H77WS-DL
Intel® H77 Chipset

ASRock®
www.asrock.com

CERTIFIED FOR Windows Server® 2008 R2

Supports intel® inside™ CORE™

intel® CHIPSET H77 inside™

Product Brief

- 100% All Solid Capacitor design

- Supports Dual Channel DDR3 1600*

- 1 x PCIe 3.0 x16 Slot, 1 x PCIe 2.0 x16 Slot,
  Support AMD Quad CrossFireX™ and
  CrossFireX™

- PCIE Dual Gigabit LAN with Teaming Function

- Supports Intel® HD Graphics with Built-in
  Visuals

- Combo Cooler Option (C.C.O.)

- Supports ASRock XFast RAM, XFast LAN,
  XFast USB, Crashless BIOS**

- Supports Intel Smart Connect Technology,
  Intel Rapid Start Technology**

* DDR3-1600 is only supported with 3rd Gen Intel® Core™ Processors
** The supported software tools are supported with client OS.

Specifications

Physical status	Form Factor	- ATX
	Dimensions	- 12" x 9.6" (30.5 cm x 24.4 cm)
Processor System	CPU	- Supports 3rd and 2nd Generation Intel® Core™ i7 / i5 / i3 and Pentium® / Celeron® and Intel® Xeon® E3-1200 & v2 Series Processors in LGA1155 Package - Supports Intel® K-Series CPU - Supports Hyper-Threading Technology - Supports Intel® Turbo Boost 2.0 Technology
	Socket	- Single Socket H2 (LGA1155)
	Power phase	- 4 + 2 Power Phase Design
	Chipset	- Intel® H77
System Memory	Capacity	- 4 x 240-pin DDR3 DIMM slots - Support up to 32GB, un-buffered DIMM
	Type	- Dual Channel DDR3 memory technology - Supports DDR3 1600*/1333/1066* (DDR3 1600 with Intel® Ivy Bridge CPU, DDR3 1333 with Intel® Sandy Bridge CPU) - Supports Intel® Extreme Memory Profile (XMP) 1.3 / 1.2 "
	Voltage	- Supports 1.35V to 1.60V
Expansion Slot	PCIe 3.0 x 16	- 1 slot (PCIE1: x16 mode)
	PCIe 2.0 x 16	- 1 slot (PCIE2: x4 mode)
	PCI	- 2 slots
Graphics	Controller	- Intel® HD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated.
	VRAM	- Max. shared memory 1760MB
	Output	- Supports D-Sub with max. resolution up to 2048x1536 @ 75Hz
Ethernet	Interface	- Gigabit LAN 10/100/1000 Mb/s
	LAN Controller	- 2 x Realtek RTL8111E - Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN with Teaming function - Supports PXE
Storage	SATA controller	- Intel H77 : 2 x SATA3 6.0 Gb/s , 4 x SATA2 3.0 Gb/s , support RAID 0, 1, 5 , 10 , Intel Rapid Storage 3.0 , Intel Smart Response Technolog , NCQ, AHCI and "Hot Plug" functions - ASMedia ASM1061: 2 x SATA3 6.0 Gb/s , support NCQ, AHCI and "Hot Plug" functions
	SAS controller	- NA
Rear Panel I/O	PS/2 KB/mouse	- 2
	VGA port	- D-sub x 1
	USB 2.0 port	- 4
	USB 3.0 port	- 2
	Lan port	- 2 x RJ45 Gigabit Ethernet LAN ports - LAN Ports with LED (ACT/LINK LED and SPEED LED)
Internal connector	COM port header	- 1 (COM1)
	Power LED header	- 1
	Chassis intrusion header	- 1
	Auxiliary panel header	- 1 (include chassis intrusion , front LAN LED)
	TPM header	- 1
	Fan header	- 5 (2 x 4-pin , 3 x 3-pin)
	ATX power	- 1 (24-pin) + 1 (8-pin)
	USB 2.0 header	- 3 (each support 2 USB 2.0)
	USB 3.0 header	- 1 (each support 2 USB 3.0)
System BIOS	BIOS type	- 64Mb AMI UEFI Legal BIOS with GUI support
	BIOS features	- Plug and Play (PnP) - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.1 Support - DRAM Voltage Multi-adjustment - CPU Core, IGPU, DRAM, 1.8V PLL, VTT, VCCSA Voltage Multi-adjustment
Hardware Monitor	Temperature	- CPU Temperature Sensing - System Temperature Sensing
	Fan	- CPU/Rear/Front Fan Tachometer - CPU Quiet Fan (Allow Chassis Fan Speed Auto-Adjust by CPU Temperature) - CPU/Rear/Front Fan Multi-Speed Control
	Voltage	- Voltage Monitoring: +12V, +5V, +3.3V, CPU Vcore
Support OS	OS	- Microsoft® Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit and Microsoft® Windows® Server 2008 R2 64-bit
Features	Key features	- Single Socket H2 (LGA1155) Supports 3rd and 2nd Generation Intel® Core™ i7 / i5 / i3 and Pentium® / Celeron® and Intel® Xeon® E3-1200 & v2 Series Processors in LGA1155 Package - Intel® H77 chipset - Support up to 32GB DDR3 UDIMM 4 DIMM sockets - Realtek RTL8111E 2-port GbE LAN - 2 SATA3 (6Gbps), 4 SATA2 (3Gbps) & 2 ASMedia SATA3 (6Gbps) - 4 USB 3.0 ports (2 x rear , 2 via header) & 10 USB 2.0 ports (4 x rear , 6 x via header)

	Unique features*	- ASRock Extreme Tuning Utility (AXTU)
		- ASRock Instant Boot
		- ASRock Instant Flash
		- ASRock APP Charger
		- ASRock SmartView
		- ASRock XFast USB
		- ASRock XFast LAN
		- ASRock XFast RAM
		- ASRock Crashless BIOS
		- Hybrid Booster:
		  - ASRock U-COP
		  - Boot Failure Guard (B.F.G.)
		- Combo Cooler Option (C.C.O.)
		- Good Night LED

	*Note: ASRock unique features are supported with client OS.	

Board Diagram

128-bit Dual-Channel Memory x 4 Slots

VRD 12
on Board

PCI-E X16 SLOT

Intel Processor
Ivy Bridge
LGA-1155 Pin Socket

PCI_E BUS
100MHz

Channel A — DDR3 1066/1333/1600 / DDR3 1066/1333/1600

Channel B — DDR3 1066/1333/1600 / DDR3 1066/1333/1600

FDI LINK

DMI

D-SUB Connector

ANALOG PORT

INTEL

Panther Point

PCH

PCIE x1
100MHz

ASM1083

PCI   33MHz

PCI 1
PCI 2

PCI-E X4 SLOT

PCIE x4
100MHz

High-Speed USB
10 ports

Super-Speed USB
4 ports

480Mb/s

480Mb/s

SATA BUS
100MHz

SATA BUS

SATA3_0
SATA3_1
SATA2_2   SATA2_4
SATA2_3   SATA2_5

REALTEK 8111E
10/100/1000

PCIE x1
100MHz

REALTEK 8111E
10/100/1000

PCIE x1
100MHz

SPI

SPI FLASH
64Mb

PCIE BUS
100MHz

LPC BUS   33MHz

Asmedia ASM1061

SATA3_A0   SATA3_A1

SIO
Nuvoton NCT6776D