CADDXFPV

ECLIPSE 006HD USER MANUAL

V1.3

Connection

Vin 11.1V-25.2V
TX2 RX2 GND 5V0
GND
Uart Rx
Uart Tx
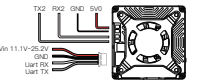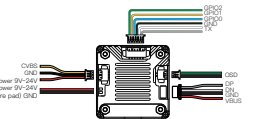
⚠ • Power consumption: 12V@1.5A
  Please consider the power supply capability of the power supply.
  • VTX generates a lot of heat when working, so please pay
  attention to airflow for heat dissipation

CVBS
GND
Power 9V-24V
Power 9V-24V
(Spare pad) GND

GND
SW
GND
VBUS

⚠ • Power Consumption: 12V@120mAh

Specifications

Model	Eclipse 006
Detector Type	Uncooled Vanadium Oxide
Resolution	640x512
Wavelength Range	8~12μm
LENS	F1.0/9.1mm
FOV	48.3°(H)*38.6°(V)*66°(D)
Frame Rate	50fps
Power Consumption	<1.5w
Output	PAL
Supply Voltage	9V~24V
Temperature	−20℃~60℃
Interface	HD Interface: MIPI
Latency	Average Latency 20ms
Image Quality	AImage Enhancement
Model	Avatar GT VTX
Communication Frequency	5.725~5.850 GHz
Transmitter Power (EIRP)	FCC: <30dBm, MAX:33dBm; CE: <14dBm; SRRC: <20dBm; MIC: <25dBm
Recording	1080p/720p
Channels	8
Wide Power Input	11.1~25.2V
OSD	Canvas mode

Latency	Average delay 22ms
Antenna	2(IPEX)

Operation Mode Switching

Note: When using the HD Thermal Imaging Camera, you need to switch the Ground Side Device Mode to Race Mode.

Operating Instructions:
1. Ground end device press the menu key, select the settings option
2. In the settings, select the device to enter the option to find the switching mode, select the racing mode to save it

OSD Functions

Note: The hardware needs to be version V2.0 and the software is version 240724–1_005SL_v2 or higher.
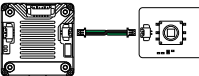
The movement allows you to customize the OSD string of the video display through an external menu board.
The OSD board is divided into four directions: up, down, left, right and center.

Operating Instructions:
1. Connect the menu board to the movement
2. Wait for the movement to power on the picture
3. Press the center button, the operation interface will pop up, the operation interface is divided into four lines, the first line and the second line is to provide a choice of characters, the third line is to delete the option, the fourth line is the current character, the black background is the current cursor position
4. Press up, down, left or right to move the cursor in the character line, and press center to select the character to be inserted into the current string.
5. move the cursor to DEL, press the center, you can delete the last character in the string, all clear the current string will become [NA], this time that there is no character
6. Move the cursor to the fourth line of the current character line, press the center key to exit the operation. This is the string if not empty, the lower left corner will have the current settings string

Serial Communication Description

TX	Master transmit, 3.3V level, baud rate default 115200bps
RX	Master receive, 3.3V level, baud rate default 115200bps
GND	Reference Ground
GPIO0	General Purpose IO, 3.3V level
GPIO1	General Purpose IO, 3.3V level
GPIO2	General Purpose IO, 3.3V level

1. Description of Agreement

0xFF (1Byte)	0x5A (1Byte)	version (1Byte)	cmd (1Byte)	sub_cmd (1Byte)	payload_len (4Byte)	payload	crc16 (2Byte)
header (10Byte)							

1.1 Field Description

0xFF : constant value
0x5A : constant value
version: Protocol version (initial version 0)
cmd : Command id
sub_cmd : subcommand
payload_len : Payload data length
payload : Data content
crc16 : Checksum value with header and payload

1.2 Calibration Function

crc16_code
static uint16_t crc16_modbus(uint8_t *data, uint32_t length)
{
    uint8_t i;
    uint16_t crc = 0xffff;   // Initial value
    while(length−−)
    {

```
    crc ^= *data++;     // crc ^= *data; data++;
    for (i = 0; i < 8; ++i)
    {
        if (crc & 1)
            crc = (crc >> 1) ^ 0xA001;    // 0xA001 = reverse 0x8005
        else
            crc = (crc >> 1);
    }
}
return crc;
```

2. Command Definition

host−>dev : The host computer sends to the device
dev−>host : The device sends to the host computer

2.1 Getting the Version

Directional	cmd	sub_cmd	payload_len (Byte)	Instruction
host−>dev	0	0	0	
dev−>host	0	0	N	Returns the firmware version string

2.2 Image Adjustment

Directional	cmd	sub_cmd	payload_len (Byte)	Instruction
host−>dev	1	0	1/0	1Byte brightness value (0~100), no payload without setting only return the actual brightness value
dev−>host	1	0	1	Returns the current brightness value
host−>dev	1	1	1/0	1Byte contrast value (0~100), no payload not set only return the actual contrast value
dev−>host	1	1	1	Returns the current contrast value

2.3 Pseudo−Color

Directional	cmd	sub_cmd	payload_len (Byte)	Instruction
host−>dev	2	0	1	Set the pseudo-color serial number; 0 is off pseudo-color

2.4 Shutter Control

Directional	cmd	sub_cmd	payload_len (Byte)	Instruction
host−>dev	3	0	1	Manual shutter calibration image
host−>dev	3	1	1	Disable automatic shutter calibration
host−>dev	3	2	1	Enable automatic shutter calibration

2.5 Hot Tracking

Directional	cmd	sub_cmd	payload_len (Byte)	Instruction
host−>dev	4	0	1	Close Hot Tracking
host−>dev	4	1	1	Open Hot Tracking

3. Example of Command

Command Description	Command Data
Get version	FF 5A 00 00 00 00 00 00 00 00 C7 57
Set the contrast to 80%	FF 5A 00 01 01 01 00 00 00 00 68 73
Set the contrast to 50%	FF 5A 00 01 01 32 00 00 00 00 32 6A BA
Set the brightness to 80%	FF 5A 00 01 00 01 00 00 00 00 50 EA A2
Set the brightness to 50%	FF 5A 00 01 00 32 00 00 00 00 32 8B 4B
Set pseudo color 5	FF 5A 00 02 00 05 00 00 00 00 05 6A 88
Set pseudo color 0	FF 5A 00 02 00 00 00 00 00 00 00 6B 5B
Shutter Calibration	FF 5A 00 03 00 00 00 00 00 00 00 C9 97
Disable Auto Shutter	FF 5A 00 03 01 00 00 00 00 00 00 C9 37
Enable Auto Shutter	FF 5A 00 03 02 00 00 00 00 00 00 80 97

Dimensions

19.5
22
25.5

33.5
23
16.5
20

26.5
25.5
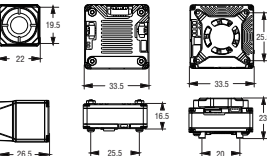
Unit: mm

CADDXFPV Support
email: support@caddxfpv.com
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