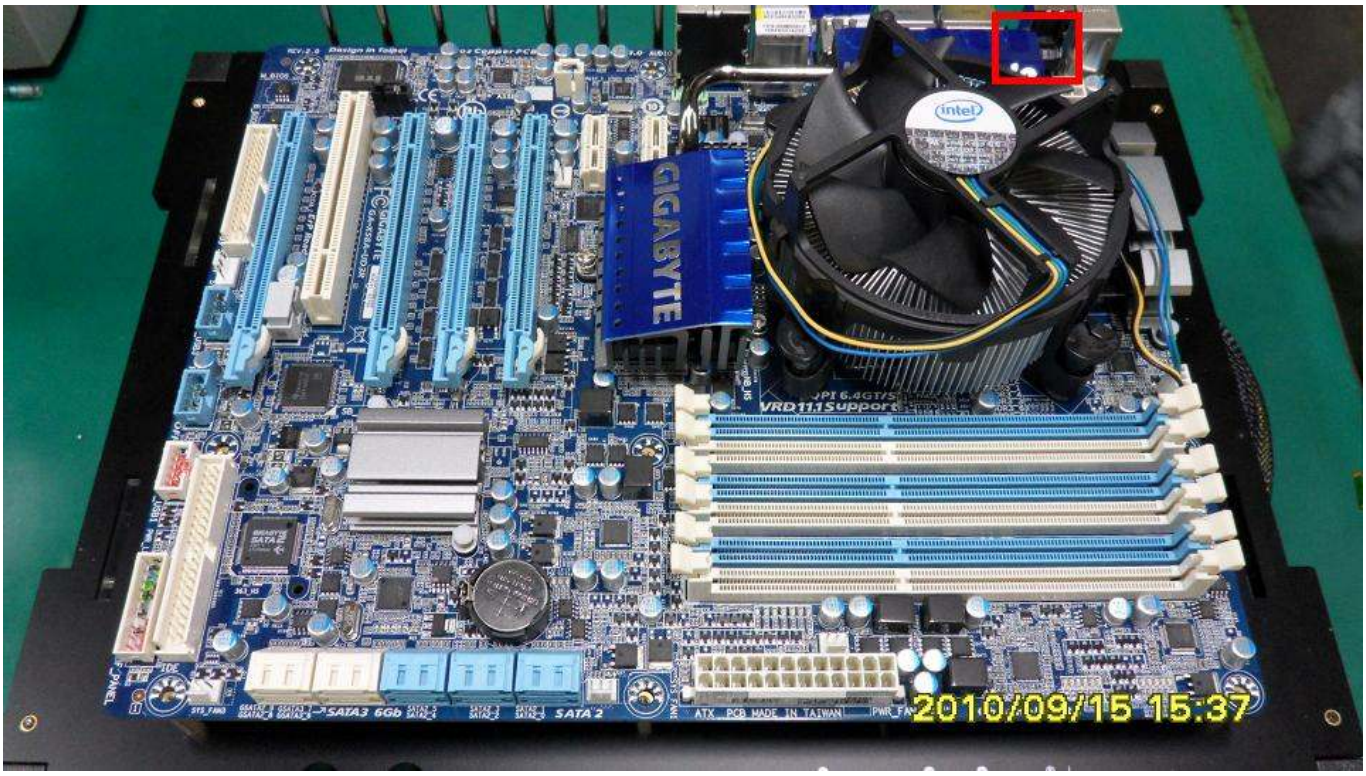
PRINCO DDR3-1600 user guide and testing for GA-X58A-UD3R Motherboard

CPU i7-950 3.07G



Part I：Standard test

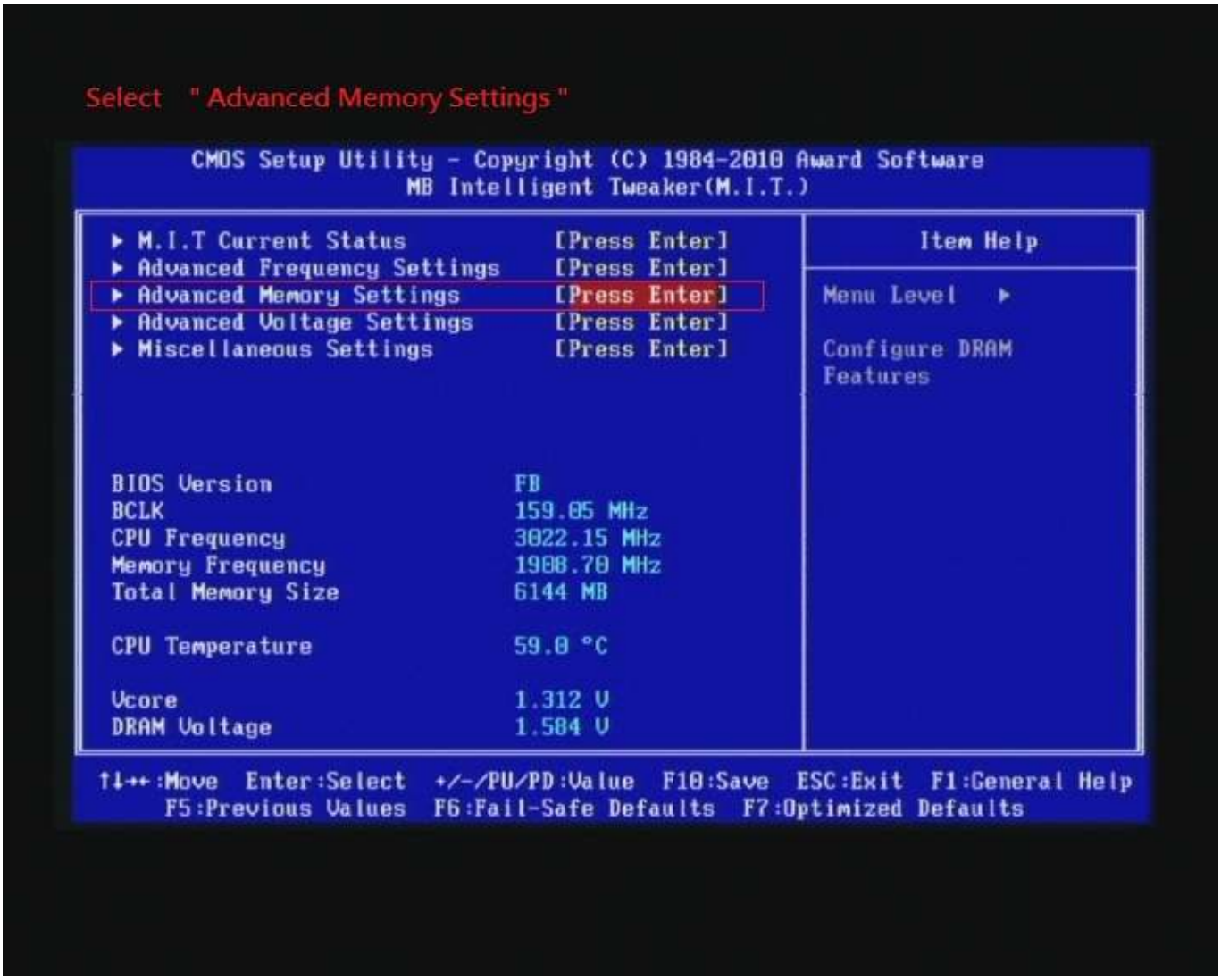
It's the easiest way to enjoy overclock benefit by using PRINCO DDR3-1600 DIMM board

How to use?

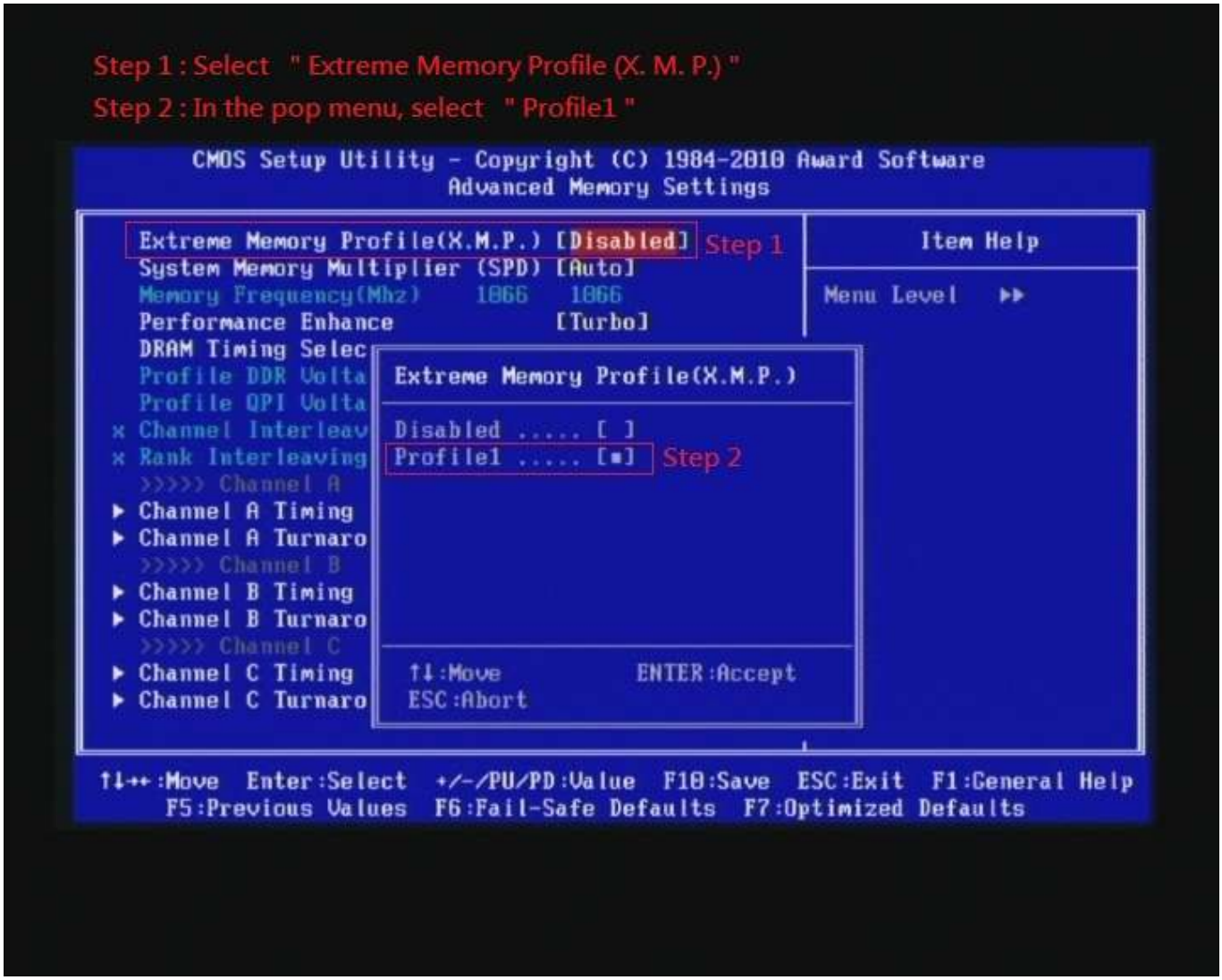
0. Clear BIOS to mainboard initial setting

1. Enter BIOS setup and [MB Intelligent Tweaker(M.I.T.)] menu

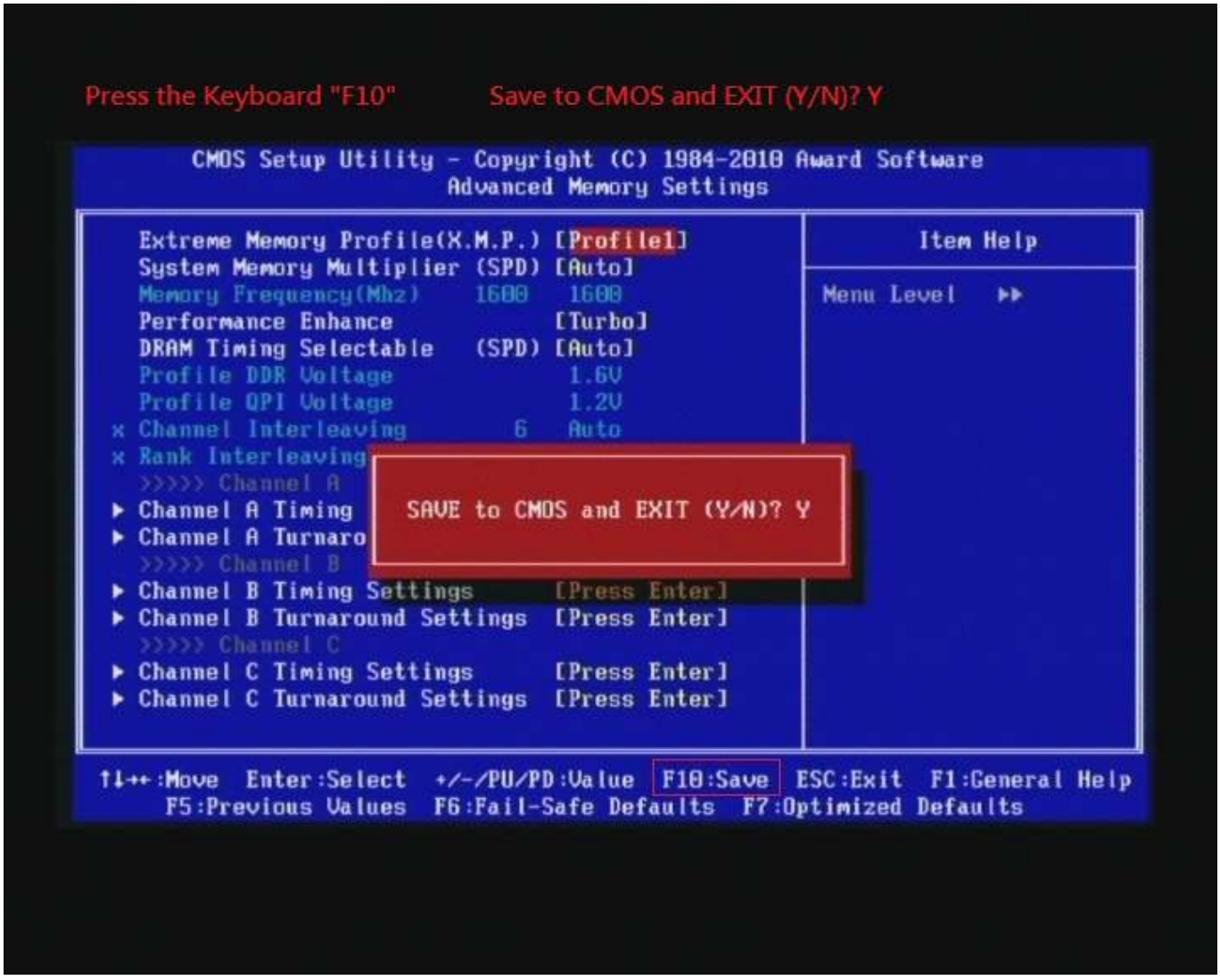
2. Enter [Advance Memory Setting] item



3. Enter [Extreme Memory Profile(X.M.P.)] item and choose [Profile 1] option，*BIOS will load X.M.P parameter in SPD on DIMM board， which are performance optimized for PRINCO DDR3-1600 DIMM board*



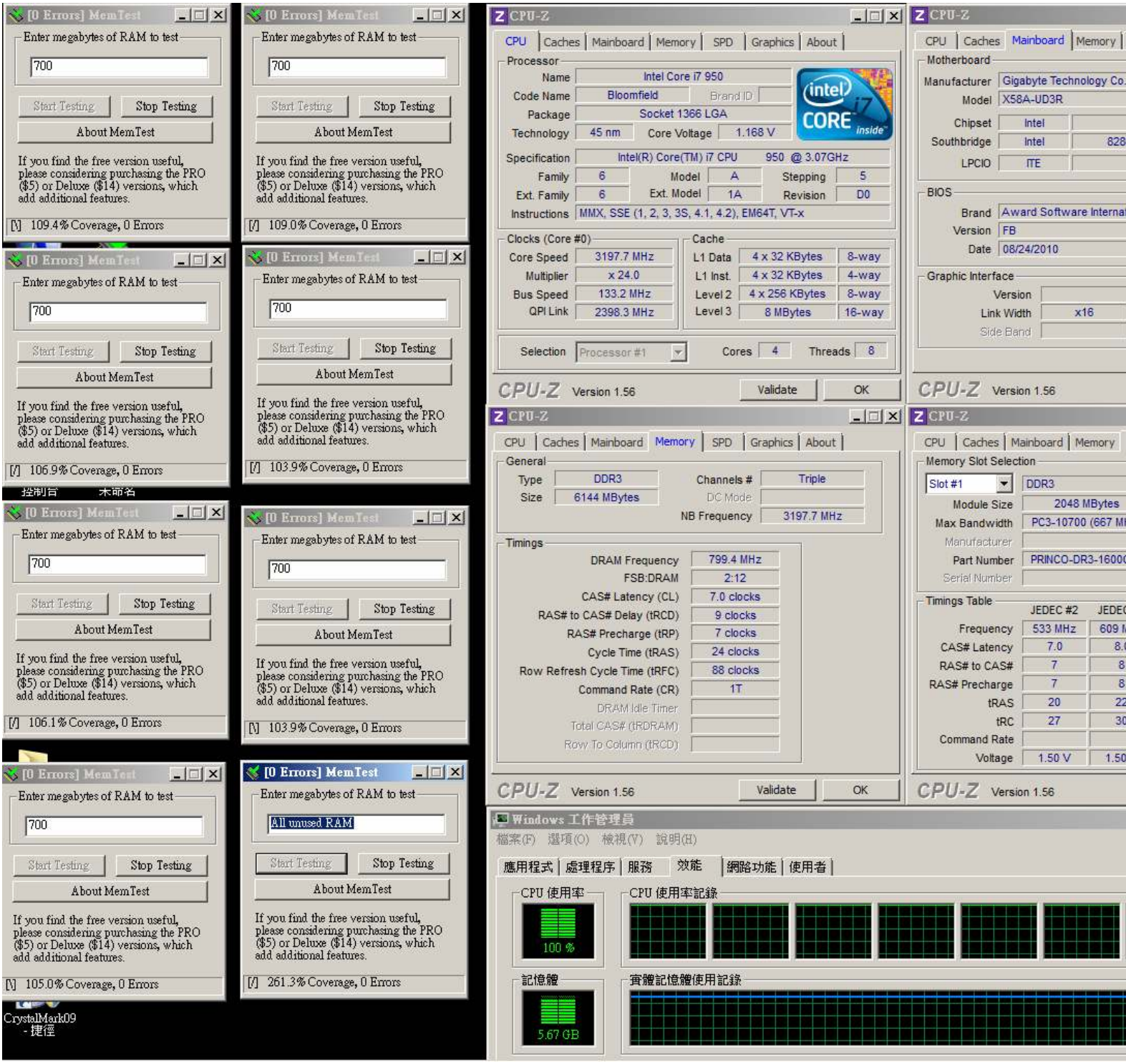
4. Save BIOS changes [F10] and exit



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：799.4*2=1599,　timing：7, 9, 7, 24,　multi-core test => pass!)



Advanced Overclocking and Testing

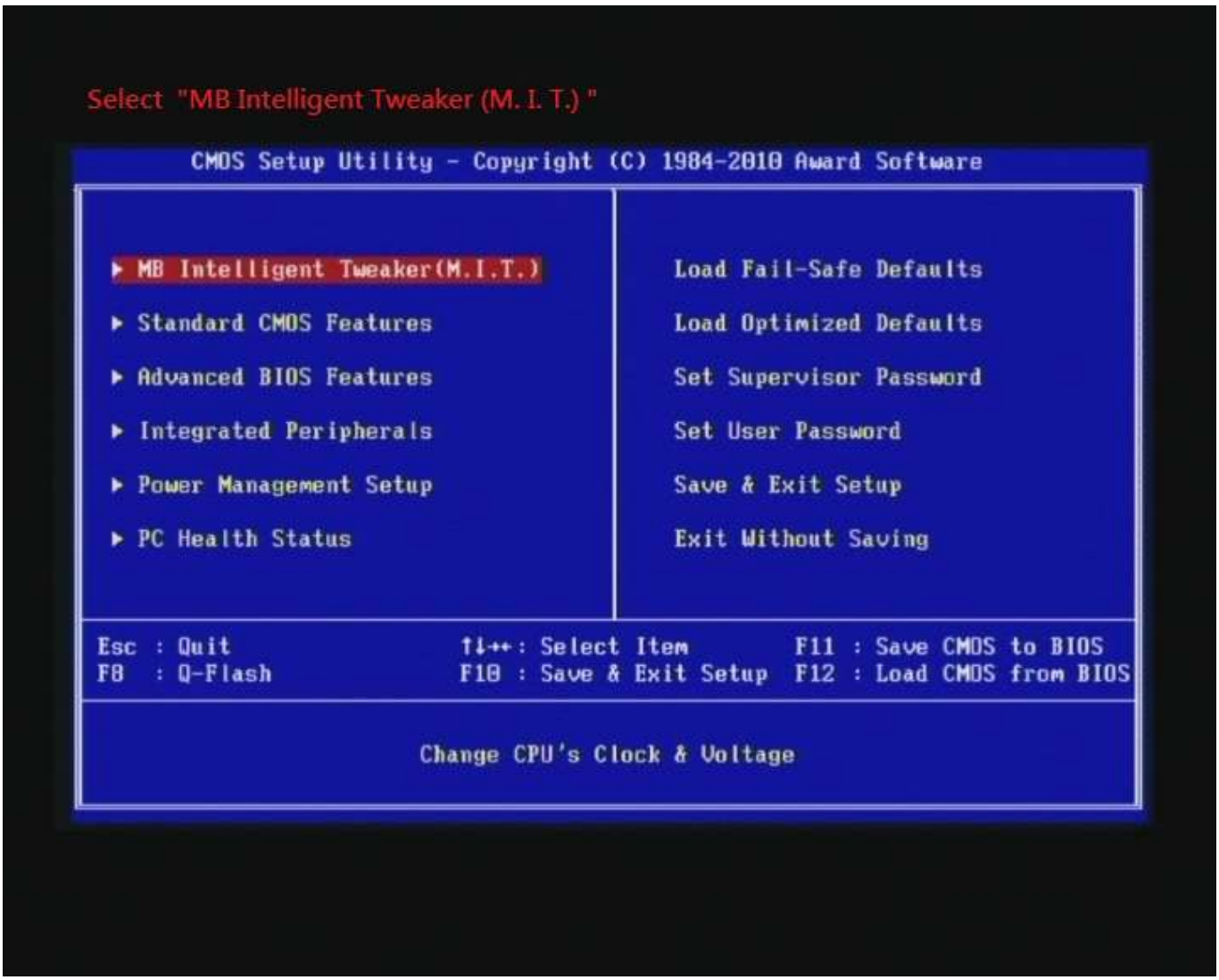
Part II：Heavy test

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

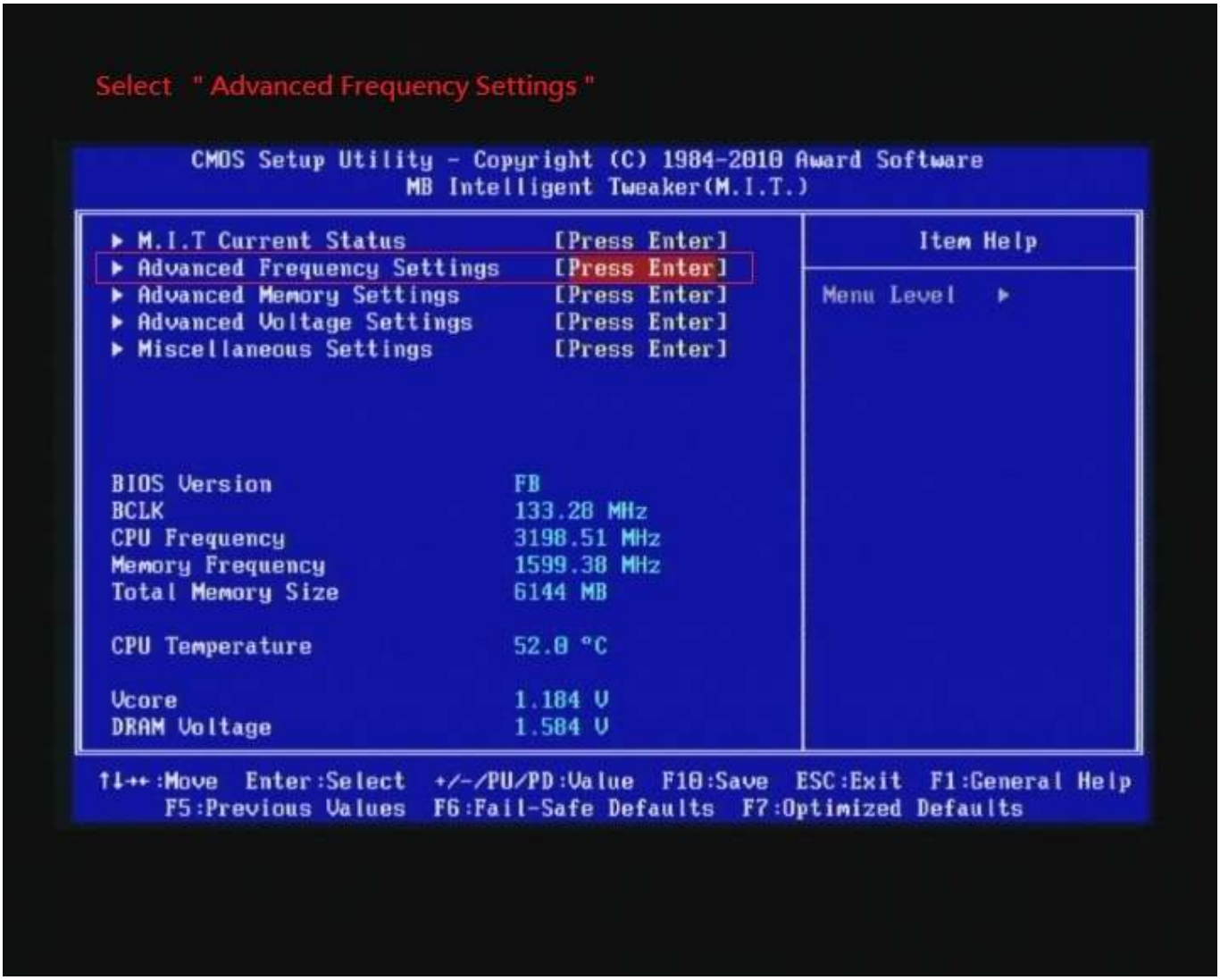
How to use?

0. Clear BIOS to mainboard initial setting

1. Enter BIOS setup and [MB Intelligent Tweaker(M.I.T.)] menu



2. Enter [Advance Frequency Setting] item



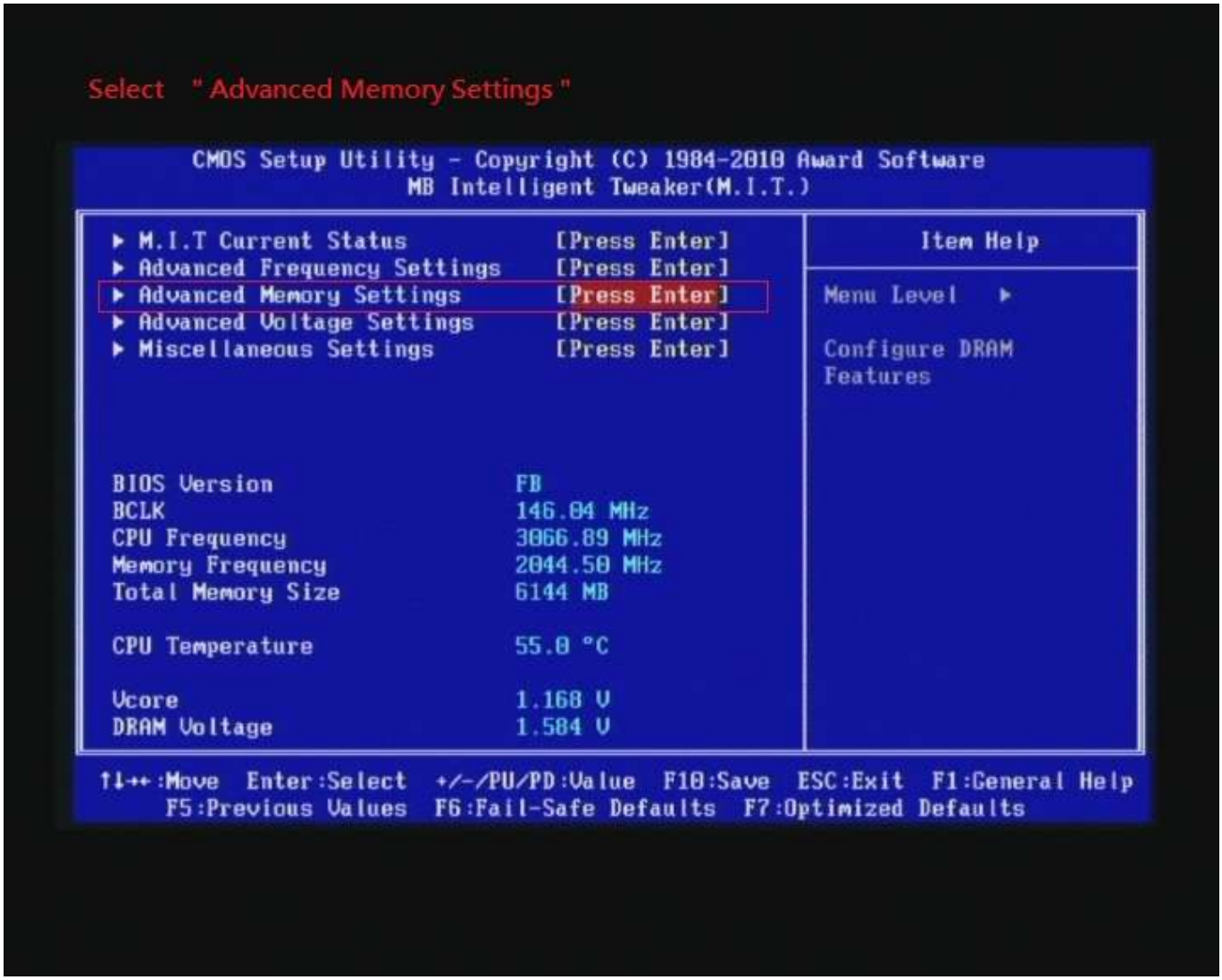
3. Set [Base Clock(BCLK) Control] item to [Enabled] ，Select [BLCK Frequency(Mhz)] item，and increase to higher Base clock rate (ex:150). Then set [System Memory Multiplier (SPD)] item to [12.0]. Don’t forget setting [CPU Ratio Setting] item to suitable ratio [ex:20]

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

then return to previous to

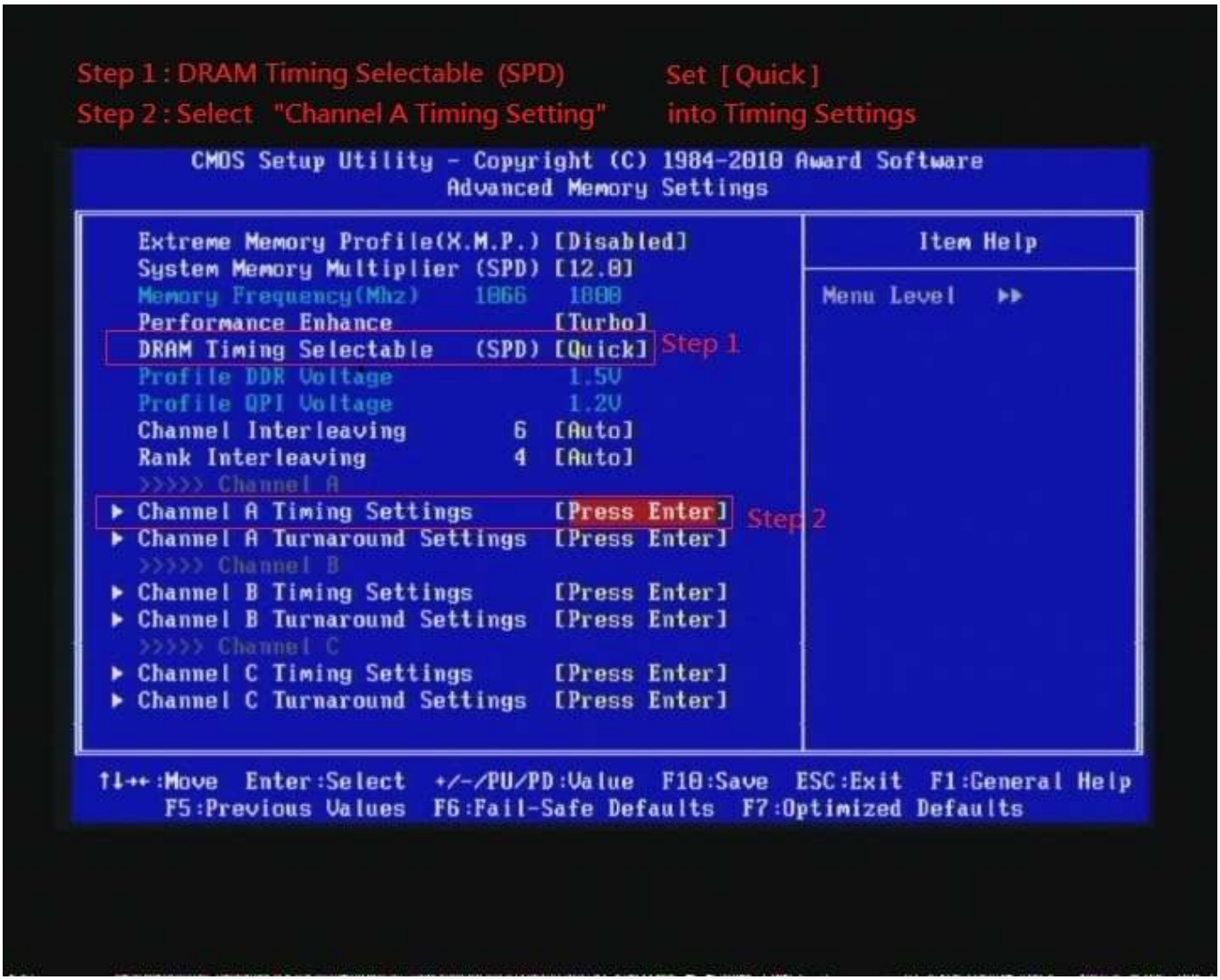
[MB Intelligent Tweaker(M.I.T.)] menu

4. Enter [Advance Memory Setting] item



5. Set [DRAM Timing Selectable (SPD)] item to [Quick]

6. Enter [Channel A Timing Settings] item



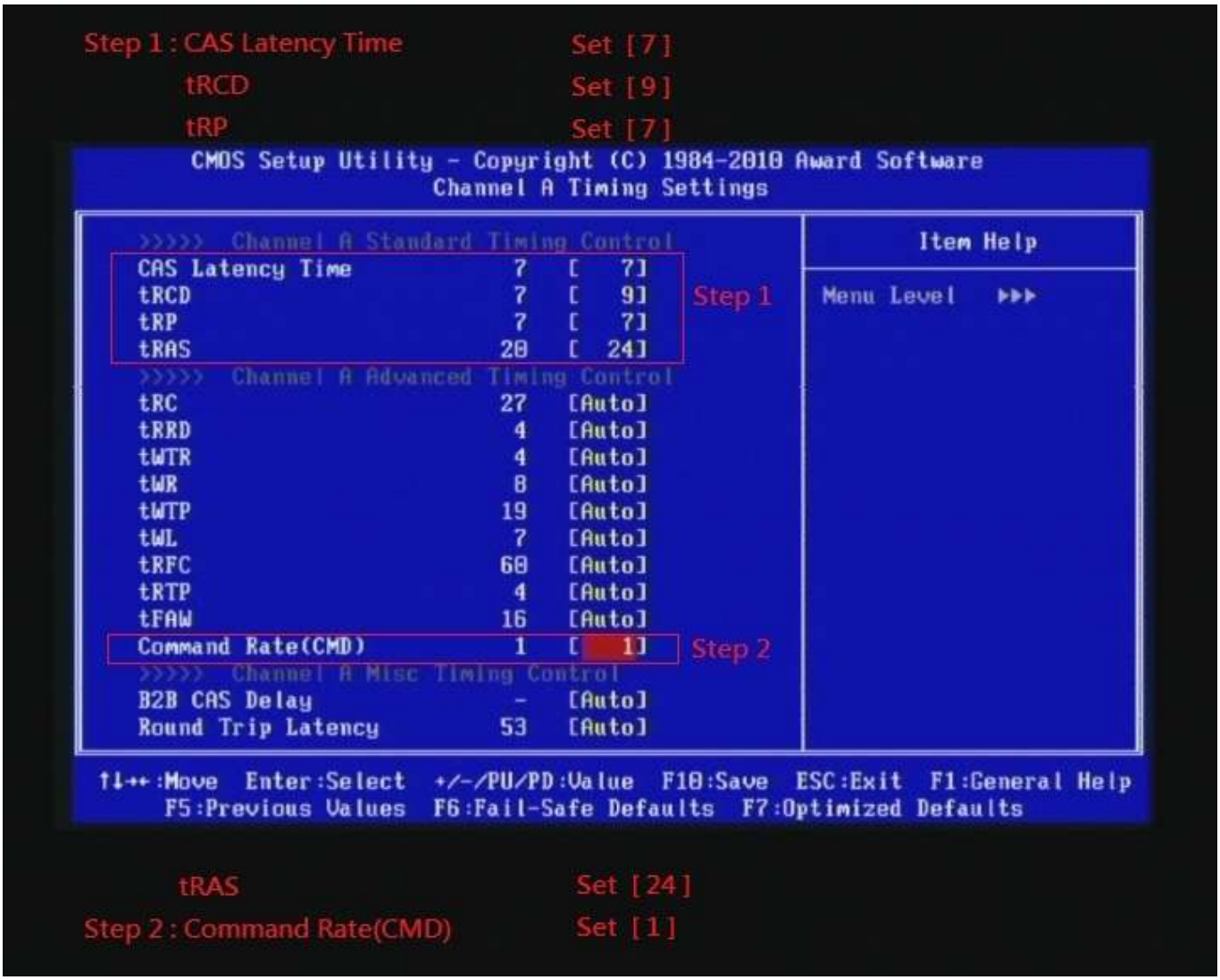
7. set [CAS Latency Time] item to [7]

   set [tRCD] item to [9]

   set [tRP] item to [7]

   set [tRAS] item to [24]

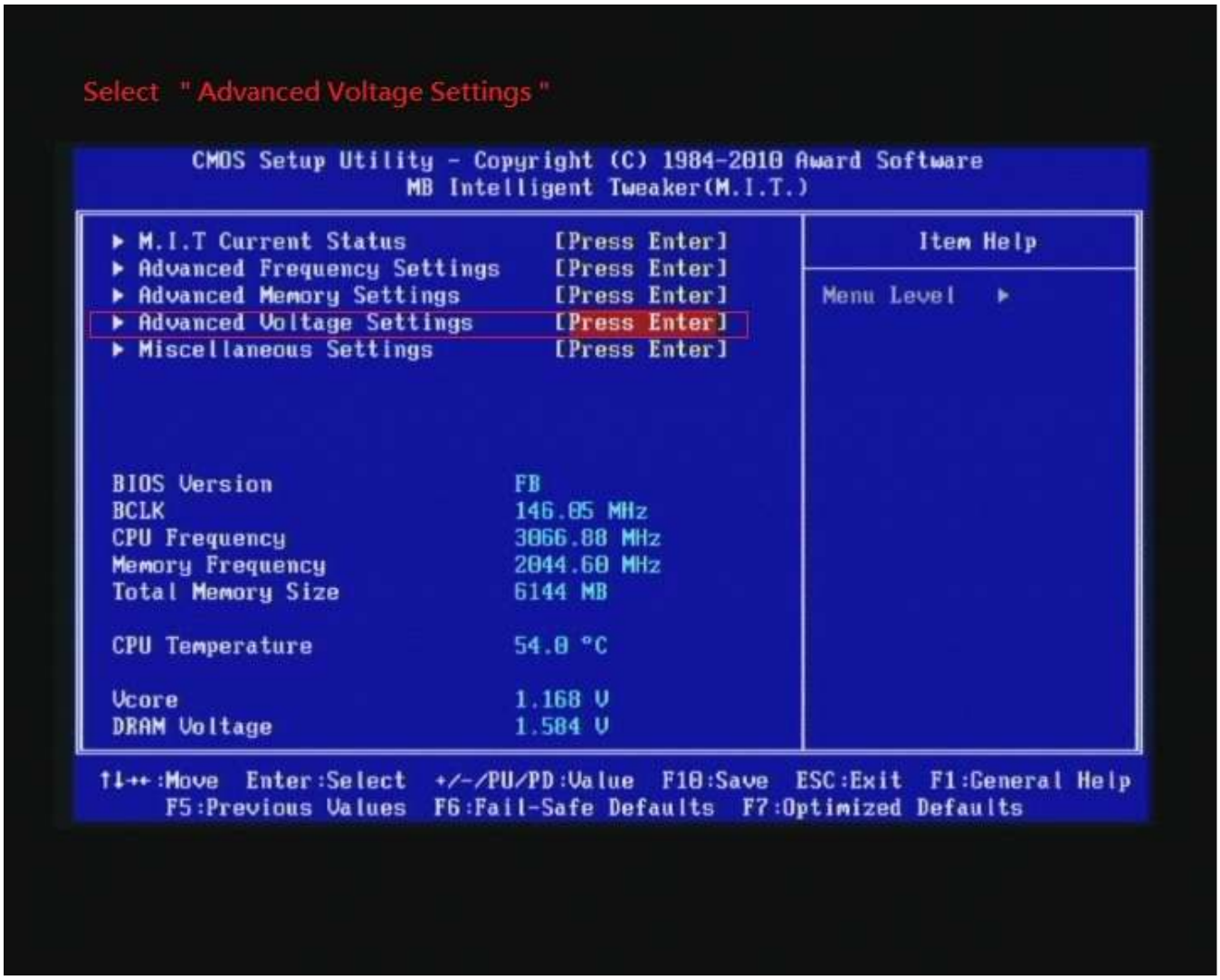
   set [DRAM Timing Mode] item to [1]



   then return to previous to

   [MB Intelligent Tweaker(M.I.T.)] menu

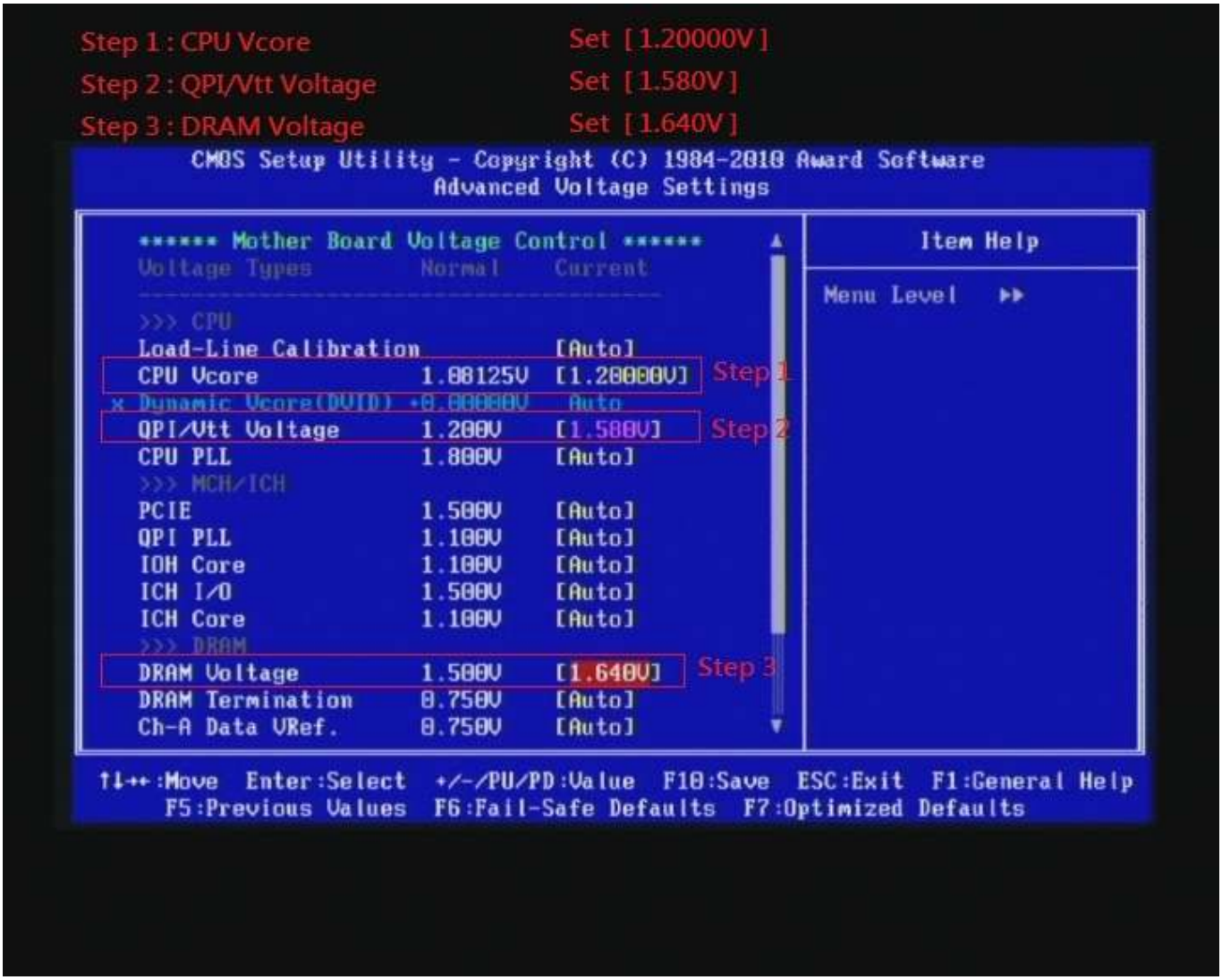
8. Enter [Advance Voltage Setting] item



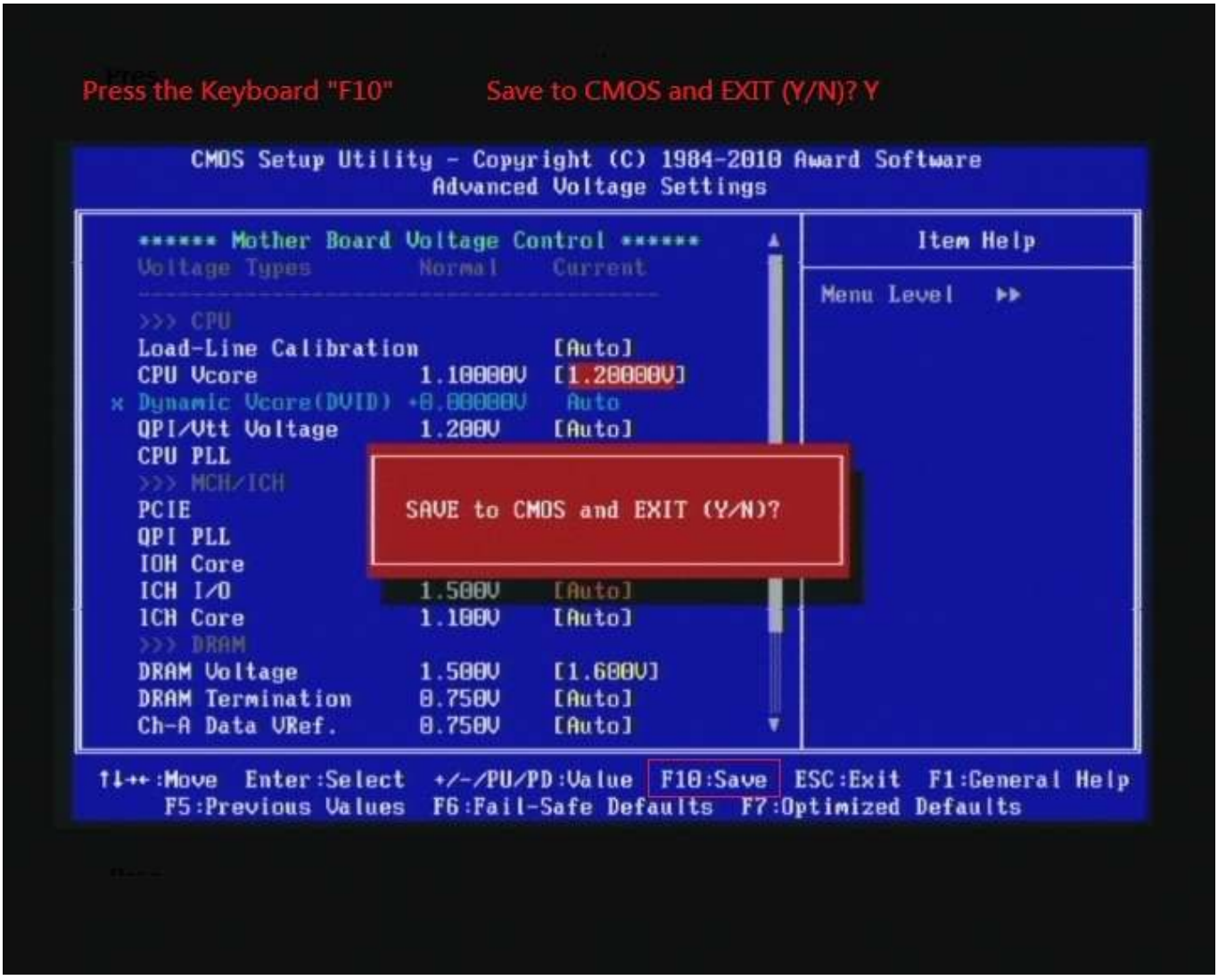
9. Select [CPU Vcore] item to [1.20008V]

Select [QPI/Vtt Voltage] item , and set the value to [1.580].

Select[DRAM Voltage] item , and set the value to [1.640V]



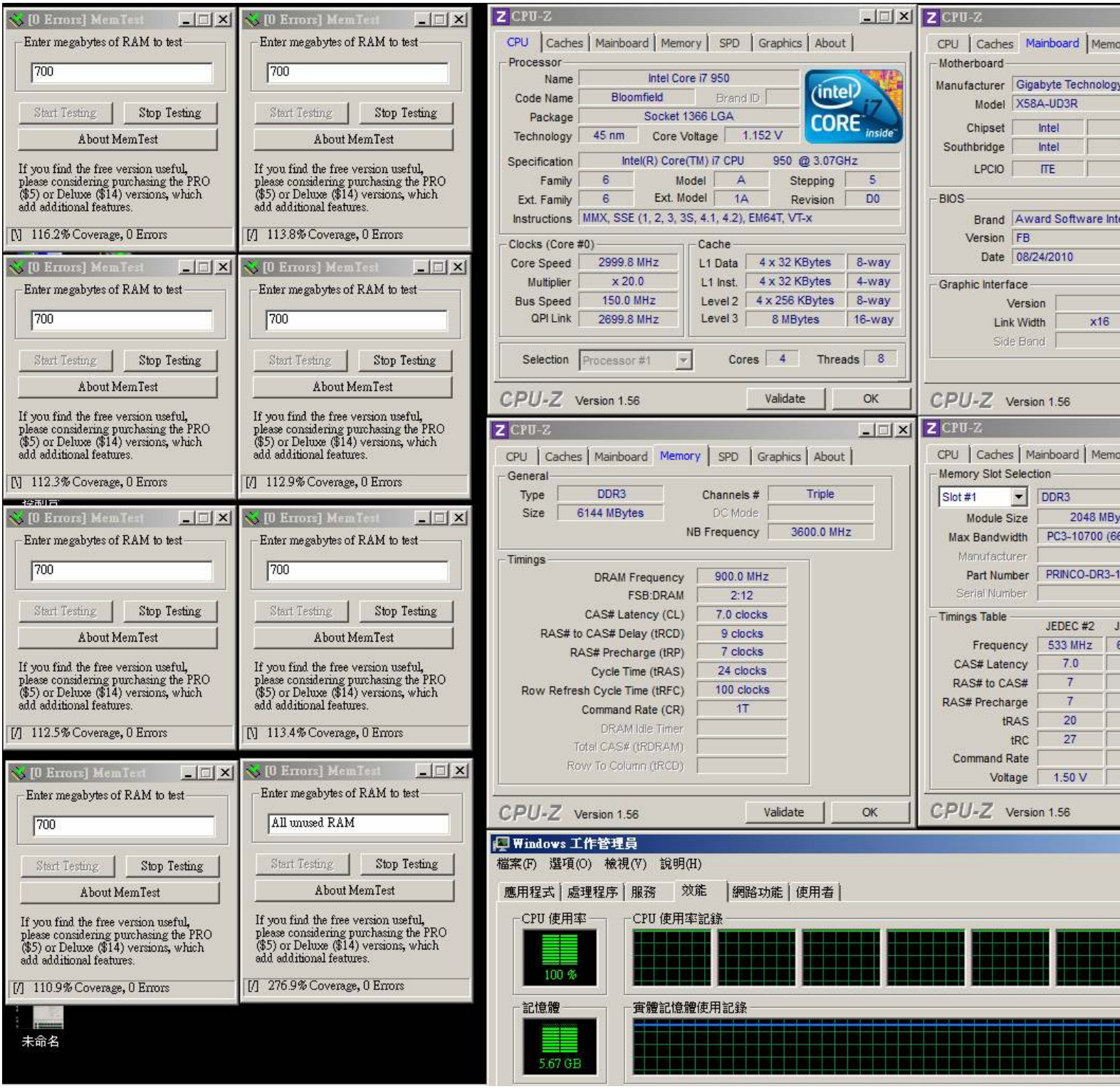
10. Save BIOS changes [F10] and exit



Test result?

We use the strictest stress testing， multi-core MemTest in window 7， to show you PRINCO DDR3-1600 potential.

(Data rate：900.0*2=1800， timing：7, 9, 7, 24， multi-core test => pass!)



Part III：Advance test

If you set parameter in BIOS as below ,

BaseClock(BCLK) Control ：[Enabled]

BCLK frequency(Mhz) ：[139]

CPU Clock Ratio：[22 X]

System Memory Multiplier (SPD)：[14.0]

CPU Vcore：[1.20000V]

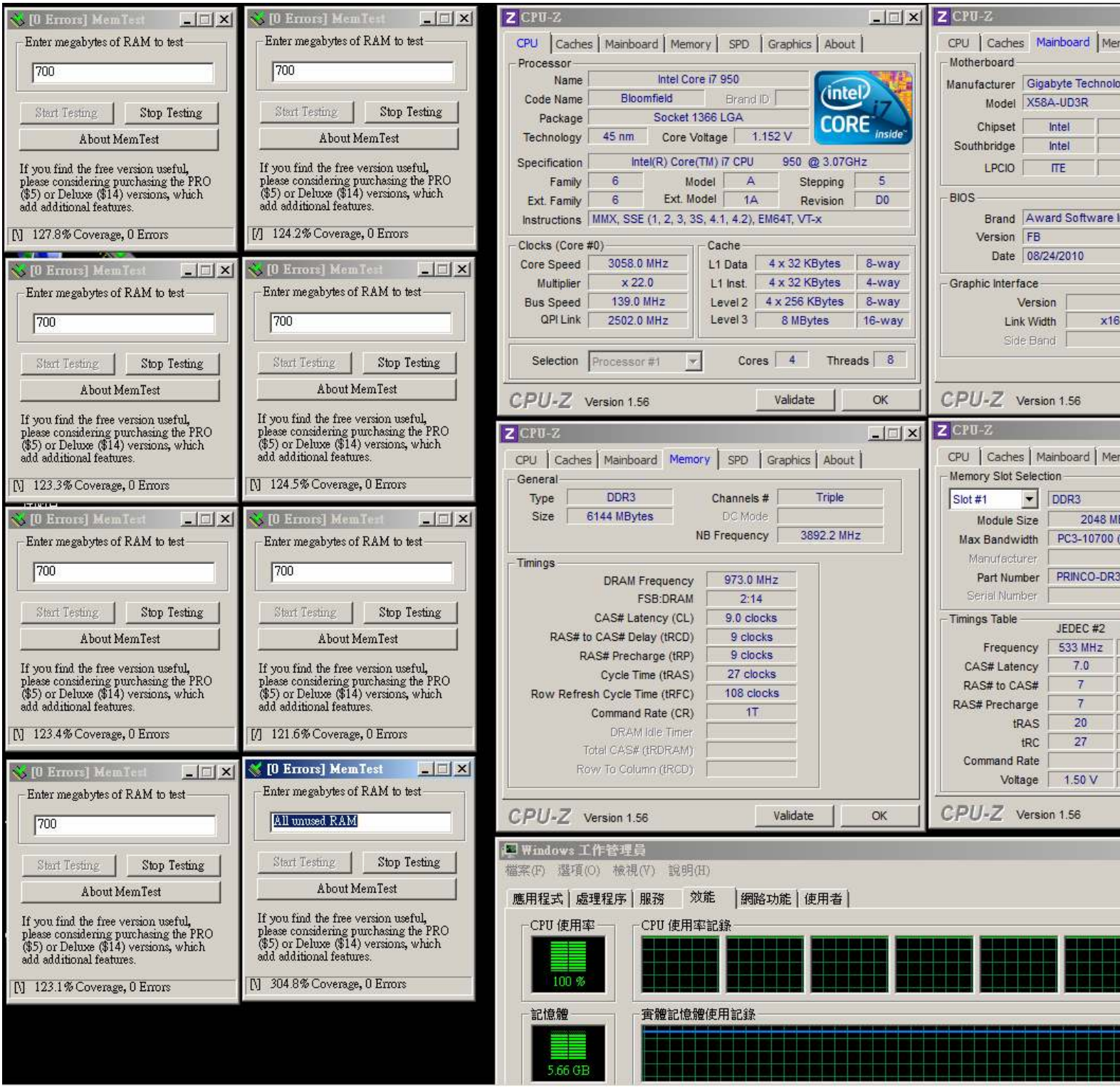
QPI/VTT Voltage：[1.580V]

DRAM Voltage：[1.640V]

DRAM timing：9, 9, 9, 27

you can check next page

(Data rate：973*2=1946， timing：9, 9, 9, 27， multi-core test => pass!)


[0 Errors] MemTest
Enter megabytes of RAM to test
700
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.
[\] 127.8% Coverage, 0 Errors
[/] 124.2% Coverage, 0 Errors
[\] 123.3% Coverage, 0 Errors
[\] 124.5% Coverage, 0 Errors
[\] 123.4% Coverage, 0 Errors
[/] 121.6% Coverage, 0 Errors
[\] 123.1% Coverage, 0 Errors
All unused RAM
[\] 304.8% Coverage, 0 Errors
CPU-Z
CPU Caches Mainboard Memory SPD Graphics About
Processor
Name Intel Core i7 950
Code Name Bloomfield Brand ID
Package Socket 1366 LGA
Technology 45 nm Core Voltage 1.152 V
Specification Intel(R) Core(TM) i7 CPU 950 @ 3.07GHz
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 3058.0 MHz
Multiplier x 22.0
Bus Speed 139.0 MHz
QPI Link 2502.0 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
CPU-Z Version 1.56
Validate OK
Mainboard
Motherboard
Manufacturer Gigabyte Technolo
Model X58A-UD3R
Chipset Intel
Southbridge Intel
LPCIO ITE
BIOS
Brand Award Software I
Version FB
Date 08/24/2010
Graphic Interface
Version
Link Width x16
Side Band
Memory
General
Type DDR3
Size 6144 MBytes
Channels # Triple
DC Mode
NB Frequency 3892.2 MHz
Timings
DRAM Frequency 973.0 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) 108 clocks
Command Rate (CR) 1T
DRAM Idle Timer
Total CAS# (tRDRAM)
Row To Column (tRCD)
Memory Slot Selection
Slot #1 DDR3
Module Size 2048 M
Max Bandwidth PC3-10700 (
Manufacturer
Part Number PRINCO-DR3
Serial Number
Timings Table
JEDEC #2
Frequency 533 MHz
CAS# Latency 7.0
RAS# to CAS# 7
RAS# Precharge 7
tRAS 20
tRC 27
Command Rate
Voltage 1.50 V
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 %
CPU 使用率記錄
記憶體
5.66 GB
實體記憶體使用記錄