Video Board Test Results-VB2

1. Attach video board, do smoke test, measure basic voltages (same as driver).  Measure on boards and at connectors.

Table 1: Power Supply Voltages

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | +5V | +15V | -15V | +24V |
| Run LSE | 0.347 A | 0.102A | 0.094 A | 0.001 A |

1. Set the DAC’s using vdm60f.fpg (most likely already done as part of the driver board testing). Record the set values from vdm60f and calculate the expected values in Table

Table 2: DAC Set values and Expected Output Voltages

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC SET | Set (Hex) | Set (Dec) | /4096 | Expected Value |
| OG | 0940 | 2368 | .578125 | 1.908 |
| IG1 | 06FB | 1787 | 0.436279296875 | 1.440 |
| IG2 | 0730 | 1840 | 0.44921875 | 1.482421875 |
| SCP | 0CD9 | 3289 | 0.802978515625 | 2.6498291015625 |
| RD | 0CC4 | 3268 | 0.7978515625 | 2.63291015625 |
| BS | 0000 | 0 | 0 | 0 |
| SUB | 0ED8 | 3800 | 0.927734375 | 3.0615234375 |
| DR-A | 0CDE | 3294 | 0.80419921875 | 2.653857421875 |
| DR-B | 0CDE | 3294 | 0.80419921875 | 2.653857421875 |
| DR-C | 0CDE | 3294 | 0.80419921875 | 2.653857421875 |
| DR-D | 0CDE | 3294 | 0.80419921875 | 2.653857421875 |

1. Check DACs: Measure voltage of each output of the DACs.  Value should be within 1% TBR of expected values.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| REF | 3.310 | 3.306 | 3.304 | 3.304 |
| OG | 1.905 | 1.922 | 1.909 | 1.881 |
| IG1 | 1.433 | 1.448 | 1.458 | 1.449 |
| IG2 | 1.495 | 1.473 | 1.486 | 1.494 |
| SCP | 2.655 | 2.659 | 2.652 | 2.666 |
| RD | 2.620 | 2.649 | 2.628 | 2.652 |
| BS | 0.000 | 0.008 | 0.000 | 0.002 |
| SUB | 3.055 | 3.076 | 3.049 | 3.073 |
| DR-A | 2.669 | 2.655 | 2.656 | 2.644 |
| DR-B | 2.665 | 2.660 | 2.683 | 2.674 |
| DR-C | 2.655 | 2.658 | 2.632 | 2.662 |
| DR-D | 2.658 | 2.667 | 2.638 | 2.682 |

1. Measure to actual voltages corresponding to each of the parameters above and record in Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| OG | -1.094 | -1.027 | -1.057 | -1.187 |
| IG1 | -2.821 | -2.757 | -2.715 | -2.753 |
| IG2 | -2.596 | -2.673 | -2.629 | -2.567 |
| SCP | 12.14 | 12.11 | 12.06 | 12.19 |
| RD | 11.89 | 12.09 | 12.01 | 11.98 |
| BS | 0.003 | 0.011 | 0.003 | 0.003 |
| SUB | -44.74 | -44.74 | -44.73 | -44.73 |
| DR-A | 19.94 | 20.12 | 20.05 | 20.04 |
| DR-B | 19.91 | 20.19 | 20.08 | 20.01 |
| DR-C | 19.87 | 20.08 | 19.93 | 20.02 |
| DR-D | 19.88 | 20.08 | 20.04 | 19.96 |

1. Using the LSE, query each of the housekeeping values for each of the video board voltages and record below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| OG | -1.13 | -0.99 | -1.05 | -1.16 |
| IG1 | -2.81 | -2.74 | -2.71 | -2.72 |
| IG2 | -2.57 | -2.65 | -2.62 | -2.53 |
| SCP | 12.17 | 12.13 | 12.05 | 12.15 |
| RD | 11.82 | 12.04 | 11.95 | 11.94 |
| BS | 0 | 0 | -0.01 | -0.01 |
| SUB | -44.16 | -44.88 | -44.56 | -44.44 |
| DR-A | 20.21 | 20.04 | 19.97 | 20.02 |
| DR-B | 20.15 | 20.33 | 20.26 | 20.26 |
| DR-C | 20.17 | 20.26 | 20.09 | 20.17 |
| DR-D | 20.08 | 20.13 | 20.06 | 20.14 |

1. Use a scope on each of the A/D signals and verify the proper function of each of the signal and record the proper functioning below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SIG | CCD1 | CCD2 | CCD3 | CCD4 |
| SCLK | Y | Y | Y | Y |
| CNV | Y | Y | Y | Y |
| SDO-A | Y | Y | Y | Y |
| SDO-B | Y | Y | Y | Y |
| SDO-C | Y | Y | Y | Y |
| SDO-D | Y | Y | Y | Y |