



TOSHIBA

SeeSense are pleased to offer a **Broadcast Enhanced version** of the popular Toshiba IK-HD1 High Definition 3-CCD camera system with the following extra enhancements :

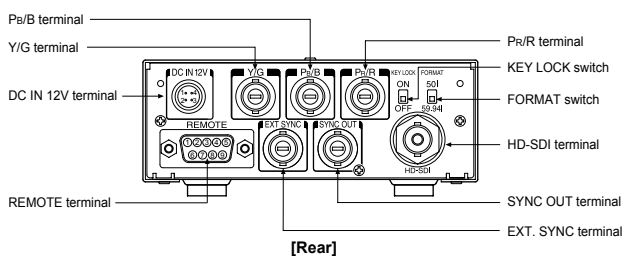
- Manual User mask setting for Auto-Shutter (exposure) and white balance
- Black Gamma level set
- Edge detail output - great for focus assist
- Manual Red and Blue black balance adjust

SeeSense also offer a "IK-HD1 Image Improver" .

This BBC approved camera delivers HD imagery from a remote compact camera head with 4 CCU cable length options from 3 to 30 metres.

It is ideal for imaging objects in motion with sharp detail and little or no motion artifacts.

Contact SeeSense for further details and lens options.



A BROADCAST ENHANCED VERSION OF THE TOSHIBA IK-HD1 CAMERA CONTROL UNIT

Remote head camera system consisting:

- IK-HD1H HD 3-CCD camera head
 - IK-HD2E Camera Control Unit with HD-SDi output
- Compatible with IK-HD1H (G2) camera heads.

Specifications:

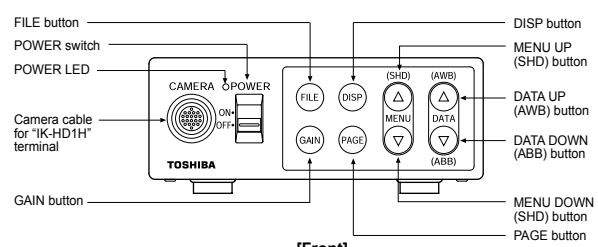
- Ultra compact camera head (33 x 39 x 40mm)
- Utilises 3 x 1/3" CCD sensors with a F2.2 prism
- Outputs 1920 x 1080 pixels at 50 fps.
- 16:9 HD output
- Dedicated 1080i system
- On-screen menu
- Weight 65 g. (camera head without lens)
- Digital HD-SDi and Analogue RGB / YUV interface
- Auto and manual 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 including:

- 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)

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.

Please contact SeeSense for further details & advice.



IK-HD2E - Contact SeeSense for other models

Rev: 3.016.0613 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. 176 Lux at f2.2 / 0dB (100% video out) Approx. 88 Lux at f2.2 / +6dB Gain (100% video out) Approx. 22 Lux at f2.2 / +18dB Gain (100% video out)
Signal/Noise Ratio	56dB (Gain @ 0dB, DNR OFF)
Min. Illumination	26 lux (59.94 Hz setting, F2.2, sensitivity+18 dB) 22 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 12 point colour matrix circuit Red, Green, Blue, Cyan, Yellow & Magenta (Gain & Phase)
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-HD2E: HD SDI out, 50 / 59.94Hz IK-HD1E: HD SDI out, 50 / 59.94Hz (see separate datasheet)

Sync. Signal Output	0.6 +/- 0.1 volts (p-p) Tri-Level Load Impedance 75 Ω Unbalanced
On Screen Display Output	Selectable: Analogue or Digital, both ON or both OFF
External Sync Input	0.6 volts: 75 Ω Unbalanced, BNC Connector (Tri-Level)
Sync. System	Internal / External Automatic Sensing
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 730g (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-4F1.8	4mm*	F1.8-16	64°
SS-6F1.8	6mm*	F1.8-16	34°
SS-8F2.2	8mm*	F2.2-16	33°
SS-15F2.2	15mm*	F2.2-16	18°
SS-125F2.2	25mm*	F2.2-16	10°

* Operate lens at F4 or above for best performance

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: 3.016.0613 E.&O.E.