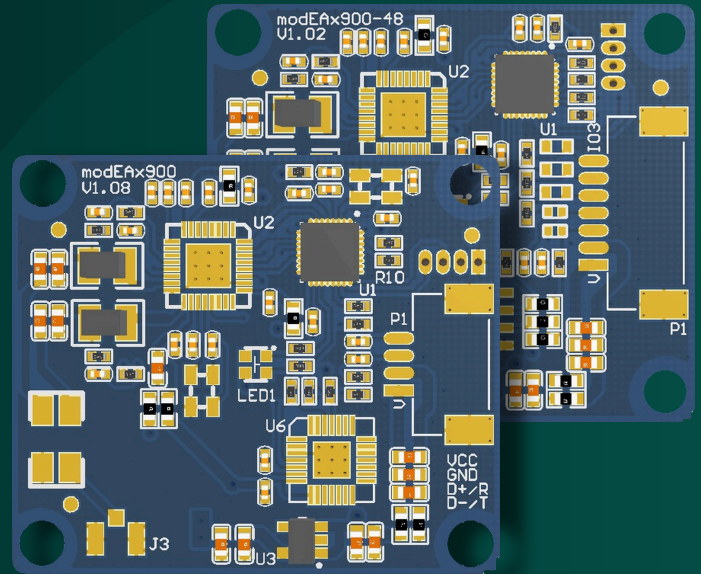


HF | NFC - Reader Module

modEAx900 Series

- 13.56 MHz reader module with NXP CLRC663
- ISO 14443 A/B, ISO 15693, FeliCa, ISO 18000-3
- MIFARE Classic, Ultralight, Plus and DESFire
- USB (VCP or PC/SC), TTL UART or RS485
- 35 × 30 × 4.5 mm board, U.FL antenna port



HF | NFC - Reader Module

Compact module for MIFARE, DESFire and ISO 15693

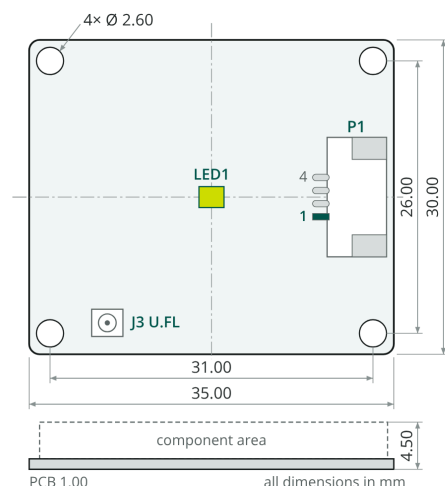
The modEAx900 is a compact HF/NFC reader module for installation in devices, terminals and control panels. On a 35 × 30 × 4.5 mm board with four mounting holes, it combines the NXP CLRC663 reader IC with a 32-bit processor and drives an external 50 Ω antenna via U.FL. With a MIFARE Classic card in ISO format, the typical read range is 50 mm.

The module reads and writes cards according to ISO/IEC 14443 A/B, ISO/IEC 15693, ISO/IEC 18000-3 Mode 3 and FeliCa, including MIFARE Classic, Ultralight, Plus and DESFire up to EV3. Card-specific procedures such as authentication, value blocks and file handling run inside the module, so the host only exchanges short binary frames – at 19200 bps by default and up to 115200 bps.

The modEAx900 runs on 5 V DC with a maximum current of 250 mA. Four versions cover the host interfaces: -UV with USB virtual COM port, -UP as USB PC/SC reader for a reduced set of card types, -TL with 3.3 V TTL UART and -48 with RS485 multi-drop and three logic outputs. Matching antennas are the modAx3035 with the same footprint and the ring antenna modAx25.

Common Applications

- Access Control and Time Recording
- Operator Identification on Machines
- Reading Through Glass and Plastic
- Vending Machines and Kiosks
- Consumables and Tool Identification
- Library and Document Management



TECHNICAL SPECIFICATIONS

RFID

Operating Frequency	13.56 MHz
Reader IC	NXP CLRC663
Air Interfaces	ISO/IEC 14443 A/B, ISO/IEC 15693, ISO/IEC 18000-3 Mode 3, FeliCa
MIFARE	Classic 1K/4K/Mini, Ultralight/C/EV1/AES, Plus, DESFire D40/EV1/EV2/EV3
Further Cards	ISO 14443-4 CPU cards, SR176, SRI512/1K/2K/4K, ISO 15693 tags
Anti-Collision	multiple cards in the field
Read Range	typ. 50 mm (MIFARE Classic, ISO card)
RF Output	power and gain adjustable in 4 steps
Antenna	external, 50 Ω, via U.FL

Host Interface

modEAx900-UV	USB 2.0 full speed, virtual COM port
modEAx900-UP	USB 2.0 full speed, PC/SC protocol
modEAx900-TL	TTL UART, 3.3 V levels
modEAx900-48	RS485 multi-drop, address 0x01–0xFF
Baud Rate	19200 bps default, up to 115200 bps
Protocol	binary frames with XOR checksum

PC/SC Version (-UP)

Card Types	MIFARE Classic, Ultralight, DESFire, ISO 14443-4 A/B, ISO 15693
------------	---

Environment

Operating Temperature	–20 to +80 °C (without housing)
Storage Temperature	–40 to +125 °C

Electrical

Supply Voltage	5 V DC
Current Consumption	max. 250 mA
Outputs (-48)	3 GPO, 3.3 V push-pull
Status LED	blue/green, prepared for a light guide

Mechanical

Dimensions	35 × 30 × 4.5 mm
Mounting Holes	4 × Ø 2.6 mm, pitch 31 × 26 mm
Host Connector	PanelMate 4-pin, 7-pin on -48
Antenna Connector	U.FL

Functions

Firmware Update	ISP via USB or UART
Automatic Functions	card detection, UID output via UART
Security	reader authentication, encryption (NDA)

Part No. / Model

modEAx900-UV	USB virtual COM port
modEAx900-UP	USB PC/SC
modEAx900-TL	TTL UART
modEAx900-48	RS485
modAx3035	antenna 35 × 30 mm, 10 cm cable
modAx25	ring antenna Ø 25 mm