Secondary Onboard Computer for SETECLab's Ground Station Terminal

Most recent version of this repository can be found in:

- GitHub

What is this repository for?

- This repository was created to develop an SOBC for the SETECLab's custom GST.

MSP432 information

- Datasheet
- Development board: MSP432 LaunchPad
- Programmer when integrated in the PCB: OLIMEX MSPBSL

How do I get set up?

- Remove **5V jumper** (**J101** jumper bench) on MSP432 LaunchPad (Important! Otherwise, two 5V sources will feed the 5V power line on the PCB)
- Connect MSP432 LaunchPad to PC via USB
- Compile with Code Composer Studio (Build Project) and Run-->Debug

Known issues

- Current tests have shown that the **SPI frequency** is somehow band-pass limited: The frequency must be above 70 kHz and below 3 MHz for a proper functioning SPI communication between MSP432 and PIC16. Though, this phenomen might be due to the fact that for testing the SPI communication, a voltage level shifter consisting of *74LS245N* and *CD4050BE* has been used which might be a limiting factor. However, using **400 kHz SPI clock speed** is a reasonable and sufficient fast frequency.

Contribution guidelines

- If you want to propose a review or need to modify the code for any reason first clone this repository in your PC and create a new branch for your changes. Once your changes are complete and fully tested create a pull request.
- If you just want to do local changes instead you can download a zip version of the repository and do all changes locally in your PC.

Who do I talk to?

- Juan J. Rojas
- Jean P. Jimenez