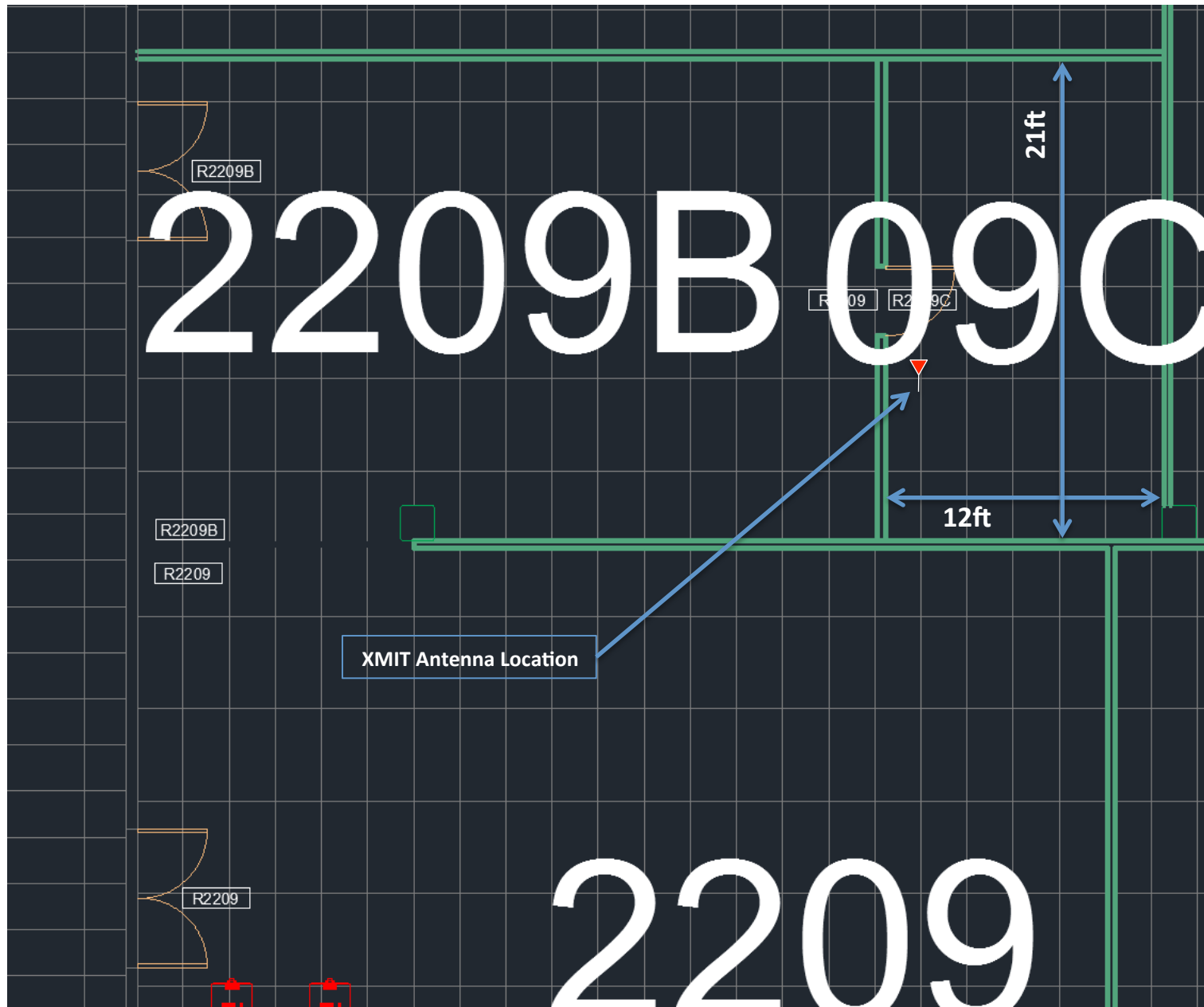




RF COMPONENTS:

(1) Repeater; Brand GPS Source: Model GLI-METRO

L1/L2 Filtered with ERP Control, Oscillation Detect, Antenna Alarm Monitoring, RS232, Power 110/6.8, N-female, Power "ON/OFF"

(1) Transmit Antenna: Fixed Base – Omni Directional (facing downward)

Room R2209C: Antcom; **p/n-3G1215P-XN-4**

L1 Gain: +.4dB @ Zenith

L2 Gain: +1.5dB @ Zenith

Location: 33deg. 27' 36" N 111deg. 54' 19.41" W

(1) Receive Antenna: Fixed Base

Roof above R2219A: Antcom; **p/n-3G1215A-XN-1**

LNA Gain: +33dB max

Location: 33deg. 27' 37.88" N 111deg. 54' 19.91" W

RF Calculations:

Repeater Pre-Amplifier Input Power: Atmospheric Variable from -130dBm to -95dBm

Pre-Amplifier Output to Repeater Input Power: Atmospheric Variable from -110dBm to -75dBm

Repeater Output:

L1-Band: Regulated at -67dBm

L2-Band: Regulated at -69dBm

Total Line Loss from Repeater to XMIT Antenna: -5dB

L1-Band XMIT Antenna Feed Point RF Input Power: -72dBm

L2-Band XMIT Antenna Feed Point RF Input Power: -74dBm

SEE NEXT PAGE FOR CALCULATIONS



Saturn Antennas FreeSpace Loss Calculator

				-140 dBm at 100 feet from the Antenna to meet NTIA regulations		
GPS Carrier Frequency (MHz)	Transmitted Power dBm	Range in Feet	Free Space loss with Isotropic Antennas	Effective Radiated Power dBm @ Range	Effective Radiated Power (dBW) @ Range	Effective Radiated Power (W) @ Range
1575.42	-72	100	66.06822634	-140.2182263	-170.22	9.5E-18
Reference Dipole Gain		Range in Miles		Effective Isotropic Radiated Power (dBm)	Effective Isotropic Radiated Power (dBW)	Effective Isotropic Radiated Power (W) @ Range
2.15	Transmitted Power W ERP 63.1E-9	0.018939394		-138.07	-168.07	15.6E-18
	Transmitted Power W EIRP 103.5E-9	Range in Kilometers 0.03				
		Range in Meters 30.48				
				$FSPL (dB) = 20 \log_{10}(d) + 20 \log_{10}(f) + 32.44$		
GPS Carrier Frequency (MHz)	Transmitted Power dBm	Range in Feet	Free Space loss with Isotropic Antennas	Effective Radiated Power dBm @ Range	Effective Radiated Power (dBW) @ Range	Effective Radiated Power (W) @ Range
1227.60	-74	100	63.90143685	-140.0514368	-170.05	9.88226E-18
Reference Dipole Gain		Range in Miles		Effective Isotropic Radiated Power (dBm)	Effective Isotropic Radiated Power (dBW)	Effective Isotropic Radiated Power (W)
2.15		0.018939394		-137.90	-167.90	16.2E-18
		Range in Kilometers 0.03				
	Transmitted Power W ERP 39.8E-9					
	Transmitted Power W EIRP 65.3E-9	Range in Meters 30.48				