**Customer DLPC230 and TPS99000 Fresh PCB Start Up Procedure**

1. **REFERENCE DOCUMENTATION**
   * 1. 2515618: DLP553x EVM formatter board schematic
     2. 2515620: DLP553x EVM formatter board BOM
     3. DLPU067: DLP5531-Q1 Electronics EVM User Guide
2. **EQUIPMENT SETUP**
   1. Install DLP Auto Control Programmed installed on computer
   2. Install Totalphase cheetah driver installed on computer
   3. Install edid\_pgm.exe program installed on computer
3. **PROCEDURE**
   1. Program EDID PROM if using HDMI (does not require board to be powered)
      1. Plug Devasys I2C to HDMI connector adapter into Devasys I2C adapter J4
      2. Connect Devasys I2C adapter to formatter uHDMI connector with HDMI cable (type A/D)
      3. Connect USB cable from computer to Devasys I2C adapter
      4. Program EDID by executing "edid\_pgm.exe DLPC230\_EVM.bin" (note that board does not need to be powered).
      5. Disconnect HDMI cable from Devasys I2C adapter
   2. Install DMD in DMD socket
   3. Connect cables
      1. Connect input power cable from external 12V power supply to formatter J11
      2. Connect SPI cable from Cheetah adapter to formatter J2
   4. Connect with Control Program
      1. Turn on external 12V supply
      2. Move PROJON switch (SW4) to the on positions (switch pointing away from the board)
      3. Start DLP Control Program.
         1. On the Connection tab set the Host SPI communication options to Mode 0, 3000KHz, Host CRC.
         2. Select the cheetah adaptor from the SPI adapter list and click on connect.
   5. Program default flash file available on mysecure resource site on TI.com. Requires special privileges from TI applications engineer.
      1. Go to the Flash Programming tab of the Control Program
      2. Select the default flash binary and click on the Program and Verify Flash Memory button. Verify Flash programs successfully
   6. Check default image is displayed
      1. After programming completes move the PROJON switch (SW4) to the off and then back to the on position.
      2. Check that the DLP splash screen is displayed on the DMD
      3. In control program go to the Error History tab and check that there are no errors
      4. Check that the two green LEDs near SW4 are on and the red LED is off
   7. Configuration dipswitches
      1. Hold in bootloader dipswitch
         1. Power off formatter
         2. Slide dipswitch SW3 to the on position
         3. Power on formatter
         4. If still connected, disconnect control program
         5. Connect with Control program and check that the mode at the top is "bootloader"
         6. Power off formatter
         7. Slide dipswitch SW3 to the off position
      2. Checksum & SPI mode dipswitchs
         1. Slide dipswitch SW2 pos 1 and 3 to the on position
         2. Power on formatter
         3. If still connected, disconnect control program
         4. In the DLP Control Program Connection tab disconnect adapter. Set SPI communication options to Mode 1, 3000KHz, Host Checksum. Select the cheetah adpator from the SPI adapter list and click on connect.
         5. Check that Control program communication to formatter is good (read error history a few times)
         6. In the DLP Control Program Connection tab disconnect adapter. Set SPI communication options to Mode 0, 3000KHz, Host CRC.
         7. Power off formatter
         8. Slide dipswitch SW2 pos 1 and 3 to the off position
      3. Host SPI/I2C and I2C address dipswitches
         1. Slide dipswitch SW2 pos 2 to the on position
         2. Plug Devasys I2C cable from Devasys to formatter connector J1
         3. Power on formatter
         4. In the DLP GUI Program Connection tab set DLPC230 Host to I2C. Set I2C communication options to 400KHz, address 36, CRC. Select the Devasys from the adaptor list and click on connect.
         5. Check that Control program communication to formatter is good (read short status 4-5 times)
         6. Power off formatter
         7. Slide dipswitch SW2 pos 2 to the off position
   8. HUD operation (skip for HL EVM DLP006)
      1. Connect formatter to HUD optics (optional)
      2. Connect photodiode cable from optics to formatter J5
      3. Connect RGB thermistor cable from optics to formatter J9
      4. Connect control flex from HUD driver board to formatter J8
      5. Connect SPI cheetah cable to formatter J2
      6. Connect formatter power cable to HUD driver (J11 on formatter)
      7. Power 12V power to HUD driver
      8. Check that DLP splash screen is displayed
      9. Check that there are no errors on the error history tab
      10. On the Control Program ADC tab read the ADC measurements
      11. Check that RGB thermistor measurements are not 0 or 1.6V
   9. Final Dipswitch Setting
      1. If not already set to "OFF", set all the switches on dipswitches SW1, SW2, SW3 to "OFF" position
   10. Loop back to 3.1 and continue until all units have been tested / programmed.