

///MotionXtra® HG-TH

Built on the same great design and extensive features of the industry-leading HG-100K, the *MotionXtra*® HG-TH delivers the excellence in image quality and the performance reliability that you have come to expect from Redlake.

The tethered-head design offers significant versatility with small, lightweight camera heads that fit into confined spaces or onto low-mass mounting surfaces. In addition to their compact size, camera ports are rugged up to 100 G. The camera controller is also rugged to 100 G and allows you to choose from one to four camera heads, and from 2 to 8 GB of memory. The HG-TH forms a complete imaging system with significantly reduced weight and an extensive feature set. You can choose the HG-TH configuration that best meets your specific imaging needs now and add more camera heads and memory later. The camera is fully compatible with the *MotionXtra* HG-100K and HG-LE, and Redlake HG2000, CR2000, and HG-TX cameras.

The *MotionXtra* HG-TH is easy to set up and ready to use with a simple installation of *MotionCentral*™ software and an Ethernet connection. Within minutes, the HG-TH identifies itself and presents a live image on your camera control screen. The versatility and flexibility of the HG-TH are evidenced by its ease of setup and use, whether in a one-camera system or with hundreds of cameras on a network. Each camera head is "IP addressable".

The Ethernet interface allows remote camera control and fast 1000Base-T transfer of uncompressed file formats including TIFF and compact Type-2 Bayer. High-quality JPEGs may be downloaded, providing excellent image quality at a fraction of the file size. AVI files using popular codecs (compressed or uncompressed) may be produced in tandem with any image download.

Designed as a complete imaging system, the HG-TH consists of four major components:

- Up to four high-speed, rugged HG-TH tethered camera heads
- Camera controller with expandable memory options and camera ports
- An optional Hub Sync Unit, which functions both as a High-G Gigabit Ethernet switch and a precision time source providing frame synchronization of multiple cameras to within $\pm 2.5\mu\text{s}$. The camera and Hub can withstand shock up to 100G in any axis.
- *MotionCentral*™ software for camera control, image download and viewing is capable of supporting a large number of HG-TH, HG-LE, HG-100K and/or HG2000/HG-TX cameras in a dedicated camera network.

An optional tablet style Display Control Unit (DCU) makes the setup of remotely located cameras fast and easy. A small back-up battery is included within the camera controller to preserve the recording if a power failure occurs after the event.

High-Speed, Compact, and Flexible Multi-Head Camera System



SNAPSHOT

- Up to 4 camera heads with 752 x 564 resolution at 1000 fps; up to 100,000 fps at reduced resolutions
- Up to 19.2 seconds of record time
- Redlake-exclusive CMOS sensor, color or mono
- Very fast 5 μs global electronic shutter eliminates motion blur
- Choice of 4 models of Camera Controller with 2 or 4 camera ports, and 2 to 8 GB of memory
- Rugged design, withstanding up to 100G in any axis
- Fast, accurate, reliable camera networking
- 1000Base-T Ethernet for fast downloads
- Easy viewing with both NTSC/PAL and Digital Output

APPLICATIONS

- Vehicle impact testing (VIT)
- Airbag deployment
- Component safety testing
- Research, development and test
- Production and manufacturing
- Range, aerospace and ballistics



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MotionXtra® HG-TH

PERFORMANCE SPECIFICATIONS

Sensor Array	8 channels, 752 x 564 pixels, CMOS Sensor, Color or Monochrome
Image Resolution	Up to 752 x 564 at 1000 fps
Dynamic Range	62 dB at sensor and 25°C (77°F) ambient temperature
Recording Rates	Selectable, 25 to 100,000 fps in 5 fps increments; variable frame rate via external source
Shutter	Global Electronic Shutter variable to 5µs
Trigger Frame	Variable position from start to the maximum available frame capacity
Trigger Mode	TTL, 5V-tolerant, user selectable polarity, or switch closure; variable debounce delay
Time Stamp	Each frame, selectable reference
Synchronization	All cameras are frame synchronized to a master precision clock when using optional Hub Sync Unit within +/- 2.5 µs
On-Board Storage	2 GB, 4 GB, and 8 GB models available
Camera Head Size	Dimensions: 3.74"(H) x 3.74"(W) x 2.68" (L) (95 x 95 x 68 mm); Weight: 2.75 lbs (1.25 kg)
Camera Controller Size	Dimensions: 6.61"(H) x 3.70"(W) x 7.95" (L) (168 x 94 x 202 mm); Weight: 9.5 lbs (4.3 kg)
Tethered Cable	3m, 6m and 10m length at 8mm, 9mm, and 10mm diameter respectively
Camera Interface	Camera Network (100/1000Base-T Ethernet); Sync I/O; Trigger In; Power; Strobe Out
Controller Cable Lengths	Controller to Hub/PC: up to 328 ft (100m); Hub to Hub/Control PC: up to 328 ft (100m)
Lens Mount	C-mount standard, High-G Box-mounts available
Hub Sync Unit Size	Dimensions and Weight: 2.16"(H) x 13"(W) x 13" (L) (55 x 330 x 330mm); Weight: 11 lbs (5Kg)
Hub Sync Unit Interface	Camera/Hub Sync Unit/Control PC Network; Trigger I/O; Power I/O; Legacy Port to connect HG D-Box or HG J-Box for multiple legacy cameras (HG2000/HG-100+/CR/HG-TX)
Power	Camera: +20 to 50 VDC @ 40W; Hub: +20 to 50 VDC @ 50W
Shock	Camera and Hub: 100G @ 5ms min. any axis, 1000 cycles
Operating Temperature	0°C to +45°C Ambient (32°F to 113°F)
Control Software	MotionCentral™; Windows 2000, XP and NT 4.0 SP6 compatible
File Formats	Type-2 Bayer, TIFF, JPEG, AVI; 8-bit mono, 24-bit color
Reticle	Full screen crosshair with X, Y coordinate display
Options	Tablet style display control unit (DCU)
Emission/Safety	CE approved, FCC Class B compliant, UL recognized (camera), UL listed (Hub Sync Unit)

Note: Specifications are subject to change.

Sample Recording Capacity at full resolution (752x564 @1000 fps)		
Number of Heads	Memory Capacity	Recording Time Per Head (seconds)
1	2 GB	4.8
1	4 GB	9.6
1	8 GB	19.2
2	2 GB	2.4
2	4 GB	4.8
2	8 GB	9.6

Sample Frame Rates	
Resolution	Frame Rate (fps)
752 x 564	1000
512 x 512	1600
480 x 480	1800
512 x 408	2000
480 x 320	2600
320 x 320	3700
320 x 240	5000
256 x 136	10,000
128 x 64	30,000
80 x 40	50,000

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