

Location :	In the Cavern (near the detector)						Cables Lost in the LV Cables per Repeater board	In the Counting house					
	L0 front-end	ECS	L0 trigger					L1 front-end	L0 trigger	PS for L1 FE and L0 trigger	HV	PS for the front-end in cavern	
Pile up VETO	L0 front-end	Repeater boards, regulators included		Service box	Optical station	PS for the L0 service box		L1 front-end / TELL 1	Trigger				
Power consumption of chip [W]	1					75% efficiency				75% efficiency		75% efficiency	
Number of chips per board	16												
Power consumption per board [W]	16	42				0.6	56.2	100		1		0.7	
Number of boards	4	4				25%	4	4		25%		25%	
Total power consumption [kW]	0.1	0.2	0.1	0.4	0.2	0.15	0.3	0.4	0.6	0.25	0.04	0.175	
Cooled ?	yes	no	yes	no	no	yes	no	yes	yes	yes	yes	yes	
Inefficiency %	5%	100%	5%	100%	100%	5%	100%	5%	5%	5%	5%	5%	
cavern (detector) / counting house part %							90%	10%					
heat dissipated to air [kW]	0.005	0.2	0.005	0.4	0.2	0.0075	0.27	0.03	0.02	0.03	0.0125	0.002	0.00875
heat removed by the cooling system [kW]	0.095	0	0.095	0	0	0.1425	0	0	0.38	0.57	0.2375	0.038	0.16625
Total power dissipated to air [kW]	1.09						0.11						
Total power to be cooled with water [kW]	0.34						1.4						
Total electrical power consumption [kW]	1						0.3						1.465

needed in the counting house

needed in the cavern but supplied from the counting house

Not sure, to be confirmed

Big dissipation to the air !

Total:

1.8 kW

1 kW

Total power needs:

3.5 kW

What still is missing or has to be confirmed:

Other sub-system that need power....?
Pumps, motors, etc...?

To dimension what TS-EL will have to provide to the sub-detectors in terms of electrical power, a 30% safety (or spare) margin should be added (in addition to what is still missing).