PRINCO DDR3-1600 user guide and testing for ASRock-P55 Motherboard

CPU i7-875 2.93G



Part I: Standard test

It's the easiest way to enjoy overclock benefit by

using PRINCO DDR3-1600 DIMM board

How to use?

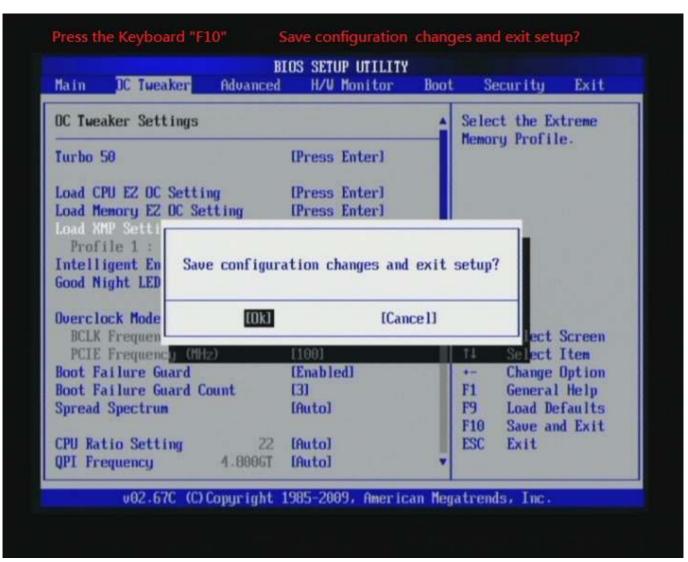
- 0. Clear BIOS to mainboard initial setting
- 1. Enter BIOS setup and [OC Tweaker] menu

ilain OC Tueake	r Advanced H/V Monitor	Boot S	ecurity Exit
System Overview			(ENTER), [TAB] SHIFT-TAB] to
System Time System Date	[22:41:52] [Sat_09/18/2010]		ct a field.
ogoten pare	1000 000 100 20101	Use	[+] or [-] to
BIOS Version :	P55 Pro/USB3 P1.20	conf	igure system Time.
Processor Type :	Intel(R) Core(TM) 17 CPU		
	K 875 @ 2.93GHz (64bit)		
Processor Speed :			
Microcode Update:			
Cache Size :	8192KB		
Total Memory :	4096M8		Select Screen
	Dual-Channel Memory Mode	14	Select Item
DDR3_A2 :	None		Change Field
DDR3_A1 :	2048M8/667MHz DDR3_1333	Tab	Select Field
	None	F1	General Help
DDR3_B1 :	2048MB/667MHz DDR3_1333	F9	Load Defaults
		F10	Save and Exit
		ESC	Exit

- 2. Enter [Load XMP Setting] 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 [Load XMP Setting] item and select [Profile 1]

Load XMP Setting		Set "Profile 1 "		
B Main DC Tweaker Advanced	IOS SETUP UTILITY H/W Monitor Bo	ot S	Security	Exit
OC Tweaker Settings			ect the Ext	
Turbo 50	IPress Enterl	Thema	ry Profile	
Load CPU EZ OC Setting Load Memory EZ OC Setting	[Press Enter] [Press Enter]			
Load XMP Setting Profile 1 : DDR3 1600 7-9-7-	(Profile 1)			
Intelligent Energy Saver	[Disabled]			
Good Night LED	[Disabled]			
Overclock Mode	[Auto]			
BCLK Frequency (MHz)	[133]	4.4	Select S	ALC: NOT ON THE OWNER.
PCIE Frequency (MHz)	[100]	11	Select 1	a second second
Boot Failure Guard	[Enabled]	-	Change (and the second second
Boot Failure Guard Count	[3]	F1	General	COLUMN TO A DESCRIPTION OF
Spread Spectrum	[Auto]	F9 F10	Load Def Save and	100 million (1997)
CPU Ratio Setting 22	[Auto]	ESC	Exit	
QPI Frequency 4.800GT	[Auto]			

4. Save BIOS changes [F10] and exit



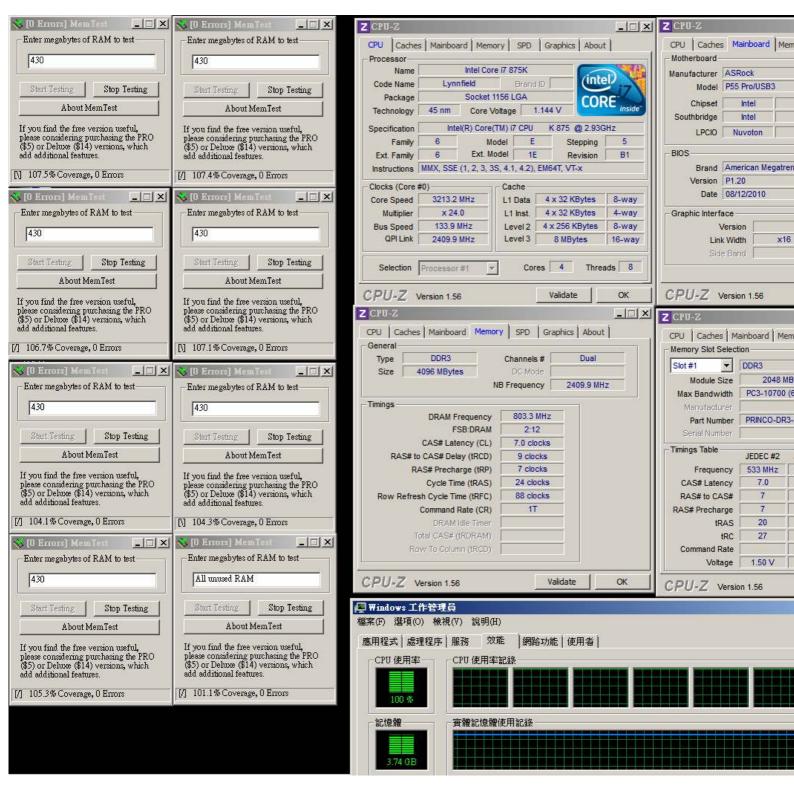
Ps: after reboot , check if the new setup have been updated.

lain OC Tweak		S SETUP UTILITY H/W Monitor	Boot	Security	Exit
System Overview				ENTERI .	0.000
Systen Tine Systen Date	78	22:43:39] Sat 09/18/2010]		(SHIFT-TAB) lect a field	0.00
BIOS Version Processor Type Processor Speed Microcode Update	: P55 Pro/USB3 P : Intel(R) Core(K 875 @ 2.93G : 2933MHz	1.20 TMD 17 CPU	L. efuite	: [+] or [-] ifigure syst	CHEROLAND CONTRACTOR
DDR3_A2 DDR3_A1	: 4096MB Dual-Channel M : None : 2048MB/800MHz 1 : None : 2048MB/800MHz 1	DDR3_1600	++ 14 +- Tab F1 F9 F10 ES0	General Load Def Save and	item Tield Tield Help Taults

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 : 803.3Mhz*2, 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 [OC Tweaker] menu

iain OC Tweak	BIOS SETUP UTILITY er Advanced H/W Monitor Boot	Security Exit
System Overview		Use (ENTER) , (TAB)
	: 106E5/3	or [SHIFT-TAB] to select a field. Use [+] or [-] to configure system Time
DDR3_A2 DDR3_A1 DDR3_B2	: 4096M8 Dual-Channel Memory Mode : None : 2048MB/667MHz DDR3_1333 : None : 2048MB/667MHz DDR3_1333	 ↔ Select Screen †4 Select Item ← Change Field Tab Select Field F1 General Help F9 Load Defaults F10 Save and Exit ESC Exit

- 2. Enter [Overclock Mode] item and select [Manual]
- 3. Select [BLCK Frequency] item , and increase to higher Base clock rate (ex:163). Then select [DRAM Frequency] item , and set the DDR3 memory to higher clock rate (ex:DDR3-1956). Don't forget setting [CPU Ratio Setting] item to suitable ratio [ex:18]

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

4. Select [DRAM Voltage] item , and set the value to [1.643V].

Step 1 : Overclock Mode		Manual]
Step 2 : BCLK Frequency (MHz)	Set [163]
Step 3 : CPU Ratio Setting	Set [18]
Step 4 : DRAM Frequency	Set [978MHz DDR3_1956]
Step 5 : DRAM Voltage	Set [1.643V]
B	IOS SETUP UTILITY	
Main DC Tweaker Advanced	H/W Monitor Boo	t Security Exit
Good Night LED	[Disabled]	Standard = 1.6150 Max = 2.0080
Overclock Mode	[Manual] Step 1	
BCLK Frequency (MHz)	[163] Step 2	
PCIE Frequency (MHz) Boot Failure Guard	[100] [Enabled]	
Boot Failure Guard Count	[3]	
Spread Spectrum	[Auto]	System may be damaged
	And the second sec	or reduce its life
CPU Ratio Setting 22	[18] Step 3	cycle when
QPI Frequency 4.800GT DRAM Frequency DDR3_1600	[Auto] [978MHz DDR3_1956]	overvoltage.
brail Frequency DBK5_1000		↔ Select Screen
► DRAM Timing Control	Step 4	14 Select Item
	and the second	+- Change Option
ASRock UDroop Control	[With UDroop]	F1 General Help
CPU Voltage 1.6010	IAutol I1.64301 Step 5	F9 Load Defaults F10 Save and Exit
UTT Voltage 1.2640	[Auto]	ESC Exit
	[Auto]	AND

5. Enter [DRAM Timing Control] item

Hain DC Tweaker Advanced	IOS SETUP UTILITY H/W Monitor	Boot	Security Exit
Good Night LED	[Disabled]		All DRAM Timing Control.
Overclock Mode	[Manua]]		control.
BCLK Frequency (MHz)	[163]		
PCIE Frequency (MHz)	[100]		
Boot Failure Guard	[Enabled]		
Boot Failure Guard Count	(3)		
Spread Spectrum	[Auto]		
CPU Ratio Setting 22	[18]		
QPI Frequency 4.800GT	[Auto]		
DRAM Frequency DDR3_1600	[978MHz DDR3_1956]		
			↔ Select Screen
DRAM Timing Control			14 Select Item
			Enter Go to Sub Screen
ASRock UDroop Control	[With UDroop]		F1 General Help
CPU Voltage	[Auto]		F9 Load Defaults
DRAM Voltage 1.6010	[1.6430] [Auto]		F10 Save and Exit ESC Exit
UTT Voltage 1.2640 PCH Voltage 1.0790	[Auto]		LOC LAIL
PCH Voltage 1.0790	THUCO1		

6. set [DRAM tCL] item to [7]

set [DRAM tRCD] item to [9]

set [DRAM tRP] item to [7]

set [DRAM tRAS] item to [24]

set [DRAM Command Rate] item to [1]

DRAM tRCD			Se	it [9]	
DRAM tRP			Se	t [7]	
DRAM tRAS			Se	t [24]	
Step 2 : DRAM Comm	and Rate		Se	t [1]	
		Chipset S	attinge		
OC Tweaker		entpace e	eccings		
DRAM Timing Control					ifies the
DRAM tCL	9	[7]	7	- Comma	and/Address rate.
DRAM tRCD	9	[9]	Step 1		
DRAM tRP	9	[7]			
DRAM tRAS	27	[24]			
DRAM tRFC	98	[Auto]			
DRAM tWR	15	[Auto]			
DRAM LWTR	8	[Auto]			
DRAM tRRD	7	[Auto]			
DRAM TRTP DRAM TRAV	- 30	[Auto] [Auto]			
DRAM CHA RTL	47	[Auto]			Select Screen
DRAM CHB RTL	49	[Auto]		11	Select Item
DRAM LUL	8	[Auto]		-	Change Option
DRAM RttNom	60	[Auto]		F1	General Help
DRAM RttWr	Disabled	[Auto]		F9	Load Defaults
DRAM PD Exit Mode	Slow	[Auto]		F10	Save and Exit
DRAM B2B CAS Delay	Disabled	[Auto]		ESC	Exit
DRAM Command Rate		[1]	Step 2	-	

7. Save BIOS changes [F10] and exit

DC Tweaker		oset Settings	
RAM Timing Contro	1		Specifies the
RAM LCL	9 [7]		Command/Address rate.
RAM tRCD	9 (9)		
RAM tRP	9 [7]		
RAM tRAS	27 124		
RAM tRFC			
RAM tWR			
	ave configuratio	nn changes and exit s	etup?
RAM tRRD			
RAM tRTP	122200		
RAM tFAU	[Ok]	[Cance 1]	1.0
RAM CHA RTL	40 16		lect Screen
KHIT CHB KIL		to)	to Change Ontion
POM +UI			change oberon
RAM tWL	60 [00		
RAM RttNom	60 LAU Disabled LAU	04/50	the second state and second state and second states and second states and second states and second states and s
RAM RttNom RAM RttWr	Disabled [Au	tol	F9 Load Defaults
RAM RttNom RAM RttWr RAM PD Exit Mode	Disabled (Au Slow (Au	ito] ito]	F9 Load Defaults F10 Save and Exit
RAM RttNom RAM RttWr	Disabled (Au Slow (Au	itol itol	F9 Load Defaults

Ps: after reboot , check if the new setup have been updated.

Hain OC Tweake		DS SETUP UTILITY H/W Monitor	Boot	Security	Exit
System Overview				E LENTERI .	Contraction of the second s
System Time System Date BIOS Version : Processor Type :	P55 Pro/USB3 1 Intel(R) Core K 875 @ 2.93	(TM) 17 CPU	se	ISHIFT-TAB elect a fiel e [+] or [- mfigure sys	d. 1 to
Processor Speed : Microcode Update: Cache Size :	106E5/3				
	4096M8 Dual-Channel I None	Nemory Mode	*** 11	Select	Item
DDR3_A1 : DDR3_B2 :	2048MB/978MHz None 2048MB/978MHz		Ta F1 F9 F1 ES	b Select General Load De O Save an	Field Help faults

Test result?

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

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

(Data rate : 979.9*2=1597.8 , timing : 7, 9, 7, 24 , multi-core test

=> pass!)

🄆 [O Errors] MemTest 📃 🗆 🗙	💊 [O Errors] Mem.Test 📃 🗖 🗙	Z CPU-Z	Z CPU-Z
Enter megabytes of RAM to test	Enter megabytes of RAM to test	CPU Caches Mainboard Memory SPD Graphics About	CPU Caches Mainboard Mer
430	430	Processor	Motherboard
		Name Intel Core i7 875K	Manufacturer ASRock
Start Testing Stop Testing	Start Testing Stop Testing		Model P55 Pro/USB3
About MemTest	About MemTest	Package Socket 1156 LGA CORE Inside	Chipset Intel
			Southbridge Intel
If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which	If you find the free version useful, please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which	Specification Intel(R) Core(TM) 17 CPU K 875 @ 2.93GHz Family 6 Model E Stepping 5	LPCIO Nuvoton
(\$5) or Deluxe (\$14) versions, which add additional features.	(\$5) or Deluxe (\$14) versions, which add additional features.	Ext. Family 6 Ext. Model 1E Revision B1	BIOS
[V] 208.0% Coverage, 0 Errors	[7] 204.8% Coverage, 0 Errors	Instructions MMX, SSE (1, 2, 3, 3S, 4.1, 4.2), EM64T, VT-x	Brand American Megatre
[1] 200.0 % Coverage, 0 Entors	[1] 204.0 % Coverage, 0 Enois	Clocks (Core #0)	Version P1.20 Date 08/12/2010
🗙 [O Errors] MemTest 📃 🔳 🗙	😵 [O Errors] MemTest 📃 🔼 🗙	Core Speed 2939.9 MHz L1 Data 4 x 32 KBytes 8-way	1
Enter megabytes of RAM to test	Enter megabytes of RAM to test	Multiplier x 18.0 L1 Inst. 4 x 32 KBytes 4-way	Graphic Interface
430	430	Bus Speed 163.3 MHz Level 2 4 x 256 KBytes 8-way QPI Link 2939.9 MHz Level 3 8 MBytes 16-way	Version Link Width x16
			Side Band
Start Testing Stop Testing	Start Testing Stop Testing	Selection Processor #1 - Cores 4 Threads 8	
About MemTest	About MemTest		
If you find the free version useful,	If you find the free version useful,	CPU-Z Version 1.56 Validate OK	CPU-Z Version 1.56
please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which	please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which	Z CPU-Z	Z CPU-Z
add additional features.	add additional features.	CPU Caches Mainboard Memory SPD Graphics About	CPU Caches Mainboard Mer
[\] 201.2% Coverage, 0 Errors	[7] 203.0% Coverage, 0 Errors	General	Memory Slot Selection
🔥 [O Errors] MemTert 📃 🔲 🗙	🔨 [O Errors] Mem Test 📃 🔲 🗙	Type DDR3 Channels # Dual	Slot #1 DDR3
Enter megabytes of RAM to test	[0 Errors] Mem Test Enter megabytes of RAM to test	Size 4096 MBytes DC Mode NB Frequency 2939.8 MHz	Module Size 2048 Mi
			Max Bandwidth PC3-10700 (Manufacturer
430	430	Timings DRAM Frequency 979.9 MHz	Part Number PRINCO-DR3
Start Testing Stop Testing	Charter I Ohn Tation I	FSB:DRAM 2:12	Serial Number
	Start Testing Stop Testing	CAS# Latency (CL) 7.0 clocks	Timings Table JEDEC #2
About MemTest	About MemTest	RAS# to CAS# Delay (tRCD) 9 clocks	Frequency 533 MHz
If you find the free version useful, please considering purchasing the PRO	If you find the free version useful,	RAS# Precharge (tRP) 7 clocks Cycle Time (tRAS) 24 clocks	CAS# Latency 7.0
(\$5) or Deluxe (\$14) versions, which	please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which	Row Refresh Cycle Time (tRFC) 98 clocks	RAS# to CAS# 7
add additional features.	add additional features.	Command Rate (CR) 1T	RAS# Precharge 7
[V] 203.2% Coverage, 0 Errors	[/] 198.5% Coverage, 0 Errors	DRAM Idle Timer	tRAS 20 tRC 27
💊 [O Errors] Mem lert 📃 🗖 🗙	<u> [0 Errors] MemTest</u>	Total CAS# (RDRAM)	Command Rate
Enter megabytes of RAM to test	Enter megabytes of RAM to test	Row To Column (IRCD)	Voltage 1.50 V
430	All unused RAM	CPU-Z Version 1.56 Validate OK	CPU-Z Version 1.56
			CF-C-∠ Version 1.30
Start Testing Stop Testing	Start Testing Stop Testing	₩indows 工作管理員 #安康 選びの 接通の 給明の	
About MemTest	About MemTest	檔案(F) 選項(O) 被視(V) 説明(H)	
If you find the free version useful,	If you find the free version useful,	應用程式 處理程序 服務 效能 網路功能 使用者	
please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which	please considering purchasing the PRO (\$5) or Deluxe (\$14) versions, which	CPU 使用率 CPU 使用率記錄	
add additional features.	add additional features.		
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