SONY

INTRODUCTION

Sony introduces a new addition to its machine vision camera lineup, the all-in-one XCI-SX1 Intelligent Camera. This camera is equipped with a 1/2-type high resolution (1280 x 1024) progressive scan CCD, an embedded CPU and a 10Base-T/100Base-TX interface for network connectivity.

Incorporating the high-performance and flexible AMD Geode™ GX533 processor with a fully customisable Windows© or Linux® operating system, the XCI-SX1 camera is designed to allow integrators to install a variety of image-processing software applications or to develop and apply customised applications to meet specific user needs. Unlike conventional machine vision cameras, images captured by the XCI-SX1 are processed within the camera and the processed-data is directly transmitted to a PC over a network, RS-232C link or Digital I/Os. The XCI-SX1 camera eliminates the need for conventional image-processing systems and allows for simple setup and efficient factory workflow.

With its high-performance, flexible integration and versatile interfaces, the durably-designed XCI-SX1 Intelligent Camera is ideal for a wide range of machine vision applications such as object recognition, inspection, measurement, alignment and more.

FEATURES

High Performance 400MHz Geode GX533 Processor

- x86-compatible architecture
- 128 MB main memory (DDR-SDRAM) and 1MB flash memory
- Integrated 128 MB Compact Flash™ memory card
- Low power consumption

Various Interfaces

- 10Base-T/100Base-TX interface for network operation
- Monitor output
- USB 1.1 interface
- RS-232C serial interface and digital input/output allow cameras to be connected with external equipment such as sensors, strobe lights and Programmable Logic Controllers (PLC).

1/2-type Progressive Scan CCD With Square Pixels

High-resolution SXGA-sized Images Captured at 15 fps

Partial Scanning Function

- Allows users to select a specific scanning area to reduce data size and increase frame rate, which minimises image processing time.

- Scanning area can be specified from 32 lines up to 1024 lines (vertically) in 32-line increments and from 384 pixels up to 1280 pixels (horizontally) in 128-pixel increments.

Binning Function

- Vertical binning combines image data for every two lines vertically to increase the frame rate, which minimises image processing time.
- Horizontal binning combines image data for every two pixels horizontally, which increases the sensitivity.

External Trigger Input

Trigger Delay Function

- Allows users to delay trigger timing from 0 to 4 seconds in 1 ms increments to capture images accurately.

Compact and Lightweight

- 55 (W) x 55 (H) x 110 (D) mm (2 $\frac{1}{4}$ x 2 $\frac{1}{4}$ x 4 $\frac{3}{8}$ inches), 400 g (14 oz)

Easy Camera Settings

High Shock and Vibration Resistance

like.no.other™

XCI-SX1®
INTELLIGENT CAMERA

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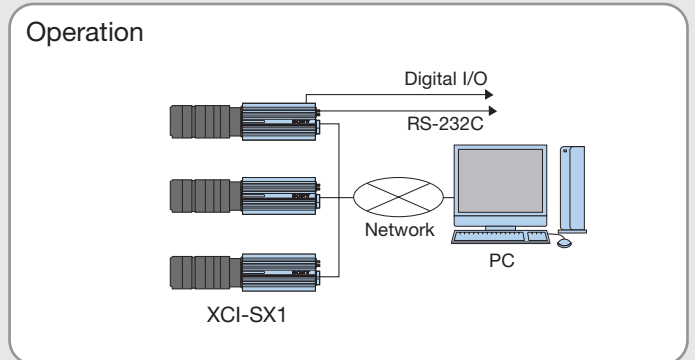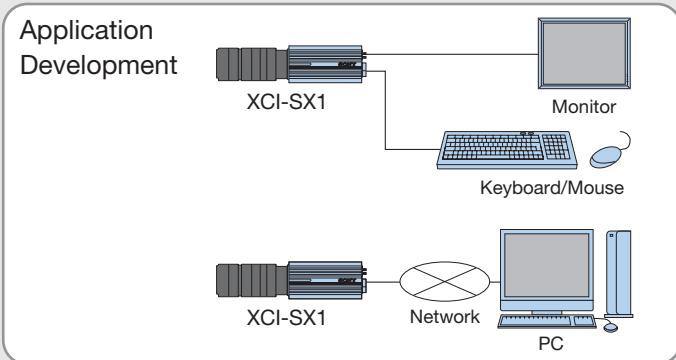
XCI-SX1 SPECIFICATIONS
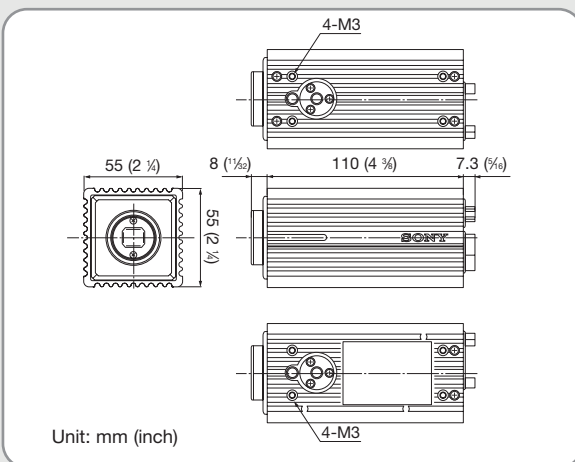
Sensor block

Image device	1/2-type progressive scan IT monochrome CCD
Effective resolution (H x V)	1,280 x 1,024 (SXGA)
Cell size (H x V)	4.65 x 4.65 μm
Frame rate	15 fps (SXGA)
Gain control	Manual (0 to +18 dB, 1 dB steps)
Electronic shutter	2 to 1/50,000 s (trigger mode), 2 to 1/100,000 s (free run mode)
Binning function	Vertical / Horizontal binning
Partial scanning function	
Vertical random scanning	32 to 1,024 lines, 32 line steps
Horizontal random scanning	384 to 1,280 pixels, 128 pixel steps
Typical frame rate	34 fps (VGA), 21 fps (XGA)
External trigger input	pulse-edge detection mode/pulse-width detection mode
Trigger delay function	0 to 4 s, 1ms steps
External trigger latency	less than 10 us
Hardware Look Up Table	Gamma compensation, binarization, negative/positive reverse, etc.

Processor

CPU	x 86, AMD Geode GX533, 400 MHz
Memory	128 MB DDR-SDRAM 128 MB Compact Flash
Operating systems	Monta Vista Linux Professional edition 3.0, Microsoft Windows embedded

Interfaces

Ethernet	10Base-T/100Base-TX (Network protocols: TCP/IP (IPv4), HTTP, FTP)
Monitor output	D-sub 15pin for multi scan monitor
USB	version 1.1
Serial interface	RS-232C
Digital I/Os	TTL IN/OUT, Isolated IN/OUT, Trigger IN, Exposure OUT

General

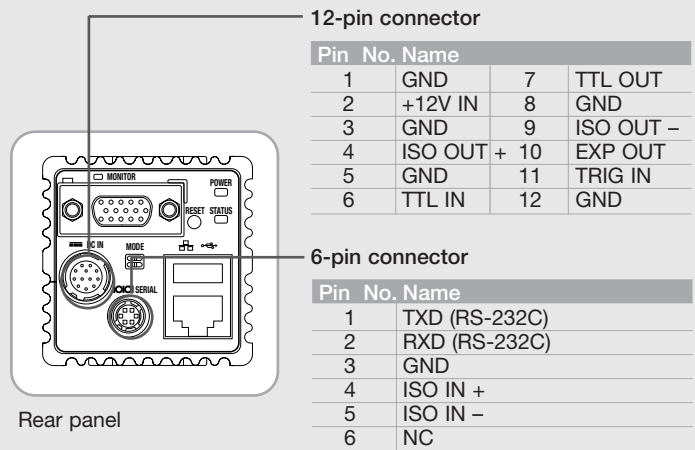|	
Lens mount	C-mount
Minimum illumination	4 lx (F1.4, +18 dB gain)
Power requirements	10.5 to 26.4 V
Power consumption	7.8 W
Dimensions (W x H x D)	55 x 55 x 110 mm (2 1/4 x 2 1/4 x 4 3/8 inches)
Mass	400 g (14 oz)
Operating temperature	-5 to +45 °C (23 to 113 °F)
Storage temperature	-30 to +60 °C (-22 to +140 °F)
Operating humidity	20 to 80% non condensing
Storage humidity	20 to 95% non condensing
Vibration	10 G (20 to 200 Hz)
Shock resistance	70 G
Regulations	FCC / CE / IC / VCCI Class A
Supplied accessories	Lens mount cap, Operating instructions
Optional accessories	Camera Adaptor DC-700/DC-700CE 12-pin Camera Cable, CCXC-12P02N (2 m), CCXC-12P05N (5 m), CCXC-12P10N (10 m), CCXC-12P25N (25 m), 6pin connector PC-XC06, PC-XC12, Lenses

SYSTEM CONFIGURATIONS

Application Development

XCI-SX1 — Monitor — Keyboard/Mouse

XCI-SX1 — Network — PC

Operation

Digital I/O
RS-232C
Network
PC
XCI-SX1

DIMENSIONS

4-M3

55 (2 1/4) 8 (11/32) 110 (4 3/8) 7.3 (5/16)

55 (2 1/4)

4-M3

Unit: mm (inch)

PIN ASSIGNMENT

Rear panel

12-pin connector

Pin No.	Name	Pin No.	Name
1	GND	7	TTL OUT
2	+12V IN	8	GND
3	GND	9	ISO OUT –
4	ISO OUT +	10	EXP OUT
5	GND	11	TRIG IN
6	TTL IN	12	GND

6-pin connector

Pin No.	Name
1	TXD (RS-232C)
2	RXD (RS-232C)
3	GND
4	ISO IN +
5	ISO IN –
6	NC

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