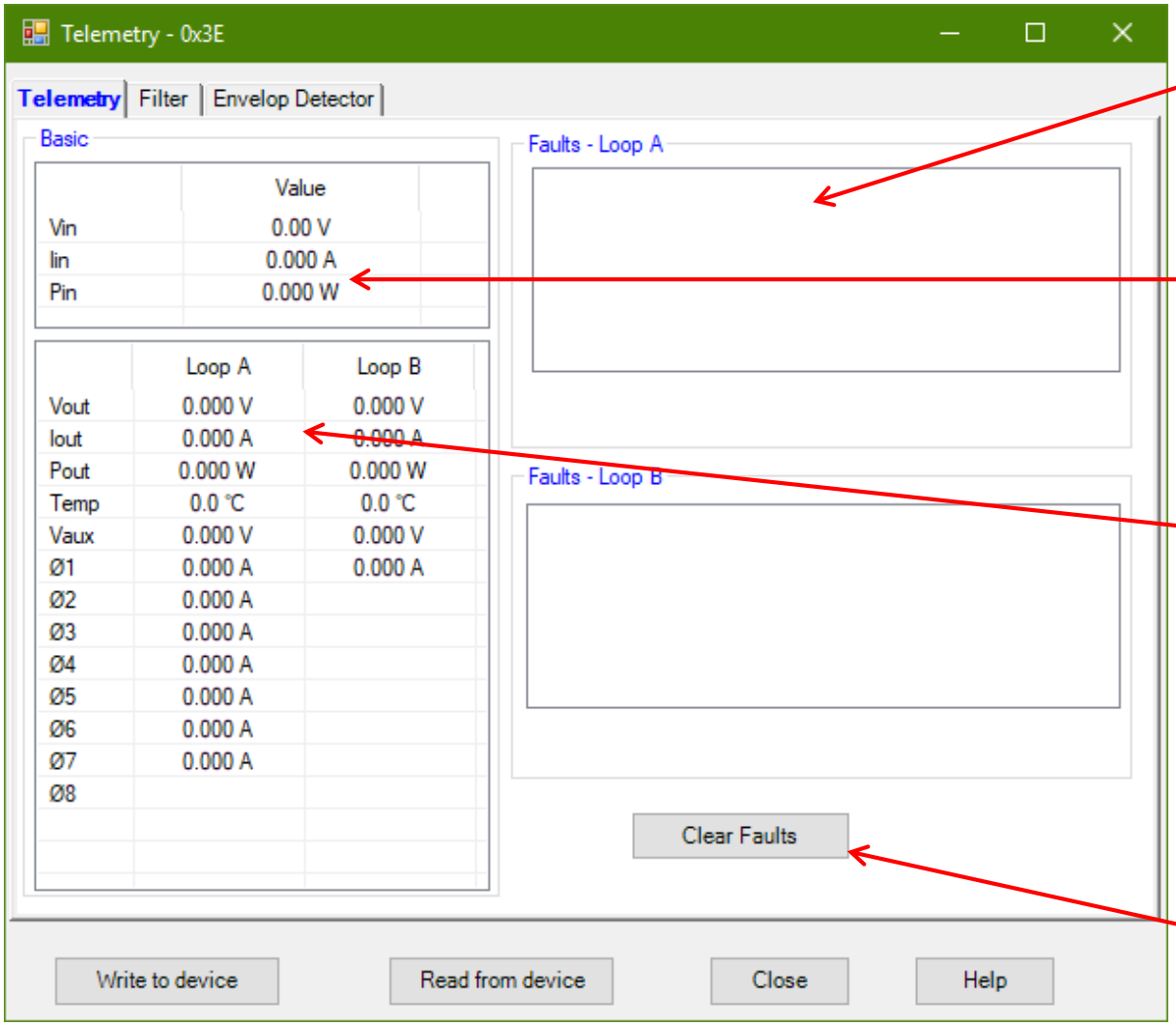
Telemetry…



Faults
Shows what faults are detected

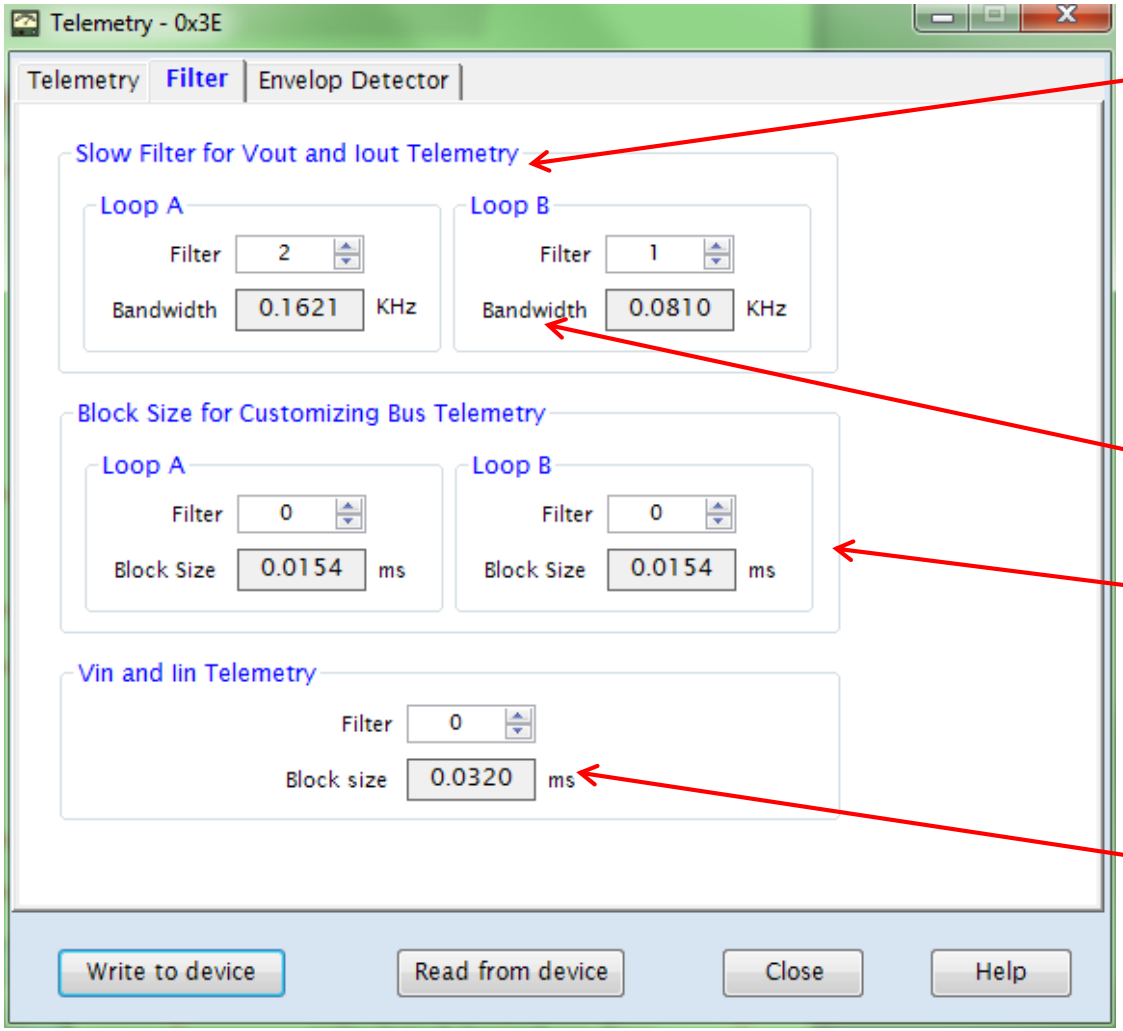
Basic
Shows measured values for input Voltage, Current and the calculated input Power

Loop A and loop B measurements
Shows measured values.
For the phase currents some phases may show 0A due to not all phases active. Typical for low load currents where i.e. Only 2 phases are active. Then it will show 0 A for the other phases as they are not active for the moment.

Vout values are filtered and sampled and due to sampling behavior and resolution in filter there can be up to a 0.25% error in reported Vout

Clear Faults button
Click this button to clear a fault.
Notice this only works if the fault condition is no longer existing. Otherwise the fault will immediately be listed again.

Telemetry... Filter



Slow Filter for Vout and Iout Telemetry

Adjusts the bandwidth of the slow telemetry filter. This is a single pole low-pass filter. Each telemetry component (Iout, Vout) has its own independent slow filter. However, the adjustment of the bandwidth is common to all slow filters for the same Loop.

Bandwidth

Indicates the bandwidth of the Slow Filter

Block size for SVID/SVI2 Telemetry

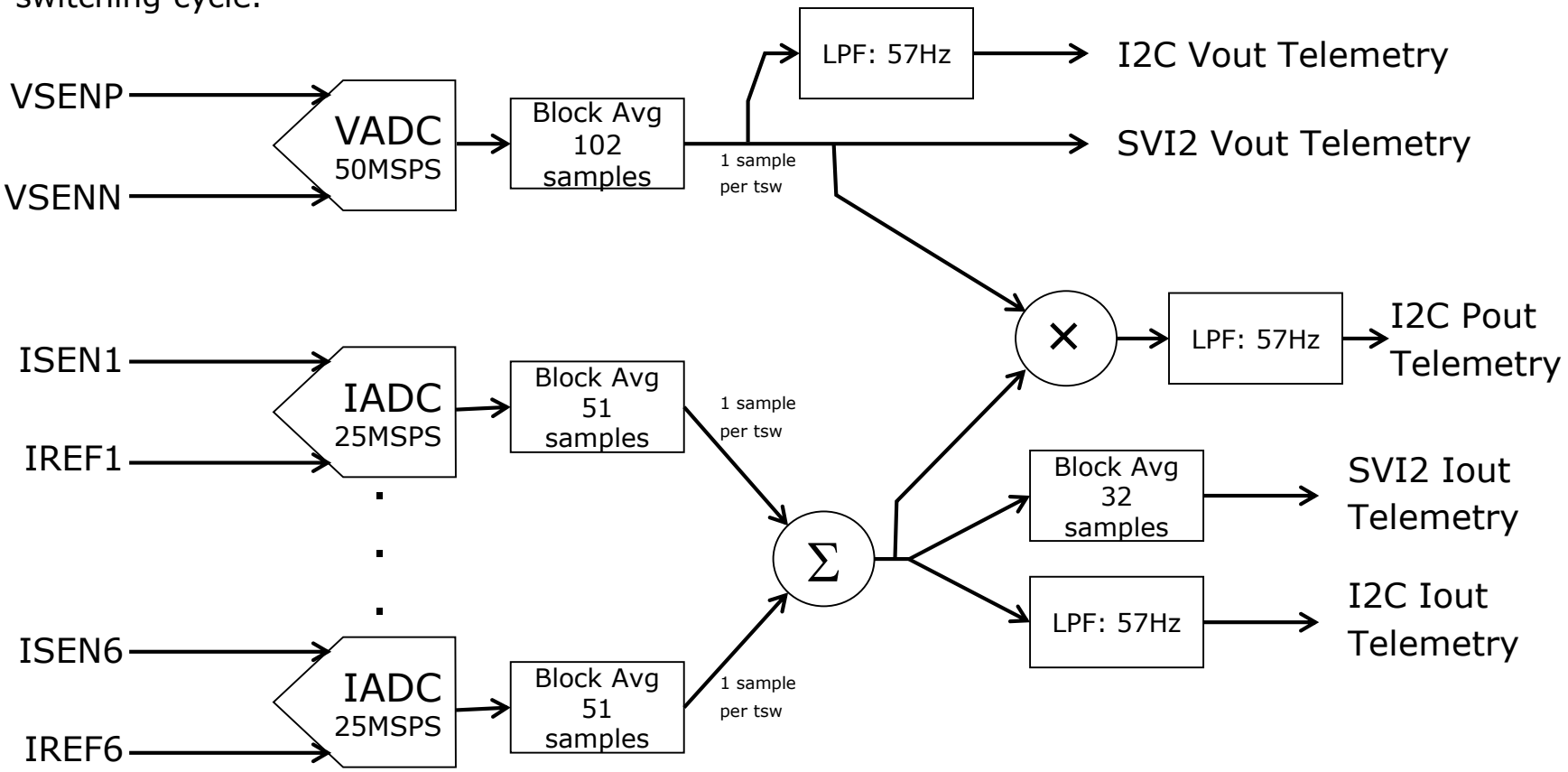
Adjusts the block size for the average value to be taken across for the fast telemetry. The fast filter calculates the average across a block of data at a time (different from a moving average).

Block Size

Block size of Input Voltage and Current telemetry. Set the length of time of the "block" that average the samples

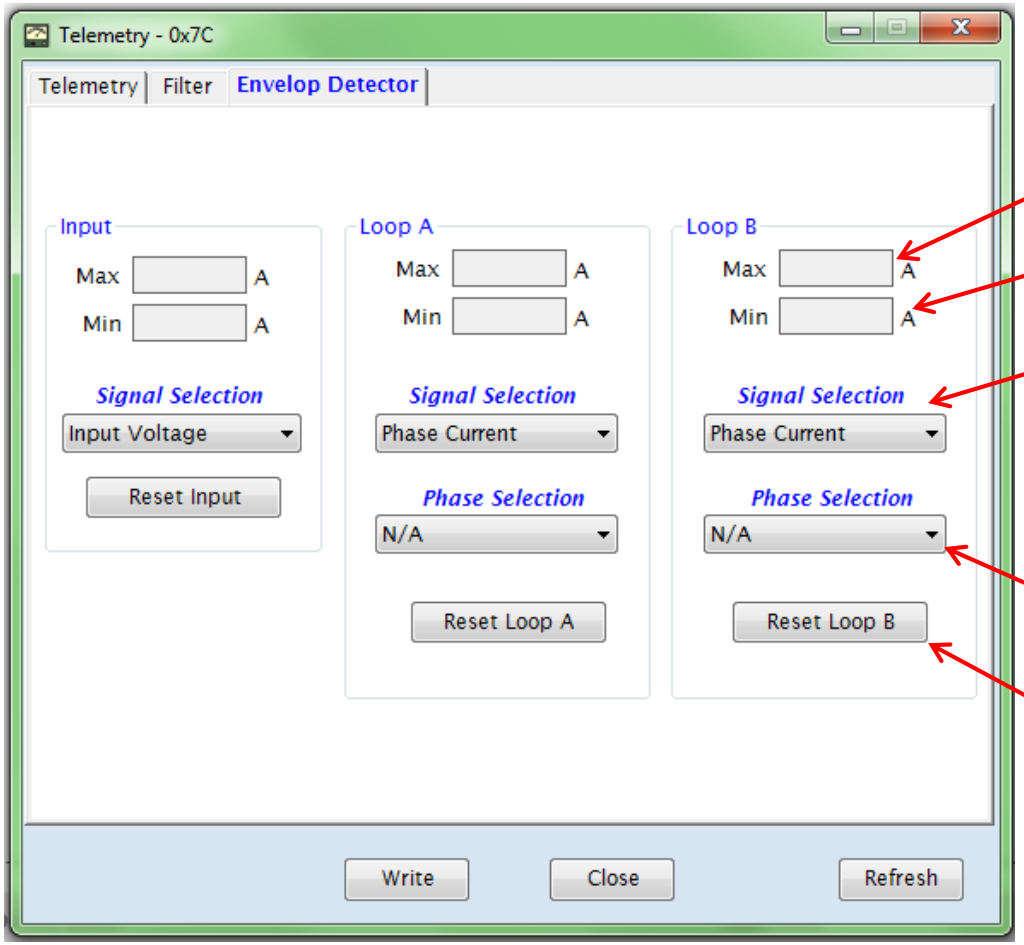
Telemetry… Filter theory

The ADC's are oversampling the inputs. For Vadc, there are 102 samples taken per switching cycle. For Iadc, 51 samples are taken in the same time period. These numbers depend on the switching frequency chosen. As fsw changes, the number of averaging samples will be different since the ADC sample rate is fixed. The averager will average all the samples in 1 switch cycle and output a block averaged number. Hence, the update rate of the ADCs for telemetry used is 1 block averaged sample per switching cycle.



*Above filter rate and samples is for a 490kHz switching frequency. Will change depending on filter setting and Switching frequency

Telemetry... Envelop Detector



Max
Maximum measured value of the selected Signal Selection

Min
Minimum measured value of the selected Signal Selection

Signal Selection:
Enables/disables of the envelope detector
Available Signals: Phase Current, Total Current, Output Power, Input Voltage, Output Voltage, Input Current, Input Power

Phase Selection
Available when Signal Selection -Phase Current signal is selected

Reset
Resets the Max and Min values recorded