

Introduction:

Matrix 512 is an ARM9-based Linux ready industrial computer. The key features are as follow:

1. ARM920T ARM Thumb Processor with 200MIPS at 180MHz, Memory Management Unit
2. 16-KByte Data Cache and 16-KByte Instruction Cache
3. 64MB SDRAM, 16MB Flash on board
4. Two 10/100 Mbps Ethernet
5. Two USB 2.0 full speed (12 Mbps) Host Ports
6. Multimedia Card Interface for SD memory card
7. Four 3-in-1 RS-232/422/485 ports
8. RS-485 supports auto data direction control
9. 21 programmable Digital I/O
10. 9 to 40VDC power input
11. Pre-installed Standard Linux 2.6 OS
12. GNU tool chain available in Artila CD
13. Optional DIN RAIL mounting adaptor

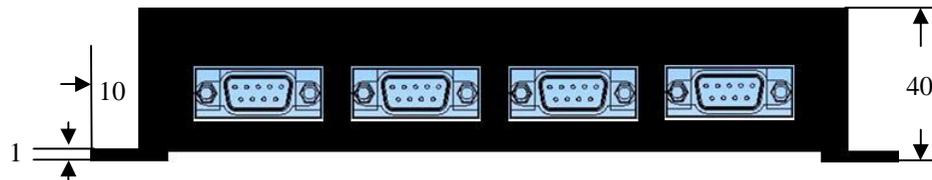
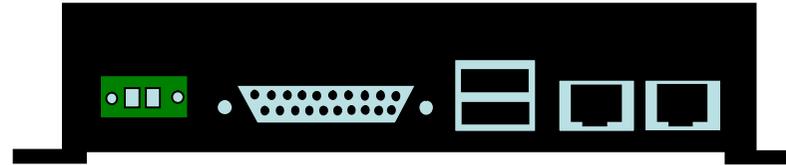
Packing List

1. Matrix 512 Box Computer
2. Wall mount bracket
3. Artila CD

Optional Accessory:

1. DK-35A: DIN RAIL Mounting Kit
2. Console cable CB-DB9MDB9M-100

Matrix 512 Layout



Pin Assignment and Definition

Reset Button

Press the “Reset” button to activate the hardware reset. You should only use this function if the software reboot does not function properly.

Power LED

The Power LED will show solid green if power is properly applied

Ready LED

The Ready LED will show solid green if Matrix 512 complete system boot up. If Ready LED is off during system boot up, please check if power input is correct. Turn off the power and restart Matrix 520 again. If Ready LED is still off, please contact the manufacture for technical support.

Link/Act

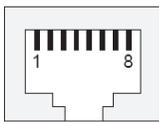
When Ethernet port are connected to the network, Link/Act will show solid green and if there is traffic in the Ethernet, this LED will flash

Serial Port LED

These four dual color LEDs indicate the data traffic at the serial ports. When Rx/D line is high then Green light is ON and when Tx/D line is high, Yellow light is ON.

Ethernet Port

Pin	Signal
1	ETx+
2	ETx-
3	ERx+
6	ERx-



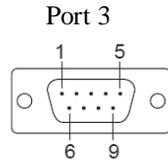
Serial Ports:

The four serial ports are 3-in-one RS-232/422/485 ports and the interface is configured in by software. Please refer to example program to configure the serial or use “setuart” utility to configure serial port setting. RS-485 hardware supports data direction control. Therefore it is software compatible with a RS-232 interface.

Serial Console Port: (P3)

Serial console port shares the connector with Serial port 3 but the pin definition as shown as follow:

Pin No.	RS-232
1	—
2	—
3	—
4	—
5	GND
6	—
7	TXD
8	RXD
9	—

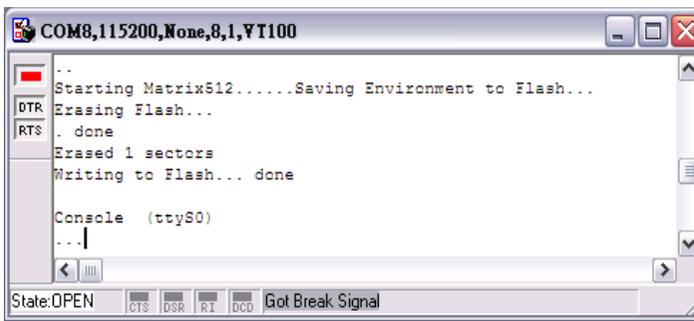


Baud Rate: 115200
Data bits: 8
Parity: N
Stop bit: 1
Terminal type: ANSI

The console cable can be ordered and its part number is CB-DB9FDB9F-100. Its configuration can be found at document Matrix 512 console cable

Enable/Disable Serial Console Port

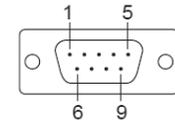
The serial console port is disabled as factory default setting. To enable the serial console, you need to purchase or prepare a serial console cable and connect it to port 3. Right after powering on the system, keep typing \$ continuously until you see the message as shown in the figure followed. Console (ttyS0) stands for console port ttyS0 is enabled. Repeat this procedure will disable the serial console and Screen will show “Console (null)”



Serial Port (DB9 Male)

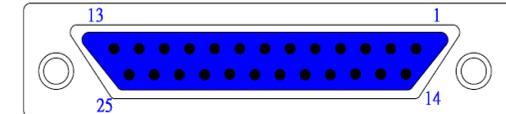
Pin No.	RS-232	RS-422	RS-485
1	DCD*	TXD-	—
2	RXD	TXD+	—
3	TXD	RXD+	DATA+
4	DTR*	RXD-	DATA-
5	GND	GND	GND
6	DSR*	—	—
7	RTS	—	—
8	CTS	—	—
9	---	—	—

Port 1~4



Note: * Port 2 only

Digital I/O Port (DB25 Female)



Pin No.	Function	Pin No.	Function
1	DIO0	14	DIO13
2	DIO1	15	DIO14
3	DIO2	16	DIO15
4	DIO3	17	DIO16
5	DIO4	18	DIO17
6	DIO5	19	DIO18
7	DIO6	20	DIO19
8	DIO7	21	DIO20
9	DIO8	22	GND
10	DIO9	23	GND
11	DIO10	24	VCC3
12	DIO11	25	VCC5
13	DIO12		

Note:

1. VCC3: 3.3 VDC output
2. VCC5: 5 VDC output
3. GND: Digital Ground

