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 | 3.306 | 3.306 | 3.307 | 3.306 |
| OG | 1.910 | 1.907 | 1.898 | 1.919 |
| IG1 | 1.441 | 1.448 | 1.427 | 1.448 |
| IG2 | 1.473 | 1.513 | 1.497 | 1.472 |
| SCP | 2.670 | 2.648 | 2.658 | 2.638 |
| RD | 2.657 | 2.635 | 2.623 | 2.632 |
| BS | 0.024 | 0.008 | 0.000 | 0.010 |
| SUB | 3.067 | 3.081 | 3.069 | 3.084 |
| DR-A | 2.662 | 2.657 | 2.658 | 2.649 |
| DR-B | 2.650 | 2.670 | 2.651 | 2.663 |
| DR-C | 2.639 | 2.669 | 2.642 | 2.661 |
| DR-D | 2.664 | 2.648 | 2.675 | 2.671 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| OG | -1.069 | -1.093 | -1.112 | -1.048 |
| IG1 | -2.771 | -2.735 | -2.826 | -2.728 |
| IG2 | -2.654 | -2.497 | -2.564 | -2.660 |
| SCP | 12.17 | 12.11 | 12.12 | 11.99 |
| RD | 12.08 | 12.03 | 12.00 | 12.03 |
| BS | 0.033 | 0.009 | 0.004 | 0.012 |
| SUB | -44.72 | -44.72 | -44.71 | -44.71 |
| DR-A | 20.17 | 20.06 | 19.98 | 20.03 |
| DR-B | 20.11 | 20.02 | 19.93 | 20.02 |
| DR-C | 19.99 | 20.02 | 19.98 | 20.07 |
| DR-D | 20.12 | 20.02 | 20.01 | 20.07 |

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 | -1.09 | -1.01 | -1.08 | -1.01 |
| IG1 | -2.66 | -2.69 | -2.73 | -2.67 |
| IG2 | -2.54 | -2.45 | -2.51 | -2.65 |
| SCP | 12.23 | 12.17 | 12.09 | 11.96 |
| RD | 12.05 | 11.99 | 11.99 | 12.06 |
| BS | 0.05 | 0.01 | 0.12 | 0.02 |
| SUB | -44.32 | -44.40 | -44.88 | -44.12 |
| DR-A | 20.49 | 20.27 | 20.17 | 20.30 |
| DR-B | 20.21 | 20.25 | 20.21 | 20.22 |
| DR-C | 20.17 | 20.09 | 20.17 | 20.27 |
| DR-D | 20.22 | 20.08 | 20.21 | 20.31 |

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 |