

MXNVR-RO-T

Industrial network video recorder for harsh environments



- > Complies with all EN 50155 mandatory test items*
- > -40 to 70°C (TX temperature) operating temperature range, without a fan
- > Record 1080P (1920 x 1080) images at up to 450 FPS
- > Live view of 720P (1280 x 720) images at up to 120 FPS
- > Multi-channel live view in 1/4 layout
- > Redundant video recording
- > Two built-in hot-swappable storage trays for 2.5" SSDs or HDDs
- > ONVIF support for standardization and interoperability

*This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: www.moxa.com/doc/specs/EN_50155_Compliance.pdf



Introduction

The MXNVR-RO-T is an onboard NVR (network video recorder) specially designed for live viewing and recording video on trains. It is compliant with mandatory sections of EN 50155 (performance, TX temperature, shock vibration), which allows the onboard CCTV system to operate in critical onboard environments (requires solid-state disks

that supports -40 to 70°C operating temperatures). The MXNVR-RO-T can record 1080P (1920 x 1080) images at up to 450 FPS, and supports live view of 720P (1280 x 720) images at up to 120 FPS. The user interface is compatible with a touch panel, and is designed for use by train engineers and operators.

Specifications

Recording

Recording Capability: Record 1080P (1920 x 1080) images at up to 450 FPS

Record Modes: Continuous, Schedule, Event

Stream Types: Video, Audio, Video/Audio

Video Input: IP video via Ethernet

Video Codecs: H.264, MPEG4, MJPEG

Audio Input/Output: 1 line-in, 1 line-out, M12 connector

Audio Format: PCM (G.711), AAC

Event Record: Triggered by CGI/DI digital input, motion detection, or time period

Pre/Post Record: 1 to 600 seconds (can be exported as a single video file)

Recycling Record: Enable/ Disable

Authentication:

- Digital Signature, Onvif export file format compliant
- Hash Function: SHA-256
- Encryption: RSA (key length 512 bits)
- Padding scheme: RSA-PSS

Local Live View

Display Capability: 720P (1280 x 720) images at up to 120 FPS

Display Mode: 1/4 multi-channel layout

Display Sequence: Based on a multi-channel layout

Monitor Interfaces: 2, 1 VGA DB15 female connector, 1 DVI-D connector

Snapshot Images: Save snapshot images to JPEG/PNG format

Searching and Exporting

Search Modes: Camera, date/time, event

Exporting: Export (download) recorded video files remotely by file or time period

Exporting File Formats: MP4

Authentication: Export recorded video files with watermark

Playback

Method: Export (download) video files for playback

Playback Modes: Continuous, timeline

Playback Operation: Play, Pause, Stop, Fast Forward, Fast Rewind

Storage

Disk Interface: 2 hot-swappable 2.5" SATAII sockets

Note: Storage disks are not included. Users will need to purchase 2.5" hard disks or SSDs (solid state disks) from a hard disk vendor.

Display Interface

VGA Interface: DB15 female connector, 2048 x 1536 resolution (max.)

DVI Interface: DVI-D connector (Chrontel CH7307 SDVO to DVI transmitter), 1920 x 1200 resolution (max.)

Network

Ethernet: 2 auto-sensing 10/100/1000 Mbps ports (M12 X-coded)

Network Configuration: IP address, subnet mask, gateway, DNS servers

Digital Input

Input Channels: 6, source type

Input Voltage: 0 to 30 VDC at 25 Hz

Digital Input Levels for Dry Contacts:

- Logic level 0: Close to GND
- Logic level 1: Open

Digital Input Levels for Wet Contacts:

- Logic level 0: +3 V max.
- Logic level 1: +10 V to +30 V (Source to DI)

Isolation Protection: 3 kV

Digital Output

Output Channels: 2, sink type
Output Current: 200 mA (max.) per channel
On-State Voltage: 24 VDC nominal, open collector to 30 VDC
Connector Type: 10-pin screw-fastened terminal block (6 DI points, 2 DO points, DI Source, GND)
Isolation: 3 kV optical isolation

LED Indicators

System: Power x 1, Storage x 1
LAN: 100M/Link x 2, 1000M/Link x 2
Serial: TX x 2, RX x 2

Power Requirements

Input Voltage: 24 to 110 VDC, M12 connector
Input Current: 2.5 A @ 24 VDC to 0.55 A @ 110 VDC (without SSD/HDD attached)
Power Consumption: 60 W (without SSD/HDD attached)

Physical Characteristics

Housing: Aluminum
Dimensions: 287 x 290 x 101 mm (11.29 x 11.41 x 3.97 in)
Weight: 5 kg (11.02 lb)
Installation: Wall mounting (standard)

Environmental Limits

Operating Temperature: -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)

Standards and Certifications

Safety: UL 60950-1, CSA C22.2 No. 60950-1-07, EN 60950-1
Rail Traffic: EN 50155*, EN 50121-4, IEC 61373

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EMC: EN 55032/24

EMI: CISPR 32, FCC Part 15B Class A

EMS:

IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
 IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m
 IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV
 IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV
 IEC 61000-4-6 CS: 10 V
 IEC 61000-4-8

Green Product: RoHS, CRoHS, WEEE

MTBF (mean time between failures)

Time: 261,297 hrs

Standard: Telcordia SR332

Warranty

Warranty Period: 3 years

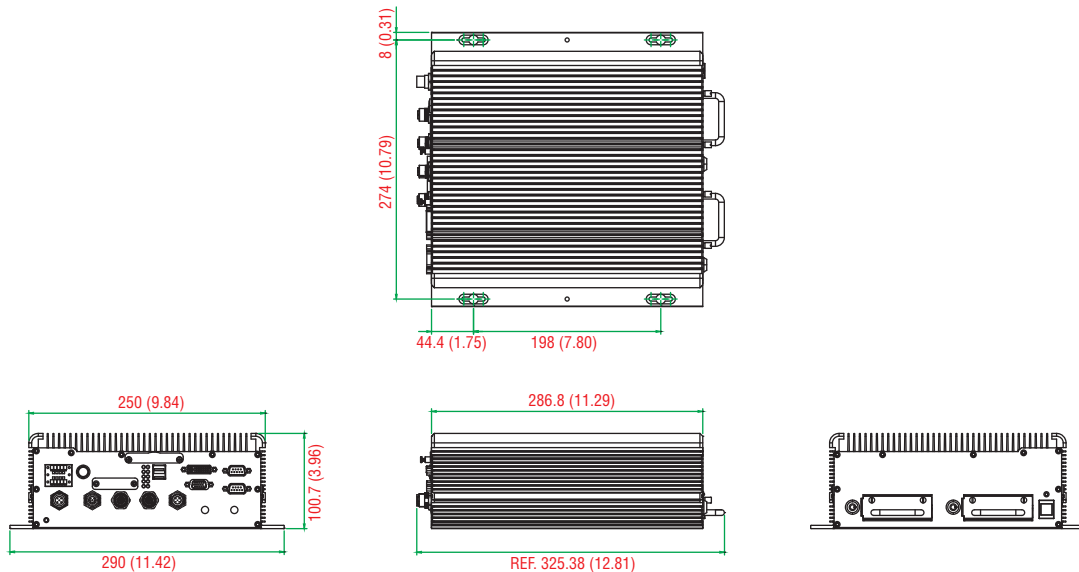
Details: See www.moxa.com/warranty

Minimum Viewing System Requirements

Note: These specifications describe the network video recorder itself, but not its official accessories. In particular, the wide temperature range supported by this product does not apply to accessories such as power adapters and cables.

Dimensions

Unit: mm (inch)



Ordering Information












Available Models

MXNVR-RO-T: Onboard NVR, x86 embedded computer with Intel Core i7-3517UE, VGA, DVI, 2 LANs, 2 serial ports, 6 DIs, 2 DOs, 3 USB 2.0 ports, 24 to 110 VDC power, Windows Embedded Standard 7, -40 to 70°C operating temperature (EN 50155 Class TX)

Package Checklist

- MXNVR-RO-T NVR
- 2 storage tray keys
- Power cable (CBL-M12FF5PPJ21-BK-15-IP68)
- 2 5-pin terminal blocks
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Optional Accessories (can be purchased separately)

Type	Model	Description
Ethernet		
 Cable & Connector	CBL-M12XMM8PRJ45-BK-100-IP67	1-meter X-coded M12-to-RJ45 Cat-5E UTP gigabit Ethernet cable, 8-pin male M12 connector, IP67-rated
 Connector	M12X-8PMM-IP67	Field-installable X-coded screw-fastened gigabit Ethernet connector, 8-pin male M12 connector, IP67-rated
Power		
 Connector	M12A-5P-IP68	Field-installable A-coded screw-fastened power connector, 5-pin female M12 connector, IP68-rated
 Power Adapter	PWR-24250-DT-S1	Input: 100 to 240 VAC, 50 to 60 Hz, 1.5 A Output: 24 VDC, 2.5 A, 60 W, for testing and system development in the office under ambient temperature conditions
 Power Cord	PWC-C7US-2B-183	Power cord with 2-pin connector, US plug
 Power Cord	PWC-C7EU-2B-183	Power cord with 2-pin connector, EU plug
 Power Cord	PWC-C7UK-2B-183	Power cord with 2-pin connector, UK plug
 Power Cord	PWC-C7AU-2B-183	Power cord with 2-pin connector, AU plug
 Power Cord	PWC-C7CN-2B-183	Power cord with 2-pin connector, CN plug
Audio		
 Connector	M12A-8PMM-IP67	Field-installable A-coded 8-pin male screw-fastened M12 connector, IP67-rated
USB		
 Connector	M12A-5PMM-IP68	D-coded screw-fastened USB connector, 5-pin male M12 connector, IP68-rated