Zoom chassis camera

DI-SC110

HITACHI
Inspire the Next

- *1.3-megapixel progressive-scan CCD*
- *18x optical zoom*
- *Minimum sensitivity: 1.8 lx*
- *16-bit (Y8-bit/C8-bit) digital output*

1.3 MEGAPIXEL PROGRESSIVE-SCAN CCD

18x OPTICAL ZOOM

1.8 lx minimum sensitivity

16-bit DIGITAL output

F.N.R Frame Noise Reduction

Made in Japan

High-performance 1.3-megapixel digital surveillance camera

The Hitachi DI-SC110 is the industry's first compact zoom chassis camera equipped with a high-definition 1.3-megapixel CCD and digital output capabilities. A high-resolution lens and sensor and high-speed auto-focus system combine with the latest digital signal processing technology to generate superior color reproduction and frame noise reduction, producing high-quality surveillance images, including details of license plates, clothing and facial features that can serve as vital evidence. The Hitachi DI-SC110 contributes this high performance to the evolving field of digital surveillance systems.

High-definition 1.3-megapixel image quality

Equipped with a high-performance lens and high-resolution CCD, the Hitachi DI-SC110 captures images with approximately four times more pixels* than conventional analog chassis cameras, while state-of-the-art digital signal processing ensures highly accurate color reproduction and exceptional image quality.

This high-performance zoom chassis camera is capable of capturing details of license plates, clothing, and facial features, producing security surveillance images that can serve as vital evidence. Accurate color reproduction is another factor that enhances security performance in a variety of scenarios.

** Maximum resolution of 1280 x 960 pixels*

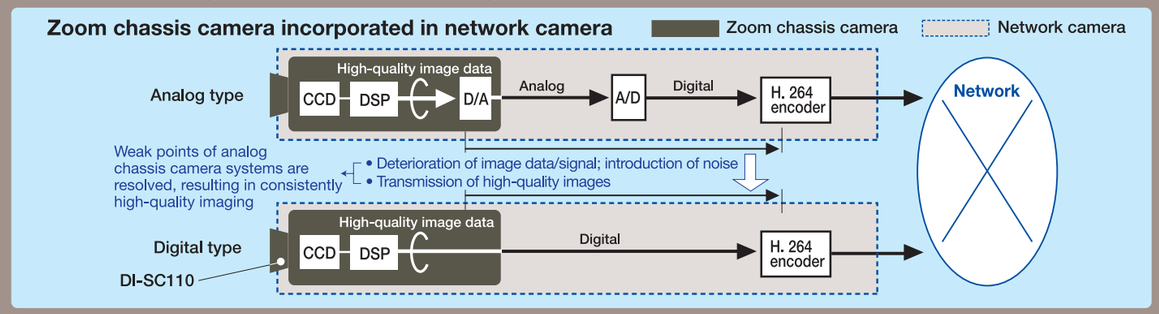
18x optical zoom + 12x digital zoom*

High-resolution imaging performance is augmented by high-power zoom capabilities. And despite this powerful zoom performance, the compact DI-SC110 is no larger than conventional analog chassis cameras. The 18x optical zoom captures details at a distance, while Hitachi's proprietary auto-focus system makes it possible to track rapidly moving subjects. Combined with the 12x digital zoom*, the DI-SC110 can deliver a maximum zoom factor of 216x.

**Digital zoom can be used in 4:3 aspect ratio output mode*

Digital output for transmission of high-quality images

The Hitachi DI-SC110 supports digital output of image signals, maximizing camera performance by permitting transmission of lossless, low-noise image data with no need for decoding.

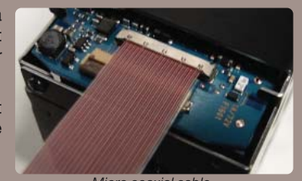


- Permits selection of six output modes based on clockfrequency and aspect ratio (see chart below).

Frame rate in each output mode

Clock frequency / Aspect ratio	36.0 MHz	30.0 MHz	27.0 MHz
16:9 (1280 X 720)	30 fps	25 fps	22.5 fps
4:3 (1280 X 960)	20 fps	16.7 fps	15 fps

- Digital output is a REC601 data stream (YUV422, Y 8-bit, C 8-bit signal), compatible with a large number of encoder ICs.
- Micro coaxial cable shielded against electromagnetic interference can be used for external interface.



Micro coaxial cable

Technology for low-light performance

The latest digital signal processor makes it possible to capture high-resolution images in illumination as low as 1.8 lx. And Hitachi's proprietary image processing technology maximizes performance in a wide range of lighting conditions.

Frame noise reduction*

Hitachi's frame noise reduction* minimizes after-images often associated with moving subjects, making it suited to a variety of surveillance scenarios. Producing accurate, clear images even in challenging low-light conditions, this technology also facilitates image compression in network camera systems.

FNR OFF. *FNR ON.*

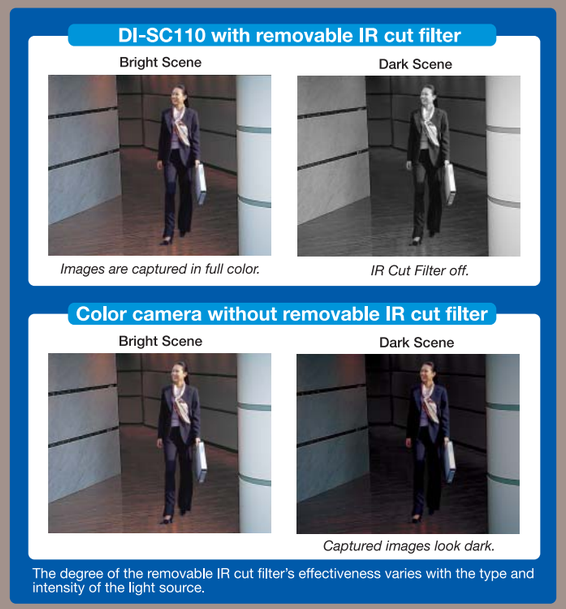
**Frame noise reduction can be used in 27MHz clock frequency output mode*

Digital slow shutter

Digital processing enables a slow shutter function that boosts sensitivity up to a maximum 1/4-second exposure time, based on the brightness of the subject. Compared to standard 1.8 lx minimum subject illumination, this function permits capture of clear images in illumination as low as 0.5 lx.

Removable IR cut filter

In daylight conditions, the IR cut filter ensures clear, high-quality color images. At night or in other very low light situations, the IR cut filter in the DI-SC110 is automatically removed to allow capture of bright, high-contrast black and white images.



The degree of the removable IR cut filter's effectiveness varies with the type and intensity of the light source.

Full range of basic visual surveillance functions

Wide dynamic range mode

This mode automatically compensates for situations in which backlighting or variable illumination make it difficult to identify facial features or other subject details, ensuring clear, glare-free images in a variety of lighting conditions.

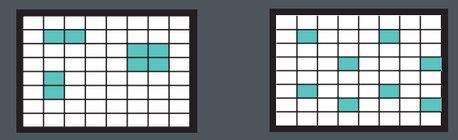
Privacy zone masking function

This function makes it possible to mask the camera's view of windows, entrances and other areas subject to privacy concerns. The position and size of the mask is maintained even when the camera pans, tilts, or zooms, making the DI-SC110 particularly suitable for surveillance of public areas.

Image from conventional camera. *Partially masked image from Hitachi DI-SC110*

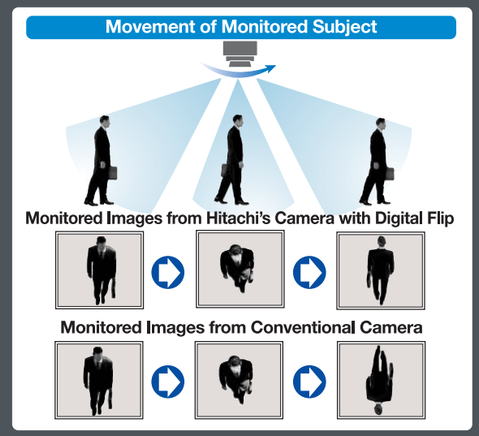
Motion detect function

This function triggers an alarm when motion is detected in designated areas of the surveillance frame. Motion detection can be activated in as many as eight frame blocks out of a total of 64.



Digital Image Flip*

Digital image flip* makes it possible to flip images vertically or horizontally, enabling tracking of subjects moving underneath the camera in a single continuous shot.



**Digital image flip can be used in 27MHz clock frequency output mode*

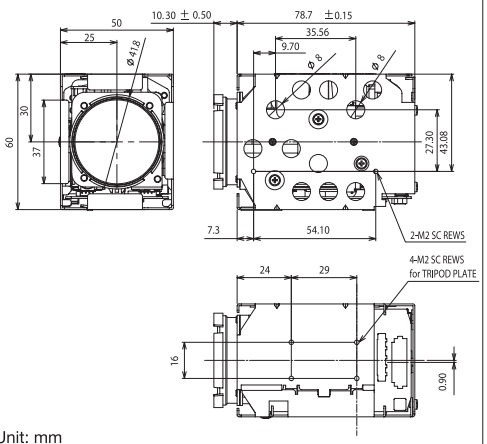
Environmentally friendly

The RoHS-compliant DI-SC110 meets guidelines for permissible levels of lead, mercury, cadmium, hexavalent chrome, PPBs and PBDE, making it an eco-friendly way to implement surveillance.

Specifications

		DI-SC110
CCD Image Sensor	Image Size	6mm Dia. (TYPE 1/3)
	Effective Pixels	1.3M (1296 x 966)
	Progressive Scan	YES
	Output Pixels/Frame Rate	1280 (H) x 720 (V) / 30fps*, 25fps, 22.5fps 1280 (H) x 960 (V) / 20fps, 16.7fps, 15fps
Lens	Optical Zoom	18X (f=4.7–84.6mm)
	Practical f-value	4.7– 84.6mm
	Practical H.angle	55.2°(w)* – 3.2°(t)
	F-value	F1.6 (w)–F2.8 (t)
	Zoom Speed	See appendix (✦)
Focus	Auto	VAF
	Manual (Far/Near)	Provided (soft)
	Focal Range (setting)	infinity–1m (t)–0.01m (w)* (soft)
IR Removable	Auto	Pro.AER+
	Manual (ON/OFF)	Provided (soft)
Durability	Zoom / Focus / Iris	500k cycles
	IR Removable	50k cycles
DSP		DSP-8
-Serial Interface-	Method : speed	RS-232C : 57.6k / 38.4k / 19.2k / 9.6k / 4.8k* bps
	RS232C logic voltage level	3.3V
-Functions-	Digital Slow Shutter	YES
	Wide Dynamic Range	OFF* / ON (soft)
	Image Freeze	OFF* / ON (soft)
	Mirror	OFF* / ON (soft)
	Vertical Invert	See appendix (✦)
	Image Reverse	See appendix (✦)
	Privacy Masking	OFF / ON* [2 zone 2-D / 8 zone 3-D*(4/1screen)] (soft)
	Motion Detect	OFF* / ON (soft)
	Frame Noise Reduction	See appendix (✦)
	Various customizable settings	YES [Preset store (max.111) , WB tuning]
	Dynamic Spot Cancel	YES
Digital Zoom		See appendix (✦)
Electrical Shutter	Shutter Speed	See appendix (✦)
	Sensitivity	Max. 1/4s (soft)
Iris		Auto* / (offset : soft)
	BLC	OFF* / ON (soft)
White Balance		Auto* / (manu : soft)
Resolution Horizontal (Typ.)		600 TVL (1280 x 720 pixels) 800 TVL (1280 x 960 pixels)
Min. Sensitivity (Typ.)	IR-cut ON (1/30s)	1.8 lx
	IR-cut OFF (1/4s)	0.02 lx
	Condition	F1.6 (w), 50IRE
Sync System		Internal
Power	Supplied voltage	9 – 12 V DC
	Supplied current (@9V) all motors inactive	260 mA
	Supplied current (@9V) Focus/Zoom motors active	450 mA
	Supplied current max (@9V) Focus/Zoom/IR motors active	600 mA
	Consumption max. (@9V in)	5.4 W
Video Output (Digital)		YUV422, Y8bit + C8bit + HSYNC + VSYNC + Clock
Digital Clock Frequency		36MHz (1280 x 720 x 30fps, 1280 x 960 x 20fps) 30MHz (1280 x 720 x 25fps, 1280 x 960 x 16.7fps) 27MHz (1280 x 720 x 22.5fps, 1280x960 x 15fps)
Dimension (W x H x D)		50 x 60 x 89mm (w/M-case)
Weight		Approx. 250g (w/M-case)
No. of Connectors		2 (36pin FFC/40pin micro coaxial)
Operating Temp. (Recommended)		0 – 60℃ (0 – 40℃)

Outer Dimensions



Unit: mm
Front, Side and Bottom Views

(✦) Appendix		Output Mode						Remarks
Output Pixels		1280 x 720*			1280 x 960			
Digital Clock Frequency		36MHz*	30MHz	27MHz	36MHz	30MHz	27MHz	
Frame Rate		30 fps	25 fps	22.5 fps	20 fps	16.7 fps	15 fps	
Zoom Speed	Fast	3.5s	4.2s	4.7s	5.2s	6.3s	7.0s	
	Normal	5.1s	6.2s	6.9s	7.7s	9.3s	10.2s	
DSP Functions	Vertical Invert	-		Yes	-		Yes	Yes: OFF*/ON (soft)
	Image Reverse	-		Yes	-		Yes	
	Frame Noise Reduction	-		Yes	-		Yes	
Digital Zoom		-		-	12x		12x	
Electrical Shutter Speed	Auto	1/30s –1/4000s	1/25s –1/4000s	1/22.5s –1/4000s	1/20s –1/4000s	1/16.7s –1/4000s	1/15s –1/4000s	
	Auto (+DSShutter)	1/4s – 1/4000s						
	Manual	1/4s – 1/10000s						

*Default mode.

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