Post Amplification Module

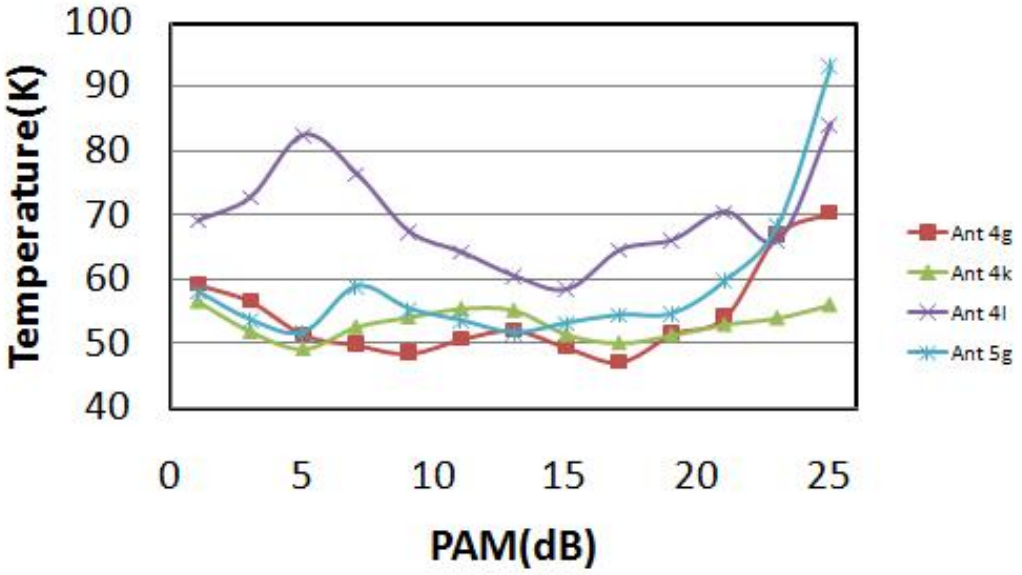
As follows are the minimum values of the Effective System Temperature (EST) at variable PAM settings. For each antenna and for every polarization, data of the System Effective Flux Density is taken over two data trials for different PAM settings at frequencies of 1430 and 4462 MHz Now since the SEFD is related to the noise that each antenna produces when actively taking data and the PAM setting affects the sensitivity of the taken data, then it is important for optimal results, to minimize the SEFD and hence maximize the signal one is to receive of a given physical radio phenomena. The values of EST or Tsys are given by the relation Tsys = (SEFD)/160.

frequency	1430				
	ant	xpol	Tsys(K)	ypol	Tsys(K)
	1a	19	107	17	73.5
	1d	7	55	13	52.9
	1e	1	52	19	73.1
	1f	11	104	17	94
	1h	13	47.2	13	55.1
	1k	1	102	1	206
	2a	17	55.3	15	58.7
	2b	17	54.9	17	69.3
	2c	15	85.2	17	55.6
	2d	5	108	5	108
	2f	7	55.3	7	58
	2g	5	43.7	15	233
	2j	13	43.2	n/a	
	2k	17	53.9	1	621
	2m	n/a		n/a	
	3g	23	80.4	7	58.6
	3j	13	40.7	n/a	
	4f	13	92.8	11	49
	4g	17	42.3	15	45.9
	4k	17	50.2	15	47.1
	4l	7	76.6	13	53.8
	5c	n/a		n/a	
	5g	15	53.3	9	55.9

frequency	4462				
	ant	xpol	Tsys(K)	ypol	Tsys(K)
	1a	13	320	15	438
	1d	7	195	11	207
	1e	13	157	15	193
	1f	11	460	13	223
	1h	13	187	13	212
	1k	5	741	7	1300
	2a	13	185	11	203
	2b	9	270	15	318
	2c	13	236	13	199
	2d	9	376	9	370
	2f	1	237	9	224
	2g	7	155	7	465
	2j	7	92.3	n/a	
	2k	11	168	7	1500
	2m	n/a		n/a	
	3g	13	792	11	278
	3j	11	164	11	164
	4f	23	745	15	172
	4g	15	206	15	194
	4k	11	209	11	179
	4l	15	199	15	175
	5c	n/a		n/a	
	5g	15	214	9	196

Of these antennas there were many that increased quite vigorously with increasing PAM settings on both 1430 and 4462, namely the set S={1d-x,1f-x,1k-x,2d-(x,y),2g-y,4f-x}. But for most antennas there is a general trend of a shallow minimum somewhere within our domain of PAM settings 1,3,5,…23,25. Graphs of an exemplary nature are as follow :

Effective System Temperature
1430 MHz(Xpol)



Effective System Temperature
4462 MHz(Xpol)