

FAQ0065

Frequently Asked Questions

Float variable address must be 4-byte aligned after FPU enable

Questions:

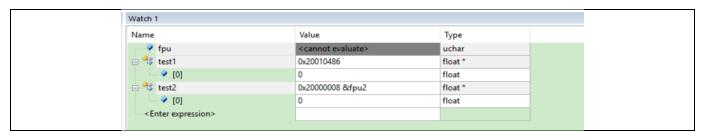
Why does the float variable address must be 4-byte aligned after FPU is enabled?

Answer:

When the FPU is enabled, if float variable address is not 4-byte aligned, Hard Fault will be entered. As shown in the figure below, thest1 is not 4-byte aligned, the program enters HardFault Handler.

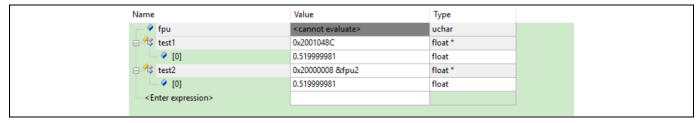
```
test1 = (float*)test_arr;
test1 = (float*)((uint32_t)(&test_arr[0])+2);
*test1 = 0.52f;

*test2 = 0.52f;
```



By changing the code as follows, the program can return to normal.

```
test1 = test_arr;
test1 = ((&test_arr[0]) + 2);
*test1 = 0.52f;
*test2 = 0.52f;
```



Type: Development tool

Applicable products: AT32F403, AT32F403A, AT32F413, AT32F407, AT32F435, AT32F437

Main function: None
Minor function: None



Document revision history

Date	Revision	Changes
2022.2.15	2.0.0	Initial release



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