Qty	Supply: Solar Modules	mW	Duty Cycle	Tumbl. derating	Effective mW	Period mWh	Notes
2	1.33 W Alta Devices	2,600.00	59%	71%	1089	1634	Assumes ISS orbit: period ~ 90 min, worst case beta angle of 0 deg.

Qty	Power Storage	Vnom	mAh	Storage (mWh)		60% DOD (mWh)	Notes
4	2S LiPo Battery Packs	7.2	3300	95040		57024	Do not discharge past 60% DOD

Qty	Load: OreSat Bus in Standby mode	mA	Duty Cycle	Effective mA	Eff. mW @ 7.2V	Period mWh	Notes
1	Low Gain Radio RX (Kw0x RX + LNA)	25	99%	25	178	267	LGR mostly in RX mode
1	Low Gain Radio beacon mode (Kw0x TX + PA)	1500	1%	15	108	162	LGR occasionally transmitting 70 cm CW beacon
1	System Controller	13	100%	13	93	140	System controller monitoring Rx and Tx
2	Battery module: quiescent power draw	1	100%	4	29	43	Constant monitoring and incoming data from batteries
8	Solar module: monitoring power draw	10	10%	1	7.2	11	Incoming data from solar arrays, non illuminated panels do not draw power
	Total			58	415	623	"Standby mode" (awaiting commands)

Qty	Load: OreSat Live pass	mA	Duty Cycle	Effective mA	Eff. mW @ 7.2V	Session mWh	Notes
1	C3 Card (180 mA - 250 mA)	150	100%	150	1080	180	Doing ADS, ACS, capturing and streaming video
1	SDR GPS	100	100%	100	720	120	Streaming raw GPS IQ data
1	IMU + MAG	17	100%	17	122	21	Streaming data to FC
4	ACS Reaction Wheels	250	100%	1000	7200	1200	Fully active
3	ACS Magnetorquers	0	0%	0	0	0	Off
8	ADS Sunsensors	25	100%	200	1440	240	Streaming data to FC
1	DxWiFi transmitter + PA	500	85%	425	3060	510	Streaming video over DxWiFi
1	OreSat Live camera	40	100%	40	280	47	Streaming video to FC
	Total					2318	2.3 Wh used per 10 min maximum OreSat Live "session"

Qty	Load: Cirrus Flux Cam pass	mA	Duty Cycle	Effective mA	Eff. mW @ 7.2V	Session mWh	Notes
1	C3 Card (180 mA - 250 mA)	150	100%	150	1080	180	Doing ADS, ACS, capturing and streaming video
1	SDR GPS	100	100%	100	720	120	Streaming raw GPS IQ data
1	IMU + MAG	20	100%	20	144	24	Streaming data to FC
4	ACS Reaction Wheels	250	100%	1000	7200	1200	Fully active
3	ACS Magnetorquers	0	0%	0	0	0	Off
8	ADS Sunsensors	25	100%	200	1440	240	Streaming data to FC
1	Cirrus Flux Camera	50	85%	45	324	54	Sending images to FC
1	CFC filter wheel	50	10%	50	36	6	Switching filters
	Total					1824	1.8 Wh used per 10 min maximum Cirrus Flux Cam "session".

Qty	Load : Detumbling mode	mA	Duty Cycle	Effective mA	Eff. mW @ 7.2V	Session mWh	Notes
1	C3 Card (180 mA - 250 mA)	100	20%	20	144	24	Doing ADS, ACS, capturing and streaming video
1	SDR GPS	100	20%	20	144	24	Streaming raw GPS IQ data
1	IMU + MAG	20	20%	4	29	4.8	Streaming data to FC
4	ACS Reaction Wheels	0	0%	0	0	0	Off
3	ACS Magnetorquers	225	100%	675	4860	810	Fully active, using power up to the orbital period energy budget
8	ADS Sunsensors	25	20%	5	288	48	Streaming data to FC
	Total					911	0.9 Wh used during detumbling / desaturation mode

Analysis

	Energy budget per orbital period in standby mode:					1011	mWh. Conclusion: Gain 1 Ah per orbit in standby mode
	Orbits to fully recharged battery pack from 60% DOD					56	orbital periods.

Days to fully recharge battery pack from 60% DOD		3.5	days.
Number of OreSat Live passes per battery charge (to 60% DOD)		24.6	passes to 60% DOD.
Number of Cirrus Flux Cam passes per battery charge (to 60% DOD)		31.3	passes to 60% DOD.