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 | 3.305 | 3.306 | 3.311 | 3.308 |
| OG | 1.905 | 1.904 | 1.893 | 1.941 |
| IG1 | 1.446 | 1.430 | 1.453 | 1.427 |
| IG2 | 1.483 | 1.477 | 1.503 | 1.479 |
| SCP | 2.654 | 2.641 | 2.660 | 2.630 |
| RD | 2.634 | 2.637 | 2.633 | 2.657 |
| BS | 0.004 | 0.014 | 0.012 | 0.000 |
| SUB | 3.067 | 3.064 | 3.068 | 3.054 |
| DR-A | 2.657 | 2.664 | 2.653 | 2.660 |
| DR-B | 2.650 | 2.655 | 2.650 | 2.665 |
| DR-C | 2.671 | 2.659 | 2.662 | 2.669 |
| DR-D | 2.652 | 2.650 | 2.673 | 2.656 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| OG | -1.100 | -1.083 | -1.140 | 0.964 |
| IG1 | -2.753 | -2.753 | -2.751 | -2.829 |
| IG2 | -2.615 | -2.615 | -2.563 | -2.657 |
| SCP | 12.11 | 12.11 | 12.10 | 12.00 |
| RD | 11.98 | 12.03 | 11.99 | 12.11 |
| BS | 0.006 | 0.020 | 0.015 | 0.004 |
| SUB | -44.71 | -44.70 | -44.70 | -44.70 |
| DR-A | 19.95 | 20.02 | 20.02 | 20.07 |
| DR-B | 19.93 | 19.95 | 19.99 | 20.15 |
| DR-C | 20.01 | 19.97 | 20.00 | 20.13 |
| DR-D | 19.94 | 19.98 | 20.01 | 20.11 |

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 | -1.20 | -1.08 | -0.96 |
| IG1 | -2.83 | -2.88 | -2.71 | -2.82 |
| IG2 | -2.71 | -2.60 | -2.55 | -2.78 |
| SCP | 12.08 | 12.07 | 12.11 | 11.90 |
| RD | 11.98 | 11.89 | 11.97 | 11.97 |
| BS | -0.03 | -0.10 | -0.17 | 0.04 |
| SUB | -44.24 | -44.52 | -44.48 | -44.88 |
| DR-A | 20.17 | 20.09 | 19.94 | 19.85 |
| DR-B | 20.00 | 20.01 | 19.84 | 20.06 |
| DR-C | 19.93 | 20.22 | 20.18 | 20.10 |
| DR-D | 20.13 | 20.09 | 20.22 | 20.22 |

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 |