

Tower Electronics Module Stray Voltage Test

COVER SHEET

Program: GLAST

Procedure Number: LAT-DS-04097

Procedure Title: TEM SVT

Paragraph Number: 5.2

Paragraph Title: Test Procedure Instructions/Information

Controlling Document Number: CAA
LAT-DS-01646

Controlling Document Step Number: STEP 17

Unit S/N: 614


Descriptive Comment: _____

TEST READINESS REVIEW COMPLETED AND APPROVED BY THE FOLLOWING:

Test Director: [Signature] Date: 12/9/04

Quality Assurance: _____ Date: 12-9-04

Test Conductor: [Signature] Date: 12/9/04




POST TEST REVIEW COMPLETED AND APPROVED BY THE FOLLOWING:


Test Director: [Signature] Date: 12/10/04

Quality Assurance: _____ Date: 12-10-04

Test Conductor: [Signature] Date: 12/10/04




Tower Electronics Module Stray Voltage Test

TEST DATA SHEET		Unit S/N: 614	Date/Temperature: 12/19/04 / ambient	
Title: 5.2 Test Procedure Instructions/Information		Operator: LS	QA:  12.9.04	
Para	Test Equipment Description, Manufacturer	Model/LAT Number	Serial/Rev. Number	*Cal./Val. Date
5.2.3.1 - 1	Record Model/LAT number, Serial/Revision number, Calibration due dates and Validation date for all equipment used in this procedure:			
	VME Crate, Dawn VME Products	11-1011777-2119	GLAT1132	N/A
	VME, TST-STP Trans card, SLAC	LAT-DS-00999	GLAT02K	N/A
	VME SBC MVME2304 card, Motorola	MVME2304-0123	GLAT0305	N/A
	VME LCB Mezzanine card, SLAC	LAT-TD-00860	GLAT0822	N/A
	DC Power supply #1, BK Precision	1697	GLAT1485	8/05
	28 Volt supply cable, SLAC	LAT-DS-03246	N/A	
	PS Control cable, SLAC	LAT-DS-04831	GLAT1420	9/15
	TEM to GASU cable, SLAC	LAT-DS-02106	GLAT1421	9/15
	LCB Transition board cable, SLAC	LAT-DS-03247	GLAT1314	
	CAT5 Ethernet cable	TRD855PL-50	N/A	
	RS-232 Cable	TDC003-7 (RECO98M conn)	N/A	
	Breakout Box Assembly, 78-Pin Conn, SLAC	LAT-DS-03580	GLAT1390	9/05
	Connector Saver (51 pin), Glenair	MWDM2L-51- USP1	N/A	
	Connector Saver (69 pin), SLAC	LAT-DS-04724	N/A	
	Connector Saver (78 pin), L Com	DGBH78MF	N/A	
	** Digital Multimeter, Fluke/Meterman	87-III/38XR	GLA00004	11/3/05
	Automatic tester cable, 51 pin Y, SLAC	LAT-DS-04627	GLAT1422	9/15
	Automatic tester cable, 69 pin Y, SLAC	LAT-DS-04628	GLAT1418	9/15
	Automatic tester cable, 78 pin Y, SLAC	LAT-DS-04613	GLAT1417	9/15
	Automatic 78 to 78 cable, SLAC	LAT-DS-04629	GLAT1417	9/15
	HP Data Logger, HP	34970A	GLAT1512	6/05
	BOC JC Cable, SLAC	LAT-DS-04275	N/A	
	BOC JI Cable, SLAC	LAT-DS-04302	N/A	
	BOC JT Cable, SLAC	LAT-DS-04273	N/A	

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Tower Electronics Module Stray Voltage Test

TEST DATA SHEET		Unit S/N: 614	Date/Temperature: 12/2/04 AMO	
Title: 5.2 Test Procedure Instructions/Information		Operator: LS	QA: 	
Para	Test Equipment Description, Manufacturer	Model/LAT Number	Serial/Rev. Number	*Cal./Val. Date
5.2.3.1 - 1	Record Model/LAT number, Serial/Revision number, Calibration due dates and Validation date for all equipment used in this procedure:			
	Pomona Jumper, Pomona	P-12-0	N/A	
	FEM - TPS 78 pin Cable, SLAC	LAT-DS-04629		
	DATA COGGER VOLTAGE plug IN	LAT-DS-04629	LAT1341	04/05
	——— // ———	——— // ———	ECAT1390	04/05

* This column is for recording the calibration due date for a given piece of equipment or the date that EGSE was validated.

** Do not substitute other DMM's

CAUTION: Fluke 87-III and Fluke 87-V are not the same, Fluke 87-V is not allowed.

All test hardware validated on 12/8/04

Tower Electronics Module Stray Voltage Test

TEST DATA SHEET		Unit S/N: <i>612</i>	Date/Temperature: <i>12/9/04 / ambient</i>
Title: 5.2 Test Procedure Instructions/Information		Operator: <i>L.S</i>	QA: LAT 10 QA <i>12.9.04</i>
Para	Title	Print Name	Signature
5.2.4 - 1	Record names of all personnel that take part in the test/operation:		
	<i>electronic engineer</i>	<i>С.С. АПОЗНИКА</i>	<i>12/9/04</i>

Tower Electronics Module Stray Voltage Test

COVER SHEET

Program: GLAST

Procedure Number: LAT-TD-04097

Procedure Title: TEM SVT

Paragraph Number: 5.4

Paragraph Title: Automated SVT Testing

Controlling Document Number: _____

Controlling Document Step Number: CAA LAT-DS-01646

Unit S/N: 614

Descriptive Comment: _____

TEST READINESS REVIEW COMPLETED AND APPROVED BY THE FOLLOWING:

Test Director: [Signature] Date: 12/9/04
Quality Assurance: _____ Date: 12.9.04
Test Conductor: [Signature] Date: 12/9/04




POST TEST REVIEW COMPLETED AND APPROVED BY THE FOLLOWING:

Test Director: [Signature] Date: 12/10/04
Quality Assurance: _____ Date: 12.10.04
Test Conductor: [Signature] Date: 12/10/04




Tower Electronics Module Stray Voltage Test

TEST DATA SHEET		Unit S/N: 614	Date: 12/9/04	
Title: 5.4 Automated SVT Testing		Operator: LS	QA: 	
Step	Description	Limits	Unit	Data
5.4.1	Automated Pre-Operation Verifications			
-1	Notify QAE.	OK	OK/NG	OK
-2	Test Readiness Review is done.	OK	OK/NG	OK
-3	Record the EUT equipment:			
	TEM Part number	NA	NA	LAT-DS-01649-57
	TEM LAT Bay location	NA	NA	N/A
	TEM Serial number	NA	NA	614 614
	GASU Serial number	NA	NA	N/A
	GASU Part number	NA	NA	N/A
	GASU LAT Bay location	NA	NA	N/A
-4	LAT or EGSE power is off.	OFF	OFF/ON	OFF
-6	Data Logger checks are complete.	OK	OK/NG	OK
-7	Measure EUT to ground.	< 2.0	Ohms	1.1
-8	Measure equipment to ground.	< 2.0	Ohms	1.1
-9	All connector savers are installed on the flight connections.	OK	OK/NG	OK
-10	The Test Equipment and participant lists have been completed.	OK	OK/NG	OK

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Tower Electronics Module Stray Voltage Test

TEST DATA SHEET		Unit S/N: 614	Date: 12/9/04	
Title: 5.4 Automated SVT Testing		Operator: LS	QA: 	
Para.	Description	Limits	Unit	Data
5.4.2	Test Setup (JS1)			
5.4.2-2	Connect J1 per the interconnect diagram.	OK	OK/NG	OK
5.4.2-3	Connect Data Logger per the test configuration.	OK	OK/NG	OK
5.4.3	JS1 GASU Connector Checks			
5.4.3-13	Verify that the data all passed.	OK	OK/NG	OK
5.4.4	Test Setup (JC0-3 and JT0-7)			
5.4.4-1	Connect JS1 per the interconnect diagram.	OK	OK/NG	OK
5.4.5	JC0-JC3 CAL Connector Checks			
5.4.5.1-16	Verify that the data all passed.	OK	OK/NG	OK
5.4.5.2-16	Verify that the data all passed.	OK	OK/NG	OK (SPARE - 0.8V)
5.4.5.3-16	Verify that the data all passed.	OK	OK/NG	OK
5.4.5.4-16	Verify that the data all passed.	OK	OK/NG	OK
5.4.6	JT0-JT7 TKR Connector Checks			
5.4.6.1-17	Verify that the data all passed.	OK	OK/NG	OK
5.4.6.2-17	Verify that the data all passed.	OK	OK/NG	OK
5.4.6.3-17	Verify that the data all passed.	OK	OK/NG	OK
5.4.6.4-17	Verify that the data all passed.	OK	OK/NG	OK
5.4.6.5-17	Verify that the data all passed.	OK	OK/NG	OK
5.4.6.6-17	Verify that the data all passed.	OK	OK/NG	OK
5.4.6.7-17	Verify that the data all passed.	OK	OK/NG	OK
5.4.6.8-17	Verify that the data all passed.	OK	OK/NG	OK

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Channel ID	Value	Units	Alarm
101	7.51E+06	OHM	0
102	7.51E+06	OHM	0
103	7.51E+06	OHM	0
104	7.51E+06	OHM	0
105	7.51E+06	OHM	0
106	7.51E+06	OHM	0
107	7.51E+06	OHM	0
108	7.51E+06	OHM	0
109	7.51E+06	OHM	0
110	7.51E+06	OHM	0
111	7.51E+06	OHM	0
112	7.51E+06	OHM	0
113	7.51E+06	OHM	0
114	7.51E+06	OHM	0
115	7.51E+06	OHM	0
116	7.51E+06	OHM	0
117	7.51E+06	OHM	0
118	7.51E+06	OHM	0
119	7.51E+06	OHM	0
120	7.51E+06	OHM	0
121	7.51E+06	OHM	0
122	7.51E+06	OHM	0
123	7.51E+06	OHM	0
124	7.51E+06	OHM	0
125	7.51E+06	OHM	0
126	7.51E+06	OHM	0
127	7.51E+06	OHM	0
128	7.51E+06	OHM	0
129	7.51E+06	OHM	0
130	7.51E+06	OHM	0
131	7.51E+06	OHM	0
132	7.51E+06	OHM	0
133	7.51E+06	OHM	0
134	7.51E+06	OHM	0
135	7.51E+06	OHM	0
136	7.51E+06	OHM	0
137	7.51E+06	OHM	0
138	7.51E+06	OHM	0
139	7.51E+06	OHM	0
140	7.51E+06	OHM	0
201	7.51E+06	OHM	0
202	7.51E+06	OHM	0
203	7.51E+06	OHM	0
204	7.51E+06	OHM	0
205	7.51E+06	OHM	0
206	7.51E+06	OHM	0
207	7.51E+06	OHM	0
208	7.51E+06	OHM	0
209	7.51E+06	OHM	0
210	7.51E+06	OHM	0
211	7.51E+06	OHM	0

Channel ID	Value	Units	Alarm
101	9.90E+37	OHM	0
102	9.90E+37	OHM	0
103	9.90E+37	OHM	0
104	9.90E+37	OHM	0
105	9.90E+37	OHM	0
106	9.90E+37	OHM	0
107	9.90E+37	OHM	0
108	9.90E+37	OHM	0
109	9.90E+37	OHM	0
110	9.90E+37	OHM	0
111	9.90E+37	OHM	0
112	9.90E+37	OHM	0
113	9.90E+37	OHM	0
114	9.90E+37	OHM	0
115	9.90E+37	OHM	0
116	9.90E+37	OHM	0
117	9.90E+37	OHM	0
118	9.90E+37	OHM	0
119	9.90E+37	OHM	0
120	9.90E+37	OHM	0
121	9.90E+37	OHM	0
122	9.90E+37	OHM	0
123	9.90E+37	OHM	0
124	9.90E+37	OHM	0
125	9.90E+37	OHM	0
126	9.90E+37	OHM	0
127	9.90E+37	OHM	0
128	9.90E+37	OHM	0
129	9.90E+37	OHM	0
130	9.90E+37	OHM	0
131	9.90E+37	OHM	0
132	9.90E+37	OHM	0
133	9.90E+37	OHM	0
134	9.90E+37	OHM	0
135	9.90E+37	OHM	0
136	9.90E+37	OHM	0
137	9.90E+37	OHM	0
138	9.90E+37	OHM	0
139	9.90E+37	OHM	0
140	9.90E+37	OHM	0
201	9.90E+37	OHM	0
202	9.90E+37	OHM	0
203	9.90E+37	OHM	0
204	9.90E+37	OHM	0
205	9.90E+37	OHM	0
206	9.90E+37	OHM	0
207	9.90E+37	OHM	0
208	9.90E+37	OHM	0
209	9.90E+37	OHM	0
210	9.90E+37	OHM	0
211	9.90E+37	OHM	0

Channel ID	Value	Units	Alarm
101	3.35E+00	VDC	0
102	3.35E+00	VDC	0
103	3.28E+00	VDC	0
104	3.28E+00	VDC	0
105	3.32E+00	VDC	0
106	3.32E+00	VDC	0
107	3.34E+00	VDC	0
108	3.34E+00	VDC	0
109	3.22E+00	VDC	0
110	3.21E+00	VDC	0
111	2.75E+00	VDC	0
112	2.74E+00	VDC	0
113	3.34E+00	VDC	0
114	3.34E+00	VDC	0
115	3.34E+00	VDC	0
116	3.34E+00	VDC	0
117	3.29E+00	VDC	0
118	3.28E+00	VDC	0
119	3.34E+00	VDC	0
120	3.34E+00	VDC	0
121	2.59E+00	VDC	0
122	1.82E-03	VDC	0
123	2.56E+00	VDC	0
124	1.89E-03	VDC	0
125	2.54E+00	VDC	0
126	2.25E-03	VDC	0
127	2.55E+00	VDC	0
128	2.08E-03	VDC	0
129	2.58E+00	VDC	0
130	2.84E-03	VDC	0
131	2.55E+00	VDC	0
132	1.32E-03	VDC	0
133	2.57E+00	VDC	0
134	1.75E-03	VDC	0
135	2.58E+00	VDC	0
136	1.89E-01	VDC	0
137	2.57E+00	VDC	0
138	1.12E-03	VDC	0
139	2.58E+00	VDC	0
140	1.36E-03	VDC	0
201	2.52E+00	VDC	0
202	2.13E-03	VDC	0
203	2.51E+00	VDC	0
204	1.89E-03	VDC	0
205	2.51E+00	VDC	0
206	1.99E-03	VDC	0
207	2.53E+00	VDC	0
208	1.42E-03	VDC	0
209	-3.51E-02	VDC	0
210	-3.88E-06	VDC	0
211	1.09E-03	VDC	0

Channel ID	Value	Units	Alarm
101	2.10E+00	VDC	0
102	2.08E+00	VDC	0
103	2.39E+00	VDC	0
104	2.36E+00	VDC	0
105	2.08E+00	VDC	0
106	2.06E+00	VDC	0
107	2.45E+00	VDC	0
108	2.42E+00	VDC	0
109	1.26E-02	VDC	0
110	2.48E+00	VDC	0
111	3.27E-02	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	-1.29E-05	VDC	0
116	-1.68E-05	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	-2.59E-06	VDC	0
120	3.33E+00	VDC	0
121	1.59E-02	VDC	0
122	2.24E+00	VDC	0
123	2.21E+00	VDC	0
124	1.30E+00	VDC	0
125	1.12E+00	VDC	0
126	2.62E+00	VDC	0
127	2.62E+00	VDC	0
128	2.25E+00	VDC	0
129	2.23E+00	VDC	0
130	2.01E+00	VDC	0
131	1.98E+00	VDC	0
132	2.21E+00	VDC	0
133	2.18E+00	VDC	0
134	2.20E+00	VDC	0
135	2.18E+00	VDC	0
136	8.11E+00	VDC	0
137	4.14E+01	VDC	0
138	4.14E+01	VDC	0
139	8.11E+00	VDC	0
140	0.00E+00	VDC	0
201	-5.17E-06	VDC	0
202	2.30E+00	VDC	0
203	3.33E+00	VDC	0
204	2.27E+00	VDC	0
205	1.72E-02	VDC	0
206	-3.88E-06	VDC	0
207	3.33E+00	VDC	0
208	1.73E-02	VDC	0
209	-3.35E-02	VDC	0
210	1.96E+00	VDC	0
211	4.47E-01	VDC	0

Channel ID	Value	Units	Alarm
101	2.29E+00	VDC	0
102	2.27E+00	VDC	0
103	2.24E+00	VDC	0
104	2.22E+00	VDC	0
105	2.01E+00	VDC	0
106	1.99E+00	VDC	0
107	1.81E+00	VDC	0
108	1.79E+00	VDC	0
109	9.44E-05	VDC	0
110	2.48E+00	VDC	0
111	1.04E-05	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	-1.94E-05	VDC	0
116	-2.07E-05	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	-2.59E-06	VDC	0
120	3.33E+00	VDC	0
121	1.54E-02	VDC	0
122	2.24E+00	VDC	0
123	2.22E+00	VDC	0
124	1.27E+00	VDC	0
125	1.10E+00	VDC	0
126	2.63E+00	VDC	0
127	2.63E+00	VDC	0
128	2.12E+00	VDC	0
129	2.10E+00	VDC	0
130	1.82E+00	VDC	0
131	1.79E+00	VDC	0
132	2.08E+00	VDC	0
133	2.06E+00	VDC	0
134	2.28E+00	VDC	0
135	2.26E+00	VDC	0
136	1.17E+01	VDC	0
137	4.15E+01	VDC	0
138	4.15E+01	VDC	0
139	1.17E+01	VDC	0
140	0.00E+00	VDC	0
201	-1.29E-06	VDC	0
202	1.86E+00	VDC	0
203	3.33E+00	VDC	0
204	1.84E+00	VDC	0
205	1.68E-02	VDC	0
206	-1.29E-06	VDC	0
207	3.33E+00	VDC	0
208	1.69E-02	VDC	0
209	-2.79E-02	VDC	0
210	1.91E+00	VDC	0
211	5.19E-01	VDC	0

Channel ID	Value	Units	Alarm
101	1.82E+00	VDC	0
102	1.80E+00	VDC	0
103	1.98E+00	VDC	0
104	1.95E+00	VDC	0
105	1.92E+00	VDC	0
106	1.89E+00	VDC	0
107	1.77E+00	VDC	0
108	1.75E+00	VDC	0
109	1.04E-05	VDC	0
110	2.48E+00	VDC	0
111	6.45E-04	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	-7.76E-06	VDC	0
116	-6.47E-06	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	-2.59E-06	VDC	0
120	3.33E+00	VDC	0
121	1.54E-02	VDC	0
122	2.00E+00	VDC	0
123	1.97E+00	VDC	0
124	1.28E+00	VDC	0
125	1.10E+00	VDC	0
126	2.63E+00	VDC	0
127	2.63E+00	VDC	0
128	2.14E+00	VDC	0
129	2.12E+00	VDC	0
130	2.18E+00	VDC	0
131	2.16E+00	VDC	0
132	2.13E+00	VDC	0
133	2.11E+00	VDC	0
134	1.95E+00	VDC	0
135	1.93E+00	VDC	0
136	1.17E+01	VDC	0
137	4.15E+01	VDC	0
138	4.15E+01	VDC	0
139	1.17E+01	VDC	0
140	-1.29E-06	VDC	0
201	-3.88E-06	VDC	0
202	1.93E+00	VDC	0
203	3.33E+00	VDC	0
204	1.91E+00	VDC	0
205	1.69E-02	VDC	0
206	-3.88E-06	VDC	0
207	3.33E+00	VDC	0
208	1.69E-02	VDC	0
209	-2.41E-02	VDC	0
210	1.84E+00	VDC	0
211	5.04E-01	VDC	0

Channel ID	Value	Units	Alarm
101	1.89E+00	VDC	0
102	1.87E+00	VDC	0
103	2.18E+00	VDC	0
104	2.16E+00	VDC	0
105	1.98E+00	VDC	0
106	1.96E+00	VDC	0
107	2.25E+00	VDC	0
108	2.22E+00	VDC	0
109	-1.85E-04	VDC	0
110	2.48E+00	VDC	0
111	-1.89E-04	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	-9.05E-06	VDC	0
116	-9.05E-06	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	-1.29E-06	VDC	0
120	3.33E+00	VDC	0
121	1.54E-02	VDC	0
122	1.90E+00	VDC	0
123	1.87E+00	VDC	0
124	1.27E+00	VDC	0
125	1.09E+00	VDC	0
126	2.63E+00	VDC	0
127	2.63E+00	VDC	0
128	2.14E+00	VDC	0
129	2.11E+00	VDC	0
130	2.02E+00	VDC	0
131	1.99E+00	VDC	0
132	2.28E+00	VDC	0
133	2.26E+00	VDC	0
134	1.81E+00	VDC	0
135	1.78E+00	VDC	0
136	1.16E+01	VDC	0
137	4.15E+01	VDC	0
138	4.15E+01	VDC	0
139	1.16E+01	VDC	0
140	2.59E-06	VDC	0
201	-3.88E-06	VDC	0
202	2.07E+00	VDC	0
203	3.33E+00	VDC	0
204	2.04E+00	VDC	0
205	1.68E-02	VDC	0
206	-3.88E-06	VDC	0
207	3.33E+00	VDC	0
208	1.69E-02	VDC	0
209	-4.60E-02	VDC	0
210	1.90E+00	VDC	0
211	4.88E-01	VDC	0

Channel ID	Value	Units	Alarm
101	2.19E+00	VDC	0
102	2.17E+00	VDC	0
103	2.31E+00	VDC	0
104	2.29E+00	VDC	0
105	2.42E+00	VDC	0
106	2.39E+00	VDC	0
107	2.38E+00	VDC	0
108	2.36E+00	VDC	0
109	-2.06E-04	VDC	0
110	2.48E+00	VDC	0
111	-2.11E-04	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	-2.59E-06	VDC	0
116	-2.59E-06	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	-2.59E-06	VDC	0
120	3.33E+00	VDC	0
121	1.50E-02	VDC	0
122	2.46E+00	VDC	0
123	2.43E+00	VDC	0
124	1.27E+00	VDC	0
125	1.10E+00	VDC	0
126	2.62E+00	VDC	0
127	2.62E+00	VDC	0
128	2.10E+00	VDC	0
129	2.08E+00	VDC	0
130	2.21E+00	VDC	0
131	2.19E+00	VDC	0
132	2.33E+00	VDC	0
133	2.31E+00	VDC	0
134	2.39E+00	VDC	0
135	2.37E+00	VDC	0
136	1.16E+01	VDC	0
137	4.15E+01	VDC	0
138	4.15E+01	VDC	0
139	1.16E+01	VDC	0
140	0.00E+00	VDC	0
201	-3.88E-06	VDC	0
202	2.32E+00	VDC	0
203	3.33E+00	VDC	0
204	2.30E+00	VDC	0
205	1.65E-02	VDC	0
206	-5.17E-06	VDC	0
207	3.33E+00	VDC	0
208	1.64E-02	VDC	0
209	-3.24E-02	VDC	0
210	1.92E+00	VDC	0
211	4.60E-01	VDC	0

Channel ID	Value	Units	Alarm
101	2.46E+00	VDC	0
102	2.43E+00	VDC	0
103	2.49E+00	VDC	0
104	2.47E+00	VDC	0
105	2.39E+00	VDC	0
106	2.37E+00	VDC	0
107	2.62E+00	VDC	0
108	2.60E+00	VDC	0
109	2.00E-04	VDC	0
110	2.48E+00	VDC	0
111	1.89E-04	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	5.17E-06	VDC	0
116	6.47E-06	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	-2.59E-06	VDC	0
120	3.33E+00	VDC	0
121	1.56E-02	VDC	0
122	2.38E+00	VDC	0
123	2.36E+00	VDC	0
124	1.27E+00	VDC	0
125	1.09E+00	VDC	0
126	2.63E+00	VDC	0
127	2.63E+00	VDC	0
128	2.20E+00	VDC	0
129	2.18E+00	VDC	0
130	2.09E+00	VDC	0
131	2.06E+00	VDC	0
132	2.28E+00	VDC	0
133	2.26E+00	VDC	0
134	2.33E+00	VDC	0
135	2.31E+00	VDC	0
136	1.16E+01	VDC	0
137	4.15E+01	VDC	0
138	4.15E+01	VDC	0
139	1.16E+01	VDC	0
140	-1.29E-06	VDC	0
201	-5.17E-06	VDC	0
202	2.33E+00	VDC	0
203	3.33E+00	VDC	0
204	2.30E+00	VDC	0
205	1.70E-02	VDC	0
206	-5.17E-06	VDC	0
207	3.33E+00	VDC	0
208	1.71E-02	VDC	0
209	-4.35E-02	VDC	0
210	1.94E+00	VDC	0
211	4.76E-01	VDC	0

Channel ID	Value	Units	Alarm
101	2.09E+00	VDC	0
102	2.07E+00	VDC	0
103	2.11E+00	VDC	0
104	2.09E+00	VDC	0
105	2.17E+00	VDC	0
106	2.14E+00	VDC	0
107	2.28E+00	VDC	0
108	2.26E+00	VDC	0
109	1.89E-04	VDC	0
110	2.48E+00	VDC	0
111	1.86E-04	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	2.59E-06	VDC	0
116	2.59E-06	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	0.00E+00	VDC	0
120	3.33E+00	VDC	0
121	1.56E-02	VDC	0
122	2.31E+00	VDC	0
123	2.29E+00	VDC	0
124	1.28E+00	VDC	0
125	-1.10E+00	VDC	0
126	2.62E+00	VDC	0
127	2.62E+00	VDC	0
128	2.23E+00	VDC	0
129	2.21E+00	VDC	0
130	1.99E+00	VDC	0
131	1.96E+00	VDC	0
132	2.30E+00	VDC	0
133	2.27E+00	VDC	0
134	2.08E+00	VDC	0
135	2.05E+00	VDC	0
136	1.16E+01	VDC	0
137	4.15E+01	VDC	0
138	4.15E+01	VDC	0
139	1.16E+01	VDC	0
140	0.00E+00	VDC	0
201	-3.88E-06	VDC	0
202	2.14E+00	VDC	0
203	3.33E+00	VDC	0
204	2.12E+00	VDC	0
205	1.71E-02	VDC	0
206	-5.17E-06	VDC	0
207	3.33E+00	VDC	0
208	1.72E-02	VDC	0
209	-2.53E-02	VDC	0
210	1.86E+00	VDC	0
211	4.84E-01	VDC	0

Channel ID	Value	Units	Alarm
101	2.54E+00	VDC	0
102	2.51E+00	VDC	0
103	2.28E+00	VDC	0
104	2.26E+00	VDC	0
105	2.09E+00	VDC	0
106	2.06E+00	VDC	0
107	2.18E+00	VDC	0
108	2.16E+00	VDC	0
109	7.44E-02	VDC	0
110	2.48E+00	VDC	0
111	5.67E-02	VDC	0
112	2.48E+00	VDC	0
113	2.60E+00	VDC	0
114	2.60E+00	VDC	0
115	2.59E-06	VDC	0
116	3.88E-06	VDC	0
117	1.69E+00	VDC	0
118	1.69E+00	VDC	0
119	0.00E+00	VDC	0
120	3.33E+00	VDC	0
121	1.54E-02	VDC	0
122	2.32E+00	VDC	0
123	2.30E+00	VDC	0
124	1.27E+00	VDC	0
125	1.10E+00	VDC	0
126	2.63E+00	VDC	0
127	2.63E+00	VDC	0
128	2.10E+00	VDC	0
129	2.07E+00	VDC	0
130	2.09E+00	VDC	0
131	2.07E+00	VDC	0
132	2.27E+00	VDC	0
133	2.24E+00	VDC	0
134	2.20E+00	VDC	0
135	2.17E+00	VDC	0
136	1.16E+01	VDC	0
137	4.15E+01	VDC	0
138	4.15E+01	VDC	0
139	1.16E+01	VDC	0
140	0.00E+00	VDC	0
201	-5.17E-06	VDC	0
202	2.03E+00	VDC	0
203	3.33E+00	VDC	0
204	2.01E+00	VDC	0
205	1.67E-02	VDC	0
206	-5.17E-06	VDC	0
207	3.33E+00	VDC	0
208	1.67E-02	VDC	0
209	-2.68E-02	VDC	0
210	1.86E+00	VDC	0
211	4.81E-01	VDC	0

Channel ID	Value	Units	Alarm
101	3.88E-05	VDC	0
102	3.33E+00	VDC	0
103	1.70E-02	VDC	0
104	3.33E+00	VDC	0
105	1.77E-02	VDC	0
106	1.92E+00	VDC	0
107	4.80E-01	VDC	0
108	2.29E+00	VDC	0
109	2.27E+00	VDC	0
110	2.38E+00	VDC	0
111	2.35E+00	VDC	0
112	2.24E+00	VDC	0
113	2.21E+00	VDC	0
114	1.94E+00	VDC	0
115	1.91E+00	VDC	0
116	2.32E+00	VDC	0
117	2.29E+00	VDC	0
118	2.30E+00	VDC	0
119	2.27E+00	VDC	0
120	2.46E+00	VDC	0
121	2.44E+00	VDC	0
122	1.54E-01	VDC	0
123	3.36E+00	VDC	0
124	3.36E+00	VDC	0
125	2.59E-05	VDC	0
126	2.59E-05	VDC	0
127	1.29E-05	VDC	0
128	2.18E+00	VDC	0
129	2.15E+00	VDC	0
130	2.28E+00	VDC	0
131	2.26E+00	VDC	0
132	2.20E+00	VDC	0
133	2.18E+00	VDC	0
134	2.22E+00	VDC	0
135	2.20E+00	VDC	0
136	2.51E+00	VDC	0
137	2.49E+00	VDC	0
138	2.18E+00	VDC	0
139	2.15E+00	VDC	0
140	2.35E+00	VDC	0
201	2.33E+00	VDC	0
202	2.33E+00	VDC	0
203	2.31E+00	VDC	0
204	2.41E+00	VDC	0
205	2.39E+00	VDC	0
206	2.59E-05	VDC	0
207	1.29E-05	VDC	0
208	3.88E-05	VDC	0
209	3.39E+00	VDC	0
210	7.63E-03	VDC	0
211	0.00E+00	VDC	0

212	3.39E+00	VDC	0
213	3.39E+00	VDC	0
214	2.59E-05	VDC	0
215	1.29E-05	VDC	0
216	2.48E+00	VDC	0
217	9.83E-03	VDC	0
218	3.36E+00	VDC	0
219	3.36E+00	VDC	0
220	2.59E-05	VDC	0
221	0.00E+00	VDC	0
222	2.48E+00	VDC	0
223	3.36E-04	VDC	0
224	0.00E+00	VDC	0
225	-1.29E-05	VDC	0
226	9.59E+01	VDC	0
227	9.59E+01	VDC	0
228	9.59E+01	VDC	0
229	4.99E-02	VDC	0

Channel ID	Value	Units	Alarm
101	0.00E+00	VDC	0
102	3.33E+00	VDC	0
103	1.70E-02	VDC	0
104	3.33E+00	VDC	0
105	1.76E-02	VDC	0
106	2.00E+00	VDC	0
107	4.39E-01	VDC	0
108	2.26E+00	VDC	0
109	2.23E+00	VDC	0
110	1.86E+00	VDC	0
111	1.83E+00	VDC	0
112	1.74E+00	VDC	0
113	1.71E+00	VDC	0
114	2.20E+00	VDC	0
115	2.17E+00	VDC	0
116	2.14E+00	VDC	0
117	2.11E+00	VDC	0
118	2.02E+00	VDC	0
119	2.00E+00	VDC	0
120	1.96E+00	VDC	0
121	1.93E+00	VDC	0
122	1.25E-01	VDC	0
123	3.36E+00	VDC	0
124	3.36E+00	VDC	0
125	-2.59E-05	VDC	0
126	-2.59E-05	VDC	0
127	0.00E+00	VDC	0
128	2.17E+00	VDC	0
129	2.15E+00	VDC	0
130	2.34E+00	VDC	0
131	2.32E+00	VDC	0
132	2.31E+00	VDC	0
133	2.29E+00	VDC	0
134	2.24E+00	VDC	0
135	2.21E+00	VDC	0
136	2.25E+00	VDC	0
137	2.23E+00	VDC	0
138	1.84E+00	VDC	0
139	1.82E+00	VDC	0
140	2.15E+00	VDC	0
201	2.12E+00	VDC	0
202	1.79E+00	VDC	0
203	1.76E+00	VDC	0
204	1.99E+00	VDC	0
205	1.96E+00	VDC	0
206	-1.29E-05	VDC	0
207	-1.29E-05	VDC	0
208	-2.59E-05	VDC	0
209	3.39E+00	VDC	0
210	7.59E-03	VDC	0
211	-1.29E-05	VDC	0

212	3.39E+00 VDC	0
213	3.39E+00 VDC	0
214	-1.29E-05 VDC	0
215	1.29E-05 VDC	0
216	2.48E+00 VDC	0
217	2.20E-04 VDC	0
218	3.36E+00 VDC	0
219	3.36E+00 VDC	0
220	-1.29E-05 VDC	0
221	1.29E-05 VDC	0
222	2.48E+00 VDC	0
223	2.20E-04 VDC	0
224	0.00E+00 VDC	0
225	0.00E+00 VDC	0
226	9.60E+01 VDC	0
227	9.60E+01 VDC	0
228	9.60E+01 VDC	0
229	4.90E-02 VDC	0

Channel ID	Value	Units	Alarm
101	3.88E-05	VDC	0
102	3.33E+00	VDC	0
103	1.61E-02	VDC	0
104	3.33E+00	VDC	0
105	1.68E-02	VDC	0
106	2.00E+00	VDC	0
107	4.48E-01	VDC	0
108	1.77E+00	VDC	0
109	1.74E+00	VDC	0
110	1.74E+00	VDC	0
111	1.72E+00	VDC	0
112	1.76E+00	VDC	0
113	1.73E+00	VDC	0
114	1.98E+00	VDC	0
115	1.95E+00	VDC	0
116	1.95E+00	VDC	0
117	1.92E+00	VDC	0
118	1.91E+00	VDC	0
119	1.89E+00	VDC	0
120	1.99E+00	VDC	0
121	1.96E+00	VDC	0
122	1.27E-01	VDC	0
123	3.36E+00	VDC	0
124	3.36E+00	VDC	0
125	2.59E-05	VDC	0
126	2.59E-05	VDC	0
127	2.59E-05	VDC	0
128	1.89E+00	VDC	0
129	1.86E+00	VDC	0
130	1.98E+00	VDC	0
131	1.96E+00	VDC	0
132	1.79E+00	VDC	0
133	1.76E+00	VDC	0
134	1.77E+00	VDC	0
135	1.74E+00	VDC	0
136	2.13E+00	VDC	0
137	2.11E+00	VDC	0
138	1.95E+00	VDC	0
139	1.93E+00	VDC	0
140	2.13E+00	VDC	0
201	2.11E+00	VDC	0
202	2.03E+00	VDC	0
203	2.01E+00	VDC	0
204	1.68E+00	VDC	0
205	1.65E+00	VDC	0
206	0.00E+00	VDC	0
207	-1.29E-05	VDC	0
208	2.59E-05	VDC	0
209	3.39E+00	VDC	0
210	3.35E+00	VDC	0
211	0.00E+00	VDC	0

212	3.39E+00	VDC	0
213	3.39E+00	VDC	0
214	1.29E-05	VDC	0
215	2.59E-05	VDC	0
216	2.48E+00	VDC	0
217	-2.97E-04	VDC	0
218	3.36E+00	VDC	0
219	3.36E+00	VDC	0
220	-1.29E-05	VDC	0
221	0.00E+00	VDC	0
222	2.48E+00	VDC	0
223	-2.72E-04	VDC	0
224	0.00E+00	VDC	0
225	-1.29E-05	VDC	0
226	9.60E+01	VDC	0
227	9.60E+01	VDC	0
228	9.60E+01	VDC	0
229	4.86E-02	VDC	0

Channel ID	Value	Units	Alarm
101	2.59E-05	VDC	0
102	3.33E+00	VDC	0
103	1.69E-02	VDC	0
104	3.33E+00	VDC	0
105	1.75E-02	VDC	0
106	1.95E+00	VDC	0
107	4.71E-01	VDC	0
108	2.20E+00	VDC	0
109	2.18E+00	VDC	0
110	1.86E+00	VDC	0
111	1.84E+00	VDC	0
112	1.77E+00	VDC	0
113	1.74E+00	VDC	0
114	1.89E+00	VDC	0
115	1.86E+00	VDC	0
116	1.76E+00	VDC	0
117	1.73E+00	VDC	0
118	2.08E+00	VDC	0
119	2.05E+00	VDC	0
120	1.71E+00	VDC	0
121	1.68E+00	VDC	0
122	7.69E-01	VDC	2
123	3.36E+00	VDC	0
124	3.36E+00	VDC	0
125	3.88E-05	VDC	0
126	5.17E-05	VDC	0
127	2.59E-05	VDC	0
128	2.27E+00	VDC	0
129	2.25E+00	VDC	0
130	2.41E+00	VDC	0
131	2.39E+00	VDC	0
132	2.12E+00	VDC	0
133	2.10E+00	VDC	0
134	1.94E+00	VDC	0
135	1.91E+00	VDC	0
136	2.22E+00	VDC	0
137	2.19E+00	VDC	0
138	1.81E+00	VDC	0
139	1.78E+00	VDC	0
140	2.15E+00	VDC	0
201	2.12E+00	VDC	0
202	2.03E+00	VDC	0
203	2.01E+00	VDC	0
204	2.17E+00	VDC	0
205	2.14E+00	VDC	0
206	0.00E+00	VDC	0
207	1.29E-05	VDC	0
208	3.88E-05	VDC	0
209	3.39E+00	VDC	0
210	3.35E+00	VDC	0
211	0.00E+00	VDC	0

- spared (unused signal)
OK after cleaning

212	3.39E+00 VDC	0
213	3.39E+00 VDC	0
214	1.29E-05 VDC	0
215	1.29E-05 VDC	0
216	2.48E+00 VDC	0
217	-7.76E-05 VDC	0
218	3.36E+00 VDC	0
219	3.36E+00 VDC	0
220	-1.29E-05 VDC	0
221	1.29E-05 VDC	0
222	2.48E+00 VDC	0
223	-7.76E-05 VDC	0
224	1.29E-05 VDC	0
225	0.00E+00 VDC	0
226	9.60E+01 VDC	0
227	9.60E+01 VDC	0
228	9.60E+01 VDC	0
229	4.69E-02 VDC	0