

# PRINCO DDR3-1800 user guide and testing for DFI UTX58 T3eH8 Motherboard

CPU i7-930 2.80G



## Part I : Standard test

*It's the easiest way to enjoy overclock benefit by using PRINCO DDR3-1800 DIMM board*

How to use?

0. Clear BIOS to mainboard initial setting
1. Enter BIOS setup and [Genie BIOS Setting] menu

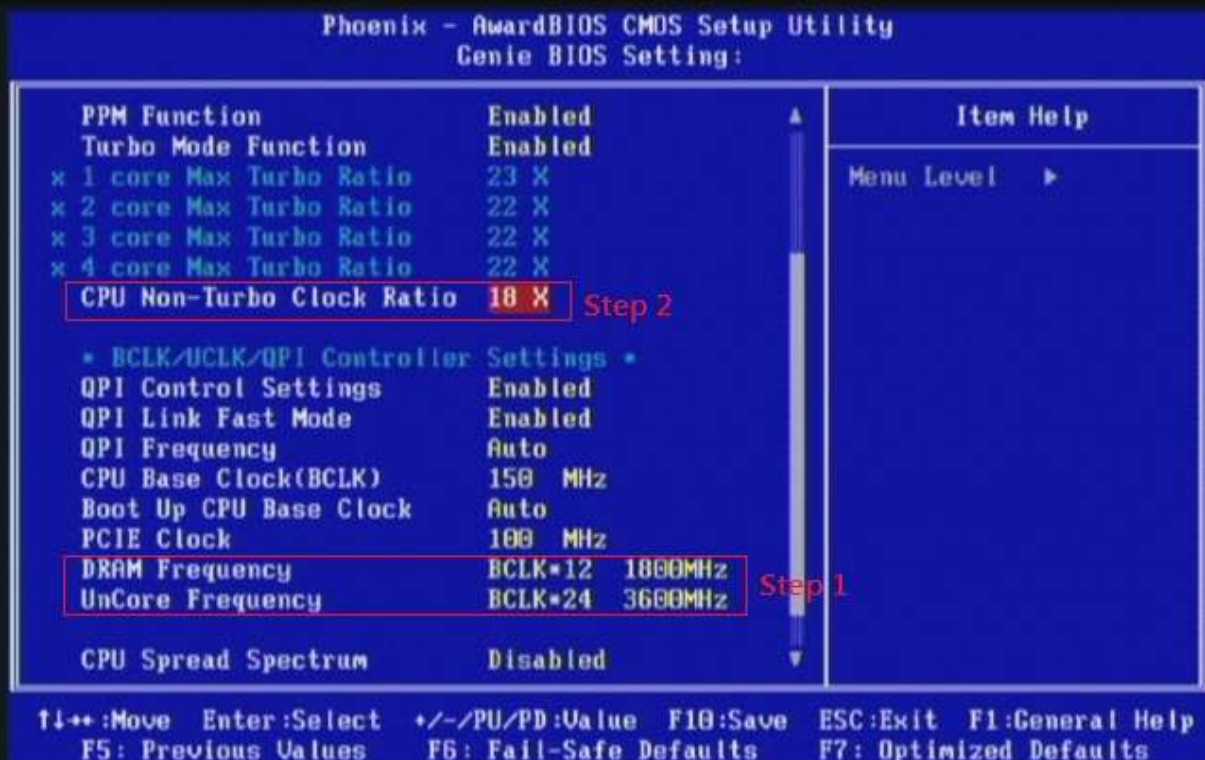
Select " Genie BIOS Setting "



- Select [CPU Base Clock(BCLK) ] item to (ex:150 MHz).  
 Select [DRAM Frequency] item , and set the DDR3 memory to higher clock rate (ex:BCLK\*12 1800MHz). Then select [UnCore Frequency] item to (ex:BCLK\*24 3600MHz) Don't forget setting [CPU Non-Turbo Clock Ratio] item to suitable ratio (ex:18 X)

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

- |                                    |                         |
|------------------------------------|-------------------------|
| Step 1 : DRAM Frequency            | Set [ BCLK*12 1800MHz ] |
| UnCore Frequency                   | Set [ BCLK*24 3600MHz ] |
| Step 2 : CPU Non-Turbo Clock Ratio | Set [ 18 X ]            |





### 3. Enter [DRAM Timing] item

Select " DRAM Timing "



4. set [DRAM Command Rate] item to [1N]

set [DRAM Latency Time (tCL)] item to [8]

set [RAS# to CAS# Delay (rRCD)] item to [9]

set [Precharge dealy (tRP)] item to [8]

set [RAS# Precharge (tRAS)] item to [27]

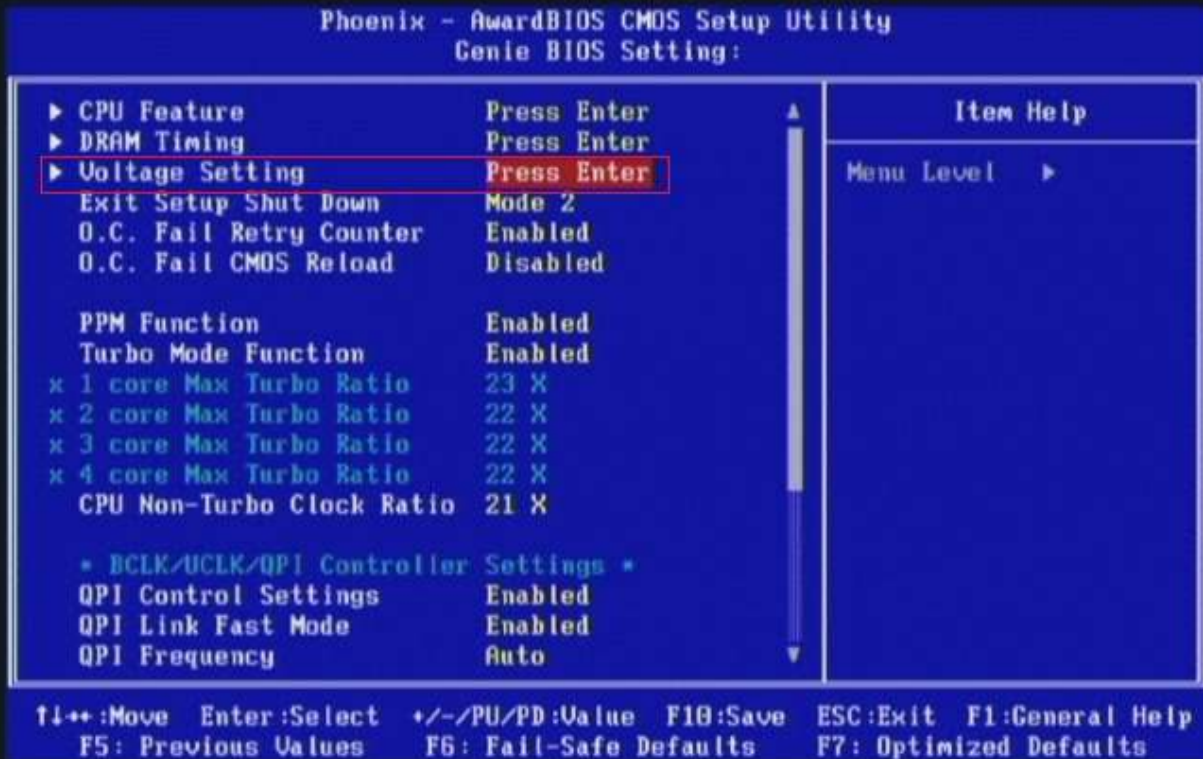
then return to previous to [Genie BIOS Setting] menu

DRAM Command Rate	Set [1N]
CAS Latency Time (tCL)	Set [8]
RAS# to CAS# Delay (tRCD)	Set [9]
Precharge dealy (tRP)	Set [8]
RAS# Precharge (tRAS)	Set [27]



## 5. Enter [Voltage Setting] item

Select " Voltage Setting "



6. Select [DRAM Bus Voltage] item , and set the value to [1.605V].

Select [CPU VTT Voltage] item , and set the value to [1.36V].

Step 1: DRAM Bus Voltage

Set [1.605V]

Step 2: CPU VTT Voltage

Set [1.36V]





## 7. Save BIOS changes [F10] and exit

Press the Keyboard "F10"

Save to CMOS and EXIT (Y/N)? Y





# Test result?

In order to demonstrate the performance and stability of PRINCO DDR3-1800 DIMM board, We use the strictest stress testing, that is, multi-core MemTest in window 7.

(Data rate :  $900.6 \times 2 = 1800$ , timing : 8, 9, 8, 27, multi-core test => pass!)

The image displays a collage of software windows. On the left, eight MemTest windows are arranged in a 4x2 grid. Each window shows a test configuration for 680 MB of RAM and reports a 100% coverage rate with 0 errors. The coverage rates are: 105.1%, 103.3%, 107.7%, 105.8%, 105.8%, 103.2%, 101.5%, and 135.9%.

On the right, four CPU-Z windows are shown. The top two windows display the processor information for an Intel Core i7 930 (Bloomfield, Socket 1366 LGA, 45 nm, 2.80 GHz). The bottom two windows show the memory configuration: DDR3, 6144 MB, Triple Channel, 3602.5 MHz. The timings table in the bottom-right CPU-Z window is as follows:

JEDEC #3	
Frequency	609 MHz
CAS# Latency	8.0
RAS# to CAS#	8
RAS# Precharge	8
tRAS	22
tRC	30
Command Rate	
Voltage	1.50 V

At the bottom, a Windows Task Manager window is visible, showing CPU usage at 100% and memory usage at 5.68 GB.

# Advanced Overclocking and Testing

## Part II : Heavy test

*If you want to know the potential of PRINCO DDR3-1800? Following are step-by-step howto.*

How to use?

0. Clear BIOS to mainboard initial setting
1. Enter BIOS setup and [Genie BIOS Setting] menu

Select " Genie BIOS Setting "



2. Select [CPU Base Clock(BCLK) ] item to (ex:137 MHz).  
 Select [DRAM Frequency] item , and set the DDR3 memory to higher clock rate (ex:BCLK\*14 1918MHz). Then select [UnCore Frequency] item to (ex:BCLK\*24 3836MHz) Don't forget setting [CPU Non-Turbo Clock Ratio] item to suitable ratio (ex:19 X)

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

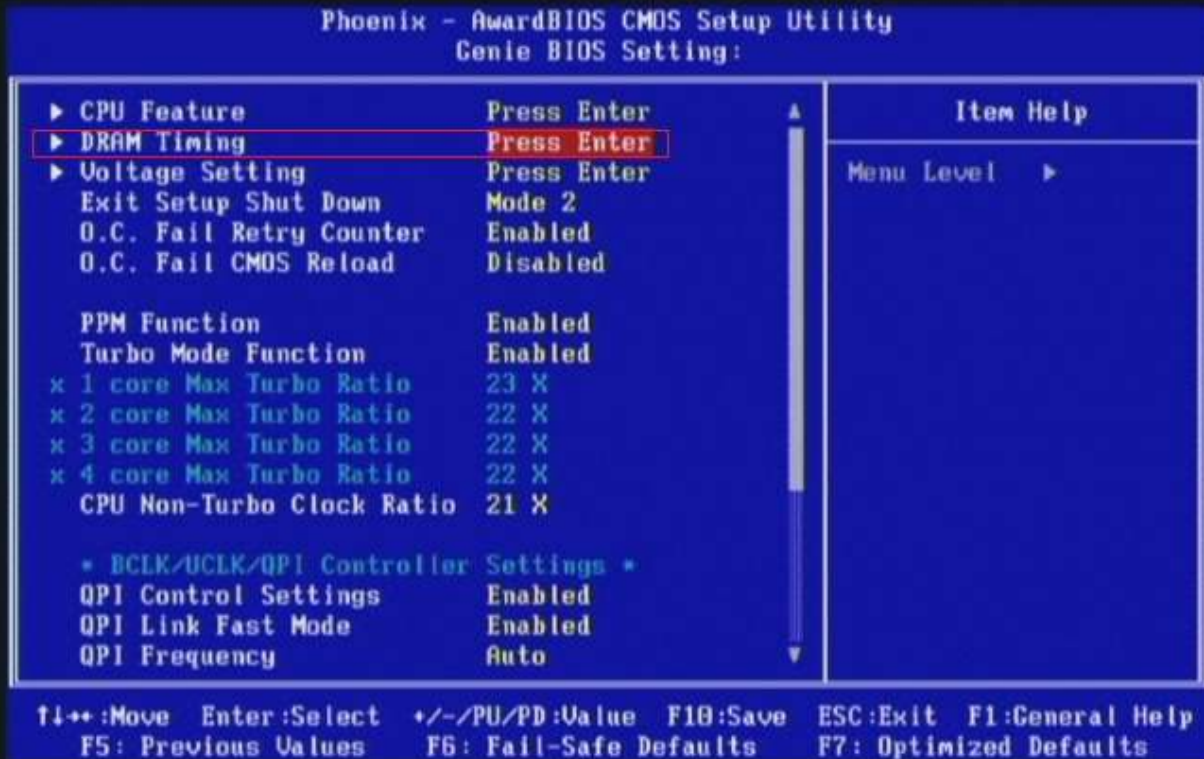
- |                                    |                         |
|------------------------------------|-------------------------|
| Step 1 : CPU Base Clock (BCLK)     | Set [ 137 MHz ]         |
| Step 2 : DRAM Frequency            | Set [ BCLK*14 1918MHz ] |
| UnCore Frequency                   | Set [ BCLK*28 3836MHz ] |
| Step 3 : CPU Non-Turbo Clock Ratio | Set [ 19 X ]            |





### 3. Enter [DRAM Timing] item

Select " DRAM Timing "





4. set [DRAM Command Rate] item to [1N]

set [DRAM Latency Time (tCL)] item to [9]

set [RAS# to CAS# Delay (tRCD)] item to [9]

set [Precharge delay (tRP)] item to [9]

set [RAS# Precharge (tRAS)] item to [27]

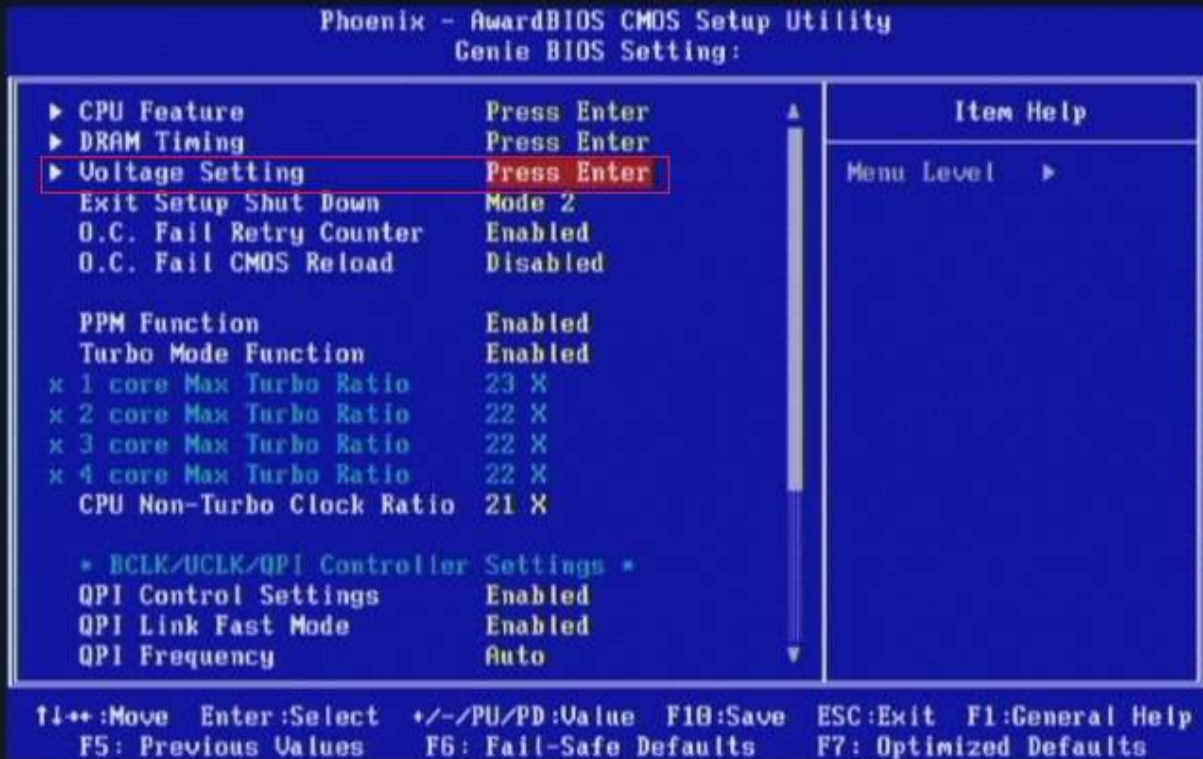
then return to previous to [Genie BIOS Setting] menu

DRAM Command Rate	Set [1N]
CAS Latency Time (tCL)	Set [9]
RAS# to CAS# Delay (tRCD)	Set [9]
Precharge delay (tRP)	Set [9]
RAS# Precharge (tRAS)	Set [27]



## 5. Enter [Voltage Setting] item

Select " Voltage Setting "



6. Select [DRAM Bus Voltage] item , and set the value to [1.650V].

Select[CPU VTT Voltage] item , and set the value to [1.40V]

Step 1 : DRAM Bus Voltage

Set [1.650V]

Step 2 : CPU VTT Voltage

Set [1.40V]



## 7. Save BIOS changes [F10] and exit

Press the Keyboard "F10"

Save to CMOS and EXIT (Y/N)? Y





# Test result?

We use the strictest stress testing, multi-core MemTest in window 7, to show you PRINCO DDR3-1800 potential.

(Data rate :  $959.7 \times 2 = 1914$ , timing : 9, 9, 9, 27, multi-core test => pass!)

Enter megabytes of RAM to test: 670

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 114.5% Coverage, 0 Errors

Enter megabytes of RAM to test: 670

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 115.5% Coverage, 0 Errors

Enter megabytes of RAM to test: 670

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 113.8% Coverage, 0 Errors

Enter megabytes of RAM to test: 670

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 113.9% Coverage, 0 Errors

Enter megabytes of RAM to test: 670

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 112.3% Coverage, 0 Errors

Enter megabytes of RAM to test: 670

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 112.2% Coverage, 0 Errors

Enter megabytes of RAM to test: 670

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 112.3% Coverage, 0 Errors

Enter megabytes of RAM to test: All unused RAM

Start Testing Stop Testing

About MemTest

If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which add additional features.

[N] 109.2% Coverage, 0 Errors

**CPU-Z** Version 1.56

CPU Caches Mainboard Memory SPD Graphics About

Processor Name: Intel Core i7 930  
Code Name: Bloomfield  
Package: Socket 1366 LGA  
Technology: 45 nm  
Core Voltage: 0.944 V

Specification: Intel(R) Core(TM) i7 CPU 930 @ 2.80GHz  
Family: 6 Model: A Stepping: 5  
Ext. Family: 6 Ext. Model: 1A Revision: D0  
Instructions: MMX, SSE (1, 2, 3, 3S, 4.1, 4.2), EM64T, VT-x

Clocks (Core #0): Core Speed: 1645.3 MHz, Multiplier: x 12.0, Bus Speed: 137.1 MHz, QPI Link: 2468.0 MHz

Cache: L1 Data: 4 x 32 KBytes 8-way, L1 Inst: 4 x 32 KBytes 4-way, Level 2: 4 x 256 KBytes 8-way, Level 3: 8 MBytes 16-way

Selection: Processor #1 Cores: 4 Threads: 8

Validate OK

**CPU-Z** Version 1.56

CPU Caches Mainboard Memory

Motherboard Manufacturer: DFI Inc. Model: DFI LP UT X58  
Chipset: Intel Southbridge: Intel LPCI: ITE

BIOS Brand: Phoenix Technology Version: 6.00 PG Date: 06/19/2009

Graphic Interface Version: Link Width: x16 Side Band:

Validate OK

**CPU-Z** Version 1.56

CPU Caches Mainboard Memory SPD Graphics About

General: Type: DDR3 Channels #: Triple Size: 6144 MBytes DC Mode: NB Frequency: 3838.9 MHz

Timings: DRAM Frequency: 959.7 MHz, FSB-DRAM: 2:14, CAS# Latency (CL): 9.0 clocks, RAS# to CAS# Delay (tRCD): 9 clocks, RAS# Precharge (tRP): 9 clocks, Cycle Time (tRAS): 27 clocks, Row Refresh Cycle Time (tRFC): 88 clocks, Command Rate (CR): 1T, DRAM Idle Timer: Total CAS# (tRDRAM): Row To Column (tRFC):

Validate OK

**CPU-Z** Version 1.56

CPU Caches Mainboard Memory

Memory Slot Selection: Slot #1: DDR3 Module Size: 2048 MB Max Bandwidth: PC3-10700 Manufacturer: Part Number: PRINCO-DR3- Serial Number:

Timings Table: JEDEC #3 Frequency: 609 MHz, CAS# Latency: 8.0, RAS# to CAS#: 8, RAS# Precharge: 8, tRAS: 22, tRC: 30, Command Rate: Voltage: 1.50 V

Validate OK

Windows 工作管理員

檔案(F) 選項(O) 檢視(V) 說明(H)

應用程式 處理程序 服務 效能 網路功能 使用者

CPU 使用率: 100%

記憶體: 5.68 GB

CPU 使用率記錄

實體記憶體使用記錄