

# M3A790GXH/USB3

AMD 790GX + SB750 Chipsets

**ASRock**  
www.asrock.com



## Product Brief <<<<

- ASRock DuraCap (2.5 x longer life time), 100% Japan-made high-quality Conductive Polymer Capacitors
- Supports CPU up to 140W
- Supports AMD OverDrive™ with ACC feature (Advanced Clock Calibration)
- Supports Dual Channel DDR3 1600(OC)
- Integrated AMD Radeon HD 3300 graphics, DX10 class iGPU, Pixel Shader 4.0, Max. shared memory 512MB
- Built-in 128MB DDR3 1333(OC)/1200MHz SidePort Memory
- Supports ATI™ Quad CrossFireX™, 3-Way CrossFireX™, CrossFireX™ and Hybrid CrossFireX™
- Multi VGA Output options: D-Sub, DVI-D and HDMI
- Supports Full HD 1080p Blu-ray (BD) / HD-DVD playback
- Supports 2 x IEEE1394 ports, PCIE Gigabit LAN
- 7.1 CH HD Audio, DAC with 110dB dynamic range (ALC890 Audio Codec), DTS & Premium Blu-ray audio support
- Supports ASRock Instant Boot, Instant Flash, OC Tuner, IES, OC DNA
- Free Bundle: 1 x ASRock USB 3.0 Card
- Free Software: CyberLink DVD Suite - OEM and Trial; Creative Sound Blaster X-Fi MB - Trial

## Detail Specification <<<

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Platform</b>         | - ATX Form Factor: 12.0-in x 8.8-in, 30.5 cm x 22.4 cm<br>- All Solid Capacitor design (100% Japan-made high-quality Conductive Polymer Capacitors)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>CPU</b>              | - Support for Socket AM3 processors: AMD Phenom™ II X4 / X3 / X2 (except 920 / 940) / Athlon II X4 / X3 / X2 / Sempron processors<br>- Supports CPU up to 140W<br>- Supports AMD OverDrive™ with ACC feature (Advanced Clock Calibration)<br>- AMD LIVE!™ Ready<br>- Supports AMD's Cool 'n' Quiet Technology<br>- FSB 2600 MHz (5.2 GT/s)<br>- Supports Untied Overclocking Technology<br>- Supports Hyper-Transport 3.0 (HT 3.0) Technology                                                                                                                                                                                       |
| <b>Chipset</b>          | - Northbridge: AMD 790GX<br>- Southbridge: AMD SB750                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Memory</b>           | - Dual Channel DDR3 memory technology<br>- 4 x DDR3 DIMM slots<br>- Supports DDR3 1600(OC)/1333/1066/800 non-ECC, un-buffered memory<br>- Max. capacity of system memory: 16GB                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Expansion Slot</b>   | - 3 x PCI Express 2.0 x16 slots (blue: single at x16 or dual at x8/x8 mode; white: x4 mode)<br>- 1 x PCI Express 2.0 x1 slot<br>- 2 x PCI slots<br>- Supports ATI™ Quad CrossFireX™, 3-Way CrossFireX™, CrossFireX™ and Hybrid CrossFireX™                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Graphics</b>         | - Integrated AMD Radeon HD 3300 graphics<br>- DX10 class iGPU, Pixel Shader 4.0<br>- Max. shared memory 512MB<br>- Built-in 128MB DDR3 1333(OC)/1200MHz SidePort Memory<br>- Multi VGA Output options: D-Sub, DVI-D and HDMI<br>- Supports HDMI Technology with max. resolution up to 1920x1200 (1080P)<br>- Supports Dual-link DVI with max. resolution up to 2560x1600 @ 75Hz<br>- Supports D-Sub with max. resolution up to 2048x1536 @ 60Hz<br>- Supports HDCP function<br>- Supports Full HD 1080p Blu-ray (BD) / HD-DVD playback                                                                                              |
| <b>Audio</b>            | - 7.1 CH HD Audio with Content Protection<br>- DAC with 110dB dynamic range (ALC890 Audio Codec)<br>- DTS (Digital Theater Systems) support<br>- Premium Blu-ray audio support                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>LAN</b>              | - PCIE x1 Gigabit LAN 10/100/1000 Mb/s<br>- Realtek RTL8111DL<br>- Supports Wake-On-LAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Rear Panel I/O</b>   | I/O Panel<br>- 1 x PS/2 Keyboard Port<br>- 1 x VGA/D-Sub Port<br>- 1 x VGA/DVI-D Port<br>- 1 x HDMI Port<br>- 1 x Optical S/PDIF Out Port<br>- 1 x IEEE 1394 Port<br>- 1 x eSATAII Port<br>- 6 x Ready-to-Use USB 2.0 Ports<br>- 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED)<br>- HD Audio Jack: Side Speaker / Rear Speaker / Central / Bass / Line in / Front Speaker / Microphone                                                                                                                                                                                                                                   |
| <b>Connector</b>        | - 6 x Serial ATAII 3.0 Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 5, RAID 10 and JBOD), NCQ, AHCI and "Hot Plug" functions<br>- 1 x eSATAII 3.0 Gb/s connector (shared with 1 SATAII port)<br>- 1 x ATA133 IDE connector (supports 2 x IDE devices)<br>- 1 x Floppy connector<br>- 1 x IR header<br>- 1 x COM port header<br>- 1 x IEEE 1394 header<br>- 1 x HDMI SPDIF header<br>- CPU/Chassis/NB/Power FAN connector<br>- 24 pin ATX power connector<br>- 8 pin 12V power connector<br>- SLI/XFire power connector<br>- CD in header<br>- Front panel audio connector<br>- 3 x USB 2.0 headers (support 6 USB 2.0 ports) |
| <b>BIOS Feature</b>     | - 8Mb AMI Legal BIOS<br>- Supports "Plug and Play"<br>- ACPI 1.1 Compliance Wake Up Events<br>- Supports jumperfree<br>- SMBIOS 2.3.1 Support<br>- CPU, DRAM, NB Voltage Multi-adjustment                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Support CD</b>       | - Drivers, Utilities, AntiVirus Software (Trial Version), AMD OverDrive™ Utility, AMD Live! Explorer<br>- ASRock Software Suite (CyberLink DVD Suite - OEM and Trial; Creative Sound Blaster X-Fi MB - Trial)                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Unique Feature</b>   | - ASRock OC Tuner<br>- Intelligent Energy Saver<br>- Instant Boot<br>- ASRock Instant Flash<br>- ASRock OC DNA<br>- Hybrid Booster:<br>- CPU Frequency Stepples Control<br>- ASRock U-COP<br>- Boot Failure Guard (B.F.G.)                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Hardware Monitor</b> | - CPU Temperature Sensing<br>- Chassis Temperature Sensing<br>- CPU/Chassis/NB/Power Fan Tachometer<br>- CPU Quiet Fan<br>- Voltage Monitoring: +12V, +5V, +3.3V, Vcore                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>OS</b>               | - Microsoft® Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP Media Center / XP 64-bit compliant                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Certifications</b>   | - FCC, CE, WHQL<br>- EUP Ready (EUP ready power supply is required)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Accessories</b>      | - 1 x ASRock SLI/XFire Switch Card<br>- 1 x ASRock USB 3.0 Card<br>- Quick Installation Guide, Support CD, I/O Shield<br>- Floppy/ATA 133 cables<br>- 4 x SATA data cables (optional)<br>- 1 x SATA 1 to 1 power cable (optional)                                                                                                                                                                                                                                                                                                                                                                                                   |

The specification is subject to change without notice. The brand and product names are trademarks of their respective companies. Any configuration other than original product specification is not guaranteed.

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## ASRock USB 3.0 card

**Ultimate Data Transfer Speed**

**10X Super Speed**


**USB 3.0** 5 Gb/s

**USB 2.0** 1X 480 Mb/s

Delivering data transfer rates up to ten times faster than USB 2.0 with optimized power efficiency, USB 3.0 card features super speed at 5 Gb/s.

**Upgrade Flexibility**


Utilizing the new generation USB 3.0 interface, ASRock USB 3.0 card includes much advantages, such as higher data transfer speed and more flexible to adopt in different ASRock motherboards.



## Side port memory 128M:

Boost performance up to 16% which is rarely seen on other 790GX boards

### side port memroy 128M



ASRock 790GX MB with Side Port Memory 128M

**Up to 16%**

Performance Boost

3DMARK 06

Without side port memory: 2284

With side port memory: **16%** 2641

Performance Boost

GPU=900MHz, Sideport runs at DDR2 800, at performance setting

## AMD OverDrive™ with ACC feature

### CPU Frequency

Enable ACC → 3300MHz → Up to **110%** performance Boost

Disable ACC → 3000MHz

Configuration:  
CPU : Phenom X3 8750 ( 200 x 12 =2400 Mhz)  
Memory : OCZ DDR2-1200  
BIOS : L0.03

## Enable AOD ACC, Upgrade your CPU cores and L3 cache now!

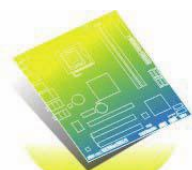
- With AMD Sempron 140 CPU  
Single core → Dual core
- With AMD Phenom II X2 550 BE CPU  
X2 cores → X4 cores
- With AMD Phenom II X3 710 / 720 BE CPU  
X3 cores → X4 cores
- With AMD Phenom II 805 / 810 CPU  
L3 cache 4MB → 6MB

\*The success rate of this enhancement depends on the individual CPU.

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EuP Ready Motherboard



EuP Ready Power Supply



EuP System

## What is EuP?

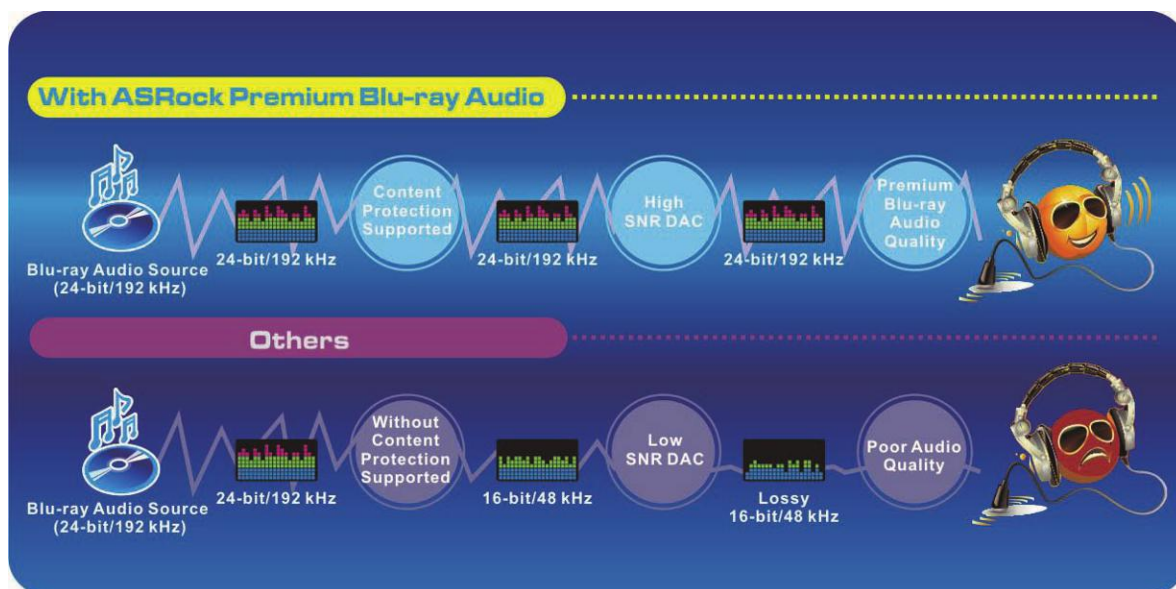
EuP, stands for Energy Using Product, was a provision regulated by European Union to define the power consumption for the completed system. With the great quantity and the popularity using of the electrical products nowadays and the continuously increasing of the electrical products categories in the following 20 to 30 years, European Union decided to establish an effective strategy to solve the energy consumption problem. That is, according to EuP, the total AC power of the completed system shall be under 1.00W in off mode condition.

## Premium Blu-ray Audio



Premium Blu-ray Audio, an outstanding technology developed on ASRock motherboard, provides the excellent audio output of 24-bit/192 kHz with its respective Blu-ray DRM compatible driver/software. With Content Protection-Support and High SNR DAC, the Blu-ray entertainments can be played in a high quality of 24-bit/192kHz. In other words, if you are using a device without the Blu-ray Audio support, the audio quality will be downgraded to 16-bit/48kHz like a regular CD quality. To deliver the best possible sound solution for today's most demanding users, ASRock Premium Blu-ray Audio motherboard is the best choice for users who are particularly desired to enjoy the pure HD audio. ASRock users are able to take full advantages of our Blu-ray Audio motherboards. Choose ASRock, choose Pure HD audio!

## Why ASRock?



\* SNR: Signal-to-Noise Ratio.

## Benefits of ASRock Premium Blu-ray Audio motherboards !

|                            | ASRock Premium Blu-ray Audio motherboards           | Other motherboards                                      |
|----------------------------|-----------------------------------------------------|---------------------------------------------------------|
| Content Protection Support | Yes                                                 | No                                                      |
| SNR* DAC                   | High                                                | Low                                                     |
| Audio Quality              | Premium Blu-ray Audio Quality<br>(24-bit / 192 kHz) | Downgrade to<br>regular CD quality<br>(16-bit / 48 kHz) |

\* SNR: Signal-to-Noise Ratio.

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## ASRock Instant Boot



ASRock Instant Boot is a new feature invented exclusively by ASRock. It can boot up system in an amazing speed, which is 10 times faster than traditional boot up. For home users or office PC users, ASRock Instant Boot can also guarantee a clean Windows OS, and consumed less power! For details: <http://www.asrock.com/feature/InstantBoot/index.asp>

- \* This function is applicable ONLY to single user that does not secure ID and Password to their systems.
- \* The boot up time depends on the hardware configuration.

## 10 Times Faster, Only 4 Secs to Boot Up to Windows!

### ASRock YouTube

<http://tw.youtube.com/watch?v=BucljXZVxXo>



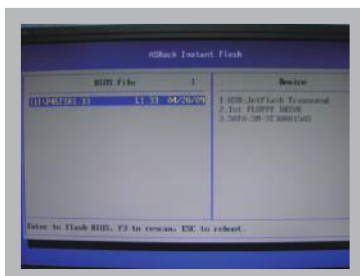
## ASRock Instant Flash

ASRock Instant Flash is an exclusive and the most user-friendly BIOS flash utility developed by ASRock. It is embedded in Flash ROM which is used to update the system BIOS without having to enter operating systems like MS-DOS or Windows.



## Features

Once executing ASRock Instant Flash, the utility will automatically detect all devices such as USB, hard disk or even floppy drive to find the exact BIOS for your system. Instead of giving you all BIOS in your devices, the Instant Flash just list BIOS versions that apply to your motherboard model only. For example, if you have many different BIOS of different motherboards saved in your devices, but you just need to flash your P45 motherboard, the Instant Flash will just list the P45 BIOS versions for you. This unique function allows you to easily select the suitable BIOS version instead of browsing through all data.



Instant Flash just list BIOS versions that apply to your motherboard model.

**Simple!**



Click and start Flashing!

**Quick!**

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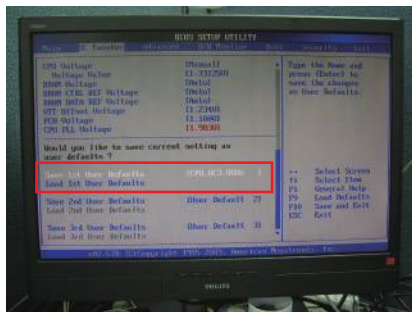
## OC DNA

Save your OC settings as a profile and share with friends. Try OC DNA now!

## OC DNA Instruction

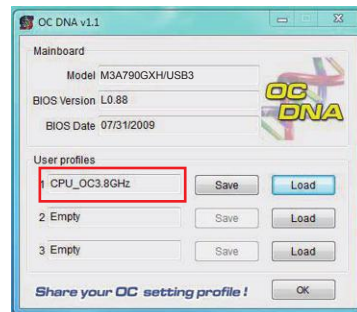
### Step 1

Save your BIOS OC settings as User Default in BIOS OC Tweaker menu. (For example: we name this User Default setting as "CPU\_OC3.8GHz")



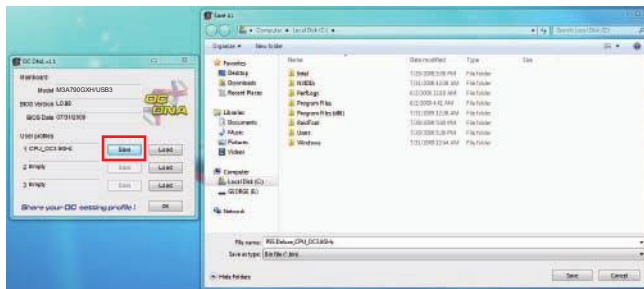
### Step 2

Execute ASRock OC DNA under OS, you will find "CPU\_OC3.8GHz" as User Profile 1.



### Step 3

Press "Save" button to save the "CPU\_OC3.8GHz" OC settings as a profile.



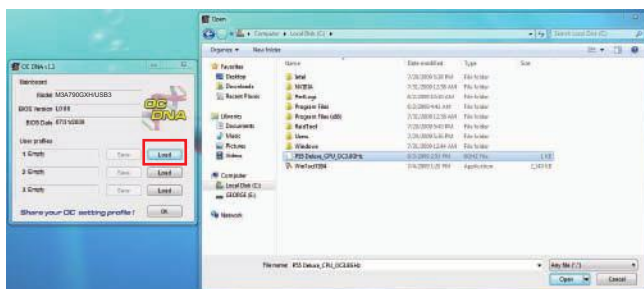
### Step 4

Send the "CPU\_OC3.8GHz" profile to other friends.



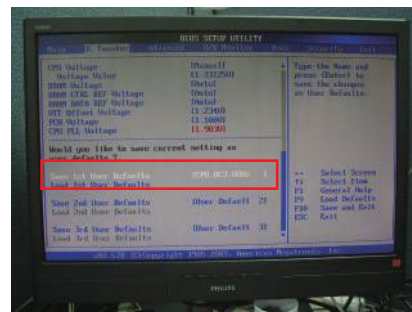
### Step 5

When the friend receives your "CPU\_OC3.8GHz" profile, he can press "Load" to load the "CPU\_OC3.8GHz" profile in OC DNA.



### Step 6

After that, the friend can enter into BIOS OC Tweaker menu to load the "CPU\_OC3.8GHz" profile as his BIOS OC settings.



Now, you have successfully share your OC setting profile with your friends.

\*The OC DNA works only when users use the same motherboard and BIOS version.

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**CyberLink**



## **CyberLink Power2Go 6.1 LE OEM**

Power2Go 6 lets you burn and backup videos, photos, music and data onto Blu-ray Discs and DVDs.

## **CyberLink MediaShow 4.1 SE OEM**

Photo and video management software MediaShow edits videos and photos instantly, creates slideshow, and allows publishing directly to YouTube and Flickr.

## **CyberLink PowerDVD 8.0 DTS Trial**

World-renowned PowerDVD 8 DTS delivers outstanding DVD movie playback quality on your PC.

## **CyberLink PowerDirector 8.0 Trial**

PowerDirector - Video Editing software – edits high-definition videos including AVCHD, allows output to PSP iPod and Blu-ray Disc.

## **CyberLink PowerBackup 2.5 Trial**

PowerBackup backs up valuable data on your PC.

## **Creative Sound Blaster X-Fi MB Trial**

The Sound Blaster X-Fi MB solution provides premium audio quality, effects and features for PC systems equipped with onboard audio.

For gamers, the EAX® ADVANCED HD 4.0, with its state-of-the-art Multi-Environment rendering and reverb modelling, delivers a much more realistic and immersive 3D gaming experience than your motherboard audio ever will.