PRINCO DDR3-1800 user guide and testing for MSI P55A Fuxion Motherboard

CPU i7-875 2.93G



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 [Cell Menu] menu



- Enter [Extreme Memory Profile(X.M.P.)] item and choose [Profile 2]option , BIOS will load X.M.P parameter in SPD on DIMM board , which are performance optimized for PRINCO DDR3-1800 DIMM board
- 3. Set [Extreme Memory Profile Mode] item to [Advance]
- 4. Set [Adjust CPU Ratio] item to [19]

: Extreme Memory Profile Mo ep 2 : Adjust CPU Ratio		Set [Advance] Set [19]
CMOS Setup Utility - Copyright	(C) 1985-2005, Amer Cell Menu	rican Megatrends, Inc.
Turbo Boost Tech Config	[Press Enter]	Help Item
Adjust CPU Ratio Adjusted CPU Frequency (MHz)	[19] Step 2 2850MHz	Sets the ratio
IC Genie Operation	Enabled]	between CPU Core
Super Unlock Technology	[Disabled]	Clock and the FSB
	South Andrew Columbus	Frequency.
MEMORY-Z	[Press Enter]	
Current DRAM Channel 1 Timing	8-9-8-27	
Current DRAM Channel 2 Timing	8-9-8-27	
DRAM Timing Mode	[Auto]	
Advance DRAM Configuration		
Extreme Memory Profile(X.M.P.)		
Extreme Memory Profile Mode	thavances	
lemory Ratio	[Auto]	
djusted DRAM Frequency (MHz)	1800MHz	
PI Ratio	[Auto]	
djusted QPI Frequency (MHz)	5400MHz	
ClockGen Tuner	[Press Enter]	

5. Save BIOS changes [F10] and exit



CMOS Setup Utility - Copyright	Cell Menu	MCI IGan	nega ci enus / The.
Current CPU Frequency	2.85GHz (150x19)		Help Item
Current DRAM Frequency	1800MHz		
Current QPI Frequency	5400MHz		
► CPU Specifications	[Press Enter]		
► CPU Feature	IPress Enterl		
Active Processor	[A]]]		
Intel EIST	[Auto]		
C1E Support	[Enabled]		
Intel Turbo Boost	[Enabled]		
Adjust CPU Base Frequency (MHz)	[150]		
OC Stepping	[Disabled]		
Turbo Boost Tech Config	[Press Enter]		
Adjust CPU Ratio	[19]		
Adjusted CPU Frequency (MHz)	2850MHz		
OC Genie Operation	[Enabled]		
Super Unlock Technology	[Disabled]		
MEMORY-Z	(Press Enter)		

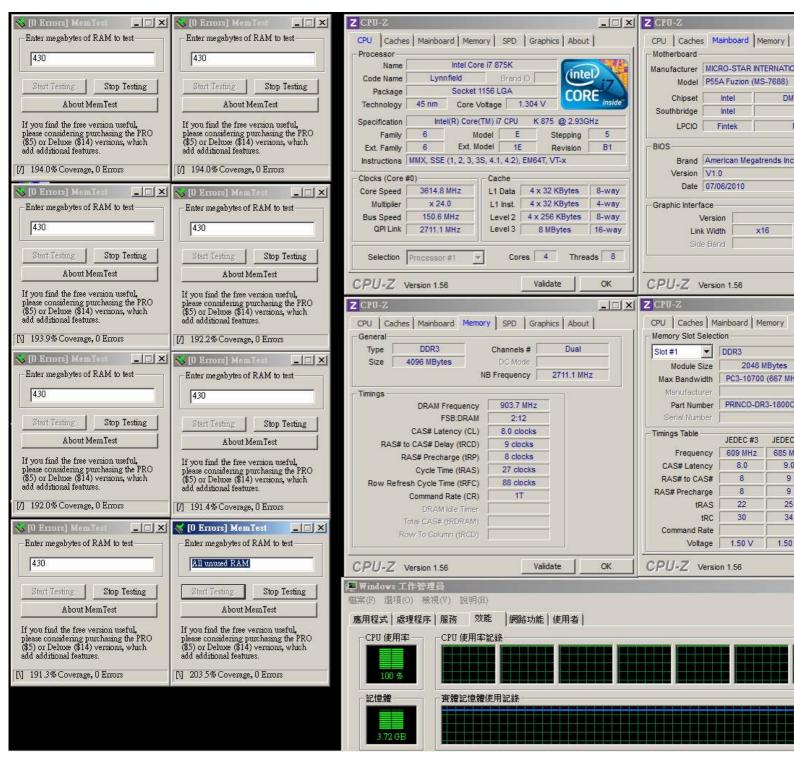
Test result?

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 : 903.0*2=1806, timing : 8, 9, 8, 27, multi-core test => pass!)



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 [Cell Menu] menu

 Advanced BIOS Features Integrated Peripherals Power Management Setup H/W Monitor Green Power 	andard CMOS Features	Eell Menu
 Power Management Setup H/W Monitor Load Optimized Defaults 	anced BIOS Features	▶ M-Flash
► H/W Monitor Load Optimized Defaults	egrated Peripherals	► Overclocking Profile
	ver Management Setup	Load Fail-Safe Defaults
Green Power Save & Exit Setup	J Monitor	Load Optimized Defaults
	en Power	Save & Exit Setup
BIOS Setting Password Exit Without Saving	IS Setting Password	Exit Without Saving
†↓↔:Move Enter:Select +/-/:Ualue F10:Save ESC:Exit F1:General F4: CPU Spec F5:Memory-Z F8:Fail-Safe Defaults F6:Optimized Def		

2. Enter [DRAM Timing Mode] item and select Manual

3. Enter [Advance DRAM Configuration] item

CMOS Setup Utility - Copyright	(C) 1985-2005, Cell Menu	America	n Megatrends, Inc.
IC Stepping	[Disabled]		Help Item
Turbo Boost Tech Config	[Press Enter]		
djust CPU Ratio	[22]		
djusted CPU Frequency (MHz)	2926MHz		
IC Genie Operation	[Enabled]		
Super Unlock Technology	[Disabled]		
MEMORY -2	(Press Enter)		
Current DRAM Channel 1 Timing	9-9-9-24		
urrent DRAM Channel 2 Timing	9-9-9-24		
RAM Timing Mode	[Manua 1]	Step 1	
Advance DRAM Configuration	[Press Enter]	Step 2	
xtreme Memory Profile(X.M.P.)	[Disabled]		
lemory Ratio	[Auto]		
djusted DRAM Frequency (MHz)	1333MHz		
PI Ratio	[Auto]		
djusted QPI Frequency (MHz)	4800MHz		
ClockGen Tuner	(Press Enter)		

4. set [CH1 1T/2T Memory Timing] item to [1]

set [CH1 CAS Latency (CL)] item to [8]

set [CH1 tRCD] item to [9]

set [CH1 tRP] item to [8]

set [CH1 tRAS] item to [27]

CH1 CAS Latency(C	lL)	Set [8]
CH1 tRCD		Set [9]
CH1 tRP		Set [8]
CH1 tRAS		Set [27]
CMOS Setup Utility - Copyr	ight (C) 1985-20	05, American Megatrends, Inc.
	ance DRAM Config	
Channel		🔺 Help Item
CH1 1T/2T Memory Timing		
CH1 CAS Latency (CL)	[8]	Also called "Command
CH1 tRCD	[9]	Rate": the delay cycle
CH1 tRP	[8] (27]	between the memory controller start to
CH1 tRAS CH1 tRFC	[74]	
CH1 tWR	[10]	send signal and the command can be sent to
CH1 tWTR	[5]	memory IC. Normally,
CH1 tRRD	(4)	you can select "1" to
CH1 tRTP	(4)	delay one cycle or
CH1 tFAW	[20]	"2" to delay two
CH1 B2B-CAS Delay	[0]	cycles. 1 will run
		faster but might be
Current CH1 tdrRdTRd	67	more unstable. Please
Current CH1 tddRdTRd		set it depends on
Current CH1 tsrRdTWr	10	memory module.
Current CH1 tdrRdTWr	10	
Current CH1 tddRdTWr	10	

5. set [CH2 1T/2T Memory Timing] item to [1]

set [CH2 CAS Latency (CL)] item to [8]

set [CH2 tRCD] item to [9]

set [CH2 tRP] item to [8]

set [CH2 tRAS] item to [27]

hannel 2 : CH2 1T/2T Memory CH2 CAS Latency(C		Set [1] Set [8]
CH2 tRCD		Set [9]
CH2tRP		Set [8]
CH2 tRAS		Set [27]
	ght (C) 1985-200 mce DRAM Configu	5, American Megatrends, Inc. ration
Channel 1 Advance Timing	[Auto]	▲ Help Item
====== Channel 2		Also called "Command
CH2 1T/2T Memory Timing	11	Rate": the delay cycle
CH2 CAS Latency (CL)	[8]	between the memory
CH2 tRCD	[9]	controller start to
CH2 tRP	[8]	send signal and the
CH2 tRAS	[27]	command can be sent to
CH2 tRFC	[74]	memory IC. Normally,
CH2 tWR CH2 tWTR	[10] [5]	you can select "1" to
CH2 tRRD	[4]	delay one cycle or "2" to delay two
CH2 tRTP	[4]	cycles. 1 will run
CH2 tFAW	[20]	faster but might be
CH2 B2B-CAS Delay	[0]	more unstable. Please
one and one roug		set it depends on
Current CH2 tdrRdTRd	6	memory module.
Current CH2 tddRdTRd	ž	
	10	
Current CH2 tsrRdTWr		

 Select [Adjust CPU Base Frequency (MHz)] item [,] and increase to higher Base clock rate (ex:171). Then set [Memory Ratio] item to [6]. Don't forget setting [CPU Ratio Setting] item to suitable ratio [ex:17]

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

ep 3 : Adjust CPU Ratio		Set [17]
CMOS Setup Utility - Copyright	(C) 1985-2005, A Cell Menu	merican Megatrends, Inc.
Adjust CPU Base Frequency (MHz) OC Stepping ▶ Turbo Boost Tech Config Adjust CPU Ratio Adjusted CPU Frequency (MHz) OC Genie Operation Super Unlock Technology	[171]Step 2[Disabled][Press Enter][17]Step 32907MHz[Enabled][Disabled]	Help Item Sets the ratio between CPU Core Clock and the FSB Frequency.
 MEMORY-2 Current DRAM Channel 1 Timing Current DRAM Channel 2 Timing DRAM Timing Mode Advance DRAM Configuration Extreme Memory Profile(X.M.P.) Memory Ratio Adjusted DRAM Frequency (MHz) QPI Ratio 	IPress Enter]9-9-9-279-9-9-27IManua]]IPress Enter]IDisabled]IG]Step 12052MHzIAuto]	
Adjusted QPI Frequency (MHz)	6156MHz	

7. Select[DRAM Voltage(V)] item , and set the value to

[1.645].

CMOS Setup Utility - Copyrigh	Cell Menu	ar rear negati chus / i har
QPI Ratio Adjusted QPI Frequency (MHz)	(Auto) 6156MHz	▲ Help Item
ClockGen Tuner	[Press Enter]	Auto:1.5000 Min: 0.9060
Adjust PCI-E Frequency (MHz)	[100]	Max: 2.4050
Auto Disable PCI Frequency	(Enabled)	If user keyin voltage
VDroop Control	[High VDroop]	BIOS will select the Closest value.
CPU Voltage(V)	[Auto]	Left+Shift:
CPU UTT (U)	[Auto]	-/+10 Steps one time
CPU PLL Voltage(V)	[Auto]	Right+Shift:
DRAM Voltage (V)	[1.645]	-/+20 Steps one time
DDR_UREF_CA_A (U)	[Auto]	Color Message :
DDR_UREF_CA_B (U)	[Auto]	Gray : Default Voltage
DDR_UREF_DA_A (U)	[Auto]	White : Safe settings.
DDR_UREF_DA_B (U)	[Auto]	Red : Not recommended
PCH 1.05(V)	[Auto]	
Spread Spectrum	[Enabled]	

8. Save BIOS changes [F10] and exit

QPI Ratio Adjusted QPI Frequency (MHz)	[Auto] 6156MHz	1	Help Item
▶ ClockGen Tuner Adjust PCI-E Frequency (MHz) Auto Disable PCI Frequency	[Press Enter] [100] [Enabled]	Min: Max:	1.500V 0.906V 2.405V er keyin voltage
			l select the
CPU Voltage(V Save configura CPU UTT(V)	tion changes and ex	xit setup?	ualue.
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CPU Voltage(U CPU UTT(U) CPU PLL Volta DRAM Voltage(DDR_VREF_CA_A DDR_UREF_CA_B(U) DDR_UREF_DA_A(U)	[Cance [Auto] [Auto]	1] Gray White	Value. ft: Steps one tim ift: Steps one tim sage : Default Voltag : Safe settings

▲ Help Item

Test result?

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

window 7 [,] to show you PRINCO DDR3-1800 potential.

(Data rate : 1029.4*2=2058 , timing : 8, 9, 8, 27 , multi-core test => pass!)

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