AXIS D2110-VE Security Radar

Reliable area protection with 180° coverage 24/7

AXIS D2110-VE Security Radar is a smart network-based security device that uses advanced radar technology to deliver wide 180° coverage. Thanks to built-in analytics developed using machine learning and deep learning, it can accurately detect, classify and track people and vehicles with a low false alarm rate. Featuring PoE-out it's easy to connect and power an additional device, such as a camera for visual verification or a network horn speaker for deterrence. Furthermore, smart coexistence functionality allows the use of multiple radars close to each other. For instance, it's possible to mount two radars back-to-back for complete 360° coverage.

- > Extensive 180° area coverage
- > Built-in analytics
- > Low false alarm rate 24/7
- > Smart coexistence functionality
- > PoE-out to power additional devices

AXIS D2110-VE Security Radar

Radar

Profiles
Area monitoring
Road monitoring

Sensor
Phased array FMCW (Frequency Modulated Continuous Wave)

Object data
Range, direction, velocity, object type

Frequency
24.05–24.25 GHz

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

Recommended mounting height
3.5 m (11 ft)[1]

Detection range
Area Monitoring Profile: 3–60 m (10–200 ft) when detecting a person
3–85 m (10–280 ft) when detecting a vehicle
Road Monitoring Profile: 30–60 m (98–197 ft) at 105 km/h (65 mph)
Check the user manual for the recommended positioning

Radial speed
Area Monitoring Profile: up to 55 km/h (34 mph)
Road Monitoring Profile: up to 105 km/h (65 mph)

Field of detection
Horizontal: 180°

Speed accuracy
+/- 2 km/h (1.25 mph)

Distance accuracy
0.7 m (2.3 ft)

Angle accuracy
1°

Spatial differentiation
3 m (9 ft)[2]

Data refresh rate
10 Hz

Coverage
5600 m^2 (61000 sq ft) for persons
11300 m^2 (122000 sq ft) for vehicles

Coexistence zone
Frequency band: 24 GHz
Radius: 350 m (1148 ft)
Recommend number of radars: up to 6

Object classification
Humans, vehicles, unknown

Radar controls
Multiple detection zones, line crossing detection with one or two lines, exclude zones with filters for short-lived objects, object speed, and object type.
Radar transmission on/off, coexistence, grid opacity, zone opacity, color scheme, trail lifetime, detection sensitivity, swaying object filter, small object filter^{BETA}, stationary rotating object filter^{BETA}, reference map calibration with options to scale, pan, and zoom map

System on chip (SoC)

Model
ARTPEC-7

Memory
1024 MB RAM, 512 MB Flash

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

1. *Mounting at another height affects the detection range. For more information, go to axis.com*
2. *Minimum distance between moving objects.*

Resolution
1920x1080 HDTV 1080p to 640x360

Frame rate
Up to 10 fps in all resolutions

Video streaming
Multiple, individually configurable streams in H.264, H.265 and Motion JPEG
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265

Image settings
Compression, rotation: 0°, 90°, 180°, 270° including corridor format, dynamic text and image overlay

Audio

Streaming
Audio output via edge-to-edge technology

Input/output
Speaker pairing

Network

Network protocols
IPv4/v6, ICMPv4/ICMPv6, HTTP, HTTP/2, HTTPS[3], TLS[3], 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, 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; specifications at *axis.com*
One-click cloud connection
ONVIF® Profile G, ONVIF® Profile S, ONVIF® Profile T, and ONVIF® Profile M specification at *onvif.org*

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

Edge-to-edge
Speaker pairing
PTZ camera pairing

Analytics
Radar motion detection (detect, track, and classify objects), Radar autotracking
Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Event conditions
Application
Device status: above/below/within operating temperature, casing open, fan failure, 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, manual trigger, virtual input
MQTT: stateless
Radar motion detection
Scheduled and recurring: schedule

Event actions
I/O: toggle I/O once, toggle I/O while the rule is active
LEDs: flash status LED, flash status LED while the rule is active
MQTT: publish
Notification: HTTP, HTTPS, TCP and email
Overlay text
Radar: radar autotracking, radar detection
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

Data streaming
Event data
Analytics data with object GPS[4] position and velocity

Built-in installation aids
Reference map calibration, sensor for tilt angle, GPS position[5]

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 (eay@cryptsoft.com).*
4. *Enter the radar's GPS position manually to get object GPS position in the data stream.*
5. *Enter the radar's GPS position manually to get the objects' GPS position in the data stream.*

Approvals

EMC
EN 55032 Class A, EN 55024, EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, EAC
Australia/New Zealand: RCM AS/NZS CISPR 32 Class A
Canada: ICES-3(A)/NMB-3(A)
Japan: VCCI Class B
Korea: KC KN32 Class A
USA: FCC Part 15 Subpart B Class A

Safety
IEC/EN/UL 62368-1, IEC/EN/UL 60950-22

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, IEC/EN 62262 IK08, NEMA 250 Type 4X

Network
NIST SP500-267

Cybersecurity
ETSI EN 303 645, BSI IT Security Label, FIPS 140, EN 18031-1

Wireless
EN 300440, EN 301489-1, EN 301489-51, EN 62311, FCC Part 15 Subpart C

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

Network security
IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)[6], IEEE 802.1AE (MACsec PSK/EAP-TLS), HTTPS/HSTS[6], TLS v1.2/v1.3[6], 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-, NEMA 4X- and IK08-rated
Aluminum and plastic casing
Color: White NCS S 1002-B

Sustainability
PVC free

Power
Power over Ethernet (PoE) IEEE 802.3at, Type 2 Class 4, typical 11 W, max 15 W
For PoE output: Power over Ethernet (PoE) IEEE 802.3bt, Type 3 Class 5, or Axis 60 W midspans, max 38 W. The radar provides Power over Ethernet (PoE) IEEE 802.3at Type 2 Class 4 (30 W) to a second device.
8–28 V DC, typical 10 W, max 15 W

Connectors
DC input
RJ45 1000BASE-T PoE
RJ45 1000BASE-T PoE output to power an external PoE device
Relay: 2-pin terminal block
I/O: 6-pin 2.5 mm terminal block for four configurable inputs/outputs

Relays
1x 1 form A, 1 NO, max 5A, 24 V DC
Expected lifetime 25,000 operations

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)

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

Storage conditions
-40 °C to 65 °C (-40 °F to 149 °F)

Dimensions
285 x 206 x 152 mm (11.2 x 8.1 x 6.0 in)

Weight
2.4 kg (5.3 lb)

Included accessories
Installation guide, connector kit, pipe adapters, cable gland, cable gaskets, Windows® decoder 1-user license

Optional accessories
AXIS T91R61 Wall Mount
AXIS T91B47 Pole Mount
AXIS T94R01B Corner Bracket
AXIS T8415 Wireless Installation Tool
For more accessories, see *axis.com*

Applications
Radar motion detection (detect, track, and classify objects)
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*

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

Warranty
5-year warranty, see *axis.com/warranty*