SOM-7562 B1

Preliminary

Features

- Embedded Intel® Atom™ Processor N455 1.66 GHz + ICH8M
- Intel Gen 3.5 DX9, MPEG2 Decodes in HW, supports 18-bit LVDS, VGA
- Supports 1 GB on-board memory and 1/2 GB on-board Flash
- Supports 5 PCIe x1, LPC, 3 SATAII, 8 USB 2.0, GbE
- Supports embedded software APIs and Utilities

**Software APIs:** Watchdog | I²C | SMBus | H/W Monitor | GPIO | Backlight On/Off

Utilities: BIOS flash | eSOS | Monitoring | Flash Lock | Embedded Security ID

Windows Embeddec | Linux | QNX

CE FCC

Specifications

Form Factor		COM-Ultra Module, Type I Pin-out
Processor System	CPU	Intel Atom Processor N455 1.66 GHz
	L2 Cache	512 KB
	System Chipset	ICH8M
	BIOS	AMI 16 Mbit Flash BIOS
Memory	Technology	DDR3 667 MHz memory only
	Max. Capacity	Onboard 1GB
	Socket	-
Flash	Capacity	1 GB/ 2 GB Flash onboard
Display	Chipset	Embedded Gen3.5+ GFX Core
	Graphics Engine	Intel Gen 3.5 DX9, MPEG2 Decode in HW
	LVDS	18-bit single channel LVDS
	VGA	Supports max. 1400 x 1050 @ 60 Hz
	DVI	-
	TV Out	-
	SDVO	-
	Dual Display	CRT + LVDS
Ethernet	Chipset	Intel 82567V Gigabit Ethernet
	Speed	10/100/1000 Mbps
WatchDog Timer		256 level timer interval, from 0 to 255 sec or min setup by software, jumperless selection, generates system reset
Expansion		LPC, 5 PCIe x1 (1 PCIe x4 or 1 PCIe x2 option)
I/O	PATA	-
	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 (5 VSB needs for ATX power mode), wide range voltage support by project base
	Power Consumption (Typical)	+12 V @ TBD
	Power Consumption (Max, test in HCT)	+12 V @ TBD
Environment	Operating Temperature	0 ~ 60° C (32 ~ 140° F)
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions	84 x 55 mm (3.3" x 2.17")

ADVANTECH | **Computer On Modules**

Board Diagram
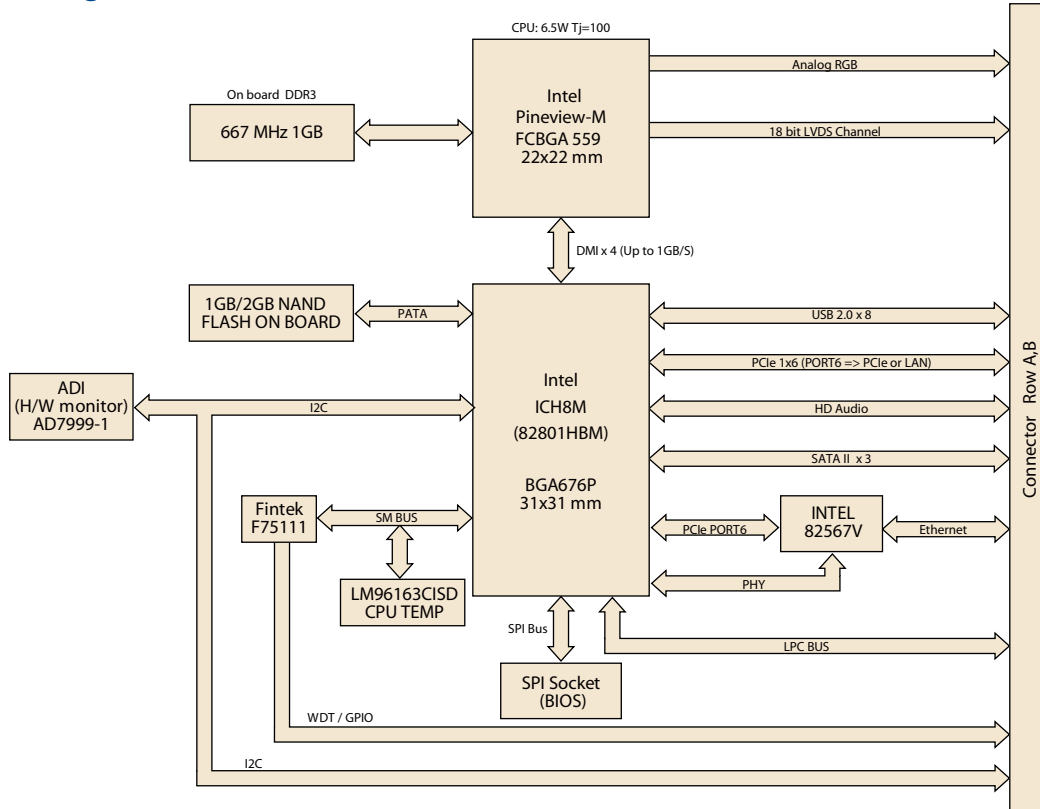
Ordering Information

Part No.	CPU	L2 Cache	Chipset	Onboard Memory	Onboard Flash	LVDS	VGA	Giga LAN	HD Audio	PCIe x 4	PCIe x 1	USB 2.0	SATA II	LPC	SMBUS	Wide range Power	ATX Power	AT Power	Thermal Solution	Operating Temp.
SOM-7562F1-S6B1E	Intel Atom N455	512 KB	ICH8M	1 GB	1 GB	18-bit	Yes	1	Yes	Option	5	8	3	1	1	+5V~+14V	Yes	Yes	Passive	0 ~ 60 °C
SOM-7562F2-S6B1E	Intel Atom N455	512 KB	ICH8M	1 GB	2 GB	18-bit	Yes	1	Yes	Option	5	8	3	1	1	+5V~+14V	Yes	Yes	Passive	0 ~ 60 °C
SOM-7562SZ-S6B1E	Intel Atom N455	512 KB	ICH8M	1 GB	1 GB	18-bit	Yes	1	Yes	Option	5	8	3	1	1	+5V~+14V	Yes	Yes	Passive	-20 ~ 80 °C
SOM-7562SZ2-S6B1E	Intel Atom N455	512 KB	ICH8M	1 GB	1 GB	18-bit	Yes	1	Yes	Option	5	8	3	1	1	+5V~+14V	Yes	Yes	Passive	-40 ~ 85 °C
SOM-7562UZ-S6B1E	Intel Atom N455	512 KB	ICH8M	1 GB	2 GB	18-bit	Yes	1	Yes	Option	5	8	3	1	1	+5V~+14V	Yes	Yes	Passive	-20 ~ 80 °C
SOM-7562UZ2-S6B1E	Intel Atom N455	512 KB	ICH8M	1 GB	2 GB	18-bit	Yes	1	Yes	Option	5	8	3	1	1	+5V~+14V	Yes	Yes	Passive	-40 ~ 85 °C

Development Board

Part No.	Description
SOM-DB5700G-U0A2E	Development Board for COM-Ultra Modules with GLAN

Embedded OS

OS	Part No.	Description
Win XPE 2008	2070009031	XPE WES2009 Lu- Pier V4.0 MUI24

Packing List

Part No.	Description	Quantity
	SOM-7562 CPU Module	1
	Utility CD	1
	Heatspreader	1

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 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
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
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 control brightness depending on ambient light conditions.

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

Monitor

Watchdog
A watchdog timer (WDT) performs a reset after a certain period of time if something goes wrong and the system does not recover on its own. The 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 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
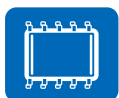
BIOS Flash
The BIOS Flash utility allows customers to update the flash ROM BIOS version, or use it to back up current BIOS by copying it from the flash chip to a file on customers' disk. The BIOS Flash utility also provides a command line version and API for fast implementation into customized applications.

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 utility 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.