

AXIS Q1961-XTE Explosion-Protected Thermal Camera

Class/Division 2- and Zone 2-certified thermometric camera

Designed and certified for Zone and Division 2 hazardous areas, this compact and lightweight explosion-protected camera can remotely monitor temperatures from -40 °C to 350 °C (-40 °F to 660 °F). You'll receive a notification if the temperature exceeds or falls below a set threshold. It will also send a notification if the temperature increases or decreases too rapidly. It supports up to 10 configurable polygonal detection areas, and spot temperature reading shows the exact temperature in specific areas. Furthermore, Axis Edge Vault, a hardware-based cybersecurity platform, safeguards the device and protects sensitive information from unauthorized access.

- > **Thermometric for remote temperature measuring**
- > **Configurable temperature monitoring areas**
- > **Spot temperature reading**
- > **Worldwide hazardous area certifications**
- > **Built-in cybersecurity with Axis Edge Vault**



AXIS Q1961-XTE Explosion-Protected Thermal Camera

Camera

Variants

AXIS Q1961-XTE 7 mm 8.3 fps
AXIS Q1961-XTE 7 mm 30 fps

Image sensor

Uncooled microbolometer 384x288 pixels, pixel size 17 μm .
Spectral range: 8-14 μm

Lens

Athermalized
Horizontal field of view: 55°, F1.18
Minimum focus distance: 1.3 m (4.3 ft)

Sensitivity

NETD 40 mK @25C, F1.0

Thermometry

Object temperature range

-40 °C to 350 °C (-40 °F to 662 °F)

Temperature accuracy

Below 120 °C (248 °F): ± 5 °C (± 9 °F) accuracy
Above 120 °C (248 °F): $\pm 15\%$ accuracy

Detection range

We recommend the size of a monitored object to cover at least 10x10 pixels in 384x288.

General

Spot temperature meter, up to 10 polygon temperature detection areas

System on chip (SoC)

Model

ARTPEC-8

Memory

2048 MB RAM, 8192 MB Flash

Compute capabilities

Deep learning processing unit (DLPU)

Video

Video compression

H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles
H.265 (MPEG-H Part 2/HEVC) Main Profile
Motion JPEG

Resolution

Sensor is 384x288. Image can be scaled up to 768x576.

Frame rate

Up to 8.3 fps or 30 fps

Video streaming

Up to 20 unique and configurable video streams¹
Axis Zipstream technology in H.264 and H.265
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265
Video streaming indicator

Image settings

Contrast, brightness, sharpness, local contrast, exposure zones, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, text and image overlay, polygon privacy mask, electronic image stabilization, multiple color palettes

Image processing

Axis Zipstream

Audio

Features

AGC automatic gain control
Speaker pairing
Spectrum visualizer²

Streaming

Configurable duplex:
One-way (simplex, half duplex)

1. We recommend a maximum of 3 unique video streams per camera or channel, for optimized user experience, network bandwidth, and storage utilization. A unique video stream can be served to many video clients in the network using multicast or unicast transport method via built-in stream reuse functionality.
2. Feature available with ACAP

Input

Input through speaker pairing
10-band graphic equalizer
Input for external unbalanced microphone, optional 5 V microphone power
Digital input, optional 12 V ring power
Unbalanced line input

Output

Output through speaker pairing

Encoding

24bit LPCM, AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz
Configurable bit rate

Network

Network protocols

IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS³, HTTP/2, TLS³, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, PTP, NTS, RTSP, RTP, SRTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, SSH, LLDP, CDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS), Link-Local address (ZeroConf)

System integration

Application Programming Interface

Open API for software integration, including VAPIX® and AXIS Camera Application Platform (ACAP); specifications at axis.com/developer-community.
One-click cloud connection
ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specifications at onvif.org

Video management systems

Compatible with AXIS Camera Station Edge, AXIS Camera Station Pro, AXIS Camera Station 5, and video management software from Axis' partners available at axis.com/vms.

Onscreen controls

Electronic image stabilization
Heater

Event conditions

Application: early fire detection
Audio: audio detection, audio clip playing, audio clip currently playing
Call: state, state change
Device status: above operating temperature, above or below operating temperature, below operating temperature, within operating temperature, IP address removed, new IP address, network lost, system ready, ring power overcurrent protection, live stream active
Digital audio input status
Edge storage: recording ongoing, storage disruption, storage health issues detected
I/O: digital input, manual trigger, virtual input
MQTT: subscribe
Scheduled and recurring: schedule
Video: average bitrate degradation, tampering, temperature detection (above/below/increasing/decreasing)

Event actions

Audio clips: play, stop
I/O: toggle I/O once, toggle I/O while the rule is active
MQTT: publish
Notification: HTTP, HTTPS, TCP, and email
Overlay text
Pre- and post-alarm video or image buffering for recording or upload
Recordings: SD card and network share
SNMP traps: send, send while the rule is active
Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share, and email

Built-in installation aids

Pixel counter

Analytics

Applications

Included

AXIS Video Motion Detection, AXIS Motion Guard, AXIS Fence Guard, AXIS Loitering Guard, early fire detection, active tampering alarm, audio detection

Supported

AXIS Perimeter Defender
Support for AXIS Camera Application Platform enabling installation of third-party applications, see axis.com/acap

Approvals

Product markings

ATEC, IECEX, cULus, INMETRO, IA, JPEX, KCs, PESO, TD

3. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (ey@cryptsoft.com).

Supply chain

TAA compliant

EMC

CISPR 35, CISPR 32 Class A, EN 55035, EN 55032 Class A, EN 50121-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, IEC 62236-4

Australia/New Zealand: RCM AS/NZS CISPR 32 Class A

Canada: ICES-3(A)/NMB-3(A)

Japan: VCCI Class A

Korea: KS C 9832 Class A, KS C 9835

USA: FCC Part 15 Subpart B Class A

Railway: IEC 62236-4

Safety

CAN/CSA C22.2 No. 62368-1 ed. 3,

IEC/EN/UL 62368-1 ed. 3, IS 13252

Environment

IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66/IP67, IEC/EN 62262 IK10⁴, ISO 21207 Method B, NEMA 250 Type 4X

Network

NIST SP500-267

Cybersecurity

ETSI EN 303 645, BSI IT Security Label, FIPS 140

Explosion

IEC/EN 60079-0, IEC/EN 60079-7, IEC/EN 60079-31, UL 60079-0, UL 60079-7, UL 60079-31, CSA C22.2 No. 60079-0, CSA C22.2 No. 60079-7, CSA C22.2 No. 60079-31, CSA C22.2 No. 213-17, UL121201

Certifications

ATEX:

II 3 G Ex ec IIC T4 Gc

II 2 D Ex tb IIIC T135°C Db

Certificate: UL 22 ATEX 2732X, UL 22 ATEX 2888X

IECEX:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

Certificate: ULD 22.0011X

cULus:

Class I Div 2 Group A, B, C, D T4

Class II Div 2 Group F, G T135°C T4

Class III Div 2

Class I Zone 2 AEx ec IIC T4 Gc

Zone 21 AEx IIIC T135°C Db

Certificate: E525121

INMETRO:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

Certificate: NCC 25.0028 X

IA:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

Certificate: MASC S/23-8118X

OSHA Taiwan:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

Certificate: TD100043

PESO:

Ex ec IIC T4 Gc

Certificate: P603185/2

Korea:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

Certificate: 24-KA4BO-0713X and 24-KA4BO-0714X

JPEX:

Ex ec IIC T4 Gc

EX tb IIIC T135°C Db

Certificate: DEK24.0037X

Cybersecurity

Edge security

Software: Signed OS, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 Client Credential Flow/OpenID Authorization Code Flow for centralized ADFS account management, password protection, Axis Cryptographic Module (FIPS 140-2 level 1)

Hardware: Axis Edge Vault cybersecurity platform TPM 2.0 (CC EAL4+, FIPS 140-2 Level 2), secure element (CC EAL 6+), system-on-chip security (TEE), Axis device ID, secure keystore, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)

Network security

IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)⁵,
IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR,
HTTPS/HSTS⁵, TLS v1.2/v1.3⁵, Network Time Security
(NTS), X.509 Certificate PKI, host-based firewall

Documentation

AXIS OS Hardening Guide

Axis Vulnerability Management Policy

Axis Security Development Model

AXIS OS Software Bill of Material (SBOM)

To download documents, go to axis.com/support/cybersecurity/resources

To read more about Axis cybersecurity support, go to axis.com/cybersecurity

General

Casing

IP66/IP67-, NEMA 4X-, and IK10-rated⁶
Polycarbonate blend and aluminum, germanium
window
Color: gray NCS S 5502-B

Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1
Class 3
Typical 4.3 W, max 12.95 W
10–28 V DC, typical 4.1 W, max 12.95 W

Connectors

Network: Shielded RJ45 10BASE-T/100BASE-TX/
1000BASE-T PoE
I/O: Terminal block for 1 supervised alarm input and 1
output (12 V DC output, max. load 50 mA)
Audio: 3.5 mm mic/line in
Power: DC input, terminal block

Storage

Support for microSD/microSDHC/microSDXC card
Recording to network-attached storage (NAS)
For SD card and NAS recommendations see axis.com

Operating conditions

–30 °C to 60 °C (–22 °F to 140 °F)
Humidity 10–100% RH (condensing)

Storage conditions

–40 °C to 65 °C (–40 °F to 149 °F)
Humidity 5–95% RH (non-condensing)

Dimensions

For the overall product dimensions, see the dimension
drawing in this datasheet.

Effective Projected Area (EPA): 0.022 m² (0.24 ft²)

Weight

1.5 kg (3.3 lb)

Box content

Camera, installation guide, TORX® L-keys, terminal
block connectors, connector guard, cable gaskets,
owner authentication key

System tools

AXIS Site Designer, AXIS Device Manager, product
selector, accessory selector, lens calculator
Available at axis.com

Languages

English, German, French, Spanish, Italian, Russian,
Simplified Chinese, Japanese, Korean, Portuguese,
Polish, Traditional Chinese, Dutch, Czech, Swedish,
Finnish, Turkish, Thai, Vietnamese

Warranty

5-year warranty, see axis.com/warranty

Export control

This product is subject to export control regulations,
and you should always comply with all applicable
national and international export or re-export control
regulations.

Part numbers

Available at axis.com/products/axis-q1961-xte#part-numbers

Sustainability

Substance control

PVC free, BFR/CFR free in accordance with JEDEC/ECA
Standard JS709
RoHS in accordance with EU RoHS Directive 2011/65/
EU and 2015/863 EN IEC 63000:2018
REACH in accordance with (EC) No 1907/2006.

Materials

Screened for conflict minerals in accordance with OECD
guidelines
To read more about sustainability at Axis, go to axis.com/about-axis/sustainability

5. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eyay@cryptsoft.com).

6. Excluding front window

Environmental responsibility

axis.com/environmental-responsibility

Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*



Highlighted capabilities

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It forms the foundation that all secure operations depend on and offer features to protect the device's identity, safeguard its integrity and protect sensitive information from unauthorized access. For instance, **secure boot** ensures that a device can boot only with **signed OS**, which prevents physical supply chain tampering. With signed OS, the device is also able to validate new device software before accepting to install it. And the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc.) against malicious extraction in the event of a security breach. The secure keystore and secure connections are provided through a Common Criteria or FIPS 140 certified hardware-based cryptographic computing module.

Furthermore, signed video ensures that video evidence can be verified as untampered. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream allowing video to be traced back to the Axis camera from where it originated.

To read more about Axis Edge Vault, go to axis.com/solutions/edge-vault.

Isothermal palette

A mode that allows the user to select a color range to represent different temperatures in a scene. Each color in an isotherm palette corresponds to a specific temperature value. The user can choose between black-and-white ranges, color ranges, or a mix between the two. The same input (measured thermal radiation) can result in different visual appearance depending on how each pixel value is mapped to a color range.

Thermometry

Thermal cameras detect objects using the infrared radiation (heat) emitted by all objects. Temperature-calibrated thermal cameras, called thermometric cameras, can measure absolute temperatures, while surveillance-optimized thermal cameras show relative temperatures. All types of thermal cameras have excellent object detection capabilities regardless of light conditions – even in total darkness.

Zone/Division 2

Hazardous areas are divided into zones or divisions, defined by the probability that hazardous material will be present in an ignitable concentration in the surrounding atmosphere.

Zone/Division 2 areas are less hazardous than Zone/Division 1 areas, and explosions are not likely to occur during normal operations.

With 'Ex e' or 'non-incendive' protection, cameras certified for Zone/Division 2 offer increased safety. This explosion-protection approach ensures that no arcs and sparks can appear, and that excessive temperatures can't be reached, during normal operation of electrical equipment. As a result, electrical equipment using 'Ex e' protection can't ignite gas or dust in the surrounding potentially combustible environment.

For more information, see axis.com/glossary