



## TOSHIBA

### The world's smallest Ultra HD 3-chip, 4K video camera system from Toshiba.

The IK-4K 3-CMOS remote head camera system has a significantly improved 1600 TVL resolution providing amazingly sharp detail and exceptional colour performance. It enhances video applications from professional broadcast, scientific imaging, life sciences to defence.

The IK-4K is ideal when 4K images are desired and space is limited providing absolutely the best quality images possible.

SeeSense are able to provide full technical assistance and back up for this camera.

Please contact SeeSense for details and to arrange a demonstration of the IK-4K camera

#### Main Features:

- Toshiba remote head camera comprising:
- IK-4KH 1/2.9" 3-CMOS Microprism Camera
  - IK-4KE Camera Control Unit

#### Camera:

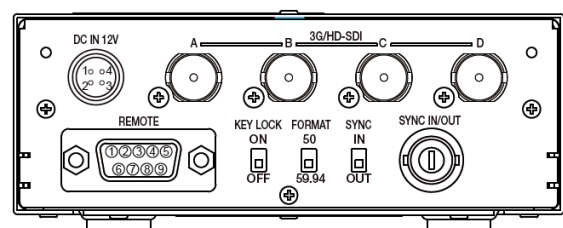
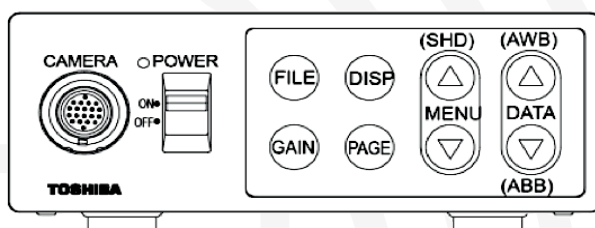
- 3840 x 2160 59.94/50 Hz UltraHD 4K output
- Switchable formats; 4K, 1080p and 1080i
- Amazing details up to 1600 TV lines resolution
- Ultra compact camera head 32 x 38 x 41mm
- Super flexible camera to CCU cable

#### CCU:

- 4 x 3G/HD-SDI output maximises signal fidelity
- 12-channel colour adjustment
- Vertical & Horizontal Image Inversion
- Freeze frame
- Gen-lock for 3D and multi-camera use
- Remote control via RS232
- Manual Red & Blue black balance adjustment
- Black pedestal range - (negative expanded)
- Edge detail output - great for focus assist
- Black Gamma level set
- Manual User mask setting for Auto-Shutter (Exposure) and White Balance
- Cable lengths 3, 6, 10 & 15 metre
- **2 years warranty**

This camera has many suitable applications in many different industries including:

- Professional Broadcast
- Medical Endoscopy, Microscopy, etc.
- Scientific imaging / diagnostics
- Industrial video / inspection
- Defence



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### Camera Specification:

Image Sensor	3 x 1/2.9-inch RGB CMOS Microprism sensors
Effective Pixels	H: 1944 V: 1104
Output Pixels	4K 3840H x 2160 p/i 59.94 / 50Hz (switchable) 1080p/i 1920H x 1080 p/i 59.94 / 50Hz (switchable)
Scanning System	Progressive (4K or 1080p) / Interlaced (1080i)
Scan Frequency	4K / 1080p [59.94 Hz] H: 67.433kHz, V: 59.94Hz
	4K / 1080p [50 Hz] H: 56.250kHz, V: 50Hz
	1080i [59.94 Hz] H: 33.716kHz, V: 59.94Hz
	1080i [50 Hz] H: 28.125kHz, V: 50Hz
Adjusted by switch on rear of CCU panel	
Resolution	4K 1,600 TV lines (vertical and horizontal) 1080p/i 1,000 TV lines (vertical and horizontal)
Sensitivity	f5.6 standard @ 2000 Lux 3000K (59.94 Hz) f6.1 standard @ 2000 Lux 3000K (50 Hz)
Min. Illumination	19.5 lux (59.94 Hz setting) at F2.2, 24dB 16.2 lux (50 Hz setting) at F2.2, 24dB
Frame Rate	50 Hz and 59.94 Hz
Camera Mount	C-mount 17.526mm (in Air)

### Control Unit Specification:

Output Signal	4K Mode 3G-SDI 4 Division 1080p/i mode 3G-SDI x 4 / HD-SDI x 4
External Sync Input	±0.6 volts (p-p): 75 Ω Unbalanced, Tri-level BNC
Sync. Signal Output	±0.6V ± 0.1 volts Tri-Level Load Impedance 75 Ω Unbalanced (BNC Connector)
Signal/Noise Ratio	56dB Standard [AGC, Gamma, Detail Edge, Matrix OFF & Lens closed]
Sync. System	Internal / External Automatic Switching
Sync. Level	±0.3V ± 0.1 volts
Colour Temperature	3200, 5600K
Shutter Modes	MAN: Manual Shutter OFF, 1/100s - 1/10,000S AUTO: Level peak, average value ratio, response speed, area OFF, 1/200s - 1/4000s SS: Synchro Scan 1/1125H - 1124H/1125H, OFF
Gain Mode	AUTO (Automatic Gain Control); MANUAL; OFF (0 dB)
Image Signal Settings	Gamma ON / OFF, -10 ~ +10
	Black Gamma ON / OFF, -10 ~ +10
	Pedestal Master -200 ~ 200, Red & Blue -100 ~ 100
	White Clip: 100 - 109% EH / V Balance 8/16 - 16/16 - 24/16 (Ratio of V/H)
White Balance	AWB: Auto White Balance (Push to Set), MANUAL
Auto-Shutter & White Bal. Mask	64 split area switching PRESET A / B / C / D / E / User Defined
Detail	Gain 0 - 10 - 31, Boost Frequency 1 - 10 - 16

### Control Unit Specification Continued:

12 Colour Matrix	Adjustable 12 point colour matrix circuit ON / OFF Chroma Saturation & Hue Both -15 ~ +15 Chroma Gain -31 ~ +31
Knee Correction	Point 70, 75, 80, 85, 90, 95 & 100%, Slope 1 - 8 -16
Shading Correction	SET / MANUAL (-128 ~ +127) / OFF
Freeze Display	ON, OFF
Scene File Setting	5 Files A, B, C, D, E
Colour Bars	YES Set by front panel switch
Remote Control	RS-232C Serial Data Control Interface (D-sub 9-pin)
Baud Rate Switch	9,600 bps / 19,200 bps
Mirror Function	ON / OFF Horizontal / Vertical

### System Information

Power Requirements	12 V DC ± 10% (Hirose HR10A-7P-4S 4pin Connector)
Power Usage	13.8 watts (full camera system)
Dimensions	IK-4KH: 32.6mm (W) x 38.6mm (H) x 41mm (D) IK-4KE: 110mm(W) x 40mm(H) x 196mm(D)
Weight	IK-4KH: 70g (Head) IK-4KE 610g (CCU)
Operating Temp.	0°C ~ +40°C
Ambient Temp.	0°C ~ +40°C
Humidity	Less than 90% (non-condensing)

### Cables

Original Toshiba Cables (CCU - Camera head) Use no imitations

EXC-3HD03	3 metre Camera Cable
EXC-3HD06	6 metre Camera Cable
EXC-3HD10	10 metre Camera Cable
EXC-3HD15	15 metre Camera Cable

### HD 3-CCD / CMOS Lenses

TF4XA-1	4mm	F2.2-16	71°	Full HD Lens
XT17sx4.5DA-R11	4.5 - 77mm	F1.6-16	60°19' - 3°53'	HD Zoom

Other lenses available from stock.  
If you have a specific lens requirement please contact SeeSense for advice.

### Power Supply

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

Please contact SeeSense for further details and to arrange a demonstration.

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