CHALMERS – Space, Earth and Environment

RRY100 – Satellite Communications – 2024 – LAB report

Student name: _____

LAB-1: Microwave radiometry for atmospheric measurements

Elevation ϵ	90 °	65 °	55 °	45 °	40 °	35 °	20 °
Receiver temperature, T_{rec} (K) Antenna temperature, T_{ant} (K)							
Hot load correction, ΔT_{hot} (K) Tropospheric zenith opacity, τ_Z (/)							
Tropospheric transmission, $e^{-m(\epsilon)\tau_Z}$ (/) Tropospheric attenuation, A (dB)							

Summarize the "most important lessons learned" from LAB-1:

LAB-2: Satellite communications exercise

Transp.	f (GHz)	pol.	C/N (dB)	B (MHz)	BER	X-pol (dB)	# TV channels
1							
2							
3							
4							
5							
6							

Summarize the "most important lessons learned" from LAB-2:

LAB-3: Antenna exercise

Theoretical θ_{3dB} (°) Measured θ_{3dB} (°)	
Antenna gain G (dBi)	
Pointing offset (°) Ground noise pickup	

Summarize the ”most important lessons learned” from LAB-3:

LAB-4: MEO satellite tracking

Sat.	GNSS	PRN	f (MHz)	v (km/s)	code	B (MHz)
1						
2						
3						
4						
5						
6						
7						
8						

Summarize the ”most important lessons learned” from LAB-4: