

Section 5 : Hardware Setup Guide

The M1541 will strobe the hardware setting value in the respective registers when the RSTJ goes inactive. BIOS can utilize the register value to save the software programming time to detect L2 type, size, PLL enable/disable and setting the bus frequency. For notebook applications, it is recommended to use software programming to reduce power consumption since the pull-up and pull-down resistors will continuously consume system power. If the BIOS wants to utilize the hardware setting value, the system board designer must make sure the strobe value is identical to their definition. Otherwise, the software programming must be used to detect the hardware configuration. The HA[31:19] default is pull low by M1541. The pull low resistor range is from 60K Ohm to 20K Ohm and the typical value is 40K Ohm. If circuit needs to pull high, a below or equal to 10K pull high resistor is required.

Pin Name	Description	Pull-up	Pull-down	Register	Note
HA[31..29]	Indicate Host frequency	-	-	Index-0EDh bits[7:5]	(1)
HA[28]	CPU interface PLL support	Enable	Disable	Index-0EDh bit[4]	-
HA[27:25]	CPUCLK compensate select	-	-	Index 0EDh bits [3-1]	(4)
HA[24]	CPUCLK PLL internal test select	Test mode	Normal mode	Index 0EDh bit[0]	-
HA[27-26]	CPUCLK compensate select	-	-	Index 0EDh bits[3-2]	(5)
HA[25-24]	HD output clock select	-	-	Index 0EDh bit[1-0]	(6)
HA[23]	Internal TAG support	Enable	Disable	Index-040h bit[6]	-
HA[22]	L2 cache type select	MOSYS cache	PB_SRAM	Index-41h bit[4]	-
HA[21..20]	Cache size detect	-	-	Index-41h bits[3:2]	(3)
HA[19]	L2 bank select	2-bank	1-bank	Index-41h bit[5]	-

Note : (1)

HA31	HA30	HA29	Host frequency
0	0	0	Reserved
0	0	1	60 MHz
0	1	0	66 MHz
0	1	1	75 MHz
1	0	0	83 MHz
1	0	1	90 MHz
1	1	0	100 MHz
1	1	1	Reserved

The Host frequency setting is only for BIOS to reference. It will not influence the internal circuit behavior.

(3)

HA21	HA20	Cache size
0	0	256KB
0	1	512KB
1	0	1MB
1	1	None

Note (4) For M1541 A1 C and earlier version

HA27	HA25	HA24	CPU CLK compensate select
0	0	0	No compensate
0	0	1	1 buffer
0	1	0	2 buffers
0	1	1	3 buffers
1	0	0	4 buffers
1	0	1	5 buffers
1	1	0	6 buffers
1	1	1	7 buffers

For M1541 A1 D and later version

Note (5)

Note (6)

HA27	HA26	CPU CLK compensate select	HA25	HA24	HD output clock select
0	0	No compensate	0	0	default
0	1	2 buffers	0	1	ahead 1 ns
1	0	4 buffers	1	0	ahead 2 ns
1	1	6 buffers	1	1	ahead 3 ns