

```
1      AREA                main, READONLY, CODE
2      THUMB
3
4      EXTERN              OutChar
5      EXPORT              dig_convrt
6
7  dig_convrt              PROC
8      PUSH                {LR}
9
10     ;000 is negative 1.65V
11     ;FFF is positive 1.65V
12     ;steps are 3.3/(2^12) = 0.806 mV
13     MOV                  R7,#0x7FF
14     CMP                  R7,R0
15     BMI                  positive
16     negative
17     SUB                  R7,R0
18     MOV                  R0,R7
19     MOV                  R5,#45
20     BL                   OutChar
21     positive
22     cont
23     MOV                  R1,#806
24     MUL                  R5,R0,R1
25     MOV                  R1,#10000
26     UDIV                 R5,R1
27     MOV                  R1,#10
28     UDIV                 R2,R5,R1
29     MUL                  R12,R2,R1
30     SUB                  R12,R5,R12
31     UDIV                 R11,R2,R1
32     MUL                  R11,R11,R1
33     SUB                  R11,R2,R11
34     UDIV                 R2,R1
35
36     MOV                  R5,R2
37     ADD                  R5,#48
38     BL                   OutChar
39
40     MOV                  R5,#46
41     BL                   OutChar
42
43     MOV                  R5,R11
44     ADD                  R5,#48
45     BL                   OutChar
46
47     MOV                  R5,R12
48     ADD                  R5,#48
49     BL                   OutChar
50
51     MOV                  R5,#10
52     BL                   OutChar
53     POP                  {LR}
54     BX                   LR
55     ENDP
56     END
```