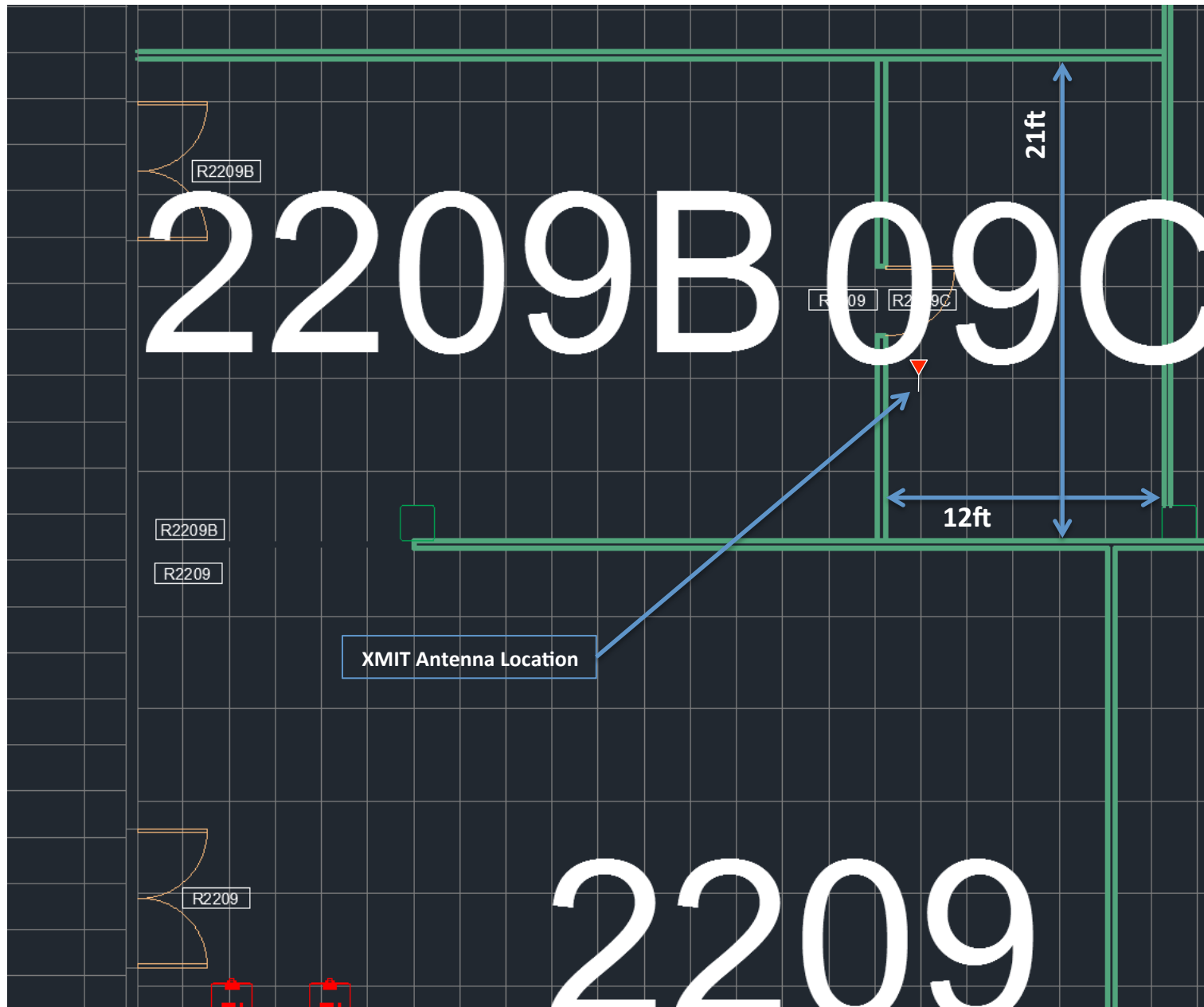




RF COMPONENTS:

(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



Component	Signal Level		Manufacturer	Part Number	Notes
Repeater Regulated Output	-67	dBm	GPS Received Signal		-110 to -149 dBm (-130dBm typ)
Cable Loss	-5	dB	GLI-METRO Auto Regulated at -67dBm		
GPS Transmit Power	-72	dBm	Line Loss from Repeater to Tx Antenna		
Repeater Antenna Gain	0.4	dB	L1-Band XMT Antenna RF Input Power		
Ptmax	-71.6		Antcom 3G1215P-XN-4		
Path Loss @ 48.3m	-70.1	dB	Path Loss = 20 Log F (MHz) + 20 Log d (m) - 27.55		
EIRP @ 48.3m from Bldg	-141.7 dBm/24 MHz		1575.42	MHz	Frequency L1
			30	m	Outside Bldg
			18.3	m	Antenna to Bldg Walls
			48.3	m	Total Distance
$P_R (EIRP) = P_{t_{max}} - 20\log f - 20\log (30 + d) + 27.55 = -71.6 - 63.95 - 33.68 + 27.55 = \mathbf{-141.7 \text{ dBm/24 MHz}}$					

Component	Signal Level		Manufacturer	Part Number	Notes
Repeater Regulated Output	-69	dBm	GPS Received Signal		-110 to -149 dBm (-130dBm typ)
Cable Loss	-5	dB	GLI-METRO Auto Regulated at -67dBm		
GPS Transmit Power	-74	dBm	Line Loss from Repeater to Tx Antenna		
Repeater Antenna Gain	1.5	dB	L2-Band XMT Antenna RF Input Power		
Ptmax	-72.5		Antcom 3G1215P-XN-4		
Path Loss @ 48.3m	-68.3	dB	Path Loss = 20 Log F (MHz) + 20 Log d (m) - 27.55		
EIRP @ 48.3m from Bldg	-140.8 dBm/24 MHz		1277.6	MHz	Frequency L2
			30	m	Outside Bldg
			18.3	m	Antenna to Bldg Walls
			48.3	m	Total Distance
$P_R (EIRP) = P_{t_{max}} - 20\log f - 20\log (30 + d) + 27.55 = -71.6 - 63.95 - 33.68 + 27.55 = \mathbf{-142.6 \text{ dBm/24 MHz}}$					