



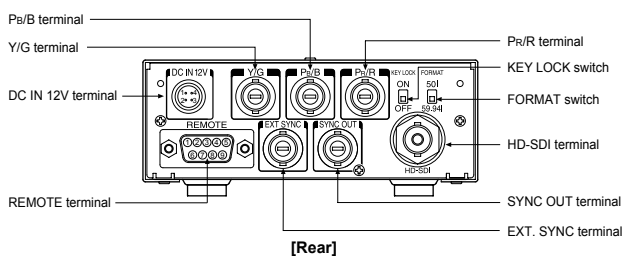
TOSHIBA

The Toshiba IK-HD1 system consists of a very lightweight and compact 1/3" 3-CCD High Definition (HD) camera head having 1920 x 1080 output pixels (16:9 ratio) and a small camera control unit (CCU) with HD-SDi output. This camera delivers HD imagery from a remote camera head, 4 cable length options and CCU system.

It is ideal for imaging objects in motion with sharp detail and little or no motion artifacts. Contact SeeSense for lens options for the Toshiba IK-HD1 camera system

SeeSense are able to provide full technical assistance and back up for this camera as well as offering additional special modifications such as factory adjustment, 2nd HD-SDi output, etc.

IK-HD2 Broadcast enhanced version available.



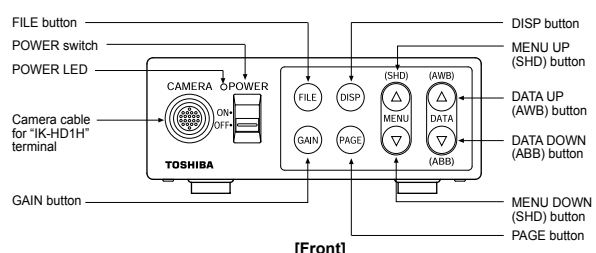
Specifications:

- Remote head camera system consisting
 - IK-HD1H HD 3-CCD camera head
 - IK-HD1E Camera Control Unit with HD-SDi output
- Ultra compact (approx 33 x 39 x 40mm) camera head
- Outputs full 1920 x 1080 pixels at 50 fps.
- 16:9 HD output
- Dedicated 1080i system ensures optimal operation
- Utilises 3 x 1/3" CCD sensors with a F2.2 prism
- On-screen menu
- Weight 65 g. (camera head without lens)
- Digital HD-SDi and Analogue RGB interface
- Auto and manual white balance
- Auto and manual electronic shutter
- C-mount 17.526mm (in air)
- 2 years warranty

This camera has many suitable applications in the following industries such as:

- Broadcast
 - Natural History
 - In Car
 - Sports
 - Goal Camera
 - POV Camera
 - 3D
- Medical
 - Endoscopy, Microscopy, etc.
- Scientific imaging / diagnostics
- Industrial video / inspection
- Underwater (compact housing or ROV)

Please contact SeeSense for details and advice.



IK-HD1E - Contact SeeSense for other models

Rev: 3.004.0613 E.&O.E.

Specification:

Power Requirements	12 V DC \pm 10% DCIN connector (4pin)
Power Consumption	10.3 watts (0.75 Amps)
Image Sensor	3 x 1/3-inch IT CCDs 3-CCD, RGB f2.2 Micro Prism System
Output Pixels	1920H x 1080i HDTV 50 / 59.94Hz (switchable)
Scanning System	2:1 Interlaced (1080i)
Scan Frequency	[59.94Hz] Horizontal: 33.716kHz, Vertical: 59.94Hz [50Hz] Horizontal: 28.125kHz, Vertical: 50Hz
Resolution	800TV lines standard (vertical and horizontal)
Sensitivity	f7.4 @ 2000 Lux (50Hz) Approx. 210 Lux at f2.2 / 0dB (100% video out) Approx. 105 Lux at f2.2 / +6dB Gain (100% video out) Approx. 13 Lux at f2.2 / +18dB Gain (100% video out)
Signal/Noise Ratio	56dB (Gain @ 0dB, DNR OFF)
Min. Illumination	13 lux (59.94 Hz setting, F2.2, sensitivity+18 dB) 11 lux (50 Hz setting, F2.2, sensitivity +18 dB)
Frame Rate	50 fps 1080i
Shutter Modes	MAN: Manual Shutter OFF, 1/100s, 1/125s, 1/250s, 1/500s, 1/1000s, 1/3000s, 1/5000s, 1/10000s, 1/30000s, 1/50000s AUTO: Automatic Shutter (EEI / CCD Iris) SS: Synchro Scan 1/1125H - 560/1125H
Colour Matrix	Adjustable 6 axis colour matrix circuit (Red, Green, Blue, Cyan, Yellow & Magenta)
Gain Modes	AUTO: Automatic Gain Control to +18dB (with upper limit MENU set) MAN: Manual Gain Control in 1 dB steps to +18dB NORM: 0dB / OFF
White Balance	MAN: Manual (RED and BLUE adjust) AWB: Auto White Balance (Push to Set White) ATW: Auto Tracing White
Scene File Setting	5 Files A, B, C, D, E
Video Signal Output	Digital HD-SDI (SMPTE 292 M) Analog RGB or Y / R-Y / B-Y
Output Signals	HD-SDI (SMPTE 292M) Output x 1 to BNC Connector Y / R-Y / B-Y 75 Ω Unbalanced to BNC Connectors Red, Green and Blue 75 Ω Unbalanced to BNC connectors (YUV / RGB Output Menu Selectable) Analog Tri-level Sync Output to BNC Connectors Contact SeeSense for optional second HD-SDI Output

FOUR CCU versions: IK-HD1C: HD SDI out, 59.94 / 60 Hz
IK-HD1D: DVI out, 50Hz
IK-HD1E: HD SDI out, 50 / 59.94Hz
IK-HD2E: Broadcast enhanced HD-SDI out (see separate datasheet)

Sync. Signal Output	0.6 +/- 0.1 volts (p-p) Negative Load Impedance 75 Ω Unbalanced
On Screen Display Output	Selectable: Analogue or Digital, both ON or both OFF
External Sync Input	0.6volts: 75 Ω Unbalanced, Sync Negative, BNC Connector (Tri-Level)
Sync. System	Internal / External Automatic Switching
Remote Control	RS-232C Serial Data Control Interface (9-pin Male D connector)
Camera Mount	C-mount 17.526mm (in Air)
Dimensions	IK-HD1H: 32.6mm (W) x 38.6mm (H) x 40mm (D) IK-HD1E: 110mm(W) x 40mm(H) x 186mm(D)
Weight	IK-HD1H: 65g (Head) : IK-HD1E 750g (CCU)
Operating Temp.	0°C to + 40°C
Humidity	Less than 90% (non-condensing)

Recommended Accessories

Cables

Original Toshiba Cables (CCU - Camera head)

EXC-HD03	3 metre Camera Cable
EXC-HD06	6 metre Camera Cable
EXC-HD10	10 metre Camera Cable
EXC-HD30	30 metre Camera Cable

Use no imitations

Lenses

The following lenses have been tested by SeeSense and are known to be compatible with this camera.

(angles of view quoted are in the horizontal plane).

SS-2.8F2.2	2.8mm*	F2.2-16	89°
SS-4F2.2	4mm *	F2.2-16	61°
SS-4.8F2.2	4.8mm	F2.2-Closed	57°
SS-8F2.2	8mm *	F2.2-16	33°
SS-15F2.2	15mm *	F2.2-16	18°
SS-25F2.2	25mm *	F2.2-16	10°
SS-4F1.8	4mm *	F1.8-16	64°
SS-6F1.8	6mm *	F1.8-16	34°

* Not fully "HD" but considered acceptable

All lenses available from SeeSense

If you have a specific requirement please contact SeeSense for advice.

Power Supply

Toshiba	ACM-601E	Medical grade power supply
SeeSense Power Supplies also available		

Rev: 3.004.0613 E.&O.E.