TI DLPC900 Two Controller - Port Configuration Issue

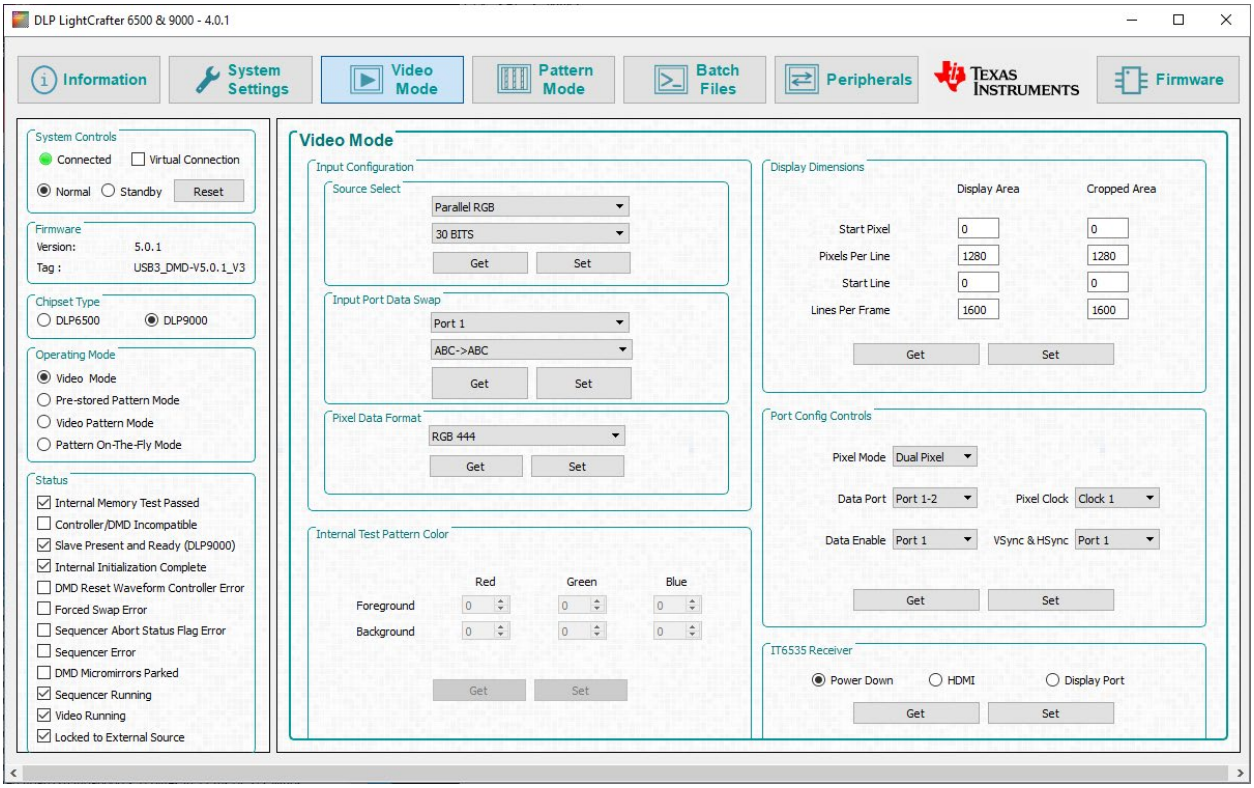
October 9, 2020

Hardware: BLI designed DLPC900 Two Controller PCA. Display Port and HDMI removed and USB3 is used as the imaging interface to the DLPC900s.

Background:

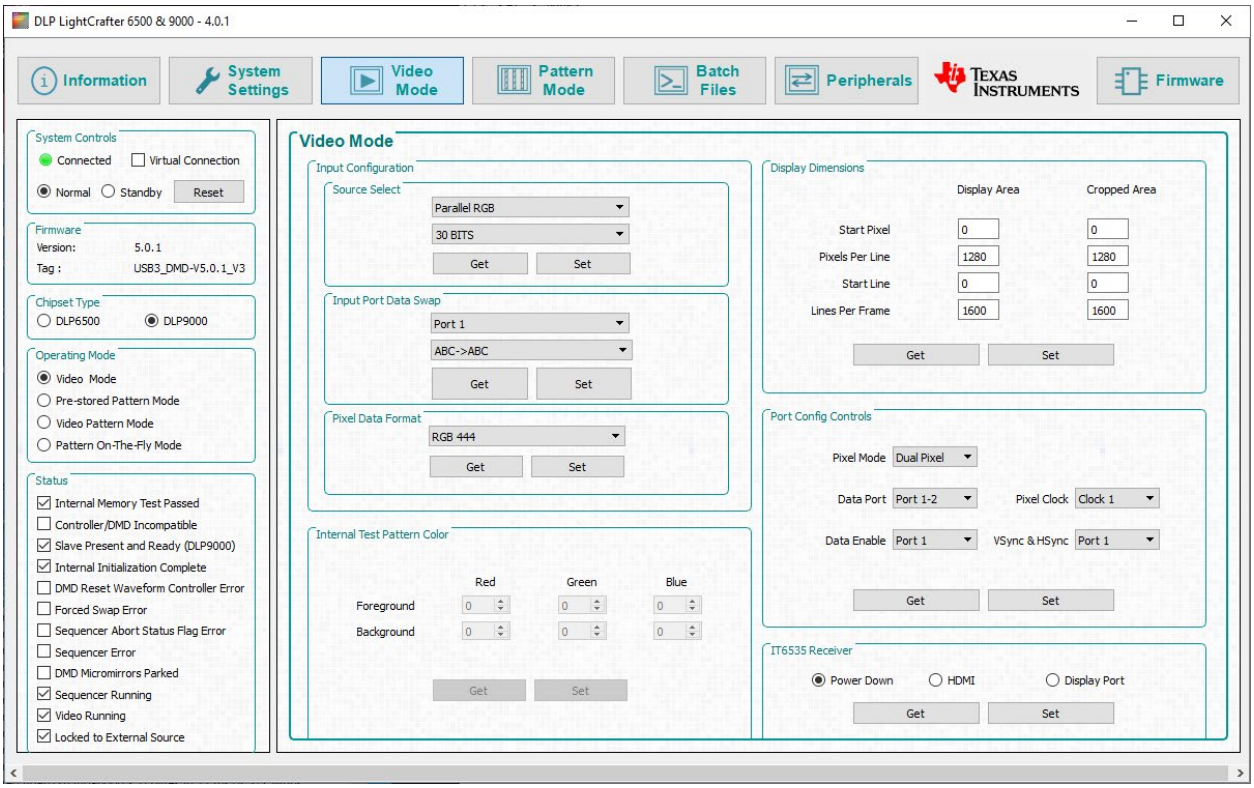
We can project images but occasionally (about once every three days) the image gets squeezed into the top or bottom half of the DMD as shown:

Normal Operation:



Once every three days:

There is no way to detect this state:



We have stumbled onto a way to re-create the problem:

1) While imaging, send the following two commands:
2) Send a CLK_SEL : 0xD0 (We know this is an invalid command) <- DMD goes blank
3) Send a CLK_SEL : 0x02 <- DMD goes into weird state

We have been able to recover by sending the following:

1) Sending one additional CLK_SEL : 0x02 <- DMD returns to normal

Questions for TI:

1) How can we detect that the DLPC900 is in this weird state?
2) What causes this, and is there a way to prevent this state?