MESA Microwave Corporation

Analog Camera

MMC-AC-ICX828AK / MMC-AC-ICX829AK

MMC AC
11/20/2015

Analog Camera Product Specifications

Safety Precautions

Warning:
This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. *TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. RISK OF ELECTRIC SHOCKCAUTIONDO NOT OPEN!*

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Product Precautions
- Handle the camera with care. Do not abuse the camera. Avoid striking or shaking it. Improper handling or storage could damage the camera.
- Do not pull or damage the camera cable.
- During camera use, do not wrap he unit in any material. This will cause the internal temperature of the unit to increase.
- Do not expose the camera to moisture, or do not try to operate it in wet areas.
- Do not operate the camera beyond its temperature, humidity and power source ratings.
- While the camera is not being used, keep the lens or lens cap on the camera to prevent dust or contamination from getting in the CCD or filter area and scratching or damaging this area.
- Do not keep the camera under the following conditions:
- In wet, moist, and high humidity areas
- Under hot direct sunlight
- In high temperature areas
- Near an object that releases a strong magnetic or electric field
- Areas with strong vibrations
- Use a soft cloth to clean the camera. Use pressured air spray to clean the surface of the glass. DO not scratch the surface of the glass.

Introduction
The specification describes the following cameras:
MMC-AC-ICX828AK / MMC-AC-ICX829AK

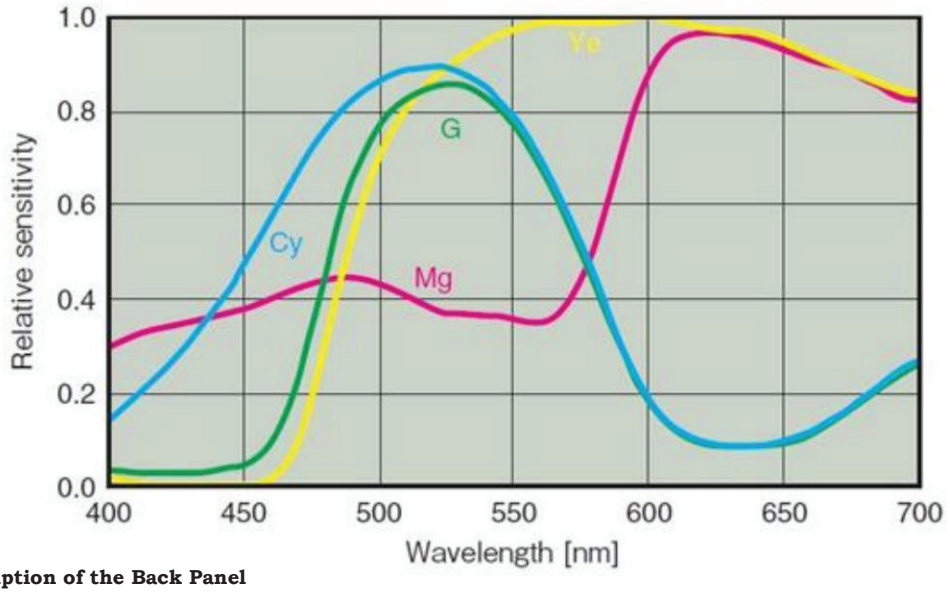
Electronic Specifications MMC-AC-ICX828AK / MMC-AC-ICX828AK

Model Number	**MMC-AC-ICX828AK (NTSC)**	**MMC-AC-ICX829AK (PAL)**
Image Sensor	1/2 inch Interline CCD ICX828AK	1/2 inch Interline CCD ICX829AK
Active Picture Elements	768(H) x 494(V)	752(H) x 582(V)
Signal Format	NTSC	PAL
Frame Rate	30 Fps	25 Fps
Scanning System	2:1 Interlace	
Scanning Frequency	Horizontal Frequency 15.734kHz Vertical Frequency 59.94Hz	
Sync. System	Internal / External	
Horizontal Resolution	480TV Lines	
S/N Ratio	55dB (AGC=OFF)	
Video Output Format	VBS 1.0Vp-p 75Ω 、 Y/C	
Minimum Scene illumination	TBD lx, F1.2 (AGC=ON)	
Electronic Shutter	**[Dip Switch]** 1/60(1/50:PAL), 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec **[Auto/Control Software]** High Speed Shutter: 1/60(1/50:PAL), 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/100000 sec Low Speed Shutter: 1 to 256FLD(Configurable through the control software)	
White Balance	Auto / Push to Set/ Manual (Configurable through the control software)	
Auto IRIS	Non-Support	
AGC	ON / OFF	
Gamma	0.45/1.0 (Switchable, Configurable through the control software), Defalut:0.45	
DR Enhancement (DR)	Dynamic Range Enhancement algorithm available	
Image Rotation	Normal (Default),Horizontal Flip, Vertical Flip, Horizontal Vertical Flip	
Still Image	Support	
Lens Mount	C Mount	
Optical LPF	IR Cut Filter with Optical LPF	
Input Voltage	DC9V～15V	
Power Consumption	(170mA + 20mA)	

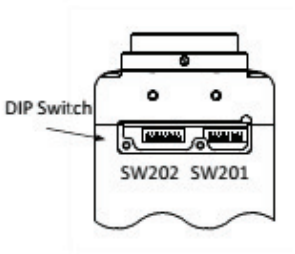
Operational Temperature	(-40℃ - +70℃)
Storage Temperature	(-50℃ - +80℃)
Dimensions Board Type :	45(W) x 45(W) x (D) mm, refer to Dimensions※1 Case Type: 51(W) x 51(H) x Approximately 60.5(D) mm ※1
Weight	Board Type: Approximately 80 g Case Type : Approximately 140 g
RoHS	RoHS Compliance
Shock & Vibration	15g RMS on 20 Hz – 500 Hz on 3 axes ; 64g ½ sinus 5 ms

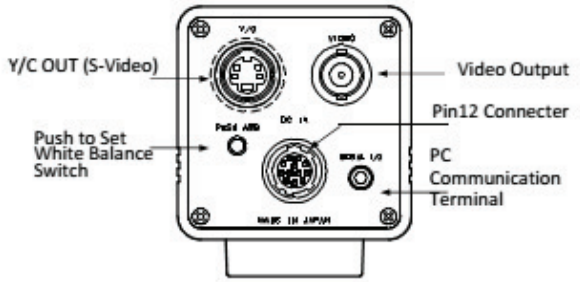
Spectral Sensitivity Characteristics

MMC-AC-ICX829AK (PAL)



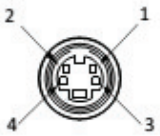
Description of the Back Panel





Y/C OUT (S-Video) Y/C Output

Pin 1	Y OUT(1Vp-p 75Ω)
Pin 2	C OUT(300mVp-p 75Ω
Pin 3	GND(Y OUT)
Pin 4	GND(C OUT)



Pin12 Connecter

Pin 1	GND
Pin 2	+12V
Pin 3	GND
Pin 4	Y OUT
Pin 5	GND
Pin 6	EXT HD
Pin 7	EXT VD
Pin 8	GND
Pin 9	C OUT
Pin 10	GND
Pin 11	+12V
Pin 12	GND

Connector : HR10A-10R-12PB (Hirose)

Power Input: Provided AC adapter
BNC Connector: Video Output (VBS 1.0Vp-p 75Ω)
PC Communication Terminal: Configurable through Control Software in the CD-ROM with RS-232C cable(Stereo Pin-jack / D-Sub Pin9).
DIP Switch: 16 DIP Switches

SW	No.	Function	OFF	ON
SW201	1	Shutter Mode	Electrical IRIS	Fixed Shutter
	2	Shutter Speed (SW201-1-ON: Available)		
	3			
	4			
	5	Flicker Compensation Mode (SW201-1-OFF: Available)		
	6			
	7	Back Light Compensation (SW201-1-ON: Available)	OFF	ON
	8	Back Light Correction Mode (SW201-7-ON: Available)	Auto Weight	Fixed Weight
SW202	1	Low Luminance Control (SW201-1-OFF: Available)	ote:AGC is avalable SW201-1 ON and OF	
	2			
	3			
	4	WB	Auto	Push to Set
	5	Image Flip		
	6			
	7	Gamma	0.45(Preset)	1.0(Manual)
	8			

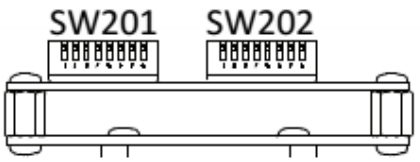
SW2	SW3	SW4	Shutter Speed
OFF	OFF	OFF	1/60
ON	OFF	OFF	1/125
OFF	ON	OFF	1/250
ON	ON	OFF	1/500
OFF	OFF	ON	1/1000
ON	OFF	ON	1/2000
OFF	ON	ON	1/4000
ON	ON	ON	1/10000

SW5	SW6	icker Compensation Mo
OFF	OFF	OFF
ON	OFF	Flicker Less
OFF	ON	Gain Modification
ON	ON	-

SW9	SW10	SW11	Low Luminance Control
OFF	OFF	OFF	AGC,Slow Shutter OFF
ON	OFF	OFF	AGC
OFF	ON	OFF	Slow Shutter ON
ON	ON	OFF	AGC ->Slow Shutter
OFF	OFF	ON	Slow Shutter -> AGC
ON	OFF	ON	AGC ->Slow Shutter-> AGC
OFF	ON	ON	-
ON	ON	ON	-

SW13	SW14	Image Flip
OFF	OFF	OFF(Normal)
ON	OFF	Vertical
OFF	ON	Horizontal
ON	ON	HorizontalVertical

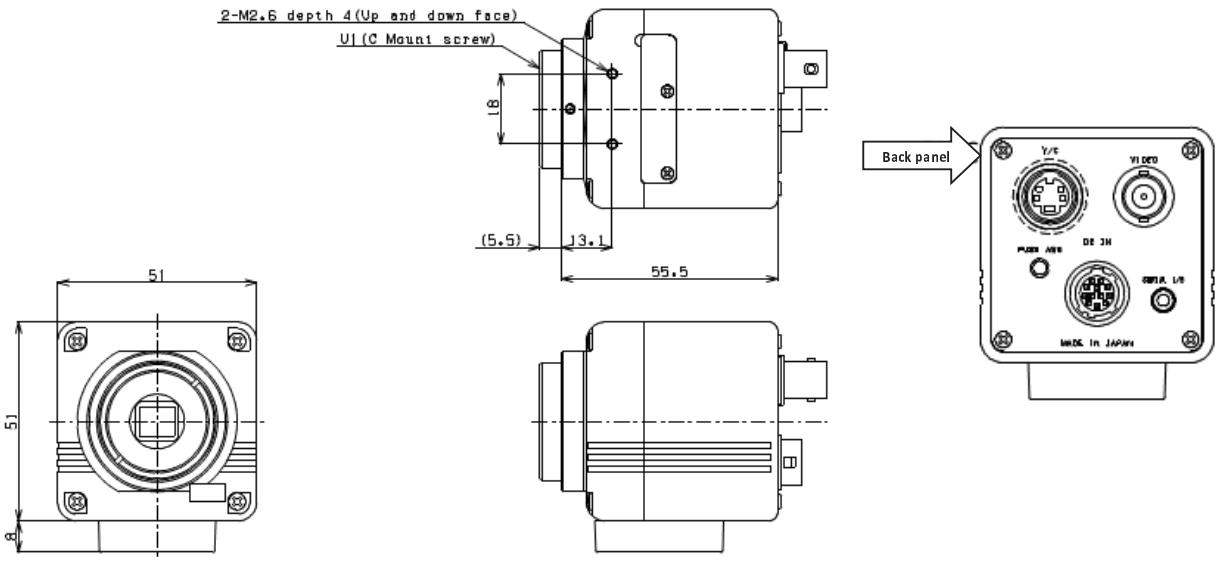
CN PIN



SW	No.	OFF	ON
SW201	1		●
	2	●	
	3	●	
	4	●	
	5	●	
	6	●	
	7	●	
	8	●	
SW202	1		●
	2	●	
	3	●	
	4	●	
	5	●	
	6	●	
	7	●	
	8	●	

Caution
- Internal Sync is unstable while adjusting the phase of the input and output signal on External Sync.
- External Sync may work in Internal Sync (Factory default) mode; however External Sync is not in phase with Internal Sync.
- To set the internal sync again, please reset the camera after internal sync has been selected.

Dimensions
C-Mount: Unit mm



Camera Set Up
When the user sets up the camera, the following items may be required:
- Model Number of the Camera
- Control Software
- Communication Cable – Serial Pin Jack Cable (Serial Pin to RS232C Cable)
- Power: DC 12V

Communication Protocol Settings

Setting	Value
Baud Rate	115,200bps
Data Bit	8 Bits
Parity	None
Stop Bit	2 Bits
Flow Control	None

Communication Format
The format for sending / receiving data between the PC and the camera (DSP or FLASHROM) is show below:

Function	1Byte	2Byte (COM)	3Byte	4Byte	5Byte	-----	-----
DSP register WRITE*	SW	57h	CAT	STB	DT0 --- DTn		CS
DSP register READ	SW	52h	CAT	STB	ENB	CS	
FLASHROM WRITE (ALL Categories)	SW	7Ah	CS				
FLASHROM WRITE (1 Category)	SW	79h	CAT	CS			
FLASHROM WRITE (Byte)	SW	78h	CAT	STB	ENB	CS	
FLASHROM READ (Byte)	SW	58h	CAT	STB	ENB	CS	

*The packet byte length varies depending on the length of the data strings (DT0 to DTn) to be written in the DSP registers.