WN2 Series

Observation Type Uncooled Infrared Module

User's Accessories Manual

V2.1

Contents

Change History

Changes between document issues are cumulative. The latest document issue contains all the changes in previous issues.

Version	Release Date	Revision Content
V0.1	August 25th, 2023	Create
V0.2	October 16, 2023	Adjusted formatting and outline.
V1.0	October 27, 2023	1. Deleted material IDs of accessories. 2. Updated USB board picture.
V2.0	May 07, 2024	Updated accessory selection.
V2.1	July 19, 2024	1. Updated accessory illustrations; 2. Added accessory descriptions.

1. Overview

1.1. Description

WN2 accessories include the WN2 accessory kit (mounting bracket, two M1.6 x 12 screws and analog video board), flying lead, and demo cable, all of which plug into the rear of the module and support USB2.0 streaming output, CVBS analog video streaming output, serial communication, and USB power supply.

All kinds of digital video are off by default, you can choose to output the required digital video signals through the user's PC software or send different digital video on command, the module components support digital video and analog video output at the same time, the two do not conflict.

1.2. Accessory List

Table 1-1 WN2 Accessories List

Name		Legend	Main Interfaces/Functions
WN2 Accessory Kit	Mounting Bracket		Used as a mounting bracket for the analog video board.
	Two M1.6x12 Screws		Used to secure analog video boards to mounting bracket and module.
	Analog Video Board		Supports USB2.0 streaming output, CVBS analog video streaming output, serial communication, and USB power supply.

Name	Legend	Main Interfaces/Functions
Flying Leads		Supports USB2.0 streaming output, CVBS analog video streaming output, serial communication, and USB power supply.
Demo Cable		Supports USB2.0 streaming output, CVBS analog video streaming output, and USB power supply.

2. WN2 Accessory Kit

Note

The WN2 accessory kit requires user installation as described in 4.1 Accessory Kit Installation.

2.1. Mounting Bracket and Screws

The mounting bracket that serves as the analog video board is mounted on the rear end of the module and is secured by two M1.6×12 screws.

Refer to Figure 2-1 and Table 2-1 for diagrams and descriptions of and explanations of mounting bracket.

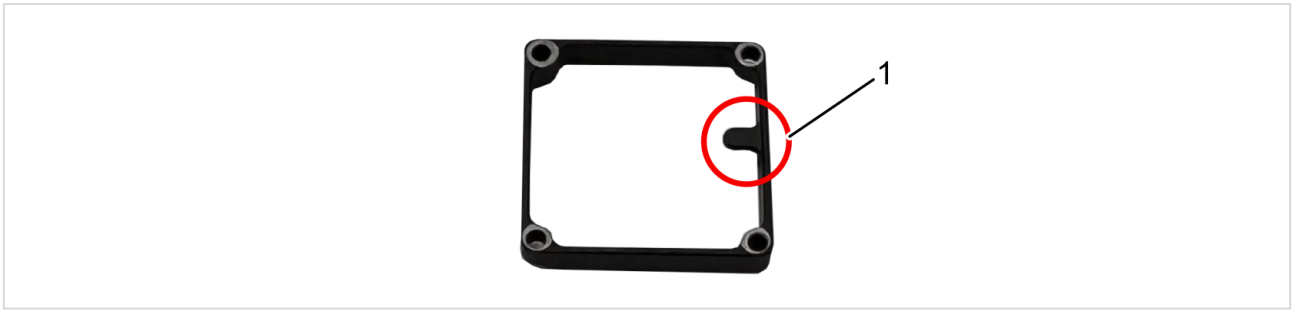


Figure 2-1 Mounting Bracket Schematic

Table 2-1 Mounting Bracket Schematic Explanation

No.	Name	Functions
1	Fool-proof Step	Prevents installation in the wrong direction.

See Figure 2-2 for a schematic of the M1.6 x 12 screws.

Figure 2-2 M1.6×12 Screw Schematic

2.2. Analog Video Board

2.2.1. Introduction

The analog video board is mounted on the rear of the module via a mounting bracket, and supports USB2.0 streaming output and communication, CVBS analog video streaming output, USB power supply, etc., which is convenient for users to quickly integrate.

Refer to Figure 2-3 and Table 2-2 for diagrams and descriptions of and explanations of analog video board.

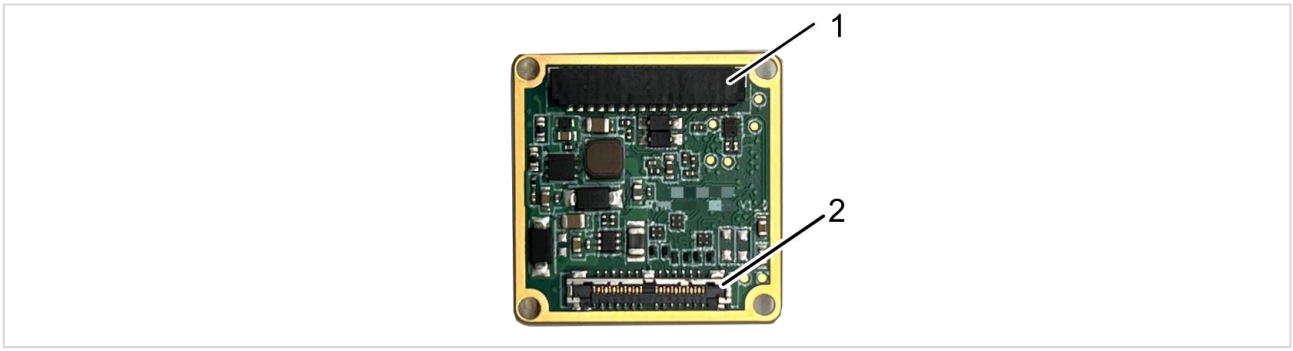


Figure 2-3 Analog Video Board Schematic

Table 2-2 Analog Video Board Schematic Explanation

No.	Name	Model	Functions
1	J2 Connector	DF52-16S-0.8H(21), (HRS, Male)	Supports USB2.0 streaming output and communication, CVBS analog video streaming output, and USB power supply.
2	J3 Connector	DF56C_26S_0.3V(51) , (HRS, Male)	The functionality of the J3 Connector Interface is not currently available to users.

2.2.2. J2 Connector Pin Definition

The location of the HRS 16-PIN J2 connector interface on the board and the pinout sequence is shown in Figure 2-4, and the pin definitions are shown in Table 2-3.

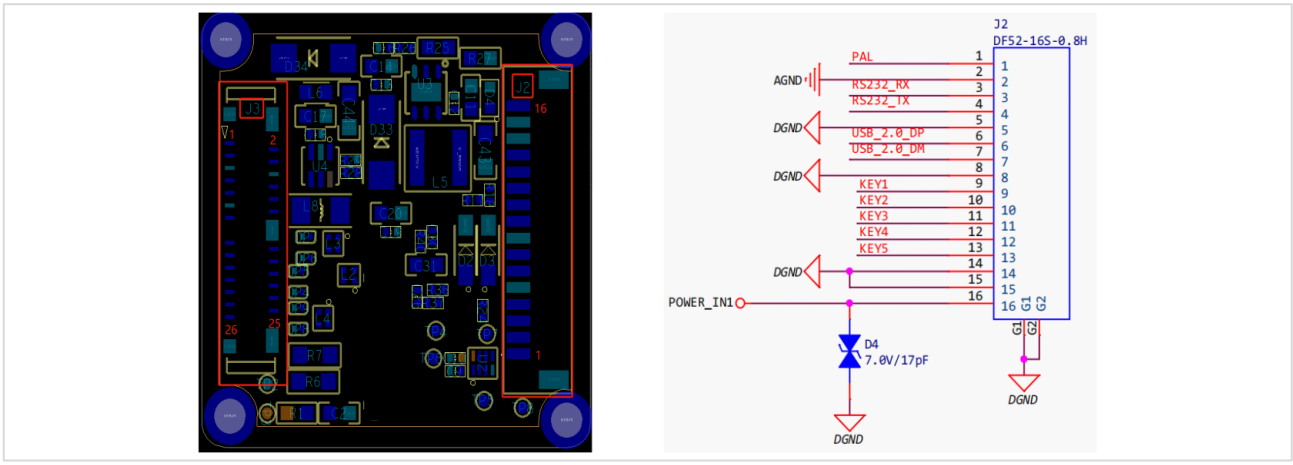


Figure 2-4 J2 Connector Interface Pinouts

Table 2-3 J2 Connector Pin Definition

No.	Name	Voltage	Revision Content	Remarks
1	PAL	/	PAL output	
2	AGND	/	AGND	
3	RS232_RX	/	RS232_RX	
4	RS232_TX	/	RS232_TX	
5	DGND	/	DGND	
6	USB_2.0_DP	/	Data signal positive terminal of USB2.0 port	Differential impedance 90 Ω
7	USB_2.0_DM	/	Data signal negative terminal of USB2.0 port	Differential impedance 90 Ω
8	DGND	/	DGND	
9	KEY1	3.3V	KEY1	Reserved
10	KEY2	3.3V	KEY2	Reserved
11	KEY3	3.3V	KEY3	Reserved
12	KEY4	3.3V	KEY4	Reserved
13	KEY5	3.3V	KEY5	Reserved
14	DGND	/	DGND	
15	DGND	/	DGND	
16	POWER_IN1	5V	Digital Power Supply	

2.2.3. J3 Connector Pin Definition

The functionality of the J3 Connector Interface is not currently available to users.

2.2.4. Structure and Dimensions

The dimensional parameters of the analog video board are shown in Figure 2-5, dimensions in mm.

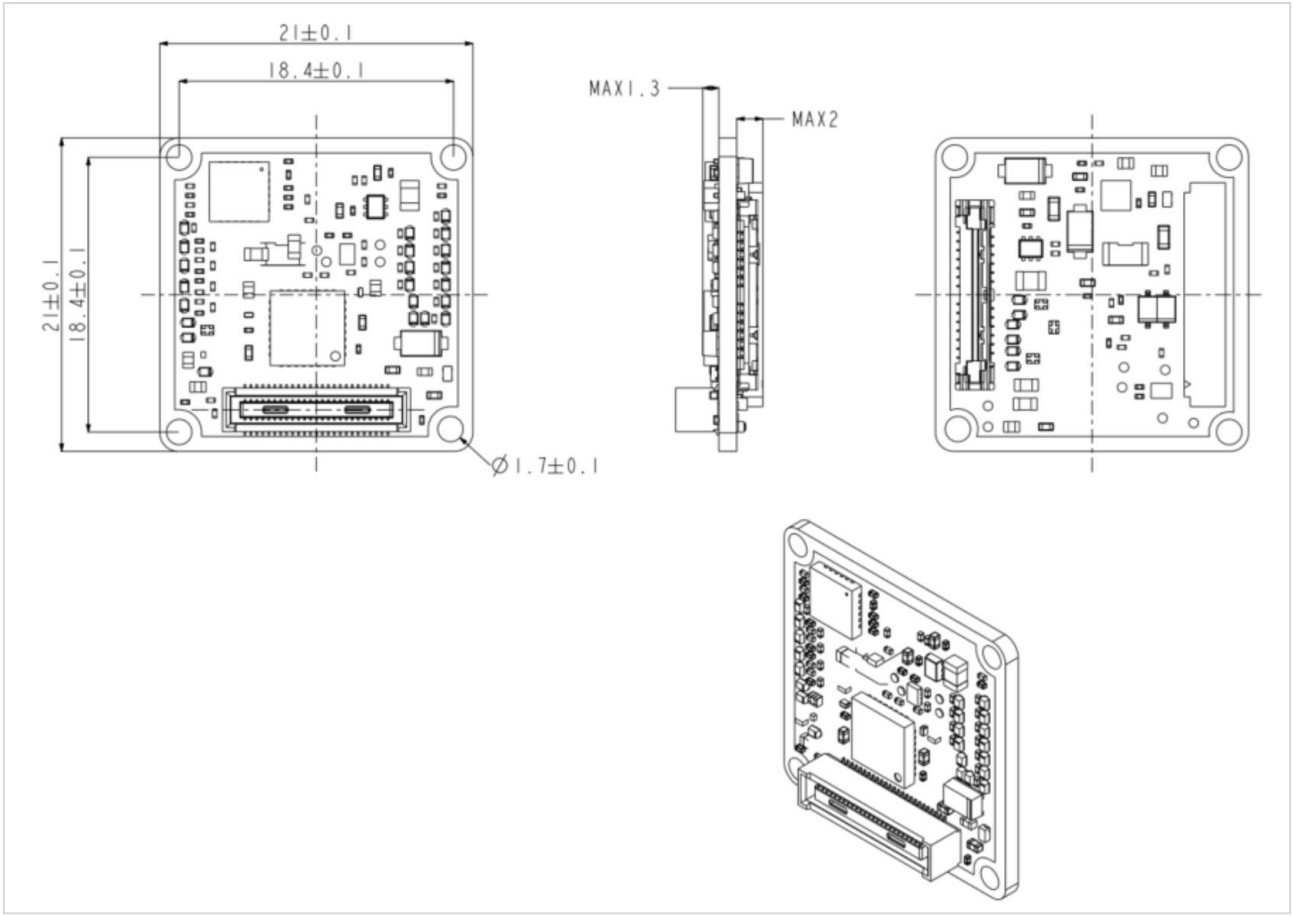


Figure 2-5 Analog Video Board Dimensions Schematic

3. Cables

3.1. Flying Leads

3.1.1. Introduction

Users can connect to the backend platform via flying lead, thereby achieving a rapid integration.

Refer to Figure 3-1 and Table 3-1 for diagrams and descriptions of and explanations of flying lead.

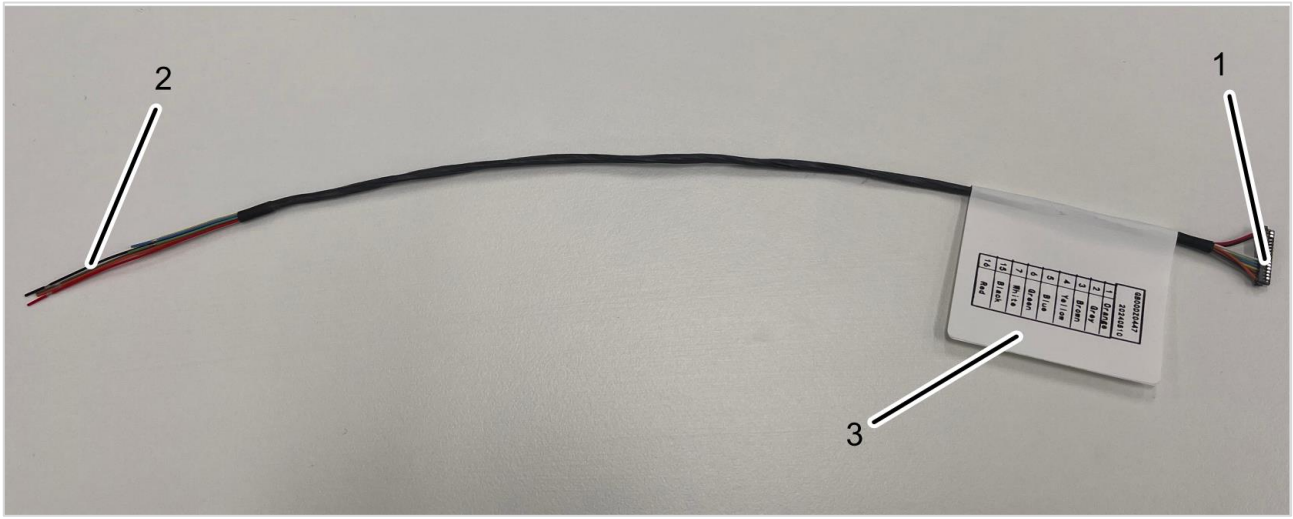


Figure 3-1 Flying Lead Schematic

Table 3-1 Flying Lead Schematic Explanation

No.	Name	Specifications	Functions
1	Cable-to-Board Connector	DF52-16P-0.8C	Adaptive connection to analog video board.
2	Reserved Cable Connection	—	Connects USB, CVBS, serial port, power supply, etc.
3	Waterproof Label	—	Marked with wire sequence and corresponding wire colors.

3.1.2. Wire Sequence Description

See Table 3-2 for wire sequences and color descriptions for flying lead.

Table 3-2 Wire Sequence and Color Descriptions of Flying Lead

No.	Wire Color	Name	Signal Description	Mating End
1	Orange	PAL	Analog Video	BNC Cable with a 1-pin Male BNC Video Connector (center conductor)
2	Gray	AGND	Analog Video Ground	BNC Cable with a 2-pin Male BNC Video Connector (edge wrapped conductor)
3	Brown	RS232_RX	RS232 Receive	DB9 Female 3-Pin, White Wire
4	Yellow	RS232_TX	RS232 Transmit	DB9 Female 2-Pin, Red Wire

No.	Wire Color	Name	Signal Description	Mating End
5	Blue	GND	GND	DB9 Female 5-Pin, Shielded
6	Green	USB_2.0_DP	USB Positive	TYPE-A 3-Pin, Green Wire
7	White	USB_2.0_DM	USB Negative	TYPE-A 2-Pin, White Wire
15	Black	GND	Power Negative	TYPE-A 4-Pin, Black Cable
16	Red	POWER	Power Positive	TYPE-A 1-pin, Red Wire

3.2. Demo Cable

Users can accomplish USB stream output and communication, as well as CVBS stream output, through the demo cable.

Refer to Figure 3-2 and Table 3-3 for diagrams and descriptions of and explanations of demo cable.

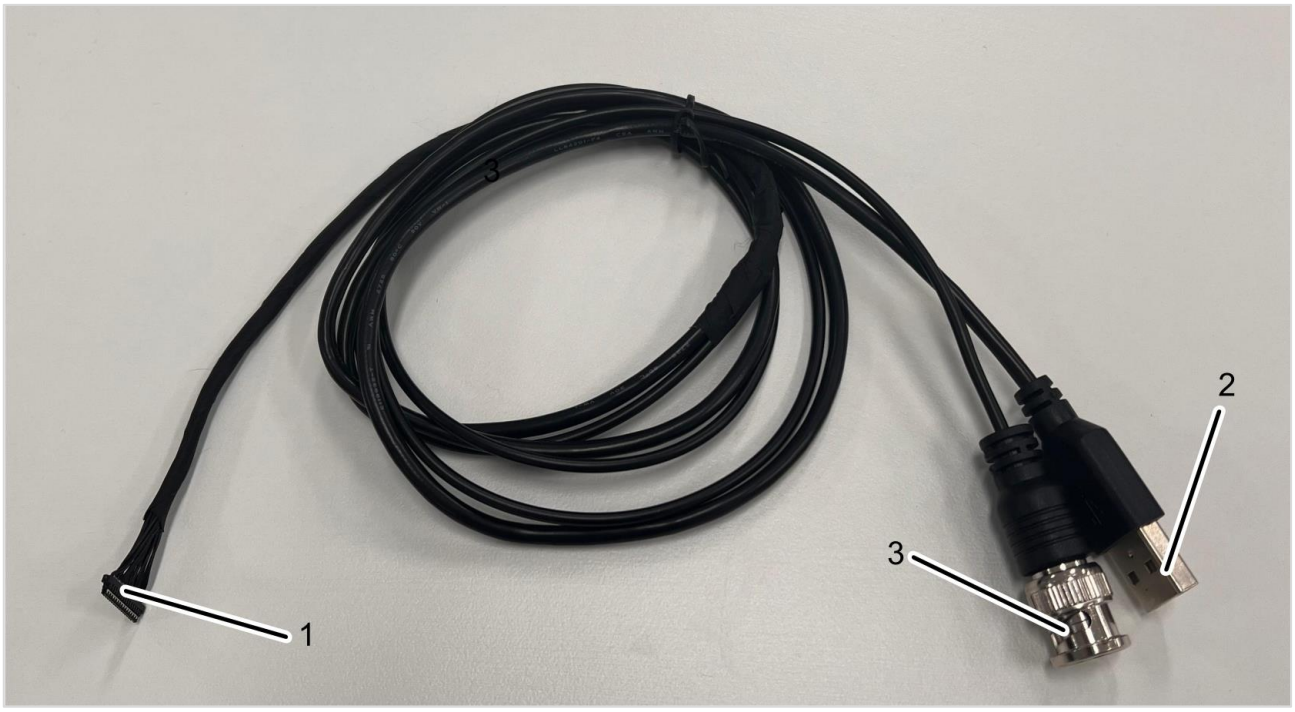


Figure 3-2 Demo Cable Schematic

Table 3-3 Demo Cable Schematic Explanation

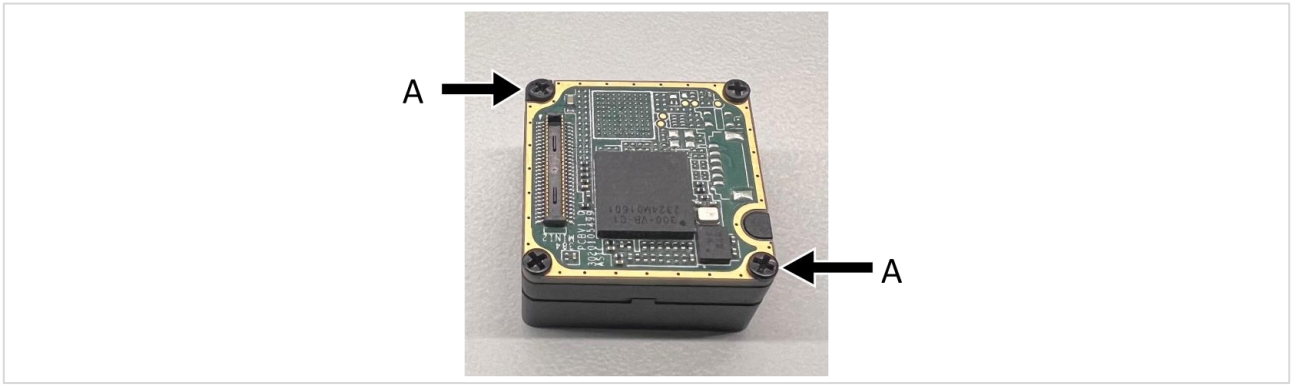
No.	Name	Specifications	Functions
1	Cable-to-Board Connector	DF52-16P-0.8C	Supports USB2.0 streaming output, CVBS analog video streaming output, serial communication, and USB power supply.
2	USB 2.0 Power Supply	USB	Supports USB2.0 streaming output and communication, USB power supply.
3	CVBS Connector	RCA Connector	Supports CVBS analog video streaming output (PAL and NTSC).

4. Hardware Connections

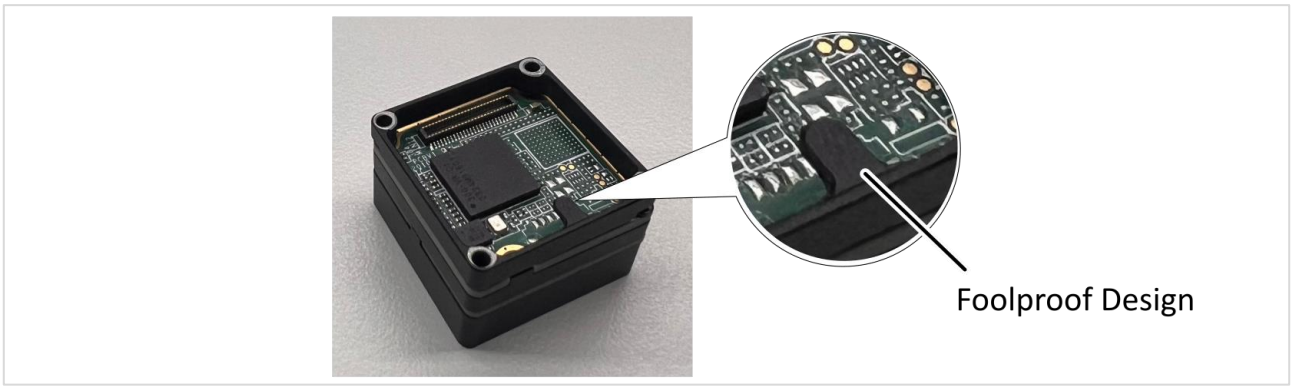
4.1. Accessory Kit Installation

STEPS:

STEP 1. Use a screwdriver to remove the two screws A on the back of the module.



STEP 2. Install the mounting bracket onto the module's PCB board in the direction indicated in the diagram. Note that the bracket features a fool-proof design; ensure it is placed correctly to avoid incorrect assembly.



STEP 3. Install the analog video board onto the mounting bracket in the direction indicated in the diagram. Note that the connectors of the analog video board and module PCB board are snapped in place during installation.

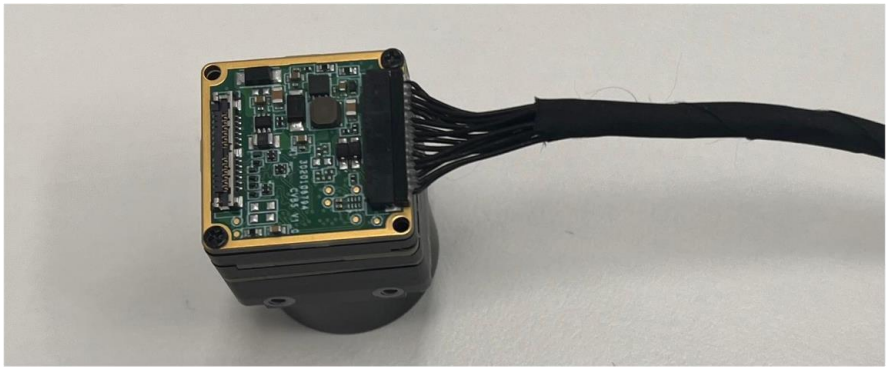
STEP 4. Use a screwdriver to install and tighten 2 pieces of M1.6x12 screw B into the screw holes on the analog video board.

4.2. Demo Cable Connection

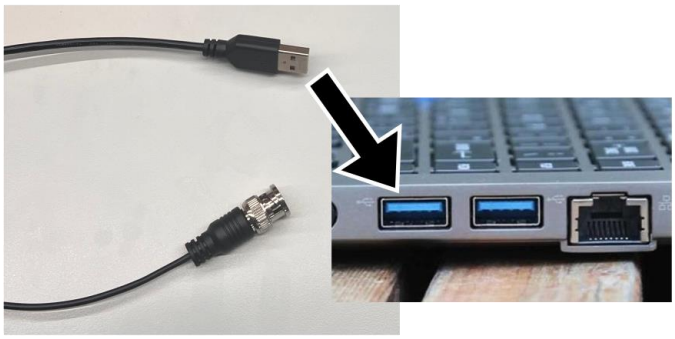
STEPS:

STEP 1. Follow the instructions in Section 4.1 to complete the accessory kit installation.

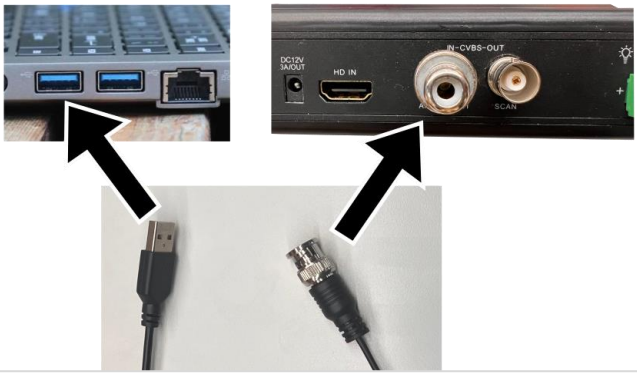
STEP 2. Connect the cable-to-board plug of the demo cable into the J2 socket of the analog video board.



STEP 3. If using the USB stream output mode, connect the USB connector of the demo cable to the PC.



STEP 4. If using the analog video stream output mode, connect the USB connector of the demo cable to the PC and the CVBS connector of the demo cable to the analog display.

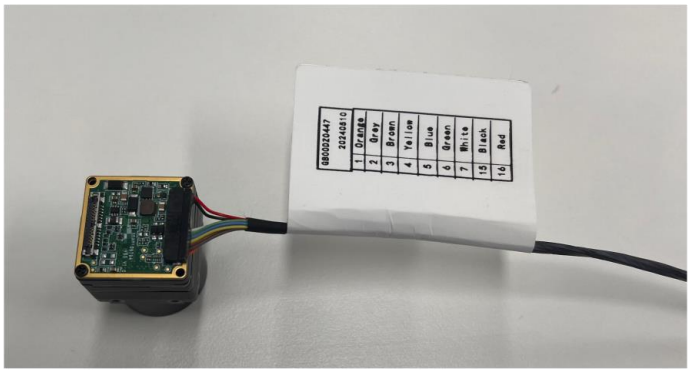


4.3. Flying Leads Connection

STEPS:

STEP 1. Follow the instructions in Section 4.1 to complete the accessory kit installation.

STEP 2. Connect the cable-to-board plug of the flying lead into the J2 socket of the analog video board.



STEP 3. Based on the stream output method, consult the wiring sequence and wire color codes in Table 3-2 to select and solder the necessary signal wires.

5. Normal Operation of Module Stream Output

5.1. Digital Video Output

5.1.1. USB Stream Output

STEPS:

1. Follow the instructions in Chapter 4 to complete the hardware connections to the module.
2. Download and install Thermal Cam (the software will prompt you to install the necessary drivers before connecting the module to your PC for the first time).
3. After opening Thermal Cam APP and successfully connecting to start streaming, digital images are displayed by default and the digital video output format is USB.

For more information, please refer to the "Thermal Cam AC020 Host Computer Operation Manual" for instructions on "Connecting to the Host Computer and Image Output" and "Setting the Video Output Format".

5.2. Analog Video Stream Output

STEPS:

1. Follow the instructions in Chapter 4 to complete the hardware connections to the module.
2. Download and install Thermal Cam (the software will prompt you to install the necessary drivers before connecting the module to your PC for the first time).
3. After opening Thermal Cam APP and successfully connecting to start streaming, digital images are displayed by default and the digital video output format is USB. You need to go to [System Functions] -> [System Settings] page to switch digital video to analog video and select the desired analog video output format.
4. View the image effect on the analog display.

For more information, please refer to the "Thermal Cam AC020 Host Computer Operation Manual" for instructions on "Connecting to the Host Computer and Image Output" and "Setting the Video Output Format".

6. Precautions

To protect you and others from injury or to protect your equipment from damage, please read all the information below before using the equipment.

1. Do not look directly at high-intensity radiation sources such as the sun.
2. The ideal operating environment temperature is -40℃~80℃.
3. Do not touch devices and cables with wet hands.
4. Do not bend or damage the cables.
5. Do not scrub your device with diluent.
6. Do not unplug other cables before cutting off the power supply.
7. Do not connect the attached cables in the wrong way to avoid damaging the device.
8. Take measures to prevent static electricity.
9. Do not dismantle the device. If there is any fault, please contact us to have it repaired by professionals.

7. Warranty

Dear User,

Thank you for choosing our products, we will, as always, to provide you with satisfactory service!

1. This product in normal use under the circumstances of failure the company will provide 1-year warranty, life-long maintenance services.
2. Warranty scope:

   Failure under normal circumstances is generally defined as natural damage caused by the user of the product during normal use without human intent or due to negligence factors.
3. The following cases are not in our warranty scope:
   1) Any damage caused by modification or repair not authorized and permitted by the company.
   2) Failure or damage caused by the use of third-party product software, service behavior.
   3) Accidental factors or human behavior caused by product damage. Such as into the liquid, drop damage, input the wrong voltage, excessive extrusion, deformation of the motherboard and so on. Appearance of obvious hard object damage, cracks, broken foot, serious deformation, power cord broken, broken cable, bare core and other phenomena.
   4) Product data loss or damage.
   5) Cannot effectively present the product warranty certificate. (Product nameplates, SN barcodes, and tamper-evident labels are torn off or damaged, blurred and unrecognizable.)
   6) Not in accordance with the instructions for installation, use, maintenance, storage of the product failure or damage.
   7) It has exceeded the warranty period.
   8) Failure or damage due to uncontrollable factors (e.g. fire, earthquake, flood, etc.).

8. Supports and Services

The company provides services such as pre-sales training, in-sales support, and after-sales maintenance. Please contact our sales-reps for specific information.

9. Abbreviations

Table 9-1 Abbreviation Table

Abbreviations	English Name	Chinese Description
PC	Personal Computer	个人电脑
CVBS	Composite Video Blanking and Sync	一种用于传输模拟视频信号的标准
BNC	Bayonet Neill-Concelman	一种很常见的 RF 端子同轴电缆终结器