

# PCM-9389 Intel® Atom™ N455/D525 3.5" SBC, DDR3 SODIMM or on-board SDRAM, PC/104, 18/24-bit LVDS, VGA, 2 GbEs, 4 COMs, 4 USB, LPC, iManager 2.0 Startup Manual

## Packing List

Before you begin installing your card, please make sure that the following items have been shipped:

1. 1 PCM-9389 SBC
2. 1 Startup Manual
3. 1 Utility CD
4. 1 Mini jumper pack p/n: 9689000002
5. 1 AT power cable p/n: 1700016141
6. 1 SATA cable p/n: 1700006291
7. 1 PS/2 KB/Mouse p/n: 1700060202
8. 1 Audio cable p/n: 1700019584
9. 1 Ethernet cable p/n: 1700017863
10. 2 USB 2 port cables p/n: 1700018730
11. 1 COM3/4 cable p/n: 1701200220
12. 1 COM2 RS-232 cable p/n: 1700019414
13. 1 COM2 RS-422/485 cable p/n: 1700019435

Remark:

ATX power cable is optional accessory p/n: 1700001112

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

**Note 1:** For detailed contents of PCM-9389, please refer to information on the enclosed CD-ROM (in PDF format).

**Note 2:** Acrobat Reader is required to view any PDF file. Acrobat Reader can be downloaded at: [www.adobe.com/Products/acrobat/readstep2.html](http://www.adobe.com/Products/acrobat/readstep2.html) (Acrobat is a trademark of Adobe)

For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>

<http://www.advantech.com/eplatform>

For technical support and service, please visit our support website at:

<http://service.advantech.com.tw/support/>

This manual is for the PCM-9389 Series Rev. A1

Part No. 2006938900  
Printed in China

1st Edition  
May 2012

## Specifications

### General

- **CPU:** Intel® Atom™ Processor N455 1.66 GHz / D525 1.8 GHz
- **System Chipset:** Intel® Atom™ N455/D525+ICH8M
- **System Memory:**
  - SODIMM: N455 for DDR3 667 MHz up to 2 GB, D525 for DDR3 800 MHz up to 4 GB
  - On-board: DDR3 667 MHz 1 GB
- **L2 Cache:** 512 KB for N455, 1 MB for D525 on die
- **BIOS:** AMI 16 Mbit Flash BIOS
- **Watchdog Timer:** Output system reset, programmable counter from 1-255 min/sec (set by iManager)
- **Expansion Interface:** PC/104, LPC
- **Battery:** Lithium 3 V / 210 mAh

**Note:** How to clear CMOS (Must follow steps below):

1. Turn off system power.
2. Unplug CR battery cable on BH1.
3. Waiting for 15sec or short BH1 pin1-2.
4. Plug battery cable on BH1.
5. Turn on system power.

- **Power management:** ACPI 3.0, APM
- **Serial ATA:** Two SATA ports supporting 300 MB/s
- **Serial port:** One rear I/O for RS-232 and three internal I/O for two RS-232 & one RS-232/422/485
- **PS/2 KB/Mouse:** Rear I/O connector
- **USB:** Four USB 2.0 compliant universal serial bus ports
- **Audio:** High Definition audio (HD), line-in, line-out, mic-in
- **GPIO:** 8-bit general purpose Input/Output (5 V tolerance)

### CompactFlash® Card

- Supports one 50-pin socket for CFC type I/II

### Display Interface

- **Controller:** Intel N455/D525, embedded Gen3.5 DX9
- **Memory:** 224 MB video RAM shared with system memory
- **Resolution:**
  - VGA: Intel® Atom™ N455 up to 1400 x 1050 (SXGA)  
Intel® Atom™ D525 up to 2048 x 1536
  - LVDS: Single channel 18/24-bit LVDS up to WXGA  
1366 x 768
  - TTL: 18-bit TTL (Supported by T-P/N)
- **Dual Display:** VGA+LVDS (if T-P/N with TTL, VGA+TTL is supported)

## Specifications

### Ethernet Interface

- **Controller:**
  - LAN1 for ICH8M+Intel 82567V GbE
  - LAN2 for Intel 82583V GbE

### Mechanical and Environmental

- **Dimensions:** 146 x 102 mm (5.7" x 4")
- **Power Supply Type:** AT/ATX
- **Power Requirement:** 5 V input
- **Power Consumption:**
  - Typical
    - N455: 1.63A @5V (8.15W)
    - D525: 1.94A @5V (9.7W)
  - Max in HCT:
    - N455: 2.23A @5V (11.15W)
    - D525: 2.9A @5V (14.5W)
- **Operating Temperature:** 0 ~ 60° C (32 ~ 140° F)
- **Weight:** 0.64 kg (reference weight of total package)

## Caution



The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to manufacturer's instructions.

## Jumpers and Connectors

The board has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the jumpers and connectors.

### Jumpers

Label	Function
J1	AT/ATX power supply
J2	COM2 RS-232/422/485 switch
J3	LCD Power

## Jumpers and Connectors

### Connectors

Label	Function
CN1	AT/ATX Power Input
CN3	DDR3 SODIMM socket
CN7	Power Switch
CN8	GPIO
CN9	VGA
CN10	CF socket
CN11	HDD & PWR LED
CN12	SATA
CN13	SATA
CN14	USB
CN15	USB
CN16	COM1
CN17	COM2: RS-232
CN18	COM2: RS-422/485
CN19	COM3/COM4
CN20	LPC
CN21	PS/2
CN22	SMBus
CN23	CPU FAN
CN24	LAN1 (External)
CN25	LAN2 (Internal)
CN26	Audio
CN27	PC/104
CN28	ISA -5 V & -12 V Input
CN29	Inverter Power Output
CN30	LVDS
CN31	TTL (by request)

# Jumpers and Connectors

## Jumpers Settings

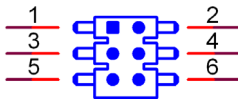
<b>J1</b>	<b>AT/ATX Power Supply</b>
Part Number	1653002101
Footprint	HD_2x1P_79_D
Description	PIN HEADER 2*1P 180D(M)SQUARE 2.0mm DIP W/O Pb
Setting	Function
NC	ATX
(1-2)*	AT

\*: default



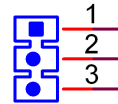
<b>J2</b>	<b>COM2 RS-232/422/485 switch</b>
Part Number	1653003260
Footprint	HD_3x2P_79
Description	PIN HEADER 3x2P 2.0mm 180D(M) SMD 21N22050
Setting	Function
(1-2)*	RS232
(3-4)	RS485
(5-6)	RS422

\*: default

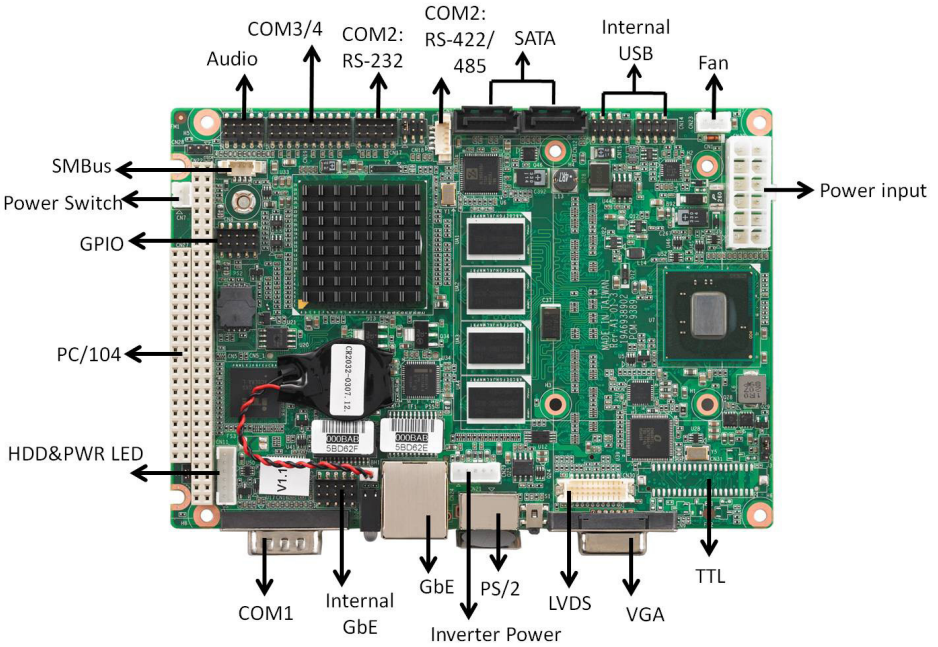


<b>J3</b>	<b>LCD Power</b>
Part Number	1653003101
Footprint	HD_3x1P_79_D
Description	PIN HEADER 3x1P 2.0mm 180D(M) DIP 2000-13 WS
Setting	Function
(1-2)	+5 V
(2-3)*	+3.3 V

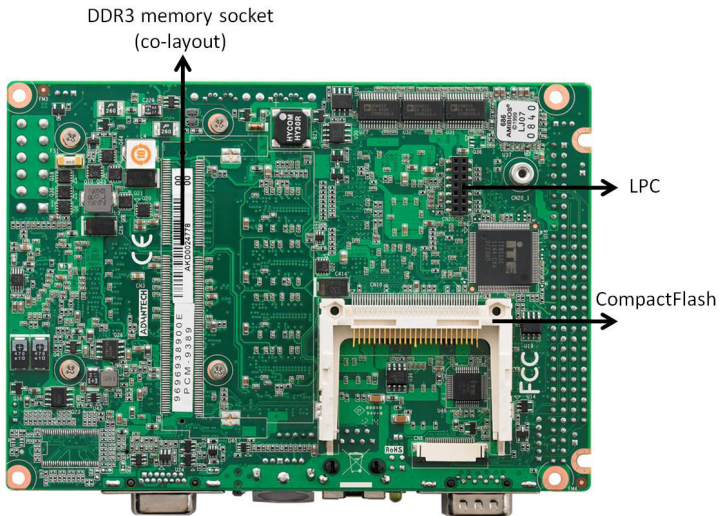
\*: default



# PCM-9389 Jumpers and Connectors



*Figure 1: PCM-9389 Jumpers and Connectors (Component Side)*



*Figure 2: PCM-9389 Jumpers and Connectors (Solder Side)*



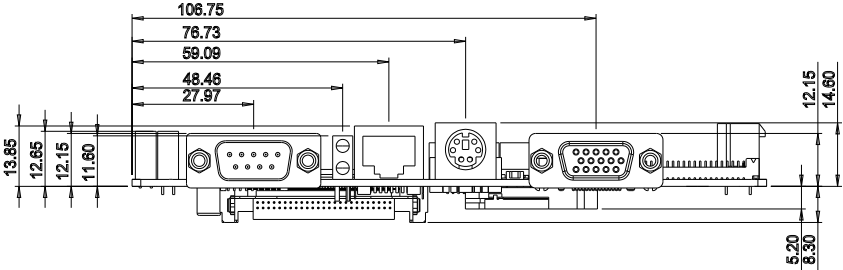


Figure 5: PCM-9389 Mechanical Drawing (Side View)