GPS Re-Radiator Link Budget

Equipment

Description	Gain/Loss
Active Roof Receive Antenna (L1GPSA-N)	38
Passive Transmit Antenna (L1RRKPA-S)	4
Splitter (LDCBS1X2)	-5
Cabling (LMR-400)	5.3dB/100ft

Receiving

GPS Signal at Ground Level	-125
Antenna gain	38
Total Power At Receiver Output (dBm)	**-87**

System Loss

Cable Loss	
- Cable from Receiver to Splitter (100ft)	5.3
- Cable from Splitter To Transmit Antennas (70ft)	3.71
Splitter Loss	5
Total System Loss (dBm)	**14.01**

Transmitting

Antenna gain	4
Total Transmitting Gain (dBm)	**4**

Total Transmit Power At Transmitter Antenna (dBm)	**-97.01**

The transmit power at the antenna = EIRP = -97.01 dBm
The ERP = EIRP - 2.15 dBm = -99.16 dBm

At 30m away from the antenna, the transmit power = EIRP(30m) = -162.93 dBm
The ERP(30m) = EIRP(30m) - 2.15 dBm = -165.08 dBm