

# GPS Receiver Test: GPS Simulator

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Submitted by

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## **OBJECTIVE:**

The primary objective of the test is to confirm the operational parameters of the GPS receiver system located on the Unit Under Test (UUT). The signal source for the GPS receiver is a COTS GPS Simulator designed to provide a simulated GPS signal. The optimum signal level at the GPS receive antenna is -130dBm. (see attached link budget). The test will be conducted within a commercial building on Boeing property located in Kent WA. NL47-25-7, WL122-15-17.

## **TEST OVERVIEW:**

**Frequency range:** L1 (1575.42) & L2 (1227.6)

**Bandwidth:** 24MHz

**Radiated Power at UUT:** -130dBm

**Signal Type:** GPS

**Tx Equipment:** Spirent GSS6700 Simulator

## **“Stop Buzzer” Points of Contact:**

Marissa Reid: 206/641-5193

## **LINK BUDGET:**

Component	Gain (dB)	Signal <sup>1</sup>	Units	Comment
UUT GPS RSSI		-130	dBm	Desired GPS signal level at UUT
FSPL	25.55	-104.45	dBm	Predicted loss between UUT and GPS antenna. (distance from source to UUT = 0.287m)
GPS Simulator Antenna Output	0.00	-104.45	dBm	Level at output of GPS antenna (broadcasting simulated GPS signal)
<b>GPS EIRP</b>		<b>-104.45</b>	<b>dBm</b>	
Free Space Loss @ 30m	-65.9	-170.3549787	dBm	30 m @ 1575 MHz
<b>EMI3 External EIRP</b>		<b>-170.3549787</b>	<b>dBm</b>	Maximum is -140 dBm

1) Signal level denoted here encompasses GPS L1 waveform centered at 1575.42 MHz with a bandwidth of 24 MHz.

**BLOCK DIAGRAM:**

