
Subject: : AmigaOS4

Topic: : AmigaOne G3-SE safe overclock @667MHz

Re: AmigaOne G3-SE safe overclock @667MHz

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Date: : 2019/3/17 16:02:24

URL:

@Helloworld

Yeah, the DIP switches seems to be exactly the same.

I've also had Q3 crash/freeze before due to the infamous DMA issue affecting USB/Network on those boards.. I have given up on using the USB even with a PCI card as it leads to instabilities (might still be fine to use if onboard LAN is unplugged though and EHCI disabled in Kicklayout). However, when I do have a USB card plugged in the PCI PATA and SATA cards can freely be used with UDMA6 enabled on both, no issues. If I disable onboard USB and don't install the PCI USB card, then the Sii0680 and Sii3114 boards can't be used in UDMA6 mode, possibly not in any UDMA mode, freeze at boot.

With onboard USB disabled it *might* have completely stable ethernet with the onboard 3com controller, as long as (assumption) the PCI USB is not used. Peculiar system indeed. With this config I also had Q3 running for a long time playing over LAN with no issues at all at any time.

However, using the RTL8169 PCI Ethernet instead makes it completely solid. So now my system will only use PCI based Ethernet going forward. The last stability issue seems to be solved (DMA freeze from using onboard Ethernet).

Regarding Quake 3, my FPS increased by about 10% after increasing the CPU clock speed by about the same amount (600MHz -> 667MHz). Quake 3 really seems CPU bound on these systems.

Thanks for the performance advices there, I will check it out ! :)

EDIT:

I just now increased the VCC_Core voltage from 1.59V (the default for 750CXe it seems) to 1.64V. It made it stable (so far) and Q3 stopped crashing like it did, sometimes while launching before.

My systems FSB is set to 133MHz, and original multiplier was set to x4.5. This was raised to x5.0 for 666.66MHz (~667MHz, 666MHz is shown in Ranger).

The settings are as follows, found in previous sources using the internet way-back machine from archive.org and the A1 XE manual :

Multiplier settings (switches close to the CPU):

x2 on off on on

x2.5 on off off on

x3 off on on on

x3.5 off off off on

x4 off on off on

x4.5 on off off off (Default for my CPU, 600MHz @ 133MHz FSB)

x5 off on off off (667MHz @ 133MHz FSB)

x5.5 off on on off

x6 off off on off

x6.5 on off on off

x7 on on off on

x7.5 on on on off

x8 off off on on

For increasing the voltage; J1 and J17 was set from

1.59V: On Off On Off Short (Default for my CPU @ 600MHz)

to

1.64V: Off On On Off Short (Should be enough for 667MHz)

i.e. rising the voltage one level up.

The next two levels (which I dare not test) are :

1.69V: On On On Off Short

1.74V: Off Off Off On Short

It seems 1.59V and 1.64V is a very low setting for the 750CXe. In IBM's data sheet 1.80V is listed as its normal core voltage.. Therefor, I suspect it is quite overclocking friendly, as long as the temperatur is monitored.

EDIT 2 :

I have tried with voltages all the way up to 1.84V, which still is within the safe range according to the data sheet. However, 733MHz cannot be reached, freezes at boot. I keep it at 667MHz and 1.64V, which indeed seems to be the sweet-spot.