

Convert HEX (Using 32 Bit Registers) To Binary IEEE 754 to Decimal

Example: Rish LM1360 Interface Manual (p6, eg1)

Modbus Query (3x) 01 04 00 02 00 02 30 0A
Modbus Return 01 04 04 **43 5B 41 21** bF 9B

1) Convert Critical Data to HEX

Decimal 0 10000110 101101110100000100100001

First Digit is +/- 0 = Negative

Following 8 Bits = Exponent

last 23 Bits = Mantissa

2) IEEE 32 Bit Converter Algorithm 1. Mantissa x 10^{-127}

3) Working out the Bits

Exp = 1000110 Decimal = 134

Exp -127 => 134-127 = 7

4) Determine Expanded Binary Value

=> $1.10110110110100000100100001 \times 10^7$

=> 11011011.0110100000100100001

5) Convert to Decimal => 219.254

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