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 | 0.103A | 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 | 3.303 | 3.303 | 3.312 |
| OG | 1.194 | 1.917 | 1.923 | 1.927 |
| IG1 | 1.445 | 1.436 | 1.430 | 1.445 |
| IG2 | 1.486 | 1.497 | 1.488 | 1.485 |
| SCP | 2.656 | 2.653 | 2.633 | 2.653 |
| RD | 2.665 | 2.624 | 2.621 | 2.642 |
| BS | 0.000 | 0.007 | 0.000 | 0.021 |
| SUB | 3.059 | 3.074 | 3.065 | 3.062 |
| DR-A | 2.660 | 2.647 | 2.644 | 2.677 |
| DR-B | 2.673 | 2.657 | 2.661 | 2.635 |
| DR-C | 2.663 | 2.652 | 2.660 | 2.674 |
| DR-D | 2.641 | 2.654 | 2.659 | 2.645 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| OG | -1.068 | -1.039 | -1.012 | -1.013 |
| IG1 | -2.752 | -2.789 | -2.833 | -2.767 |
| IG2 | -2.607 | -2.560 | -2.596 | 2.629 |
| SCP | 12.11 | 12.08 | 12.04 | 12.09 |
| RD | 12.05 | 11.97 | 11.93 | 12.04 |
| BS | 0.003 | 0.008 | 0.004 | 0.030 |
| SUB | -44.72 | -44.72 | -44.71 | -44.71 |
| DR-A | 20.02 | 19.94 | 19.92 | 20.08 |
| DR-B | 20.12 | 20.00 | 19.90 | 19.91 |
| DR-C | 20.02 | 19.99 | 19.92 | 20.03 |
| DR-D | 19.99 | 19.93 | 19.97 | 19.94 |

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 | -1.08 | -1.09 | -0.98 | -1.08 |
| IG1 | -2.68 | -2.79 | -2.87 | -2.75 |
| IG2 | -2.57 | -2.53 | -2.58 | -2.68 |
| SCP | 12.10 | 12.09 | 11.89 | 12.10 |
| RD | 12.05 | 11.89 | 11.94 | 11.96 |
| BS | 0.00 | -0.09 | -0.03 | 0.05 |
| SUB | -44.44 | -44.44 | -44.76 | -44.60 |
| DR-A | 20.33 | 20.35 | 20.08 | 20.09 |
| DR-B | 20.09 | 20.08 | 20.08 | 20.04 |
| DR-C | 19.92 | 20.05 | 19.98 | 20.06 |
| DR-D | 20.19 | 19.93 | 20.22 | 19.93 |

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 |

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