



## Features

- Fanless ruggedized aluminum chassis
- Intel® Atom N270 1.6 GHz Processor
- On board DDR 2 memory + SODIMM, Up to 1.5 GB w/o ECC
- Support GSM / GPRS / WCDMA / HSDPA / GPS
- Support ignition on/off delay control
- 1 PCI-32 & 1 Mini PCI & 1 Mini PCI-E expansion slot
- DC 6V~36V (voltage protection 33V) power input & low power protection
- Support one PCI add slot
- Support Smart battery interface
- e Mark certification

## Specifications

### Fanless platform

- Low power low operation temperature
- Fanless Aluminum Alloy Embedded System

### Dimension

- 235.6 (W) x 105 (H) x 230 (D) mm, Compact size

### Processor

- Support Intel® Atom N270 1.6 GHz low power Processor
- 437 pins package, 533 MHz FSB, 512KB L2 Cache

### Chipset

- Intel® 945GSE North & ICH 7-M South Bridge Chipset

### Memory

- On board 512MB + 1 SODIMM Socket,  
Up to 1.5 GB w/o ECC, 533 MHz DDR 2 Memory

### BIOS

- Award System BIOS, Support Console Redirection  
& Power On After Power failure

### Disk Drive Storage

- 1 channel SATA interface + 1 internal CF module slot

### Expansion

- 1 Mini PCI + 1 Mini-PCI-E + 1 PCI-32 expansion slot

### Power management

- S3, S4 suspend mode
- Low power protection design for boot-up and shutdown
- uP detection ignition status for 8 level power on/off delay
- Low battery status detected

### 3.5G Mobile Wireless support

- Sierra MC8790V support GSM/GPRS/EDGE/WCDMA/HSDPA
- Flexible support tri-band or quadband

### GPS support

- SiRF-3 high sensitivity GPS, 20 channel tracking

### Ethernet

- 1 Realtek 8111C 100/1000 Mbps LAN interface with  
Wake-On-Lan & DMI
- Support S/W power ON/OFF function

### Watchdog timer

- Programmable WDT from 1 to 255 seconds/minutes

### Display Function

- Support high resolution 1080i VGA display
- Support 18-bit dual channel LVDS w/ DB-26 connector

### Smart battery interface

- Support DC output & SMBus for Smart battery kit

### Audio

- ALC662-GR Codec supports Speaker-out

### RS-232 / 485 supports

- 2 DB-9 RS-232/485, 2 DB-9 RS-232, all optional DC-output

## Cable-Free

### Support Digital I/O w/ isolation protection

- 2 D-In, supports Dry / Wet contact, low level 0~3V,  
High level 10 ~ 50V. 2500V isolation protection
- 1 D-In for ignition status input
- 2 D-Out, 500 mA drive capability. 2500V isolation protection

### Ignition Power management

- Support system power on/off by ignition

### Front panel Extend I/O

- 1 Power button & 1 system Reset / GPRS power button
- 1 USB, 2 system status LED, 1 GPRS power LED
- 3 LEDs for GPRS speed mode, 3 LEDs for GPRS signal status
- 1 SIM card socket
- 5 SMA type Antennas for HSDPA / GPS / WLAN

### Rear panel Extend I/O

- Screw-Lock DC power input, 3-pin connector
- +5V & +12VDC & SMBus for Smart Battery w/ VTK connector
- 2 DB-9 for RS-232 / 485, 2 DB-9 for RS-232
- 1 DB-9 for 3 D-in + 2 D-out, 1 DB-15 for VGA
- 4 USB, 1 x 100/1000 Mbit LAN connector
- 1 Speaker out connector
- Power LED + HDD LED, 1 Power button

### Power Supply

- DC-6V~36V (voltage protection 33V) / 1.5~5 A input

### Power ON/OFF mode

- AT or ATX Power ON/OFF mode

### Environment

- Temperature
  - Operation temperature: -30°C~60°C w/ CF or automotive HDD
  - Storage temperature: -40°C ~ 80°C
- Relative humidity: 10% ~ 90% (Non-condensing)
- Vibration
  - 2G @ 5~500Hz random with CF & SSD
  - 1G @ 5~500Hz random with HDD
  - Operation: MIL-STD-810F Method 514.5 C-17 Category 20,  
Ground Vehicle- Highway Trucks and semitrailers 20g
  - Shock
    - Operation: MIL-STD-810F Method 516.5 Procedure I,  
Trucks and semitrailers 20g
    - Non-Operation: MIL-STD-810F Method 516.5 Procedure V,  
Ground equipment 75g

### Certifications

- CE Class A
- FCC Class A
- e Mark

### OS supports

- Windows XP Professional / Embedded, Windows CE, Linux

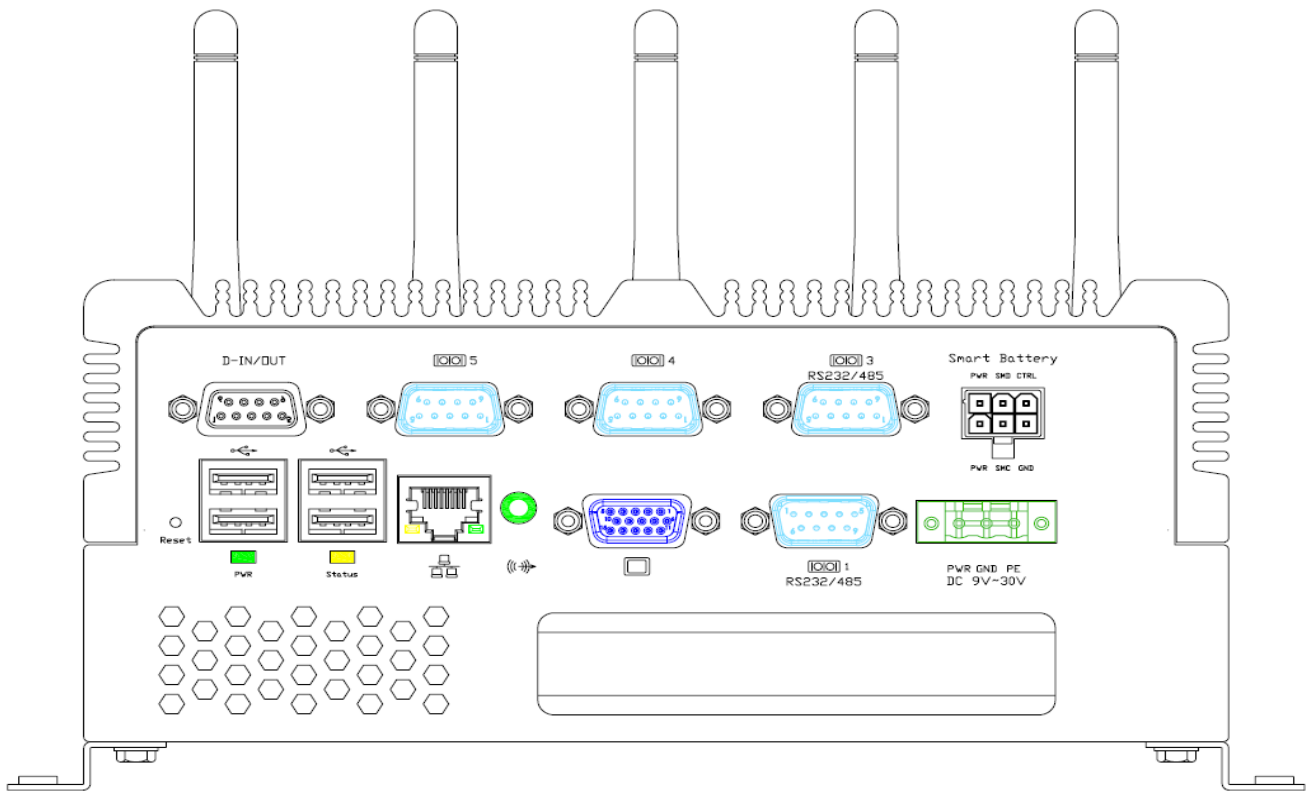
## Ordering Guide

Specification may change without notice

Ordering NO.	CPU	Memory	DB-9 RS-232/485	LVDS	Isolation D-I/O	GPS / HSDPA	PCI-32 slot
Pipal 2041M-835	N270 1.6Ghz	512MB	232/485x2, 232x2	18 bit dual ch. X 1	3 D-IN, 2 D-OUT	Available	1

- Optional order:
- 60W / 120W Power Adapter, HDD, SODIMM Memory
  - Wireless LAN Module, Anti-Vibration HDD drive bay

## Pipal 2041M rear I/O



Dimension: without mounting kit 208 W x 95.0 H x 230 D mm  
 with mounting kit 235.6 W x 105 H x 230 D mm

## Pipal 2041M front I/O

