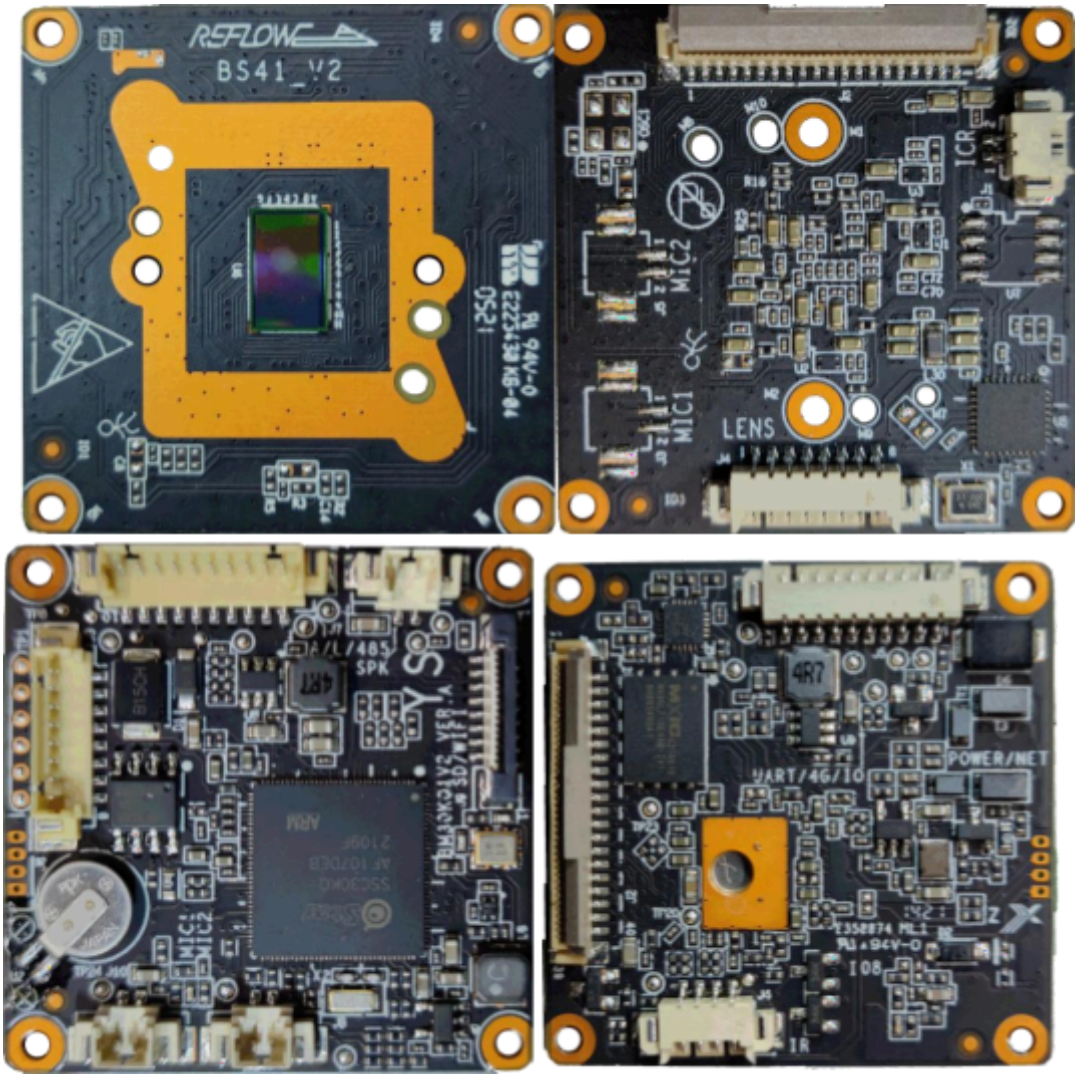
A41 4MP Blacklight &Deep Perimeter Protection Camera Module



Module product schematic

Features

Image related

- 4MP 1/1.8 ' BSI back-illuminated large target surface sensor , night vision effect is more shocking ;
- Support image 2D and 3D noise reduction technology;
- Support Extra-ISP night vision low smear image algorithm;
- Support optical wide dynamic ;
- Support 3 kinds of image scene modes: transparent, bright, standard, the image style can be switched as you like;

- Support image rotation 90 degrees, To achieve the effect mode corridors, to increase the effective field of view monitored;
- Support manual shutter and exposure adjustment, and you can see the contents of the electronic screen, LED screen, and meter at each refresh rate ;

System functions

- Support Depth intelligent Perimeter, support vehicle / non-vehicle / person classification of cross-border detection , enter the area , leaving the region , the region's invasion 4 behaviors detection ;
- Support two-ways voice intercom;
- Support H.265 intelligent coding, the coding efficiency is higher, and the bit rate is lower when the image quality is guaranteed;
- Support timing capture, alarm linkage capture, and report alarm images via email, FTP, etc.;
- Support Web- side operation and provide SDK development for multiple platforms ;
- Support motion detection, occlusion detection, sound detection;
- Support Onvif international standard protocol, can access third-party back-end / platform;
- Support GB \T28181 national standard agreement;
- Support P2P+ streaming media forwarding mode, APP fast connection, push alarm information to APP and other functions;
- Support the full Netcom function, can automatically change its own IP address according to the network segment of the third-party NVR , realizing quick access to the third-party NVR ;

Interface related

- Support 2 channels of MIC input , 1 channel of Line out output, support two-ways voice intercom;
- Intelligent soft photosensitive, more accurate day and night switching, no photoresistor required;
- Support 100M adaptive network port;

Hardware related

- PCB thick copper plating heat dissipation, stable work 7*24h at -30-60 ℃ ;
- The Sensor board is 2mm thick, and the strength is increased by 50% , reducing the problem of virtual focus caused by thermal deformation;

- Wide voltage protection circuit design, . 9 -15 V tolerance voltage access, preventing reverse power protection design;
- 4KV lightning protection for the network port and 2KV lightning protection for the power port to avoid possible damages such as surges, induced lightning, and static electricity;

Personalized customization

- Support personalized customization, you can customize the model#, Logo , image scene mode or parameters, OSD , default alarm audio;

Product specifications

Platform solution	A41@WH M-star SSC30KQ+SC450
sensor	4MP 1/1.8 ' the BSI back-illuminated target surface large Sensor ;
system structure	Dual-core A7 1.2GHz ;
Image video	description
Smart coding	Support group basis mode, advanced mode, reducing the storage footprint ;
Video processing	H.264 and H.265 video coding; Support three streams : main stream, auxiliary stream , and third streams ;
Standard	2560*1440@25 , 2304*1296@25 , 1920*1080@25 ;
Resolution	Mainstream: 2560*1440 , 2304*1296 , 1080P ; Auxiliary stream: 720P , D1 (default) , 640*360 , 2CIF , CIF ; Third stream: D1 , 640*360 , 2CIF , CIF (default) ;
OSD	Support date and time OSD , customize the OSD , serial OSD , Ethernet port OSD , most more than 8 pcs OSD ;
Privacy mask	It supports up to 4 zones ;
Regional enhancement	It supports up to 8 zones ;
Wide dynamic	Support optical wide dynamic ;
Noise reduction	Support 2D , 3D noise reduction ;
shutter	Support automatic / manual mode ; Support low smear mode ; Support indoor 50/60Hz shutter mode to suppress power frequency flicker ;
Scene mode	Support transparent (default) , bright, standard , San scene mode selection, image adjustment style preferences ;
software	description

Business functions	Support Web configuration ; Support OSD configuration, image configuration and other services ; Support capture the timing, capture time interval, alarm linkage shots, and through e-mail, the FTP , etc. The image alarm reporting; PPPOE /DHCP/ Static IP acquisition method ; Support multiple platform SDK development kits for secondary development ; Support high-definition audio and video synchronization preview, two-ways voice intercom ; Support motion detection , occlusion detection, sound detection, linkage APP to achieve mobile phone push alarm ;
intelligent	Support Depth intelligent Perimeter, support vehicle / non-vehicle / person classification of cross-border detection , enter the area , leaving the region , the region's invasion 4 kinds behavior detection ;
Sound and light warning	Support, active alarms after detected humanoid, warning lights and voice alarm linkaged.
upgrade	Support local upgrade of WEB interface ; Support GuardTools batch upgrade ; Support cloud upgrade ;
Control lights	Support 1 way warm light PWM linear dimming ;
Client	Support mobile APP video preview (IOS , Android) ; Support PC client 's local management of IPC , realize multi-channel IPC live broadcast, local hard disk storage, etc .;
custom made	Support personalized customization, you can customize the model#, Logo , image scene mode or parameters, OSD , default alarm audio;
Audio	Description
Audio processing	Support G.711U and G.711A encoding and decoding standards; Support noise suppression;
Audio output	Maximum support for 64kbps transmission ;
The internet	description
I P acquisition method	PPPoE , full Netcom (enabled by default), DHCP , static IP address ;
protocol	Support IPv4 , IP v6 , H TTPS , TCP , UDP , DHCP , RTP , RTSP , DNS , DDNS , NTP , port mapping and other network protocols ;
compatibility	Support ONVIF standard protocol, realize video preview and video recording of mainstream third-party NVR and PC client ; Support GB \T28181 national standard agreement;
Interface characteristics	description

Network status indicator	Support ;
Audio input interface	Supports 2 -ways MIC input ;
Audio output interface	Support 1 channel Line out output ;
Network Interface	Support 100M network port ;
RS485 interface	Support ;
RS232 interface	Support ;
hardware	description
Board thickness	Sensor board 2 mm ; coding board 1.6mm ;
weight	The net weight is about 0.08 kg (0.11lb) ;
working environment	-30℃~60℃（-22°F~140°F）
Board size	38 mm* 38mm , 38 standard single board structure ;
power supply	DC12V±25% , support anti-reverse connection, overvoltage, overcurrent protection, input short circuit protection ;
reliability	7*24 hours -30 ℃ ~ 60 ℃ high and low temperature cycle test is stable and reliable ; Power port 2KV lightning protection, network port 4KV lightning protection, in line with national and international standards ;

Port definition (the dot is the first pin)

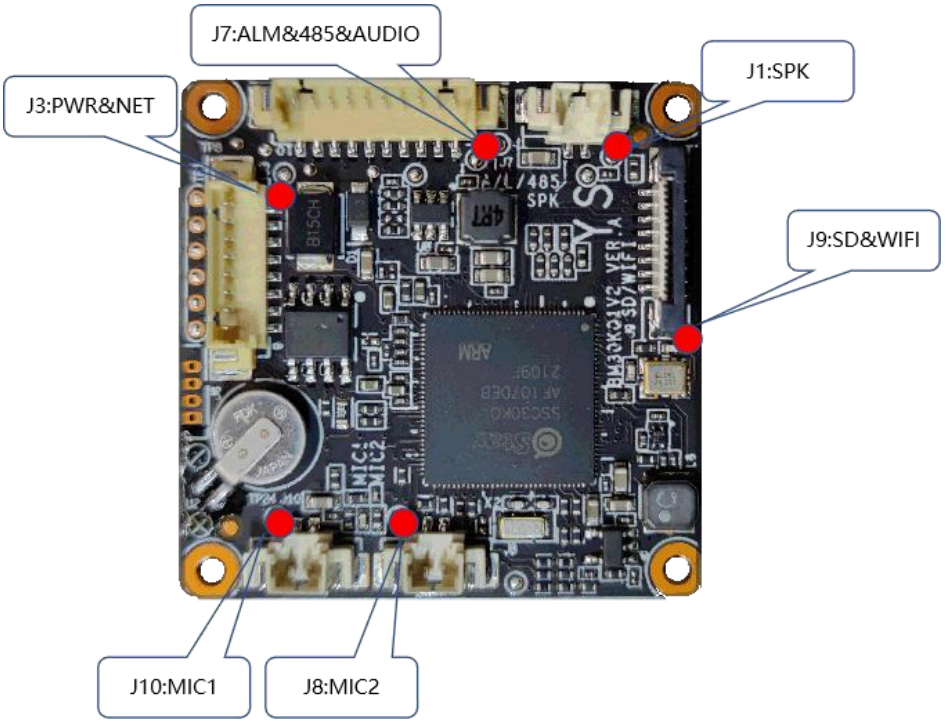


Figure 1 Schematic diagram of encoder board interface

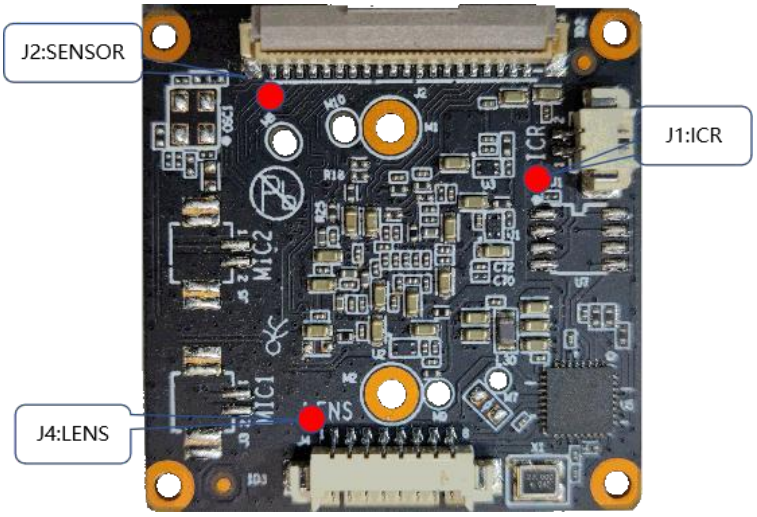


Figure 2 Schematic diagram of S ENSOR board interface

Pin definition of interface

Silk screen number	Pin number	Interface definition	Function description	Signal direction	Level	Description
J1	Reserved					
J 3	1	VDD12V_IN	Total power input	enter	12V	Power connector
	2	GND	Total power ground	GND	0V	
	3	RESET	Reset signal	enter	0/ 3.3V	Reset signal
	4	LED_ACT	Network signal status indicator	/	0/ 3.3V	Signal status indicator
	5	TRD0_P	Network data sending differential signal positive	Output	/	Ethernet interface
	6	TRD0_N	Network data transmission differential signal negative	Output	/	
	7	TRD1_P	Network data receiving differential signal positive	enter	/	
	8	TRD1_N	Network data receiving differential signal negative	enter	/	
J 4	1	Reserved				
	2	IR_CTRL_1	Photosensitive control output PWM1	Output	0/3.3V	Soft light-sensitive fill light signal
	3	IR_CTRL_2	Photosensitive control output PWM2	Output	0/3.3V	
	4	GND	Ground	GND	0V	
J 5	1	ALM_IN2	Alarm Input	Input	0/3.3V	Reserved
	2	ALM_OUT2				Reserved
	3	UART2_TXD	UART 2 data transmission signal	Output	0/ 3.3V	UART signal
	4	UART2 _ RXD	UART 2 data receiving signal	enter	0/ 3 .3V	
	5	GND	Ground	GND	0V	
	6	485_EN2	RS485 enable control	Output	0 /3.3 V	RS485 signal

	7	FAN_EN		Output	0 /3.3 V	Reserved
	8- 10					Reserved
J 7	1	ALM_IN1	Alarm Input	Input	0/3.3V	
	2					Reserved
	3	ALM_OUT1	Alarm Output	Output	0/3.3V	
	4					Reserved
	5	RS485_A	RS485 data positive	Input / output	0 /3.3 V	RS485 signal
	6	RS485_B	RS485 data negative	Input / output	0 /3.3 V	
	7	GND	Ground	GND	0V	
	8	Reserved				audio signal
	9	GND	Ground	GND	0V	
	1 0	SPK_OUT	LINE _ OUT output	Output	Output/ 2.54Vpp	
J8	1	MIC_IN_ L	MIC1 input signal	enter	/	MIC1
	2	GND	Ground	GND	0V	
J 9	Reserved					
J10	1	MIC_IN_ R	MIC2 input signal	enter	/	MIC2
	2	GND	Ground	GND	0V	
2 , SENSOR board interface definition						
J 1	1	OUT1	IR-CUT signal +	Input / output	0/ 5V	IR_CUT interface
	2	OUT2	IR-CUT signal -	Input / output	0/ 5V	
J 4	Reserved					