

SOM-6763

Intel® Atom™ Processor N450/ D510 COM-Express Compact Module



Features

- Embedded Intel® Atom™ Processor N450 SC 1.66 GHz / D510 DC 1.66 GHz + ICH8M
- Intel Gen 3.5 DX9, MPEG2 Decode in HW, supports 18-bit LVDS, VGA
- Supports 2 DDR2-667 SODIMM sockets up to 2 GB
- Supports 5 PCIe x 1, 4 PCI masters, LPC, 3 SATAII, 8 USB 2.0, EIDE, GbE
- Supports Advantech iManager and software APIs

Software APIs:



Utilities:

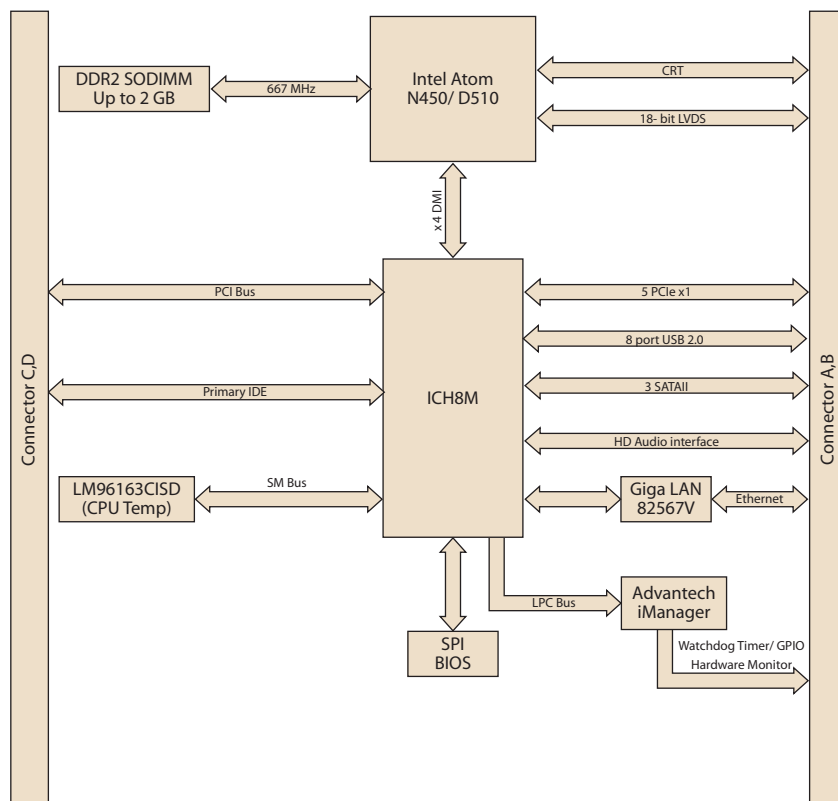


Specifications

Form Factor	COM-Express Compact Module, Type II Pin-out.	
Processor System	CPU	Intel Atom Processor N450 1.66 GHz (single core), 512 KB L2 Cache Intel Atom Processor D510 1.66 GHz (dual core), 1 MB L2 Cache
	System Chipset	ICH8M
	BIOS	AMI 16 Mbit Flash BIOS
Memory	Technology	Supports DDR2 667 MHz only
	Max. Capacity	up to 2 GB (Note 1)
	Socket	2 x 200-pin SODIMM sockets
Display	Chipset	Intel Atom N450 or Intel Atom D510
	Graphic Engine	Intel Gen 3.5 DX9, MPEG2 Decode in HW
	LVDS	18-bit sig-I channel LVDS
	VGA	Intel Atom N450 up to 1400 x 1050 Intel Atom D510 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	
I/O	PATA	1 x EIDE (UDMA 100)
	SATA	3 x SATAII (300 MB/s)
	USB	8 x 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 (1 GB DDRII 667) +12 V @ 0.67 A 6763D (1 GB DDRII667) +12 V @ 0.93 A
	Power Consumption (Max, test in HCT)	6763N (1 GB DDRII 667) +12 V @ 0.89 A 6763D (1 GB DDRII667) +12 V @ 1.32 A
	Operating Temperature	0 ~ 60° C (32 ~ 140° F)
Environment	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimension	95 x 95 mm (3.74" x 3.74")

Note 1: Supports 4 GB with D510 by Project Base.

Board Diagram



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-S6A1E	Atom N450 1.66 GHz	512 KB	ICH8M	18-bit	Yes	1	Yes	Option	5	4	8	3	1	1	Yes	Yes	Passive	0 ~ 60° C
SOM-6763D-S6A1E	Atom D510 1.66 GHz	1 MB	ICH8M	18-bit	Yes	1	Yes	Option	5	4	8	3	1	1	Yes	Yes	Active	0 ~ 60° C
SOM-6763NZ-S6A1E	Atom N450 1.66 GHz	512 KB	ICH8M	18-bit	Yes	1	Yes	Option	5	4	8	3	1	1	Yes	Yes	Passive	-20 ~ 80° C
SOM-6763NZ2-S6A1E	Atom N450 1.66 GHz	512 KB	ICH8M	18-bit	Yes	1	Yes	Option	5	4	8	3	1	1	Yes	Yes	Passive	-40 ~ 85° C
SOM-6763DZ-S6A1E	Atom D510 1.66 GHz	1 MB	ICH8M	18-bit	Yes	1	Yes	Option	5	4	8	3	1	1	Yes	Yes	Active	-20 ~ 80° C
SOM-6763DZ2-S6A1E	Atom D510 1.66 GHz	1 MB	ICH8M	18-bit	Yes	1	Yes	Option	5	4	8	3	1	1	Yes	Yes	Active	-40 ~ 85° C

Development Board

Part No.	Description
SOM-DB5700G-00A2F	Development Board for COM-Express with GLAN

Optional Accessories

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 CPU Module	1
-	Utility CD	1
1960049022N001	Heatspreader	1

Embedded OS

OS	Part No.	Description
Win XPE	2070009031	XPE WES2009 LU- Pier V4.0 MUI24

Value-Added Software Services

Software API: An interface that defines the ways by which an application program may request services from libraries and/or operating systems. Provides not only the underlying drivers required but also a rich set of user-friendly, intelligent and integrated interfaces, which speeds development, enhances security and offers add-on value for Advantech platforms. It plays the role of catalyst between developer and solution, and makes Advantech embedded platforms easier and simpler to adopt and operate with customer applications.

Software APIs

Control



GPIO

General Purpose Input/Output is a flexible parallel interface that allows a variety of custom connections. It allows users to monitor the level of signal input or set the output status to switch on/off a device. Our API also provides Programmable GPIO, which allows developers to dynamically set the GPIO input or output status.



SMBus

SMBus is the System Management Bus defined by Intel® Corporation in 1995. It is used in personal computers and servers for low-speed system management communications. The SMBus API allows a developer to interface a embedded system environment and transfer serial messages using the SMBus protocols, allowing multiple simultaneous device control.



I2C

I2C is a bi-directional two wire bus that was developed by Philips for use in their televisions in the 1980s. The I2C API allows a developer to interface with an embedded system environment and transfer serial messages using the I2C protocols, allowing multiple simultaneous device control.

Display



Brightness Control

The Brightness Control API allows a developer to interface with an embedded device to easily control brightness.



Backlight

The Backlight API allows a developer to control the backlight (screen) on/off in an embedded device.

Monitor



Watchdog

A watchdog timer (WDT) is a device that performs a specific operation after a certain period of time if something goes wrong and the system does not recover on its own. A watchdog timer can be programmed to perform a warm boot (restarting the system) after a certain number of seconds.



Hardware Monitor

The Hardware Monitor (HWM) API is a system health supervision API that inspects certain condition indexes, such as fan speed, temperature and voltage.



Hardware Control

The Hardware Control API allows developers to set the PWM (Pulse Width Modulation) value to adjust fan speed or other devices; it can also be used to adjust the LCD brightness.

Power Saving



CPU Speed

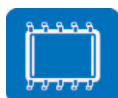
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



System Throttling

Refers to a series of methods for reducing power consumption in computers by lowering the clock frequency. These APIs allow the user to lower the clock from 87.5% to 12.5%.

Software Utilities



BIOS Flash

The BIOS Flash utility allows customers to update the flash ROM BIOS version, or use it to back up current BIOS by copying it from the flash chip to a file on customers' disk. The BIOS Flash utility also provides a command line version and API for fast implementation into customized applications.



Embedded Security ID

The embedded application is the most important property of a system integrator. It contains valuable intellectual property, design knowledge and innovation, but it is easily copied! The Embedded Security ID utility provides reliable security functions for customers to secure their application data within embedded BIOS.



Monitoring

The Monitoring utility allows the customer to monitor system health, including voltage, CPU and system temperature and fan speed. These items are important to a device; if critical errors happen and are not solved immediately, permanent damage may be caused.



eSOS

The eSOS is a small OS stored in BIOS ROM. It will boot up in case of a main OS crash. It will diagnose the hardware status, and then send an e-mail to a designated administrator. The eSOS also provides remote connection: Telnet server and FTP server, allowing the administrator to rescue the system.



Flash Lock

Flash Lock is a mechanism that binds the board and CF card (SQFlash) together. The user can "Lock" SQFlash via the Flash Lock function and "Unlock" it via BIOS while booting. A locked SQFlash cannot be read by any card reader or boot from other platforms without a BIOS with the "Unlock" feature.