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 | 3.308 | 3.304 | 3.309 |
| OG | 1.913 | 1.914 | 1.908 | 1.913 |
| IG1 | 1.440 | 1.440 | 1.443 | 1.441 |
| IG2 | 1.480 | 1.496 | 1.491 | 1.481 |
| SCP | 2.665 | 23.665 | 2.638 | 2.640 |
| RD | 2.630 | 2.632 | 2.634 | 2.627 |
| BS | 0.011 | 0.000 | 0.007 | 0.000 |
| SUB | 3.077 | 3.079 | 3.055 | 3.076 |
| DR-A | 2.648 | 2.650 | 2.665 | 2.661 |
| DR-B | 2.655 | 2.674 | 2.658 | 2.640 |
| DR-C | 2.658 | 2.656 | 2.647 | 2.666 |
| DR-D | 2.665 | 2.663 | 2.660 | 2.648 |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DAC | CCD1 | CCD2 | CCD3 | CCD4 |
| OG | -1.057 | -1.080 | -1.089 | -1.073 |
| IG1 | -2.775 | -2.761 | -2.766 | -2.785 |
| IG2 | -2.639 | -2.586 | -2.583 | -2.642 |
| SCP | 12.03 | 12.13 | 12.04 | 12.01 |
| RD | 12.00 | 11.99 | 11.99 | 11.94 |
| BS | 0.015 | 0.003 | 0.011 | 0.003 |
| SUB | -44.71 | -44.70 | -44.70 | -44.70 |
| DR-A | 19.98 | 19.94 | 19.94 | 19.98 |
| DR-B | 20.05 | 20.04 | 19.96 | 19.89 |
| DR-C | 19.98 | 19.96 | 19.94 | 20.01 |
| DR-D | 19.99 | 20.05 | 19.95 | 19.92 |

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 | -1.18 | -1.06 | -1.05 |
| IG1 | -2.87 | -2.72 | -2.86 | -2.77 |
| IG2 | -2.63 | -2.66 | -2.56 | -2.73 |
| SCP | 12.07 | 12.15 | 11.97 | 11.97 |
| RD | 11.85 | 11.97 | 11.96 | 11.77 |
| BS | -0.03 | 0.01 | -0.14 | 0.03 |
| SUB | -44.16 | -44.48 | -44.96 | -45.32 |
| DR-A | 20.25 | 20.21 | 19.92 | 20.10 |
| DR-B | 20.11 | 20.11 | 20.06 | 20.15 |
| DR-C | 19.82 | 20.05 | 20.02 | 19.85 |
| DR-D | 20.15 | 20.05 | 20.00 | 19.84 |

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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