Data Sheet

M500 In-Car Video System

Scan. Analyze. React.

In your vehicle out in the field, your eyes are your first line of defense. You're trained to constantly scan your surroundings for threats—to yourself and to the public. It's intense, highly demanding work. But with our technology, you can lighten that load and heighten your situational awareness like never before.

The M500 in-car video system is a ground-breaking leap forward in awareness, safety and efficiency. Simultaneously analyzing video while it's recording evidence, it's designed to keep you and your communities safer. Powerful video analytics—driven by an industry-leading 4K sensor — constantly process your surroundings, alerting you in real time to threats and search targets.

An ultra-rugged, tamperproof design withstands the toughest conditions. An intuitive interface is easy to use in the most demanding situations.

The M500 seamlessly coordinates with the mission critical technology you already count on—from body cameras, to command centers and evidence management.

When you're only as safe as what you can see, the M500 gives you real time awareness of what's happening around you. It's a watchtower calling out what you need to know. A partner that takes you to a new level of calm and collected. Because the more you know what's out there, the more you can keep yourself and the people you serve safe.

MOTOROLA SOLUTIONS

KEY FEATURES OF M500 SYSTEM	
Front Camera Recording	Support for high resolution front camera
Cabin Camera Recording	Support for daylight and infrared cabin camera with integrated microphone
Cabin Microphone Recording	Support for discreet cabin microphone x2
Rear Camera Recording	Support for high resolution rear camera
Smart Power Switch (SPS)	Power and/or connectivity for MDC, LTE/WiFi router and WiFi dock
Exterior Camera Recording	Support for high resolution exterior camera.
USB Drive Support	Support for configuration and firmware updates via removable USB drive
USB Evidence Backup	Removable USB Drive can be used for storing and offloading video evidence
Auto-record Triggers	System can be triggered to record by vehicle speed, lights, siren, aux input x2
Auto-stop Record	Configurable maximum length of video recordings
Group Recordings	System can initiate group recordings with body cameras
GPS Support	Support for GPS location information and timing reference
WiFi Event Upload	System can upload events to DEMS solution via WiFi access point
LTE/WiFi Router Upload	System can upload events via an LTE/WiFi modem/router
Encryption	Video evidence is encrypted at rest and in transit
Officer Settings	User access to system preferences to adjust display brightness, etc
Event Playback	Video and audio can be played back on the control panel / display
Record-after-the-Fact™	Events can be recovered from the system even if no recording was initiated
Remote Upgrade	System firmware can be upgraded over a wireless link
Dual-stream Recording	System can record 2 streams simultaneously and select upload resolution based on event tagging
Covert Mode	System can be configured to record with no visual or audio indicators
Dark Mode	System can be configured to turn off screen, and button backlights
State Capture	System can log key parameters for debug purposes
Impact Detection	System can recognize vehicle impact and automatically start recording
Internal UPS	System can self-power for several seconds in case of vehicle collision / power failure
License Plate Recognition	System can read license plates and interface with VehicleManager
Back Seat Occupancy Detection	Cabin camera will automatically record when a human is detected in back seat
Wide And Cropped Front Camera Views	System will capture panoramic and detailed views (at 2 resolutions each)
Synchronized Playback	Support for synchronized playback in VideoManager EL and CommandCentral Evidence
HiFi Microphone Support	System supports up to 2x portable wireless microphones
Live-streaming	Video and audio streaming to CommandCentral Aware
VideoManager Support	System can upload events to VideoManager
CommandCentral Evidence Support	Events can be uploaded to CommandCentral Evidence

CORE PROCESSOR

M5F FRONT CAMERA

M5P CABIN CAMERA

M5R REAR CAMERA

M5E EXTERIOR CAMERA

M5D CONTROL PANEL

HIFI MICROPHONE

Core processor

KEY FEATURES	
Form Factor	Single DIN
Dimensions (H x W x D)	7.0 x 1.9 x 7.7 in (180 x 49 x 171 mm)
Weight	3.1 lb (1.4 kg)
Operating Temperature	-30°C to +65°C (-22°F to +149°F)
Mounting Option	Overhead (vehicle-specific brackets) or universal mount
Recording Media (Internal)	1 TB automotive-grade solid state drive
Recording Media (Removable)	128 GB USB Drive
GPS	Integrated
Crash Detection	6-axis sensor
Additional Input / Outputs	USB, Ethernet, wired microphone (x2), trigger interface (2 AUX inputs), wireless microphone (x2), powered ethernet (x4)
Video Transfer Methods	Wireless 802.11 router, optional WiFi or all-in-one LTE/WiFi Router, Ethernet, USB
Max Camera Capacity	Up to 5 cameras
Resolutions	1920x1080p, 1280x720p, 864x480p (dual stream, configurable), with configurable high/medium/low bitrate
Frame Rate	30, 15, 10, & 5 fps (configurable)
Multiple Resolution Encoding	Records two resolutions simultaneously (patented): 1080p/720p, 1080p/4080p, or 720p/480p
Recording Triggers	Lights, siren, AUX triggers (x2), impact/ crash, speed, wireless microphone
Storage	Dual drive architecture
Pre-Event	None, 15 sec, 30 sec, 45 sec, 90 sec, 1 min, 2 min, 3 min, 5 min, or 10 min
Redundancy	Record-After-The-Fact (patented, configurable)
Recording Capacity	Dependent on recording resolution, frame rate and cameras connected. Video: 1080p@30fps High Quality = 4.5GB per hour per stream, 720p@30fps High Quality = 2.25GB per hour per stream, 480p@30fps High Quality = 1GB per hour per stream, Audio: 23.4MB per hour per stream
WiFi	WiFi, LTE/WiFi routers
Security	FIPS-140-2 compliant encryption
Cabin Camera Audio	Integrated MEMs microphone (digital audio over coax)

Front camera and LPR system

M500 FRONT CAMERA KEY FEATURES	
Dimensions (H x W x D), including bracket	1.7 x 1.6 x 2.7 in (43 x 40 x 69 mm)
Weight	2.68 oz (85.4 g)
Operating Temperature	-30°C to +65°C (-22°F to +149°F)
Connection	Bayonet-locking HDBNC for power and data
Aspect Ratio	Electronic panoramic view (simultaneous wide and cropped streams)
Horizontal Field of View	Wide panoramic stream: 102/119° with/without dewarp Cropped stream: 51/59.5° with/without dewarp
Low Light Performance	Below 0.1 lux
Sensor Resolution	3840x1920 pixels
Sensor Technology	8MP, BL-CMOS (backlit CMOS)
Sensor Area	1 x 1.7 in
Mounting	Windshield puck or ball mount
M500 LPR SYSTEM KEY FEATURES	
Accuracy	Greater than 90%
Range	40 ft (12 m)

Cabin camera

M5P CABIN CAMERA KEY FEATURES	
Dimensions (H x W x D)	4.5 x 1.9 x 1.5 in (113 x 48 x 39 mm)
Weight	5.3 oz (150 g)
Operating Temperature	-30°C to +65°C (-22°F to +149°F)
Connection	Single HD-BNC connection for power and data
Resolution	1920x1080
Viewing Angle	108° (horizontal)
Low Light Performance	0 lux (infrared illumination)
Infrared Illumination	940nm, not visible
Audio	Integrated MEMs microphone (digital audio over coax)
Mounting	Tamperproof screws or zip ties

Rear camera

M5R REAR CAMERA KEY FEATURES	
Dimensions (H x W x D)	2.75 x 2.56 x 1.61 in (70 x 65 x 41 mm)
Weight	4.8 oz (135 g)
Operating Temperature	-30°C to + 65°C (-22°F to +149°F)
Connection	Single HD-BNC connection for power and data
Resolution	1920x1080 at 30 fps
Viewing Angle	108° (wide view)
Low Light Performance	0.2 lux
Sensor Technology	CMOS
Mounting	Variable adjustment mount (ball and socket)

Exterior camera

M5E EXTERIOR CAMERA KEY FEATURES	
Dimensions (H x W x D)	2.0 x 3.2 x 2.3 in (51 x 81 x 58 mm)
Weight	7.37oz (208 g)
Operating Temperature	-30°C to +65°C
Connection	Single HD-BNC connection for power and data
Resolution	1920 x 1080, 1280 x 720, 864 x 480
Viewing Angle	108°
Low Light Performance	0.3 lux
Mounting	Variety of mounting options

Control panel

M5D CONTROL PANEL KEY FEATURES	
Dimensions (H x W x D)	4.3 x 5.7 x 1.4 in (110 x 144 x 36 mm)
Weight	0.7 lb (0.3 kg)
Operating Temperature	-30°C to +65°C (-22°F to +149°F)
Connection	Single HD-BNC connection for power and data
Screen Size	5" diagonal
Screen Resolution	1920x1080
Screen Brightness	600 nits
Touchscreen Technology	Capacitive multi-touch
Dedicated Controls	Power, home, record, stop, cameras, display
Mounting	B-size RAM mount
Other	Silicone overmold for secure grip

HiFi microphone

HIFI MICROPHONE KEY FEATURES	
Dimensions (H x W x D), Transmitter	3.0 x 2.1 x 1.1 in (75 x 53 x 28 mm), not including clip
Dimensions (H x W x D), Charging Dock	3.1 x 3.0 x 2.0 in (80 x 75 x 51 mm)
Dimensions (H x W x D), Transmitter in Charging Dock	4.2 x 3.0 x 2.0 in (108 x 75 x 51 mm)
Weight (Transmitter)	3.0 oz (85 g)
Weight (Charging Dock)	4.5 oz (128 g)
Operating Temperature	-25°C to +65°C (-13°F to +149°F)
Frequency Response	200-10,000 Hz +/- 3 dB
Wireless Link Frequency Band	2.4 GHz
Audio Compression	BV32

Support and warranty

Comprehensive 12-month product warranty included.

Warranty may be optionally extended to 5 years at additional cost.

To learn more, visit: **www.motorolasolutions.com/m500**

MOTOROLA SOLUTIONS

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