DATE : November.02.2011

MODEL NO :HDC_SD043M

ACCEPTANCE SPECIFICATIONS

2.1M MEGAPIXEL CAMERA BOARD

Drafting	Examination	Decision

CONTENTS

Record of Revision

Date	Version	Description of Revision
2011.11.02	2_1_1	Version of the first

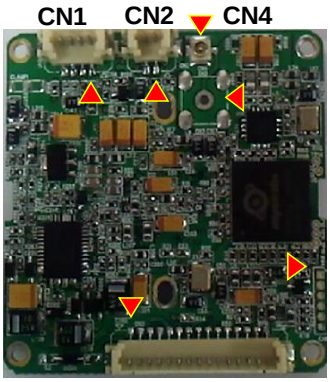
4.SPECIFICATION

Specification	Description	Details
CCD Device	MN34041PL Ttoal Pixels Effective Pixels	1/3 Inch progressive CMOS, 2.1Megapixel 2010(H) x 1108(V),2.227 Megapixel 1944(H) x 1092(V),2.122 Megapixel
System	Scanning System Sync System	Progressive Scan Internal
Resolution	Horizontal TVL Vertical TVL	More than 1000 TVL More than 1000 TVL
Picture	S/N Ratio Min,Illumination	More than 50dB 0.1 Lux without (F1.2,50 IRE,AGC MAX)
Video Mode	Frame-Rate (H)X(V)	1080P(30P,25P) , 720P(60P,50P) 1920(H)X1080(V) / 1280(H)X720(V)
Output Format	Digital Output Analog Output	HD-SDI(SMPTE274M) NTSC, PAL CVBS
Power	Supplied Voltage Power consumption	DC 12V (10V~16V),200mA ±10% Max: 2.4W
Temperature	Operating Temperature Storage Temperature	-10°C ~ 50°C -20°C ~ 70°C
Humidity	Operating Humidity Storage Humidity	Under 90% Non-condensing Under 95% Non-condensing
Demension	PCB SIZE:(W)X(H)	42(W)mm X 42(H)mm X 2 BOARD PCB 1.0(T)mm
Weight	Without Lens & Lens hloder	30 grams Lens & Lens hloder (Option)
Accessoires	Plate FFC Cable LENS & Lens Mount OPTION	0.5mm X 30Pin X 120mm X C 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 42 X 42 X 1BOARD		
	PCB NO: HDC_SD043M-REV1	
	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	SDI OUT(SDO,GND),MCX_PCB(SKIP)
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	SDI OUT	O	HD-SDI(SMPTE) Output
2	GND	—	Board Ground

Connector Description : MCX_PCB(SKIP),SMPTE274M : 720P(60P), 1080P(30P)

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 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

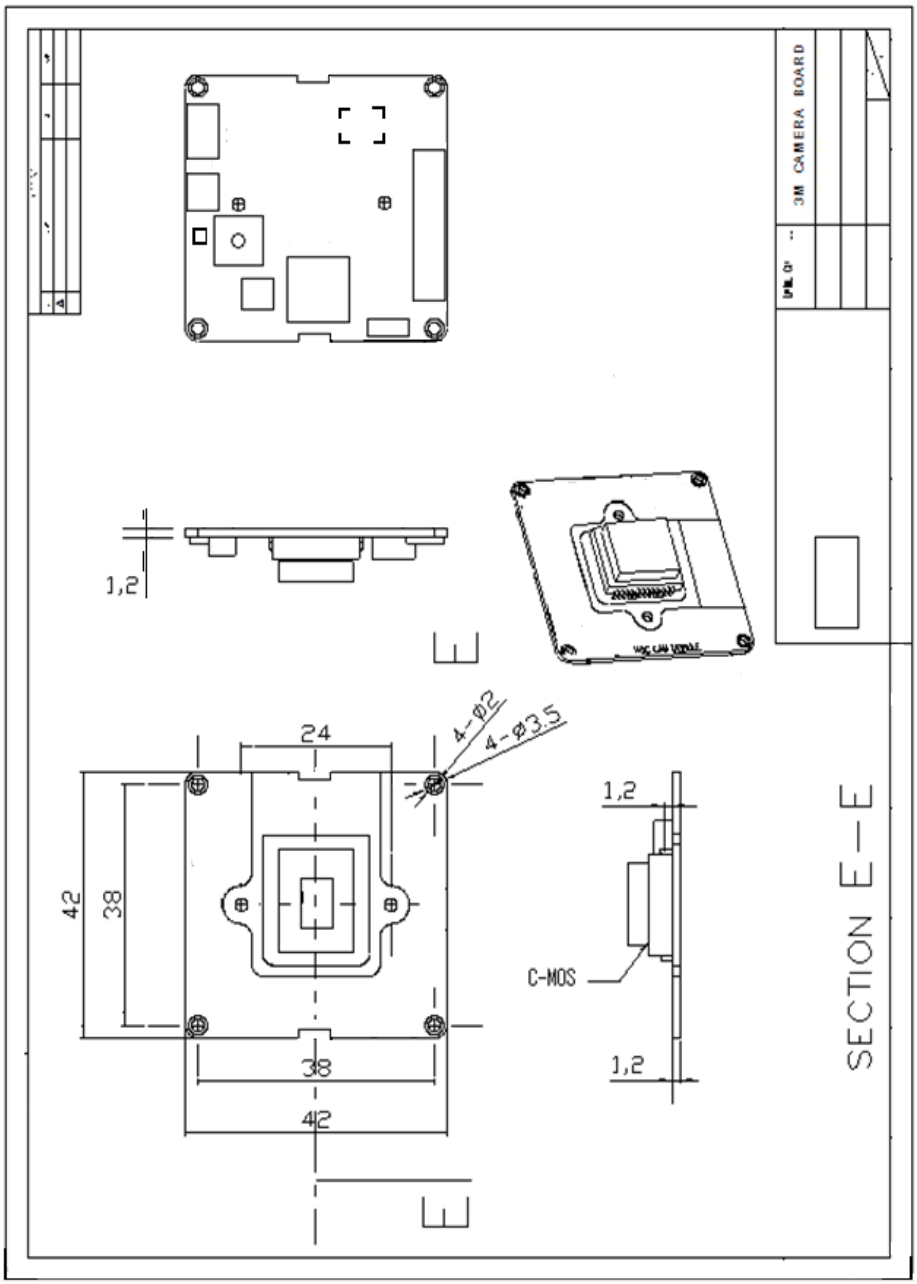
c. Communication Protocol

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
1,2
E
24
4-Ø2
4-Ø3.5
42
38
38
42
E
1,2
C-MOS
1,2
SECTION E-E