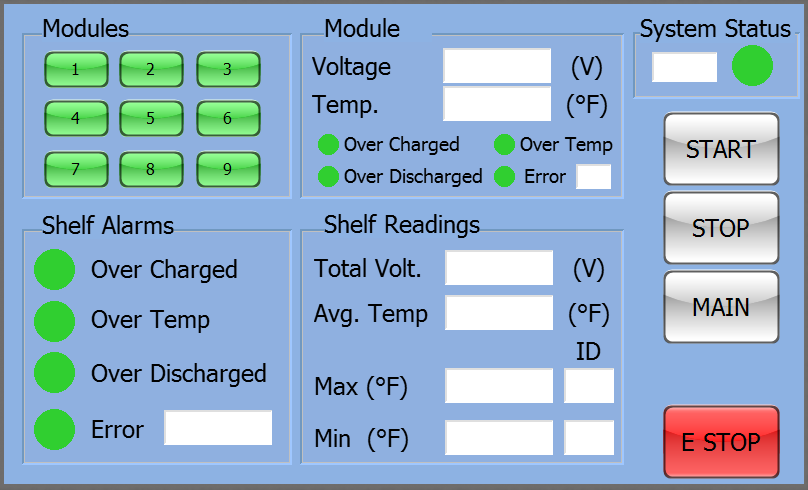


Overview Screen

* System Status - Shows received status from the converter
* System Mode - Allows the user to select the operating mode
* Relay Status is simply an LED
  + Red – Open
  + Green – Closed
  + Orange – Fault/Alarm
* Number of Discharges – Keeps track of the number of discharges
* Readings – Displays values reported by the converter
  + Bus Voltage Set Point
  + Actual DC Bus Voltage
  + Actual ESD BUS Voltage
  + Actual Source Current
  + Actual Load Current
  + Actual Converter (DC) Current
  + Actual ESD Current
* Start Button – sends the command to start the system
* Stop Button – Sends the command to stop the system
* Shelf Button – Goes to the “Shelf” screen and show shelf status
  + Green – No Alarms/Errors
  + Red – Either shelf alarm/error, or single module alarm/error
* Emergency Stop – Obvious and “out of the way”
* Temperatures – Shows the 8 temperatures reported by the converter



Shelf Screen

* Modules – Allows for quick selecting information about a module
  + Green – No alarms/errors
  + Red – Alarm/error
* Module #
  + Shows specifics for the selected module
* Shelf Alarms – Shows status of the various alarms and error codes reported by the shelf
* System Status with Hex code and indication LED for quick status assessment
  + Green – “On”
  + Gray – “Standby”
* Shelf Readings – Shows various readings received from the shelf
* Emergency Stop added to form as well

**Basic Flow for the Touchscreen GUI**

**Start Up**

- Mount files

- Load index/linker files

- Init screen

- Orientation

- Enable touch

- Init Comms

- Setup comm pins 7 (Tx) and 8 (Rx)

- Set up comms Tx/Rx buffers (256 Bytes)

- Draw Logo screen (1.5 secs)

**Enter Main Loop**

- Send commands based on which screen user is on

- Every "refresh"

- Converter Status (TS -> BMS)

- Overall Shelf Screen

- Converter Status (TS -> BMS/ProD -> Converter)

- Bus Voltage Set Point

- Bus Voltage (DC) Actual

- Bus Voltage (ESD) Actual

- Actual Source Current

- Actual Load Current

- Actual Converter DC Current

- Actual ESD Current

- Temps (0 - 7)

- Shelf Status (TS -> BMS -> Master Controllers)

- Voltages

- Temps

- Alarms/Errors

- Shelf Screen

- Shelf Readings (TS -> BMS -> Master Controllers)

- Total Voltage

- Average Temperature

- Max Temp and Module ID

- Min Temp and Module ID

- Alarms/Errors

- Selected Module Readings (TS -> BMS -> Master Controllers)

- Total Voltage

- Temperature

- Alarms/Errors

- Processes any received data based on which screen user is on

- Receive readings/updates -> Print to screen

- Check for touchscreen presses based on which screen user is on