

wdk7bj

floating point number in hex: 0x0000a03f (little endian)

floating point number: -4.4296875

1. floating point number: -4.4296875

- a. sign: 1 since floating point number is negative
- b. exponent: $4.4296875 / 2^2 = 1.107421875$ (must be greater or equal than 1, less than 2). Since 2^2 and the power is 2, $2 + 127 = 129$. 129 in binary is 1000 0001
- c. $1.107421875 - 1 = 0.107421875 \rightarrow (0.5)^4 + (0.5)^5 + (0.5)^7 + (0.5)^8 + (0.5)^9$.
 \rightarrow 1000 0001 0000 1101 1100 0000
- d. 1100 0001 1000 0001 0000 1101 1100 0000
- e. Therefore, 0xc1810dc0

2. hex: 0x0000a03f (little endian) \rightarrow 0x3fa00000 (big endian)

- a. 0011 1111 1010 0000 0000 0000 0000 0000
- b. sign: 0 \rightarrow positive
- c. exponent: 0111 1111 $\rightarrow 2^6 + 2^5 + 2^4 + 2^3 + 2^2 + 2^1 + 2^0 = 127$
 $\rightarrow 127 - 127 = 0$. Therefore, 2^0
- d. 010 0000 0000 0000 0000 0000 $\rightarrow (0.5)^2 =$ 0.25
- e. $1 + 0.25 =$ 1.25
- f. $1.25 * 2^0 =$ 1.25
- g. Thus, 0x3fa00000 = 1.25_d