DATE : FEB.29.2012

MODEL NO : WCM-WCE21D_38

ACCEPTANCE SPECIFICATIONS

2.1M MEGAPIXEL CAMERA BOARD

Drafting	Examination	Decision

CONTENTS

Record of Revision

Date	Version	Description of Revision
2012.01.15	2_1_1	Version of the first

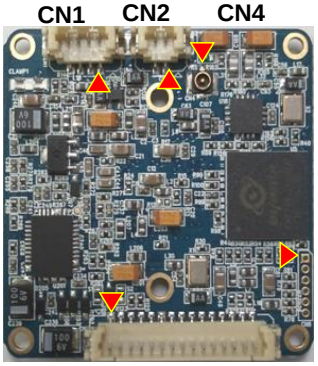
4.SPECIFICATION

Specification	Description	Details
CCD Device	MN34041PL	1/3 Inch progressive CMOS, 2.1Megapixel
	Ttoal Pixels	2010(H) x 1108(V),2.227 Megapixel
	Effective Pixels	1944(H) x 1092(V),2.122 Megapixel
System	Scanning System	Progressive Scan
	Sync System	Internal
Resolution	Horizontal TVL	More than 1000 TVL
	Vertical TVL	More than 1000 TVL
Picture	S/N Ratio	More than 50dB
	Min,Illumination	0.1 Lux without (F1.2,50 IRE,AGC MAX)
Video Mode	Frame-Rate	1080P(30P,25P) , 720P(60P,50P)
	(H)X(V)	1920(H)X1080(V) / 1280(H)X720(V)
Output Format	Digital Output	HD-SDI(SMPTE274M)
	Analog Output	NTSC, PAL CVBS
Power	Supplied Voltage	DC 12V (10V~16V),200mA ±10%
	Power consumption	Max: 2.4W
Temperature	Operating Temperature	-10°C ~ 50°C
	Storage Temperature	-20°C ~ 70°C
Humidity	Operating Humidity	Under 90% Non-condensing
	Storage Humidity	Under 95% Non-condensing
Demension	PCB SIZE:(W)X(H)	38(W)mm X 38(H)mm X 1 BOARD
		PCB 1.0(T)mm
Weight	Without Lens & Lens hloder	30 grams
		Lens & Lens hloder (Option)
Accessoires	Plate FFC Cable	0.5mm X 30Pin X 120mm X C
	LENS & Lens Mount OPTION	C/CS Mount & FIX Type M12,M14
Function setting		
1. DISPLAY MODE	**SDI SCALE**	**FULL/COMP**
	SDI FORMAT	**1080P, 720P**
	SDI PFS	**1080P(30P,25P) , 720P(60P,50P)**
	COLORBAR	**OFF/ON**
	SDI PFS	**1080P(30P,25P) , 720P(60P,50P)**
	SHADING DET	**OFF/ON**
	DEFECT DET	**OFF/ON**
2.LENS	**LENS**	**Manual / DC / VIDEO**
3.SHUTTER/AGC	**AUTO/ MANUAL**	**MANUAL(1/60(50) ~ 1/30,000 sec)**
	AGC	**0 ~ 11 steps**
	DSS	**OFF/ON(X0~X4)**
	FREQ	**60HZ,50HZ**
4. AWB	**AUTO / PUSHING / MANUAL**	**MANUAL(KELVIN,R-GAIN,B-GAIN)**
5. PICT ADJUST	**BRIGHTNESS**	**0 ~ 20 steps**
	COLOR GAIN	**0 ~ 20 steps**
	ACE	**OFF/ON**
	SHARPNESS	**0~10 steps**
	MIRROR	**OFF/ON**
	FLIP	**OFF/ON**
	STILL	**OFF/ON**
	DZOOM	**OFF/ON(0 ~ 112 steps)**
	SHADING	**OFF/ON**
	HLMSK	**OFF/ON(LEVEL,COLOR)**
6. WDR/BLC/DNR	**MODE**	**WDR/BLC/OFF**
	DNR	**OFF / LOW / MIDDLE / HIGH**

7.DAY & NIGHT	MODE	AUTO /COLOR /B/W /EXT
		AGC THRS (0 ~ 20 steps)
		MARGIN (0 ~ 20 steps)
		DELAY(LOW,MIDDLE,HIGH)
8.PRIVACY	MODE	OFF/ON
9.MOTION DET	MODE	OFF/ON
10.CAMERA ID	MODE	OFF/ON
11.SYSTEM INFO	VERSION	0.0.1
	DATA	2011-10-24
12.RESET	ON/PUSHING	
13. EXIT		

 # Design and Specification are subject to change without notice.

5.Hardware Spec.

BOARD SIZE 38 X 38 X 1BOARD		
	Top View	Bottom View
C-MOS Board		

CONNECTORS	
CN1	Auto Iris Lens Control Connector(DMP+,DMP-,DRV,+DRV-)
CN2	Day & Night Motor Control Connector(M+,M-)
CN3	Deleted
CN4	SDI OUT(SDO,GND),U-FL-R-SMT(10)
CN5	NORMAL I/O Connector(DC+12V,VBS,OSD Control,DC iris,CDS signal,TXD,RXD,EXT SYNC,GPIG PORT)
CN6	Connector for upgrading Camera Program,JTEG Upgrade(JMODE,JTCK,JTDI,JTDO,JTMS,GND),(SKIP)

Warnings and precautions

 # Do not expose the camera to rain, water or radioactivity.
If it gets wet, wipt it dry immediately.
It can cause malfunction to occur.

 # Never keep the camera face to strong light directly.
It can damage the CCD.

 # Do not drop the camera or subject them to physical shocks.
It can cause malfunctions to occur.

 # Do not install the camera in extreme temperature conditions.
Only use the camera under conditions where temperatuers are between - 10°C and +50°C. Be especially careful to provide ventilation when operating under high temperatures.

 # Do not install the camera under unstable lighting conditions.
Severe lighting change or flicker can cause the camera to work improperly.

Connector Discription

1. CN1_DC IRIS LENS Control Connector

NO	Pin Name	I/O	Description
1	Damp(+)	O	DC IRIS LENS Damping (+) PIN
2	Damp(-)	O	DC IRIS LENS Damping (-) PIN
3	DRV(+)	O	DC IRIS LENS Driving (+) PIN
4	DRV(-)	—	DC IRIS LENS Driving (-) PIN , Board Ground

Connector Description : 12505S-4A00(1.25mm_4pin_SMD_Stright,Yeonho Electronics)

2. CN2_Day & Night Motor Control Connector

NO	Pin Name	I/O	Description
1	CONT(+),(-)	I/O	Day & Night Motor Drive +,- Output
2	CONT(-),(+)	I/O	Day & Night Motor Drive -,+ Output

Connector Description : 12505S-2A00(1.25mm_2pin_SMD_Stright,Yeonho Electronics)

3. CN3_HD-SDI Connector

NO	Pin Name	I/O	Description
1	—	—	—
2	—	—	—

Connector Description : MCX_PCB(Deleted)

4. CN4_HD-SDI Connector

NO	Pin Name	I/O	Description
1	SDI OUT	O	HD-SDI(SMPTE) Output
2	GND	—	Board Ground

Connector Description : U-FL-R-SMT(10) (Hirose),SMPTE274M : 720P(60P), 1080P(30P)

5. CN5_I/O Connector 1

NO	Pin Name	I/O	Description
1	GND	—	Board Ground
2	DC12V	I	DC12V Intput
3	RXD	I	UART receive data (Rxd)
4	TXD	O	UART transmit data (Txd)
5	CVBS	O	Composite Video Output
6	GND	—	Board Ground
7	GPIO22	O	Motion DET Output (Normal 0V, Active +3.3V)
8	KEY2(down)	O	OSD Control Key(down),(Normal +3.3V, Active 0V)
9	KEY1(up)	O	OSD Control Key(up),(Normal +3.3V, Active 0V)
10	KEY5(set)	O	OSD Control Key(set),(Normal +3.3V, Active 0V)
11	KEY4(right)	O	OSD Control Key(right),(Normal +3.3V, Active 0V)
12	KEY3(left)	O	OSD Control Key(left),(Normal +3.3V, Active 0V)
13	GPIO14	O	Day & Night Output (DAY 0V, NIGHT +3.3V)
14	CVBS	O	Composite Video Output(for video lens)
15	CDS SIGNAL	I	External CDS Signal input (Normal,Low,DAY) / (Active,High ,NIGHT)

Connector Description : 12505S-15A00(1.25mm_15pin_SMD_Stright,Yeonho Electronics)

6. CN6_JTEG Upgrad Connector

NO	Pin Name	I/O	Description
1	JMODE	I	JTEG Upgrade Mode Setting (Normal +3.3V, Active 0V)
2	GND	—	Board Ground
3	JTCK	I	JTEG Upgrade Clock
4	JTDI	I	JTEG Upgrade Input
5	JTDO	O	JTEG Upgrade Output
6	JTMS	I	JTEG Upgrade Selector

Connector for upgrading Camera Program

Connector Description : 1.25MM-6PIN,Board to Board (N.C)

7.PROTOCOL

a.The purpose of the protocol

The camera after installation, the installation to give comfort to the user, from a distance, all the menu osd key on the operation of the camera has been developed to allow control.
This protocol does not control all the functions of the camera,
Camera control is a protocol for osd Key.

b. Eyenix division CAMERA OSD Key control Protocol conditions:

F / W 0.0.4 or later works only condition.
RS232C 115200, N81

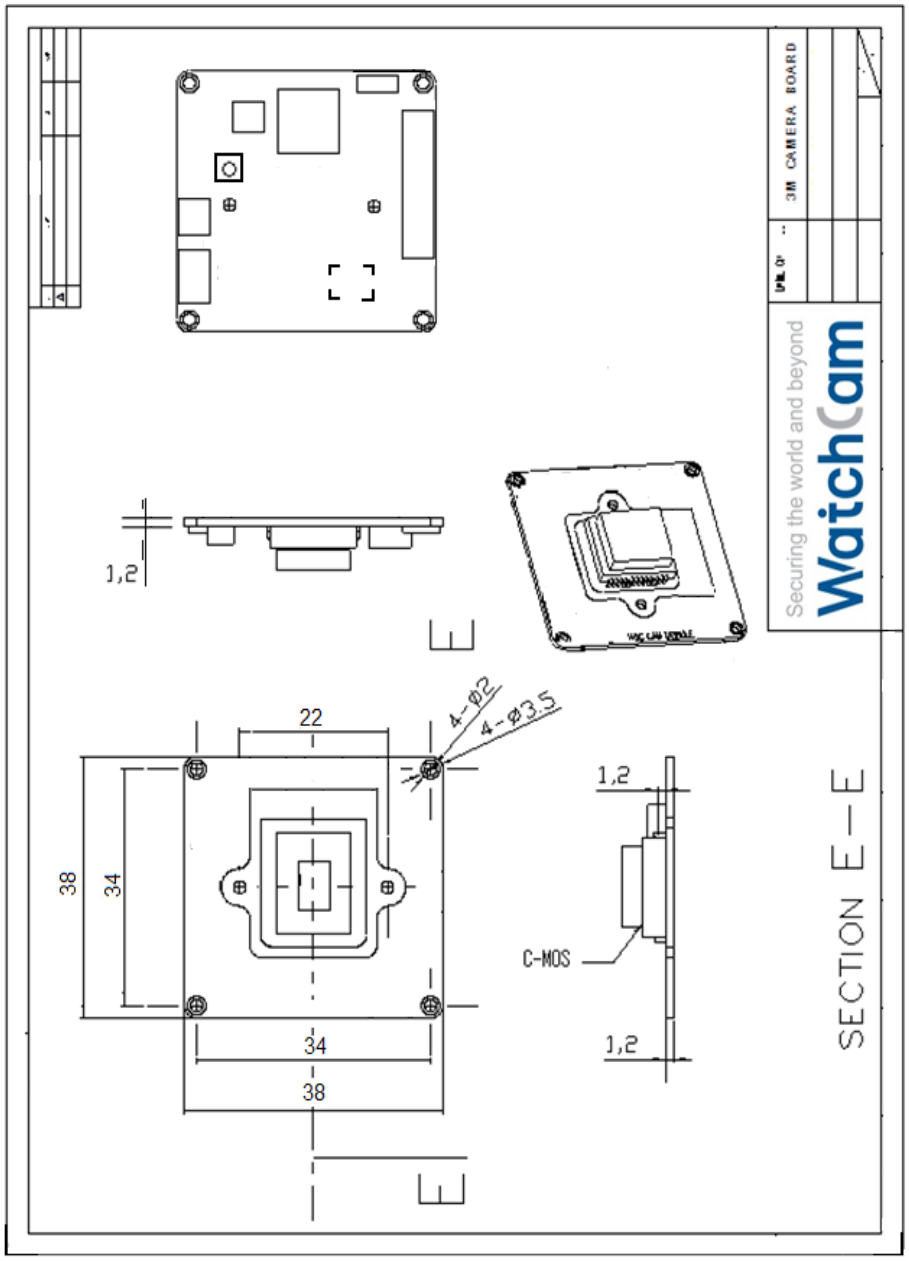
c. Communication Protocol

Communication spee	115200 (N81)
Start bit	1
Data bit	8
Parity bit	none
Stop bit	0

d. Serial Protocol data

	Stx	Cmd	Val	Etx
Key U	0x02	0x30	0x01	0x03
Key D	0x02	0x30	0x02	0x03
Key R	0x02	0x30	0x04	0x03
Key L	0x02	0x30	0x08	0x03
Key C	0x02	0x30	0x10	0x03

8.Dimension


3M CAMERA BOARD
Securing the world and beyond
WatchCam
1,2
E
22
4-Ø2
4-Ø3.5
38
34
34
38
E
1,2
C-MOS
1,2
SECTION E-E