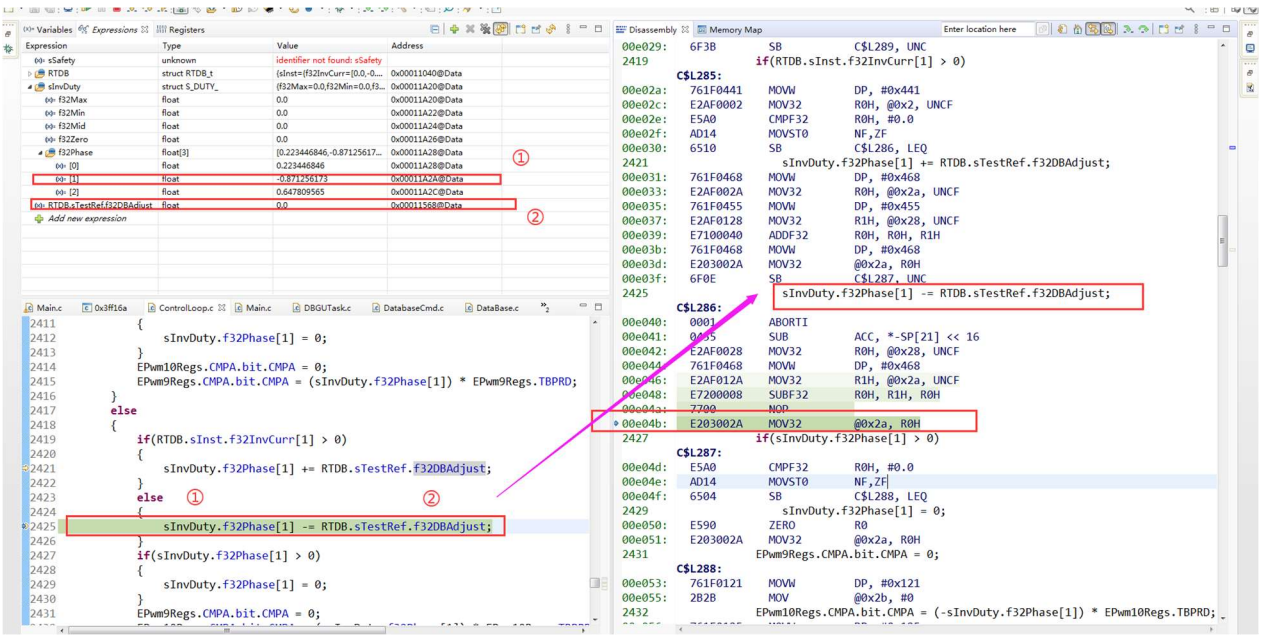
We find unexpected behavior in below code pieces.

```
2400        if(sInvDuty.f32Phase[1] > 0)
2401        {
2402            if(RTDB.sInst.f32InvCurr[1] > 0)
2403            {
2404                sInvDuty.f32Phase[1] += RTDB.sTestRef.f32DBAdjust;
2405            }
2406            else
2407            {
2408                sInvDuty.f32Phase[1] -= RTDB.sTestRef.f32DBAdjust;
2409            }
2410            if(sInvDuty.f32Phase[1] < 0)
2411            {
2412                sInvDuty.f32Phase[1] = 0;
2413            }
2414            EPwm10Regs.CMPA.bit.CMPA = 0;
2415            EPwm9Regs.CMPA.bit.CMPA = (sInvDuty.f32Phase[1]) * EPwm9Regs.TBPRD;
2416        }
2417        else
2418        {
2419            if(RTDB.sInst.f32InvCurr[1] > 0)
2420            {
2421                sInvDuty.f32Phase[1] += RTDB.sTestRef.f32DBAdjust;
2422            }
2423            else
2424            {
2425                sInvDuty.f32Phase[1] -= RTDB.sTestRef.f32DBAdjust;
2426            }
2427            if(sInvDuty.f32Phase[1] > 0)
2428            {
2429                sInvDuty.f32Phase[1] = 0;
2430            }
2431            EPwm9Regs.CMPA.bit.CMPA = 0;
2432            EPwm10Regs.CMPA.bit.CMPA = (-sInvDuty.f32Phase[1]) * EPwm10Regs.TBPRD;
2433        }
```

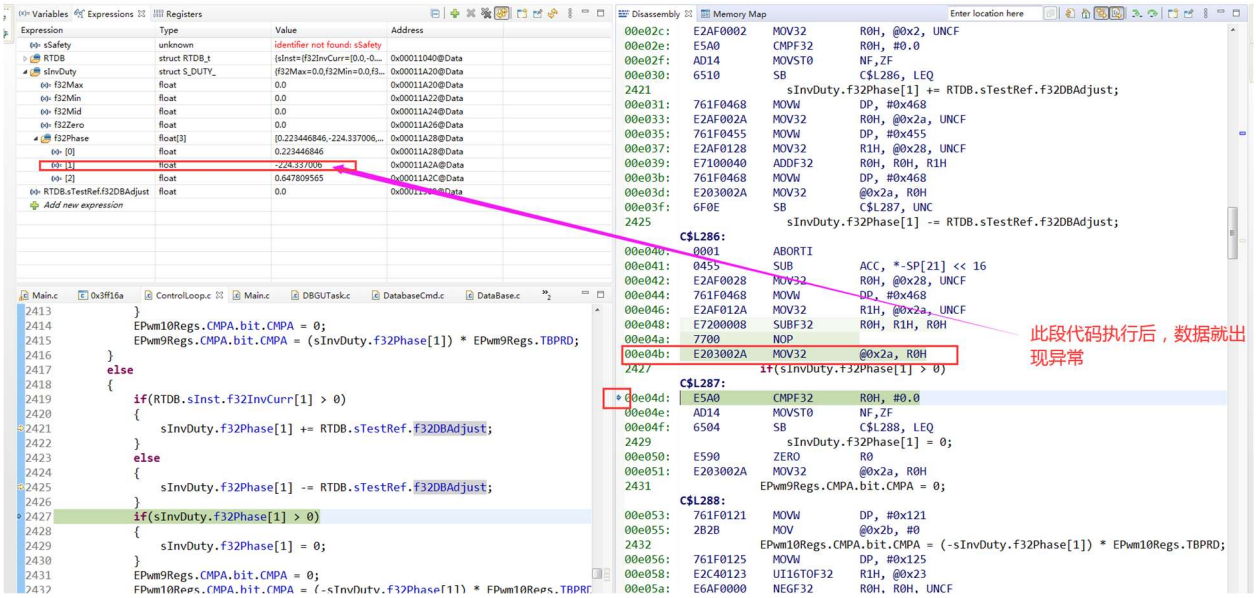
程序运行此段代码后出错。

Error happens in this line of code

The last “normal” line of code is 00e04b: E203002A MOV32 @0x2a, R0H



After that variable f32Phase[1] gets abnormal result as shown in the red part.



We also find sentence “sInvDuty.f32Phase[1] += RTDB.sTestRef.f32DBAdjust; ” in two different places have different disassembly code. As shown below, one and two with circle.

```
2400        if(sInvDuty.f32Phase[1] > 0)
2401        {
2402            if(RTDB.sInst.f32InvCurr[1] > 0)
2403            {
2404                sInvDuty.f32Phase[1] += RTDB.sTestRef.f32DBAdjust;
2405            }
2406            else
2407            {
2408                sInvDuty.f32Phase[1] -= RTDB.sTestRef.f32DBAdjust;      ①
2409            }
2410            if(sInvDuty.f32Phase[1] < 0)
2411            {
2412                sInvDuty.f32Phase[1] = 0;
2413            }
2414            EPwm10Regs.CMPA.bit.CMPA = 0;
2415            EPwm9Regs.CMPA.bit.CMPA = (sInvDuty.f32Phase[1]) * EPwm9Regs.TBPRD;
2416        }
2417        else
2418        {
2419            if(RTDB.sInst.f32InvCurr[1] > 0)
2420            {
2421                sInvDuty.f32Phase[1] += RTDB.sTestRef.f32DBAdjust;
2422            }
2423            else
2424            {
2425                sInvDuty.f32Phase[1] -= RTDB.sTestRef.f32DBAdjust;      ②
2426            }
2427            if(sInvDuty.f32Phase[1] > 0)
2428            {
2429                sInvDuty.f32Phase[1] = 0;
2430            }
2431            EPwm9Regs.CMPA.bit.CMPA = 0;
2432            EPwm10Regs.CMPA.bit.CMPA = (-sInvDuty.f32Phase[1]) * EPwm10Regs.TBPRD;
2433        }
```

对于①、②两个相同的C语言，对应的汇编不一样。不知道是不是此处的异常。具体请看汇编指令。

Corresponding disassembly code are shown below in details. They differences are marked in the red circle.

```
00dfef:   653B        SB          C$L285, LEQ
2402                if(RTDB.sInst.f32InvCurr[1] > 0)
00dff0:   761F0441    MOVW        DP, #0x441
00dff2:   E2AF0002    MOV32       R0H, @0x2, UNCF
00dff4:   E5A0        CMPF32      R0H, #0.0
00dff5:   AD14        MOVST0      NF,ZF
00dff6:   6510        SB          C$L282, LEQ
2404                    sInvDuty.f32Phase[1] += RTDB.sTestRef.f32DBAdjust;
00dff7:   761F0468    MOVW        DP, #0x468
00dff9:   E2AF002A    MOV32       R0H, @0x2a, UNCF
00dffb:   761F0455    MOVW        DP, #0x455
00dffd:   E2AF0128    MOV32       R1H, @0x28, UNCF
00dfff:   E7100040    ADDF32      R0H, R0H, R1H
00e001:   761F0468    MOVW        DP, #0x468
00e003:   E203002A    MOV32       @0x2a, R0H
00e005:   6F0E        SB          C$L283, UNC
2408                    sInvDuty.f32Phase[1] -= RTDB.sTestRef.f32DBAdjust;
          C$L282:
00e006:   761F0455    MOVW        DP, #0x455
00e008:   E2AF0028    MOV32       R0H, @0x28, UNCF
00e00a:   761F0468    MOVW        DP, #0x468
00e00c:   E2AF012A    MOV32       R1H, @0x2a, UNCF
00e00e:   E7200008    SUBF32      R0H, R1H, R0H
00e010:   7700        NOP
00e011:   E203002A    MOV32       @0x2a, R0H
2410                if(sInvDuty.f32Phase[1] < 0)
          C$L283:
00e013:   E5A0        CMPF32      R0H, #0.0
00e014:   AD14        MOVST0      NF,ZF
00e015:   6304        SB          C$L284, GEQ
2412                    sInvDuty.f32Phase[1] = 0;
00e016:   E590        ZERO        R0
00e017:   E203002A    MOV32       @0x2a, R0H
2414                EPwm10Regs.CMPA.bit.CMPA = 0;
          C$L284:
00e019:   761F0125    MOVW        DP, #0x125
00e01b:   2B2B        MOV         @0x2b, #0
2415                EPwm9Regs.CMPA.bit.CMPA = (sInvDuty.f32Phase[1]) * EPwm9Regs.TBPRD;
```

①


2419 if(RTDB.sInst.f32InvCurr[1] > 0)
C$L285:
00e02a: 761F0441 MOVW DP, #0x441
00e02c: E2AF0002 MOV32 R0H, @0x2, UNCF
00e02e: E5A0 CMPF32 R0H, #0.0
00e02f: AD14 MOVST0 NF,ZF
00e030: 6510 SB C$L286, LEQ
2421 sInvDuty.f32Phase[1] += RTDB.sTestRef.f32DBAdjust;
00e031: 761F0468 MOVW DP, #0x468
00e033: E2AF002A MOV32 R0H, @0x2a, UNCF
00e035: 761F0455 MOVW DP, #0x455
00e037: E2AF0128 MOV32 R1H, @0x28, UNCF
00e039: E7100040 ADDF32 R0H, R0H, R1H
00e03b: 761F0468 MOVW DP, #0x468
00e03d: E203002A MOV32 @0x2a, R0H
00e03f: 6F0E SB C$L287, UNC
2425 sInvDuty.f32Phase[1] -= RTDB.sTestRef.f32DBAdjust;
C$L286:
00e040: 0001 ABORTI
00e041: 0455 SUB ACC, *-SP[21] << 16
00e042: E2AF0028 MOV32 R0H, @0x28, UNCF
00e044: 761F0468 MOVW DP, #0x468
00e046: E2AF012A MOV32 R1H, @0x2a, UNCF
00e048: E7200008 SUBF32 R0H, R1H, R0H
00e04a: 7700 NOP
00e04b: E203002A MOV32 @0x2a, R0H
2427 if(sInvDuty.f32Phase[1] > 0)
C$L287:
00e04d: E5A0 CMPF32 R0H, #0.0
00e04e: AD14 MOVST0 NF,ZF
00e04f: 6504 SB C$L288, LEQ
2429 sInvDuty.f32Phase[1] = 0;
00e050: E590 ZERO R0
00e051: E203002A MOV32 @0x2a, R0H
2431 EPwm9Regs.CMPA.bit.CMPA = 0;
C$L288:
00e053: 761F0121 MOVW DP, #0x121
00e055: 2B2B MOV @0x2b, #0
2432 EPwm10Regs.CMPA.bit.CMPA = (-sInvDuty.f32Phase[1]) * EPwm10Regs.TBPRD;
②
此处多了这两行汇编