HASP Payload Specification and Integration Plan

Payload Title: UAH Thermal Imaging Balloon Experiment (TIBE)

Payload Class: **Large**

Payload ID: Payload 09

Institution: University of Alabama in Huntsville

Contact Name: Bob Hawkins

Contact Phone: (256) 684-1513

Contact E-mail: hawkinr@email.uah.edu

Submit Date: 06/01/2007

I. Mechanical Specifications:

A. Measured weight of the payload (not including payload plate): **Approx. 10kg**

B. Provide a mechanical drawing detailing the major components of your payload and specifically how your payload is attached to the payload mounting plate: **Attached**

C. If you are flying anything that is potentially hazardous to HASP or the ground crew before or after launch, please supply all documentation provided with the hazardous components (i.e. pressurized containers, radioactive material, projectiles, rockets…): **None**

D. Other relevant mechanical information: **Payload to plate mounting can be seen in the attachments on the bottom view of the draft.**

II. Power Specifications: (Attached)

A. Measured current draw at 28 VDC

B. If HASP is providing power to your payload, provide a power system wiring diagram starting from pins on the student payload interface plate EDAC 516 connector through your power conversion to the voltages required by your subsystems.

C. Other relevant power information

III. Downlink Telemetry Specifications:

A. Serial data downlink format: **Stream**

B. Approximate serial downlink rate (in bits per second): **Approximately 1200 baud**

C. Specify your serial data record including record length and information contained in each record byte: **Example Data Readout**
*counter***TAB***temp***TAB***temp***TAB***temp***TAB***temp***TAB***temp***TAB***temp***TAB***temp*

TAB*temp***TAB***temp***TAB***temp***TAB***temp***TAB***temp***TAB***temp***TAB***temp***TAB***temp*/**Carrig e Return**
Last 12 temperature data readouts will be 2 bytes, all others will be 1 bytes.

D. Number of analog channels being used: **2 or 0?**

E. If analog channels are being used, what are they being used for? **Power On/Off**

F. Number of discrete lines being used: **None**

G. If discrete lines are being used what are they being used for? **N/A**

H. Are there any on-board transmitters? If so, list the frequencies being used and the transmitted power: **N/A**

I. Other relevant downlink telemetry information: **N/A**

IV. Uplink Commanding Specifications:

A. Command uplink capability required: **No**

B. If so, will commands be uplinked in regular intervals: **No**

C. How many commands do you expect to uplink during the flight (can be an absolute number or a rate, i.e. *n commands per hour*): **N/A**

D. Provide a table of all of the commands that you will be uplinking to your payload: **N/A**

E. Are there any on-board receivers? If so, list the frequencies being used: **N/A**

F. Other relevant uplink commanding information: **None**

V. Integration and Logistics

A. Date and Time of your arrival for integration: **July 21**

B. Approximate amount of time required for integration: **A Day**

C. Name of the integration team leader: **Bob Hawkins**

D. Email address of the integration team leader: **hawkinr@email.uah.edu**

E. List **ALL** integration participants (first and last names) who will be present for integration with their email addresses: **Will provide at a later date.**

F. Define a successful integration of your payload: **Plugs in, powers up, sends data, thermal controls respond accordingly.**

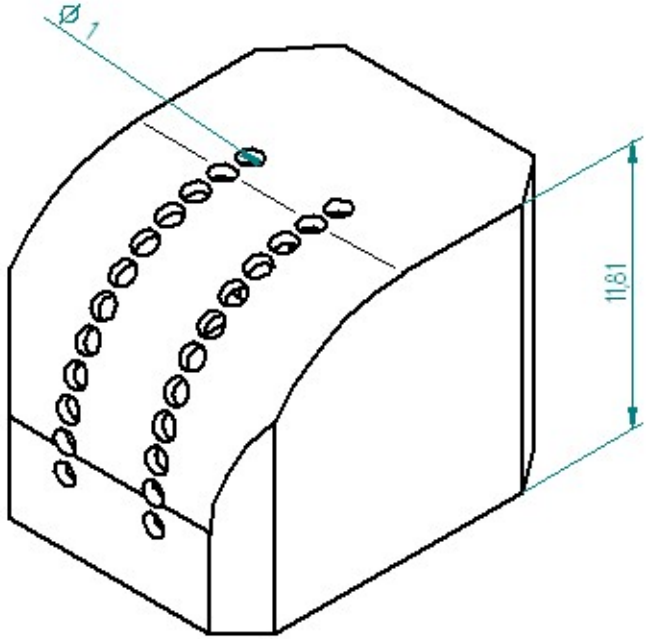
G. List all expected integration steps: **Mount, plug in, power up.**

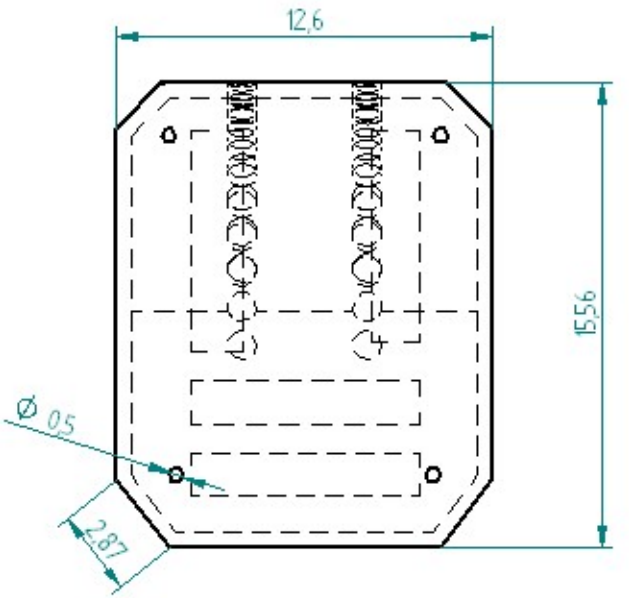
H. List all checks that will determine a successful integration: **Transmits applicable data from all sensors, thermal controls respond accordingly**.

I. List any additional LSU personnel support needed for a successful integration other than directly related to the HASP integration (i.e. lifting, moving equipment, hotel information/arrangements, any special delivery needs…): **Hotel Info**

J. List any LSU supplied equipment that may be needed for a successful integration:
Possible refrigerator/freezer for cooling the payload in order to test current draw for heaters.

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED





	NAME	DATE
DRAWN	UAH	06/01/07
CHECKED		
ENG APPR		
MGR APPR		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
ANGLES ±X.X°
2 PL ±X.XX 3 PL ±X.XXX

SOLID EDGE
UGS - The PLM Company

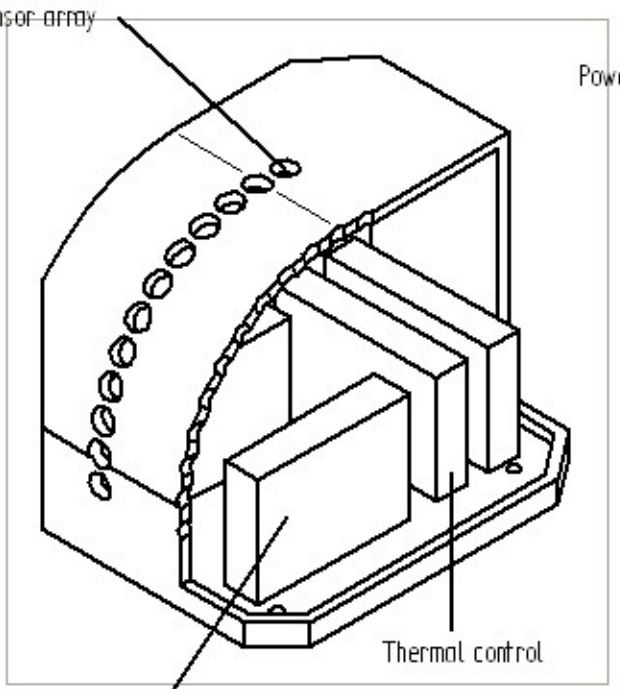
TITLE

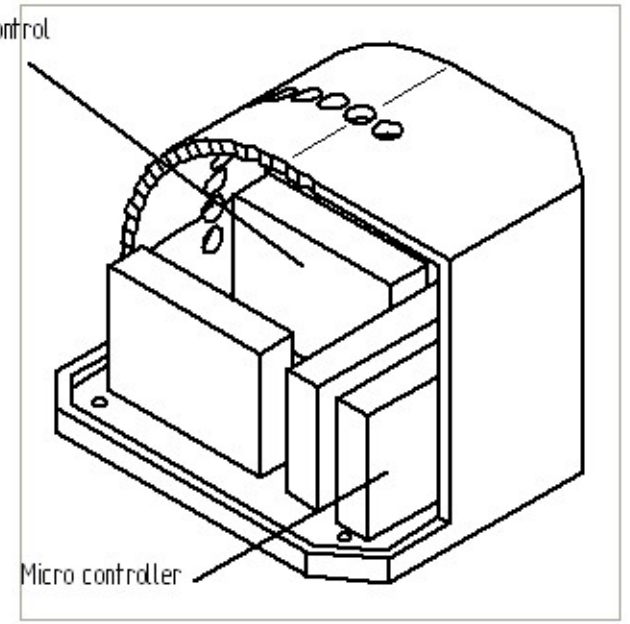
SIZE	DWG NO	REV
A4		

FILE NAME: cutaway3d.ft

SCALE:	WEIGHT:	SHEET 1 OF 1

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED





	NAME	DATE
DRAWN	Binekl	06/01/07
CHECKED		
ENG APPR		
MGR APPR		

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
ANGLES ±X.X°
2 PL ±X.XX 3 PL ±X.XXX

SOLID EDGE
UGS - The PLM Company

TITLE: Payload Cutaway with approximate instrumentation

SIZE	DWG NO	REV
A4		

FILE NAME: cutaway2.dft

SCALE:	WEIGHT:	SHEET 1 OF 1

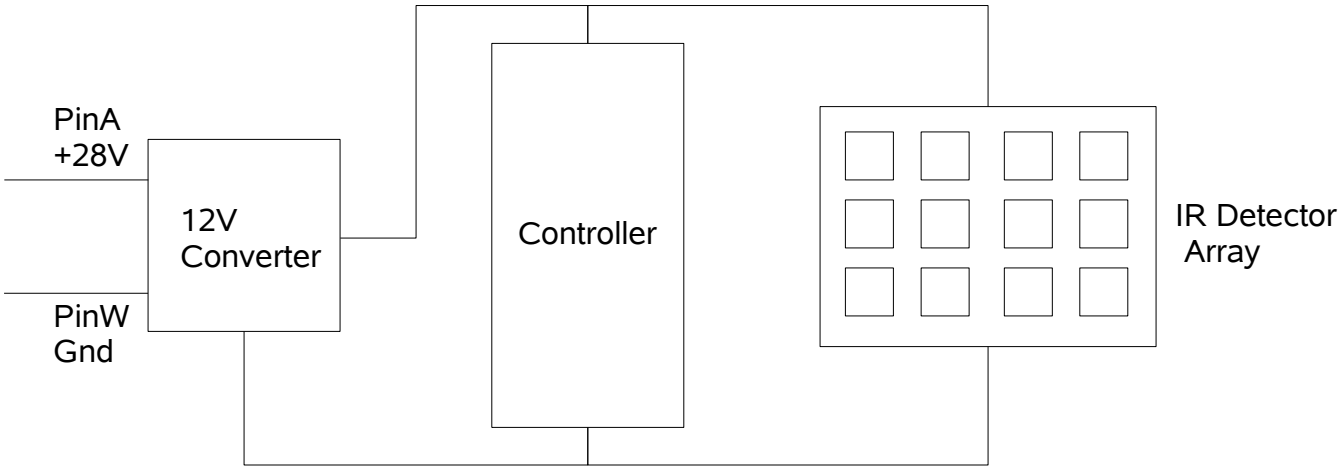
II Power Specification:

A. Measure current draw at 28VDC:

2.5A total at max current draw. We expect a nearly consistent ~1.3A for the instrument, and a variable ~1.2A for the heaters since they will turn on and off.

B. Power System Wiring Diagrams

Instrument wiring diagram – pins A (+28V) and W (Gnd), all components are 12V



Heater wiring diagram – pins B (+28V) and T (Gnd)