HASP Payload Specification and Integration Plan

Payload Title: High Altitude Greenhouse Gas Survey (HAGGS)

Payload Class: Small

Payload ID: 08

Institution: Arizona State University

Contact Name: Muadin Latifi

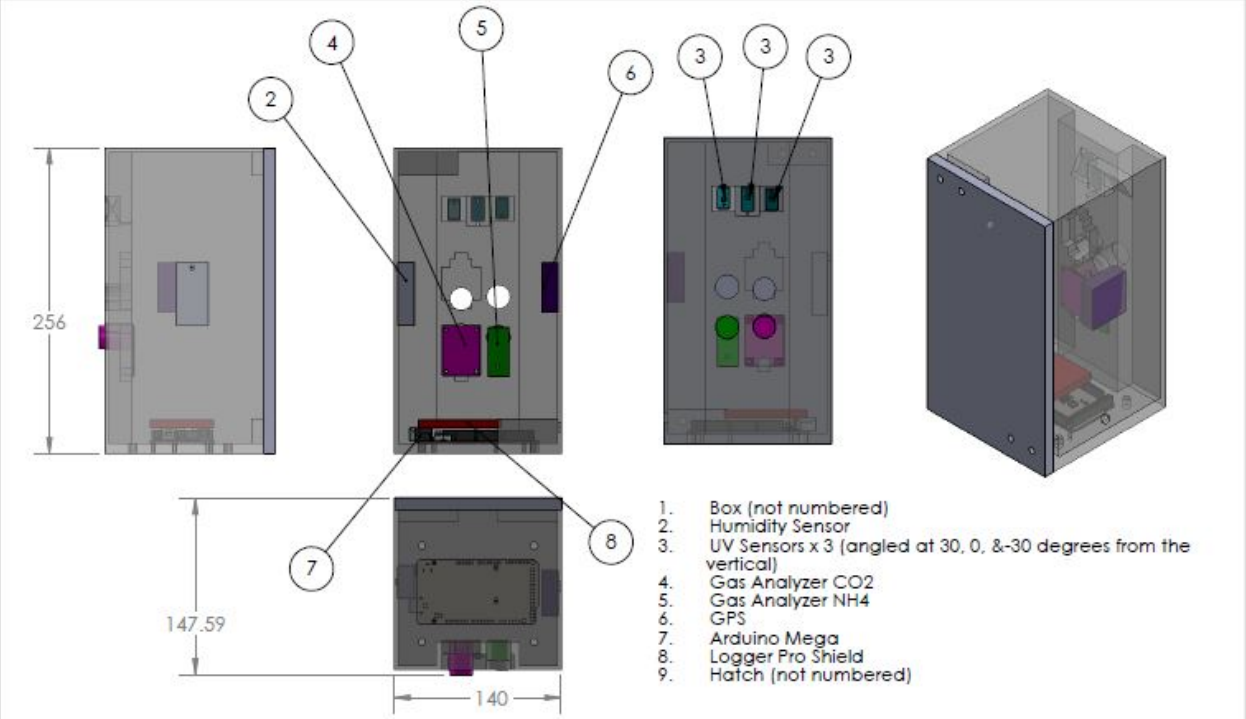
Contact Phone: (858) 735-8369

Contact E-mail: mlatifi@asu.edu

Submit Date: 04/24/2015

I. Mechanical Specifications:

A. Measured weight of the payload: 0.90083kg
B. Provide a mechanical drawing detailing the major components of your payload and specifically how your payload is attached to the payload mounting plate



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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. No hazardous materials
D. Other relevant mechanical information

II. Power Specifications:

A. Measured current draw at 30 VDC

System Component:	Current (mA):
Arduino Mega	5
3X UV Sensors	3
CO2 sensor	200
CH4 sensor	150
GPS Datalogging shield	20
Temp/Humidity sensor	2.5
GPS Antenna	10
Total:	390.5

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.

HAGGS Power plan / EDAC Power interface

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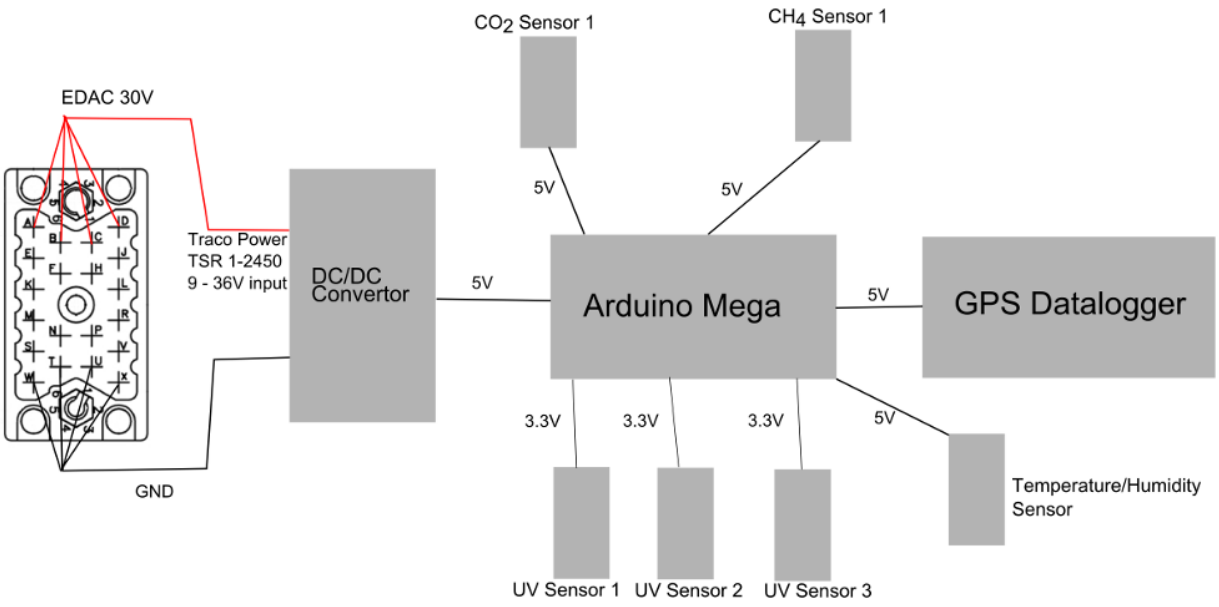

C. Other relevant power information
    a. N/A

III. Downlink Telemetry Specifications:

A. All data will be stored onboard.

IV. Uplink Commanding Specifications:

A. All data will be stored onboard.

V. Integration and Logistics

A. Date and Time of your arrival for integration:
    a. August 3, 2015 is the arrival date for integration.
B. Approximate amount of time required for integration:
    a. Approximately 2 days.
C. Name of the integration team leader:
    a. Ben Mackowski
D. Email address of the integration team leader: mapfreak314@gmail.com
E. List ALL integration participants (first and last names) who will be present for integration with their email addresses:
    a. Ben Mackowski - mapfreak314@gmail.com
    b. James Enos - jaenos@asu.edu
    c. Odell Lopez - olopez5@asu.edu

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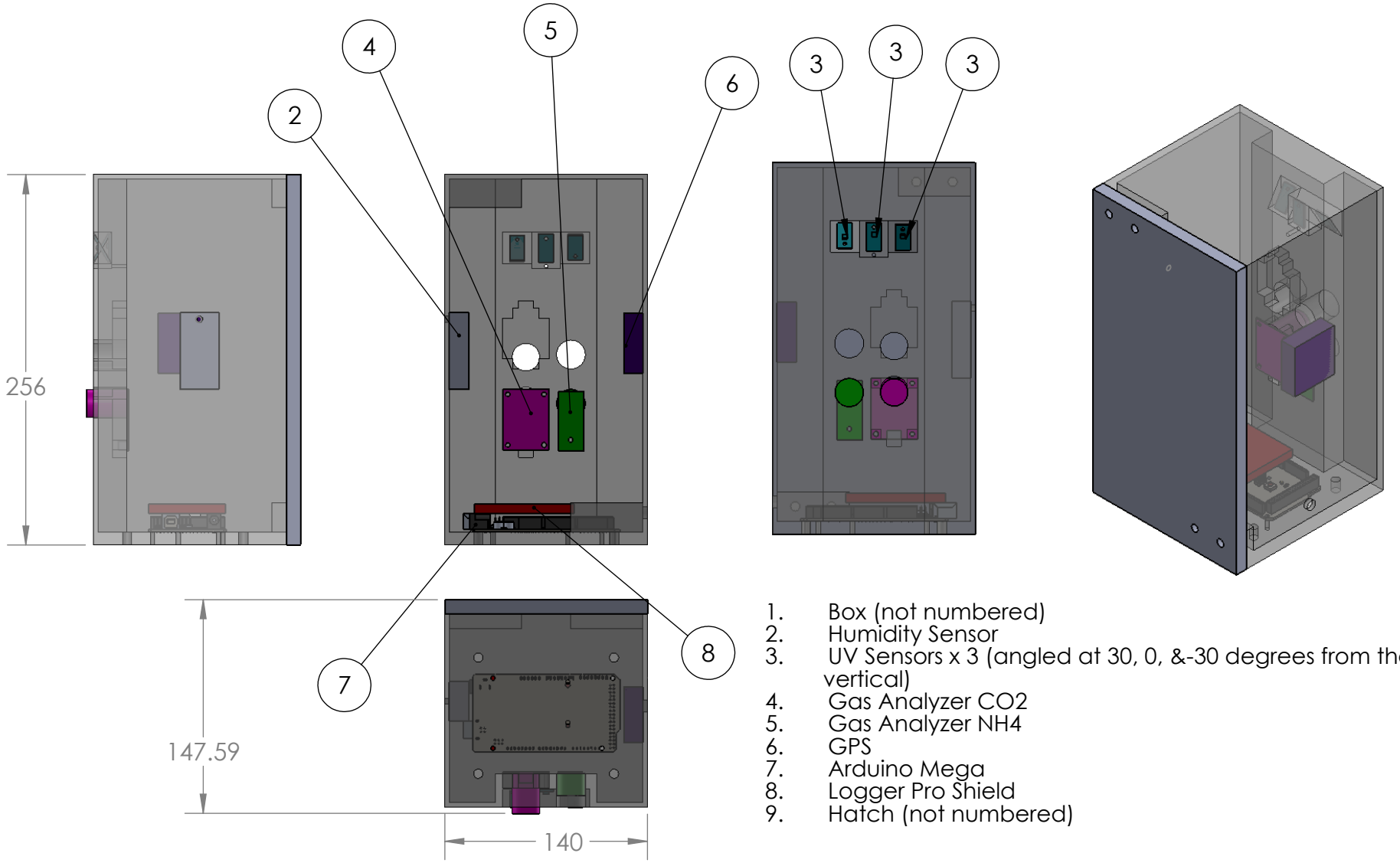
F. Define a successful integration of your payload:
    a. The HAGGS payload is properly mounted on the HASP mounting plate and it is secured on the gondola.
    b. Once HAGGS payload is configured with HASP power, all payload instruments operate properly.
        i. The GPS, Gas, and UV sensors are receiving power.
    c. The GPS, Gas, and UV sensors are sending accurate data to data storage.
G. List all expected integration steps:
    a. Mount payload to HASP mounting plate and secure on the gondola.
    b. Connect power wires.
    c. Verify successful integration.
H. List all checks that will determine a successful integration:
    a. Power on payload.
    b. Verify power levels on each hardware device
    c. Allow data collection for several cycles.
    d. Power off payload.
    e. Remove SD card and verify data.
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...):
J. List any LSU supplied equipment that may be needed for a successful integration:
    a. 30 VDC power supply to test electronics



1. Box (not numbered)
2. Humidity Sensor
3. UV Sensors x 3 (angled at 30, 0, &-30 degrees from the vertical)
4. Gas Analyzer CO2
5. Gas Analyzer NH4
6. GPS
7. Arduino Mega
8. Logger Pro Shield
9. Hatch (not numbered)

DO NOT SCALE DRAWING

TITLE:

Final Assembly

SCALE: 1:4 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1