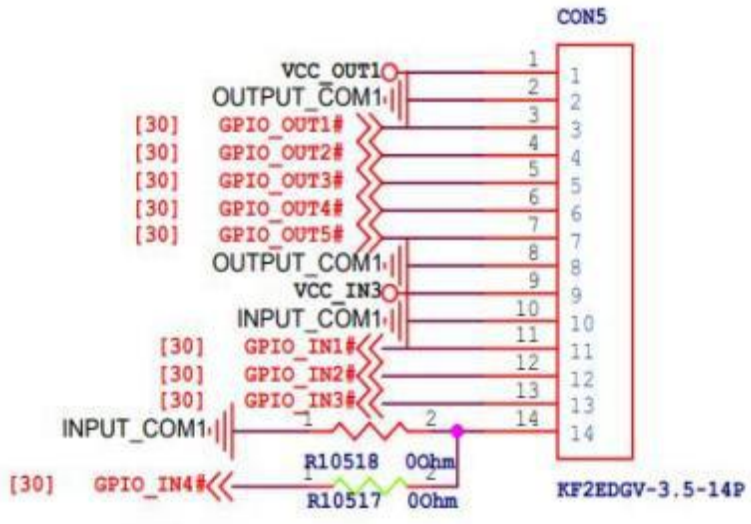
◆ 7, and the PCI-E Mini Card interface

Interface definition	description	graph
PCI Expr ess Mini Card Connector	4G LTE module interface, which can support the module.	
4G _PWR _EN : Soc GPIO3 D5 =>gpiochip3 => line29 Function: Low on; high disabled		
Internal interface of the device, all supporting modules, need to be tested and add corresponding drivers to the system mirror		



Order 8, Micro SIM, card socket

Interface definition	description	graph
Micro SIM Card socket	Coordination interface 8 4G LTE module use support Micro SIM	



Order 9,4G, state light

Interface definition	description	graph
The 4G state light	The 4G module network status lamp	

◆ 10, restore button

Interface definition	description	graph
Restore the button	Used to trigger the device to enter the boot loader mode to burn the firmware, use instructions: press and hold the change button, and then supply power to the device, the device will automatically enter the boot loader mode.	
This button needs to be used with the corresponding burning tool software to complete the firmware update		

HMI 7-Wireless charging smart module

Declaration:
Hereby, [SUZHOU XI NENG POWER CO. LTD.]declares that the radio equipment type [Xnergy Smart Display Module]is in compliance with Directive 2014/53/EU.
FCC STATEMENT:
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.
Any Changes or modifications not expressly approved by the party responsible for compliance could
void the user's authority to operate the equipment.
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.
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
The device has been evaluated to meet general RF exposure requirement

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 of the following measures:

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- 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.

FCC Part 15 Clause 15.21 :

“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.”

RF Exposure Guidance Statement：

1.This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

2.The device has been evaluated to meet general RF exposure requirement

◆ 11, reset the button

Interface definition	description	graph
Reset the button	System to force the restart button	
Note The restart behavior triggered by using this button does not save the data currently running, and there may be data loss		

◆ 12,4G antenna interface

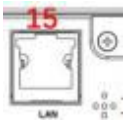
Interface definition	description	graph
The 4G antenna	4G antenna interface, SMA external thread and internal hole 	

The XG-HMI 7 Smart Screen module industrial host is equipped with an IPEX connector and extension cord connected to the 4G module and a 4G antenna. The customer also needs a Micro SIM card to ensure that the 4G module is working properly on the XG-H MI 7 smart screen module

Order 13, the buzzer

Interface definition	description	graph
buzzer	buzzer System signal definition: the use of SOC GPIO0 C5 High buzzer works The low buzzer stops	

◆ 14, a wired network interface

Interface definition	description	graph
RJ 45 Interface	Wired network interface Support for 10,100M cable network	 

◆ 15, USB 2.0 interface

Interface definition	description	graph
The U SB 2.0 interface	The U SB 2.0 interface, which has two working modes: Host, regular state This interface is used as a Host and supports external USB Devcie. Device, In boot loader mode, the interface USB works in Device mode, which can connect to other USB Host. Allowable maximum current: 500 mA	
The USB Device mode of this equipment is only used for debugging and updating the firmware and needs to be used with the development tools		

◆ 16, USB 3.0 interface

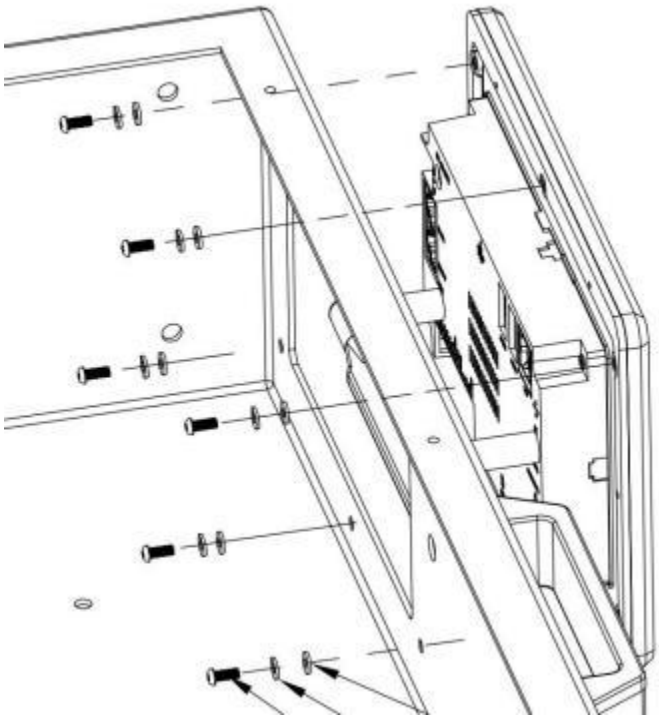
Interface definition	description	graph
USB 3.0	USB 3.0 data interface, working in Host mode. Allowable maximum current: 900 mA	

◆ 17, and the HDMI interface

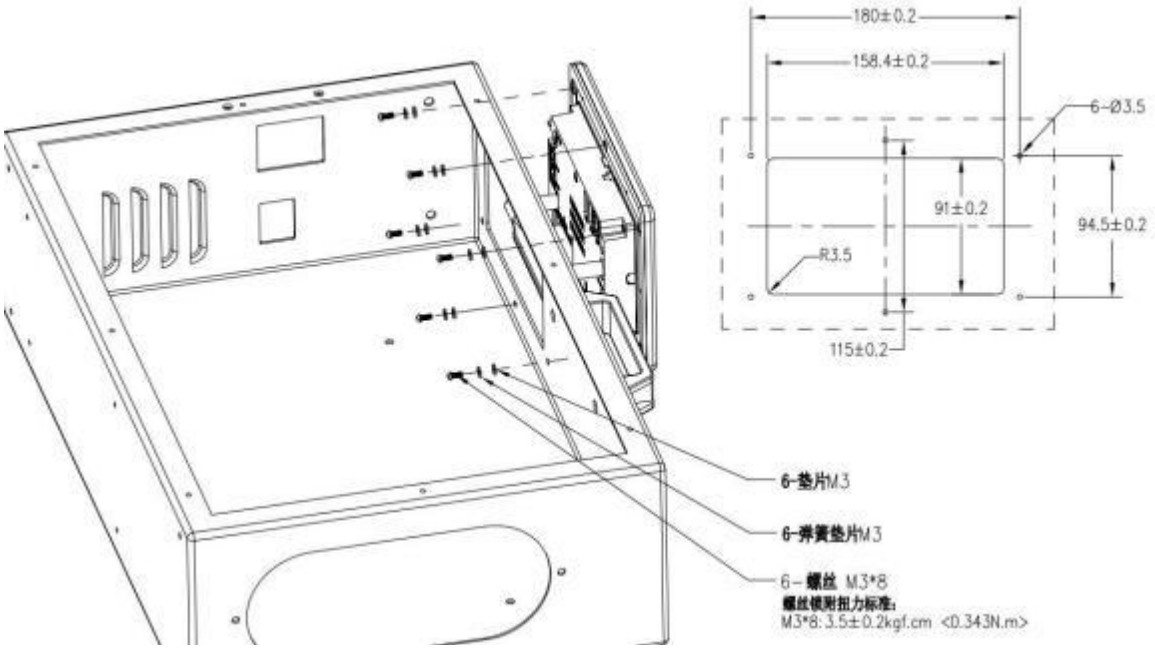
Interface definition	description	graph
The HDMI display interface	H DMI Display interface, and the built-in screen is working in the same screen mode	
This interface is an internal interface and is only used in product debugging and mass production testing		

5. Installation instructions

Use 6304 material head M3 * 8mm size screw matching gasket and spring blade for installation. Embedded installation method of the intelligent module, as shown in the figure below.



Note: Standard: M3 * 8:3.5+/-0.2Kg/cm M2 * 6:2.5+/-0.2Kg/cm



6. Storage and use instructions

In order to ensure the normal use of this product and prevent accidents such as electric shock or fire, please read and understand all the use requirements and operating procedures before using this product. Strictly comply with the following requirements:

1. The DC power supply required by this product is generated by the AC / DC power adapter, and the AC / DC power adapter should be kept away from the heat source in a well-ventilated place.

2. AC power socket and AC power cord should pay attention to good grounding, and can withstand enough current demand.

3. This product uses 12V-30V DC power supply, the plug inner diameter of 2.1mm / 5.5mm, the plug length is greater than 9mm, the current is related to the external setting, the whole machine should not be greater than 3A.

4. Pay attention to good ventilation and heat dissipation, not placed in a closed shell without heat conduction or box; also do not let direct sunlight or other heat sources bake.

5. Pay attention to avoid overwet and excessive dust to avoid failure caused by circuit corrosion.

6. Pay attention to keep a certain space during the assembly to provide the air convection and heat dissipation on the surface of the equipment.

7. Take attention to prevent seesaw deformation due to additional pressure.

8. Pay attention to the power supply during assembly, each interface signal is correctly connected correctly, the power supply does not exceed the endurance range, the electrical connection of all parts is correct, check the power.

10. All input and output interfaces should be operated in the case of power failure (unplug the connector).

11. This product is suitable for indoor industrial use, using the ambient temperature: -10 ~ 60℃, relative humidity: 80%.

12. Please unplug the power supply when you are not in use for a long time.