Introduction

This document aims to contain all the required interface information to develop a system for a PocketQube developed by the Electronic Systems Laboratory (ESL) at Stellenbosch University (SU).

Electrical Interface

The main electrical connection between modules is a 2x9 header. The required signals are defined in terms of other PocketQube interfaces but are not directly compatible. The signal definition is seen in Table 1.

Table 1 Main electrical connections on base plane

1	SDA	SDL	18
2	GND	GND	17
3	SDB	SCK	16
4		S1_5V	15
5	VBat	S2_5V	14
6	5V	S1_3V3	13
7	3V3	S2_3V3	12
8	GND	GND	11
9		PPS	10

The connections can be broken into several categories. The signals and their corresponding category are described in Table 2.

Table 2 Pin definition of main system bus.

Category	Signal	Description
Communication – RS485	SDA	Data A line for RS485 bus.
	SDB	Data B line for RS485 bus.
Communication – I2C	SDL	Data line for I2C bus.
	SCK	Clock line for I2C bus.
Power Connections	VBat	Raw battery line. (Use with caution)
	5V	Main 5V line
	3V3	Main 3V3 line
	S1_5V, S2_5V	Switched 5V lines, which are controlled by the EPS.
	S1_3V3, S2_3V3	Switched 3V3 lines, which are controlled by the EPS.
Miscellaneous Signals	PPS	Pulse per second signal that is used for synchronization of modules. Normally generated by Main OBC, except if GPS is present.