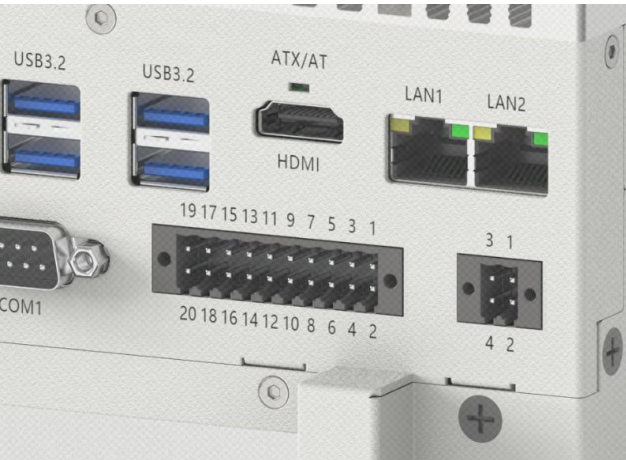
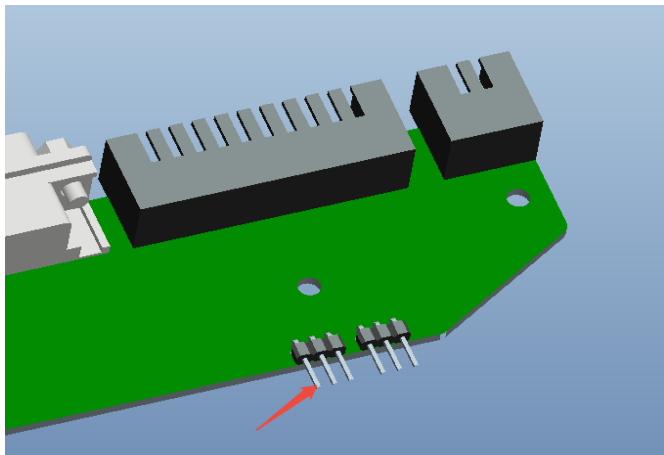


Specification of 16-Channel GPIO with 3.3V Direct Output from the Motherboard

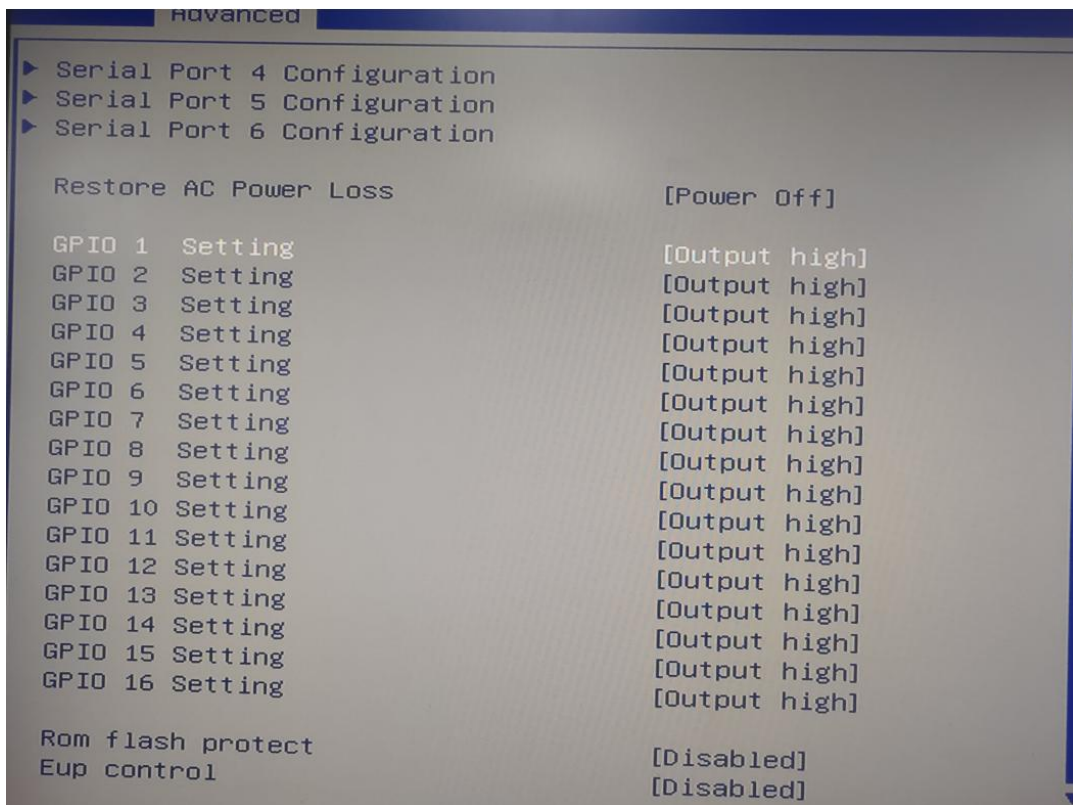


Pin Definitions									
19	17	15	13	11	9	7	5	3	1
GPIO12	GPIO11	GPIO10	GPIO9	GPIO4	GPIO3	GPIO2	GPIO1	GND	V5S
20	18	16	14	12	10	8	6	4	2
GPIO16	GPIO15	GPIO14	GPIO13	GPIO8	GPIO7	GPIO6	GPIO5	GND	DC_OUT

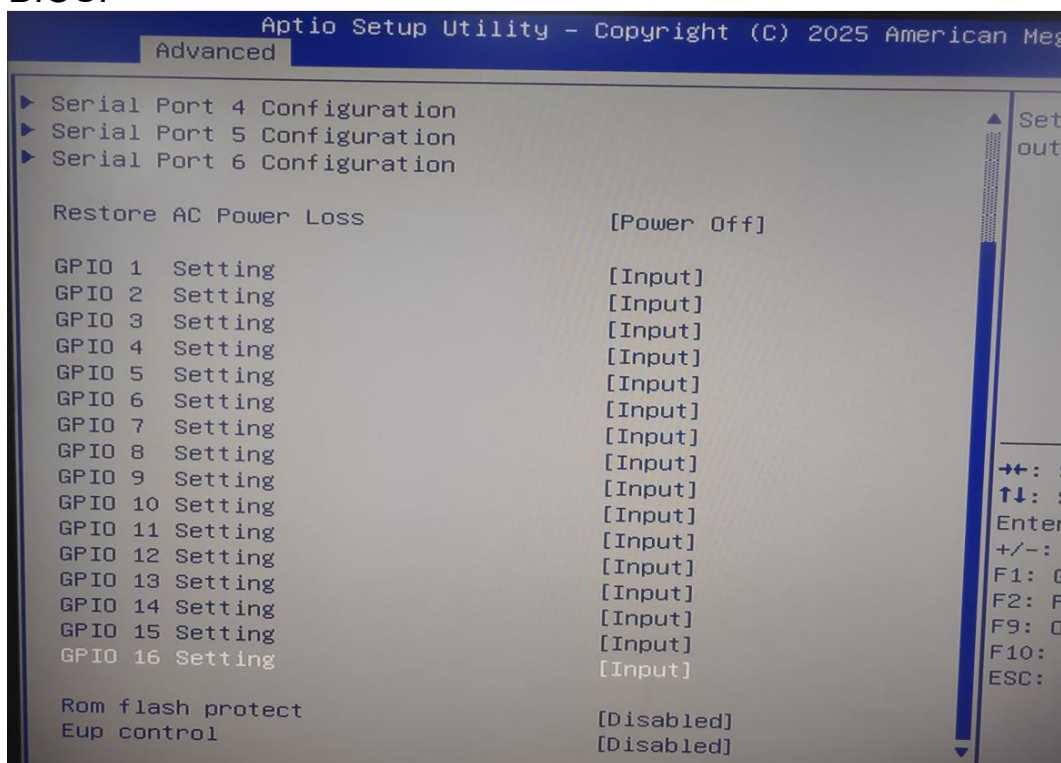


Panel Connector Pin 2 (DC_OUT) – Jumper Definition, Silkscreen: JDC_OUT1		
1-2	DC_OUT * NC	By default, Pin 2 (DC_OUT) is unpowered
2-3	DC_OUT * DC_IN	Pin 2 is shorted to the system’s input power.
Description: When external devices require power, Pin 2 can be enabled to output voltage. It should be used together with Pin 4 (GND) to supply power to the external device. The output voltage on Pin 2 will match the system’s input voltage.		

GPIO1–16 are set to DO (Digital Output) mode by default. In the BIOS, the output state can be configured as HIGH or LOW.



Each GPIO can be configured as DI (Digital Input) mode through the BIOS.



GPIO地址

Function	Default State / Options	Description	Address
GPIO1	HIGH/LOW	BIOS Options	A06
GPIO2	HIGH/LOW	BIOS Options	
GPIO3	HIGH/LOW	BIOS Options	
GPIO4	HIGH/LOW	BIOS Options	
GPIO5	HIGH/LOW	BIOS Options	
GPIO6	HIGH/LOW	BIOS Options	
GPIO7	HIGH/LOW	BIOS Options	
GPIO8	HIGH/LOW	BIOS Options	
GPIO9	HIGH/LOW	BIOS Options	A07
GPIO10	HIGH/LOW	BIOS Options	
GPIO11	HIGH/LOW	BIOS Options	
GPIO12	HIGH/LOW	BIOS Options	
GPIO13	HIGH/LOW	BIOS Options	
GPIO14	HIGH/LOW	BIOS Options	
GPIO15	HIGH/LOW	BIOS Options	
GPIO16	HIGH/LOW	BIOS Options	

When the GPIOs are in DO (Digital Output) mode:
Writing a hexadecimal value to address **A06** controls the HIGH/LOW states of **GPIO1–8**.
Writing a hexadecimal value to address **A07** controls the HIGH/LOW states of **GPIO9–16**.

Method to Obtain the Hexadecimal Value

	GPI08	GPI07	GPI06	GPI05	GPI04	GPI03	GPI02	GPI01
Example 1	0	0	0	0	0	0	0	0
Description: All GPIO1–8 values are 0, which represents a LOW state for each GPIO. The corresponding binary value is 00000000 , which converts to the hexadecimal value 0x00 .								
	GPI08	GPI07	GPI06	GPI05	GPI04	GPI03	GPI02	GPI01
Example 2	0	0	0	0	0	0	1	0
Description: GPIO2 is set to 1 while all other GPIOs are 0, indicating that GPIO2 is HIGH and all others are LOW. The corresponding binary value is 00000010 , which converts to the hexadecimal value 0x02 .								

	GPI08	GPI07	GPI06	GPI05	GPI04	GPI03	GPI02	GPI01
Example 3	0	0	0	0	1	0	1	0
Description: GPIO2 and GPIO4 are set to 1, while all other GPIOs are 0, indicating that GPIO2 and GPIO4 are HIGH and all others are LOW. The corresponding binary value is 00001010 , which converts to the hexadecimal value 0x0A .								

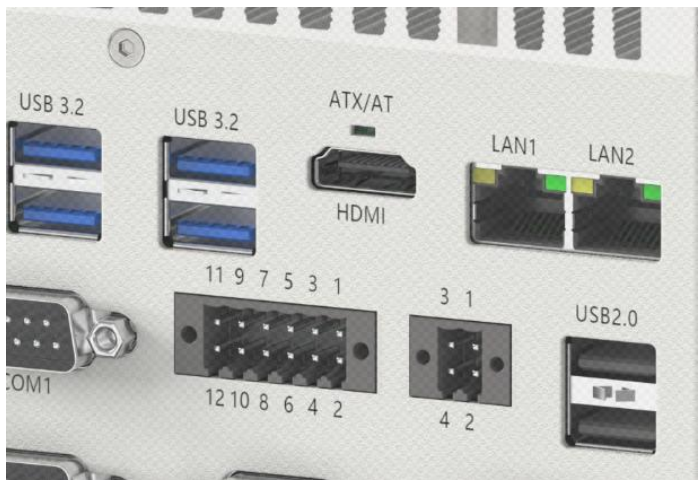
	GPI08	GPI07	GPI06	GPI05	GPI04	GPI03	GPI02	GPI01
Example 4	0	1	1	0	0	1	0	0
Description: GPIO3, GPIO6, and GPIO7 are set to 1, while all other GPIOs are 0, indicating that GPIO3, GPIO6, and GPIO7 are HIGH and all others are LOW. The corresponding binary value is 01100100 , which converts to the hexadecimal value 0x64 .								

Writing the obtained hexadecimal value to **address A06** sets the corresponding **HIGH/LOW states for GPIO1–8**. Similarly, writing the obtained hexadecimal value to **address A07** sets the corresponding **HIGH/LOW states for GPIO9–16**.

	GPI016	GPI015	GPI014	GPI013	GPI012	GPI011	GPI010	GPI09
Example 1	0	0	0	0	0	0	0	0
Description: All GPIO9–16 values are 0, indicating that all corresponding GPIOs are in the LOW state. The corresponding binary value is 00000000 , which converts to the hexadecimal value 0x00 .								
	GPI016	GPI015	GPI014	GPI013	GPI012	GPI011	GPI010	GPI09
Example 2	0	0	0	0	0	0	1	0
Description: GPIO10 is set to 1, while all other GPIOs are 0, indicating that GPIO10 is HIGH and all others are LOW. The corresponding binary value is 00000010 , which converts to the hexadecimal value 0x02 .								
	GPI016	GPI015	GPI014	GPI013	GPI012	GPI011	GPI010	GPI09
Example 3	0	0	0	0	1	0	1	0
Description: GPIO10 and GPIO12 are set to 1, while all other GPIOs are 0, indicating that GPIO10 and GPIO12 are HIGH and all others are LOW. The corresponding binary value is 00001010 , which converts to the hexadecimal value 0x0A .								
	GPI016	GPI015	GPI014	GPI013	GPI012	GPI011	GPI010	GPI09
Example 4	0	1	1	0	0	1	0	0
Description: GPIO11, GPIO14, and GPIO15 are set to 1, while all other GPIOs are 0, indicating that GPIO11, GPIO14, and GPIO15 are HIGH and all others are LOW. The corresponding binary value is 01100100 , which converts to the hexadecimal value 0x64 .								

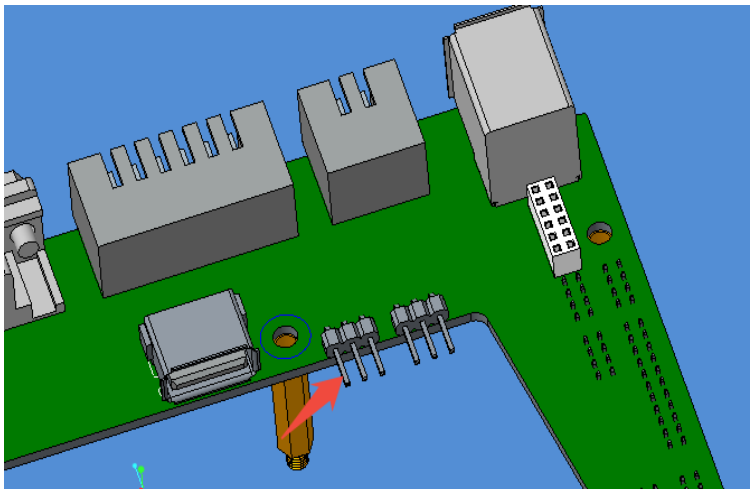
Note: You can use search engines such as **Google** to find binary-to-hexadecimal converters for quick conversion.

8-Channel 3.3V Direct-Output GPIO Description



Pin Definitions

11	9	7	5	3	1
GPIO4	GPIO3	GPIO2	GPIO1	GND	V5S
12	10	8	6	4	2
GPIO8	GPIO7	GPIO6	GPIO5	GND	DC_OUT

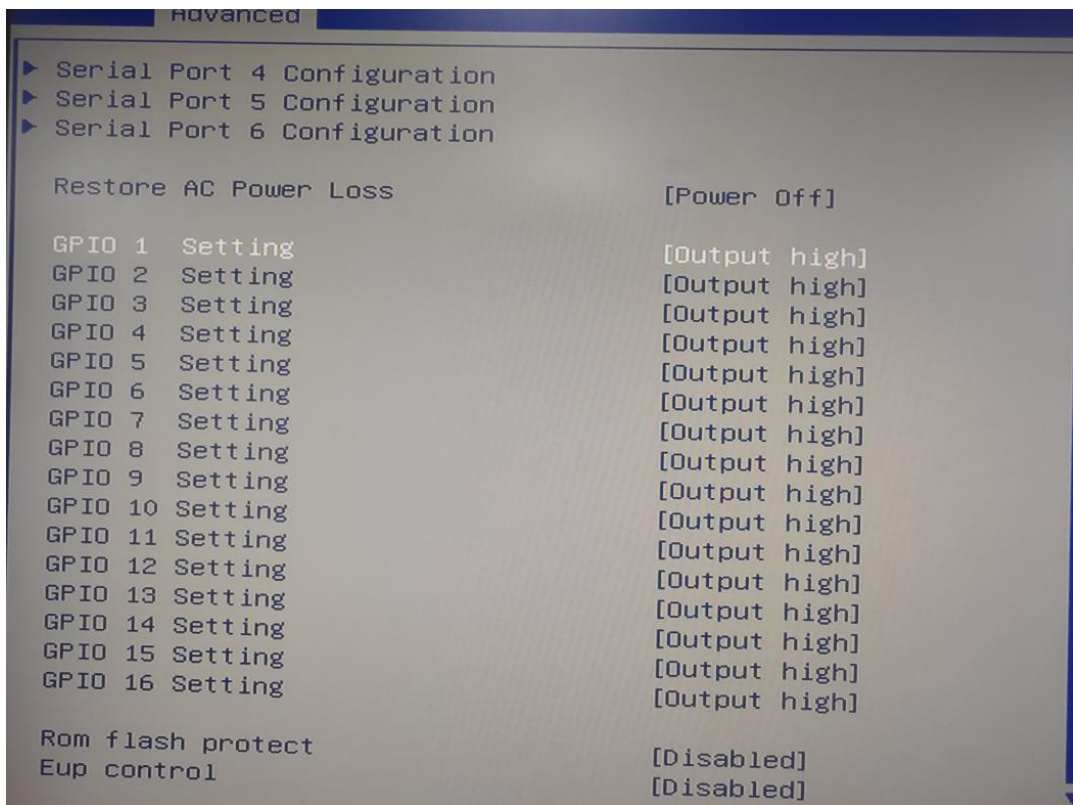


Panel Connector Pin 2 (DC_OUT) – Jumper Definition, Silkscreen: JDC_OUT1

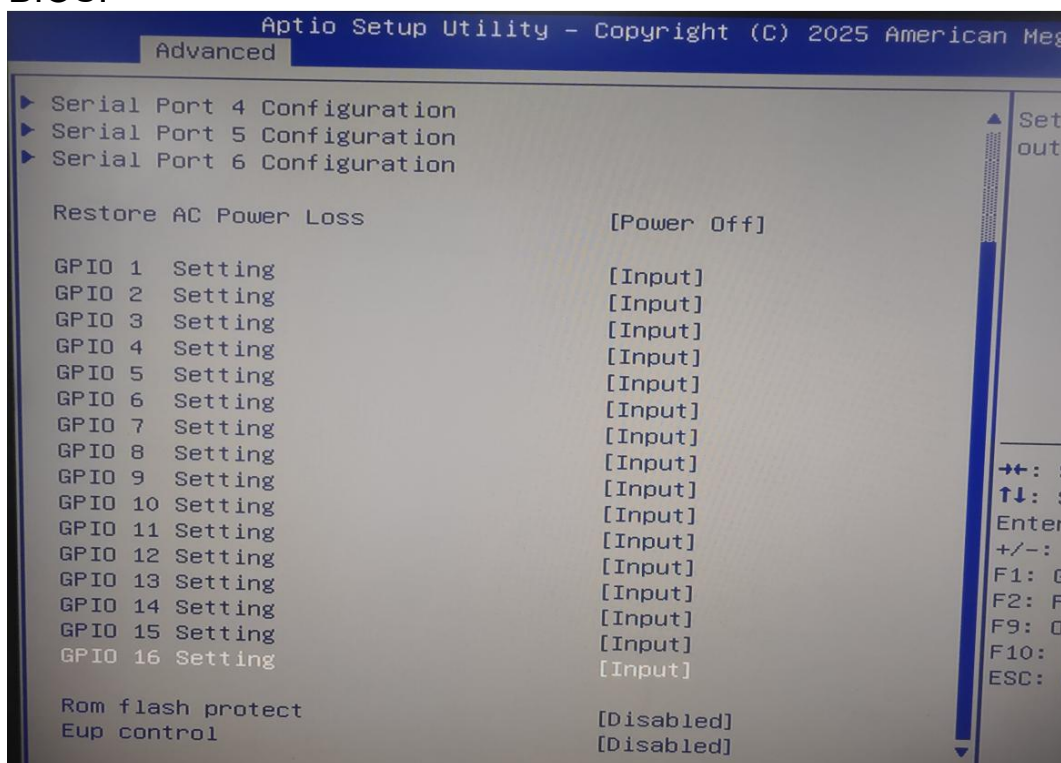
1-2	DC_OUT * NC	By default, Pin 2 (DC_OUT) is unpowered.
2-3	DC_OUT * DC_IN	Pin 2 is shorted to the system's input power.

Description: When an external device requires power, Pin 2 (DC_OUT) can be enabled and used together with Pin 4 (GND) to supply power to the external device. The output voltage on Pin 2 will match the system's input voltage.

GPIO1–8 are set to DO (Digital Output) mode by default. In the BIOS, the output state can be configured as HIGH or LOW.



Each GPIO can be configured as DI (Digital Input) mode through the BIOS.



GPIO Address

Function	Default State / Options	Description	Address
GPIO1	HIGH/LOW	BIOS Options	A06
GPIO2	HIGH/LOW	BIOS Options	
GPIO3	HIGH/LOW	BIOS Options	
GPIO4	HIGH/LOW	BIOS Options	
GPIO5	HIGH/LOW	BIOS Options	
GPIO6	HIGH/LOW	BIOS Options	
GPIO7	HIGH/LOW	BIOS Options	
GPIO8	HIGH/LOW	BIOS Options	

When the GPIOs are in DO (Digital Output) mode: Writing a hexadecimal value to **address A06** controls the **HIGH/LOW states of GPIO1–8**.

Method to Obtain the Hexadecimal Value

	GPIO8	GPIO7	GPIO6	GPIO5	GPIO4	GPIO3	GPIO2	GPIO1
Example 1	0	0	0	0	0	0	0	0
Description: All GPIO1–8 values are 0, indicating that all corresponding GPIOs are in the LOW state. The corresponding binary value is 00000000 , which converts to the hexadecimal value 0x00 .								
	GPIO8	GPIO7	GPIO6	GPIO5	GPIO4	GPIO3	GPIO2	GPIO1
Example 2	0	0	0	0	0	0	1	0
Description: GPIO2 is set to 1, while all other GPIOs are 0, indicating that GPIO2 is HIGH and all others are LOW. The corresponding binary value is 00000010 , which converts to the hexadecimal value 0x02 .								

	GPIO8	GPIO7	GPIO6	GPIO5	GPIO4	GPIO3	GPIO2	GPIO1
Example 3	0	0	0	0	1	0	1	0
Description: GPIO2 and GPIO4 are set to 1, while all other GPIOs are 0, indicating that GPIO2 and GPIO4 are HIGH and all others are LOW. The corresponding binary value is 00001010 , which converts to the hexadecimal value 0x0A .								
	GPIO8	GPIO7	GPIO6	GPIO5	GPIO4	GPIO3	GPIO2	GPIO1
Example 4	0	1	1	0	0	1	0	0
Description: GPIO3, GPIO6, and GPIO7 are set to 1, while all other GPIOs are 0, indicating that GPIO3, GPIO6, and GPIO7 are HIGH and all others are LOW. The corresponding binary value is 01100100 , which converts to the hexadecimal value 0x64 .								

Writing the obtained hexadecimal value to address A06 will set the corresponding HIGH/LOW states for GPIO1–8.

Note: You can use search engines such as **Google** to find binary-to-hexadecimal converters for quick conversion.