DSG Hall A LAPPD Meeting Minutes

Date: February 27, 2024
Time: 11:00 PM – 12:00 PM

Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, George Jacobs, Tyler Lemon, Simona Malace, and Marc McMullen

1. **Gantry upport Design**
    Marc McMullen
    1. Discussed changes to gantry support NX12 model
       - L-profiles added to the base of each leg of the support to ensure stability and proper attachment to the base of the LAPPD black box
       - L-profiles allow variation of the height of the gantry's carrier with respect to the LAPPD
    2. Ordered parts
       - Four of T-slots, 40 x 40 mm and 27.5'' long
       - 12 sets of two-hole corner brackets
    3. Once ordered parts are assembled with gantry and correct dimensions confirmed, remaining parts of the support will be ordered

2. **LED Box Design**
    Pablo Campero
    1. Completed first version of the LED box design in NX12
       - Designed LED support inside the box to hold the head of the LED and provide stability for the fiber light attachment
       - Added threads to the holes at the LED box's base; LED box will be assembled to the gantry's carrier with bolts so position adjustments can be made to achieve perpendicularity with the LAPPD window
       - Need to modify hole diameter at the base of the LED box to allow access of the LED head
    2. Confirmed that Ultimaker S7 3D printer is ready to be used
       - Will convert box NX12 .PRT file to .STL file format for printing
       - Mounts to allow the printing of the LED light support inside the box will be generated by the 3D printer software automatically; adjustments are available
       - Internal M4 threads for box will be made using soldering insertion tip and adding threaded inserts

3. **Signal Generator to Drive LED**
    Pablo Campero and Simona Malace
    1. Reviewed in-hand Agilent 33522A signal generator specifications
       - Agilent model 33522A has been discontinued; recommended replacement is a 30-MHz, 2-channel Keysight model 33522B Waveform Generator
       - Model 33522A and model 33522B have the same minimum pulse width of 16 ns
       - Keysight 33622A signal generator has a minimum pulse width of 5 ns (1-ps resolution), but costs more than Keysight 33522B by ~$4000

- Required minimum square pulse width to drive the LED is 10–20 ns
- Sent specifications of available options; Simona Malace decided on Keysight 33522B