PRINCO DDR3-1600 user guide and testing for ASUS MAXINMUS III Motherboard

CPU i5-670 3.47G

Part I：Standard test

It's the easiest way to enjoy overclock benefit by using PRINCO DDR3-1600 DIMM board

How to use?

0. Clear BIOS to mainboard initial setting

1. Enter BIOS setup and [Extreme Tweaker] menu

2. Enter [Ai Overclock Tuner] item and choose X.M.P option

   BIOS will load X.M.P parameter in SPD on DIMM board，which are performance optimized for PRINCO DDR3-1600 DIMM board

3. Enter [eXtreme Memory Profile] item and select [Profile #1]

Step 1 : Select " Extreme Tweaker "
Step 2 : Ai Overclock Tuner   Set [X.N.P.]
Step 3 : eXtreme Memory Profile   Set [Profile #1]

BIOS SETUP UTILITY

Extreme Tweaker Main Advanced Power Boot Tools Exit

Step 1

Configure System Performance Settings

Target CPU Frequency: 3520MHz
Target DRAM Frequency: 1604MHz

CPU Level Up   [Auto]
Memory Level Up   [Auto]

Ai Overclock Tuner   [X.M.P.] Step 2
  eXtreme Memory Profile   [Profile #1] Step 3
  Profile Info : 1600MHz-7-9-7-24-1N-1.60V
CPU Ratio Setting   [22.0]
▶ CPU Configuration
•Intel(R) SpeedStep(TM) Tech   [Disabled]
BCLK Frequency   [160]
DRAM Frequency   [DDR3-1600MHz]
QPI Frequency   [Auto]

Start auto tuning
OC Tuner   [Turbo Profile]

Profile #1 :
Standard profile
defined by Intel
Profile #2 :
Optional profile
created by memory
vendor

Note : Only valid
profiles can be
shown on the list.

↔   Select Screen
↑↓   Select Item
+-   Change Option
F1   General Help
F10   Save and Exit
ESC   Exit

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4. Save BIOS changes [F10] and exit

Test result?

In order to demonstrate the performance and stability of PRINCO DDR3-1600 DIMM board, We use the strictest stress testing, that is, multi-core MemTest in window 7.

(Data rate：803.4*2=1606,　timing：7, 9, 7, 24,　multi-core test => pass!)

Advanced Overclocking and Testing

Part II：Heavy test

If you want to know the potential of PRINCO DDR3-1600? Following are step-by-step howto.

How to use?

0. Clear BIOS to mainboard initial setting

1. Enter BIOS setup and [Extreme Tweaker] menu

2. Enter [Ai Overclock Tuner] item and select [Manual]

3. Select [BLCK Frequency] item，and increase to higher Base clock rate (ex:190). Then select [DRAM Frequency] item，and set the DDR3 memory to higher clock rate (ex:DDR3-1900). Don't forget setting [CPU Ratio Setting] item to suitable ratio (ex:17.0)

   (In this case we only focus on memory over clocking, not CPU)

Step 1 : Select " Extreme Tweaker "

Step 2 : Ai Overclock Tuner   Set [Manual]

Step 3 : BCLK Frequency   Set [190]

Step 4 : DRAM Frequencry   Set [DDR3-1900MHz]

Step 5 : CPU Ratio Setting   Set [17.0]

BIOS SETUP UTILITY

| Extreme Tweaker | Main | Advanced | Power | Boot | Tools | Exit |

Step 1

Configure System Performance Settings

Target CPU Frequency: 3230MHz
Target DRAM Frequency: 1904MHz

You can OC based on "OC From CPU/Memory Level Up"

Ai Overclock Tuner   [Manual] Step 2
OC From CPU Level Up   [Auto]
OC From Memory Level Up   [Auto]
CPU Ratio Setting   [17.0] Step 5
▶ CPU Configuration
•Intel(R) SpeedStep(TM) Tech [Disabled]
BCLK Frequency   [190] Step 3
PCIE Frequency   [100]
DRAM Frequency   [DDR3-1900MHz] Step 4
QPI Frequency   [Auto]

Start auto tuning
OC Tuner   [Turbo Profile]

Forces a DDR3
frequency slower than
the common tCK
detected via SPD.

↔   Select Screen
↑↓   Select Item
+-   Change Option
F1   General Help
F10   Save and Exit
ESC Exit

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4. Enter [DRAM Timing Control] item

Select " DRAM Timing Control "

BIOS SETUP UTILITY

Extreme Tweaker   Main   Advanced   Power   Boot   Tools   Exit

•Intel(R) SpeedStep(TM) Tech	[Disabled]
BCLK Frequency	[190]
PCIE Frequency	[100]
DRAM Frequency	[DDR3-1900MHz]
QPI Frequency	[Auto]
Start auto tuning	
OC Tuner	[Turbo Profile]
▶ DRAM Timing Control	
CPU Clock Amplitude	[Auto]
PCH Clock Amplitude	[Auto]
CPU Clock Skew	[Auto]
PCH Clock Skew	[Auto]
******* Please key in numbers directly! *******	
Current Voltage: 1.204V 1.799V 1.363V	
CPU Temperature: 47°C/116.5°F	
Extreme OV	[Disabled]
LN2 Mode	[Disabled]

DRAM Timing Control

↔   Select Screen
↑↓   Select Item
Enter Go to Sub Screen
F1   General Help
F10   Save and Exit
ESC   Exit

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5. set [DRAM CAS# Latency] item to [7 DRAM Clock]

   set [DRAM RAS# to CAS# Delay] item to [9 DRAM Clock]

   set [DRAM RAS# PRE Time] item to [7 DRAM Clock]

   set [DRAM RAS# ACT Time] item to [24 DRAM Clock]

   set [DRAM Timing Mode] item to [1N]

   then return to previous to [Ai Overclock Tuner] menu
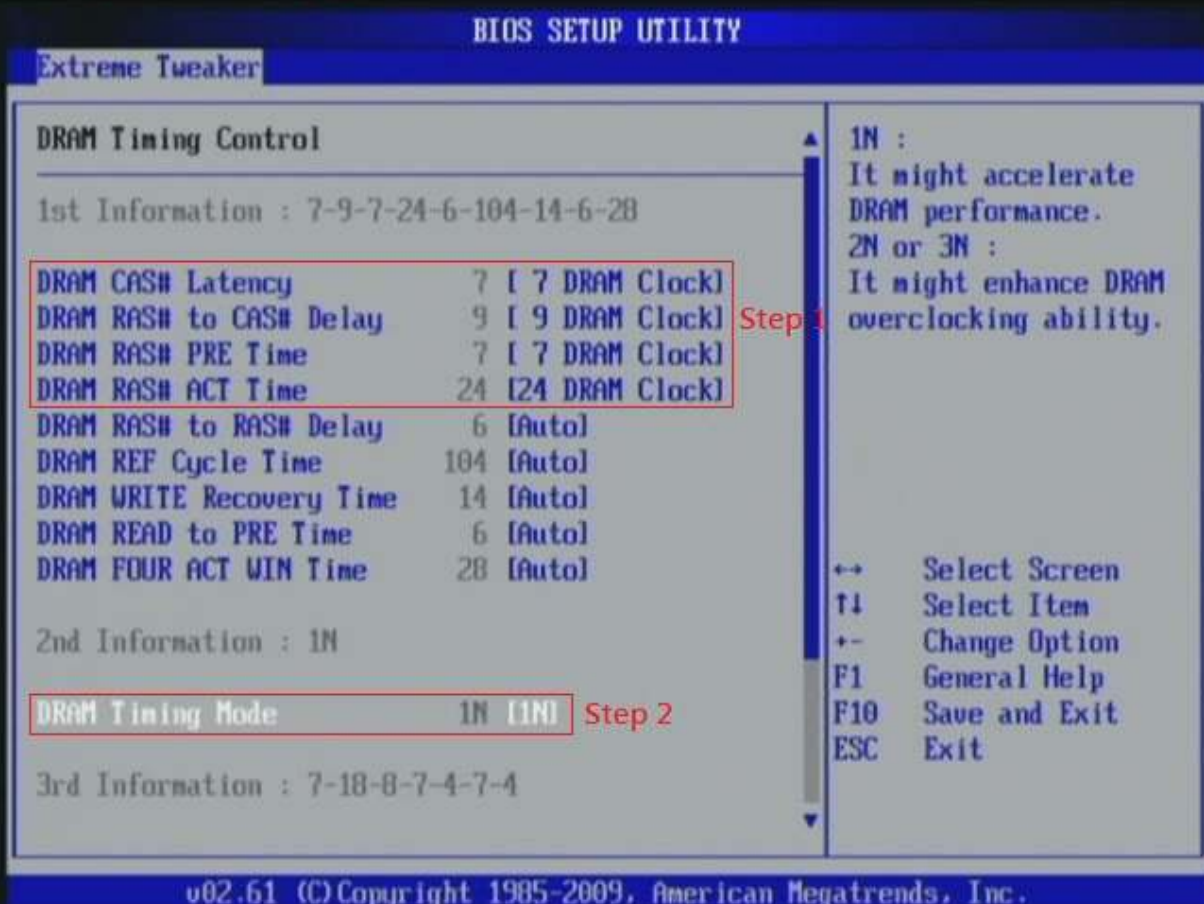
6. Select [IMC Voltage] item ，and set the value to [1.35150].

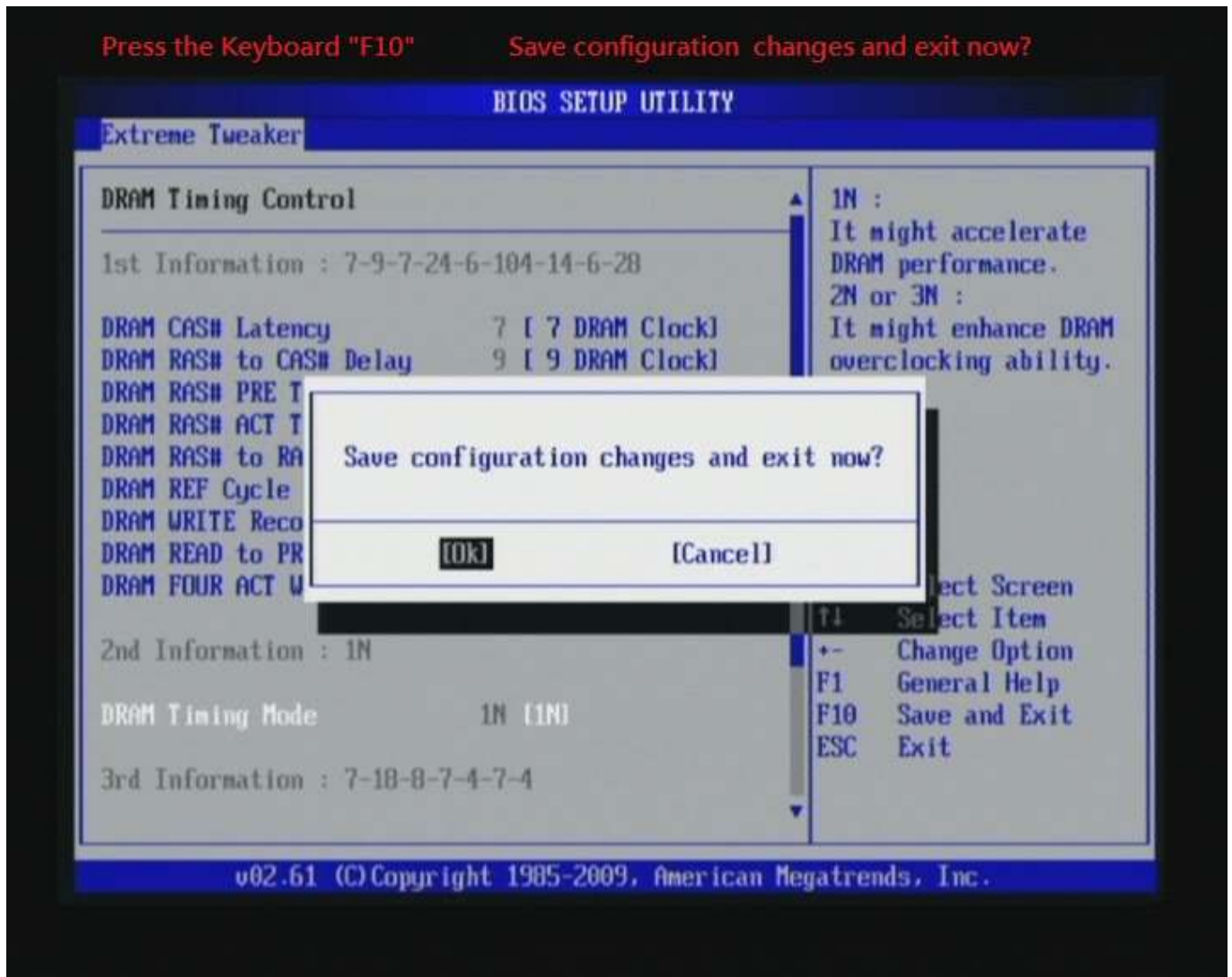   Select[DRAM Bus Voltage] item ，and set the value to [1.64300]

7. Save BIOS changes [F10] and exit

Test result?

We use the strictest stress testing， multi-core MemTest in

window 7， to show you PRINCO DDR3-1600 potential.

(Data rate：952.5*2=1905， timing：7, 9, 7, 24， multi-core test => pass!)