

CM64

ACCESS POINT FOR
COMMA 6 GAME
MACHINES
ART.110 TULPS



COMMA 6 COMPLIANT

UP TO 4 SERIAL PORTS

READY FOR ADSL ISDN
PSTN GPRS EDGE

LINUX INSIDE

REMOTELY UPGRADABLE

CM64 is a small router that implements all the characteristics required by the "**Capitolato Tecnico per la Concessione in Rete dei Monopoli di Stato**" document, in terms of:

- Service levels
- Network security
- Compatibility with standard communication protocols

CM64 is a small (110x150x30 mm), low cost and easy to install device designed to operate in medium hostile environment as the public sites, fully programmable in C, Java, etc thanks to the standard Open Source Development Tools available on the popular Linux Operating System.

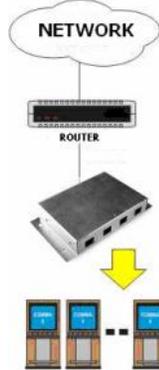
Technical characteristics

- Up to 4 RS232 fully accessible serial ports compliant with comma 6 requirements
- Available extended versions with more serial ports
- Port disconnections and case openings monitoring
- USB 1.1 port to connect a printer
- Ethernet 10/100MB port to connect to a local network
- Internal ADSL, PSTN, ISDN, GPRS and EDGE modem available
- Open source development tools for C, and C++ for Debian and Red Hat linux distributions
- Linux kernel 2.4 with a restricted set of standard Unix tools
- Already supported services and tools are SNMP, WEB, FTP, Telnet, SSH, NTP, SSL
- Firewall IP filtering with Shorewall
- RISC Axis Etrax LX100 microprocessor at 100Mhz
- 16MB of RAM memory and 4MB of flash memory
- Firmware fully up-gradable from remote through a normal FTP session
- Metallic case to operate in medium hostile environment
- Available in high volumes
- Size 110x150x30 mm
- CE certification compliant

Versions available

- **CM64-ETH** is the base version useful for installation within an external router.
- **CM64-ADSL** is similar to the ETH model but with an internal ADSL modem.
- **CM64-ISDN** is similar to the ETH model but with an internal ISDN modem.
- **CM64-PSTN** is similar to the ETH model but with an internal 33600 baud modem.
- **CM64-GPRS** is similar to the ETH model but with an internal GPRS dual band class 10 modem. Data speed is 9,6 kbps for each GSM cell granted.
- **CM64-EDGE** is similar to the ETH model but with an internal EDGE tri band class 6/10 modem. Data speed is 40 kbps for each GSM cell granted.

CM64-ETH base version



CM64-ETH is the base version useful for installation within an external router.

CM64-PSTN router with internal modem



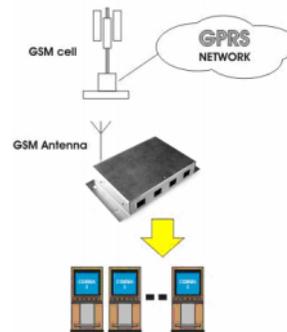
CM64-PSTN is similar to the ETH model but with an internal 33600 baud modem.

CM64-ADSL router with internal ADSL adapter



CM64-ADSL is similar to the ETH model but with an internal ADSL modem.

CM64-EDGE router with internal EDGE modem



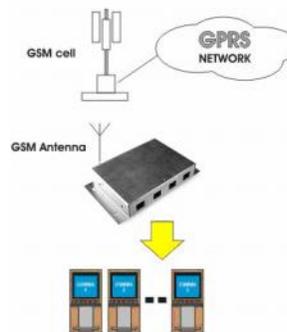
CM64-GPRS is similar to the ETH model but with an internal GPRS dual band class 10 modem.

CM64-ISDN router with internal ISDN adapter

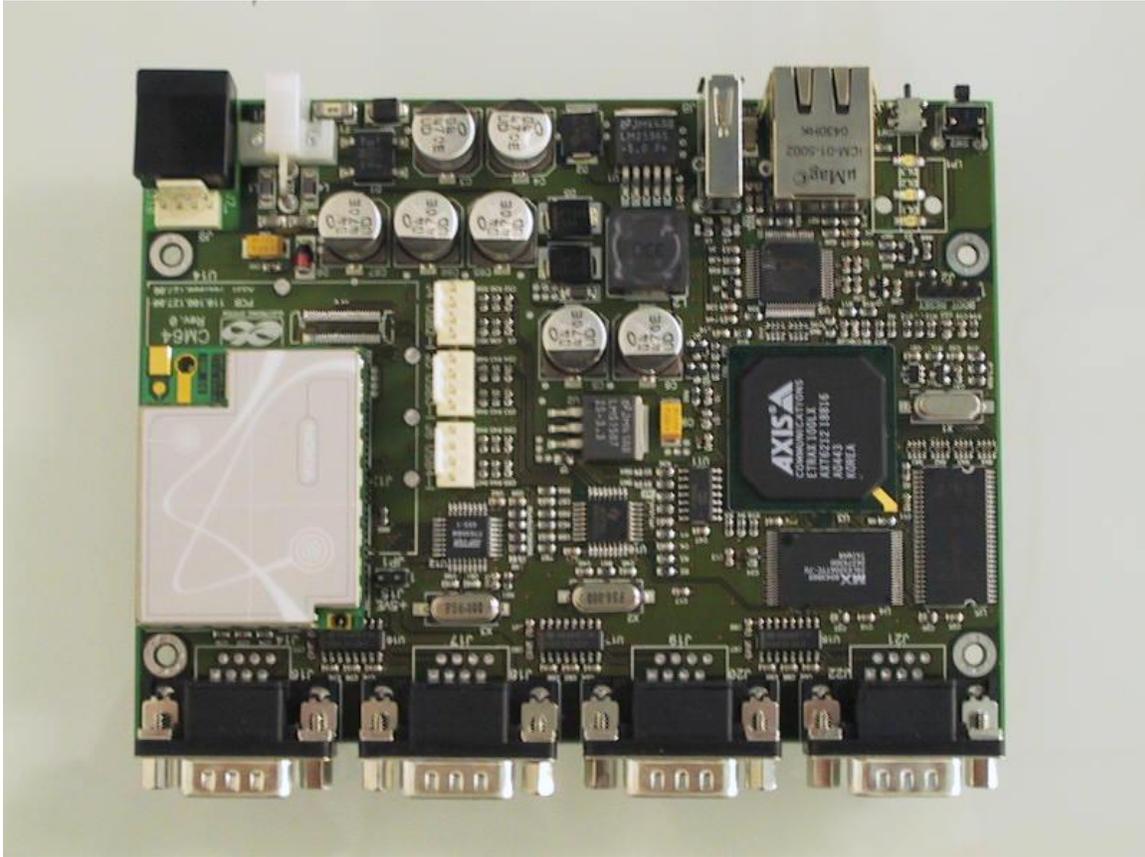


CM64-ISDN is similar to the ETH model but with an internal ISDN modem.

CM64-EDGE router with internal EDGE modem

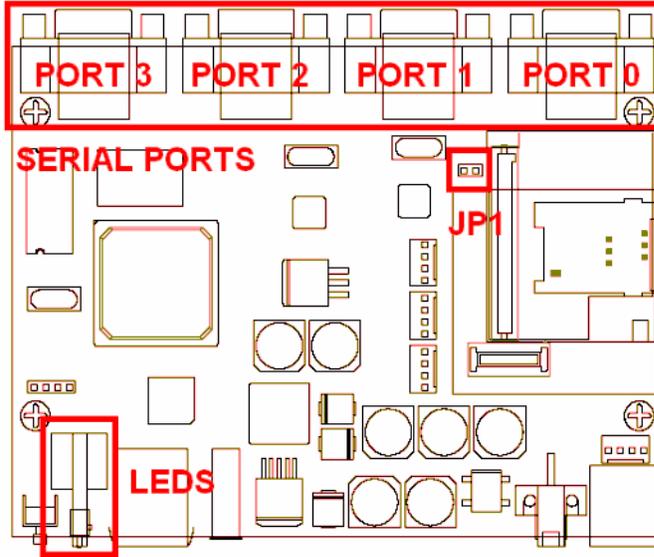


CM64-EDGE is similar to the ETH model but with an internal EDGE tri band class 6/10 modem.



CM64 connection description

This document reports the signals on the external and internal connectors of the CM64 Point of Access for Games with Linux



Front panel leds

- **DL3 Green led.** Power supply
- **DL2 Green led.** Network traffic over ethernet port, user definable
- **DL1 Yellow.** GPRS state, MAC address setup, user definable
 - When blink fast low brightness the GPRS modem is not registered on carrier GSM network
 - When blink slowly at low brightness the GPRS modem is registered on carrier GSM network
 - When blink fast at high brightness the MAC address is not set

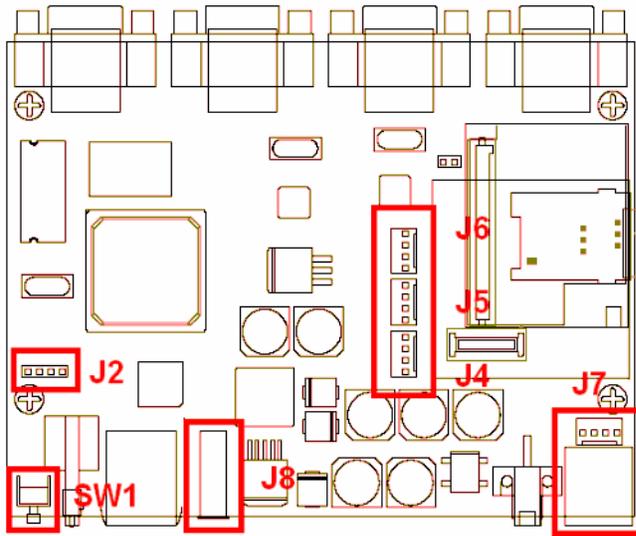
JP1 Jumper

Used to connect pin 9 of serial ports to +5V to power external serial devices.

Comma 6 serial ports

DB9 male connector to the Comma 6 game machines serial port.

<p>PINOUT PORT</p> <p>DB9 MALE</p>	<p>1 n.c.</p> <p>2 RXD</p> <p>3 TXD</p> <p>4 n.c.</p> <p>5 GND</p> <p>6 n.c.</p> <p>7 RTS</p> <p>8 CTS</p> <p>9 (+5Vcc)</p>
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J4 J5 J6 Internal USB1 1.1 connector

Pin-out

- pin 1: +5V controlled power supply
- pin 2: USB1 D- data signal
- pin 3: USB1 D+ data signal
- pin 4: Ground

J8 External USB0 1.1 connector

Pin-out

- pin 1: +5V controlled power supply
- pin 2: USB0 D- data signal
- pin 3: USB0 D+ data signal
- pin 4: Ground

J7 ADSL/ISDN/PSTN external connector RJ45

This connector is used to link the wired WAN interface: for ADSL and PSTN connect to the public switched telephone line, for the ISDN connect to S bus of a NT1

J2 Network Boot and Reset

Shorting pins 1 and 2 will enable the network boot capability of the Axis processor.

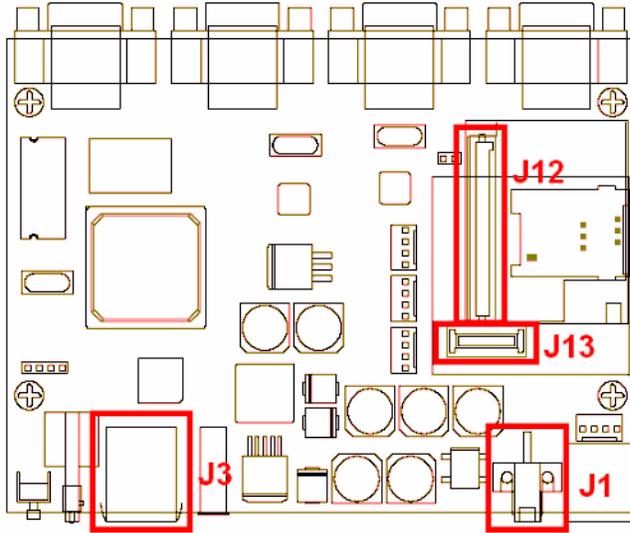
Shorting pins 3 and 4 will result in a reset of the Axis processor

Pin-out

- pin 1: connected to Axis Network Boot
- pin 2: GND
- pin 3: GND
- pin 4: connected to Axis Master Reset signal

SW1 Console Login

This switch, if pressed at boot time will enable the login function upon serial port 0 (the console port).



J1 External Power Supply connector

2 pin external connector. No polarity needed. The presence of a diode bridge permits to connect an AC or DC power supply to the CM64 between 9 and 18 Volts.

J3 Ethernet connector

This RJ45 shielded connector is used to link the CM64 to a 10/100 external Ethernet network equipment. This interface is mounted on all versions of the CM64.

J12 EDGE module connector

This connector is used to accommodate an optional EDGE module for communication between CM64 and the Concessionario servers through the GPRS/EDGE network.

J13 GPRS module connector

This connector is used to accommodate an optional GPRS module for communication between CM64 and the Concessionario servers through the GSM/GPRS network.