∇ Fancy Company

Móra Space Module

Features

- - 40 to 85 °C temperature range
  (Guaranteed by design but not characteristic.)
- Redundant oscillator circuit
- Based on Stm32L010F4P6
- Temperature stable passive components
- Ultra wide range power supply : 2.7 - 4.5 V

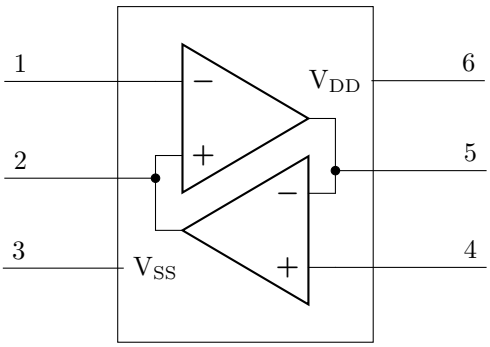

Figure 1: Pinout and internal circuit

Applications

- Hall effect measurement
- Temperature measurement
- ADC noise measurement
- Quotes sending

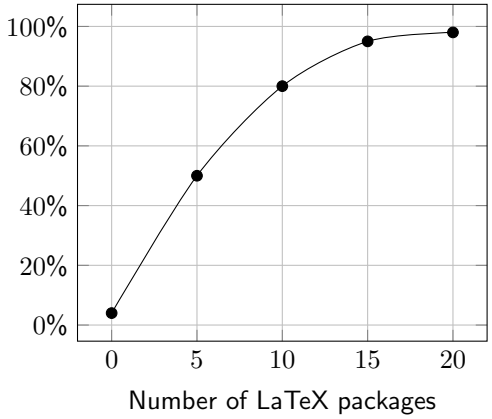

Figure 2: Typical data sheet production efficiency

General Description

This year, on the last day of September, a unique offer was given for the students to create their payload for the MRC-100 satellite. We have accepted the opportunity with great pleasure. Immediately we began brainstorming about the experiments the card should do with the participation of Physics and Engineering students. Finally, the primary experiment was designed to be a noise measurement of the ADC controller. The question is if the noise on the AD samples in the used STM microcontroller is dependent on the radiance of space. Measures will be done at different parts of the trajectory. The secondary experiment is the jitter measurement of the other modules. The common bus will let us listen and measure the bit rate of the other modules. As a result, we expect to see whether the timing is as important and sensitive point of the design as we see it now. Our third experiment is about our local culture. In this mode of operation, the satellite will transmit our local student sayings and quotes to show the diversity of our community. Our fourth experiment simply measures the magnetic field through the PCB.

Electrical Specifications

All specifications are in $-40°C \leq T_A \leq 85°C$ unless otherwise noted.

Table 1: Electrical charasteristic specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	
Current consumption	I_S	10	10	10	mA	
Standby current consumption	I_B	10	10	10	mA	
Additional current consumption with Oscillator on	I_O	10	10	10	mA	
Additional current consumption with Hall sensor on	I_H	10	10	10	mA	
Additional current consumption with Temperature sensor on	I_T	10	10	10	mA	

[1] Based on characterization data, not tested in production.

Dimensions

Table 2: Board Dimensions

Parameter	Size
Side	30.0 x 30.0
Height	3.0

Dimensions are expressed in millimeters.

Note: Stresses above those listed under Absolute Maximum Ratings can cause permanent damage to the device. This is a stress rating only. Functional operation of the device is not implied in any conditions above those indicated in the Electrical Specifications section.