

L1 Calculation

Label	Parameter	Value	Units	Notes / Formula
A	Transmit ERP	24	pW	
B	Frequency	1575.42	MHz	L1 center frequency
C	Distance	100	feet	Required distance
D	Distance	30.5	meters	= C / 3.2808 feet/meter
E	Free Space Path Loss	66.1	dB	= $20 * \log(\mathbf{B}) + 20 * \log(\mathbf{D}) - 27.55$
F	Transmit ERP	-76.2	dBm	= $10 * \log(\mathbf{A} / 1,000,000,000)$
G	Transmit EIRP	-74.0	dBm	= F + 2.15
H	Received Power	-140.1	dBm	= G - E

L2 Calculation

Label	Parameter	Value	Units	Notes / Formula
A	Transmit ERP	15	pW	
B	Frequency	1227.60	MHz	L2 center frequency
C	Distance	100	feet	Required distance
D	Distance	30.5	meters	= C / 3.2808
E	Free Space Path Loss	63.9	dB	= $20 * \log(\mathbf{B}) + 20 * \log(\mathbf{D}) - 27.55$
F	Transmit ERP	-78.2	dBm	= $10 * \log(\mathbf{A} / 1,000,000,000)$
G	Transmit EIRP	-76.1	dBm	= F + 2.15
H	Received Power	-140.0	dBm	= G - E