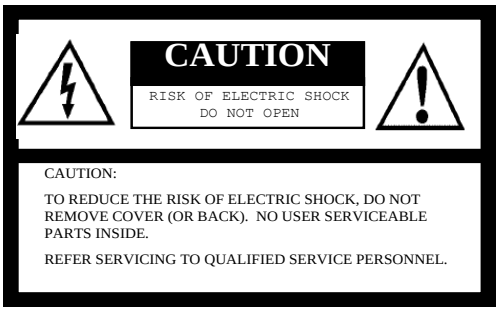
STC-AFCM133DV
Product Specification

16:9 Format 1.3 MegaPixel
11x Zoom Auto Focus Camera

Safety Precautions



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For U.S.A.

Warning:

This equipment generates and uses radio frequency energy and if not installed and used properly, I.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

For Canada

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.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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.

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Content

I. Specifications

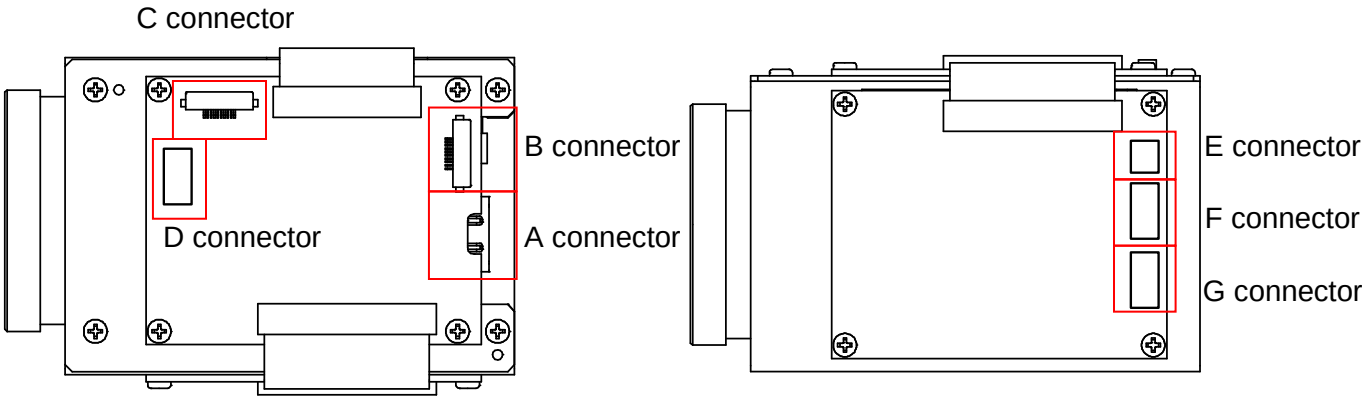
A. Electronic Specifications / Mechanical Specifications / Environmental Specifications

Model Number				STC-AFCM133DV	Initial setting
Electronic specifications	Imager			1/3" SXGA CMOS: IMX104 (SONY)	
	CCD effective picture elements			1305 (H) x 1049 (V)	
	HD active picture elements			1280 (H) x 720 (V)	
	Cell size			3.75 (H) x 3.75 (V) µm	
	Minimum scene illumination			Initial settig : 5.82 Lux at F1.6 (at zoom out position)	
				at 50 % IRE, AGC ON and 1/100 seconds shutter speed with IR cut filter	
				2.78 Lux at F1.6 (at zoom out position)	
				at 50 % IRE, AGC ON and 1/60 seconds shutter speed with IR cut filter	
	Sync. System			Internal	
	Video output			DVI 1.0 conformity	
				RGB, 1280 (H) x 720 (V), 60 Hz / 50 Hz	
				(YPbPr LVDS signal output from the LVDS KEL connector)	
	Camera functions				
		ALC		Can be configured via the UART communication	Fixed shutter,
				with optical iris, auto electronic shutter and AGC	AGC OFF
		Shutter speed		Adjustable shutter speed via the UART communiaction	1/100 seconds
			Extended	Extended shutter speed is available up to 0.5 seconds	
			High speed	Up to 1/38,252 seconds at 60 Hz or up to 1/32,694 seconds at 50 Hz	
		Gain		AGC or Fixed gain selectable via the UART communication	Fixed gain, 0dB
			AGC	0 to 24 dB	
			Fixed gain	0 to 24 dB	
		Digital gain		Up to 12.0242 dB	7.9588 dB
		Gamma		1.0, 0.9, 0.8, 0.7, 0.6, 0.5, 0.45, 0.3 or manual gamma	Manual gamma
				Selectable gamma via the UART communication	
		White balance		Auto white balance / manual white balance / push to set white balance	Manual white
				Selectable white balance via the UART communication	balance (4100K)
		Mirror image		Horizontal and vertical flip are selectable mirror image via the UART communication	Horizontal mirror
		Picture modes		Three picture mode (Picture, bright and pseudo color including the thirty pseudo color modes)	Picture mode
				Selectable picture mode via the UART communication	
		Line generator		Both horizontal and vertical with all available colors	No lines
				Adjustable thickness via the UART communication	
		Shadow mask generator		Both horizontal and vertical with shading level adjustment via the UART communication	No shadow mask
		Motion detection		Selectable On or Off via the UART communication	On
		Digital zoom		x1 to x128 digital zoom	
				Digital pan and tilt is available on freezed image	
		Freeze image		Selectable Live image or freeze image via the UART communication	Live image
				Digital pan and tilt is available on freezed image	
		Communication		UART communication via C304 (S4B-ZR-SM4A, JST) connector	
		Character generator		Built-in character generation function via the UART communication	
		Pixel blemish correction		Static pixel blemish correction up to 64 pixels	
	Lens control functions				
		Optical zoom		Manual zoom position control via the UART communication	
		Focus		Auto focus / manual focus / push set focus	Auto focus
				Selectable focus mode via the UART communication	
		Iris		Auto IRIS / manual IRIS / push set IRIS	Auto iris
				Selectable IRIS control mode via the UART communication	
	Power	Input voltage		DC 8 to 15 V (Typical: 12 V)	
		Consumption		4.8W	
Mechanical specifications	Dimensions			55.5 (W) x 48.5 (H) x 76 (D) mm	
	Auto focus lens			11x auto focus zoom lens (Tamron)	
				Optical zoom range: from 5.2 mm to 58.8 mm	
				Aperture: F 1.6 at f = 5.2 mm to F 3.0 at f = 58.8 mm	
	Close-up lens			Without any close-up lens	
	Optical filter			IR cut filter on	
	Interface connector	Video output (DVI)		Mini-HDMI connector / CN207, SSL00-10L3 (KEL)	
		Video output (LVDS)		CN204, SSL00-10L3 (KEL)	
		HD/VD signal output		CN206, SM05B-SRSS (JST)	
		Power input		CN303, S2B-ZR-SM4A (JST)	
		External control		CN305, SM06B-SRSS (JST)	
				6-pin connector header for up to nine external switch connectivity	
		Communication		CN304, S4B-ZR-SM4A (JST)	
	Weight			Approximately 150 g	
Environmental specifications	Temperature	Operational		Temperature: 0 to 45 deg. C	
		Storage		Temperature: -30 to 65 deg. C	
	RoHS			RoHS compliance	

B. Connector Specifications

1. Mechanical Drawings

The camera is equipped with the following four connectors (Connector-A through G).



2. Connector-A: Video Output (DVI)

The connector type: Mini-HDMI Connector

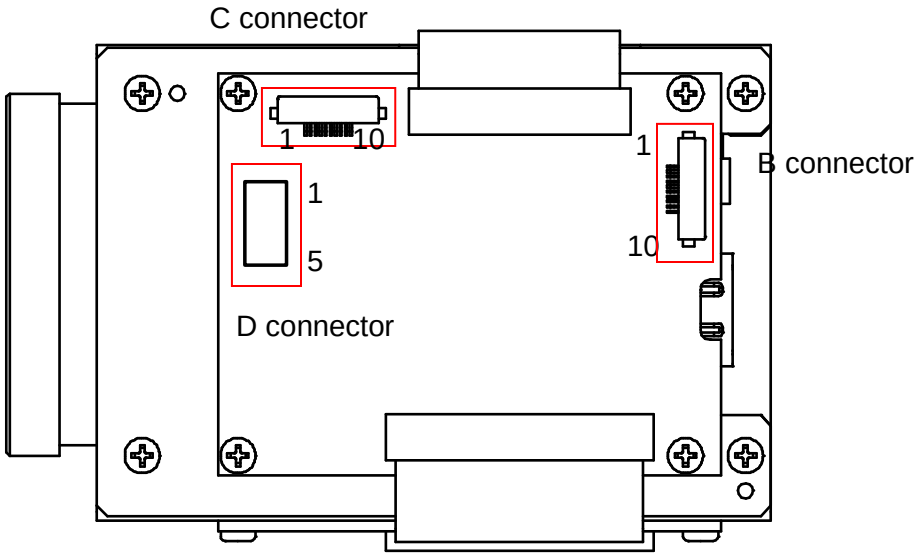
Pin Assignment:

No.	Signal Type
1	TMDS Data2 Shield
2	TMDS Data2+
3	TMDS Data2-
4	TMDS Data1 Shield
5	TMDS Data1+
6	TMDS Data1-
7	TMDS Data0 Shield
8	TMDS Data0+
9	TMDS Data0-
10	TMDS CLK Shield
11	TMDS CLK+
12	TMDS CLK-
13	DDC/CEC Ground
14	CEC
15	SCL
16	SDA
17	Reserved
18	+5V Power
19	Hot Plug Detect

The cable requirements:

The camera connects to the HDMI port on the monitor:
1. Mini-HDMI – HDMI cable
2. HDMI cable with the Mini-HDMI to HDMI adaptor

The camera connects to the DVI port on the monitor:
1. Mini-HDMI – HDMI cable with a HDMI to DVI adaptor
2. HDMI cable with a Mini-HDMI to HDMI adaptor and a HDMI to DVI adaptor



3. Connector-B: Video output (DVI, CN207)
The connector type: SSL00-10L3 (KEL)

Pin Assignment:

No.	Signal types
1	TMDS_TxOUT2+
2	TMDS_TxOUT2-
3	TMDS_TxOUT1+
4	TMDS_TxOUT1-
5	TMDS_TxOUT0+
6	TMDS_TxOUT0-
7	TMDS_TxCLK+
8	TMDS_TxCLK-
9	N.C.
10	+5V

4. Connector-C: Video output (LVDS, CN204)
The connector type: SSL00-10L3 (KEL)

Pin Assignment:

No.	Signal types
1	LVDS_TxOUT0-
2	LVDS_TxOUT0+
3	LVDS_TxOUT1-
4	LVDS_TxOUT1+
5	LVDS_TxOUT2-
6	LVDS_TxOUT2+
7	LVDS_TxCLK-
8	LVDS_TxCLK+
9	LVDS_TxOUT3-
10	LVDS_TxOUT3+

This LVDS signal converts 28 bit TTL signals with the LVDS receiver (DS90CR288AMTDX, National semiconductor).

Pin Assignment of DS90CR288AMTDX

Input signal	No.
LVDS_TxOUT0-	9
LVDS_TxOUT0+	10
LVDS_TxOUT1-	11
LVDS_TxOUT1+	12
LVDS_TxOUT2-	15
LVDS_TxOUT2+	16
LVDS_TxCLK-	17
LVDS_TxCLK+	18
LVDS_TxOUT3-	19
LVDS_TxOUT3+	20

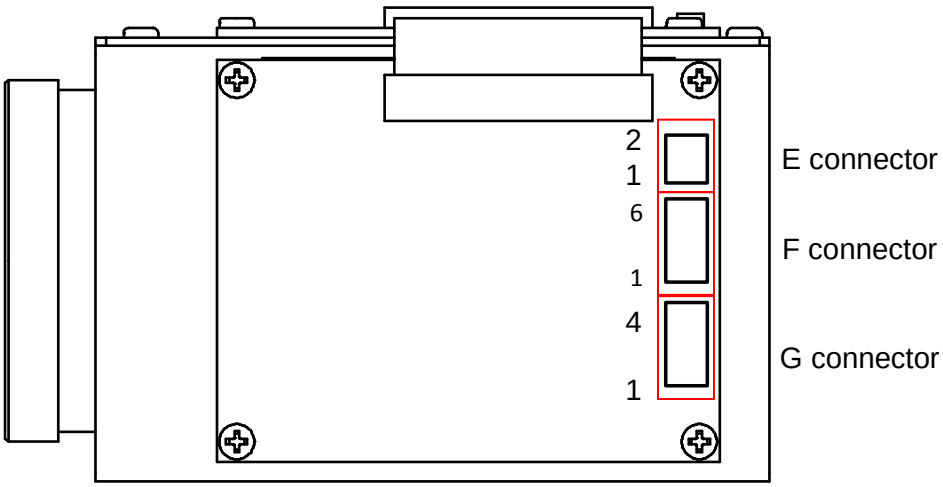
Output signal	No.	Output signal	No.
Y0	2	Pr0	37
Y1	1	Pr1	35
Y2	55	Pr2	34
Y3	54	Pr3	33
Y4	53	Pr4	32
Y5	51	Pr5	30
Y6	50	Pr6	29
Y7	49	Pr7	27
Pb0	47	FLD	6
Pb1	46	VD	5
Pb2	45	HD	3
Pb3	43	CLK	26
Pb4	42		
Pb5	41		
Pb6	39		
Pb7	38		

5. Connector-D: HD/VD signal output (CN206)

The connector type: SM05B-SRSS (JST)
Note: Mating connector housing: ZHR-05 manufactured by JST

Pin Assignment:

No.	Signal Type	Voltage
1	TBD	
2	TBD	
3	TBD	
4	TBD	
5	GND	



6. Connector-E (CN303): Power input

The connector type: S2B-Zr-SM4A (Right angle connector, JST)

Note: Mating connector housing: ZHR-02 manufactured by JST

Pin Assignment

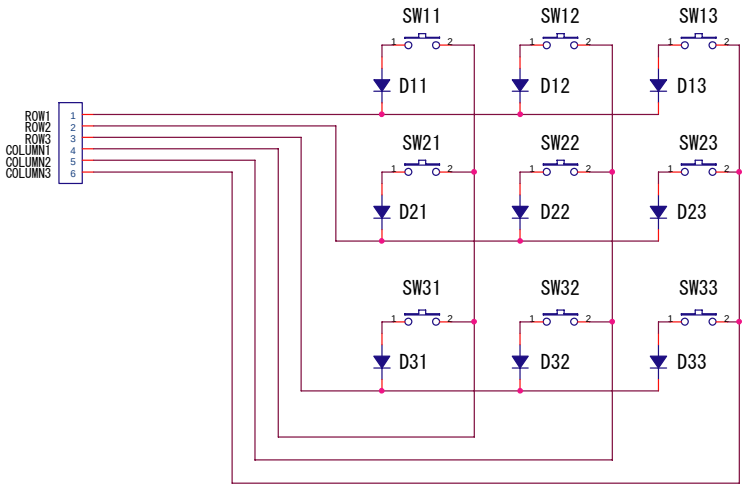
No.	Signal types
1	Power In
2	GND

7. Connector F (CN305): External switch connection
The connector type: SM06B-SRSS (right angle connector, JST)
Note: Mating connector housing: SHR-06 manufactured by JST

Pin Assignment

No.	Signal types
1	ROW1
2	ROW2
3	ROW3
4	COLUMN1
5	COLUMN2
6	COLUMN3

According to the diagram below, a total of 9 switches can be connected to connector CN305. The switches are arranged as row/column matrix and this enables the user to connect 9 switches on 6 conductors.



8. Connector G (CN304): UART communication
The connector type: S4B-ZR-SM4A (Right angle connector, JST)
Note: Mating connector housing: ZHR-04manufactured by JST

Pin Assignment

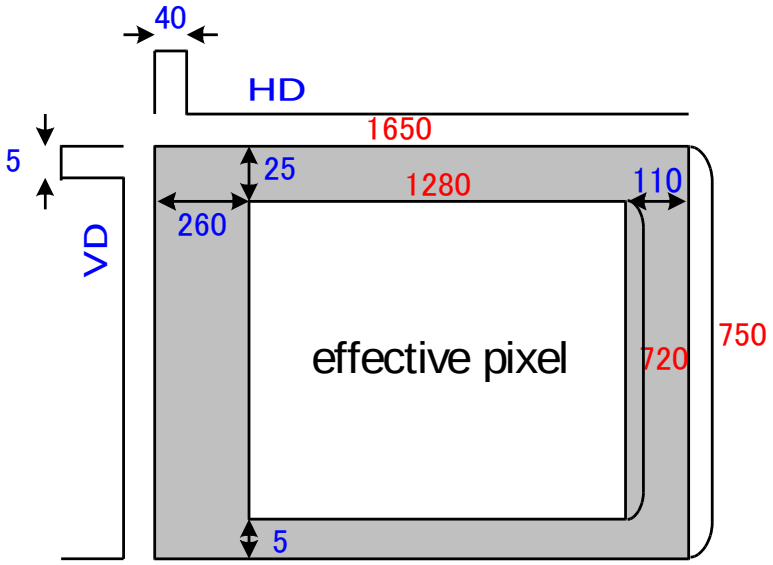
No.	Signal types	Voltage
1	+3.3V Out	3.3V
2	TX	3.3V
3	GND	
4	RX	3.3V

C. Output Signal Timing

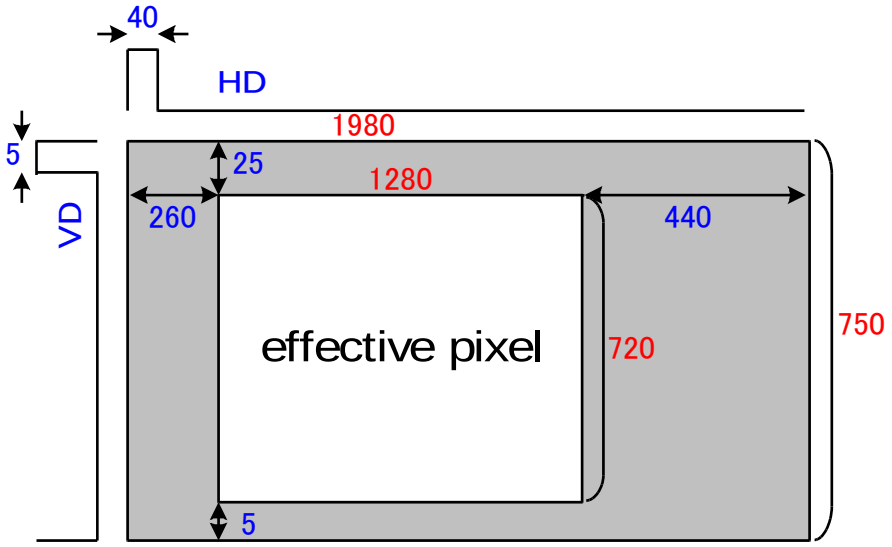
A. DVI Output Signal Timing

		720P 60Hz	720P 50Hz
Parameter	**Unit**		
H-Resolution	Pixels	**1280**	**1280**
V-Resolution	Lines	**720**	**720**
H Frequency	kHz	**45.00**	**37.50**
V Frequency	Hz	**60.00**	**50.00**
Scan Type	-	NI	NI
Pixel Frequency	MHz	74.25	74.25
Pixel Time	nsec	13.5	13.5
Line time	usec	22.2	26.7
Frame Time	msec	16.7	20.0
H Addressable	Pixels	1280	1280
H Front Porch	Pixels	110	440
H Sync	Pixels	40	40
H Back Porch	Pixels	220	220
H Total	Pixels	1650	1980
V Addressable	Lines	720	720
V Front Porch	Lines	5	5
V Sync	Lines	5	5
V Back Porch	Lines	20	20
V Total	Lines	750	750
H Addressable	usec	17.239	17.239
H Front Porch	usec	1.485	5.926
H Sync	usec	0.539	0.539
H Back Porch	usec	2.963	2.963
V Addressable	msec	16.000	19.200
V Front Porch	msec	0.111	0.133
V Sync	msec	0.111	0.133
V Back Porch	msec	0.444	0.533

60Hz



50Hz



Note: These timings are the output signal timing before converting to the DVI signal.

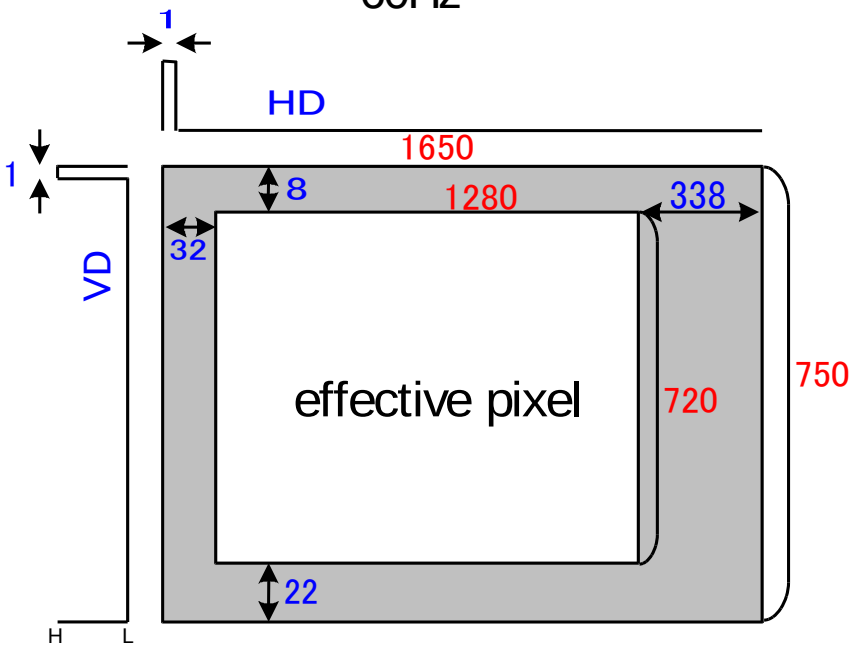
B. LVDS Output Signal Timing

[Range of Output Signal]

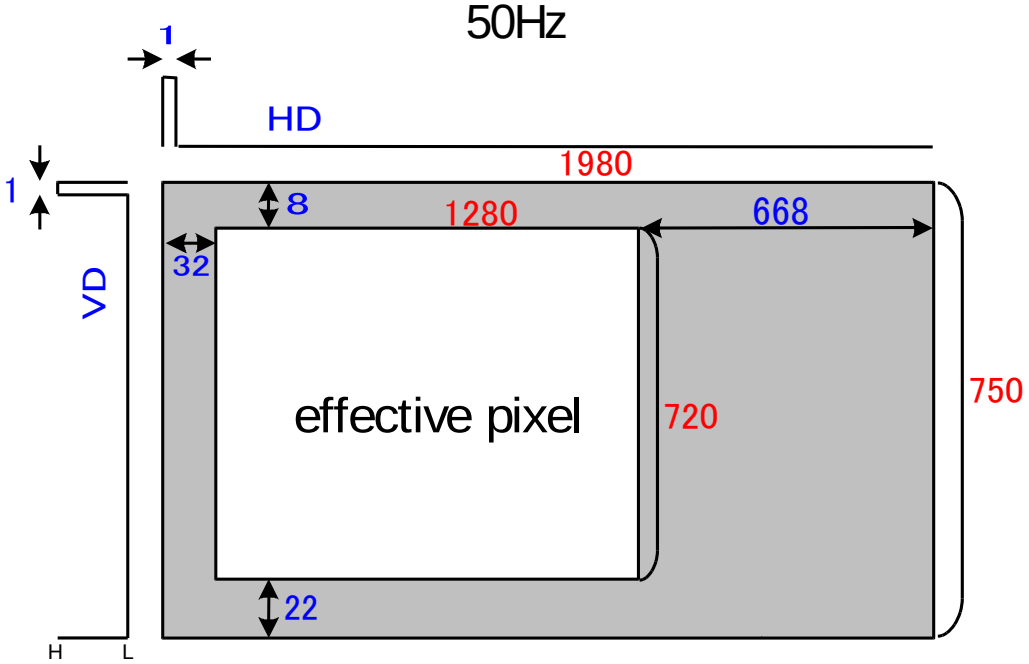
Y : 16 ～ 235

Pb/Pr : -112 ～ 112

60Hz



50Hz



II. Camera Operations

A. ALC Operations

ALC (Automatic Light Compensation) is configured by the user by enabling or disabling the optical iris, auto electronic shutter and/or the AGC (Automatic Gain Control). The camera provides flexible priority settings as described below. The setting parameters in the table are defined in the protocol document and the Sentech control software.

Scene illumination	Electronic shutter parameters	Optical iris parameters	AGC parameters
Bright	AEE minimum exposure time	Auto minimum open ratio	AGC Minimum gain
	Change		
	AEE middle exposure time (minimum side)	Change	
	Change	Auto maximum open ratio	
	AEE middle exposure time (maximum side)		Change
	Change		AGC middle gain
	AEE maximum exposure time		Change
Dark			AGC maximum gain

B. Shutter Settings

The camera offers both high-speed shutter and extended shutter settings as described below:

720P – 60Hz Operations:

Value	High speed shutter		Value	Extended shutter	
0	16.7ms	1/60s	TBD	TBD	TBD
375	8.3ms	1/120.1s	TBD	TBD	TBD
562	4.2ms	1/239.7s	TBD	TBD	TBD
656	2.1ms	1/480.3s	TBD	TBD	TBD
703	1.0ms	1/963.6s	TBD	TBD	TBD
726	526.7us	1/1,898.7s	TBD	TBD	TBD
738	260.0us	1/3,846.2s	TBD	TBD	TBD
744	126.7us	1/7,894.7s	TBD	TBD	TBD
749	15.6us	1/64,283.9s	TBD	TBD	TBD
			TBD	TBD	TBD

The extended shutter can be set up to 17.1 seconds. Therefore, when it is set to be more than 0.5 seconds, noise will appear on the image. Please check the image when the extended shutter is set greater than 0.5 seconds.

720P – 50Hz Operations:

Value	High speed shutter		Value	Extended shutter	
0	20.0ms	1/50s	TBD	TBD	TBD
375	10.0ms	1/100.1s	TBD	TBD	TBD
562	5.01ms	1/199.8s	TBD	TBD	TBD
656	2.50ms	1/400.2s	TBD	TBD	TBD
703	1.25ms	1/803.0s	TBD	TBD	TBD
726	625.0us	1/1,582.3s	TBD	TBD	TBD
738	312.0us	1/3,205.1s	TBD	TBD	TBD
744	152.0us	1/6,578.9s	TBD	TBD	TBD
749	18.67us	1/53,570.5s	TBD	TBD	TBD
			TBD	TBD	TBD

The extended shutter can be set up to 20.5 seconds. Therefore, when it is set to be more than 0.5 seconds, noise will appear on the image. Please check the image when the extended shutter is set greater than 0.5 seconds.

C. External Switch Assignable Functions

The external control switches (up to nine switches) can be connected on the CN305 connectors. The functions below can be assigned on each switch independently and this enables the external switch controls without UART communication.

	Functin		Function
1	Display Menu	34	Horizontal line maker size (+)
2	Zoom (TELE)	35	Horizontal line maker size (-)
3	Zoom (WIDE)	36	Horizontal line maker position (+)
4	Focus (NEAR)	37	Horizontal line maker position (-)
5	Focus (FAR)	38	Vertical line maker color (+)
6	Push to set focus	39	Vertical line maker color (-)
7	Auto focus OFF	40	Vertical line maker size (+)
8	Auto focus ON	41	Vertical line maker size (-)
9	Push to set iris	42	Vertical line maker position (+)
10	Auto iris OFF	43	Vertical line maker position (-)
11	Auto iris ON	44	Mirror OFF
12	Iris (Open)	45	Horizontal mirror
13	Iris (Close)	46	Upside down
14	Picture mode (+)	47	Rotation 180 degree
15	Picture mode(-)	48	Still image OFF
16	Contrast (+)	49	Still image ON
17	Contrast (-)	50	Manual white balance
18	Shadow mask shading level (+)	51	Auto white balance
19	Shadow mask shading level (-)	52	Push to set white balance
20	Shadow mask top (+)	53	Auto focus OFF/ON
21	Shadow mask top (-)	54	Auto iris OFF/ON
22	Shadow mask bottom (+)	55	Mirror OFF / Horizontal mirror
23	Shadow mask bottom (-)	56	Mirror OFF / Upside down
24	Shadow mask top / bottom (+)	57	Mirror OFF / Rotation 180 degree
25	Shadow mask top / bottom (-)	58	Horizontal mirror / Upside down
26	Shadow mask left (+)	59	Horizontal mirror / Rotation 180 degree
27	Shadow mask left (-)	60	Upside down / Rotation 180 degree
28	Shadow mask right (+)	61	Still image OFF / ON
29	Shadow mask right (-)	62	Manual white balance / Auto white balance
30	Shadow mask left / right (+)		
31	Shadow mask left / right (-)		
32	Horizontal line maker color (+)		
33	Horizontal line maker color (-)		

D. User Configurable Functions

The functions in the table below are available through the UART communication for users. The communication is done through the CN304 connector.

	Function
Zoom	Master zoom control
	Optical zoom out limiter
	Optical zoom in limiter
	Digital zoom link
	Fixed digital zoom
	Digital zoom tilt
	Digital zoom pan
	Digital zoom start position
	Digital zoom end position
	Minimum digital zoom
	Maximum digital zoom
	Digital zoom speed
Focus	Focus mode
	Push to set focus
	Focus distance
	Motion detection
Iris	Iris mode
	Push to set iris
	Iris open ratio
	Auto iris Min. open ratio
	Auto iris Max. open ratio
	Auto iris tolerance
	Auto iris threshold
	Auto iris step (MUL)
	Auto iris step (DIV)
	Auto iris max. step
Push button	Push button
	Push button intitial function SW11
	Push button intitial function SW12
	Push button intitial function SW13
	Push button intitial function SW21
	Push button intitial function SW22
	Push button intitial function SW23
	Push button intitial function SW31
	Push button intitial function SW32
	Push button intitial function SW33
	Push button polarity SW11
	Push button polarity SW12
	Push button polarity SW13
	Push button polarity SW21
	Push button polarity SW22
	Push button polarity SW23
	Push button polarity SW31
	Push button polarity SW32
	Push button polarity SW33
	Min number of color modes
	Max number of color modes
	Contrast Min. limiter
	Contrast Max. limiter
	Shadow mask Min. shading level
	Shadow mask Max. shading level
	Marker horizontal Min. position
	Marker horizontal Max. position
	Marker horizontal Min. size
	Marker horizontal Max. size
	Marker vertical Min. position
	Marker vertical Max. position
	Marker vertical Min. size
	Marker vertical Max. size

	Function
Color mode	Picture mode
	Pseudo00 back color
	Pseudo00 front color
	Pseudo01 back color
	Pseudo01 front color
	Pseudo02 back color
	Pseudo02 front color
	Pseudo03 back color
	Pseudo03 front color
	Pseudo04 back color
	Pseudo04 front color
	Pseudo05 back color
	Pseudo05 front color
	Pseudo06 back color
	Pseudo06 front color
	Pseudo07 back color
	Pseudo07 front color
	Pseudo08 back color
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	Pseudo09 back color
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	Pseudo23 back color
	Pseudo23 front color
	Pseudo24 back color
	Pseudo24 front color
	Pseudo25 back color
	Pseudo25 front color
	Pseudo26 back color
	Pseudo26 front color
	Pseudo27 back color
	Pseudo27 front color
	Pseudo28 back color
	Pseudo28 front color
	Pseudo29 back color
	Pseudo29 front color
	Pesudo color threshold
	Pesudo color slope

	Function
Shadow mask	Shadow mask shading level
	Horizontal shadow mask top position
	Horizontal shadow mask bottom position
	Vertical shadow mask left position
	Vertical shadow mask right position
Line marker	Horizontal line marker color
	Horizontal line marker position
	Horizontal line marker thickness
	Vertical line marker color
	Vertical line marker position
	Vertical line marker thickness
User color	User defined color 0 R
	User defined color 0 G
	User defined color 0 B
	User defined color 1 R
	User defined color 1 G
	User defined color 1 B
	User defined color 2 R
	User defined color 2 G
	User defined color 2 B
	User defined color 3 R
	User defined color 3 G
	User defined color 3 B
	User defined color 4 R
	User defined color 4 G
	User defined color 4 B
	User defined color 5 R
	User defined color 5 G
	User defined color 5 B
	User defined color 6 R
	User defined color 6 G
	User defined color 6 B
	User defined color 7 R
	User defined color 7 G
	User defined color 7 B
UART	UART baud rate
	UART short reply for write
	UART check sum

	Function
Blemish pixel	Blemish pixel correction
	Display blemish pixel correction
	White blemish pixel threshold
	Black blemish pixel threshold
	Blemish pixel 00 horizontal position
	Blemish pixel 00 vertical position
	Blemish pixel 01 horizontal position
	Blemish pixel 01 vertical position
	Blemish pixel 02 horizontal position
	Blemish pixel 02 vertical position
	Blemish pixel 03 horizontal position
	Blemish pixel 03 vertical position
	Blemish pixel 04 horizontal position
	Blemish pixel 04 vertical position
	Blemish pixel 05 horizontal position
	Blemish pixel 05 vertical position
	Blemish pixel 06 horizontal position
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	Blemish pixel 07 horizontal position
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	Blemish pixel 08 vertical position
	Blemish pixel 09 horizontal position
	Blemish pixel 09 vertical position
	Blemish pixel 10 horizontal position
	Blemish pixel 10 vertical position
	Blemish pixel 11 horizontal position
	Blemish pixel 11 vertical position
	Blemish pixel 12 horizontal position
	Blemish pixel 12 vertical position
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	Blemish pixel 27 horizontal position
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	Blemish pixel 29 horizontal position
	Blemish pixel 29 vertical position
	Blemish pixel 30 horizontal position
	Blemish pixel 30 vertical position

	Function
Blemish pixel	Blemish pixel 31 horizontal position
	Blemish pixel 31 vertical position
	Blemish pixel 32 horizontal position
	Blemish pixel 32 vertical position
	Blemish pixel 33 horizontal position
	Blemish pixel 33 vertical position
	Blemish pixel 34 horizontal position
	Blemish pixel 34 vertical position
	Blemish pixel 35 horizontal position
	Blemish pixel 35 vertical position
	Blemish pixel 36 horizontal position
	Blemish pixel 36 vertical position
	Blemish pixel 37 horizontal position
	Blemish pixel 37 vertical position
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	Blemish pixel 39 vertical position
	Blemish pixel 40 horizontal position
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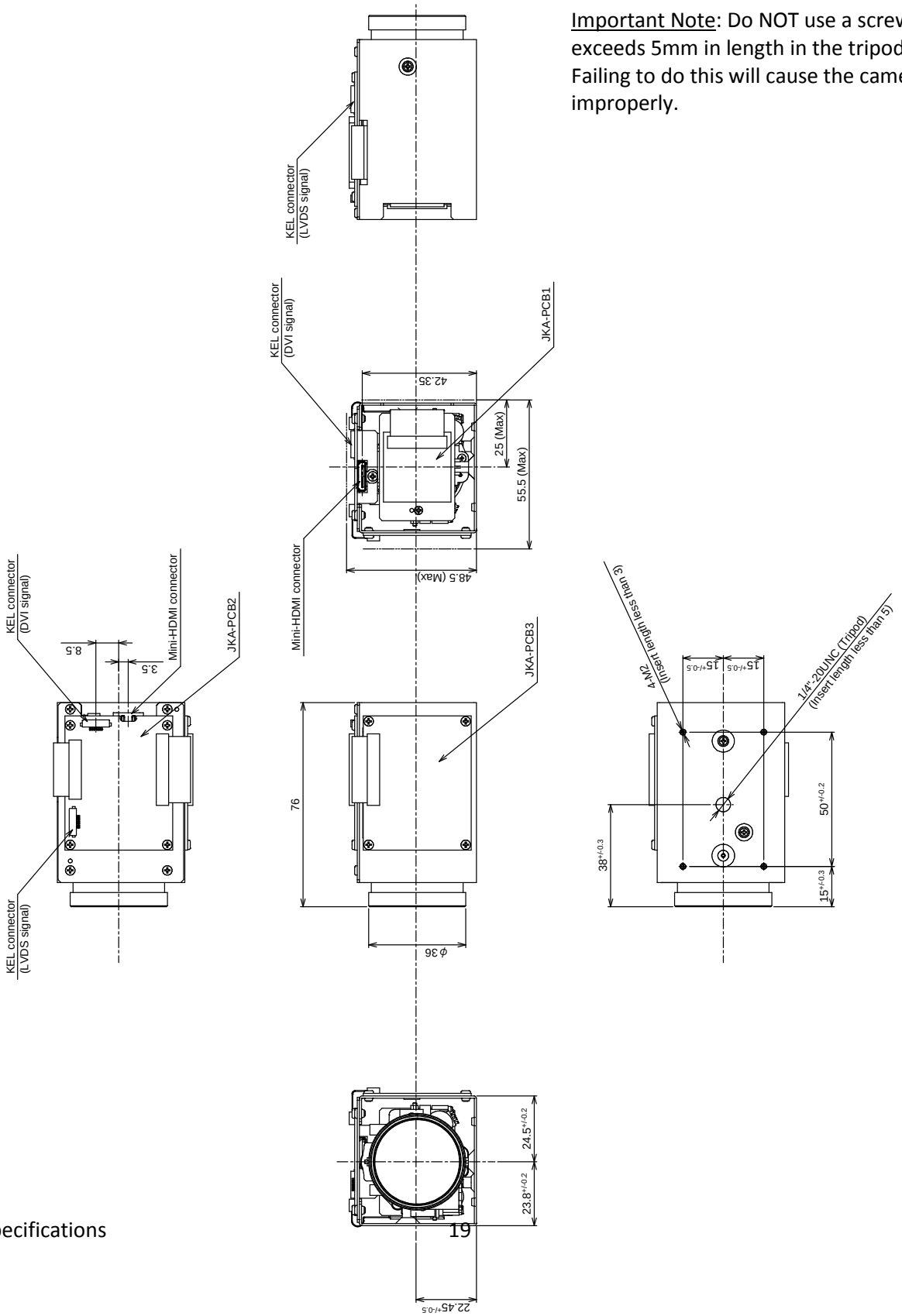
	Blemish pixel 59 horizontal position
	Blemish pixel 59 vertical position
	Blemish pixel 60 horizontal position
	Blemish pixel 60 vertical position
	Blemish pixel 61 horizontal position
	Blemish pixel 61 vertical position
	Blemish pixel 62 horizontal position
	Blemish pixel 62 vertical position
	Blemish pixel 63 horizontal position
	Blemish pixel 63 vertical position

	Function
OSD	OSD character size
	OSD H position
	OSD V position
Still image	Still image
60 / 50 fps	60/50FPS
Test pattern	Test pattern (Gray scale)
ALC	ALC target level
	Edge ALC weight
	Center ALC weight
	ALC peak
	ALC average integration frames
	ALC single-frame quantity
Shutter	Exposure control
	Exposure time
	AEE minimum exposure time
	AEE middle exposure time (minimum side)
	AEE middle exposure time (maximum side)
	AEE maximum exposure time
	AEE tolerance
	AEE threshold
	AEE speed
Gain	Gain control
	Gain
	AGC minimum gain
	AGC middle gain
	AGC maximum gain
	AGC tolerance
	AGC threshold
	AGC speed
	Gain value for disabling motion detection
	Digital gain
White balance	White balance mode
	Push to set white balance
	White balance R gain
	White balance G gain
	White balance B gain
	Auto white balance tolerance
	Auto white balance threshold
	Auto white balance average integration frames
	Auto white balance singl-frame process quantity
	Auto white balance R change limit
	Auto white balance B change limit
Gamma	Gamma mode
	Preset gamma
	Manual gamma control point 0
	Manual gamma control point 1
	Manual gamma control point 2
	Manual gamma control point 3
	Manual gamma control point 4
	Manual gamma control point 5
	Manual gamma control point 6
	Manual gamma control point 7
	Manual gamma control point 8
	Manual gamma control point 9
Color	Color correction matrix RR
	Color correction matrix RG
	Color correction matrix RB
	Color correction matrix GR
	Color correction matrix GG
	Color correction matrix GB
	Color correction matrix BR
	Color correction matrix BG
	Color correction matrix BB

	Function
YUV	B-Y gain
	B-Y hue
	R-Y gain
	R-Y hue
High luminance chrome suppress	High luminance chrome suppress threshold
	High luminance chrome suppress slope
Aperture	Front aperture control horizontal gain
	Front aperture control vertical gain
	Front aperture control coring
	Back aperture control horizontal gain
	Back aperture control vertical gain
	Back aperture control coring
Other	Horizontal flip
	Vertical flip
	Contrast
	RGB offset
OSD command	
Field table	

III. Dimensions (unit mm)



Important Note: Do NOT use a screw that exceeds 5mm in length in the tripod screw hole. Failing to do this will cause the camera to work improperly.

Revisions

Rev	Date	Changes	Note
1.0	3/5/2013	New document	

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