



دریا کامپیوتر
Darya Computer

Award & Intel Debug Codes

AWARD & Intel X38/X48 POST Code/Debug LED Guide



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Award & Intel Debug Codes

The most common Debug codes, what they mean, and how to work with them.

This Guide is intended for the Foxconn Blackops board, but the codes should be identical or very similar on all Mainboards with Award BIOSes.

If your problem isn't described in this list or the tips listed here don't help you, send a private message to me, or contact the Foxconn tech support. Before you do so, please search the foxconn section here on xs to see if anybody else has the same or a similar problem and post in that topic/thread or open your own topic/thread.

no LED all fans spinning

If the Board powers on with all fans spinning and all LEDs running but the DEBUG display doesn't display any POST codes and nothing else happens, then the PWM probably can't get enough juice. Check if the 8Pin 12V plug and the 24Pin ATX PSU power plugs are plugged in properly, make sure they don't bend too much or haven't a loose cable. Check another PSU if possible. If nothing helps, power off the mainboard, remove both BIOS chips and wait a few minutes, then put them back in and power the mainboard on again. Make sure the BIOS chips are seated the right way around, the marks on the chips should face downwards.

FF then reboot

If the Motherboard powers on, displays FF for a couple of seconds with all fans spinning and the LEDs working and then restarts, the Motherboard is trying to detect the BIOS and

read from it. This sometimes happens randomly when overclocking the mainboard, but if it happens several times in a row make sure the BIOS chips are seated properly and the right way around, the mark on the BIOS chip needs to face downwards. Another possible problem is that the BIOS is messed up as a result of a too high overclock or a bad BIOS flash. Power off the mainboard, remove both BIOS chips and wait a few minutes, then put them back in and power the mainboard on again. Switch the BIOS chips around or change the BIOS select jumpers to boot from the other BIOS chip in case the initial one is corrupted. Note that the FF code is also used by the memory configuration and testing procedure, check the POST Code description for A0 and following for details

FF hangs with all fans spinning

If the Board powers on with all fans spinning and all LEDs running and the DEBUG Display hangs at FF, then the board is either working fine but you cant see it, or the boards BIOS is messed up. First hit the Num Lock and CAPSLOCK keys on your keyboard and check if the respective LEDs on your Keyboard turn on and off when hitting them.

Note that the FF code is also used by the memory configuration and testing procedure, check the POST Code description for A0 and following for details

A) If they do, then the System is working but you cant see anything on the display for some reason. Check if there is something wrong with the Videocard, the PCIE slot or BUS, the Monitor or monitor cable. Turn the Monitor on and off, switch the Monitor cable from one D-SUB or DVI plug to the other in case your Videocard has two. If this doesnt help then reboot and load the optimized defaults. If that doesnt help either try another Videocard if possible, or try the Videocard in another system to make sure its working properly. Try another monitor or try the Monitor on another System.

B) If they dont, then the System is stuck at the very early initializaton phase. This could mean that the BIOS is messed up or there is something wrong with the Mainboard or CPU. Turn off the board, remove both BIOS chips for a few minutes, then put them back and power the board on again. Switch the BIOS chips around or change the BIOS select jumpers to boot from the other BIOS chip in case the initial one is corrupted. If this doesnt help either contact me or Lardarse of the Foxconn tech support.

If this didnt help then make sure the CPU isnt missing , is seated properly and not damaged. Check the CPU in another board or check another CPU in this board to make sure the CPU is fine. Check if the cpu is seated properly and the pads and pins are clean and make good contact with each other, and make sure the socket is fastened well and the heatsink is seated properly.

FF with beeping

If the Mainboard powers on with all fans spinning and all LEDs running, but the Debug LED shows FF and you hear some beep codes, check if there is something wrong with the Videocard, the PCIE slot or BUS, the Monitor or monitor cable. Turn the Monitor on and off, switch the Monitor cable from one D-SUB or DVI plug to the other in case your Videocard has two. If this doesnt help then reboot and load the optimized defaults. If that doesnt help either try another Videocard if possible, or try the Videocard in another system to make sure its working properly. Try another monitor or try the Monitor on another System.

Note that the FF code is also used by the memory configuration and testing procedure, check the POST Code description for A0 and following for details

2b

When the system powers on and the Debug LED shows the usual POST code sequence but hangs on 2b or you get a beep code as soon as the sequence reaches 2b, then the Mainboard cant detect your Videocard properly. Note that the POST code sequence might not halt at 2b but continue, so the final POST Code it displays could be FF, 1E or 7F which means the Maiboard booted, entered BIOS, or OC recovery kicked in and is waiting for Input to enter BIOS. Since the Videocard couldnt be detected properly you will only see a black Monitor and either 2b, FF, 1E or 7F. Check if there is something wrong with the Videocard, the PCIE slot or BUS, the Monitor or monitor cable. Turn the Monitor on and off, switch the Monitor cable from one D-SUB or DVI plug to the other in case your Videocard has two. If this doesnt help then reboot and load the optimized defaults. If that doesnt help either try another Videocard if possible, or try the Videocard in another system to make sure its working properly. Try another monitor or try the Monitor on another System.

7F

When the system detects that a critical error happened during the last boot attempt or several boot attempts failed, so OC recovery kicked in. There should be a message displayed on the Display informing you that OC revocery kicked in and that its waiting for your input to enter BIOS. If you cant see this message cause your Display stays black, please check the description for POST Code 2b.

1E

Your in the BIOS right now, if you cant see the BIOS cause your Display stays black, please check the description for POST Code 2b.

E0

When you get this error message the Mainboard cant detect the memory SPD, the memory itself, or there was some problem while reading from the SPD. Shut down the Mainboard and make sure the memory is seated properly. Load the optimized defaults, if this doesnt help then try one stick of memory in slot1 or slot2, if possible update the BIOS, try another SPD on your memory, try another set of memory or try this set of memory in another system.

E1

Virtually the same as E0, check E0 for a description.

C1

If the Mainboard hangs during this bootup phase then its most likely a memory related problem. Please check the settings your tried and load the optimized defaults. Check if the set of memory has been tested by us or any other user, search for topics/threads in the foxconn section about this set of memory to see how other users are configuring it. During this phase of bootup the Level 2 cache is detected as well, if the CPU is overclocked or damaged or misconfigured it might trigger this POST Code as well. If the problem doesnt

seem to be memory related for you, then search for topics/threads from other users who are using the same CPU and check how they are configuring it. If possible check another CPU in this Mainboard or check the same CPU in another Mainboard to make sure its running fine.

A0 and anything from 03 until 91

If you get any of the above POST codes it means the initial memory configuration and testing procedure failed. Check if the set of memory has been tested by us or any other user, search for topics/threads in the foxconn section about this set of memory to see how other users are configuring it. Check the detailed POST Code list below for more details on the memory configuration and testing procedure POST Code sequence.

54 with beeping

This POST Code is a part of the above initial memory configuration and testing Codes, but If the Debug LEDs display 54 with a lot of beeping, it might be something else. When you apply new settings in BIOS and hit save and exit you might get this error. It doesn't NECESSARILY mean that the settings you tried to apply don't work. Keep the power button pressed for 4 seconds to shut the board down - wait 10 seconds - then power the board on again. OC recovery will kick in, enter BIOS but just hit "save and exit" and see if the settings work now. If you get error 54 with beeps again the settings you're trying won't work, most likely cause the memory can't take it. Check if the set of memory has been tested by us or any other user, search for topics/threads in the foxconn section about this set of memory to see how other users are configuring it.

A1

If you get the above POST code it means the initial memory configuration and testing procedure passed, but there was a problem when setting up the clockgen and the system clocks. Check your system settings, load the optimized defaults, if these tips don't help search the foxconn support section for topics/threads about the same or similar hardware you are using.

C5

When your system hangs and the Debug LEDs show C5 your memory or the chipset is most likely not stable at this setting. Check if the set of memory has been tested by us or any other user, search for topics/threads in the foxconn section about this set of memory to see how other users are configuring it.

80

80 or FF are the codes the board shows under normal operation.

Detailed list of Award BIOS Port80 and Intel X38/X48 POST Codes:

These POST Codes are generated by the Award BIOS Kernel Core using the Port80 feedback from the CPU.

Note that some of the Intel Chipset memory configuration and testing procedure Codes (BLUE) are identical to some of the Award POST Codes. The BIOS cannot translate those Codes and just forwards them, but from the context it should be clear what a Code means even if there are two possible interpretations.

no LED all fans spinning PWM cant get enough juice

FF Test CMOS R/W functionality (FF is used for several steps, see further down in the list)

CA Base memory Test

CB Base memory Test fail/error

CF Test CMOS R/W functionality

CO Early chipset initialization, Disable shadow RAM, Disable L2 cache, Program basic chipset registers

C1 Detect memory, Auto-detection of DRAM size, type and ECC, Auto-detection of L2 cache

E0 Cant detect SPD/memory

E1 Cant detect SPD/memory

A0 memory configuration and testing

03 Intel memory configuration and testing code

24 Intel memory configuration and testing code

26 Intel memory configuration and testing code

27 Intel memory configuration and testing code

FF Intel memory configuration and testing code

28 Intel memory configuration and testing code

29 Intel memory configuration and testing code

30 Intel memory configuration and testing code

31 Intel memory configuration and testing code

32 Intel memory configuration and testing code

FF Intel memory configuration and testing code

FF Intel memory configuration and testing code

33 Intel memory configuration and testing code

34 Intel memory configuration and testing code

35 Intel memory configuration and testing code

36 Intel memory configuration and testing code

FF Intel memory configuration and testing code

37 Intel memory configuration and testing code

38 Intel memory configuration and testing code

39 Intel memory configuration and testing code

40 Intel memory configuration and testing code

FF Intel memory configuration and testing code

41 Intel memory configuration and testing code

42 Intel memory configuration and testing code

FF Intel memory configuration and testing code

43 Intel memory configuration and testing code

44 Intel memory configuration and testing code

45 Intel memory configuration and testing code

46 Intel memory configuration and testing code

47 Intel memory configuration and testing code
48 Intel memory configuration and testing code
49 Intel memory configuration and testing code
50 Intel memory configuration and testing code
51 Intel memory configuration and testing code
52 Intel memory configuration and testing code
54 Intel memory configuration and testing code (54 with beeping, check detailed description on the top)
81 Intel memory configuration and testing code
82 Intel memory configuration and testing code
84 Intel memory configuration and testing code
90 Intel memory configuration and testing code
91 Intel memory configuration and testing code
A1 Finished Intel memory configuration and testing code, going into ClockGen

C3 Expand compressed BIOS codes to DRAM
C5 Call chipset hook to copy BIOS back to E000 & F000 in shadow
03 Initial Superio_Early_Init switch
05 Blank out screen, Clear CMOS error flag
07 Clear 8042 interface, Initialize 8042 self-test
08 Test special keyboard controller for Winbond 977 series superIO chips, enable keyboard interface
0A Detect PS/2 mouse/keyboard
0E Test F000h segment shadow to see whether it is R/W-able or not. If test fails, use onboard speaker alarm
0h Expand the Xgroup codes locating in physical address 1000:0
10 Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support
12 Use walking 1's algorithm to check out interface in CMOS circuitry, Set real-time clock power status, and then check for override
14 Program chipset default values into chipet. Chipset default values are MODBINable by OEM customers
16 Initial Early_Init_Onboard_Generator switch
18 Detect CPU and Cache, (initialize L1 Cache?)
1B Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR
1D Initial EARLY_PM_INIT switch
1E Finished Loading BIOS Menu
1F Load keyboard matrix (notebook platform)
21 HPM initialization (notebook platform)
23 Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute. Load CMOS settings into BIOS stack. If CMOS checksum fails, use the default values instead. Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information. Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. Early PCI initialization: Enumerate PCI bus number, Assign memory & I/O resource, search for valid VGA device & VGA BIOS and put it

into C000:0

27 Initialize INT 09 buffer

29 Program CPU internal MTRR (P6 & PII) for 0-640K memory address, Initialize the APIC for Pentium class CPU, Program early chipset according to CMOS setup (onboard IDE controller etc), Measure CPU speed,

2b Invoke vga BIOS

2d VGA Bios loaded, initializing display output, display VGA BIOS details, Award BIOS details, CPU type, CPU speed etc

33 Reset keyboard except Winbond 977 series Super I/O chips

3E Test 8259 interrupt mask bits for channel 1

40 Test 8259 interrupt mask bits for channel 2

43 Test 8259 functionality

47 Initialize EISA slot

49 Calculate total memory by testing the last double word of each 64K page

4E Program MTRR of M1 CPU, Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range, Initialize the APIC for P6 class CPU, On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.

50 Initialize USB

52 Test all memory (clear all extended memory to 0)

55 Display number of processors (multi-processor platform)

57 Display PnP logo, Early ISA PnP initialization, Assign CSN to every ISA PnP device

59 Initialize the combined Trend Anti-Virus code

5B (Optional Feature) Show message for entering AWDFLASH.EXE from FDD

5D Initialize Init_Onboard_Super_IO switch, Initialize Init_Onboard_AUDIO switch

60 Okay to enter Setup utility, users can not enter the CMOS setup utility before this POST stage

65 Initialize PS/2 Mouse

67 Prepare memory size information for function call: INT 15h ax=E820h

69 power on L2 cache

6B Program chipset registers according to items described in Setup & Auto-configuration table

6D assign resources to all ISA PnP devices, Auto assign ports to onboard COM ports if the corresponding item in Setup is set to "AUTO"

6F initialize floppy controller, set up floppy related fields in 40:hardware

73 (Optional feature) Enter AWDFLASH.EXE if: AWDFLASH is found in floppy drive, or, ALT+F2 is pressed

75 detect & install all IDE devices: HDD, LS120, ZIP, CDROM etc

77 detect serial ports & parallel ports

7A detect & install co-processors

7F Switch back to text mode if full screen logo is supported. If error occur, report errors & wait for keys. If no errors occur or F1 key is pressed to continue: Clear EPA or customization logo, On FOXCONN boards: OC recovery kicked in, waiting for input to enter BIOS (if your monitor stays black check if the board beeped during POST code 2b, if yes see POST code 2b)

80 Normal operation of the board after bootup

82 Call chipset power management hook, Recover the text fond used by EPA logo (not the fullscreen logo)
83 Save all data in stack back to CMOS
84 initialize ISA PnP boot devices
85 USB final initialiation, NET PC: Build SYSID structure, switch screen back to text mode, set up ACPI table at top of memory, Invoke ISA adapter ROMs, Assign IRQs to PCI Devices, Initialize APM, Clear noise of IRQs
93 read hdd boot sector information for trend anti-virus code
94 enable L2 cache, program boot up speed, chipet final initialization, power management final initialization, clear screen & display summary table, program K6 compatible write allocation, program P6 class compatible write combining
95 program daylight saving, update keyboard LED & typematic rate
96 build MP table, build & update ESCD, set CMOS century to 20h or 19h, load CMOSD time into DOS timer tick, build MSIRQ routing table
FF booting (Int 19h) If the Debug LEDs show FF but the Display stays black, check the detailedled description of POST code 2b on the top

Normal Boot Sequence:

This is the sequence of POST codes you should see when booting up, note that some of them only flash on for a fraction of a second

FF
c0
A0
40
54
C3
A1
29
2b
2d
93
33
49
50
52
75
89
8b
94
95
96
FF
80

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