JetBox 9535 / 9535-w

9-Port Intelligent PoE Routing Computer

CE FC UL LISTED RoHS

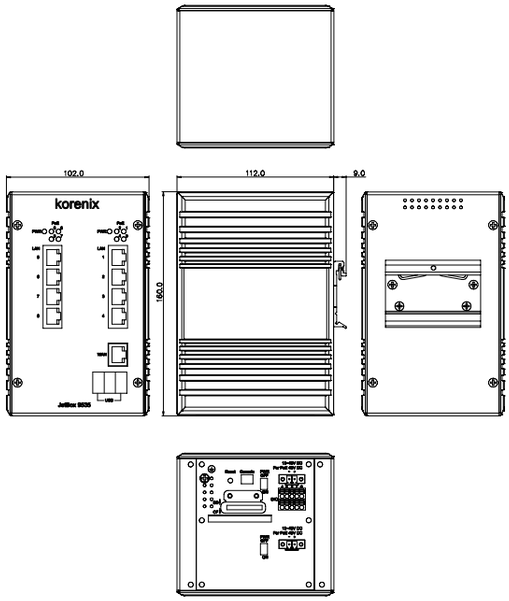
World's First Industrial 9-port Intelligent PoE Routing computer

- Intel IXP430/435 667MHz networking processor
- Complete Layer3 routing support: OSPF, RIP, DVMRP, IPv6
- 8-port PoE delivers full 15.4W per port, 123w per unit
- Full management features with QoS, VLAN, PoE scheduling
- Separated two DC 12~48V power inputs (48V for PoE)
- Versatile interfaces of USB, DIO, SDIO control, and optional modules for RFID, WLAN, and WiMax
- 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 (-40~80°C for Wide temperature)

Overview

The stylish JetBox 9535 series is an industrial layer-3 router with power-over-Ethernet technology and Linux computing. It is a gateway to connect different network groups (Ethernet, fieldbus, serial or IO control) in a complex networking architecture and manage peripherals at the front-end site through its Linux programs or Java applications. It is reliable (network redundancy, system recovery) and robust (passive cooling, protected against the dusts and spills, shock & vibration resistance) to adopt in severe industrial vertical markets, such as transportation, substation, or hazardous environment.

Dimensions (Unit = mm)



Hardware Specifications

System

Processor:
Intel Xscale IXP430 667MHz RISC-based
Intel Xscale IXP435 667MHz RISC-based (wide temp)
Fanless
System memory: 128MB DDR2 RAM
System flash: 32MB
Ethernet: 10/100 Based-Tx RJ-45 connector x9
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 DO), 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~LAN8):
Powered/none x8(Yellow on/off)
LED per unit:
Power on/off x1 (Green on/off)
Power on/off switch x1
Reset button x1
HW Watchdog timer:
Generates a time-out system reset, 1sec

Power Supply:
Two seperated power inputs
DC input 48V (for PoE)
DC 12~48V
Power Consumption:
One input 1.6A at 48V (Max., including PoE), two DC inputs
OS support: Embedded Linux 2.6.20

Mechanical

Construction:
Rugged Aluminum Alloy Chassis, IP31 protection
Color: Silver
Mounting: DIN rail (wall mount optional)
Dimension: 160(H) x 112 (W) x 102 (D) mm
Net weight: 1.2kg

Environment

Operating Temp:
-13 ~ 158°F(-25 ~ 70°C), 5 to 95% RH
-40 ~ 176°F(-40 ~ 80°C), 5 to 95% RH
(Wide temp version: JetBox 9530-w)
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
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

JETBOX

Feature Specifications

WAN Interface

Ethernet: 10/100 Based-Tx RJ-45 connector x1, auto MDI/MDI-X

LAN Interface

Ethernet: 10/100 Based-Tx RJ-45 connector x8 (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/PPPoE Dial up, Configure file management, DHCP Server, Initial System Boot up, Firewall, Network Configuration, Scheduled Jobs System Logs, System Time, User account manager Webmin configure

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, setserial, usbmount,usbutils, bridge-utils, ethtool, iptables, net-snmp, ntp, openssh, openssl,openVPN, openSWAN, pppd, pptp-linux, proftpd, samba, smtpclient, bind, l2tp, mrouted, quagga, wireless-tools, jamvm, syslogd, udhcp, goahead web 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 9535 Intel IXP430 667MHz, 48V DC, 128MB SDRAM

JetBox 9535-w Intel IXP435 667MHz, 48V DC, 128MB DDR2 RAM, -40~80°C

Includes:

- JetBox 9535 / 9535-w
- Console cable x1
- Attached two 2-pin power terminal block
- Attached 10-pin DIO terminal block
- Attached blanket to cover SD card slot
- Attached name plate to cover CD card slot
- Quick installation guide
- Documentation and software CD-ROM

Optional Accessories

- Additional applications on CF card: CF card capacity is 2G
  CF2G-M Modbus gateway
  Add-on Webmin modules
  Advanced Linux configuration
- 802.11g wireless dongle
- Wall mount kits