PSAS Packet Documentation

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CHAPTER 1

Data Structure

1.1 Message

A PSAS Message has a header with an ASCII four character code (e.g., 'ADIS') that identifies it. This is followed by a 6 byte timestamp in nanoseconds. This is always nanosecond since beginning of a program, which is usually the same as boot time for a device. This is followed by two bytes that give the size of the rest of the message. The remainder of the message is a collection of *Data*.

1.2 Data

Data can be almost anything, even other messages. Usually it's a pre-defined set of fixed sized numbers

CHAPTER 2

Message Definitions

These are all the message types pre-defined in psas_packet.messages.MESSAGES

2.1 ADIS

ADIS16405
Format Description:

Field	Type	Size [Bytes]
VCC	uint16_t	2
Gyro_X	int16_t	2
Gyro_Y	int16_t	2
Gyro_Z	int16_t	2
Acc_X	int16_t	2
Acc_Y	int16_t	2
Acc_Z	int16_t	2
Magn_X	int16_t	2
Magn_Y	int16_t	2
Magn_Z	int16_t	2
Temp	int16_t	2

Portland State Aerospace Society (PSAS) is a student aerospace engineering project at Portland State University. We are building ultra-low-cost, open source rockets that feature some of the most sophisticated amateur rocket avionics systems out there today.

In developing our telemetry system we've had to come up with a tight data storage and transfer technique. However we use this data scheme in many different projects, from the flight computer to various ground stations. This project is developed to have a single place that defines everything.

CHAPTER 5

psas_packet

psas_packet is the reference implementation of our binary message storage and transmission scheme.

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