

BINARY TO DECIMAL CONVERSION REFERENCE

Standard 8-Bit Notation Base-2 to Base-10

POWER OF 2	BINARY BIT POSITION	DECIMAL VALUE	CUMULATIVE SUM
2^0	0000 0001	1	1
2^1	0000 0010	2	3
2^2	0000 0100	4	7
2^3	0000 1000	8	15
2^4	0001 0000	16	31
2^5	0010 0000	32	63
2^6	0100 0000	64	127
2^7	1000 0000	128	255

Mathematical Notation: $\text{Decimal} = (d_n \cdot 2^n) + (d_{n-1} \cdot 2^{n-1}) + \dots + (d_0 \cdot 2^0)$

Example (1011): $(1 \cdot 2^3) + (0 \cdot 2^2) + (1 \cdot 2^1) + (1 \cdot 2^0) = 8 + 0 + 2 + 1 = 11$