

5G Wi-Fi Image Transmission Module

Model: ULINK_V5G



1. Features :

Supports IOS/Android/Windows operating systems

Supports 1080P/720P/VGA resolution adaptive

Supports NTSC/PAL adaptive

Supports transparent serial port transmission

Supports bidirectional control and command sending between handheld devices and modules

Delayed $\leq 200\text{ms}$

Size: 58.62mm*44.76mm*11.10mm

The wireless communication distance 100m (Max. / open distance)

Supports AHD HD/1080P, SD/CVBS, VGA analog video signals input adaptive

2. Introduction

Ulink 5.2/5.8G Wireless Image Transmission Module: A Wi-Fi video transmission module operating on the globally open 5.2/5.8G ISM frequency band.

Support for video signals in multiple resolutions including 1080P, 720P and VGA input adaptive, along with various analog video formats such as AHD, CVBS, CVI and TVI input.

The system supports receiving and displaying images across multiple platforms including iOS, Android, and Windows. It enables wireless data exchange between modules and the system, allowing smart devices to control modules wirelessly while receiving real-time feedback such as battery level, indicator status, and motor rotation.

Powered by the mature 5.2/5.8G wireless standard, this module delivers robust interference resistance, high bandwidth, and excellent device compatibility. Integrated with IOS/Android client software, it enables precise control command transmission and reception via mobile devices. Featuring versatile interfaces including UART, PWM, and GPIO, it supports multiple communication protocols with external devices. Its compact design allows integration into host application systems.

3. Electrical Parameters

Ulink_5.2/5.8G_ Image wireless transmission module: Electrical characteristics

1	Working voltage	6~12V
2	Working current	300~500mA
3	Startup time	8 second $\pm$ 2 second
4	Wireless communication	5.2/5.8G
5	Rated dissipation	3W
6	Communication protocol	(UART/GPIO)
7	Maximum communication range	100m open distance
8	RF output power	$\leq$ 23dBm
9	Input signal format	AHD.CVBS
10	Maximum image resolution	1080P_30 frames
11	Delayed	$\leq$ 200ms

AHD.CVBS Image wireless transmission module specification

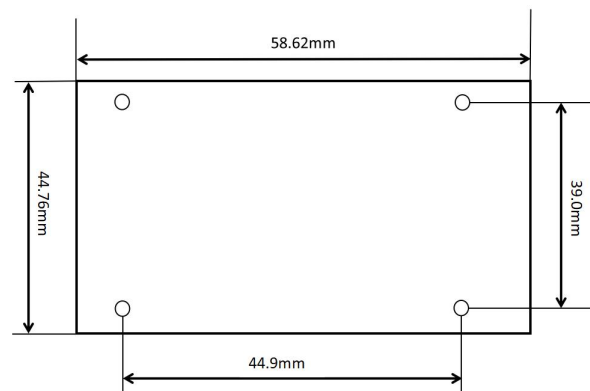
Ulink_5.2/5.8G_ Image wireless transmission module: other parameters

1	Antenna	External dual antenna
2	Size	58.62mm*44.76mm*11.10mm
3	Working temperature	-10°C ~ +50°C
4	Storage temperature	-20°C ~ +60°C

Ulink_5.2/5.8G_ Image Wireless Transmission Module: Interface Definition

1	GPIO_1	NC
2	GPIO_0	NC
3	PWM0	IO
4	PWM3	IO
5	UART_RX	Serial communication receive
6	UART_TX	Serial Communication Transmission
7	GND	Video
8	AHD_VIDEO	AHD CVBS video signal input
9	GND	Power supply
10	VBAT	6~12V DC power supply

Ulink_5.2/5.8G_ Image wireless transmission module: module size diagram



天线规格

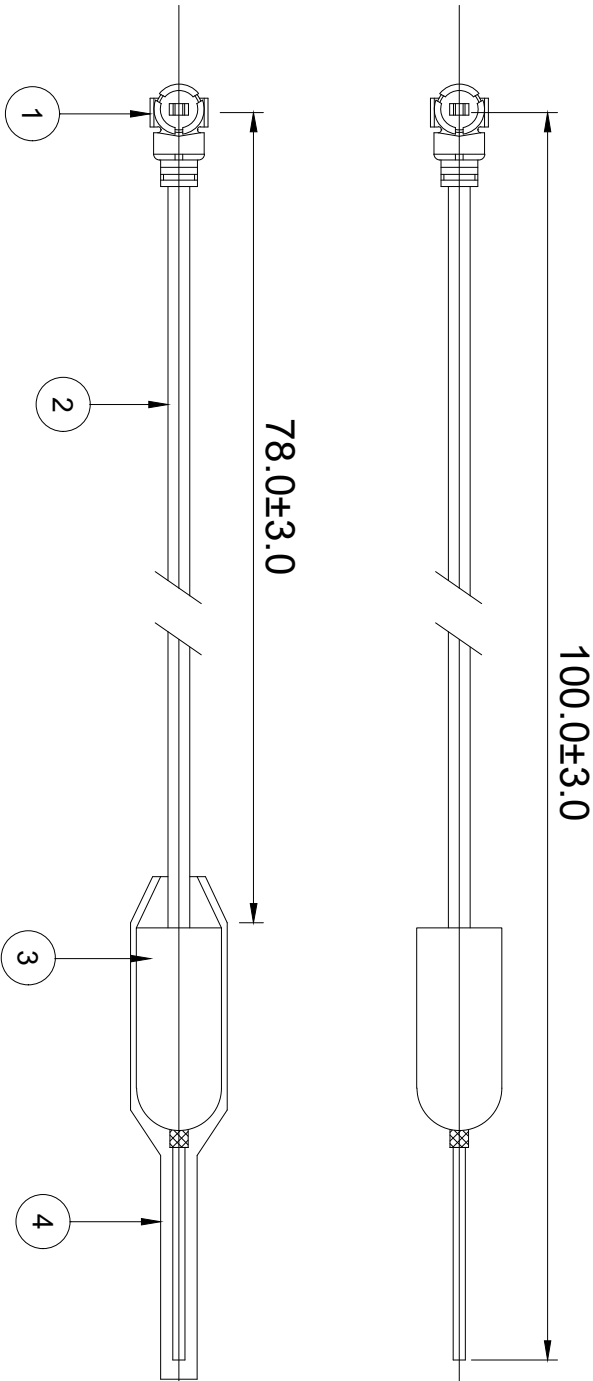
Antenna Specification

Electrical Properties	
Frequency	5150MHz~5850MHz
Impedance	50 Ohm Nominal
V.S.W.R	≤1.5(Max)
Return Loss	≤-10(Max)
Radiation	Omnidirectional
Gain (Peak)	3.98dBi(Max)
Polarization	Linear
Connector	IPEX-1
Physical Properties	
Antenna Material	Cu
Cable Type	O.D 1.13
Operating Temp.	-10 ~ +60 °C
Storage Temp.	-10 ~ +70 °C
Cable Color	black

RoHS
Compatible

CUSTOMER
PART NO
深圳市金葵花科技有限公司

REV.	DESCRIPTION	DATE
A	首次发行	2025-09-12



NO	PART NAME	DESCRIPTION	Material	Q.TY
4	Hot Shrink Tube	L29.0mm/Ø4.0mm,Black	EVA	1
3	Copper Tube	Ø4.4*10.5*1.4mm	Cu	1
2	Coaxial Cable	O.D 1.13,Black	O.D 1.13	1
1	IPEX-1	IPEX 1代 Cu Au Plated	Cu	1

SICBRD 东莞市思博通讯有限公司 Dongguan Sibocommunication Co., Ltd			
PART NAME: 5.8GHz Copper Tube Antenna			
PART NO.: S-JKH250912		DATE: 2025-09-12	
APPROVED BY	CHECKED BY	DESIGNED BY	UNITS: mm SCALE: 1/1 REVISION: A
		Wei	

電波法により5.2GHz帯は屋内使用に限ります。

“5.2GHz band is restricted to indoor use due to the Radio Law.”

FCC warning :

1. This device should be installed and operated with minimum distance 20cm between the radiator & your body.
2. 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.
3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
4. 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.
5. The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Any company of the host device which install this modular should perform the test of radiated emission and spurious emission according to FCC part 15C : 15.247 15.407 and 15.209 requirement, and the module should comply with the KDB file 996369 Module approval, Only if the test result comply with these requirement, then the host can be sold legally.
6. During operation, the separation distance between user and the antenna shall be at least 20cm.
7. The host product shall be properly labelled to identify the modules within the host product. The FCC certification label of a module shall be clearly visible at all times when installed in the host product; otherwise, the host product must be labelled to display the FCC certification number for the module, preceded by the word "contains" or similar wording expressing the same meaning, as follows:

Contains FCC ID: 2BSR2-ULINK-V5G.

In this case, 2BSR2-ULINK-V5G is the module's certification number.

RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated at a minimum distance 20cm between the radiator & your body. Per FCC KDB 996369 D03 OEM Manual v01 guidance, the following conditions must be strictly followed when using this certified module:

KDB 996369 D03 OEM Manual v01 rule sections:

2.2 List of applicable FCC rules:

This module has been tested for compliance to FCC Part 15 .

2.3 Summarize the specific operational use conditions

The module is evaluated for standalone mobile RF exposure use condition. Any other usage conditions such as co-location with other transmitter(s) or being used in a portable condition will need a separate reassessment through a Class II permissive change application or new certification.

2.4 Limited modular procedures

Not applicable. The module was tested in a standalone configuration and is subject to single modular approval.

2.5 Trace antenna designs

Not applicable.

2.6 RF exposure considerations

This equipment complies with FCC mobile radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body. If the module is installed in a portable host, a separate SAR evaluation is required to confirm compliance with relevant FCC portable RF exposure rules.

2.7 Antennas

The following antennas have been certified for use with this module. Antennas of the same type with equal or lower gain may also be used with this module.

- Type: FPC
- Target Design Peak gain:
- ANT 1: For FCC: 5150 MHz~5250MHz: 3.98dbi; 5725 MHz~5850MHz: 2.09dbi
For MIC: 5180MHz~5240MHz: 3.98dBi; 5500MHz~5700MHz: 2.92dBi
- ANT 2: For FCC: 5150 MHz~5250MHz: 3.98dbi; 5725 MHz~5850MHz: 2.09dbi
For MIC: 5180MHz~5240MHz: 3.98dBi; 5500MHz~5700MHz: 2.92dBi

The end product must use a permanently attached antenna or a unique antenna connector.

2.8 Label and compliance information

The end product must be labeled in a visible area with the following: “Contains FCC ID: **2BSR2-ULINK-V5G**”. End-product may also use electronic labeling provided all conditions of [784748 D02 e labeling v02r01](#) are met. The grantee's FCC ID can be used only when all FCC compliance requirements are met.

2.9 Information on test modes and additional testing requirements

This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with other transmitter(s) or portable use will require a separate class II permissive change re-evaluation or new certification.

2.10 Additional testing, Part 15 Subpart B disclaimer

This transmitter module is tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B (unintentional radiator) rule requirement applicable to the final host. The final host will still need to be reassessed for compliance to this portion of rule requirements if applicable. As long as all conditions above are met, further transmitter test will not be required except for the host integration test requirements stated in Section 7 of this document. The integrator (Microsoft in this case) is ultimately responsible for testing their end-product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE: If these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid, and the FCC ID cannot be used on the final product. In these circumstances, the integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.