RT1076S

Onboard Smart Tablet

10.1-INCH DISPLAY | RK3568J | UBUNTU 22.04



Product appearance is shown for reference. The screen interface is illustrative and does not define the software features supplied.

Product Overview

The RT1076S provides information display and human-machine interaction for locomotive onboard safety monitoring systems (6A systems). It features an industrial-grade RK3568J configuration, a 10.1-inch BOE display, dual Fast Ethernet and RS-485 interfaces. With the associated application software, it can display onboard video and operational information.

The tablet and its associated base are installed as a fixed assembly. Specifications for the tablet unit and base are listed separately; their processors, interfaces and power ratings must not be interchanged.

Configuration Summary

Item	Specification
System platform	RK3568J; 4 GB RAM + 32 GB storage / 8 GB RAM + 64 GB storage; Ubuntu 22.04
Display & capture	10.1-inch BOE display; 5 MP front-facing camera; ambient light sensor
Communications	Dual Fast Ethernet; dual RS-485; Wi-Fi, Bluetooth, 4G and BeiDou positioning
Installation	Display, bracket and low-profile base installed as one assembly; retain the interconnecting cable.

Tablet Unit Specifications

Item	Specification
Processor	RK3568J, industrial-grade configuration
RAM / storage	4 GB RAM + 32 GB storage / 8 GB RAM + 64 GB storage
Operating system	Ubuntu 22.04
Display	10.1-inch BOE display; LVDS interface
Display brightness	400 cd/m² (400 nits)
Display resolution	1280 x 800
Front-facing camera	1 x 5 MP camera; MIPI interface; fixed-focus design, 0.5-2 m working distance
Microphone	Customized noise-reduction module
Speakers	2 x 4-ohm speakers; 3-5 W each
Positioning	BeiDou-3 single-mode positioning; NMEA-0183 protocol
Wi-Fi	802.11 a/b/g/n/ac; 2.4 GHz and 5 GHz; internal antenna, with provision for an antenna connector on the mainboard
Bluetooth	Bluetooth 5.1
4G communications	Quectel EC20
Ethernet	2 x 100 Mbps Ethernet; 6-pin circular connector interface
Serial communications	2 x RS-485; 4-pin circular connector interface
Service interfaces	USB Type-C for firmware updates and data transfer; 1 reset button
Ambient light sensing	Photoresistor; automatic display brightness adjustment according to ambient light
Power input	12 V DC
Battery design provision	Provision for charge/discharge management; 3-pin interface with NTC 7.4 V / 2 A
Operating temperature	-25 °C to +70 °C
Electrostatic discharge (ESD)	6 kV contact discharge; 8 kV air discharge

Base & System Integration

Base / Compact Gateway Specifications

Item	Specification
Functions	Network-device connectivity, routing, IP connectivity and protocol gateway functions; edge computing
Video inputs	Multiple camera inputs, primarily for gesture-recognition and driver monitoring system (DMS) cameras
Optional compute module	RK3576; 6 / 8 TOPS; 4 GB RAM + 32 GB storage / 8 GB RAM + 64 GB storage
External connectors	6 circular connectors: 1 x 2-pin power input and 5 x 6-pin Ethernet connectors carrying 12 V power
Power input	110 V DC
Power conversion	MORNSUN URF1D12QB-75WR3
Battery	12 V / 500 mAh; 5 A peak output
Housing / operating temperature	Aluminum alloy enclosure; -20 °C to +70 °C

Installation & Wiring

Install the display and base together as a fixed assembly, retaining the interconnecting cable. The installation must not obstruct existing instruments, controls or required lines of sight.

Follow the approved mechanical drawings for mounting-hole positions, fasteners and tightening torque. Secure the cables and allow sufficient bending clearance to prevent tension and interference with moving parts.

Software & Video Integration

Video protocols, codecs, simultaneous decoding channel count, resolution and frame rate must be confirmed against the actual software configuration.