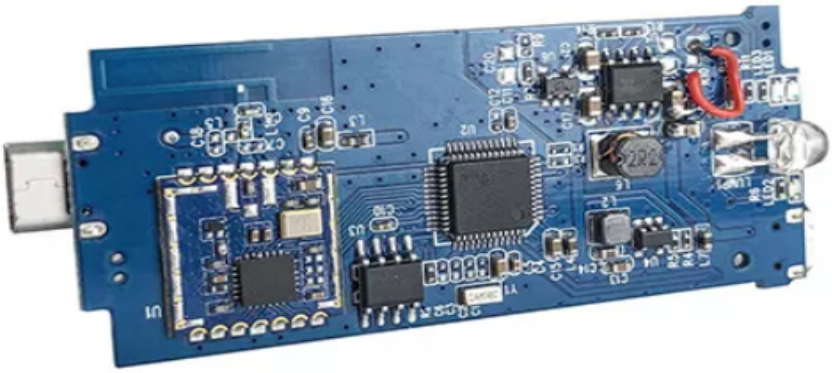
WiFi VGA Camera Module DJU-W01

Product Specification

Release version:1.0

WiFi Camera Module

Photos



1. WIFI Camera Specification:

SPECIFICATION	
Resolution	VGA(640*480)
Gray scale	Color
Frame rate	30fps
Power	USB connector (battery for option as well)
Light Indicator	Controlled by MCU, the setting way can be met by your requirement
Data save	On the smart device
SSID name	SSID can change, manually connect to WIFI camera
SDK	Different SDK for iPhone, Andriod and Windows
Working mode-AP	WIFI camera will give out the hotspot for the smart device to connect
WIFI camera size	Same as your size: 49.6*35mm

2. WIFI CHIPSET INFORMATION

2.1 Applications

- MID
- IP Camera
- STB
- Smart TV
- E-book
- Other devices which need to be supported by wireless network

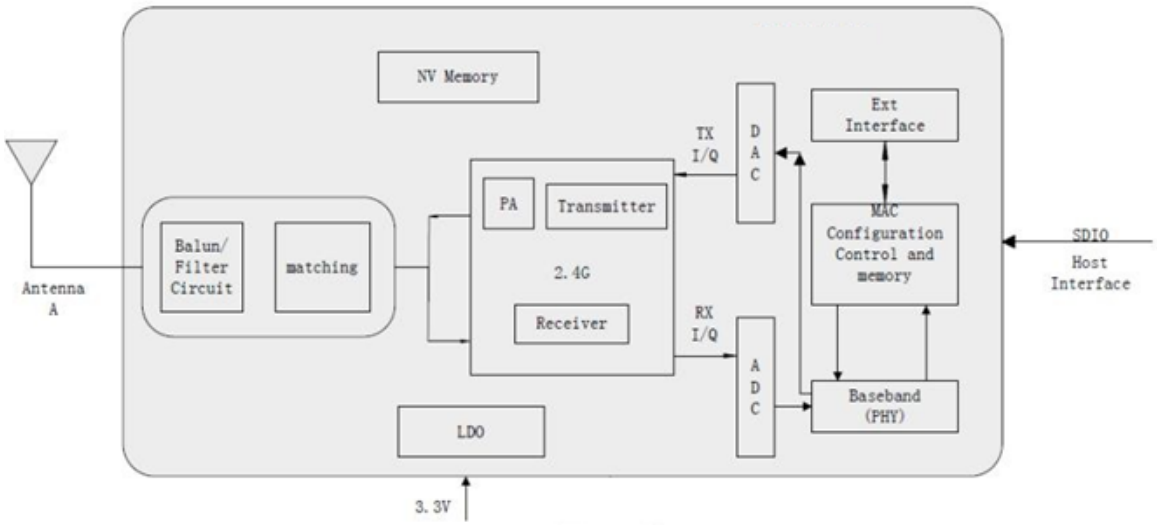
2.2 Features

- Operating Frequencies : 2.4~2.4835GHz
- Host Interface is SDIO, complies with SDIO 1.1/2.0/3.0
- IEEE Standards : IEEE 802.11b/g/n
- Wireless data rate can reach up to 150Mbps
- External antenna optional
- Power Supply:3.3V±0.2V

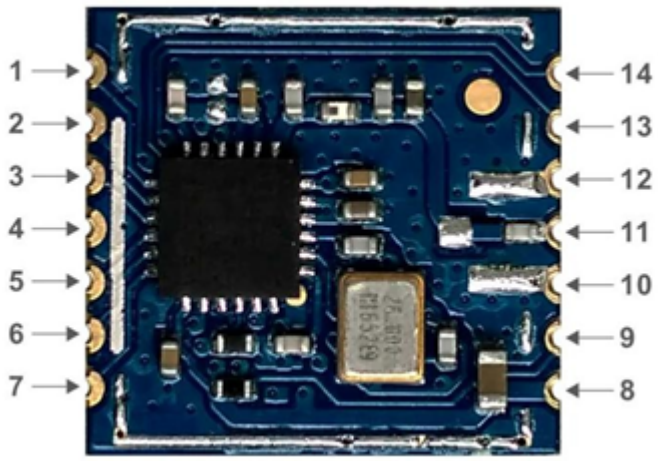
2.3 Key Specification

Host Interface	SDIO 1.1/ 2.0/ 3.0
IEEE Standards	IEEE 802.11b/g/n
Operating Frequencies	2.4~2.4835GHz,
Modulation	802.11b: CCK, DQPSK, DBPSK 802.11g: 64-QAM,16-QAM, QPSK, BPSK 802.11n: 64-QAM,16-QAM, QPSK, BPSK
Working Mode	Infrastructure, Ad-Hoc
Wireless Data Rate	802.11b: 1, 2 ,5.5,11Mbps, 802.11g: 6,9,12,18,24,36,48,54Mbps, 802.11n: MCS0~7，HT20 reach up to72.2Mbps, HT40 reach up to150Mbps
Rx Sensitivity	-95dBm (Min)
TX Power	19.5dBm (Max)
Antenna Type	Connect to the external antenna through the half hole
Dimension(L*W*H)	13x 13.5x1.5mm (WxLxH) Tolerance:+/-0.15mm
Clock Source	26MHz
Working Temperature	-10° C to +50° C
Storage Temperature	-40° C to +70° C

2.4 Block Diagram

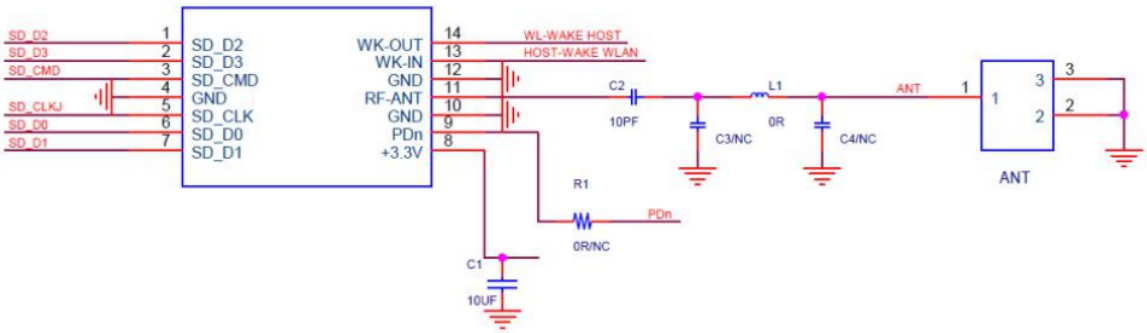


2.5 Pin Connector Descriptions:



PIN	Function	Type	Description
1	SD _2	I/O	SDIO data 2
2	SD _3	I/O ; I	SDIO data 3/ GSPI chip select
3	SD _CMD	I/O ; I	SDIO command/ GSPI data input
4	GND	G	Ground
5	SD _CLK	I; I	SDIO clock/ GSPI clock input
6	SD _D0	I/O ; O	SDIO data 0/ GSPI data output
7	SD _D1	I/O	SDIO data 1
8	+3.3V	P	3.3V power supply
9	PDn	P	Power down (active low)
10	GND	G	Ground
11	ANT_RF	I/O	WLAN RF pad
12	GND	G	Ground
13	WK_IN	I	Wake/Suspend input control / NC
14	WK_OUT	O	Wake/Suspend output control / NC

2.6 Schematic



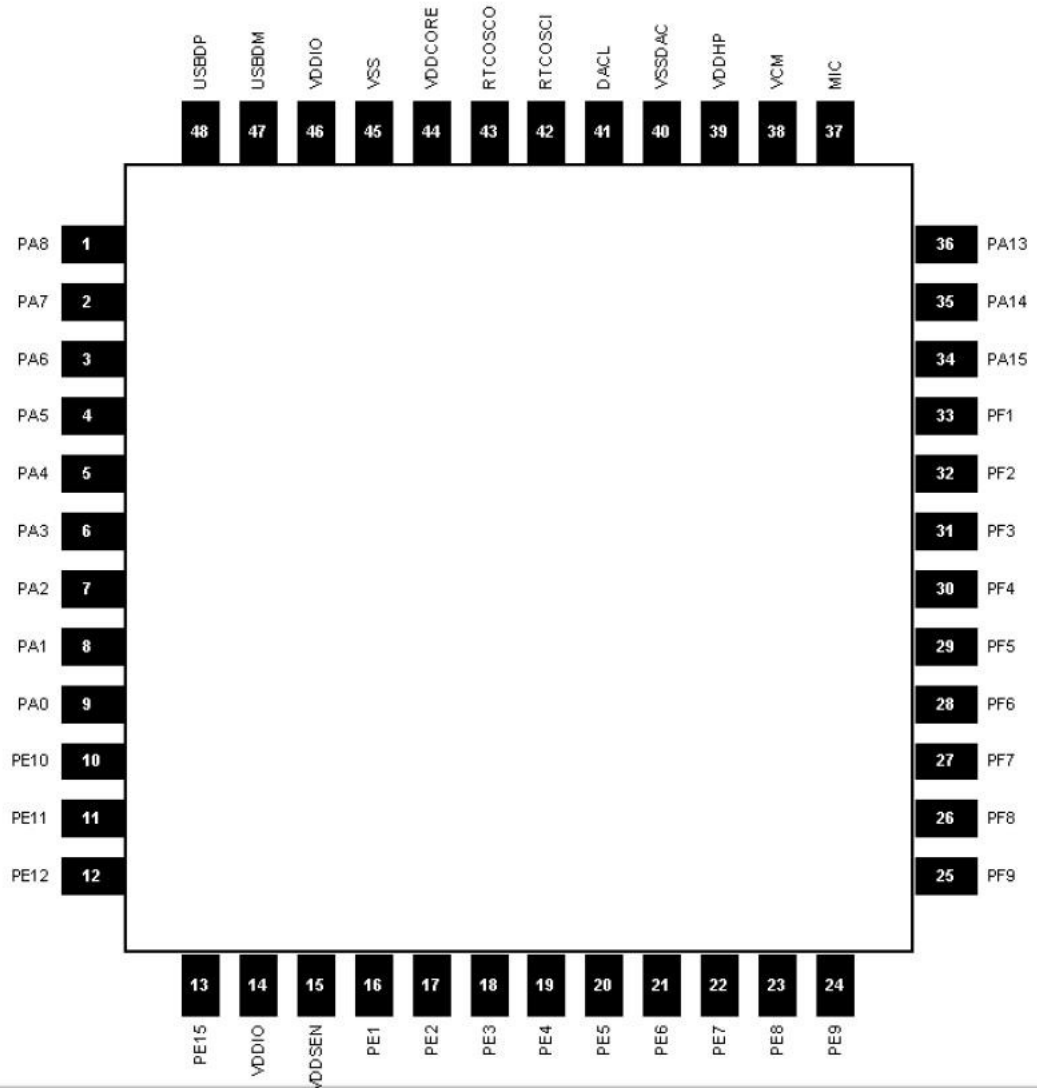
3 MCU INFORMATION

DJU-W01 uses 32bit RISC microcontroller. The project is designed to provide VGA/720P JPEG CODEC applications with cost-effective, low-power, and high-performance microcontroller solution in a small die size. By providing a complete set of common system peripherals, DJU-W01 minimizes overall system costs and eliminates the need to configure additional components. It integrates advanced digital and analog peripherals to multimedia player applications.

Features

- High performance 32bit CPU, Maximum 120MHz operating frequency
- 8K Bytes I-Cache and 8K Bytes D-Cache
- Embody 8MByte SDRAM
- JPEG encode & decode up to 60fps at VGA,30pfs at 720p
- Support coms sensor 8bit data interface; support and YcbCr422
- Support motion detection; VDE adjust;
- LCD driver interface; Support 8bit serial RGB LCD screen and 8bit CPU EMI LCD screen;
- Display process unit; Post-scaler supports any scale up or down; OSD1/OSD2/OSD3/Video layers; OSD1/2/3 supports 256 colors;
- Two SD Host controller
- Two SPI
- Two UART
- I2C
- Four timers
- Watch dog
- USB2.0 HS/FS Device and Host
- Multiple power LDOs
- Multiple PLL for user
- SARADC for general purpose, such as ADKEY,Battery detect;
- Mono MIC with AGC,Record
- Build in high performance audio DAC with Class AB output
- Support two oscillator at the same time, 32k and 12M
- Build in 2M RSOSC
- Support real time clock

Pin Assignment



Pin Description

Pin No.	Name	Type	Function
1	PA8	I/O	IIC SDA G2 UART0 RX G1
2	PA7	I/O	ADC3 SPI1_DI G0

Pin No.	Name	Type	Function
			SD0_CMD UART0_TX G2
3	PA6	I/O	ADC4 SPI1_CLK G0 SD0_CLK
4	PA5	I/O	SD0_DAT3
5	PA4	I/O	SPI1_DO G0/DI_2w G0 SD0_DAT0 UART0_RX G2
6	PA3	I/O	SD0_DAT1 PINT1
7	PA2	I/O	SD0_DAT2
8	PA1	I/O	ADC5 CSI_MCLK G0 BTUART_RX G0
9	PA0	I/O	ADC6 BTUART_TX G0 T3PWM G0
10	PE10	I/O	I2C_SCL T0PWM
11	PE11	I/O	ADC7 IR G2 PINT5 G0 T1PWM/T2CAP/T2INC
12	PE12	I/O	ADC8 T2PWM
13	PE15	I/O	I2C_SDA G1 BTUART_TX G1
14	VDDIO	PWR	VDDIO 3.3V LDO output
15	VDDSEN	PWR	Sensor 3.0V LDO output
16	PE1	I/O	CSI_D0 CSI_D2
17	PE2	I/O	CSI_D1
18	PE3	I/O	CSI_D2 CSI_D3
19	PE4	I/O	CSI_D3 CSI_D0
20	PE5	I/O	CSI_D4
21	PE6	I/O	CSI_D5 CSI_PCLK
22	PE7	I/O	CSI_D6 CSI_D5
23	PE8	I/O	CSI_HSYNC CSI_D6
24	PE9	I/O	CSI_PCLK CSI_MCLK G1
25	PF9	I/O	LCDD4 LCDD7 CSI_D7 SPI1_CLK G1
26	PF8	I/O	LCDD3 LCDD6 CSI_HSYNC SPI1_DO G1/DI_2w G1
27	PF7	I/O	LCDD2 LCDD5 CSI_VSYNC SPI_PING_DATO G0
28	PF6	I/O	LCDD1

Pin No.	Name	Type	Function
			LCDD4 SPI_PING_CLK G0 SD1_DAT2
29	PF5	I/O	LCDD0 LCDD3 SPI_PING_CS G0 SD1_DAT3
30	PF4	I/O	LCDDE LCDD2 SPI_PING_DATO G1 SD1_CMD
31	PF3	I/O	LCDHSYNC/LCDRS LED2/LCDD1 SPI_PING_CLK G1 SD1_CLK
32	PF2	I/O	LCDVSYNC/LCDCS LCDD0 SPI_PING_CS G1 SD1_DAT0
33	PF1	I/O	LCDCLK/LCDWR LCDVSYNC/LCDCS SPI_PING_DATI SD1_DAT1 PINT2
34	PA15	I/O	LCDHSYNC/LCDRS SPI0_D1 G0/SPI0_DI G0
35	PA14	I/O	SPI0_D0/SPI0_DO/DI I2C_SDA G0
36	PA13	I/O	SPI0_CLK
37	MICI	AI	MIC input
38	VCM	AO	VCM output
39	VDDHP	PWR	Header phone POWER
40	VSSADC	GND	Analog GND
41	DACL	AO	DACL Output
42	IRTCOSCI	AI	32K OSC input
43	IRTCOSCO	AO	32K OSC output
44	VDDCORE	PWR	VDDCORE LDO output
45	VSS	GND	GND
6	VDDIO	PWR	USB VDD
47	USBDM	AIO	USB2.0 DM
48	USBDP	AIO	USB2.0 DP

Note: PIN46 is the same as PIN52, PIN46 can be floating.

4. USB Camera

4.1 Image sensor GC0308 General Description

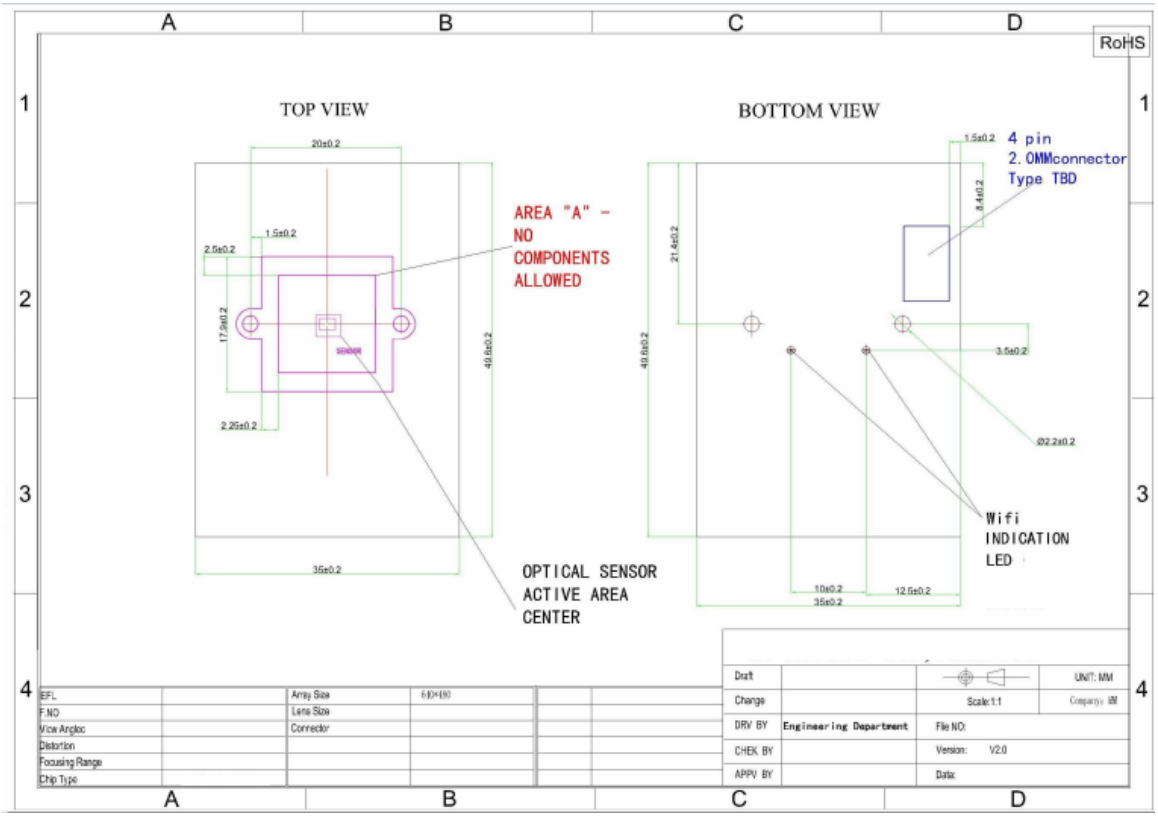
The GC0308 features 640V x 480H resolution with1/6.5-inch optical format, and 4-transistor pixel structure for high image quality and low noise variations.

It delivers superior image quality by powerful on-chip design of a 10-bit ADC, and embedded image signal processor

4.2 Image Sensor GC0308 General

- Standard optical format of 1/6.5 inch
- Various output formats: YCbCr4:2:2, RGB565, Raw Bayer
- Single power supply requirement (2.8v)
- Windowing support
- Horizontal /Vertical mirror
- Image processing module
- Package: CSP

5. Drawing of DJU-M01 Camera Module



6. Environmental and Reliability Specification

NO	Test name	Condition	Sample size	Judgement
1	High Temperature storage	80℃+/-2℃ 24H	5pcs	1, no image change before and after 2, no transformation and broken mechanically 3, no focus changing of lens 4, vision inspection OK
2	Low Temperature storage	-40℃+/-2℃ 48H	5pcs	
3	Humidity storage	60℃, 95%[RH] 72H	5pcs	
4	Thermal shock	-40℃ (0.5H)~80℃ (0.5H)/cycle	5pcs	
5	Vibration test	30Hz,0.38mm&55 Hz,0.19mm, XYZ direction,0.5H/direct ion,	10pcs	
6	Drop test	1m/one direction. 1time/direction, total 6 direction	10pcs	