

# MxNVR-MO4 Series

## 4-channel H.264/MJPEG streaming video recorder for mobile surveillance



- Embedded system with low power consumption; no heater and fan required
- Transmits and records the H.264 and MJPEG video streams simultaneously
- One SATA interface for 2.5" hard disk or SSD (solid state disk)
- Meets EN 61373 vibration criteria with a 2.5" inch hard disk installed\*
- Anti-vibration with built-in M12 Ethernet and power input connector, DB9 audio inputs, and DI/DO connector
- T model is compliant with EN 50121-3-2 and the essential sections of EN 50155 (T model supports TX temperature level with -40 to 75° operating temperature; SSD required)
- DynaStream™ supported for optimized network efficiency
- ONVIF conformity for standardization and interoperability
- Supports DHCP OPT66/67 for auto-configuration

\* Hard disk purchased separately



### Introduction

The MxNVR-MO4 is a streaming DVR (digital video recorder), which can transmit and record H.264 or MJPEG video streams simultaneously. With a rugged design that is compliant with the essential sections of EN 50155, covering power characteristics, EMC, vibration, shock and temperature (T model, TX temperature level), the MxNVR-MO4 especially excels in rolling stock IP video surveillance applications. Moreover, the MxNVR-MO4 has passed EN 61373 standard anti-vibration testing with a 2.5 inch hard disk (purchased

separately), delivering highly reliable storage performance for rolling stock applications. The MxNVR-MO4 can be triggered to record by system boot, by event, by schedule, or by external commands, such as CGI or SNMP. The embedded DynaStream™ function increases the network transmission efficiency by dynamically adjusting the video frame rate. To prevent unauthorized access, advanced 802.1X authentication is available to provide high network security. The MxNVR-MO4 also supports the ONVIF standard to easily integrate and interoperate with third party systems and software.

### Specifications

#### Video

**Video Compression:** H.264 (MPEG4 part 10, AVC), MJPEG

**Video Inputs:** 4 BNC connectors (1Vpp, 75 ohms)

**Video Outputs:** Via Ethernet

**Video Streams:** H.264/ MJPEG dual streams

**Video resolution and FPS (frame per second):**

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
Full D1	720 x 480	30	720 x 576	25
4CIF	704 x 480	30	704 x 576	25
VGA	640 x 480	30	640 x 480	25
CIF	352 x 240	30	352 x 288	25
QCIF	176 x 112	30	176 x 144	25

**Note:**

1. When enabling the H.264 and MJPEG video streams simultaneously, the 2 video streams support up to full D1 resolution at 30 FPS. For example, if the resolution of the H.264 video stream is 720 x 480 at 20 FPS, the MJPEG video stream will support 720 x 480 resolution at 10 FPS, or 352 x 240 at 30 FPS.
2. 4 channels of the MJPEG video streaming support up to VGA, 4CIF and Full D1 resolution at 60 FPS (including pre-event video).

**Video Viewing:**

- DynaStream™ supported for changing the video frame rate automatically

- Adjustable image size and quality
- Timestamp and text overlay
- Maximum of 8 simultaneous unicast connections

**Audio**

**Audio input:** 2, Line-in or MIC-in, DB9 connector

**Audio format:** Mono, PCM (G.711)

**Recording**

**Stream Types:** H.264 @ 120 FPS or MJPEG @ 60 FPS

**Video File Format:** AVI

**Record Modes:** continuous recording, schedule recording, event recording

**Playback**

**Method:** Playback with popular media players (FFDShow codec required) or with customized software (programmed by SDK)

**Video Download:** Remote download via FTP

**Storage**

**Disk Interface:** 1 SATA interface for 2.5-inch hard disk or SSD (solid state disk)

**Disk Tray:** Removable disk tray

**Note:** The 2.5-inch hard disk and SSD need to be purchased and installed by the user.

## Network

**Protocols:** TCP, UDP, HTTP, SMTP, FTP, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, IGMPv3, QoS, SNMPv1/v2c/v3, DDNS, DHCP OPT66/67

**Ethernet:** 1 10/100BaseT(X), M12 connector

## Serial Port

**Console Port:** 1, RS-232 RJ45 port

## GPIO

**Digital Inputs:** 4, max. 8 mA

Low: +13 V to +30 V; High: -30 V to +3 V

**Relay Output:** 1, max. 24 VDC @ 1A

**Connector:** DB9

## LED Indicators

**STAT:** System status

**10/100:** 10Mbps or 100Mbps

**Power:** Power on/off

**HDD:** Storage disk status

**FAULT:** Can be configured to correspond to disconnected network

**V1, V2, V3, V4:** 1, 2, 3, 4 video inputs activity

## Power Requirements

**Input Voltage:** 1, 12 VDC or 24 VDC input, 5-pin M12 connector

**Power Consumption:** Max. 11.5 W (with 1 2.5-inch HDD)

## Physical Characteristics

**Housing:** Metal

**Dimensions:** 92.8 x 135 x 150.4 mm (3.93 x 5.31 x 5.93 in)

**Installation:** Panel mounting or DIN-rail mounting

## Security

**Password:** User level password protection

**Filtering:** By IP address

**Authentication:** 802.1X

## Alarms

**Video Motion Detection:** Includes sensitivity settings

**Video Loss:** Video loss alarm

**Scheduling:** Daily repeat timing schedule

**Imaging:** JPEG snapshots for pre/trigger/post alarm images

**Video Recording:** Event recording to the hard disk (if installed)

**Email/FTP Messaging:** Automatic transfer of stored images via email or FTP as event-triggered actions

**Custom Alarms:** HTTP event servers and CGI events for setting customized alarm actions

**Pre-alarm Buffer:** 16 MB video buffer for JPEG snapshot images

## Environmental Limits

### Operating Temperature:

Standard Model: 0 to 60°C (32 to 140°F)

Wide Temp. Model: -40 to 75°C (-40 to 167°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Conformal Coating:** Available on request

## Standards and Certifications

**Safety:** UL 60950-1

**EMI:** FCC Part 15, CISPR (EN55022) class A

**EMS:** EN 61000-4-2 (ESD), Level 3; EN 61000-4-3 (RS), Level 3;

EN 61000-4-4 (EFT), Level 3; EN 61000-4-5 (Surge), Level 3;

EN 61000-4-6 (CS), Level 3; EN 61000-4-8; EN 61000-4-11

**Rolling Stock:** EN 50155:2007 compliance (shock, vibration, temperature, EMC)

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** EN/IEC 61373 (with Toshiba 2.5-inch hard disk)

*Note: Please check Moxa's website for the most up-to-date certification status.*

## Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Minimum Viewing System Requirements

**CPU:** Pentium 4, 2.4 GHz

**Memory:** 512 MB of memory

**OS:** Windows XP/2000 with SP2 or above

**Browser:** Internet Explorer 6.x or above

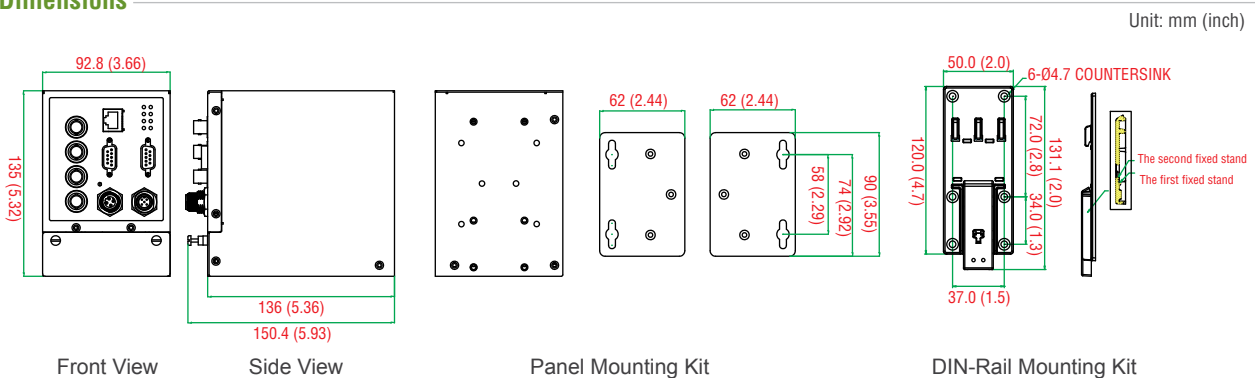
**Multimedia:** DirectX 9.0c or above

## Software Development Kit

**VPort SDK PLUS:** Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third-party developers (the latest version of SDK is available for download from Moxa's website).

**Standard:** ONVIF

## Dimensions



## Ordering Information

### Available Models

**MxNVR-MO4:** 4-channel H.264/MJPEG industrial video recorder, 1 SATA socket, M12 Ethernet connector, 0 to 60°C operating temperature

**MxNVR-MO4-T:** 4-channel H.264/MJPEG industrial video recorder, 1 SATA socket, M12 Ethernet connector, -40 to 75°C operating temperature

**Note:**

1. The MxNVR-MO4 does not include a hard disk or SSD; users must purchase a drive separately.
2. The hard disk or SSD is not included in the MxNVR-MO4's 5-year warranty.
3. An SSD is required for the MxNVR-MO4-T to meet wide operating temperature specifications.
4. Conformal coating is available on request.

### Optional Accessories (can be purchased separately)

**SoftNVR-IA V3.0:** 64-channel IP surveillance software for industrial automation applications

**DR-4524/75-24/120-24:** 45/75/120 W DIN-Rail 24 VDC power supplies

**MDR-40-24/60-24:** 40/60 W DIN-Rail 24 VDC power supplies, -20 to 70°C operating temperature

**DK-DC50131:** DIN-Rail Mounting Kit, 50x131 mm

### Package Checklist

- MxNVR-MO4 network video recorder
- Panel mounting kit and 6 screws
- 4 hard disk screws
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card