MCU firmware function list:

1. Serial command scan:
   1. USART interrupt on command receive.
2. Serial data podcasting.
   1. USART interrupt on command transmit.
3. Safety events reactions:
   1. Over heat event set load shut off.
   2. Voltage overload set load shut off.
   3. Current overload set load shut off.
4. ADC functions :
   1. Initialization.
   2. Read.
5. DAC functions:
   1. Initialization.
   2. Write.
6. Timers :
   1. Initialization.
   2. Read time counts.
7. Mode control:
   1. Mode parameters set.
   2. Constant current PID control.
   3. Constant voltage PID control.
   4. Constant resistance PID control.
   5. Constant power PID control.
   6. Load on off.
8. External Triggering:
   1. Triggering parameters set.
   2. External interrupt to load control.
9. Output functions:
   1. Square wave parameters set.

GUI functions and threads:

1. Thread to display:
   1. Labels for current, voltage, resistance, power, mode selection.
   2. Buttons to set parameters:
      1. CC
      2. CV
      3. CR
      4. CW
      5. EX TRIG
      6. F(x)
      7. SET
      8. ON/OFF
      9. Data logging.
   3. Menu to choose:
      1. Output function.
2. Thread for ON/OFF command.
3. Thread for parameters transmission.
4. Thread for data logging.