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 | 3.308 | 3.302 | 3.303 | 3.308 |
| OG | 1.919 | 1.917 | 1.901 | 1.911 |
| IG1 | 1.455 | 1.448 | 1.430 | 1.457 |
| IG2 | 1.489 | 1.468 | 1.488 | 1.492 |
| SCP | 2.671 | 2.655 | 2.660 | 2.648 |
| RD | 2.635 | 2.613 | 2.629 | 2.631 |
| BS | 0.008 | 0.003 | 0.017 | 0.000 |
| SUB | 3.060 | 3.047 | 3.067 | 3.082 |
| DR-A | 2.661 | 2.668 | 2.658 | 2.671 |
| DR-B | 2.640 | 2.659 | 2.659 | 2.675 |
| DR-C | 2.649 | 2.652 | 2.678 | 2.668 |
| DR-D | 2.656 | 2.637 | 2.666 | 2.668 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| OG | -1.032 | -1.030 | -1.111 | -1.087 |
| IG1 | -2.735 | -2.719 | -2.786 | -2.734 |
| IG2 | -2.624 | -2.663 | -2.596 | -2.598 |
| SCP | 12.16 | 12.14 | 12.15 | 12.11 |
| RD | 12.01 | 11.91 | 11.99 | 11.96 |
| BS | 0.010 | 0.004 | 0.024 | 0.003 |
| SUB | -44.72 | -44.71 | -44.71 | -44.68 |
| DR-A | 19.96 | 20.02 | 19.96 | 19.94 |
| DR-B | 19.91 | 19.98 | 19.93 | 20.03 |
| DR-C | 19.94 | 19.89 | 19.99 | 20.02 |
| DR-D | 19.97 | 19.85 | 20.11 | 19.97 |

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 | -1.06 | -1.02 | -1.10 | -1.07 |
| IG1 | -2.71 | -2.69 | -2.78 | -2.71 |
| IG2 | -2.57 | -2.64 | -2.57 | -2.57 |
| SCP | 12.13 | 12.07 | 12.13 | 12.07 |
| RD | 11.95 | 11.85 | 11.90 | 11.93 |
| BS | -0.01 | 0.00 | 0.02 | -0.01 |
| SUB | -44.04 | -44.52 | -44.60 | -44.72 |
| DR-A | 20.18 | 19.96 | 20.06 | 20.05 |
| DR-B | 20.19 | 20.05 | 20.00 | 19.96 |
| DR-C | 20.05 | 20.01 | 20.08 | 20.27 |
| DR-D | 19.98 | 20.10 | 20.19 | 20.09 |

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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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