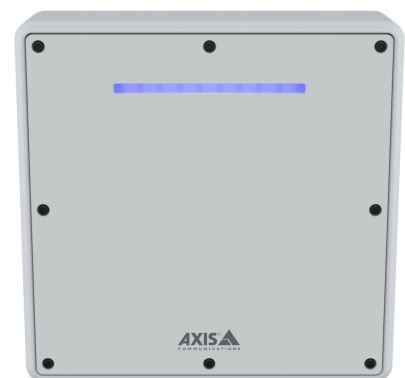


AXIS D2210-VE Radar

60 GHz radar for area and traffic monitoring 24/7

This network-based device uses advanced radar technology to accurately detect, classify, and track humans and vehicles in various weather and light conditions. With the two-directional road monitoring profile enabled, it can monitor speeds up to 360 km/h (224 mph). Plus, the integrated dynamic LED strip can be used to deter, warn or notify. Or it can be switched off for more discrete monitoring. Furthermore, PoE out lets you power an additional device without an extra cable drop. For instance, you can add AXIS D2210-VE to an existing camera installation. Or connect a horn speaker to remotely address people or play prerecorded messages to deter unwanted activities.

- > 95° coverage to detect, classify, and track objects
- > Area and road monitoring profiles available
- > Monitor vehicle speeds up to 360 km/h (224 mph)
- > Easily connect with PoE out and edge-to-edge
- > Compact design with integrated LED strip



AXIS D2210-VE Radar

Radar

Profiles

One-directional road monitoring
Two-directional road monitoring
Area monitoring

Sensor

FMCW (Frequency Modulated Continuous Wave)

Object data

Object type (classes: humans, vehicles, unknown),
range, direction, velocity

Frequency

61.0–61.5 GHz⁽¹⁾

RF transmit power

<100 mW (EIRP)
License-free. Unharmful radio-waves.

Recommended mounting height

3.5–12 m (11–39 ft)⁽²⁾

Recommended mounting tilt

15°⁽³⁾

Detection range

Road monitoring profiles: Up to 150 m (492 ft) when
detecting a vehicle⁽⁴⁾

Area monitoring profile: 5–60 m (16–200 ft) when
detecting a person⁽⁵⁾

5–90 m (16–300 ft) when detecting a vehicle⁽⁶⁾

Speed

One-directional road monitoring profile: Up to
360 km/h (224 mph) for oncoming vehicles. Up to
280 km/h (174 mph) for departing vehicles.

Two-directional road monitoring profile: Up to
200 km/h (125 mph)

Area monitoring profile: Up to 55 km/h (34 mph)

Field of detection

Horizontal: 95°

Speed accuracy

+/- 2 km/h (1.25 mph)

Distance accuracy

Road monitoring profiles: 0.8 m (2.6 ft)

Area monitoring profile: 0.5 m (1.6 ft)

Angle accuracy

95% percentile is <1.2°⁽⁷⁾

Spatial differentiation

3 m⁽⁸⁾

Data refresh rate

10 Hz

Coverage

Area monitoring profile: 2700 m² (29000 sq ft) for
persons

6100 m² (65600 sq ft) for vehicles

Coexistence zone

Frequency band: 61 GHz

Radius: 350 m (1148 ft)

Recommended number of radars: up to 8

Radar controls

Multiple detection zones, line crossing detection with
one or two lines, exclude zones with filters for short-
lived objects, object speed, object type, configurable
trigger duration

Radar transmission on/off, grid opacity, zone opacity,
color scheme, trail lifetime, detection sensitivity,
swaying object filter, small object filter, frequency
channel, reference map calibration with options to
scale, pan, and zoom map

1. For road monitoring, center frequency is 61.340 GHz for channel 1 and 61.140 GHz for channel 2.

2. The mounting height affects the detection range. See the user manual at axis.com for more information.

3. The radar can be tilted 0–30°. When the back part of the chassis is level, the radar is tilted 15°. The mounting tilt affects the detection range. See the user manual at axis.com for more information.

4. Measured at 7 m mounting height, with 15° tilt. The mounting height, tilt and placement of the radar affects the detection range. The recommended placement of the radar is in front of or behind the moving vehicles. See the user manual at axis.com for more information.

5. Measured at 5 m mounting height, with 15° tilt. See the user manual at axis.com for more information.

6. Measured at 5 m mounting height, with 15° tilt. See user manual at axis.com for more information.

7. Max error 1.3°

8. Minimum distance between moving objects.

System on chip (SoC)

Model

ARTPEC-8

Memory

1048 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

1920x1080 to 640x360

Frame rate

Up to 10 fps in all resolutions

Video streaming

Up to 20 unique and configurable video streams⁽⁹⁾
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265
Video streaming indicator

Image settings

Compression, rotation: 0°, 90°, 180°, 270°, dynamic text and image overlay

Audio

Features

Speaker pairing

Output

Output via speaker pairing

Network

Network protocols

IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS⁽¹⁰⁾, HTTP/2, TLS⁽¹⁰⁾, 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), IEEE 802.1X (EAP-TLS), IEEE 802.1AR

System integration

Application Programming Interface

Open API for software integration, including VAPIX®, metadata 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, video management software from Axis' Application Development Partners available at axis.com/vms

Onscreen controls

Play media clip

Edge-to-edge

Speaker pairing

Camera pairing

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, radar data failure; interference, no data, tampering

Edge storage: recording ongoing, storage disruption, storage health issues detected

I/O: digital input, digital output, manual trigger, virtual input

MQTT: stateless

Radar motion detection

Scheduled and recurring: schedule

9. We recommend a maximum of 3 unique video streams per 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.

10. 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

I/O: toggle I/O once, toggle I/O while the rule is active
MQTT: publish
Notification: HTTP, HTTPS, TCP and email
Overlay text
Radar: dynamic LED strip, radar autotracking, radar detection
Recordings: SD card and network share
SNMP traps: send, send while the rule is active
Status LED: flash, flash while the rule is active
Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email

Data streaming

Radar metadata with relative position, GPS position,⁽¹¹⁾ velocity, direction, and object type

Built-in installation aids

Reference map calibration, sensor for tilt angle, GPS position

Analytics

Applications

Included
AXIS Speed Monitor, AXIS Radar Integration for Microbus
Support for AXIS Camera Application Platform enabling installation of third-party applications, see axis.com/acap

Supporting software

AXIS Radar Autotracking for PTZ (Slew to Cue)
For supported cameras, see axis.com/products/axis-radar-autotracking

Approvals

Product markings

CSA, UL/cUL, CE

Supply chain

TAA compliant

Wireless

EN 301489-1, EN 301489-3, EN 305550-2,
FCC Part 15 Subpart C

EMC

EN 55035, EN 55032 Class A, EN 50121-4,
EN 61000-3-3, EN 61000-6-1, EN 61000-6-2
Australia/New Zealand: RCM AS/NZS CISPR 32 Class A
Canada: ICES-3(A)/NMB-3(A)
USA: FCC Part 15 Subpart B Class A

Safety

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

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 IK10,
NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9)

Network

NIST SP500-267

Cybersecurity

ETSI EN 303 645, BSI IT Security Label, EN 18031-1

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), system-on-chip security (TEE), secure keystore, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)

Network security

IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)⁽¹²⁾,
IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR,
HTTPS/HSTS⁽¹²⁾, TLS v1.2/v1.3⁽¹²⁾, 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

11. Enter the radar's GPS position manually to get the objects' GPS position in the data stream.

12. 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).

General

Casing

IP66/IP67-, NEMA 4X- and IK10-rated

Aluminum casing

Color: white NCS S 1002-B

For repainting instructions, go to the product's support page. For information about the impact on warranty, go to axis.com/warranty-implication-when-repainting.

Power

Power over Ethernet (PoE) IEEE 802.3at, Type 2 Class 4
Typical 5.88 W, max 8 W

For PoE output: Power over Ethernet (PoE)

IEEE 802.3bt, Type 3 Class 6, max 38 W. The radar provides Power over Ethernet (PoE) IEEE 802.3at, Type 2 Class 4 (30 W) to a second device

10–28 V DC, typical 5 W, max 6.44 W

Connectors

Network: Shielded RJ45 10BASE-T/100BASE-TX/
1000BASE-T PoE

Network: RJ45 1000BASE-T PoE output to power an external PoE device

I/O: Terminal block for 1 supervised alarm input and 1 output (12 V DC output, max. load 50 mA)

Power: DC input, terminal block

Dynamic LED

Dynamic LED strip with RGB (red, green, blue) LEDs and predefined light patterns

Daylight visibility up to 60 m (197 ft)⁽¹³⁾

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

–40 °C to 60 °C (–40 °F to 140 °F)

Humidity 10–100% RH (condensing)

Wind speed (sustained): 75 m/s (168 mph)⁽¹⁴⁾

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): 0.023 m² (0.25 ft²)

Weight

1250 g (2.8 lb)

Box content

Radar, AXIS TQ1003-E Wall Mount, installation guide, TORX® T20 screw driver, TORX® T30 bit, terminal block connectors, connector guard, cable gaskets, owner authentication key

Optional accessories

AXIS T8415 Wireless Installation Tool

AXIS Surveillance Cards

For more accessories, go to axis.com/products/axis-d2210-ve-radar#accessories

System tools

AXIS Site Designer, AXIS Device Manager, product selector, accessory selector

Available at axis.com

Languages

English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese

Warranty

5-year warranty, see axis.com/warranty

Part numbers

Available at axis.com/products/axis-d2210-ve-radar#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

Renewable carbon-based plastic content: 20 % (recycled)

Screened for conflict minerals in accordance with OECD guidelines

To read more about sustainability at Axis, go to axis.com/about-axis/sustainability

13. In direct sunlight. The range increases in conditions with less light.

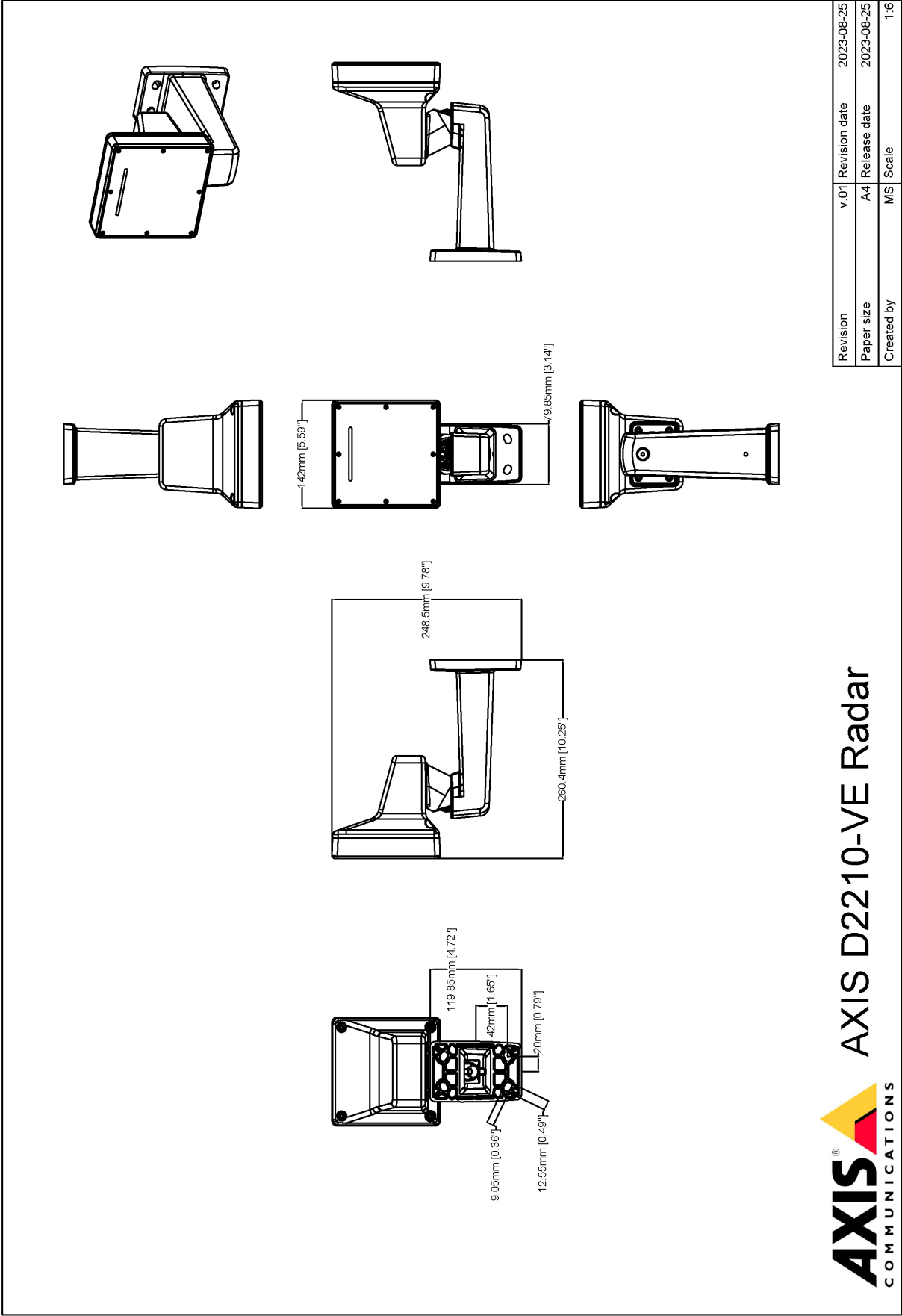
14. For drag force calculations, use Effective Projected Area (EPA).

Environmental responsibility

axis.com/environmental-responsibility

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

Dimension drawing



Highlighted capabilities

Radar profiles

Area monitoring is a detection profile for radar in surveillance use cases. Best used for objects moving up to 55km/h (34 mph). Detects whether an object is a human, a vehicle, or an unknown object.

Road monitoring is a detection profile for radar in traffic use cases. Best used to track vehicles moving at up to 200 km/h (125 mph) in urban zones, closed zones, and on suburban roads. This mode should not be used for the detection of humans or other types of objects. The ability for detection at high speeds is dependent on the Axis radar product in use.

Dynamic LED strip

Dynamic LED strip is a feature in selected Axis radars. With RGB (red, green, blue) LEDs and predefined light patterns, it can be used to deter, warn or notify.

Edge-to-edge

Edge-to-edge technology is a way to make IP devices communicate directly with each other. It offers smart pairing functionality between, for example, Axis cameras and Axis audio or radar products.

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.

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

For more information, see axis.com/glossary