HASP Payload Specification and Integration Plan

Payload Title: Team Aerospike

Payload Class: Small Large (circle one)

Payload ID: Payload #11

Institution: LSU

Contact Name: Jeff Kornuta

Contact Phone: (225) 278-4540

Contact E-mail: jkornu1@lsu.edu

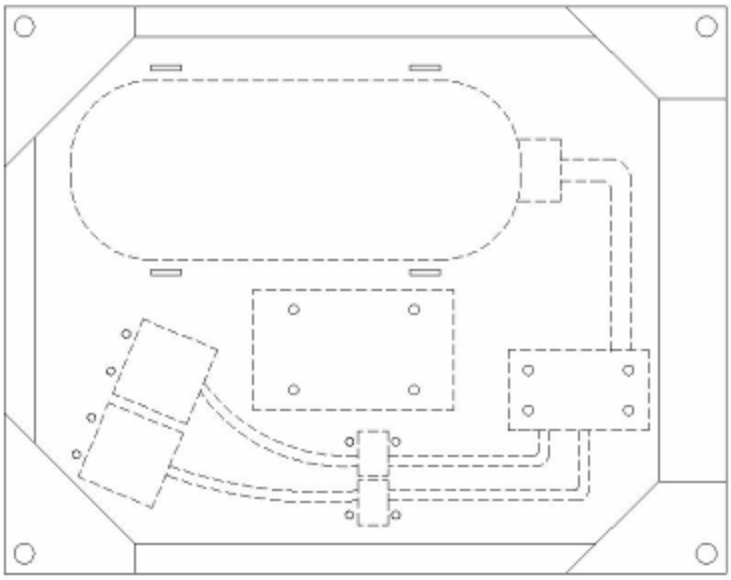
Submit Date: June 1, 2007

I. Mechanical Specifications:

A. Measured weight of the payload (not including payload plate)

4.7 kg

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



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…)

A paintball tank (pressure vessel) is included in our payload. The label on the tank is the official Department of Transportation (DOT) certification paper that certifies this tank will hold 4500 psi. (See pictures below). These types of pressure vessels are typically certified in this manner.


RETEST EVERY 3 YEARS PER
FRP-1 & E11005 AND TC-3FCM

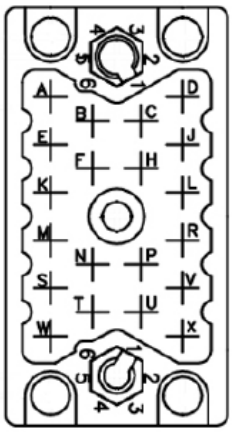
II. Power Specifications:

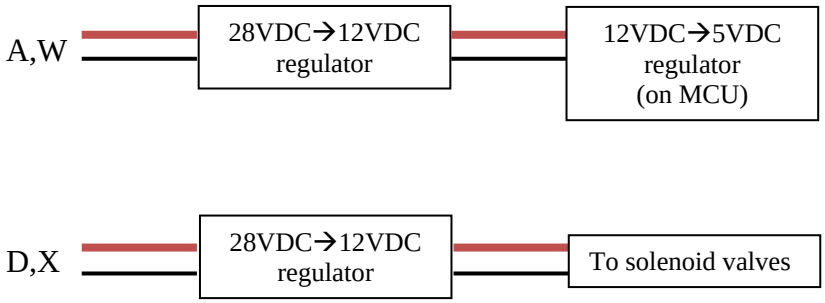
A. Measured current draw at 28 VDC

Min: 200mA (idle)

Max: 900mA (active w/ active solenoid valves)

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.





III. Downlink Telemetry Specifications:

A. Serial data downlink format: Stream **Packetized** (circle one)

B. Approximate serial downlink rate (in bits per second)

Max: 1000 bits/second

C. Specify your serial data record including record length and information contained in each record byte.

Function	Bytes
FE/FE (Beginning Record)	2
Ambient Pressure	20
Timestamp	6
Stagnation Temperature	20
Stagnation Pressure (CD)	20
CD Force	60
Stagnation Pressure (A)	20
A Force	60
FF/FF (End Record)	2
LF/CR	2

D. Number of analog channels being used:

Zero

E. Number of discrete lines being used:

Zero

F. Are there any on-board transmitters? If so, list the frequencies being used and the transmitted power.

No

IV. Uplink Commanding Specifications:

A. Command uplink capability required: Yes No (circle one)

B. 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*)

Zero

C. Are there any on-board receivers? If so, list the frequencies being used.

No

V. Integration and Logistics

A. Date and Time of your arrival for integration:

8:00 AM, Monday, July 23rd

B. Approximate amount of time required for integration:

2 hours

C. Name of the integration team leader:

Jeff Kornuta

D. Email address of the integration team leader:

jkornu1@lsu.edu

E. List *ALL* integration participants (first and last names) who will be present for integration with their email addresses:

Jeff Kornuta	jkornu1@lsu.edu
Matt Hohenschutz	mhohen1@lsu.edu
Ian Walsdorf	iwalsd1@lsu.edu
Henry Hardee	hharde1@lsu.edu

F. Define a successful integration of your payload:

That which successfully completes (G) and satisfies (H)

G. List all expected integration steps:

- Visually inspect payload for defects
- Connect payload to personal PC in order to ensure working. Blank memory.
- Disconnect from PC and connect power and serial connections to HASP; remove Jumper 1 on BalloonSat++
- Coordinate with Michael Stewart to ensure proper power is supplied to payload and to ensure proper serial communication with HASP is achieved by verifying all received data records
- Secure MCU enclosure lid; ensure stagnation enclosure is secured; ensure thrust stand storage/transport Styrofoam is secured
- Secure payload board to HASP

H. List all checks that will determine a successful integration:

- Are any defects visually present?
- Does payload send correct data to PC?
- Has memory been successfully blanked?

- Has Jumper 1 been removed?
- Are the supplied voltages adequately being applied to the payload?
- Does the payload send correct data to HASP?
- Are all enclosure lids secured?
- Is the thrust stand storage/transport Styrofoam secured?
- Is the payload secured to HASP?

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 arrangements for the night of July 22nd for integration participants
- Careful handling of payload when shipped to Ft. Sumner as to not damage pressure vessel or load cells

J. List any LSU supplied equipment that may be needed for a successful integration:

- 28VDC power supply