CPCS Technologies

Phone: 919.386.8033
Email: info@cpcstech.com

Defense and Public Safety Technology Consulting Services

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- Articles

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- Presentations

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- Ethernet Overview
- High Speed Networking
- Frame Relay Overview
- Fiber Optics

dBm to Watt Conversion Table

dBm	Watts	dBm	Watts	dBm	Watts
0	1.0 mW	16	40 mW	32	1.6 W
1	1.3 mW	17	50 mW	33	2.0 W
2	1.6 mW	18	63 mW	34	2.5 W
3	2.0 mW	19	79 mW	35	3.2 W
4	2.5 mW	20	100 mW	36	4.0 W
5	3.2 mW	21	126 mW	37	5.0 W
6	4 mW	22	158 mW	38	6.3 W
7	5 mW	23	200 mW	39	8.0 W
8	6 mW	24	250 mW	40	10 W
9	8 mW	25	316 mW	41	13 W
10	10 mW	26	398 mW	42	16 W
11	13 mW	27	500 mW	43	20 W
12	16 mW	28	630 mW	44	25 W
13	20 mW	29	800 mW	45	32 W
14	25 mW	30	1.0 W	46	40 W
15	32 mW	31	1.3 W	47	50 W

Remember when calculating your total output that the FCC only allows 36dBm EIRP (4 watts)!

Transmitted power must be configured correctly to prevent potential interference problems due to the effective isotropic radiated power exceeding the limits as defined in FCC part 15.247(i).

As defined in FCC part 15.247(i), the power transmitted by the transmitter can only have a maximum power level of 1 watt or 30dBm.

The antenna can only have a maximum gain of 6dBi.

If the power at the transmitter is lowered by 1dB, the antenna gain can be increased by an additional 3dB.

For example, if an installation reduced power at the transmitter to 29dBm, it could use an antenna having a gain of 9dBi.

In general, for every 1dB power reduction at the transmitter from 30dBm, an installation can add 3dB gain at the antenna.

A breakdown of transmitter versus antenna gain is as follows:

30dBm transmit - 6dBi antenna
29dBm transmit - 9dBi antenna
28dBm transmit - 12dBi antenna
27dBm transmit - 15dBi antenna
26dBm transmit - 18dBi antenna
25dBm transmit - 21dBi antenna
24dBm transmit - 24dBi antenna

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CPCS Technologies
PO Box 5243
Cary, NC 27512-5243

919.386.8033
info@cpcstech.com