OBC_SDR Communication

Precursor Events:

- CySAT launched from ISS
- Start-up sequence has ended
- Communication established with Ground Station

Data Collection Sequence:

- OBC detects that it is time for a payload measurement.
- OBC sets SDR enable pin high on PC-104 Stack (H2-Pin 3)
- SDR FPGA boots up and loads Linux and runs script: “startup_radiometer_app.py”
- OBC asks SDR if it is on (0x01)
- SDR responds that it is on and ready (0x00)
- OBC sends a time set request to the SDR (0x11)
- SDR responds to confirm (0x10)
- OBC sends time information to SDR (0x…..)
- OBC then requests a payload measurement to be taken (0x21)
- SDR responds confirming it will take a measurement (0x20)
- OBC sends the parameters for the AD9361_TPR_nogui script
- SDR then waits while requesting temperature data from LNAs via I2C
- After LNAs are at temp (TBD), the script calls the AD9361_TPR_nogui
- AD9361_TPR_nogui initializes with set parameters and recording sequence starts
- Signals from the Radiometer are run through the ADC9361 script recorded to a file
- After some time (5 min?) the OBC sends the shutdown command to the SDR (0x??)
- Then the OBC disables the SDR enable pin on PC-104 Stack (H2-Pin 3)

Data Transmission Sequence:

This is described in the “GS_OBC_SDR” Communication file in detail.