



Main Features

- ◆ Built-in NXP i.MX 8M Quad low-power processor, up to 1.3 GHz
- ◆ 8" TFT LCD monitor with projected capacitive touch screen
- ◆ IPS LCD with wide viewing angle and resolution 1280x 720
- ◆ Touch panel cover thickness 3mm for IK08 protection
- ◆ Sunlight readable capability: 1,000nits LCD brightness
- ◆ CVBS input for analog camera x 4
- ◆ Isolated CANBus 2.0 x 1
- ◆ Back-up battery for approx. 20 min of operation (optional)
- ◆ Wide range DC input from 9V ~ 60V DC in
- ◆ Complete IP65 waterproof
- ◆ Touchscreen is operable with various gloves (even with water spillage)

Product Overview

NRM 103, 8-inch all in one robust vehicle mount computer, is designed for the warehouses, port, logistic and material handling markets. It implements the NXP i.MX 8M Quad low-power processor on both of Android (by request) and Linux platforms, and offers complete IP65 and IK08. NRM 103 is able to support analog camera x 4 for security purpose and takes less than 1 second to see video content. Optional back-up battery can help to back up data when car power battery stops supplying. LCD panel: 1,000nits typ. guarantees to reach sunlight-readable. Wide-range power input (9V~60V) can let NRM 103 to be capable of setting up in various facilities and vehicles. The M.2 slot x 2 are designed for WLAN and WWAN wireless connectivity.

Specifications

LCD Panel

- ◆ 8-inch TFT LCD panel with LED backlight
- ◆ 1280 x 720 pixels (HD)
- ◆ Brightness: 1000 cd/m² (typical)
- ◆ Viewing angle: 170° (H)/170° (V)
- ◆ Contrast ratio: 1000:1 (typical)

Touch Screen

- ◆ Projected capacitive
- ◆ Anti-glare coating surface
- ◆ Transmission rate: 80 ± 3%

CPU

- ◆ NXP i.MX 8M Quad processor with 1.3 GHz frequency
- ◆ Quad Arm[®] Cortex[®]-A53 core

Memory

- ◆ Onboard LPDDR4 2400MHz SDRAM 4GB

Storage

- ◆ 1 x eMMC 32GB (BOM optional 64GB)
- ◆ 1 x Micro SDXC Slot

Expansion

- ◆ 1 x M.2 2230 Key E socket (SDIO 3.0, PCIe 2.0, UART)
- ◆ 1 x M.2 3042/3050/3052 Key B socket (USB 3.0) for LTE/5G NR module with 1 x external Micro-SIM slot, with 1 x internal Micro-SIM slot

GNSS and Onboard Sensor

- ◆ 1 x Default u-blox NEO-M9N GNSS for GPS/Glonass/QZSS/Galileo/Beidou
- ◆ Optional M8U/M8L modules with dead reckoning available
- ◆ G Sensor and gyroscope

LAN

- ◆ 1-port LAN, 10/100/1000 Mbps

Security

- ◆ TPM 2.0: Infineon SLB9665TT2.0FW5.62 (BOM optional)

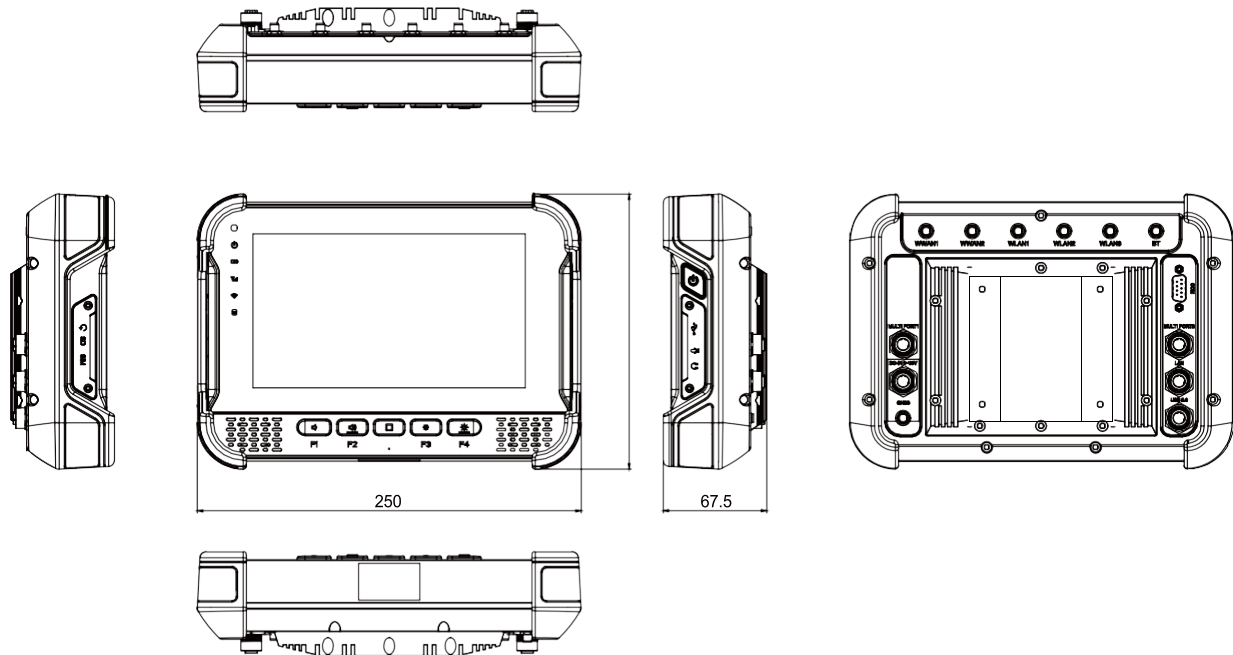
I/O Interface-Front

- ◆ Volume control keys (+/-) with LED
- ◆ Brightness control keys (+/-) with LED
- ◆ F1 ~ F4 programmable function keys with LED
- ◆ 1 x Shift key with LED
- ◆ Light sensor
- ◆ 5 x LED indicators (power, battery, WWAN, WLAN, storage)
- ◆ 2 x Built-in 2W speakers
- ◆ 1 x Mic

I/O Interface-Lateral

- ◆ Left Side
 - 1 x System reset button w/ cover
 - 1 x MicroSD slot w/ cover
 - 1 x Micro-SIM slot w/ cover

Dimension Drawing



◆ Right Side

- 1 x Power button
- 1 x USB 2.0 type A connector w/ cover
- 1 x Mic-in (mono), 1 x Line-out (mono) w/ cover

I/O Interface-Rear

- ◆ 1 x Full RS232 (COM, w/ 5VDC, 12VDC)
- ◆ 1 x Power connector, M12 A-coded 5-pin
- ◆ 1 x 10/100/1000 Mbps LAN, M12 A-coded 8-pin
- ◆ 1 x M12 A-coded 8 pin for 2 x USB 2.0
- ◆ 1 x M12 (MULTI PORT1, A-coded 12-pin)
 - 2 x GPI
 - 2 x GPO
 - 1 x Isolated CANBus 2.0B
 - PWM (speed)+Direction+GND
- ◆ 1 x M12 (MULTI PORT2, A-coded 12-pin)
 - 1 x RS232 (Tx, Rx)
 - 1 x RS232 (Tx, Rx)/RS422/RS485
 - 4 x Composite video input
- ◆ 2 x SMA connector for WWAN
- ◆ 3 x SMA connector for WLAN
- ◆ 1 x SMA connector for Bluetooth
- ◆ 1 x SMA connector for GNSS

Mechanical

- ◆ Cooling system: fanless
- ◆ Enclosure: plastic
- ◆ IK Rating: IK08 (housing and touch screen)
- ◆ Mounting: VESA 75
- ◆ Ingress protection: complete IP65
- ◆ Dimension: 250x179x67.5 mm
- ◆ Weight: 2.4kg

Power Management

- ◆ 9V ~ 60V DC in
- ◆ Back-up battery for approx. 20 min of operation (optional)
- ◆ Reverse protection/over voltage protection/under voltage protection
- ◆ Ignition on/off control & programmable on/off delay timing

- ◆ Wake up by SMS, RTC and ignition

RFID Module (optional)

- ◆ 13.56-MHz RFID/contactless standard protocols
- ◆ Compatibles with all major global secured baseband ISO standards including ISO14443 TypeA, MIFARE classic cards, and Smartlabel ISO15693

Environment

- ◆ Operating temperatures:
 - Ambient with air -40°C to 70°C, ambient with air and without battery
- ◆ Storage temperatures: -40°C to 80°C
- ◆ Relative humidity: 10% to 90% (non-condensing)
- ◆ Vibration (random)
 - 2g@5~500 Hz (in operation)
- ◆ Vibration
 - Operating: MIL-STD-810G, 514.6 Procedure 1, Category 4
 - Storage: MIL-STD-810G, 514.6 Procedure 1, Category 24
- ◆ Shock
 - Operating: MIL-STD-810G, Method 516.6, Procedure I, trucks and semi-trailers = 40g
 - Crash hazard: MIL-STD-810G, Method 516.6, Procedure V, ground equipment = 75g

Operating System

- ◆ Linux
- ◆ Android (by request)

Standards/Certifications

- ◆ CE/FCC class B/E13/IK08

Ordering Information

- ◆ NRM 103-PC1 (P/N: 10VC0022000X0)
8" rugged vehicle mount computer with NXP i.MX 8M Quad, projected capacitive touch screen and complete IP65, 4GB LPDDR4 SDRAM, 32GB eMMC, DC input 9~60 VDC