

AXIS F9104-B Mk II Main Unit

AI-based, 4-channel barebone main unit for integration

This 4-channel barebone unit offers up to 4K at 12/15 fps and you can use up to four different sensor units simultaneously. UL-recognized, it's perfect for integration into UL-certified end products. A deep learning processing unit runs advanced features and powerful analytics at the edge. For instance, AXIS Object Analytics can detect, classify, track, and count humans and types of vehicles. With FAKRA connectors, it ensures secure installation. Furthermore, Axis Edge Vault, a hardware-based cybersecurity platform, safeguards the device and offers FIPS 140-2 Level 2 certified key storage and operations.

- > **UL recognized component**
- > **4-channel main unit with up to 4K at 12/15 fps**
- > **FAKRA connectors**
- > **Support for powerful analytics**
- > **Built-in cybersecurity with Axis Edge Vault**



AXIS F9104-B Mk II Main Unit

System on chip (SoC)

Model
ARTPEC-8

Memory
4096 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
Up to 3840x2160 8Mp¹
Up to 2592x1944 5Mp¹
Up to 1920x1080 HDTV 2Mp¹

Frame rate
Up to 60/50 fps (60/50 Hz) in all resolutions²

Video streaming
Multiple, individually configurable streams in H.264, H.265 and Motion JPG
Axis Zipstream technology in H.264 and H.265
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265
Low latency mode
Video streaming indicator

Signal-to-noise ratio
>55 dB

Image settings
Contrast, brightness, sharpness, white balance, tone mapping, exposure mode, exposure zones, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, dynamic text and image overlay, privacy masks, polygon privacy mask

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/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, 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
Privacy masks

Event conditions
Application
Device status: above/below/within operating temperature, IP address blocked, IP address removed, live stream active, network lost, new IP address, system ready, ring power overcurrent protection, shock detected
Edge storage: recording ongoing, storage disruption, storage health issues detected
I/O: manual trigger, virtual input is active
MQTT: MQTT Client connected, stateless
Scheduled and recurring: pulse, schedule
Video: average bitrate degradation, tampering, video source connected

1. Resolution varies depending on the sensor unit used.

2. For main units and sensor units capture mode specifications, see capture mode table.

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).

Event actions

LEDs: flash status LED, flash status LED while the rule is active
MQTT: publish
Notification: HTTP, HTTPS, TCP and email
Overlay text
Recordings: SD card and network share
Security: erase configuration
SNMP traps: send, send while the rule is active
Images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email
WDR mode

Analytics

Applications

Included

AXIS Object Analytics, AXIS Scene Metadata, AXIS Video Motion Detection, AXIS Sensor Metrics Dashboard:
Modbus over serial: Protocol: Modbus RTU, Port mode: RS485 2-wire
Modbus over IP: Protocol: Modbus TCP, Port mode: Ethernet on switch

Supported

AXIS Perimeter Defender, AXIS People Counter

Applications supported on 4 channels: AXIS Object Analytics

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

AXIS Object Analytics

Object classes: humans, vehicles (types: cars, buses, trucks, bikes, other)

Scenarios: line crossing, object in area, time in area, crossline counting, occupancy in area, tailgating detection, PPE monitoring^{BETA}, motion in area, motion line crossing

Up to 10 scenarios

Other features: triggered objects visualized with trajectories, color-coded bounding boxes and tables
Polygon include/exclude areas

Perspective configuration

ONVIF Motion Alarm event

AXIS Scene Metadata

Object classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates

Object attributes: vehicle color, upper/lower clothing color, confidence, position

Approvals

Product markings

UL/cUL, CE, KC, VCCI, FCC

Environment

IEC 60068-2-1, IEC 60068-2-2

Network

IPv6 USGv6, NIST SP500-267

Cybersecurity

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

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
Secure keystore: TPM 2.0 (CC EAL4+, FIPS 140-2 Level 2), secure element (CC EAL 6+), system-on-chip security (TEE)

Axis device ID, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)

Network security

IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)⁴, IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS⁴, TLS v1.2/v1.3⁴, 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

Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 2 Class 4

10–48 VDC, typical 11.5 W, max 25.5 W

⁴ 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).

Connectors

Network: RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE
FAKRA: 4x for sensor units
Power: 3-pin terminal block for 10–48 V DC input
Data transfer: 1x USB 2.0 Type A, max load 500 mA, supported USB class: Vendor specific

Storage

Support for microSD/microSDHC/microSDXC card
Support for SD card encryption (AES-XTS-Plain64 256bit)
Recording to network-attached storage (NAS)
For SD card and NAS recommendations see axis.com

Operating conditions

Temperature: –40 °C to 60 °C (–40 °F to 140 °F)
Humidity: 10–95% RH (non-condensing)

Storage conditions

Temperature: –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

115 g (0.25 lb)

Required hardware

AXIS TU6007-E Cable, AXIS TU6004-E Cable,
AXIS TU6005 Plenum Cable, AXIS F21 Sensor Unit,
AXIS F41 Sensor Unit, AXIS F7225-RE Pinhole Sensor

Box content

Main unit, installation guide

Optional accessories

TU6001 Connector 3-pin, Connector A 2-pin,
TU6009 Connector 6-PIN, TF9902 Surface Mount
AXIS Surveillance Cards
For more accessories, go to axis.com/products/axis-f9104-b-mk-ii-main-unit#accessories

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

Part numbers

Available at axis.com/products/axis-f9104-b-mk-ii-main-unit#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, and standard EN IEC 63000:2018
REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see echa.europa.eu

Materials

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

Environmental responsibility

axis.com/environmental-responsibility
Axis Communications is a signatory of the UN Global Compact, read more at unglobalcompact.org

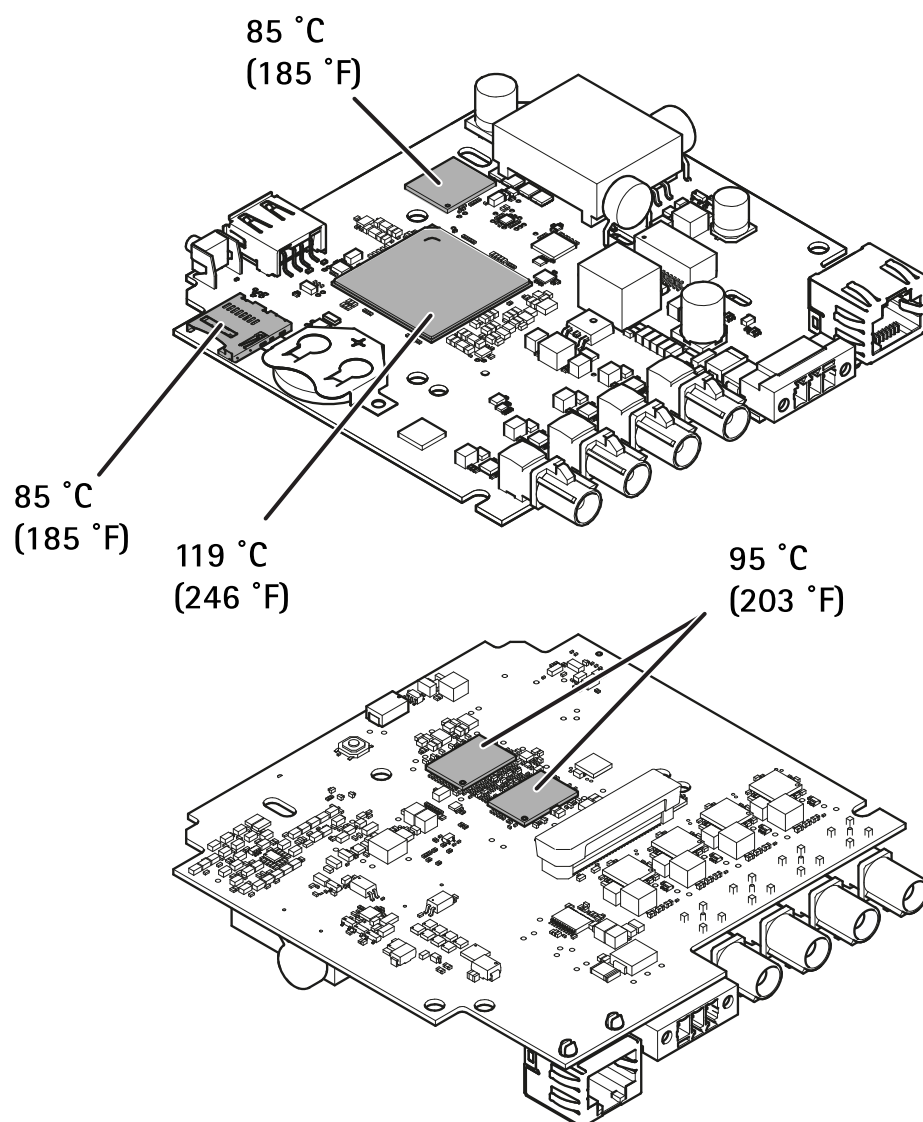
Capture mode

Capture mode includes resolution, frame rate, and shutter speed for the main unit in combination with different sensor units.

Sensor unit	Resolutions	Exposure	Frame rate (fps) (60/50Hz)	Shutter speed (seconds)
2 MP sensor units	1080p: 1920x1080	Without WDR	30/25	1/20000 to 1.5 s
		WDR	30/25	1/20000 to 1.5 s
	720p: 1280x720	Without WDR	60/50	1/32500 to 1/2 s
5 MP sensor units	5 MP: 2592x1944	Without WDR	20/20	1/18000 s to 1 s
		WDR	20/20	1/18000 s to 1 s
	Quad HD: 2560x1440	Without WDR	30/25	1/18000 s to 1 s
		WDR	30/25	1/18000 s to 1 s
8 MP sensor units (not yet released)	8 MP: 3840x2160	Without WDR	15/12.5	
		WDR	15/12.5	

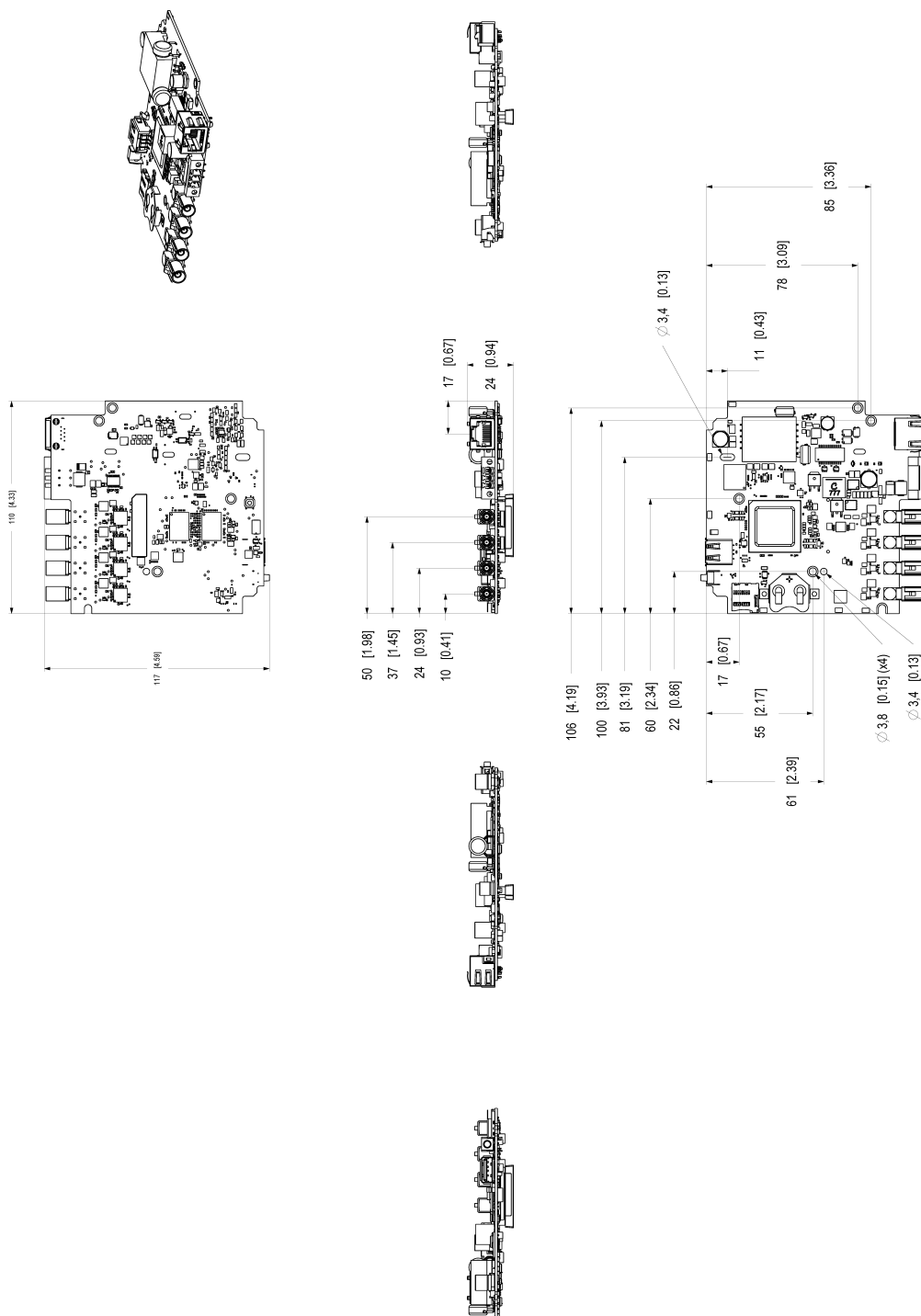
No WDR support for 720p: 1280x720. To get WDR, use 1080p: 1920x1080 and scale down.

AXIS F9104-B Mk II Main Unit



¹ Maximum allowable temperatures. If the ambient temperature is 35 °C (95 °F) or higher, the temperature of the components increases and they must be cooled.

Dimension drawing



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.

AXIS Object Analytics

AXIS Object Analytics is a preinstalled, multifeatured video analytics that detects and classifies humans, vehicles, and types of vehicles. Thanks to AI-based algorithms and behavioral conditions, it analyzes the scene and their spatial behavior within – all tailored to your specific needs. Scalable and edge-based, it requires minimum effort to set up and supports various scenarios running simultaneously.

Barebone

Main units exist in standard version (Main Unit) or barebone version (Main Unit Barebone). Barebone here refers to standard version without chassis. A barebone product is ideal for integration into other devices.