

Calculations performed by the DSP Card:

- Calculates R_c based on the following formula

$$R_c(t) = (V_c(t) - L_c(di/dt)) / i(t)$$

- Reads magnet voltage taps $V_c(t)$ and current $i(t)$ once every 1.389 ms
- Passes $V_c(t)$ through various digital low pass filters (walking average type)
- Sums the outputs of low pass filters to determine R_c changes
- Compares results to data base, if quench condition exists then sends command to TIMING/CONTROL card and start abort cycle.
- Reads status of the Utility card to confirm the "abort event"
- Continue data collection for another 20 seconds after the "Abort"
- Re-initializes the system when the crate controller cleared all problems