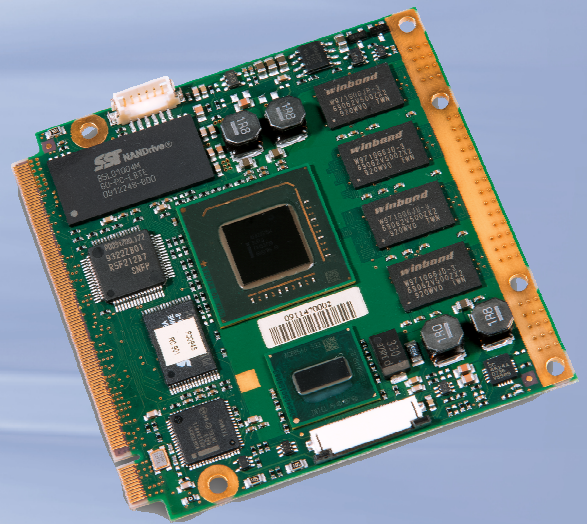


Product Sheet



Qseven™ Family

Intel® Atom™ Z5x0

The Qseven open specification (www.qseven-standard.org) is a module concept to bring PCI Express and other latest technologies like SATA, USB 2.0 and LVDS on a small form factor COM (Computer On Module).

Qseven modules are plugged onto an application-specific baseboard. The specification has been created for applications requiring both small form factor and lowest power consumption using latest processor and I/O technology.

The design of the **MSC Q7-US15W-FD** module is based on Intel's new ATOM™ CPU technology and the US15W System Control Hub (SCH) offering lowest power consumption x86 technology and a high degree of functional integration for entry level embedded applications.

The Z5x0 processor with its low power consumption of only ~2W is ideally suited for fanless designs. Paired with the successful Intel® US15W SCH the design offers integrated graphics and many I/O options. Some module versions are available with a 4GB on board IDE Flash Memory device. The SST 85LP1004x-M-C-LBTE MLC NANDrive offers unique features like 10 Million host write cycles with advanced NAND management technology.

MSC Q7-US15W-FD optionally delivers hardware and BIOS based security to protect the customers IP. The implemented security scheme is compliant with the requirements of the TCG (Trusted Computing Group).

For evaluation and design-in of the Qseven module the MSC provides a reference platform. This boards carries the interface infrastructure for the Qseven™ module and PC type connectors for external access.

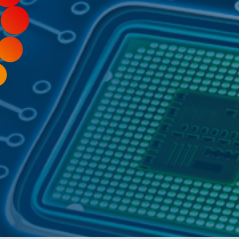
Features

- Intel® Atom™ Z5x0 (up to 1.6GHz)
- Mobile Intel® US15W System Controller Hub (SCH) with integrated Intel® Graphics Media Accelerator 500
- Up to 2GB DDR2 SDRAM, soldered (2GB on request)
- 2/4GB on board Flash, bootable (2GB on request)
- 10/100/1000 Base-TX Ethernet interface
- LVDS interface (18 / 24 Bit) up to 1366 x 768
- SDVO interface up to 1920 x 1080
- Dual Independent Display supported
- SATA-150 mass storage Interfaces
- Eight USB 2.0 interfaces
- USB2.0 client support
- SDIO interface
- High Definition Audio interface
- Phoenix SecureCore BIOS
- System monitoring, watchdog
- ACPI power management including Suspend-to-RAM support
- Qseven 1.11 compliant
- Windows XP (embedded) and Linux support

Product description	Order No.
MSC Q7-US15W-FD-001, Intel® Atom™ Z510, 512MB, 1GbE, no Flash, SATA, 1 x PCI Express x1	32456
MSC Q7-US15W-FD-002, Intel® Atom™ Z530, 1024MB, 1GbE, no Flash, SATA, 1x PCI Express x1	32457
MSC Q7-US15W-FD-003, Intel® Atom™ Z510, 1024MB, 1GbE, 4GB Flash, SATA, 1x PCI Express x1, TPM	32128
MSC Q7-US15W-FD-004, Intel® Atom™ Z530, 1024MB, 1GbE, 4GB Flash, SATA, 1x PCI Express x1, TPM	32458



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Technical Data – MSC Q7-US15W-FD

Core Logic, Memory

CPU: Intel® Atom Z530 (1.6 GHz) / Z510 (1.1 GHz)

Chipset: Intel® US15W SCH

Memory: 2GB/1GB/512MB DDR2-533 SDRAM on board

Drives

SATA: SATA-2 channel (up to 150MB/s)
optional on board Flash disk 2/4GB

Standard Interfaces

USB: 8 x USB 2.0

Bus Interfaces

Qseven Interface: Version 1.11 compliant

PCI Express™: 1x PCI Express x1

LPC: Low Pin Count bus for legacy interfaces on Qseven connector

Flat Panel / CRT Interface

Graphics Controller: Intel® Graphics Media Accelerator 500,
integrated in Intel® US15W SCH device)

Video Memory: UMA, up to 384 MB

LCD Interface: LVDS 18/24 Bit, up to 1366 x 768
SDVO up to 1920 x 1080

Miscellaneous

Watchdog Timer: Initiates system reset, (programmable, 1s ... 255h)

Battery: External

System Monitoring

Voltage, Temperature, Fan

LAN Interface

Ethernet: 10/100/1000Base-TX, Intel® WG82583V

Sound Interface

Audio: High Definition Audio Interface

Security Device

Infineon TPM 1.2 SLB 9635, optional

Bios

Type: Phoenix SecureCore

Boot Options: Quick Boot, MultiBoot XP (FD, HD, CD, LAN, USB, SD-Card), Boot without keyboard, LAN Boot via PXE (RPL optional), Wake on LAN (WOL) supported

Security: TPM 1.2 support, optional, Pre-Boot-Authentication, Phoenix SecureFlash for safe BIOS updates

Power Management: ACPI (S3 cold, S4, S5 supported), Enhanced Intel SpeedStep® technology supported

USB: USB legacy support (Keyboard, Mouse, Hub)

Video: VGA BIOS with flat panel extensions (EPI)

HW Programming I/F: Embedded Application Software Interface (EASI) for embedded PCs

Power Supply

Power: +5V +/-5%, 5V Standby

Power Consumption: 7W typ. (Z530, 1.6 GHz)

Environment

Ambient Temperature: 0° ... 60° C (operating),
-25° ... 85° C (storage)

Humidity: 5 ... 95% (operating, non-condensing)
5 ... 95% (storage, non-condensing)

Mechanical

Dimensions: 70mm x 70mm x13mm

Accessories

Heatspreader:	Order number
MSC Q7-US15W-HSP-001	1050905
Heatrail:	
MSC Q7-XXX-01 HTR-001	1053769

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