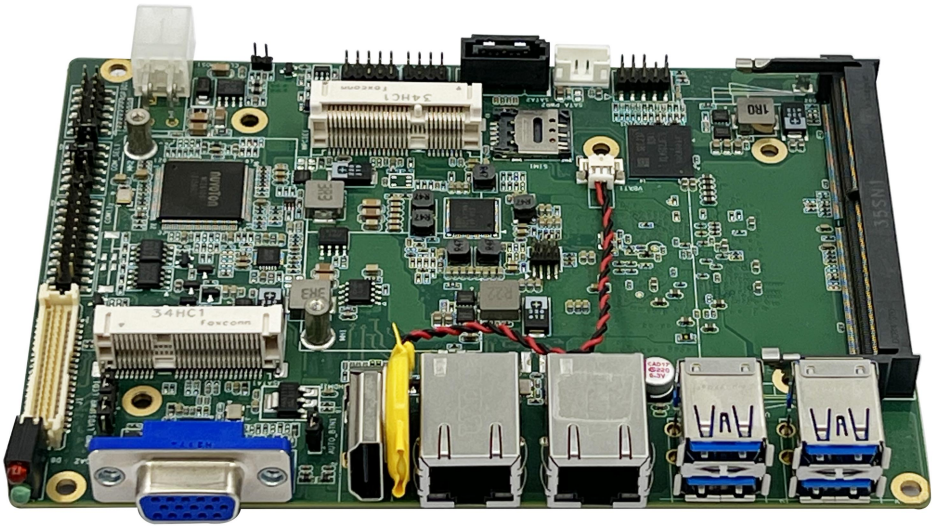
YDSTECH®

》User's Guide《

PCM-GM351

User Manual

V0.1



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Preface

Thank you for purchasing the PCM-GM351 motherboard from Indes Technology , which is designed with Intel Atom low-power chipset, onboard Intel® Gemini Lake Refresh processor, and onboard 4 G B DDR4 memory.

The chipset integrates Intel UHD high-performance core graphics, supports dynamic video memory allocation technology, and can provide powerful image processing capabilities.

The PCM-GM351 motherboard has a Realtek 8111 H Gigabit network chip onboard , and the onboard watchdog function makes your device smarter and more convenient to control.

PCM-GM351 supports ATX power management scheme and adopts the most mature power design scheme to ensure the stability of CPU during high-speed operation. The efficient heat sink greatly improves the stability of the chip. The board adopts 8-layer PCB design. The separate power layer and ground layer reduce the interference between power signals. At the same time, each I/O port has been specially designed for EMC. These thoughtful designs make PCM-GM351 obtain more stable overall performance.

PCM-GM351 also features fast computing speed, strong graphics processing capability, fast data transmission speed and excellent stability design. It is suitable for situations with large graphics computing, fast data storage speed and all-weather operation. It can be widely used in monitoring, security, factory control, finance and intelligent transportation.

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• Technical Support

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• Get more product information

You can go to the Ydstech website at http://www.ydstech.com to obtain all information about Ydstech software and hardware products.

• About this manual

This manual contains all the information you need when installing the Indes PCM-GM351 motherboard.

• Precautions before installation

Before installing and using the motherboard, be sure to follow the following precautions to ensure that the motherboard is not damaged during installation and use. If you have any technical questions about the use of this product, please contact technical personnel.

When removing any components during installation, please cut off the power supply to avoid damage to the device.

* Please make sure that the voltage setting of the power supply has been adjusted to the voltage standard used in your country.

* Please be aware of any static electricity on your body, and if possible, wear a grounding wristband before handling computer parts.
* Do not place magnetic items together with soft and hard drives.
* Please be sure to put away unused screws and other parts and do not leave them on the motherboard or computer host to avoid electrical short circuits.
* Please keep any water or liquid away from the computer to avoid accidental overturning, spilling, or dripping, which may cause a short circuit.
* Please use this product with care and pay attention to the installation specifications. Based on the specification limitations of ATX , chipset and processor, we do not provide guarantees for usage beyond the specifications .

• Packing List

Please make sure that the motherboard packaging you purchased is complete. If the packaging is damaged or any accessories are missing, please contact your dealer as soon as possible .

Product Name	describe	quantity
motherboard	PCM- GM351	1PCS
power cable	Square 4P power cord L=300MM	1PCS
1 point 2 USB cable	DuPont 2.0 2*4PIN to two USB injection female connectors L=300MM	1 PCS
Certificate	General Certificate	1PCS
Warranty Card	Universal warranty card	1PCS

• Motherboard Technical Specifications

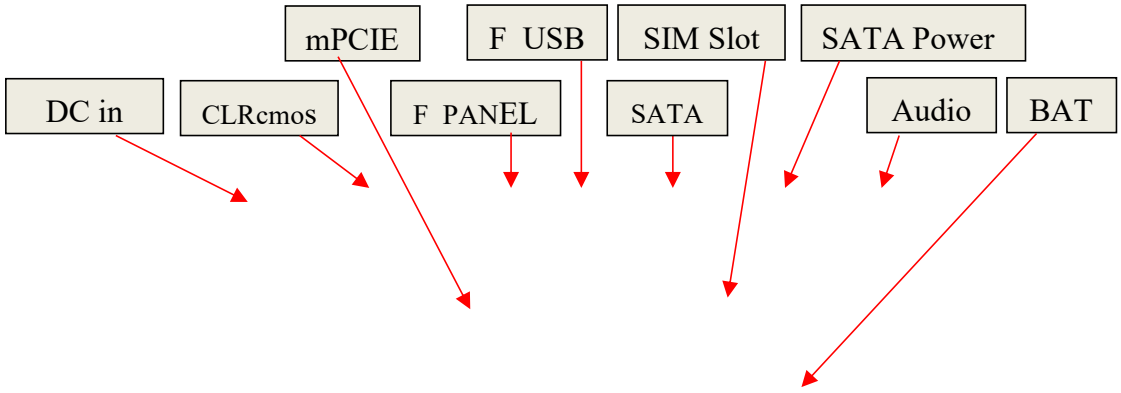
	PCM-GM351
CPU	Intel ® Gemini Lake series SOC, support: Intel® Celeron ®N4 00 0 Dual core 1. 1 GHz up to 2. 6 GHz , 6 W
system memory	SO-DIMM DDR4 4G memory (voltage 1.2V) frequency 2400MH z
display interface	2 independent display outputs support LVDS (maximum resolution 1920x1080) , HDM I (maximum resolution 3840 x 2160)
Ethernet	R TL 8111 H Gigabit network chip, RJ-45×2
SATA	1 MSATA, 1 SATA3.0, onboard 64G EMMC
USB	Rear: 2 x USB 3.0 , built-in pins: 2 x USB 2.0
serial port	2 x RS232 (3- wire) + 1 x RS485
Extension ports	1x mPCIe, 8x GPIOs, 1x SIM Slot (Nano SIM), watchdog circuit
voltage	+ 12V ~ + 19V
Operating temperature	-20 ～ 75 ℃ , optional -40° C ~ 85° C
storage temperature	-40～ 85 ℃
Motherboard size	146 mm (length) × 10 1 mm (width)
Heat dissipation	Fanless passive cooling

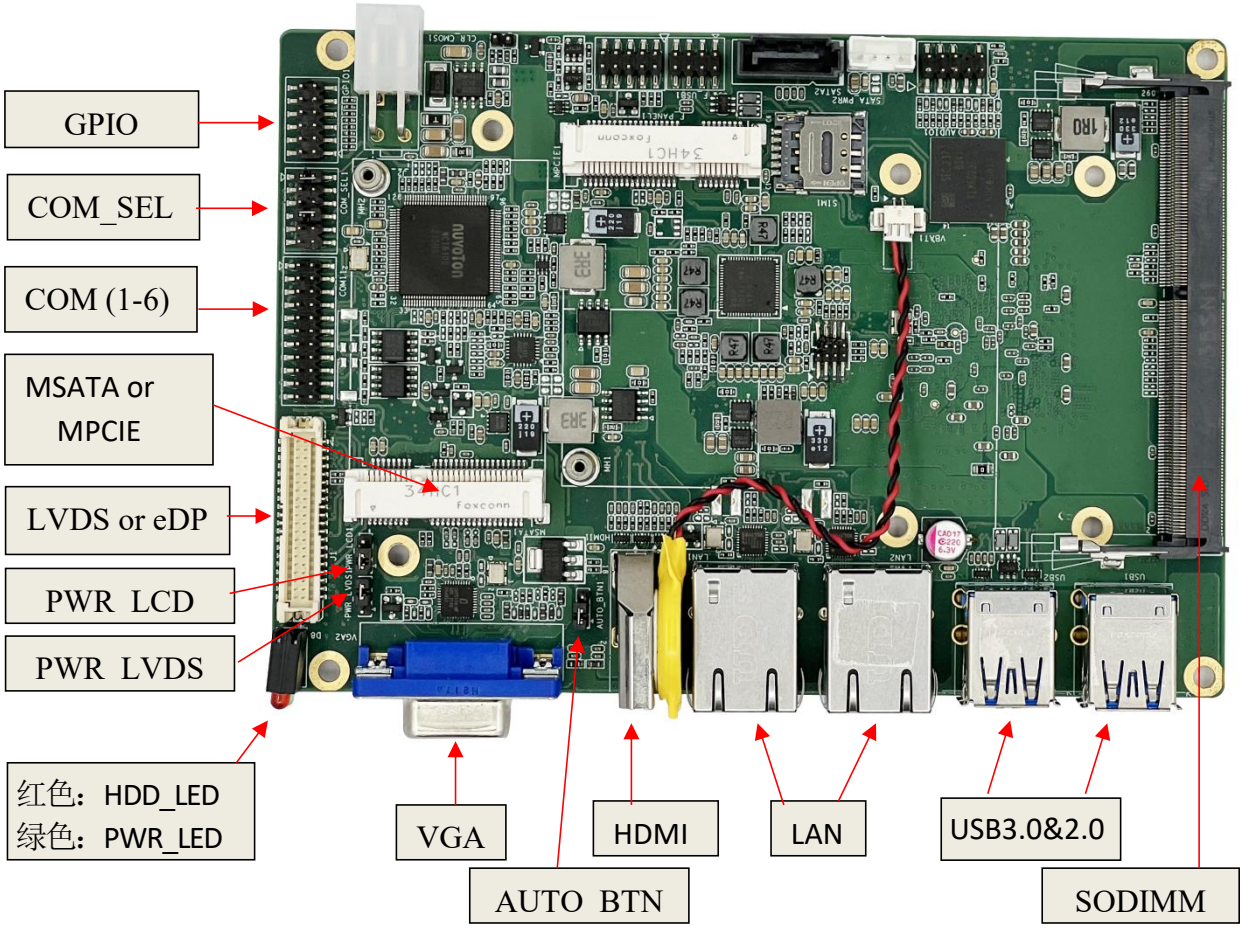
support system	Win 10 , Win 11, Linux

- **Hardware Installation and Setup**

1. Interface Location and Function

PCM-GM351 mainboard front interface location diagram





2. Interface definition

2.1 Identify the position of jumper pin 1

Please check the motherboard markings . Any square-marked pins (PCB pads) or pins with a number 1 or a " △ " mark next to them are pins 1 .

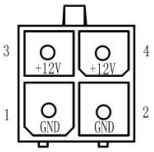
2.2 Clear CMOS (motherboard label: CLR_CMOS)

clear the CMOS data by shorting pins 1-2 of the CLR_CMOS jumper. To clear the CMOS data, you must complete the following operations:

a) Shut down the system first
b) Unplug the computer
c) Short pins 1-2 of the JP3 jumper for at least 3 seconds, then disconnect.
d) Power cycle the system

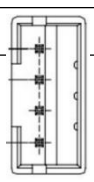
The following situations require you to clear CMOS
a) Incorrect BIOS parameters set
b) When something goes wrong
c) When you forget your BIOS password

2.3 Power input interface (5557 type 2X2 connector, pitch 4.2mm)

Connector	PIN	Function
	3-4	12 V , supports wide voltage input 12~19V
	1-2	GND

The maximum current allowed per PIN is 5 A. The standard wiring is as shown below

2.4 Hard drive power supply interface (PH2.0 4P motherboard label: SATA_PWR)

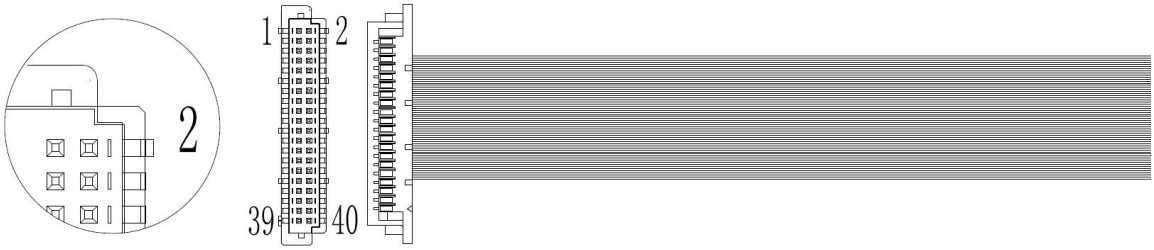
Connector	PIN	Function
1 	1	NC (optional 12V)

2	2	GND
3	3	GND
4	4	5V

The maximum current allowed per pin is 2 A.

2.5 LVDS interface (DF13 2x20Pin connector, 1.25mm pitch, motherboard marking: J1)

illustrate	definition	PIN		definition	illustrate
The default backlight voltage is 5V	+5V /+12V	1	2	LVDS B3+	
	LCD_VCC	3	4	LVDS B3-	
Backlight Enable	BKLT_EN	5	6	LVDS B2+	
Backlight brightness adjustment	BKLT_CTL	7	8	LVDS B2-	
	DDC CLK	9	10	LVDS B1+	
	DDC DATA	11	12	LVDS B1-	
Aux-(eDP)	Aux Ch(n)	13	14	LVDS B0+	
Aux+(eDP)	Aux Ch(p)	15	16	LVDS B0-	
spare	INT#	17	18	LVDS B CLK +	
	LVDS A3+	19	20	LVDS B CLK -	
	LVDS A3-	twenty one	twenty two	GND	
	LVDS A2+	twenty three	twenty four	+5V /+12V	Same as PIN1
	LVDS A2-	25	26	LCD_VCC	Same as PIN3
	LVDS A1+	27	28	GND	
	LVDS A1-	29	30	GND	
	LVDS A0+	31	32	Lane 1(p)	eDP
	LVDS A0-	33	34	Lane 1(n)	eDP
	LVDS ACLK +	35	36	Lane 0(p)	eDP
	LVDS ACLK -	37	38	Lane 0(n)	eDP
	GND	39	40	Hot Plug	eDP



Note: The default is LVDS output, and EDP output is optional. If you need to use EDP signal, please inform us in advance.

2.6 LVDS backlight voltage adjustment (mainboard label: PWR_LVDS, default is 5V)

PWR_LVDS	Function
1 - 2	Select LVDS backlight voltage as power input voltage
twenty three	Select LVDS backlight voltage to 5V (default is 5V)

Note: When the jumper cap shorts 1-2PIN, the LVDS backlight voltage is the same as the input voltage of the industrial control board. If a 19V power input is used, the LVDS backlight voltage is also 19V. Please confirm the backlight voltage range allowed by the LCD screen.

2.7 LVDS VCC voltage regulation (motherboard label: PWR_LCD, default is 3.3V)

PWR_LCD	Function
1 - 2	Select LVDS VCC voltage to 3.3V (default is 3.3V)
twenty three	Select LVDS VCC voltage as 5V

2.8 USB2.0 (DuPont 2.0 2x4PIN connector, motherboard mark: F_USB)

definition	PIN		definition
+5V	1	2	5V
USB 5 -	3	4	USB 6 -
USB 5+	5	6	USB 6+
GND	7	8	GND

2.9 Serial port (DuPont 2.0 2x11PIN connector, motherboard marking: COM)

illustrate	definition	PIN		definition	illustrate
RS232	COM1_RX	1	2	COM1_TX	RS232
	COM2_RX	3	4	COM2_TX	
	COM3_RX	5	6	COM3_TX	
	COM4_RX	7	8	COM4_TX	
	COM5_RX	9	10	COM5_TX	
	COM6_RX	11	12	COM6_TX	
COM1	RS 485 _ A _ D- / RS 422 _ A _ Tx D-	13	14	RS_485_A_D + / RS 422 _ A _ Tx D+	COM1
	RS 422 _A _R xD-	15	16	RS 422_A_RxD +	
COM2	RS 485_B_D- / RS 422 _ B _ Tx D-	17	18	RS_485_B_D + / RS 422 _ B _ Tx D+	COM2
	RS 422 _ B _ R xD-	19	20	RS 422 _ B _R xD+	

	Ground	twenty one	twenty two	GND	

Note: COM1 and COM2 serial ports support RS232/422/485 optional. When using, you need to connect the corresponding defined PINs. For example, when COM1 needs to use RS232 definition, you should connect the 1-2 two PINs of the COM pin. When using RS422 definition, you should connect the 13-14-15-16 four PINs of the COM pin. When using RS485 definition, you should connect the 13-14 two PINs of the COM pin. At the same time, COM1 can only select one of the three definitions, and no matter which definition is selected, these connections are COM1.

2.10 COM1, COM2 mode selection (motherboard label: COM_SEL)

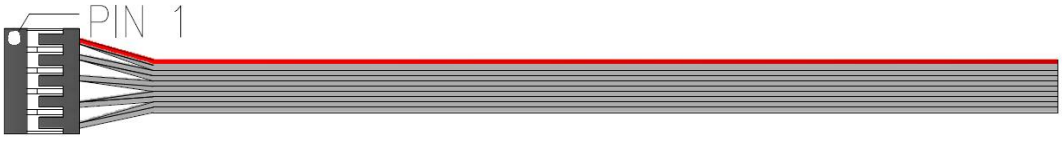
PIN	definition
1 -2	COM1 selects RS232 mode
3 -4	COM1 selects RS485 mode
5 -6	COM1 selects RS422 mode
7 -8	COM2 selects RS232 mode
9 -10	COM2 selects RS485 mode
11 -12	COM2 selects RS422 mode

Note: At the same time, a serial port number can only select one mode;

2.11 Audio (DuPont 2.0 2x5PIN connector, motherboard label: AUDIO)

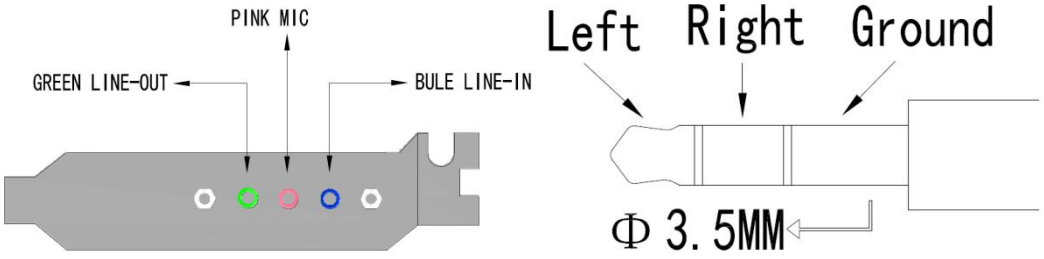
definition	PIN		definition
Right channel output LineOut-R	1	2	Left channel output LineOut-L
GND	3	4	GND
Microphone right channel Mic-R	5	6	Microphone right channel Mic-L
GND	7		
Line input right channel LineIn-R	9	10	Line input left channel LineIn-L

There is a white dot on pin 1 of the standard wiring. Please confirm that it corresponds to pin 1 of the motherboard AUDIO pin during installation, as shown below:



Audio Line

Audio interface description:



2.12 GPIO (DuPont 2.0 2x6PIN connector, motherboard label: GPIO)

definition	PIN		definition
3.3V	1	2	GND
GPIO0	3	4	GPIO1
GPIO2	5	6	GPIO3
GPIO4	7	8	GPIO5
GPIO6	9	10	GPIO7
GND	11	12	3.3V

2.13 Switch and reset (F_Panel, Dupont 2.0 2x5PIN)

definition	PIN		definition
HDD_LED+	1	2	PWR_LED+
HDD_LED-	3	4	PWR_LED -
Reset-	5	6	Power switch+
Reset+	7	8	Power switch-
NC	9	10	NC

2.14 Automatically start after power on (mainboard label: AUTO_BTN)

AUTO_BTN	Function

1 - 2	Enable the power-on auto-start function
twenty three	Disable the power-on auto-start function

3. Installing External Devices

After you have installed all the components and connectors on the motherboard and set the relevant jumpers and fixed them in the chassis, you can continue to install other add-on cards and external storage devices. After installation, please carefully check all power supplies, cables and jumper settings to avoid unnecessary losses. Only after confirming that they are correct can you connect the power to the power socket .

4. Structure diagram

- driver

Visit http://www.ydstech.com to download the driver.