

Data processing unit for NMOS linear image sensor C8799

Data processing unit with USB interface



C8799 is a data processing unit that converts video signals from an NMOS image sensor driver circuit into digital signals and transfers them to a PC. The USB interface allows easy connection to a PC for high-speed data communications at 12 Mbps.

Features

- Built-in 12-bit A/D converter
- Adjustable data rate (5 MHz Max.)
- Internal memory: 1 mega-word
- Interface of computer: USB 1.1
- Simultaneous measurements using multiple units

Applications

- Spectrophotometry
- Position measurement

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Digital power supply	V _D	+7	V
Analog power supply	V _A	±18	V
Operating temperature	T _{opr}	0 to +50 *1	°C
Storage temperature	T _{stg}	0 to +60 *1	°C

*1: No condensation

■ Specifications

Parameter	Remark	Specification
Supply voltage	+5 V	*2 +5 V, 200 mA
	+15 V	*2 +15 V, 150 mA
	-15 V	-15 V, 0 mA (for image sensor driver circuit supply)
Video input signal	*3	0 to 10 V
Control output signal (START)	*4	Positive logic
Synchronized output signal (CLK)	*5	16 MHz, 8 MHz, 4 MHz, 2 MHz, 1 MHz, 500 kHz, 250 kHz, 125 kHz, 62.5 kHz
A/D resolution		12 bit
Data rate	*6	5 MHz (Max.)
Internal memory		1 mega-word
Interface of computer		USB 1.1
Compatible OS	*7	Windows 98, Windows 2000, Windows XP

*2: Tentative data

*3: C8799-01 compatible with 0 to 5 V supply is also available.

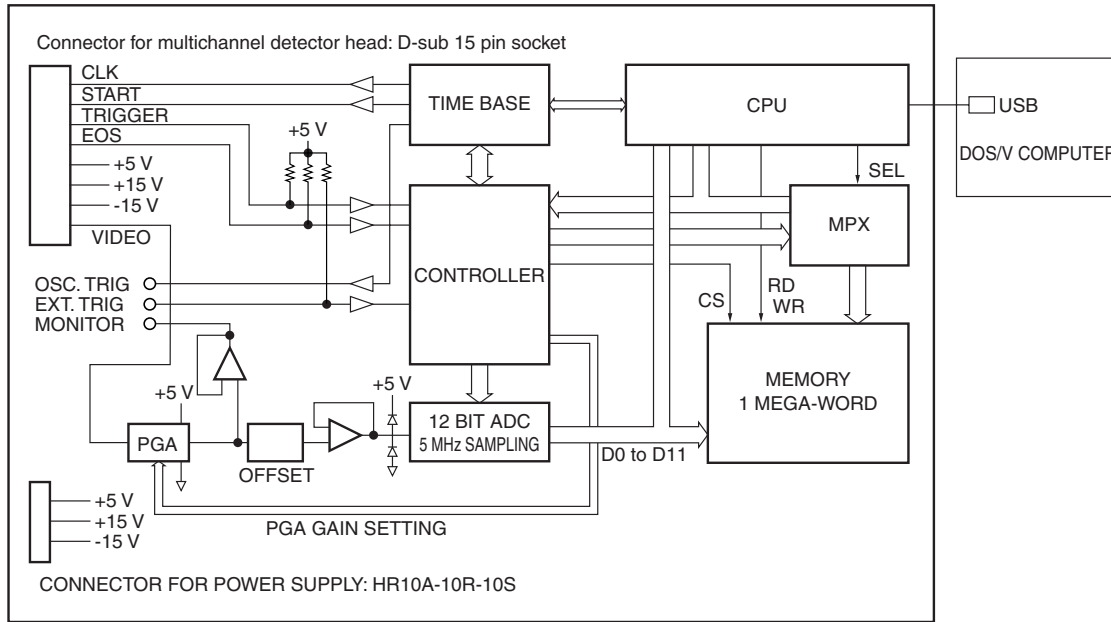
*4: Pulse width and interval are adjustable.

*5: Setting is selectable.

*6: Data rate equals the CLK frequency divided by the number of CLK pulses generated in an NMOS driver circuit for forming pixels.

*7: Correct operation on OS (operating system) has been verified, but please note that operation has not been verified on all PC models.

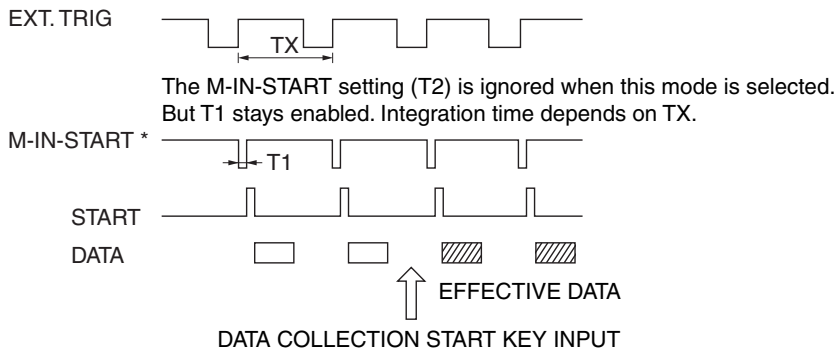
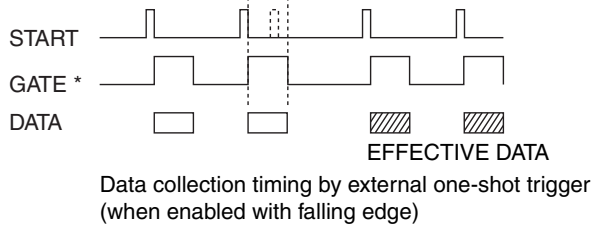
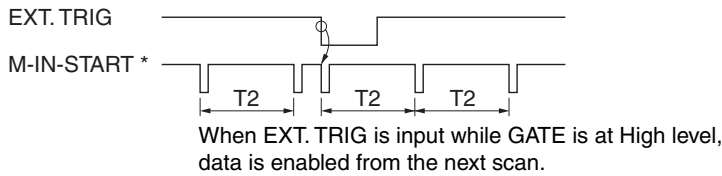
■ Block diagram



DATA PROCESSING UNIT C8799

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■ Timing chart (external trigger setting)

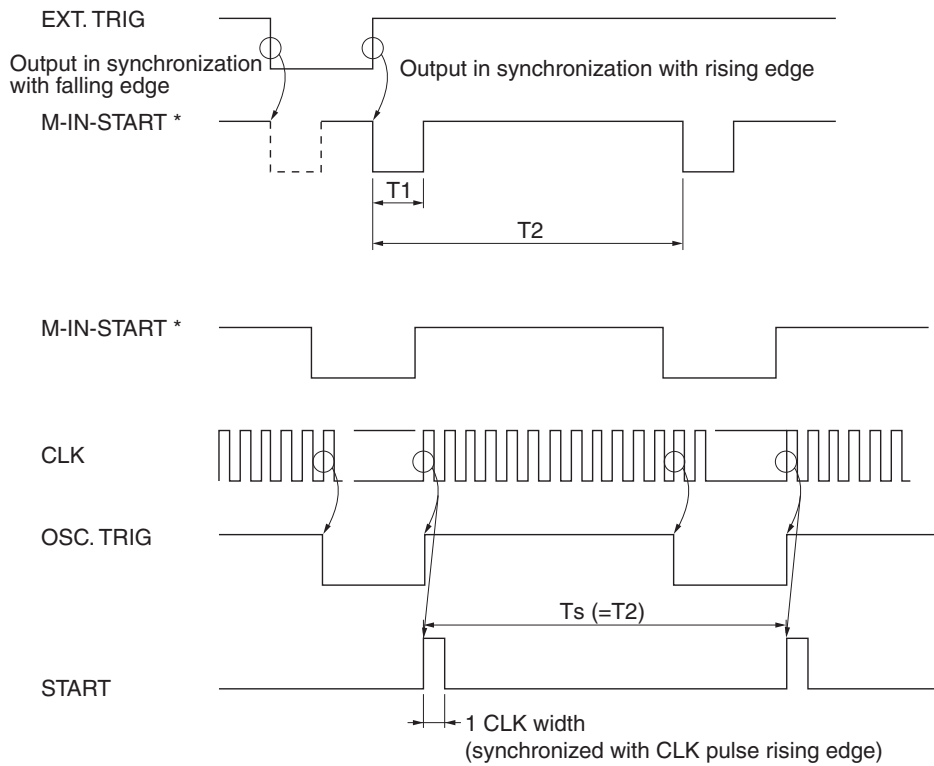


Data collection timing by external continuous trigger input
(when enabled with falling edge)

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* Internal signal

■ Timing chart (accumulation setting)

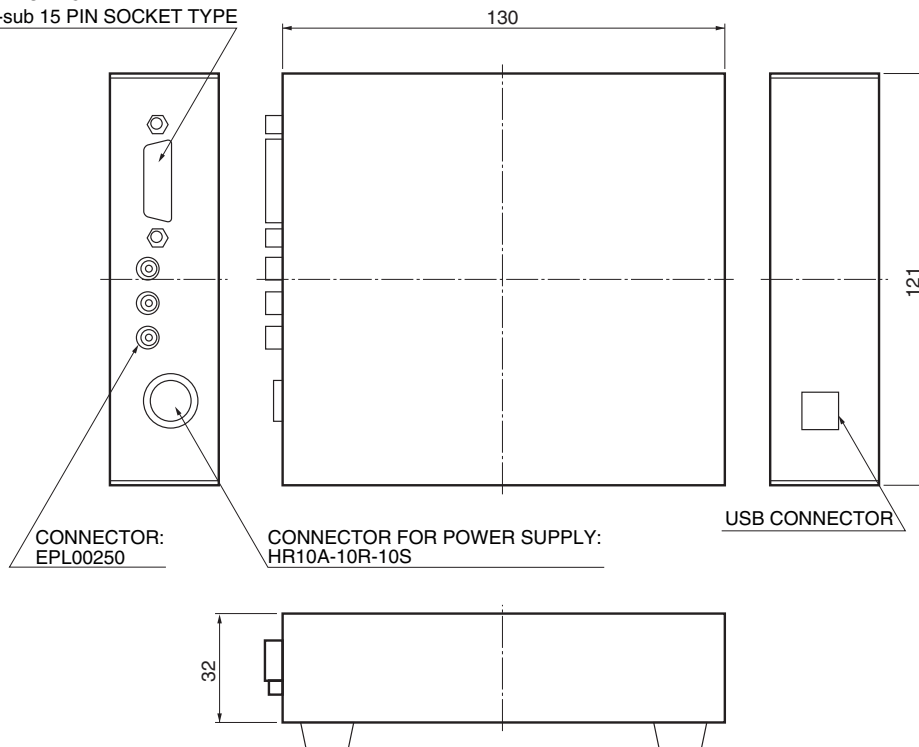


* Internal signal

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■ Dimensional outline (unit: mm)

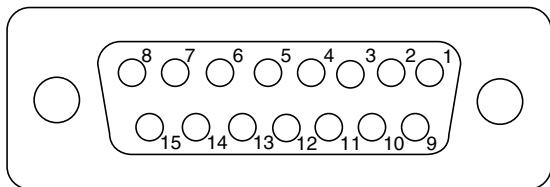
I/F CONNECTOR FOR MULTICHANNEL
DETECTOR HEAD: D-sub 15 PIN SOCKET TYPE



KACCA0114EA

■ Pin connection of "SIGNAL I/O" connector

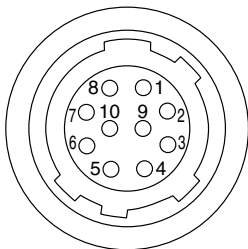
<Connector for multichannel detector head I/F>
(15-pin D-sub connector)



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Pin No.	Terminal name	I/O	Content
1	NC		No connection
2	VIDEO	I	Video signal
3	+15 V	O	+15 V supply line
4	-15 V	O	-15 V supply line
5	+5 V	O	+5 V supply line
6	START	O	MCD reset signal
7	CLK	O	MCD synchronization signal
8	EOS	I	Sensor end-of-scan signal
9	A. GND		Analog ground
10	A. GND		Analog ground
11	NC		No connection
12	D. GND		Digital ground
13	D. GND		Digital ground
14	D. GND		Digital ground
15	TRIGGER	I	A/D conversion timing

<Supply connector>
R-circle type connector
Made by HIROSE: HR10A-10R-10S

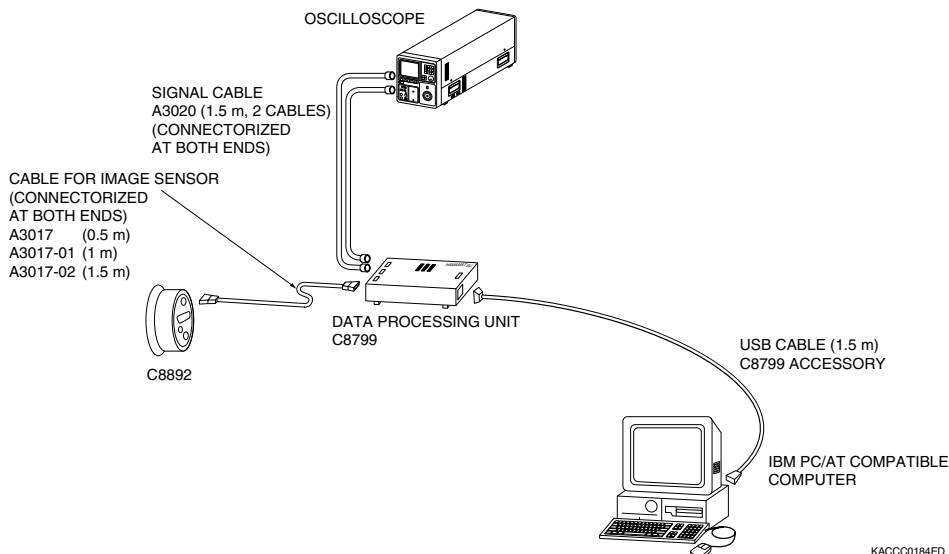


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Pin No.	Terminal name	I/O	Content
1	+15 V	I	+15 V supply line
2	A. GND		Analog ground
3	-15 V	I	-15 V supply line for MCD
4	A. GND		Analog ground
5	+5 V	I	+5 V supply line
6	D. GND		Digital ground
7	+5 V	I	+5 V supply line for MCD
8	D. GND		Digital ground
9	NC		No connection
10	NC		No connection

Note) MCD: Multichannel Detector Head

■ Connection example for data processing unit (C8799) to peripheral units



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