Short description of CBCM project

List of components:

1. CBCM IC
2. Interface PCB
3. Arduino Due
4. Python user interface

CBCM IC

Interface PCB

Arduino Due

Python user interface

Clock, Parameters, data I/O

Power

Digital isolator

Clock, Parameters, data I/O

Parameters, data I/O

Voltage regulators

Data graph, data record files

CBCM IC:

(see CBCM.pdf)

Interface PCB:

The PCB is designed to be an Arduino shield, it provides 4x3.3V power line for left and right digital/analog power respectively. In addition, the PCB also provides 18 digital isolators for electrical isolation of signals input and output signals given by the Arduino board.

Arduino Due:

The Arduino board is responsible for generating required signals and read the IC output. (Detailed I/O can be found in CBCM.pdf)

On the other hand, the board receives instructions from and return the collected data to the python user interface.

Initialization:

1. Generating clock signal
2. Set initial sampling rate
3. Set initial CCO parameter

Work loop:

The loop will be listening for 4 types of instructions

1. Set Sampling rate
2. Set COO parameter
3. Set Calibration input
4. Read IC output

Python user interface:

The python user interface is where we control the test parameters and procedures. It receives the data from and send test configuration commands to Arduino board.

The user interface provides 2 modes for testing:

1. Continuous reading for single calibration value
2. Scanning through all calibration values

In addition, it plots the result data and record the resulting data in a file.



