

## KPM204 Communication Manager

Embedded Computer Based on RISC Architecture with 4 Serial Ports, 2 Network Ports, GPRS\3G \4G and SD Card Slots



**Product Name:** Embedded computer

**Category:** Gateway, communication manager, collector, concentrator

**Product description:**

1. Industrial grade ARM processor, 300MHz frequency
2. 64MB DDR3 SDRAM, 128M Flash
3. 2 Gigabit Industrial Ethernet interfaces, IEEE1588 support
4. 4 x RS232/RS485 interface.
5. GPRS/3G/4G/Wifi remote wireless data transmission support
6. Built-in real-time clock (RTC), buzzer, temperature sensor and hardware encryption
7. Support -40~80°C industrial wide temperature application
8. Linux / WinCE support, pre-installed Linux

KPM204 series wireless remote intelligent controller based on RISC architecture industrial grade ARM9 processor, clocked at 300MHz, supports 2 10/100/1000Mbps adaptive industrial Ethernet interface, 4 serial ports (RS-232/422/485 optional Supports power IEC60870-101, 103, 104 protocol, DL/T645, ModbusRTU, CJT188 and other protocols, supports IEC61850 ProfiNet, EtherNet, BACnet, SNPx, energy management machine and other communication protocols, with 1 debug serial port, large capacity SD Storage, WIFI wireless LAN and GPRS/3G/4G remote communication functions make it easy for users to realize remote monitoring applications. It is ideal for industrial field signal acquisition and control of on-site and remote equipment.

KPM204 series uses high-performance, low-power, small-volume embedded microprocessors with embedded 64MB DDR2 SDRAM, 128MB Flash memory, 32KB NVRAM, and SD memory card with up to 128GB capacity for powerful computing, storage capacity, local and remote wireless communication capabilities, real-time collection and processing of field data, complex control algorithms and massive field data storage, with rich peripheral interfaces and communication functions, ideal for data acquisition and high computing power control systems, communication systems, remote equipment monitoring and other applications. Rugged metal casing and internal circuit "three-proof" treatment, especially suitable for harsh environments.

KPM204 series of intelligent controllers pre-installed the embedded Linux operating system, providing an open and efficient software platform for user software development. Combined with the self-developed LT-IDE development environment, it can easily and efficiently complete application development and interactive debugging.



## 1. Hardware specifications

### Main system

**CPU:** Industrial grade ARM, 300MHz frequency

**RAM:** 64MB DDR2 SDRAM

**Flash:** 128MB Flash

**NVRAM:** 32KB

**Storage:** Large capacity SD storage, up to 128GB

### Network Interface

**LAN :** 10/100Mbps Adaptive Industrial Ethernet, RJ45

**Protection:** 15KV air discharge and 8KV contact discharge protection

### Serial interface

**Standard:** RS-232 (TxD、 RxD、 GND)

RS-422 (A、 B、 Y、 Z、 GND)

RS-485 (DATA+、 DATA-、 GND)

**Photoelectric isolation:** independent optical isolation for each channel

**Serial port protection:** 15KV ESD for all signal lines

**Flow direction control:** RS485 automatic data flow control

**Communication Protocol:** Modbus RTU/ASCII Protocol Support

### CAN interface

**Standard:** Bidirectional optical isolation CAN2.0B interface

**Signal:** CAN-H, CAN-L

**Isolation:** 2KV digital optical isolation

**Speed:** 10Kbps to 1Mbps

### GPRS

**RF Band:** 850/900/1800/1900MHz

**Standard:** Class 8/10

### 3G (Optional WCDMA)

**Technical System:** WCDMA/HSDPA/GSM/GPRS/EDGE

**RF band:** 2100/1900/850MHz

**Peak rate:** 3.6Mbps (downstream) / 384Kbps (upstream)

**Peak rate:** 100Mbps (downstream) / 50M bps (upstream)

### Reliability

**Alarm Tool:** Built-in buzzer

**Temperature monitoring:** Built-in temperature sensor for temperature monitoring

**Watchdog :** Hardware Watchdog (WDT) Monitoring

**MTBF:** more than 100,000 hours

### Safety

**Hardware encryption:** Built-in independent hardware encryption circuit to protect user IP

### WIFI (WLAN)

**Compatible standards:** 802.11a/b/g

**RF Type:** DSSS, CCK, OFDM

**Transmission rate:** 150Mbps

**Transmission distance:** 200 meters (open area without shelter)

**Dry node:** logic 0 (short to GND), logic 1 (disconnected)

**Wet node:** logic 0 (below 3VDC), logic 1 (10 ~ 30 VDC)

**Protection:** 4KV photoelectric isolation; 36 VDC overvoltage protection

### Digital output

**Relay:** Type C (lifetime is more than 100,000 times), capacity 1A @120

VAC or 1A @ 24VDC, support for normally open or normally closed contacts

### Analog input

**Signal Type:** Single-Ended / Differential Signal Input

**Resolution:** 16 bits

**Signal form:** 0~5V, 0~10V, ±5V, ±10V, 4~20mA

**Sampling rate:** no less than 100 times per second per channel

### Analog output

**Resolution:** 16 bits

**Signal form:** 0~10V, 4~20mA

**Load resistance:** less than 250 Ω

### Pulse input

**Operating humidity:** 5 to 95% RH

**Storage temperature:** -50~100°C

**Seismic performance:** 1G @ IEC-68-2-6, sine wave, 5~500 Hz, 1 Oct./min, 1 hr/axis.

**Impact resistance:** 5G @ IEC-68-2-27, half sine wave, 30 ms

### Power requirements

**Power input:** 9-48VDC, 12 VDC/24VDC recommended

**Power Consumption:** 250 mA @ 12 VDC, 3W

### Mechanical properties

**Shell:** Polycarbonate plastic

**Dimensions:** 138x55x118mm

**Weight:** 320g

**Installation:** rails, wall mount

### Warranty period 5 years



## 2. Software specifications

### Linux (pre-installed)

**Operating System:** 3.2

**BootLoader:** UBoot

**File System:** JFFS2, YAFFS2, NFS, Ext2, Ext3

**Protocol stack:** TCP, UDP, IPv4, SNMPv1/v2/v3, ICMP,

ARP, HTTP, CHAP, PAP, DHCP, NTP, NFS,

SMTP, Telnet, FTP, TFTP, PPP, PPPoE

**Network security:** OpenVPN, iptables firewall

**Web server (Apache):**

Create and manage websites, support PHP and XML and dial-out tasks for network connectivity to other hosts

**Web-based system configuration and machine testing services:**

IE or other browsers can complete system function configuration and verification testing of all components onboard

**Application development software:**

- GNU C library
- GNU C/C++ cross-compiler
- GCC C/C++ cross-compilation toolchain Bootloader/ Kernel/ files