

**1920  
x  
1080** **FULL HD**

**High-Definition C-MOS camera**

**IK-HR1D/S**

**D=DVI-I, S=HD-SDI output**



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Toshiba puts Full HD camera IK-HR1 series on the market following IK-HD1. In the clear image and high resolution, technology for broadcast, medical and laboratory are a base.

## Key features

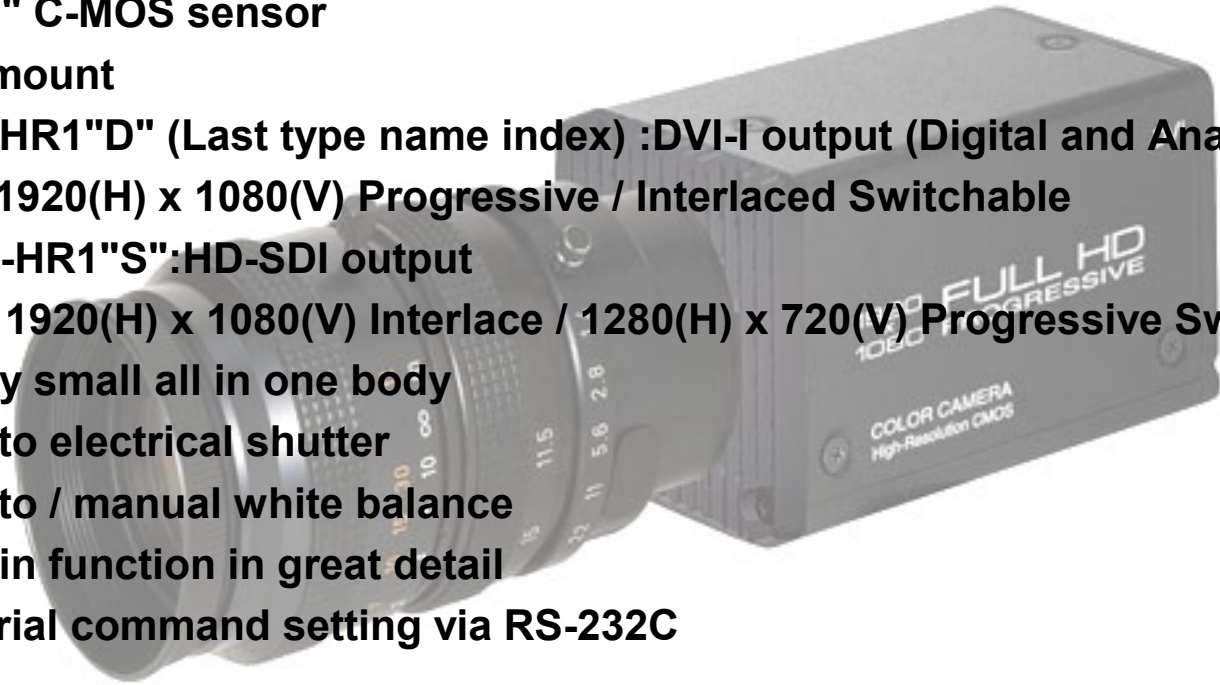
- 1/3" C-MOS sensor
- C mount
- IK-HR1"D" (Last type name index) :DVI-I output (Digital and Analog)  
1920(H) x 1080(V) Progressive / Interlaced Switchable



IK-HR1"S":HD-SDI output

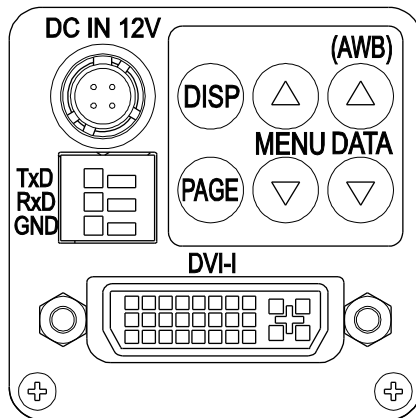
1920(H) x 1080(V) Interlace / 1280(H) x 720(V) Progressive Switchable

- Very small all in one body
- Auto electrical shutter
- Auto / manual white balance
- Gain function in great detail
- Serial command setting via RS-232C



## IK-HR1S (HD-SDI output) debuts to the lineup of IK-HR1 series.

### IK-HR1D

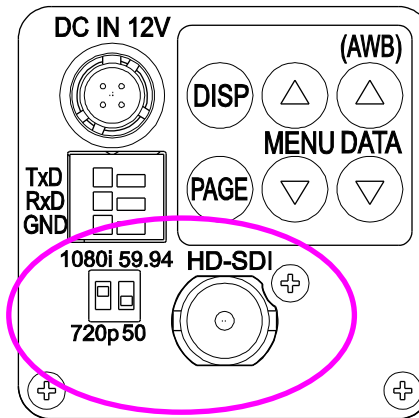


#### Base function

- **DVI-I** connector output  
**Digital and Analog** both output
- **1920 x 1080 progressive / Interlaced**  
switchable by On Screen Menu or rear panel button.

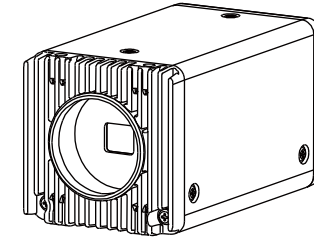
### IK-HR1S

**New**



#### Main future

- **HD-SDI (BNC)** connector output  
Single link
- **1920 x 1080 Interlaced / 1280 x 720 Progressive**  
switchable by rear panel switch.

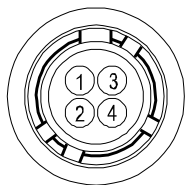


#### Mutual function

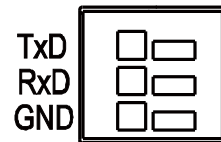
- **1/3" HD-FULL pixel high resolution sensor**
- **C-mount**
- **Very small in One Body**
- Low power consumption
- Auto electrical shutter
- Auto / manual white balance
- Gain function in great detail
- Serial command setting via RS-232C

## Rear panel switches

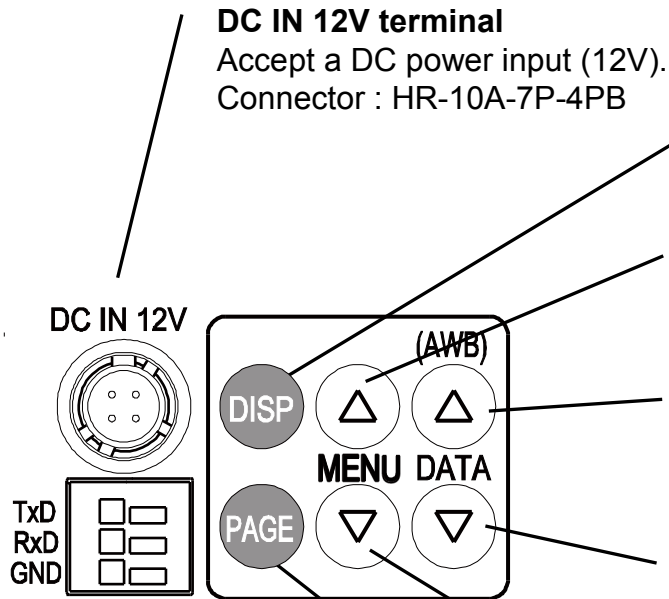
Various settings can be controlled on the unit by using the on screen menu displayed on the monitor. The contents once set are memorized even if the power source is turned off, so it is unnecessary to set again when using the unit next time. When the setting is performed, select the menu of the item to be set.



1	+12V
2	+12V
3	GND
4	GND



1	TxD
2	RxD
3	GND



### DC IN 12V terminal

Accept a DC power input (12V).  
Connector : HR-10A-7P-4PB

### DISP button

Used when switching the display.

### MENU UP button

Select the function to be confirmed or changed on the menu.

### DATA UP (AWB) button

Changes the value of the function selected by the MENU (UP/DOWN) button. (Also used when using AWB.)

### DATA DOWN button

Changes the value of the function selected by the MENU (UP/DOWN) button.



### MENU DOWN button

Select the function to be confirmed or changed on the menu.

### PAGE button

Used when switching to the menu and when selecting the menus.

## Specification (Performance)

	IK-HR1D	IK-HR1S
Power supply	12 VDC±10% DCIN connector (4 pin)	←
Power consumption	Approx. 4.2W(T.B.D.) at DC 12V	Approx. 4.0W(T.B.D.) at DC 12V
Image sensor	1/3" progressive scan color CMOS (Rolling shutter) Effective pixels □ H:2000 □ V:1132	←
Output pixels	Horizontal : 1920, Vertical : 1080p/i	Horizontal : 1920, Vertical : 1080i Horizontal : 1280, Vertical : 720p 
Output signal frequency	Progressive (1080p) / Interlaced (1080i) Switchable [Progressive (1080p)] H:67.43kHz □ V:59.94Hz [Interlaced (1080i)] H:33.71kHz, V:59.94Hz	1080i (Interlaced) / 720p (Progressive) and 59.94Hz / 50Hz Switchable Based upon SMPTE 292M
Sync system	Internal	←
Video signal output	Digital output (DVI-I connector output) 8 bit X RGB Analog output (DVI-I connector output) R : 0.7Vp-p ±10% (75 ohm unbalanced) G : 0.7Vp-p ±10% (75 ohm unbalanced) B : 0.7Vp-p ±10% (75 ohm unbalanced)	SDI: (Serial Digital Interface) (BNC connector) Based upon SMPTE 292M 
Sync. signal output	Analog output (DVI-I connector output) H □ 5 V +0.5 V/-1.0 V (p) V: 5 V +0.5 V/-1.0 V (p)	None

## Specification (Performance)

	IK-HR1D	IK-HR1S
Resolution	H: 750TV lines standard V: 750TV lines standard	←
Sensitivity	F4 Standard (at 2000lx, 3000K, 1/60s)	←
Minimum illumination	16 lx (50IRE, F1.0, Gain12dB, Gamma=OFF)	8 lx (50IRE, F1.0, Gain18dB, Gamma=OFF)
SN ratio	56 dB standard (Gain 0 dB, DNR OFF)	Undefined
Dimensions	Width : 44 mm Height : 44 mm Depth : 78 mm	←
Weight	Approx. 146 g	←
Body Color	Black	←
Operating temperature	0 °C ~ +40 °C (32°F ~ 104°F)	←
Storage temperature	-20 °C ~ +60 °C (-4°F ~ 140°F)	←
humidity	90 % or less (non condensing)	←



Design and specifications are subject to change without notice

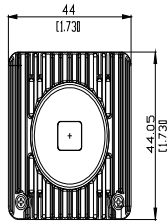
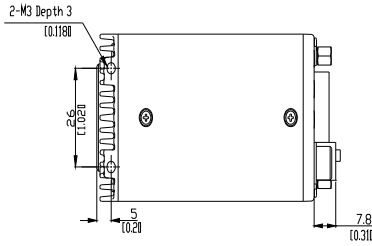
## Specification (Features)

	IK-HR1D	IK-HR1S
Shutter	AUTO / MANUAL / SS (Synchro Scan) AUTO : Peak / Average / Response speed / Area  MANUAL : OFF, 1/100s, 1/125s, 1/250s, 1/500s, 1/1000s, 1/2000s, 1/4000s, 1/8000s, 1/16000s, 1/32000s,  SS (Synchro Scan) : 2/1125H □ 1123/1125H	← MANUAL : OFF, 1/100s, 1/125s, 1/250s, 1/500s, 1/1000s, 1/2000s, 1/4000s  SS (Synchro Scan) : [1080i mode] OFF, 2/1125H □ 1123/1125H [720p mode] OFF, 2/750H □ 748/750H
Gamma	OFF / ON : -10 ~ 0 ~ 10 step control	←
Gain control	OFF / ON : 0 ~ 12dB 1dB step	←
White balance	AWB / ATW / MANUAL AWB :3200 K/5600 K ATW :3000 ~ 6000 K MANUAL:R,B level adjustment 3200 K/5600 K	←
Random trigger	No	←
Ext. trigger	No	←
Video signal settings	Master pedestal, Gamma, Detail	←
Color bar display	Yes	←
Scene file setting	5files A/B/C/D/E	
Remote control	RS-232C protocol: Baud rate 9600bps/19200bps (RxD, TxD, GND)	←

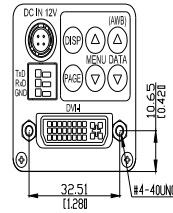
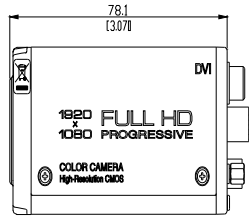
## External Appearance

IK-HR1D

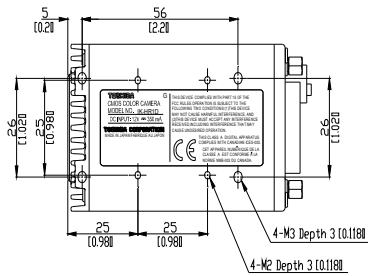
mm  
[inch]



[Front]



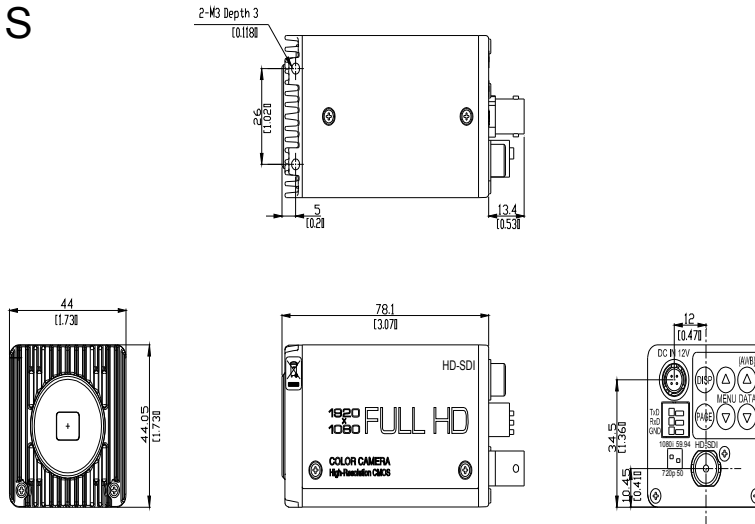
[Rear]



## External Appearance

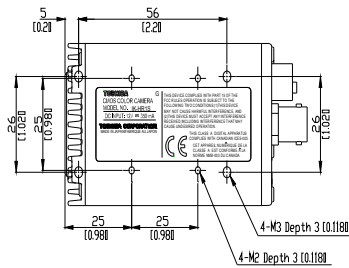
IK-HR1S

mm  
[inch]



[Front]

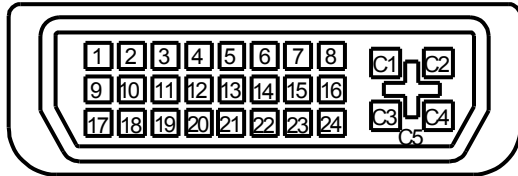
[Rear]



## Signal out terminal

Digital : The digital data output by **Transition Minimized Differential Signaling (TMDS)** total 24bits (RGB 8bits) in single mode.

Analog : The analog signal output 0.7V(p-p) in unbalanced.



Connector used:  
Molex 74320-1004  
or equivalent.

#	Function	Note	#	Function	Note
1	TMDS Data 2- (R1)		16	Hot Plug Detect	
2	TMDS Data 2+ (R1)		17	TMDS data 0- (B1)	
3	TMDS Data 2/4 shield		18	TMDS data 0+ (B1)	
4	TMDS Data 4- (G2)	N.C.	19	TMDS data 0/5 shield	
5	TMDS Data 4+ (G2)	N.C.	20	TMDS data 5- (R2)	N.C.
6	DDC clock	N.C.	21	TMDS data 5+ (R2)	N.C.
7	DDC data	N.C.	22	TMDS clock shield	
8	Analog Vertical Sync		23	TMDS clock+	
9	TMDS Data 1- (G1)		24	TMDS clock-	
10	TMDS Data 1+ (G1)		C1	Analog Red	
11	TMDS Data 1/3 shield		C2	Analog Green	
12	TMDS Data 3- (B2)	N.C.	C3	Analog Blue	
13	TMDS Data 3+ (B2)	N.C.	C4	Analog Horizontal	
14	+5V		C5	Analog Ground	
15	Ground		-	-	-

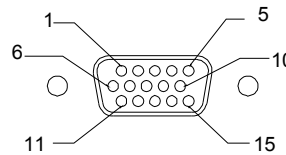
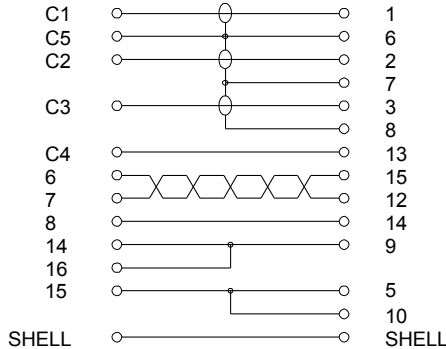
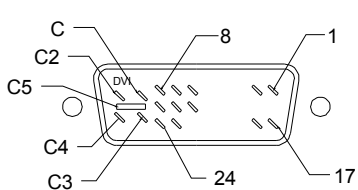
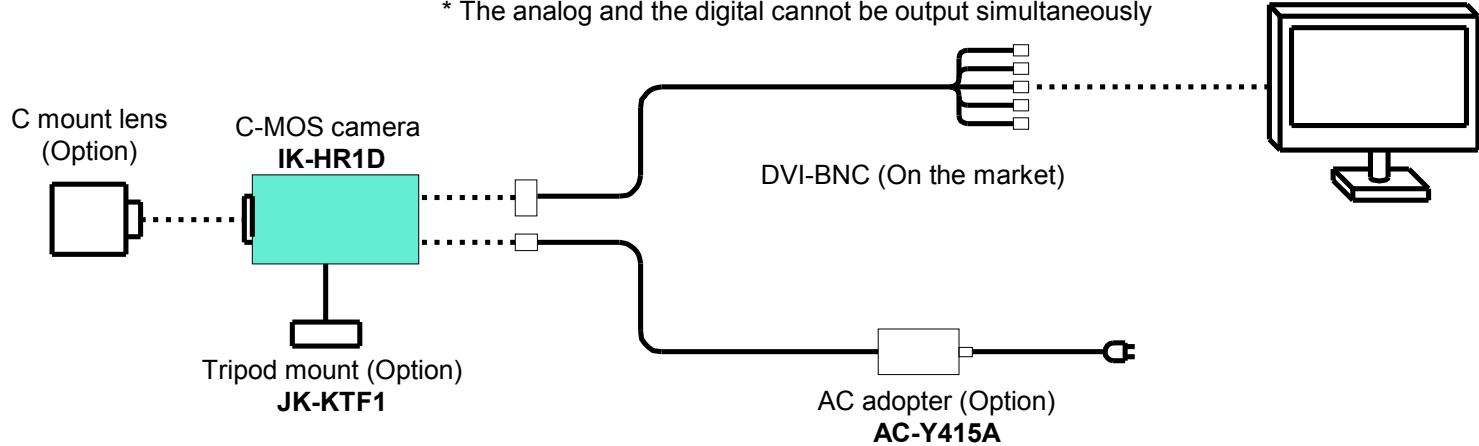
## Connections



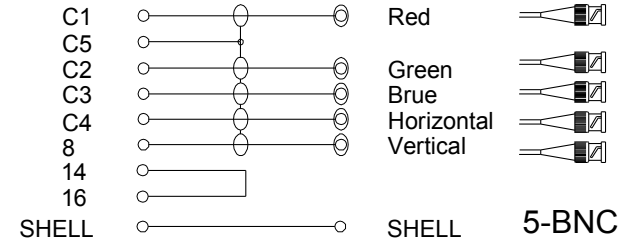
for Monitoring

DVI-I output has an analog RGB output. It is useful for analog monitor by using the conversion cable on the market. There are two types as mini D-Sub 15pin or 5-BNC connector.

\* The analog and the digital cannot be output simultaneously



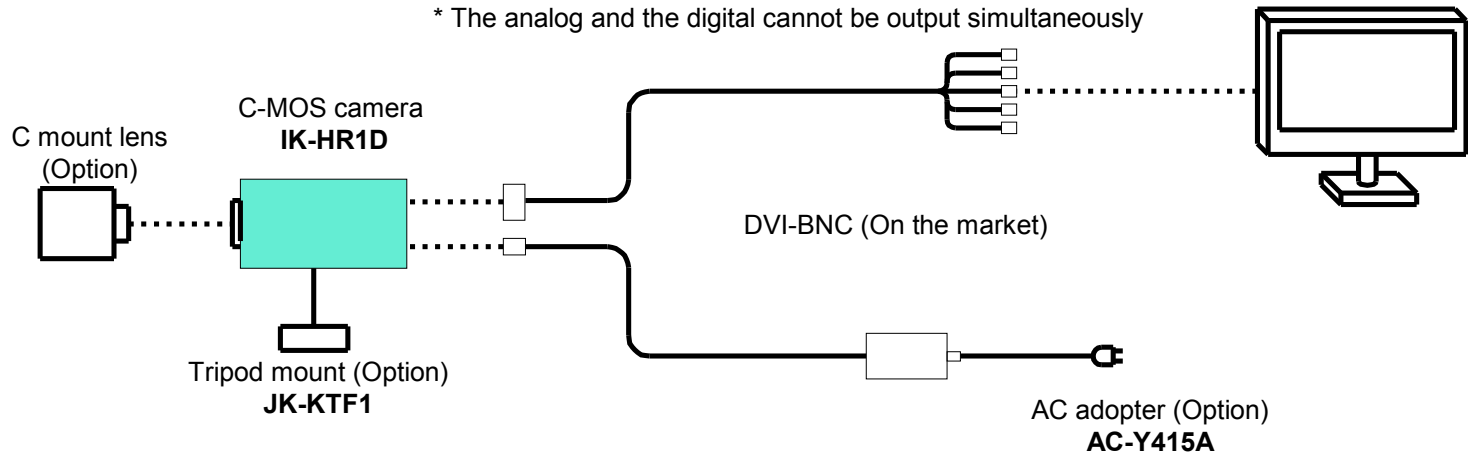
Mini D-sub 15pin



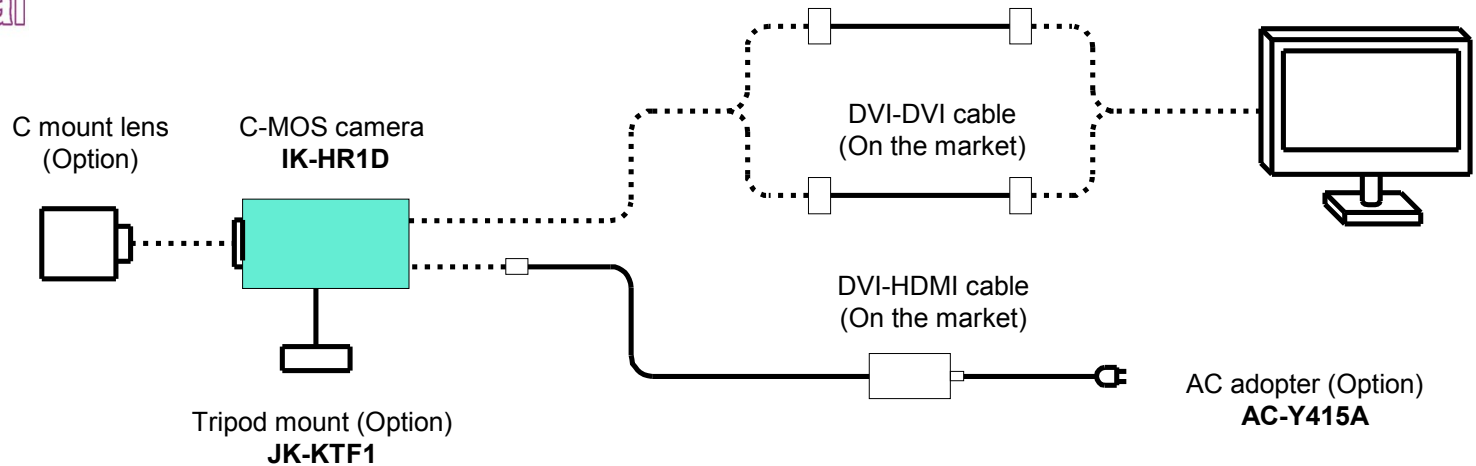
## Connections

### IK-HR1D

Analog



Digital



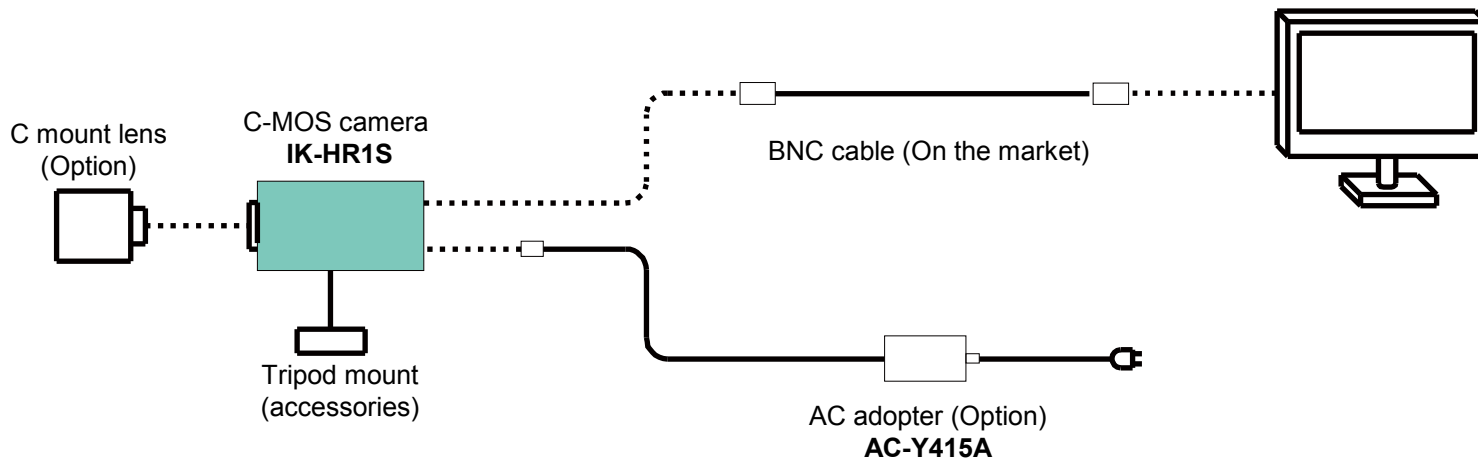
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## Connections

IK-HR1S

Digital



Note:  
 The tripod mount adapter is attached only IK-HR1S.  
 Because it is need to broadcast usage that is the  
 main of this model.