

Project: **P13271 AMSAT Maximum Power Point Tracker**

Revision #: 2 Date: 5/5/2013

Spec. #	Importance	Source	Function	Specification (metric)	Unit of Measure	Marginal Value	Ideal Value	Comments/Status
S1	9	AMSAT	CN1,CN3	Maximum Power Input	Watts	7.24	>7.24	27 cm^2 cells, Qty=7
S2	9	AMSAT	CN1	Input Voltage Max	Voltage	22	>22	NASA Derating
S3	9	AMSAT	CN3	Limited Output Voltage	Voltage	<4.1	4.1	Operating voltage limit
S4	9	AMSAT	CN1	MPPT Efficiency	Percentage	90.00%	>90%	Conversion efficiency
S5	9	AMSAT	CN1	MPPT Response Time	Milliseconds	100	<100	
S6	9	AMSAT	CN2	Maximum Operational Temperature	Celsius	85	>85	Industrial Specifications
S7	9	AMSAT	CN2	Minimum Operational Temperature	Celsius	-40	<-40	Industrial Specifications
S8	9	AMSAT	CN2	TID Radiation Expectation	kiloRad	30	>30	Published data
S9	6	AMSAT	CN2,CN4	Component Height Restriction	Millimeter	<8.1	5	Topside clearance
S10	6	AMSAT	CN2	Layout Area Constraint	Cm^2	144.5	<144.5	Tall items on topside
S11	6	AMSAT	CN5,CN6	IHU Communications	Pass/Fail	N/A	N/A	Fox-1 Specifications (I2C)

**IHU** Internal Housekeeping Unit

**Importance Rating Scale**

- Must have 9
- Nice to have 6
- Preference 3