

TS724 DualVision/Ultra



Remote Thermal Monitoring System with Visual Image Functionality and Ultrasonic Detection

Visual and infrared cameras combined with ultrasonic detection and specialized software allows remote monitoring of critical substation components in real-time

The DualVision/Ultra System represents another milestone in Mikron's innovative ThermalSpecction 724 Remote Thermal Monitoring line of products. This system is the first to combine visual imagery with infrared and airborne ultrasound technologies to continuously monitor substations and electrical switchgear – all in a single intranet/internet-enabled package. With this system, visual surveillance enhanced with IR imaging makes it easy to spot intruders and monitor critical substation components 24/7, without supplementary lighting. With the addition of airborne ultrasound, certain conditions such as arcing, tracking, or corona can also be detected before they reach the critical stage. Designed with advanced maintenance-free electronics and industrial protective packaging, the DualVision/Ultra system offers unparalleled accuracy for demanding applications in even the most adverse environments. With an unmatched array of optional accessories, the DualVision/Ultra system demonstrates Mikron's commitment to long-term trouble-free operation.

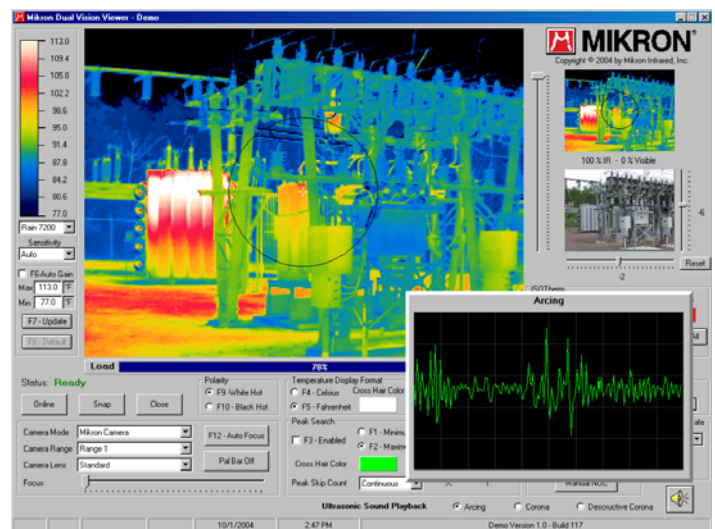


System Features/Benefits

- High Quality, Real Time Digital Image Transfer via Ethernet
- Remote Monitoring via (wired or wireless) Ethernet
- NEMA-4 housing
- Maintenance Free operation
- Control and Alarm Triggering Software
- Infrared-Enhanced Visual Surveillance capabilities
- Arcing/tracking/corona detection with ultrasound
- High Accuracy $\pm 2\%$ or 2°C of reading
- Long Wavelength, Less Affected by Sunlight
- Ambient temperatures to 100°C (212°F) with optional cooling
- Remote Pan-And-Tilt capability (optional)

The DualVision 724 system consists of separate thermal imaging and video cameras and an ultrasonic detection unit all housed in an environmentally sealed, temperature-controlled enclosure. These components have Internet IP addresses and password protection, allowing control from any computer using wired or wireless Ethernet.

Mikron's DualVision/Ultra software blends the visual and IR camera feeds into a single blended image with correct aspect ratio and spatial area. It also offers a spectral component which is useful in displaying electric emissions caused by arcing, tracking, or corona. When utilized with Mikron's MikroSpec™ R/T Thermal Data Acquisition and Analysis software, the system is capable of recording up to 75 minutes of blended visual and IR video feeds and ultrasonic data in real-time. Frames can also be captured at intervals rather than continuously, or they can be triggered by a temperature alarm tied to a defined Region of Interest or by direct signal from the PC.



Technical Data

IR Camera—M7500	Detector:	320 x 240 Uncooled Focal Plane Array (Microbolometer)
	Temperature and Spectral Range:	-40 to 120° C (Standard)
	Measurement Accuracy:	±2% or 2°C of reading
	Field of View:	21.7°(H) x 16.4°(V)
	Focus Range:	30 cm to infinity
	Instantaneous FOV:	1.2 mrad
	Spectral Band:	8.0 to 14.0 μm
	Image Update Rate:	30 Frames/sec
	Sensitivity / NETD:	0.06°C @ 30°C
	Interfaces:	100 Base T Ethernet
	A/D Resolution:	14 bit
Visual Camera	Sensor:	1/4" Interline Transfer CCD
	Pixel Depth:	8 bit Digit B/W or 24 bit Digital Color
	Resolution:	640x480 or 320x240
	Shutter:	1/30s - 1/30,000s
	Sensitivity:	1-200,000 Lux
	Frame Rate:	Up to 30 Frames per Second
	External Video:	CCTV Video Inputs/Outputs
Ultrasonic Detection Unit	Frequency Range:	36-44 kHz
	Dynamic Input Range	100 dB
	Field of View	10°
	Outputs:	4-20 mA DC Linear Output and 0 to 10 VDC; Proportional to the Received Ultrasound of 0 to 40 dB
	Heterodyned (Audio) Output	90 dBA at Full Scale Output Into 16 Ohms 0 to 6 kHz 3 dB Bandwidth
	Alarm:	Open Collector Rated at 24 VDC, 10 mA. Threshold Level Adjustable Over the Output Range. Alarm Output Stops Conducting When the Input Level Exceeds the Threshold Level Set Point.
Interfaces	Communication:	Ethernet
	Video Output:	NTSC/PAL, S-Video
OnLine Visible/ Thermal Image Processing Software with Spectral Viewing	Presentation:	In run mode the system displays a live thermal image on the screen in 256 colors. Images can also be frozen.
	Remote Camera Control Functionality	Allows you to select the camera type, mode, range, temperature scale and lens. Also allows adjustments to be made for focusing, emissivity, ambient calibration, and percentage of transmission loss.
	Real-time Image and Data Acquisition	Allows large amount of data to be capture at user-adjustable capture rate.
	Multiple Regions of Interest (ROIs)	Process and compute the minimum, maximum and average temperatures for up to 32 Regions of Interest (ROIs) defined in a variety of shapes.
	Multiple Color Palettes	Offer flexibility for optimal image clarity.
	Off-Line Analysis	Replay and analyze image sequence files that have been previous captured and saved to disk.
	Image Blending	Blends the visual and IR camera feeds into a single DualVision image with correct aspect ratio and spatial area. Allows hot spots to be identified while viewing the scene as a visual image. The composite image can be adjusted to show any percentage of the IR and visual.
Housing	NEMA-4 Enclosure with Mounts	Includes IR Transparent Window, interface connections, power termination strip, vortex air cooler with thermostat control or optional solid state air conditioner or heater with thermostat control
Environmental	Operating Temperature:	-15°C to 50°C
	Storage Temperature:	-40°C to 70°C
	Shock Resilience:	30G (IEC60068-2-29/JIS C 0042)
	Vibration Resilience:	3G (IEC60068-2-6/JIS C 0040)
Electrical	Power Supply:	120 VAC 5 Amps Max Standard (10 Amps with Pan & Tilt)
Physical Characteristics	Dimensions:	8.5" (H) x 29" (L) x 10.625" (OD) (excluding projections)
	Weight:	approximately 75 lb.

Mikron reserves the right to change specifications to reflect the latest changes in technology and improvements at any time without notice. These changes will be reflected in subsequent editions of our literature when warranted.

Optional Equipment

8-Channel Input/Out Modules

Relay Output (Alarms) Module	Offers 8 relay channels with each channel driving up to 240VAC at 3 Amps
Universal Input (Remote Triggering) Module	Offers 8 channels with each channel ranging from 5 VDC to 240 VAC
4-20 mA Output Module	Offers 8 channels allowing MikroSpec R/T software to send each Region of Interest temperature to a 4-20mA output.
4-20 mA Input Module	Offers 8 channels allowing the MikroSpec R/T software to store external signals with captured temperature data.

MikroSpec R/T Multiple IR Camera System Package

The MikroSpec R/T Multiple IR Camera System Package is a unique software add-on that allows data obtained from up to 14 cameras to be monitored simultaneously in real-time on a single computer.

Lenses

The M7500 is supplied with a standard lens offering a 21.7°(H) x 16.4°(V) field of view. Optional Telephoto and Wide Angle lenses are also available at an additional cost.

Remote-Controlled Pan/Tilt Head

A remote-controlled pan-and-tilt head is available at an additional cost.

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