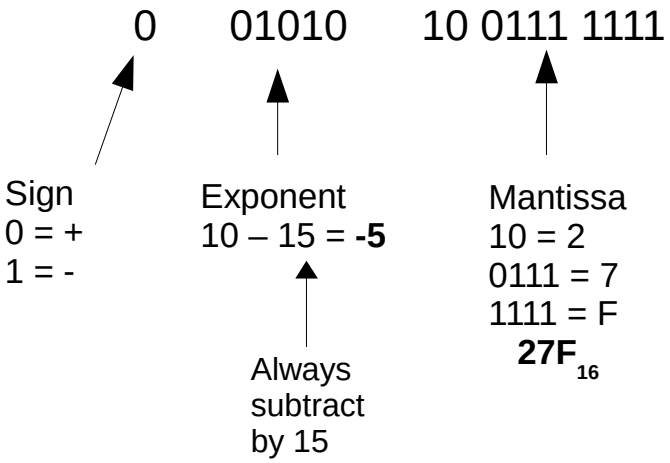
Float 16 Conversion Example:

1. Read data in hex format: $2A7F_{16}$

2. Break up the hex value and convert each to binary:

2	A	7	F
0010	1010	0111	1111

3. All 16 binary bits will be broken into 3 groups:



Sign: determines if your value is positive or negative
Exponent: convert your 5 bit binary value to decimal form and subtract by 15
Mantissa: convert these 10 bits to hex

4. The mantissa value must now be converted from hex to decimal:

$$27F_{16} \longrightarrow 639_{10}$$

5. Now you must divided your decimal value by 1024 :

$$\frac{639}{1024} = 0.62402$$

6. You always add 1 to your fraction value and put in your sign from step 3:

$$0.62402 + 1 = 1.62402 \longrightarrow +1.62402$$

7. Finally you multiply your value from step 6 by 2^x, x being your exponent value from step 3:

$$+1.62402 * 2^{-5} = \mathbf{+0.05075}$$

final value