AXIS A8X07-VE product description

The AXIS A8207-VE and AXIS A8307-VE are members of a new Axis product family. The only difference between the two products is that the AXIS A8207-VE has a static touch keypad, which is replaced with a touch display in the AXIS A8307-VE. Henceforth A8X07-VE will refer to both/any of the versions.

The A8X07-VE is a new network video door station in the Axis portfolio. With the capability to call different places the A8X07-VE covers important use cases that the previous Axis door stations could not. Like previous door stations the A8X07-VE: can be supplied through PoE+ or DCIN (8-28V), has general-purpose I/O-ports, got relays for operation of e.g. door strikes, capabilities for full duplex calls and high-quality video surveillance.

The A8X07-VE is configured over the TCP/IP network using the built-in graphical user interface. The internal time base (RTC) is battery backed up and uses temperature compensated oscillator for low time drift.

In addition to the touch-keypad/-display functionality the A8X07-VE contains several other new functionalities. Some of the most noteworthy being an integrated card reader, micro HDMI output, PIR-sensor, Wiegand- and RS485-reader interface and a telecoil.

Features

- Camera
- TCP/IP for communication with the host software and other devices
- Ease of installation
- Remote software update
- Wiegand- and RS485-interface for connection to an access controller e.g. AXIS A1601
- Two relays and 350mA@24V or 700mA@12V* power available for e.g. door locking/unlocking
- Two power inputs:
    - DC 8-28V
    - PoE class 4
    - PoE class 3, at reduced output power
- Four general purpose supervised I/Os
- Possible to use POE+ as the only power source
- Switch for tampering detection
- Micro HDMI output for direct connection of camera stream to external display.
- VBUS connector for connection of 2N verso modules
- Line- in/out for option to use external mic/speaker
- microSD support for local storage of video recordings
- Telecoil sending the sound, via the magnetic field, directly to t-coil equipped hearing aids
- Card reader
- Touch interface:
    - A8307-VE: 720p touch display
    - A8207-VE: 12 key numerical touch keypad

**Stated available power is when unit is supplied with PoE class 4 or DCIN. If PoE class 3 is used the available power out is 50mA@24V or 100mA@12V.*

Technical description

Physical product buildup

The product consists of a powder coated aluminum chassis, 5mm thick front glass, a camera dome and 4 (+1 for AXIS A8207-VE) PCB stacked inside. The extra PCB in AXIS A8207-VE is a keypad PCB, which is replaced with a display in AXIS A8307-VE. The PCBs that are included in both versions are: Main-, Front-, RFID- and PIR-board.

In addition to the PCBs there are a number of other components, that connect to the main board, in the product: Two microphones, a speaker and a ferrite core copper wound telecoil.

MAIN board

The main board contains:

- CPU with DDR, flash and power supplies, handles the main tasks like Ethernet and the access control logics
- Isolated POE+ DC/DC converters and connectors
    - generates +12V raw voltage
    - Max 25.5W
- Ethernet PHY
- Battery backed up RTC clock
- MCU
- Relays
- General purpose IOs
- RS-485 / Wiegand interface
- Over current protection for output voltages
- Flash button
- Ethernet status LED
- Tampering switch
- Control button, for resetting to factory default or connecting to AXIS Video Hosting System service
- Accelerometer
- SLVS interface with flex connector for front sensor board connection
- Micro SD card holder
- FPGA, serial-to-MIPI bridge and flex connector for display (only in A8307-VE)
- Touch button controller
- Keypad flex connector (only in A8207-VE)
- Micro HDMI connector
- Audio codec
- Speaker amplifier and connector
- Telecoil amplifier and connector
- Line-in/out connector
- PIR controller and connector
- VBUS connector
- Card reader board flex connector

Front board

The front board includes the following subsystems:

- Rigid flex PCB for connection with main board
- 2.8V supply for sensor analog voltage
- Camera sensor

RFID board

The RFID card reader board contains:

- Card reader module (3rd party module)
- Flex connector for connection to main board
- PCB trace for touch call button
- Four white LEDs for button illumination
- Ambient light sensor
- PCB trace for 13.56MHz RFID antenna
- Surface mounted copper wound coil as 125kHz antenna

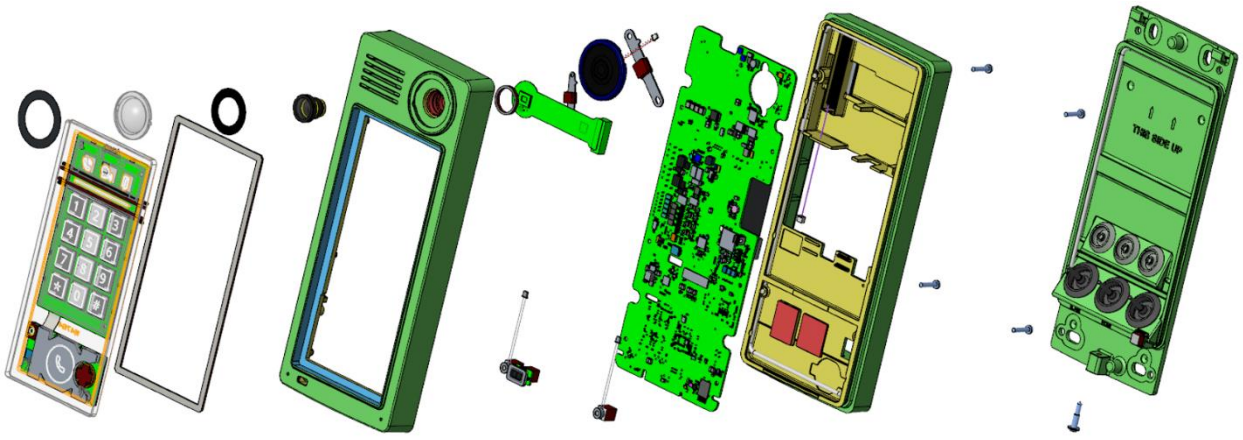
PIR board

The PIR sensor is, for mechanical reasons, mounted on a small separate board.

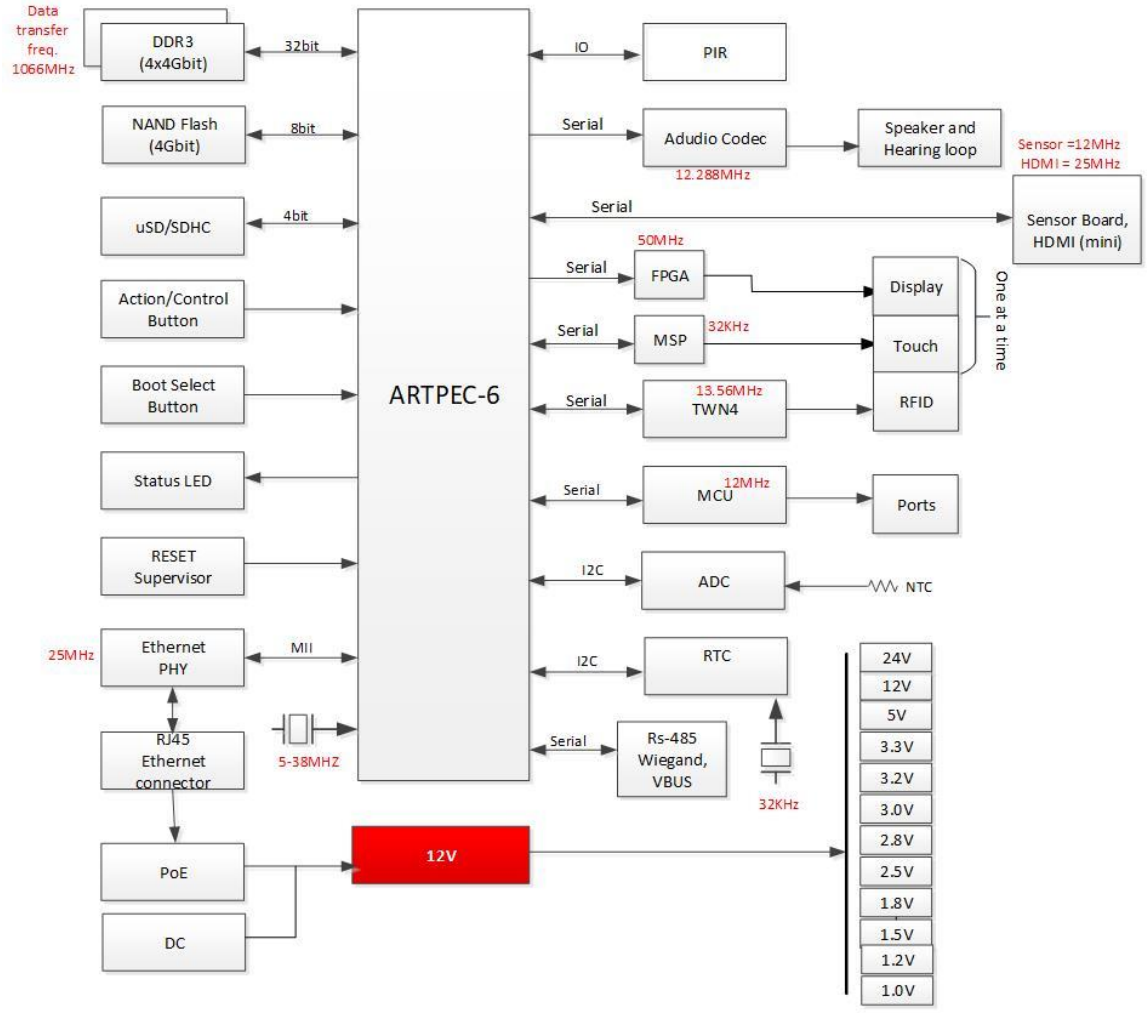
Keypad board

The keypad board is only present in the keypad version AXIS A8207-VE. It contains:

- Three status LEDs for incoming call (blue), ongoing call (yellow) and unlocked door symbols (green).
- Two RGB LEDs for status bar illumination
- Eight white LEDs for illumination of the numeric keypad
- PCB traces for the 12 touch buttons



Block diagram



Interfaces

Switches

- Control button, for resetting to factory default or connecting to AXIS Video Hosting System service
- Flash button
- Tampering switch

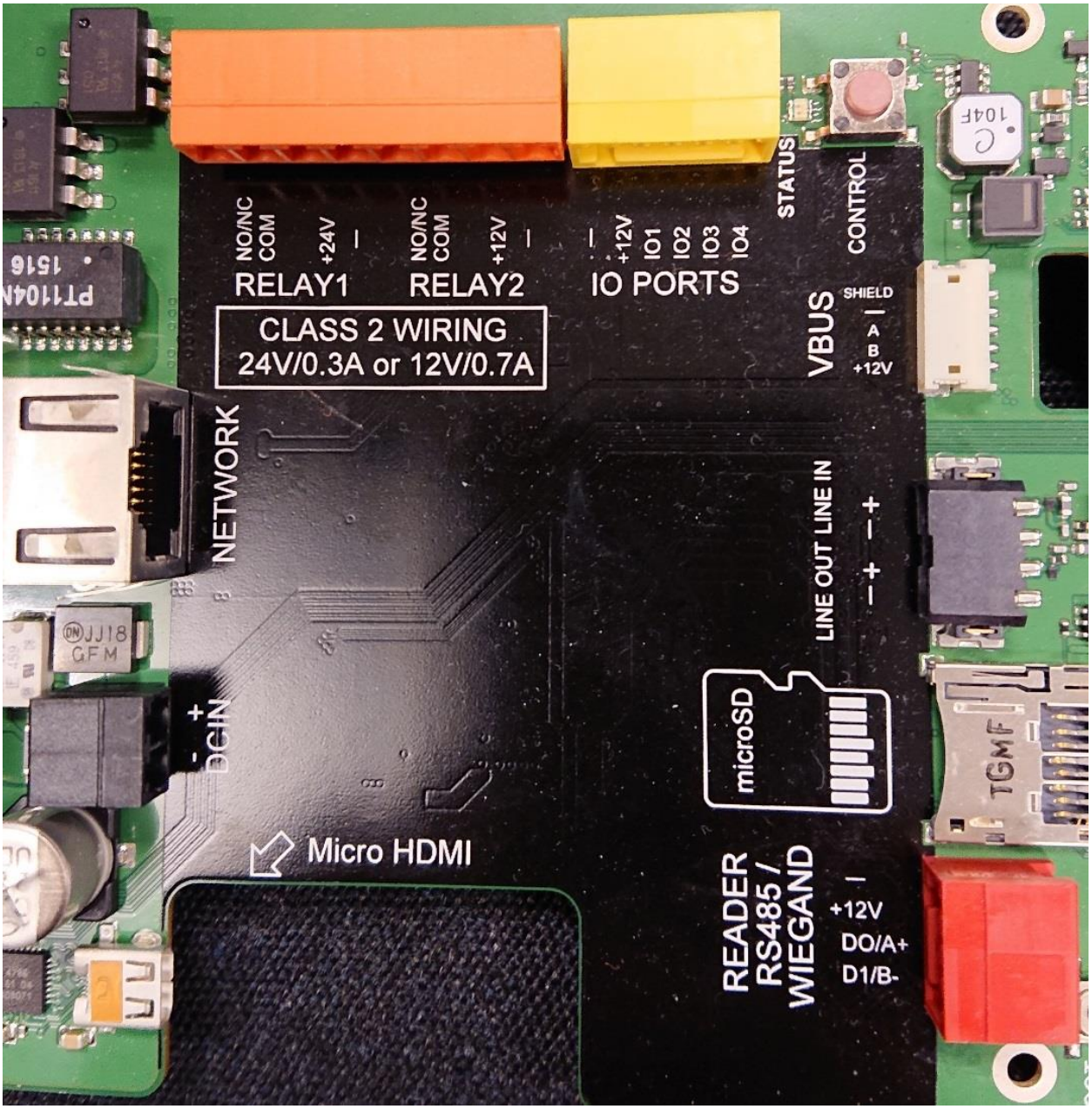
LEDs

- Ethernet status LED
- Eight white LEDs for keypad illumination (only A8207-VE)
- Two RGB LEDs for status bar on keypad (only A8207-VE)
- Blue LED for incoming call symbol on keypad (only A8207-VE)
- Yellow LED for ongoing call symbol on keypad (only A8207-VE)
- Green LED for door unlocked symbol on keypad (only A8207-VE)
- Four white LEDs for illumination of call button

External interfaces

- Network: RJ45 connector with PoE support, used for 10/100BASE-TX and PoE class 3 or 4
- DC-in 8-28V
- 4x General purpose I/Os, 6 pin 2.5mm pitch terminal block
- 2x Relays, 2.5A current rating, 8 pin 3.81mm pitch terminal block
- VBUS connector, 5 pin 1.5mm pitch crimp style connector
- Line-in/out connector, 4 pin 2.5mm pitch terminal block
- RS485/Wiegand, 4 pin 2.5mm pitch terminal block
- Micro HDMI out connector
- Micro SD card holder

Connector overview



Wireless interfaces

The A8X07-VE contains three wireless interfaces, the two RFID card reader interface and a telecoil audio interface.

RFID

AXIS A8X07-VE has two card reader interfaces 125kHz and 13.56MHz. The 125kHz is an old standard that is still commonly used in the US. The new, more widespread, card reader standard, for e.g. HID cards, runs on 13.56MHz. The 125kHz antenna is a copper wire wound coil on the card reader PCB and the 13.56MHz antenna is a PCB trace loop. Both card reader antennas are located behind the front glass in the lower half of the AXIS A8X07-VE. The RFID controller is a 3rd party module that is surface mounted on the A8X07-VE RFID board. The supported card types are listed below:

EM4X02	PYRAMID
HITAG_1_S	KERI
HITAG_2	DEISTER
EM4X50	CARDAX
ISOFDX_B	NEDAP
HID_PROX	MIFARE
COTAG	ISO15693
IOPROX	HID_ICLASS
INDALA	FELICA
NEXWATCH	SRX
AWID	NFC_P2P
GPROX	

Induction loop (Telecoil)

For accessibility reasons the AXIS A8X07-VE is equipped with an induction loop used for sending the audio from the door station, via magnetic field, directly to telecoil equipped hearing aids. The frequency is directly proportional to the audio frequency and frequency content ranges from 300 to 4000 Hz.

Environmental

Operating temperature: AXIS A8207 -40 to +55°C
AXIS A8307 -20 to +55°C

International protection marking: IP66