



Main Features

- Intel Atom® x6414RE quad-core processor, 9W
- 10.4" TFT LCD monitor with PCAP touch (BOM optional)
- IPS LCD with wide viewing angle and resolution 1024 x 768
- Sunlight readable capability: 1,200nits LCD brightness
- LCD monitor, 1 x HDMI, 1 x DP video outputs for triple displays
- Isolated CANBus 2.0 x 1
- CVBS input for analog camera x 4 (work with optional capture card)
- PoE supported for IP camera x 2 (optional)
- Open frame design for wide variety of form factors
- EN 50155, class OT3 (-30°C~70°C) certificated for railway

Product Overview

vROK 3030, 10.4-inch all in one railway open frame panel computer, is designed for human machine interface (HMI) and passenger information system aimed at railway applications. It implements the latest Intel Atom® x6414RE processor on both of Windows and Linux platforms. It is able to support analog camera x 4 (work with optional capture card) or PoE camera x 2 (optional) for security purpose. LCD panel 1,200nits guarantees to reach sunlight-readable. LCD monitor, 1 x HDMI, 1 x DP video outputs for triple displays with passenger information, advertising, or onboard infotainment. The design of mini-PCIe slots x 1 and M.2 slot x 2 are supported for mSATA/capture card and WLAN/WWAN wireless connectivity for data transmission. Open frame design is able to integrate into a wide variety of configurations and form factors.

Specifications

LCD Panel

- 10.4-inch TFT LCD panel with LED backlight
- 1024 x 768 pixels
- Brightness: 1200 cd/m² (typical)
- Viewing angle: 170° (H)/170°(V)
- Contrast ratio: 900:1 (typical)

Touch Screen (BOM optional)

- Projected capacitive
- Anti-glare coating surface
- Transmission rate: 85 ± 3%

CPU

- Intel Atom® x6414RE quad-core processor, 1.5 GHz, TDP 9W

Memory

- 1 x 260-pin DDR4 SO-DIMM socket support 3200MHz up to 32GB. default 2666MHz, 4GB
- With In-Band ECC (IBECC)

Video Output

- 1 x HDMI 1.4b up to 3840 x 2160@30 Hz
- 1 x DP 1.4 up to 4096 x 2160@60 Hz

Storage

- 1 x M.2 2280 Key M socket (SATA 3.0 or PCIe 3.0 x1)
- 1 x mSATA (occupied mini-PCIe slot)

Expansion

- 1 x M.2 2230 Key E socket (USB 2.0, PCIe 3.0 x2)
- 1 x Full size mini-PCIe socket (USB 2.0, PCIe 3.0/SATA 3.0)

- 1 x M.2 3042/3050/3052 Key B socket (USB 2.0, USB 3.2 Gen2) for LTE/5G NR module, BOM optional 1 x Full size mini-PCIe socket (USB 2.0, USB 3.2 Gen2 (BOM optional)) for LTE module, with 1 x external micro-SIM slot, 1 x internal micro-SIM slot

GNSS and Onboard Sensor

- 1 x Default U-blox NEO-M9N GNSS module for GPS+QZSS/Glonass/Galileo/Beidou
- 1 x 3D accelerometer and 3D gyroscope

LAN and Power over Ethernet

- 2-Port LAN M12 X-coded, 10/100/1000/2500 Mbps, Intel® I225-IT (optional PoE 802.3af/at, max. 30W, w/ VIOD-POE2-01)

Security

- TPM 2.0: Infineon SLB9670VQ2.0 FW7.62

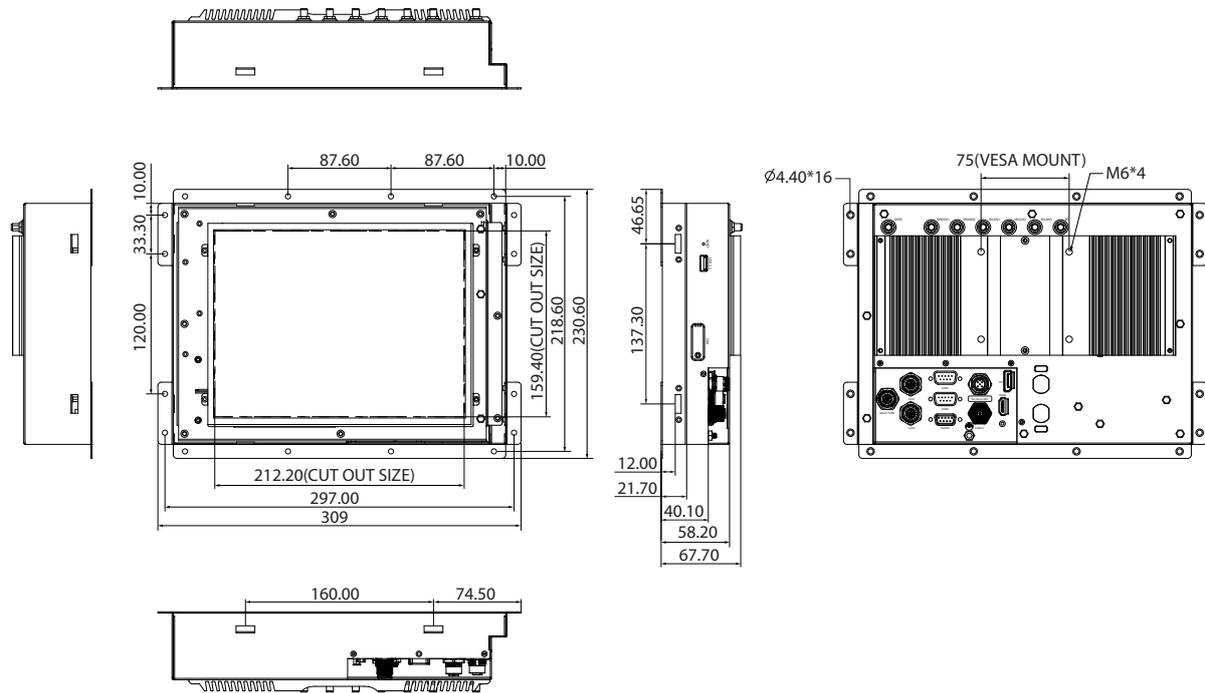
I/O Interface-Lateral

- Right Side
 - 1 x System reset button
 - 1 x USB 3.2 Gen2 type A connector
 - 1 x Micro-SIM slot w/ cover

I/O Interface-Rear

- 2 x DB9 (COM1/COM2) for full RS232/RS422/RS485 (w/ isolation)
- 1 x Power connector, M12 A-coded 5-pin
- 2 x 10/100/1000/2500 Mbps LAN, M12 X-coded 8-pin
- 1 x M12 A-coded 8-pin for 2 x USB 2.0
- 1 x Line-in (stereo), 2 x Line-out (stereo) (AUDIO, DB9, female)

Dimension Drawing



- 1 x HDMI output
- 1 x DP output
- 1 x M12 (MULTI PORT, A-coded 17-pin)
 - 4 x DI (w/ isolation)
 - 2 x DO (w/ isolation)
 - Power in for DIO isolation, 14~48VDC
 - 1 x Isolated CANBus 2.0B
 - 1 x Power button
 - 4 x Composite video input
- 1 x RP-SMA connector hole for Bluetooth
- 3 x RP-SMA connector hole for WLAN
- 2 x SMA connector hole for WWAN
- 1 x SMA connector for GNSS
- 1 x Ground connector

Mechanical

- Cooling system: fanless
- Enclosure: metal
- Mounting: open frame mount, VESA 75 mount
- Dimension: 309 x 230.6 x 67.7 mm
- Cutout dimension: 212.2 x 159.4 mm
- Weight: 3.0 kg

Power Management

- 24/36V DC (14 ~ 48VDC) in, w/o isolation
- 24/110V DC in, w/ isolation (BOM optional)
- Reverse protection, OCP & UVP
- Selectable boot-up & shut-down voltage for low power protection by software
- Setting 8-level power on/off delay time by software
- 10~255 seconds WDT support, setup by software
- SDK (Windows/Linux) including utility and sample code

Environment

- Operating temperatures
 - EN 50155, class OT3 (-30°C~70°C), 85°C for 10 minutes (w/ 9W TDP CPU, industrial SSD) with air flow
 - EN 50155, class OT1 (-30°C~60°C), w/ 9W TDP CPU, industrial SSD, PoE, with air flow

- Storage temperatures: -40°C to 80°C
- Relative humidity: 10% to 90% (non-condensing)
- Vibration (random)
 - 2g@5~500 Hz (in operation, SSD)
- Vibration
 - Operating: MIL-STD-810H, 514.8C Procedure 1, Category 4
 - Storage: MIL-STD-810H, 514.8E Procedure 1, Category 24
- Shock
 - Operating: MIL-STD-810H, Method 516.6, Procedure I, trucks and semi-trailers = 40g
 - Crash hazard: MIL-STD-810H, Method 516.6, Procedure V, ground equipment = 75g

Operating System

- Windows 10/Windows 11
- Linux

Standards/Certifications

- CE
- FCC Class A
- EN 50155: 2017
 - Ambient temperature EN 50155, Class OT3 (-30°C~70°C)
 - Interruptions of voltage supply class S1
 - Supply change over class C1
 - EMC EN 50121-1: 2017, EN 50121-3-2: 2016+A1: 2019
 - Environment EN 60068-2-1, EN 60068-2-2, EN 60068-2-30
 - Shock and vibration IEC 61373 Class B
 - Protective coating class PC1 (PC2, by request)
- EN 45545-2: 2020 (PCB)

Ordering Information

- **vROK 3030-A (P/N: 10A30303000X0)**
10.4" railway open frame panel computer with Intel Atom® x6414RE quad-core processor with 4GB DDR4, DC input 24V/36V (w/o isolation), 1 x M.2 2280 Key M socket for storage