

# 8-BIT BINARY REFERENCE CHART

Technical Reference: Unsigned Integer Conversion (Base-2 to Base-10)

Bit Position	Power of 2	Decimal Value	Binary Sequence
8	$2^7$	128	10000000
7	$2^6$	64	01000000
6	$2^5$	32	00100000
5	$2^4$	16	00010000
4	$2^3$	8	00001000
3	$2^2$	4	00000100
2	$2^1$	2	00000010
1	$2^0$	1	00000001
Total 8-bit Sum (Maximum)		255	11111111

## COMMON BYTE PATTERNS

Hex	Binary	Decimal	Description
0x0F	0000 1111	15	Low Nibble
0xF0	1111 0000	240	High Nibble
0x55	0101 0101	85	Alternating Bits
0xAA	1010 1010	170	Alternating Bits
0xFF	1111 1111	255	All High (All On)

Formula:  $\sum_{n=0}^7 (\text{bit}_n \cdot 2^{n-1})$

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