

DES 12 Channel Transition Board - Functional Tests: Revision 2.0

Stage 1. Preparation of documentation and configuration settings - Table 1.

Board Part Number	P23	Board Serial Number	23
Date Of Tests	April, 2010	Name Of Person Testing	S. Holm
Suggested Filename To Save	CCDTransition_12Ch_REPORT_BOARD#.xls		

Stage 2. Board Dimensions and Grounding Options - Table 2.

Board Length	OK	J5 connection	(-15v) or (-5v)
Board Width	OK	J6 connection	(+15v) or (+5v)
Board Thickness	OK	J1, J3, J4, J8, J9, J11 Connection	(Front Panel Ground) or Agnd
Board Outline	OK	Video Channel Options	Straight through

Stage 4. Power plane short test - Table 3.

Short test to ground		
Supply Name	Impedance to ground	Test Point
+5VA' in	32k	F11
-5VA' in	23k	F12
+15VA' in	27k	F13
-15VA' in	23k	F14
-28VA' in	3M	F16
+48VA' in	26k	F15
+5VA' out	32k	F6
-5VA' out	24k	F7
+15VA' out	23k	F9
-15VA' out	27k	F8
-28VA' out	300k	F10
+48VA' onboard	26k	F5
Neg. Preamp Power	23k	F1
Neg. Preamp Power	23k	F2
Pos. Preamp Power	27k	F3
Pos. Preamp Power	27k	F4

Stage 6. Power Consumption - Table 4.

Supply Name	Power Supply Consumption	
	Measured Voltage on PCB	Measured Current on power supply
+5VA' in	5.21	0.003
-5VA' in	-5.19	0.003
+15VA' in	15.19	0.012
-15VA' in	-15.22	0.031
-28VA' in	-28.00	0.007
+48VA' in	47.90	0.0375
+5VA' out	5.21	N/A
-5VA' out	-5.19	N/A
+15VA' out	15.19	N/A
-15VA' out	-15.22	N/A
-28VA' out	-28.00	N/A
+48VA' out	47.90	N/A

Power Dissipation:
2.7 Watts
~2.5 watts +/- 5%

Stage 8. Bias Voltage testing - Table 5.

Bias Voltage Test Data DAC Value 50%		
Signal	volts	Fanout Brd
Vru 0	-5.64	BIAS 3
Vru 1	-5.64	BIAS 4
Vru 2	-5.64	BIAS 5
Vru 3	-5.64	BIAS 6
Vru 4	-5.64	BIAS 7
Vru 5	-5.64	BIAS 8
Vru 6	xxx	BIAS 9
Vru 7	xxx	BIAS 10
Vri 0	-5.64	BIAS 11
Vri 1	-5.64	BIAS 12
Vri 2	-5.64	BIAS 13
Vri 3	-5.64	BIAS 14
Vri 4	-5.64	BIAS 15
Vri 5	-5.64	BIAS 16
Vri 6	xxx	BIAS 17
Vri 7	xxx	BIAS 18
Vog 0	1.25	BIAS 19
Vog 1	1.25	BIAS 20
Vog 2	1.25	BIAS 21
Vog 3	1.25	BIAS 22
Vog 4	1.25	BIAS 23
Vog 5	1.25	BIAS 24
Vog 6	xxx	BIAS 25
Vog 7	xxx	BIAS 26
Vdd 0	-9.40	BIAS 27
Vdd 1	-9.40	BIAS 28
Vdd 2	-9.40	BIAS 29
Vdd 3	-9.40	BIAS 30
Vdd 4	-9.40	BIAS 21
Vdd 5	-9.40	BIAS 32
Vdd 6	xxx	BIAS 33
Vdd 7	xxx	BIAS 34

Notes and Observations

Checked for oscillations using a Agilent Oscilloscope on AC. **OK**

Stage 9. Vsub and Heater Control testing - Table 6.

Vsub Testing
DAC Value 50%

Signal	volts
Vsub1	15.02
Vsub2	15.08
Vsub3	15.13
Vsub4	15.00
Vsub5	15.04
Vsub6	15.00

RTD Testing
DAC Value 50%

Signal	Readback
RTD1	218
RTD2	248
RTD3	274
RTD4	302
RTD5	325
RTD6	350
Reference 4096	836
Reference buffered	836

Notes and Observations

RTD values within range.

Stage 10. CDS Video Channel Testing - Table 7.

TEST #1: ccdBrdTest_Setup01.mod

This setup acquires data from the ADC channels. The purpose of this test is to verify the correct operation of the ADC devices and measure the noise of the ADC channels while the inputs are grounded.

Noise Test 4

	Min Pix Value	Max Pix	Mean Pix	Std. Dev.
CH 0				
CH 1				
CH 2				
CH 3				
CH 4				
CH 5	~60k	~60k	~60k	<4
CH 6				
CH 7				
CH 8				
CH 9				
CH 10				
CH 11				

TEST #2: ccdBrdTest_Setup01.mod

This setup acquires data from the ADC channels. The purpose of this test is to verify the path of the video signal to the correct operational Front Panel output port.

	ok
CH 0	ok
CH 1	ok
CH 2	ok
CH 3	ok
CH 4	ok
CH 5	ok
CH 6	ok
CH 7	ok
CH 8	ok
CH 9	ok
CH 10	ok
CH 11	ok

Stage 11. Hot Swap Controller tests - Table 8.

HOT Swap testing

Supply Name	FB pin	On pin	Typical voltage value	
+5VA' in	R204	BP109		
	1.4	3.2	1.4v	3.1v
-5VA' in	R197	Bp108		
	-1.4	-3.2	neg 1.4v	neg 3.1v
+15VA' in	R180	Bp106		
	1.4	9.5	1.4v	9.4v
-15VA' in	R179	R181		
	-1.4	-9.5	neg 1.4v	neg 9.4v
-28VA' in	R171	R172	R170	
	-26.3	-26.5	-27.1	
	R163	Bp160		
+48VA' in	4.70	5.30	4.7	5.3