

# SOM-6763 B1

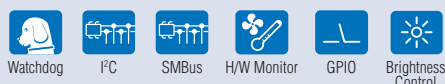
Intel® Atom™ Processor N455/D525  
COM Express® Compact Module



## Features

- Embedded Intel® Atom™ Processor N455 SC 1.66 GHz / D525 DC 1.80 GHz + ICH8M
- Intel® Gen 3.5 DX9, MPEG2 hardware decoder, supports 24-bit LVDS, VGA
- Supports 2 DDR3-667 for N455 up to 2 GB and DDR3-800 for D525 up to 4 GB SODIMMB
- Supports 5 PCIe x 1, 4 PCI masters, LPC, 3 SATAII, 8 USB 2.0, EIDE, GbE
- Supports iManager, SUSIAccess and Embedded Software APIs

### Software APIs:



## Specifications

|                  |                                      |                                                                                                                                    |                                         |
|------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Form Factor      |                                      | COM Express R2.0 Compact Module, Type II Pin-out.                                                                                  |                                         |
| Processor System | CPU                                  | Intel Atom Processor N455 1.66 GHz (single Core), 512 KB L2 Cache<br>Intel Atom Processor D525 1.80 GHz (dual Core), 1 MB L2 Cache |                                         |
|                  | System Chipset                       | ICH8M                                                                                                                              |                                         |
|                  | BIOS                                 | AMI 16 Mbit Flash BIOS                                                                                                             |                                         |
| Memory           | Technology                           | Supports DDR3 667 MHz (N455) and 800 MHz (D525)                                                                                    |                                         |
|                  | Max. Capacity                        | Up to 2GB for N455; up to 4GB for D525                                                                                             |                                         |
|                  | Socket                               | 2 x 204-pin SODIMM sockets                                                                                                         |                                         |
| Display          | Chipset                              | Intel Atom N455 or Intel Atom D525                                                                                                 |                                         |
|                  | Graphic Engine                       | Intel Gen 3.5 DX9, MPEG2 hardware decoder                                                                                          |                                         |
|                  | LVDS                                 | 24-bit single channel LVDS                                                                                                         |                                         |
|                  | VGA                                  | Intel Atom N455 up to 1400 x 1050<br>Intel Atom D525 up to 2048 x 1536                                                             |                                         |
|                  | DVI                                  | -                                                                                                                                  |                                         |
|                  | TV Out                               | -                                                                                                                                  |                                         |
|                  | SDVO                                 | -                                                                                                                                  |                                         |
|                  | Dual Display                         | CRT + LVDS                                                                                                                         |                                         |
| Ethernet         | Chipset                              | Intel 82567V Gigabit Ethernet                                                                                                      |                                         |
|                  | Speed                                | 10/100/1000 Mbps                                                                                                                   |                                         |
| WatchDog Timer   |                                      | 65536 level timer interval, from 0~65535 sec, multi-level, multi-option watchdog timer                                             |                                         |
| Expansion        |                                      | LPC, 5 PCIe x1 (1 PCIe x4), 4 PCI masters, I²C                                                                                     |                                         |
| I/O              | PATA                                 | 1 EIDE (UDMA 100)                                                                                                                  |                                         |
|                  | SATA                                 | 3 SATAII (300 MB/s)                                                                                                                |                                         |
|                  | USB                                  | 8 USB 2.0                                                                                                                          |                                         |
|                  | Audio                                | High definition audio interface                                                                                                    |                                         |
|                  | GPIO                                 | 8-bit GPIO                                                                                                                         |                                         |
| Power            | Power Type                           | ATX, AT                                                                                                                            |                                         |
|                  | Power Supply Voltage                 | +12 V and +5 VSB for ATX, +12V for AT                                                                                              |                                         |
|                  | Power Consumption (Typical)          | 6763N (2 GB DDR3 667)<br>+12 V @ 0.9 A                                                                                             | 6763D (2 GB DDR3 800)<br>+12 V @ 0.94 A |
|                  | Power Consumption (Max, test in HCT) | 6763N (2 GB DDR3 667)<br>+12 V @ 1.3 A                                                                                             | 6763D (2 GB DDR3 800)<br>+12 V @ 1.5 A  |
|                  | Operating Temperature                | 0 ~ 60° C (32 ~ 140° F)                                                                                                            |                                         |
| Environment      | Humidity                             | Operating: 40° C @ 95% relative humidity, non-condensing<br>Storage: 60° C @ 95% relative humidity, non-condensing                 |                                         |
| Mechanical       | Dimensions                           | 95 x 95 mm (3.74" x 3.74")                                                                                                         |                                         |

# Block Diagram

The block diagram illustrates the system architecture of the Intel N455 D525. The central component is the Intel N455 D525, which is connected to various components and interfaces.

**Memory and Storage:**

- Memory:** One Channel DDR3, 2 x 204-pin SODIMM N455, 667MHz x16 up to 2GB D525, 800MHz x16 up to 4 GB.
- Storage:** PRIMARY IDE, PCI BUS, Socket (BIOS), EEPROM 24C02 (2Kb) (Optional), LM96163 detect CPU temperature, EEPROM, SPI FLASH.

**Connectivity and Expansion:**

- Connectors:** Connector Row C,D, Connector Row A,B.
- Interfaces:** DMI x 4 -D, DMI x 2 -M, 8 USB 2.0, 5 PCIe1, HD Audio, 3 SATA II, Intel Giga LAN 82567V, Ethernet, PHY, LPC BUS, WDT, GPIO, H/W Monitor, Smart FAN.

**Other Components:**

- Intel N455 D525:** The main processor.
- ICH8M:** Integrated Chipset.
- Advantech iManager:** Management controller.
- 18 bit to 24 bit LVDS Chrontel CH7036A:** LVDS Channel.
- VGA:** Video Graphics Array.

## Ordering Information

| Part No.          | CPU                   | L2 Cache | Chipset | LVDS   | VGA | Giga LAN | HD Audio | PCIe x4 | PCIe x1 | PCI | USB 2.0 | SATA II | LPC | SMBus | ATX Power | AT Power | Thermal Solution | Operating Temp. |
|-------------------|-----------------------|----------|---------|--------|-----|----------|----------|---------|---------|-----|---------|---------|-----|-------|-----------|----------|------------------|-----------------|
| SOM-6763N-S6B1E   | Atom N455<br>1.66 GHz | 512 KB   | ICH8M   | 24-bit | Yes | 1        | Yes      | Option  | 5       | 4   | 8       | 3       | 1   | 1     | Yes       | Yes      | Passive          | 0 ~ 60° C       |
| SOM-6763D-S8B1E   | Atom D525<br>1.8 GHz  | 1 MB     | ICH8M   | 24-bit | Yes | 1        | Yes      | Option  | 5       | 4   | 8       | 3       | 1   | 1     | Yes       | Yes      | Active           | 0 ~ 60° C       |
| SOM-6763NZ-S6B1E  | Atom N455<br>1.66 GHz | 512 KB   | ICH8M   | 24-bit | Yes | 1        | Yes      | Option  | 5       | 4   | 8       | 3       | 1   | 1     | Yes       | Yes      | Passive          | -20 ~ 80° C     |
| SOM-6763NZ2-S6B1E | Atom N455<br>1.66 GHz | 512 KB   | ICH8M   | 24-bit | Yes | 1        | Yes      | Option  | 5       | 4   | 8       | 3       | 1   | 1     | Yes       | Yes      | Passive          | -40 ~ 85° C     |
| SOM-6763DZ-S8B1E  | Atom D525<br>1.8 GHz  | 1 MB     | ICH8M   | 24-bit | Yes | 1        | Yes      | Option  | 5       | 4   | 8       | 3       | 1   | 1     | Yes       | Yes      | Active           | -20 ~ 80° C     |
| SOM-6763DZ2-S8B1E | Atom D525<br>1.8 GHz  | 1 MB     | ICH8M   | 24-bit | Yes | 1        | Yes      | Option  | 5       | 4   | 8       | 3       | 1   | 1     | Yes       | Yes      | Active           | -40 ~ 85° C     |

Note: Passive = fanless; Active = with fan

## Development Board Optional Accessories

| Part No.         | Description                             |
|------------------|-----------------------------------------|
| SOM-DB5720-00A1E | Development Board for COM Express Type2 |

| Part No.       | Description                                |
|----------------|--------------------------------------------|
| 1960048815N001 | Semi-Heatsink 95 x 95 x 17 mm              |
| 1960048819N001 | Semi-Cooler 95 x 95 x 33.5 mm with 12V fan |

## Packing List

| Part No.       | Description            | Quantity |
|----------------|------------------------|----------|
| -              | SOM-6763 B1 CPU Module | -        |
| -              | Utility CD             | 1        |
| 1960049022N001 | Heatspreader           | 1        |

## Embedded OS

| OS         | Part No.   | Description                           |
|------------|------------|---------------------------------------|
| Win XPE    | 2070009031 | XPE WES2009 Lu- Pier V4.0 MUI24       |
| Win CE 7.0 | 2070010929 | Image CE 7.0 Pro SOM-6763 B1 V1.0 ENG |