

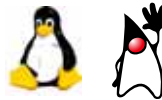
# JetBox 9560

## 5-Port 12~24V Boost 48V PoE Routing Computer



### Vehicle-specific 5-port 12~24V Boost 48V PoE Routing Computer with mobile network card extensibility

- DC 12~24V Boost 48V PoE, 4 port, 15.4W per port
- Intel IXP430 667MHz Networking Processor
- Complete layer3 routing support: OSPF, RIP, DVMRP, IPv6
- Full managed features with QoS, VLAN, PoE scheduling
- Versatile interfaces of USB, DIO, SDIO control, and optional modules for RFID, WLAN, and WiMax
- Mobile network card slot for GSM/GPRS/3G/3.5G/HSUPA
- Embedded Linux UI—Modulized Webmin, capable of running customized control programs
- Cross-platform applications by JavaVM
- Fan-less and ruggedized industrial design for anti-vibration, anti-shock, and -25~70°C operation temperature



## Overview

### 12~24V booster for 48V PoE

The JetBox 9560 is a specific surveillance system used in vehicles. It accepts 12~24V DC power input and boosts to 48V DC output for 802.3af standard PoE devices. Rugged industrial design to withstand 50g shock and 5g vibration is suitable to be installed in carriages.

### Mobile network (optional) (GSM/GPRS/3G/3.5G/HSUPA)

The reserved mobile network card slot can extend the network communication via GSM/GPRS/3G/3.5G/HSUPA and enhance the mobility of the JetBox 9560. It makes IP surveillance in public transportation, trucks or railway simple. General 12~24V industrial power input can enable 48V PoE IP cam and the captured IP cam images can be sent back to control center via wireless network.

### GPS (optional)

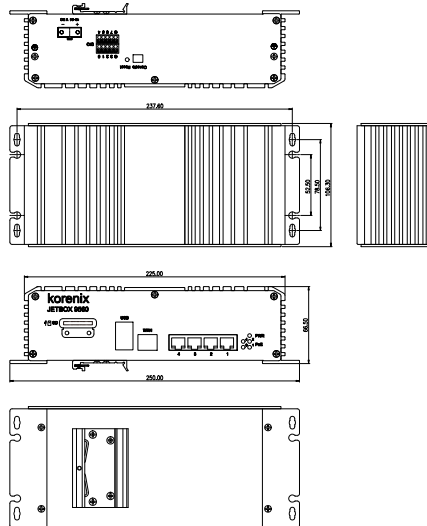
GPS is another function which can be provided through the mobile network card for the geographic positioning service. It can deliver the vehicle position data through an unlimited networking and suitable to be used in fleet management.

### The most powerful control system in moving vehicles

In addition to the vehicle-specific power input, and the mobile communication enhancement, the JetBox 9560 carries 3 USB, 8 DIO and has the capability of layer3 routing, Linux computing, and programs running in JavaVM, therefore the JetBox 9560 is the most powerful front-end control system used in moving vehicles.

# Industrial Communication Computer

## Dimensions (Unit = mm)



Industrial PoE Switch
IP67/68 Ethernet Switch
Rackmount Managed Switch
Gigabit Switch
Redundant Switch
Entry-Level Switch
<b>Networking Computer</b>
Communication Computer
Ethernet I/O Server
Serial Device Server
Media Converter
Multiprotocol Serial Card
SFP Module
Din Rail Power Supply

## Hardware Specifications

### System

#### Processor:

Intel XscaleXP430 667MHz RISC-based  
Fanless

**System memory:** 128MB DDR2 RAM

**System flash:** 32MB

**Ethernet:** 10/100 Based-TxRJ-45 connector x5

Built-in 15KV ESD protection of all signals

**Network cables for PoE:**

10Base-T: 4-pair UTP/STP Cat.3,4,5, EIA/TIA-568

100ohm (100m)

100Base-Tx: 4-pair UTP/STP Cat.5 EIA/TIA-568

100ohm (100m)

**Storage:**

SD card slot x1

CF card slot x1

**USB:** USB 2.0 x3 (Host)

Supporting devices: USB flash, wireless dongle

**Digital IO:** 8 DIO (default 8 DI), DI or DO is defined by customers

**Console port:** 3-pin header (RS232 interface)

**LED per port (on the port):**

Link/Activity (Green on/Green blinking)

Full Duplex/Collision (Yellow on/ Yellow blinking)

**LED per PoE port (LAN1~LAN4):**

Powered/none x4(Yellow on/off)

**LED per unit:**

Power on/off x1 (Green on/off)

**Reset buttonx1**

**HW Watchdog timer:**

Generates a time-out system reset, 1sec

**Power Supply:** DC 12~24V

#### Power Consumption:

Single input 4.2A at 24V (Maximum, including PoE)

**OS support:** Embedded Linux 2.6.20

#### Mechanical

**Construction:** Rugged Aluminum Alloy Chassis, IP31 protection

**Color:** Silver

**Mounting:** Wall mount (DIN-rail optional)

**Dimension:** 66.5(H) x 250 (W) x 106.3 (D) mm

**Net weight:** 1.07kg

#### Environment

**Operating Temp:**

-13 ~ 158°F(-25 ~ 70°C), 5 to 95% RH

**Storage Temp:** -40 ~ 176°F(-40 ~ 80°C), 5 to 95% RH

**Regulation:** FCC class A, CE, UL\*

EN55022 class A

EN55024

EN61000-3-2, 3

EN61000-4-2, 3, 4, 5, 6, 8, 11

IEC 60950

IEC61373\* (Railway)

EN50155\* (Railway)

EN50121-4\* (Railway)

NEMA TS2\* (traffic control)

**Shock:** IEC60068-2-27 (50g peak acceleration)

**Vibration:** IEC60068-2-6 (5g/ 10~150Hz/operating)

**MTBF:** 319,175 hours MIL-HDBK-217 GB (MILITARY HANDBOOK) standard\*

**Warranty:** 5 years

\*to be confirmed

## Feature Specifications

### WAN Interface

**Ethernet:** 10/100 Based-TxRJ-45 connector x1, auto MDI/MDI-X

### LAN Interface

**Ethernet:** 10/100 Based-TxRJ-45 connector x4 (with PoE), auto MDI/MDI-X

**Routing per VLAN:** Support port-based VLAN and IEEE802.1Q VLAN

**Quality of Service:** Four priority queues per port, 802.1p COS and IP Layer TOS/DiffServ

### Ethernet Performance

**Transfer Rate:** 14,880 pps for Ethernet port and 148,800 pps for fast Ethernet port

**Transfer Packet Size:** 64 bytes to 1522 bytes (with VLAN tag)

**MAC address:** 1K MAC address table

**Memory Buffer:** 512 Kbits

**Back-plane:** 1.2 Gbps

### IP Routing Service

**Static routing**

**Dynamic routing:** RIP, RIP-II, OSPF, ISIS\*, BGP\*, DVMRP  
**PPP**

**PPPoE**

### IP Firewall/ Perimeter Security

**IP address and port filtering**

**NAT/ DMZ**

**VPN:** L2TP, PPTP, SLIP, VLAN, IPsec, OpenVPN, GRE\*, NHRP\*, DMVPN\*

### Management & Security

**Security**

HTTPS, SSH, SFTP

**Basic Web UI Module (Webmin):** PPP/PPPoEDial up, Configure file management, DHCP Server, Initial System Boot up, Firewall, Network Configuration, Scheduled Jobs, System Logs, System Time, User account manager Web minconfigure

**Extensible for other proprietary Web UI modules:**

Routing, NAT, Switch, DIO, Serial, PoE

**Extensible for other standard Web UI (webmin) modules**

**Linux shell access via TELNET connection or console port**

**SNMP v1, v2c, v3:** MIB and traps

MIB-II, Bridge MIB, Ethernet-like MIB, VLAN MIB

**Proprietary SNMP MIB sample code**

**NTP** for time management

### Power over Ethernet

**PD classification:** detection, class ID 0~3 follow IEEE802.3af standard

**PIN assignment (RJ45 connector):** V+ (Pin 4,5), V-(Pin 7,8), Tx(Pin 1,2), Rx (Pin 3,6)

**PoE control:** Support user configuration for PoE enable, disable, or based on schedule

**PoE schedule control:** Each PoE port can be active and powered scheduling with different rules. It supports weekly schedule on hourly basis.

**Power Limit Control:** The control mode supports IEEE802.3af standard. The maximum DC power delivery on each PoE is 15.4W@DC 48 V input.

### Technology

**Standard:**

IEEE802.3 10Base-T Ethernet

IEEE802.3u 100Base-Tx Fast Ethernet

IEEE802.3af Power over Ethernet (PoE)

IEEE802.3x Flow Control and Back-pressure

IEEE802.1p Class of service

IEEE802.1Q VLAN

**Processing:** Store and Forward architecture

**Packet filter:** Broadcast packet filtering

\*Optional

## Linux Specifications

### Embedded Linux

**Bootloader:** JetBox bootloader

**Linux Kernel:** 2.6.20

**Shell:** GNU ash

**File system:** jffs2, NFS, Ext2, Ext3, VFAT, FAT

**Device drivers:** SD card, CF card, USB, Watchdog timer, UART, Ethernet, DIO

**Protocol:** ARP, PPP, CHAP, IPv4, IPv6, PAP, ICMP, TCP, UDP, NFS, RIP, RIP-II, OSPF, ISIS, BGP, DVMRP, L2TP, PPTP, SLIP, VLAN, IPsec, OpenVPN

**Software packages:** busybox (telnetd, inetd, udhcp), e2fsprongs, i2c-tools, ltp-testsuite, microcom, mtd, pciutils, usbmount,usbutils, bridge-utils, ethtool,

iptables, net-snmp, ntp, openssh, openssl,openVPN, openSWAN, pppd, pptp-linux, proftpd, samba, smtclient, bind, l2tp, mrouter, quagga, wireless-tools, jamvm, syslogd, udhcp, setserial, goaheadweb server

**JavaVM**

**Korenix Linux auto-run function**

Customized configuration

Process monitoring

### SDK

**Linux tool chain:** Gcc(C/C++ PC cross compiler), uClibc

**Linux sample code**

## Ordering Information

**Jetbox 9560 Intel IXP430 667MHz, 12~24V DC, 128MB DDR2 RAM**

Includes:

- JetBox 9560
- Console cable x1
- Attached 2-pin power terminal block
- Attached 10-pin DIO terminal block
- Attached blanket to cover SD card slot
- Quick installation guide
- Documentation and software CD-ROM

## Optional Accessories

**Additional applications on CF card: CF card capacity is 2G**

- Add-on Webmin modules & JavaVM
- Advanced Linux configuration

**802.11g wireless dongle**

**3.5G wireless card**

**DIN-rail kits**

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PoE Switch

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Ethernet Switch

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Managed  
Switch

Gigabit Switch

Redundant  
Switch

Entry-Level  
Switch

**Networking  
Computer**

Communication  
Computer

Ethernet  
I/O Server

Serial Device  
Server

Media  
Converter

Multiport  
Serial Card

SFP Module

Din Rail  
Power Supply