

# Matrix-800



## Features

- NXP i.MX93 Dual-Core Arm Cortex-A55 + M33 Real-Time MCU
- NPU with End-to-End Tooling for Edge AI Inference
- Advanced Security Features with Arm TrustZone® and NXP EdgeLock® Secure Enclave
- PQC (Post Quantum Cryptography) Ready Hardware TPM
- 2 x Gigabit Ethernet with TSN with on LAN 1
- 4 x 3Mbps Baud Rate RS-485
- 2 x Digital Input with 24V Opto-isolation
- 1 x Relay-switched Digital Output
- 1 x M.2 B-Key Expansion Slot for Wireless or Cellular Connectivity
- Standalone Watchdog backed with Super Capacitor and Battery
- USB 2.0 Type-C and Micro-SD Slot for Backup

## ■ H/W Specifications

### CPU / Memory

- CPU: NXP i.MX93 Dual-Core Arm Cortex-A55 @ 1.7GHz
- Cortex-M33 @ 250MHz with Arm Ethos-U65 microNPU
- SDRAM: 2GB LPDDR4
- Flash: 16GB, eMMC

### Network Interface

- 2 x Gigabit Ethernet with Hardware Timestamp
- TSN Capable on LAN 1
- Connector Type: RJ45 (with LED indicator)

### USB Interface

- 1 x USB 2.0 Type-C Port for data backup

### TTY (Serial) Port

- Four Serial ports
- 4 x RS-485 (High Speed up to 3Mbps)
- Connector: Terminal block
- RS-485 Signal: Data+, Data-

### Digital Input

- 2 x Digital Input channels
- Isolation Protection: Opto-Isolated
- Logical High: 10~30VDC (24V nominal)
- Logical Low: 0~3VDC

### Relay Output

- 1 x Digital Output channel (Relay Switched)
- Normal Open (NO) and Normal Closed (NC) Type
- Contact Rating: 80VDC@1.5A

### SD Slot

- 1 x Micro-SD socket
- SD Compliant, support SDHC/SDXC
- Storage capacity: support up to 256GB

### Expansion

- 1 x M.2 B-Key socket (for 4G, 5G or WiFi connectivity), USB interface reserved
- 1 x Micro-SIM card socket
- 2 x SMA-type Antenna hole reserved

### General

- Watchdog: Yes (Standalone)
- Real-Time Clock (RTC): Yes, backup by super capacitor
- External battery connector for Optional power backup
- Power Input Voltage: 12-24VDC, terminal block
- Typical Consumption: 24VDC@250mA
- Dimensions (W x L x H): 78 x 112 x 26mm
- Net Weight: Approx. 250g
- Operating Temperature: -40 ~ 85°C (-40~185°F)
- Regulation: CE Class A, FCC Class A
- Installation: Wall mounting, DIN-rail mounting (with optional kit)

## ■ S/W Specifications

### Operation System

- Support Ubuntu Core 26.04 LTS or Yocto Linux, kernel 6.20.x (or up)
- Supports bootup from eMMC or MicroSD card
- Supports backup from MicroSD card or USB device
- Boot Loader: U-Boot

## ■ Ordering Information

### Matrix-800 / Matrix-800U

- Linux / Ubuntu-ready Cortex-A55 Dual-Core 1.7GHz Industrial IoT Gateway
- Linux / Yocto-ready Cortex-A55 Dual-Core 1.7GHz Industrial IoT Gateway

### Antenna Kit

- Antenna Kit for cellular / Wi-Fi (SMA)

### DIN Rail Mounting Kit

- DIN RAIL Mounting Kit

### PWR-12V

- 100~240VAC to 24VDC Power Adapter (1A or higher recommended)