

ECU Sample Tables



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Gravity Probe B Relativity Mission

ECU SAMPLE TABLES

**S0922 Rev. -
September 1, 2003**

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ECU Sample Tables

Table 9.2.3.5-1 ECU IOC Sample Table for ADC 1A

Sample Time	Description	GRT #	Mnemonic	Item
2	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
4	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
6	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2
8	Gyroscope #1 GRT	T-01Q	TE_Gyro_1_GT01Q	3
10	Gyroscope #3 GRT	T-03Q	TE_Gyro_3_GT03Q	4
12	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
14	Telescope detector #1 GRT	T-12Q	TE_TelD_1_GT12Q	6
16	Mux1A CAL1		DE_Mux1A_CAL1	7
18	Mux1A CAL2		DE_Mux1A_CAL2	8
20	Telescope detector #2 GRT	T-13Q	TE_TelD_2_GT13Q	9
22	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
24	Telescope detector mount +Y GRT	T-21Q	TE_TelDM_YGT21Q	10
26	Mux1A CAL3		DE_Mux1A_CAL3	11
28	Mux1A CAL4		DE_Mux1A_CAL4	12
30	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
32	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
34	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
36	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
38	Mux2A CAL1		DE_Mux2A_CAL1	19
40	Mux2A CAL2		DE_Mux2A_CAL2	20
42	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
44	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
46	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
48	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
50	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
52	Mux4A CAL2		DE_Mux4A_CAL2	32
54	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2
56	Gyroscope #1 GRT	T-01Q	TE_Gyro_1_GT01Q	3
58	Gyroscope #3 GRT	T-03Q	TE_Gyro_3_GT03Q	4
60	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
62	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
64	Telescope detector #1 GRT	T-12Q	TE_TelD_1_GT12Q	6
66	Mux1A CAL2		DE_Mux1A_CAL2	8
68	Telescope detector #2 GRT	T-13Q	TE_TelD_2_GT13Q	9
70	Telescope detector mount +Y GRT	T-21Q	TE_TelDM_YGT21Q	10
72	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
74	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
76	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
78	Mux2A CAL2		DE_Mux2A_CAL2	20
80	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
82	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
84	Mux2A CAL3		DE_Mux2A_CAL3	23
86	Mux2A CAL4		DE_Mux2A_CAL4	24
88	Mux1A CAL4		DE_Mux1A_CAL4	12
90	Mux2A CAL1		DE_Mux2A_CAL1	19
92	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
94	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
96	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
98	Mux4A CAL1		DE_Mux4A_CAL1	31
100	Mux4A CAL2		DE_Mux4A_CAL2	32

ECU Sample Tables

1) ECU IOC Sample Table

a) as defined in SCSE 16, Section 9.2.3.5, ECU ADC Default Sample Tables for Nominal Science Mission, Rev. Gh

b) Includes unique ADC 1A, 1B, 2A, 2B, 3A, 3B

c) IOC ADC 1A update rate and monitors left out

IOC ADC 1A update rate			IOC ADC 1A Left Out	
Every 20 seconds	T-10P	TE_QBS_a_GT10P	spare	DE_Mux2A_SP44
			spare	DE_Mux2A_SP45
Every 50 seconds		DE_Mux1A_CAL2	spare	DE_Mux2A_SP49
"		DE_Mux1A_CAL4	Mux3A CAL1	DE_Mux3A_CAL1
"		DE_Mux2A_CAL1	Mux3A CAL2	DE_Mux3A_CAL2
"		DE_Mux2A_CAL2	Mux3A CAL3	DE_Mux3A_CAL3
"		DE_Mux4A_CAL2	spare	DE_Mux4A_SP24
"	T-15Q	TE_CryPm_aGT15P	spare	DE_Mux4A_SP25
"	T-06P	TE_Fi1_2_aGT06P	spare	DE_Mux4A_SP26
"	T-08P	TE_Fi3_4_aGT08P	spare	DE_Mux4A_SP27
"	T-18d	TE_FlM_a_GT18D		
"	T-01Q	TE_Gyro_1_GT01Q		
"	T-03Q	TE_Gyro_3_GT03Q		
"	T-10D	TE_MTkIn_aGT10D		
"	T-12AD	TE_PPEX_aGT12AD		
"	T-05Q	TE_Q_Aft_GT05Q		
"	T-17Q	TE_Q_ForEGGT17Q		
"	T-01D	TE_St2Dw_aGT01D		
"	T-05P	TE_St2Pr_aGT05P		
"	T-12Q	TE_TelD_1_GT12Q		
"	T-13Q	TE_TelD_2_GT13Q		
"	T-21Q	TE_TelDM_YGT21Q		
Every 100 seconds		DE_Mux1A_CAL1		
"		DE_Mux1A_CAL3		
"		DE_Mux2A_CAL3		
"		DE_Mux2A_CAL4		
"		DE_Mux4A_CAL1		

ECU Sample Tables

Table 9.2.3.5-2

ECU IOC Sample Table for ADC 1B

Sample Time	Description	GRT #	Mnemonic	Item
2	Porous plug exit GRT/b	T-12BD	TE_PPEx_bGT12BD	14
4	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
6	Mux2B CAL1		DE_Mux2B_CAL1	19
8	Mux2B CAL2		DE_Mux2B_CAL2	20
10	Mux2B CAL3		DE_Mux2B_CAL3	23
12	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
14	Mux2B CAL4		DE_Mux2B_CAL4	24
16	Mux3B CAL1		DE_Mux3B_CAL1	25
18	Mux3B CAL2		DE_Mux3B_CAL2	26
20	Mux3B CAL3		DE_Mux3B_CAL3	27
22	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
24	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
26	Mux4B CAL1		DE_Mux4B_CAL1	31
28	Mux4B CAL2		DE_Mux4B_CAL2	32
30	Main tank internal GRT/b	T-11D	TE_MTKIn_bGT11D	1
32	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
34	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2
36	Gyroscope #2 GRT	T-02Q	TE_Gyro_2_GT02Q	3
38	Gyroscope #4 GRT	T-04Q	TE_Gyro_4_GT04Q	4
40	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
42	Telescope corrector plate #1 GRT	T-14Q	TE_TelCP_1GT14Q	6
44	Mux1B CAL2		DE_Mux1B_CAL2	8
46	Telescope corrector plate #2 GRT	T-15Q	TE_TelCP_2GT15Q	9
48	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
50	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
52	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
54	Porous plug exit GRT/b	T-12BD	TE_PPEx_bGT12BD	14
56	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
58	Mux2B CAL1		DE_Mux2B_CAL1	19
60	Mux2B CAL2		DE_Mux2B_CAL2	20
62	Mux3B CAL2		DE_Mux3B_CAL2	26
64	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
66	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
68	Mux4B CAL1		DE_Mux4B_CAL1	31
70	Mux4B CAL2		DE_Mux4B_CAL2	32
72	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
74	Main tank internal GRT/b	T-11D	TE_MTKIn_bGT11D	1
76	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2
78	Gyroscope #2 GRT	T-02Q	TE_Gyro_2_GT02Q	3
80	Gyroscope #4 GRT	T-04Q	TE_Gyro_4_GT04Q	4
82	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
84	Telescope corrector plate #1 GRT	T-14Q	TE_TelCP_1GT14Q	6
86	Mux1B CAL1		DE_Mux1B_CAL1	7
88	Mux1B CAL2		DE_Mux1B_CAL2	8
90	Telescope corrector plate #2 GRT	T-15Q	TE_TelCP_2GT15Q	9
92	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
94	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
96	Mux1B CAL3		DE_Mux1B_CAL3	11
98	Mux1B CAL4		DE_Mux1B_CAL4	12
100	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13

ECU Sample Tables

d) IOC ADC 1B update rate and monitors left out

IOC ADC 1B update rate			IOC ADC 1B Left Out	
Every 20 seconds	T-11P	TE_QBS_b_GT11P	Spare	DE_Mux2B_SP43
			Spare	DE_Mux2B_SP44
Every 50 seconds		DE_Mux1B_CAL2	Spare	DE_Mux2B_SP45
"		DE_Mux2B_CAL1	Spare	DE_Mux2B_SP48
"		DE_Mux2B_CAL2	Spare	DE_Mux2B_SP49
"		DE_Mux3B_CAL2	Spare	DE_Mux4B_SP24
"		DE_Mux4B_CAL1	Spare	DE_Mux4B_SP25
"		DE_Mux4B_CAL2	Spare	DE_Mux4B_SP26
"	T-16P	TE_CryPm_bGT16P	Spare	DE_Mux4B_SP27
"	T-07P	TE_Fi1_2_bGT07P		
"	T-09P	TE_Fi3_4_bGT09P		
"	T-19D	TE_FIMtr_bGT19D		
"	T-02Q	TE_Gyro_2_GT02Q		
"	T-04Q	TE_Gyro_4_GT04Q		
"	T-11D	TE_MTKIn_bGT11D		
"	T-12BD	TE_PPEX_bGT12BD		
"	T-06Q	TE_Q_Flng_GT06Q		
"	T-02D	TE_St2Dw_bGT02D		
"	T-28P	TE_St2Pr_bGT28P		
"	T-14Q	TE_TelCP_1GT14Q		
"	T-15Q	TE_TelCP_2GT15Q		
Every 100 seconds		DE_Mux1B_CAL1		
"		DE_Mux1B_CAL3		
"		DE_Mux1B_CAL4		
"		DE_Mux2B_CAL3		
"		DE_Mux2B_CAL4		
"		DE_Mux3B_CAL1		
"		DE_Mux3B_CAL3		

ECU Sample Tables

Table 9.2.3.5-3 ECU IOC Sample Table for ADC 2A

Sample Time	Description	GRT #	Mnemonic	Item
0.1	+10 V ref/a		VE_Mux7A_VREF	1
0.2	Heat pulse meter heater voltage/a	H-01D	VE_HPMH_a_H01D	2
0.3	Flow meter heater voltage/a	H-05AD	VE_FIMH_a_H05AD	3
0.4	Flow control heater voltage/a	H-10D	VE_FICH_a_H10D	4
0.5	Porous plug heater voltage/a	H-13AD	VE_PPH_a_H13AD	5
0.6	PODS#7 continuity	R-07D	DE_PODS7_R07D	9
0.7	PODS#8 continuity	R-08D	DE_PODS8_R08D	10
0.8	PODS#9 continuity	R-09D	DE_PODS9_R09D	11
0.9	HEX-1 dewar SDT	T-03D	TE_HEX1Dw_ST03D	15
1	VCS1 middle SDT	T-04D	TE_VCS1Md_ST04D	16
1.1	VCS1 bottom SDT	T-05D	TE_VCS1Bt_ST05D	17
1.2	Vacuum shell probe SDT/a	T-13P	TE_VSPR_a_ST13P	19
1.3	Mux7A SD4 CAL1		DE_Mux7A_SD4_C1	21
1.4	Dewar top plate SDT	T-17D	TE_TpPltDwST17D	24
1.5	Plumbing saddle STA194 SDT/a	T-17P	TE_PISad_aST17P	26
1.6	Pressure sense line STA156 SDT/a	T-19P	TE_PrSLn_aST19P	27
1.7	Window #1 frame SDT/a	T-21P	TE_Win_1_aST21P	28
1.8	Window #2 frame SDT/a	T-23P	TE_Win_2_aST23P	29
1.9	Window #3 frame SDT/a	T-25P	TE_Win_3_aST25P	30
2	HEX-4 probe SDT	T-27P	TE_HEX4Pr_ST27P	31
2.1	HEX-1 probe SDT	T-01P	TE_HEX1Pr_ST01P	32
2.2	HEX-3 probe SDT	T-03P	TE_HEX3Pr_ST03P	33
2.3	Forward ECU1 SDT		TE_ECU_FOR_SDT1	39
2.4	Guard tank bottom SDT	T-16D	TE_GrdTk_ST16D	18
2.5	Window #4 frame PRT/a	T-29P	TE_Win_4_aPT29P	42
2.6	Heat pulse meter heater voltage/a	H-01D	VE_HPMH_a_H01D	2
2.7	Flow meter heater voltage/a	H-05AD	VE_FIMH_a_H05AD	3
2.8	Flow control heater voltage/a	H-10D	VE_FICH_a_H10D	4
2.9	Porous plug heater voltage/a	H-13AD	VE_PPH_a_H13AD	5
3	PODS#10 continuity	R-10D	DE_PODS10_R10D	12
3.1	PODS#11 continuity	R-11D	DE_PODS11_R11D	13
3.2	PODS#12 continuity	R-12D	DE_PODS12_R12D	14
3.3	HEX-1 dewar SDT	T-03D	TE_HEX1Dw_ST03D	15
3.4	VCS1 middle SDT	T-04D	TE_VCS1Md_ST04D	16
3.5	VCS1 bottom SDT	T-05D	TE_VCS1Bt_ST05D	17
3.6	Vacuum shell probe SDT/a	T-13P	TE_VSPR_a_ST13P	19
3.7	Mux7A SD4 CAL1		DE_Mux7A_SD4_C1	21
3.8	Mux7A SD4 CAL2		DE_Mux7A_SD4_C2	22
3.9	Liquid point sensor voltage	LP-01D	VE_LiqPnt_LP01D	23
4	Plumbing saddle STA194 SDT/a	T-17P	TE_PISad_aST17P	26
4.1	Pressure sense line STA156 SDT/a	T-19P	TE_PrSLn_aST19P	27
4.2	Window #1 frame SDT/a	T-21P	TE_Win_1_aST21P	28
4.3	Window #2 frame SDT/a	T-23P	TE_Win_2_aST23P	29
4.4	Window #3 frame SDT/a	T-25P	TE_Win_3_aST25P	30
4.5	HEX-4 probe SDT	T-27P	TE_HEX4Pr_ST27P	31
4.6	HEX-1 probe SDT	T-01P	TE_HEX1Pr_ST01P	32
4.7	HEX-3 probe SDT	T-03P	TE_HEX3Pr_ST03P	33
4.8	Forward ECU1 SDT		TE_ECU_FOR_SDT1	39
4.9	Mux7A SD2 CAL1		DE_Mux7A_SD2_C1	40
5	Mux7A SD2 CAL2		DE_Mux7A_SD2_C2	41

ECU Sample Tables

e) IOC ADC 2A update rate and monitors left out

IOC ADC 2A update rate			IOC ADC 2A Left Out	
Every 2.5 seconds		DE_Mux7A_SD4_C1	spare	DE_Mux7A_SP05
"		TE_ECU_FOR_SDT1	spare	DE_Mux7A_SP06
"	T-03D	TE_HEX1Dw_ST03D	spare	DE_Mux7A_SP07
"	T-01P	TE_HEX1Pr_ST01P	spare	DE_Mux7A_SP25
"	T-03P	TE_HEX3Pr_ST03P	spare	DE_Mux7A_SP41
"	T-27P	TE_HEX4Pr_ST27P	spare	DE_Mux7A_SP62
"	T-17P	TE_PISad_aST17P	spare	DE_Mux7A_SP63
"	T-19P	TE_PrSLn_aST19P	spare	DE_Mux7A_SP64
"	T-05D	TE_VCS1Bt_ST05D	QBS forward end SDT	TE_Q_ForESST18Q
"	T-04D	TE_VCS1Md_ST04D	QBS G3/G4 SDT	TE_Q_G3_G4ST07Q
"	T-13P	TE_VSP_r_a_ST13P		
"	T-21P	TE_Win_1_aST21P		
"	T-23P	TE_Win_2_aST23P		
"	T-25P	TE_Win_3_aST25P		
"	H-10D	VE_FICH_a_H10D		
"	H-05AD	VE_FIMH_a_H05AD		
"	H-01D	VE_HPMH_a_H01D		
"	H-13AD	VE_PPH_a_H13AD		
Every 5 seconds		DE_Mux7A_SD2_C1		
"		DE_Mux7A_SD2_C2		
"		DE_Mux7A_SD4_C2		
"		DE_PODS10_R10D		
"		DE_PODS11_R11D		
"		DE_PODS12_R12D		
"		DE_PODS7_R07D		
"		DE_PODS8_R08D		
"		DE_PODS9_R09D		
"		TE_GrdTk_ST16D		
"		TE_TpPltDwST17D		
"		TE_Win_4_aPT29P		
"		VE_LiqPnt_LP01D		
"		VE_Mux7A_VREF		

ECU Sample Tables

Table 9.2.3.5-4

ECU IOC Sample Table for ADC 2B

Sample Time	Description	GRT #	Mnemonic	Item
0.1	+10 V ref/b		VE_Mux7B_VREF	1
0.2	Heat pulse meter heater voltage/b	H-02D	VE_HPMH_b_H02D	2
0.3	Flow meter heater voltage/b	H-05BD	VE_FIMH_b_H05BD	3
0.4	Flow control heater voltage/b	H-11D	VE_FICH_b_H11D	4
0.5	Porous plug heater voltage/b	H-13BD	VE_PPH_b_H13BD	5
0.6	PODS#1 continuity	R-01D	DE_PODS1__R01D	9
0.7	PODS#2 continuity	R-02D	DE_PODS2__R02D	10
0.8	PODS#3 continuity	R-03D	DE_PODS3__R03D	11
0.9	HEX-2 dewar SDT	T-06D	TE_HEX2Dw_ST06D	15
1	HEX-3 dewar SDT	T-07D	TE_HEX3Dw_ST07D	16
1.1	HEX-4 dewar SDT	T-08D	TE_HEX4Dw_ST08D	17
1.2	Vacuum shell probe SDT/b	T-14P	TE_VSPR_b_ST14P	19
1.3	Mux7B SD4 CAL1		DE_Mux7B_SD4_C1	21
1.4	Mux7B SD4 CAL2		DE_Mux7B_SD4_C2	22
1.5	Plumbing saddle SDT/b	T-18P	TE_PISad_bST18P	26
1.6	Pressure sense line SDT/b	T-20P	TE_PrSLn_bST20P	27
1.7	Window #1 SDT/b	T-22P	TE_Win_1_bST22P	28
1.8	Window #2 SDT/b	T-24P	TE_Win_2_bST24P	29
1.9	Window #3 SDT/b	T-26P	TE_Win_3_bST26P	30
2	HEX-2 probe SDT	T-02P	TE_HEX2Pr_ST02P	32
2.1	HEX-4 probe SDT	T-04P	TE_HEX4Pr_ST04P	33
2.2	Forward ECU2 SDT		TE_ECU_FOR_SDT2	39
2.3	Mux7B SD2 CAL1		DE_Mux7B_SD2_C1	40
2.4	Mux7B SD2 CAL2		DE_Mux7B_SD2_C2	41
2.5	Window #4 frame PRT/b	T-30P	TE_Win_4_bPT30P	42
2.6	Heat pulse meter heater voltage/b	H-02D	VE_HPMH_b_H02D	2
2.7	Flow meter heater voltage/b	H-05BD	VE_FIMH_b_H05BD	3
2.8	Flow control heater voltage/b	H-11D	VE_FICH_b_H11D	4
2.9	Porous plug heater voltage/b	H-13BD	VE_PPH_b_H13BD	5
3	PODS#4 continuity	R-04D	DE_PODS4__R04D	12
3.1	PODS#5 continuity	R-05D	DE_PODS5__R05D	13
3.2	PODS#6 continuity	R-06D	DE_PODS6__R06D	14
3.3	HEX-2 dewar SDT	T-06D	TE_HEX2Dw_ST06D	15
3.4	HEX-3 dewar SDT	T-07D	TE_HEX3Dw_ST07D	16
3.5	HEX-4 dewar SDT	T-08D	TE_HEX4Dw_ST08D	17
3.6	Vacuum shell probe SDT/b	T-14P	TE_VSPR_b_ST14P	19
3.7	Mux7B SD4 CAL1		DE_Mux7B_SD4_C1	21
3.8	Mux7B SD4 CAL2		DE_Mux7B_SD4_C2	22
3.9	+10 V ref/b		VE_Mux7B_VREF	1
4	Plumbing saddle SDT/b	T-18P	TE_PISad_bST18P	26
4.1	Pressure sense line SDT/b	T-20P	TE_PrSLn_bST20P	27
4.2	Window #1 SDT/b	T-22P	TE_Win_1_bST22P	28
4.3	Window #2 SDT/b	T-24P	TE_Win_2_bST24P	29
4.4	Window #3 SDT/b	T-26P	TE_Win_3_bST26P	30
4.5	HEX-2 probe SDT	T-02P	TE_HEX2Pr_ST02P	32
4.6	HEX-4 probe SDT	T-04P	TE_HEX4Pr_ST04P	33
4.7	Window #4 frame PRT/b	T-30P	TE_Win_4_bPT30P	42
4.8	Forward ECU2 SDT		TE_ECU_FOR_SDT2	39
4.9	Mux7B SD2 CAL1		DE_Mux7B_SD2_C1	40
5	Mux7B SD2 CAL2		DE_Mux7B_SD2_C2	41

ECU Sample Tables

f) IOC ADC 2B update rate and monitors left out

IOC ADC 2B update rate			IOC ADC 2B Left Out	
Every 2.5 seconds		DE_Mux7B_SD2_C1	not used	DE_Ecu_none1
"		DE_Mux7B_SD2_C2	spare	DE_Mux7B_SP05
"		DE_Mux7B_SD4_C1	spare	DE_Mux7B_SP06
"		DE_Mux7B_SD4_C2	spare	DE_Mux7B_SP07
"		TE_ECU_FOR_SDT2	spare	DE_Mux7B_SP23
"	T-06D	TE_HEX2Dw_ST06D	spare	DE_Mux7B_SP25
"	T-02P	TE_HEX2Pr_ST02P	spare	DE_Mux7B_SP40
"	T-07D	TE_HEX3Dw_ST07D	spare	DE_Mux7B_SP41
"	T-08D	TE_HEX4Dw_ST08D	spare	DE_Mux7B_SP61
"	T-04P	TE_HEX4Pr_ST04P	spare	DE_Mux7B_SP62
"	T-18P	TE_PISad_bST18P	spare	DE_Mux7B_SP63
"	T-20P	TE_PrSLn_bST20P	spare	DE_Mux7B_SP64
"	T-14P	TE_VSP_r_b_ST14P	QBS SDT	TE_QBS_SDTST12P
"	T-22P	TE_Win_1_bST22P	Science telescope SDT	TE_SciTel_ST16Q
"	T-24P	TE_Win_2_bST24P		
"	T-26P	TE_Win_3_bST26P		
"	T-30P	TE_Win_4_bPT30P		
"	H-11D	VE_FICH_b_H11D		
"	H-05BD	VE_FIMH_b_H05BD		
"	H-02D	VE_HPMH_b_H02D		
"		VE_Mux7B_VREF		
"	H-13BD	VE_PPH_b_H13BD		
Every 5 seconds		DE_PODS1__R01D		
"		DE_PODS2__R02D		
"		DE_PODS3__R03D		
"		DE_PODS4__R04D		
"		DE_PODS5__R05D		
"		DE_PODS6__R06D		

ECU Sample Tables

Table 9.2.3.5-5 ECU IOC Sample Table for ADC 3A

Sample Time	Description	GRT #	Mnemonic	Item
0.1	Flow meter heater current/a	(H-05AD)	CE_FlMHI_ah05ad	1
0.2	Flow control heater current/a	(H-10D)	CE_FlCH_I_ah10d	2
0.3	Porous plug heater current/a	(H-13AD)	CE_PPH_I_ah13ad	3
0.4	Quartz block support heater V	H-05P	VE_QBS_H_a_H05P	4
0.5	Gyro3 Htr V/a		VE_Gyr3_HTR_V_A	5
0.6	Gyro1 Htr V/a		VE_Gyr1_HTR_V_A	6
0.7	Final Filter 3&4 Htr V/a	H-03P	VE_FF3_4_ah03P	7
0.8	Final Filter 1&2 Htr V/a	H-01P	VE_FF1_2_ah01P	8
0.9	GMA #1A SDT/a		TE_GMA_SDT_1A	9
1	GMA #2A SDT/a		TE_GMA_SDT_2A	10
1.1	Leakage valve 1 SDT/a		TE_VAT_LV1_SDTa	12
1.2	Leakage valve 2 SDT/a		TE_VAT_LV2_SDTa	13
1.3	UV-A base SDT/a		TE_UV_BASE_SDTa	14
1.4	GMA Monitor board SDT/a		TE_ECU_Aft_SDT1	15
1.5	Exhaust valve 1 SDT/a		TE_VAT_EV1_SDTa	16
1.6	Exhaust valve 2 SDT/a		TE_VAT_EV2_SDTa	17
1.7	Exhaust valve 3 SDT/a		TE_VAT_EV3_SDTa	18
1.8	Exhaust valve 4 SDT/a		TE_VAT_EV4_SDTa	19
1.9	Support ring vacuum shell	T-13D	DE_VSDwSRgST13D	20
2	Vac. Shell Graphite Ring SDT/a	T-30D	TE_VCS_GR_ST30D	21
2.1	Vac. Shell Graphite Ring SDT/a	T-31D	TE_VCS_GR_ST31D	22
2.2	Mux9A_CAL1		DE_Mux9A_CAL1	23
2.3	Mux9A_CAL2		DE_Mux9A_CAL2	24
2.4	GMA Pre-Regulator Pressure A	GP2	DE_GMA____GP2	25
2.5	GMA Inlet Pressure Gyro 2 A	GP10	DE_GMA____GP10	26
2.6	GMA Tank Pressure	GP1	DE_GMA____GP1	27
2.7	GMA Inlet Pressure Gyro 1 A	GP7	DE_GMA____GP7	28
2.8	GMA Inlet Pressure Gyro 3 A	GP11	DE_GMA____GP11	29
2.9	GMA Post Regulator Pressure A	GP4	DE_GMA____GP4	30
3	GMA Inlet Pressure Gyro 4 A	GP13	DE_GMA____GP13	31
3.1	GMA Switch (Mock GMA Only)	V1	DE_GMA_SW__V1	33
3.2	GMA Switch (Mock GMA Only)	V3	DE_GMA_SW__V3	34
3.3	GMA Switch (Mock GMA Only)	V5	DE_GMA_SW__V5	35
3.4	GMA Switch (Mock GMA Only)	V11	DE_GMA_SW__V11	36
3.5	GMA Switch (Mock GMA Only)	V10	DE_GMA_SW__V10	37
3.6	GMA Switch (Mock GMA Only)	V8	DE_GMA_SW__V8	38
3.7	GMA Switch (Mock GMA Only)	V14	DE_GMA_SW__V14	39
3.8	GMA Switch (Mock GMA Only)	V15	DE_GMA_SW__V15	40
3.9	UV Lamp-A output		DE_UVLampA_OUT	49
4	UV Lamp-A current		CE_UVLampA_I	50
4.1	UV Lamp-A bulb temperature		TE_UVLampA_T2	51
4.2	Vatt Valve - A Open monitor		VE_VAT_A_OPEN	52
4.3	Heat pulse meter heater current/a	(H-01D)	CE_HPMH_I_ah01d	62
4.4	Magnetometer-1 X-out		DE_MAG1_X_OUT	63
4.5	Magnetometer-1 Y-out		DE_MAG1_Y_OUT	64
4.6	Magnetometer-1 Z-out		DE_MAG1_Z_OUT	65
4.7	Magnetometer-2 X-out		DE_MAG2_X_OUT	66
4.8	Magnetometer-2 Y-out		DE_MAG2_Y_OUT	67
4.9	Magnetometer-2 Z-out		DE_MAG2_Z_OUT	68

ECU Sample Tables

5	+5V Monitor/a		VE_Mux11A_VCAL	69
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ECU Sample Tables

Table 9.2.3.5-5 ECU IOC Sample Table for ADC 3A -cont

Sample Time	Description	GRT #	Mnemonic	Item
5.1	Flow meter heater current/a	(H-05AD)	CE_FlMHI_ah05ad	1
5.2	Flow control heater current/a	(H-10D)	CE_FlCH_I_ah10d	2
5.3	Porous plug heater current/a	(H-13AD)	CE_PPH_I_ah13ad	3
5.4	Quartz block support heater V	H-05P	VE_QBS_H_a_H05P	4
5.5	Gyro2 Htr V/a		VE_Gyr2_HTR_V_A	5
5.6	Gyro1 Htr V/a		VE_Gyr1_HTR_V_A	6
5.7	Final Filter 3&4 Htr V/a	H-03P	VE_FF3_4_ah03P	7
5.8	Final Filter 1&2 Htr V/a	H-01P	VE_FF1_2_ah01P	8
5.9	GMA #3A SDT/a		TE_GMA_SDT_3A	11
6	Leakage valve 1 SDT/a		TE_VAT_LV1_SDTa	12
6.1	Leakage valve 2 SDT/a		TE_VAT_LV2_SDTa	13
6.2	UV-A base SDT/a		TE_UV_BASE_SDTa	14
6.3	GMA Monitor board SDT/a		TE_ECU_Aft_SDT1	15
6.4	Exhaust valve 1 SDT/a		TE_VAT_EV1_SDTa	16
6.5	Exhaust valve 2 SDT/a		TE_VAT_EV2_SDTa	17
6.6	Exhaust valve 3 SDT/a		TE_VAT_EV3_SDTa	18
6.7	Exhaust valve 4 SDT/a		TE_VAT_EV4_SDTa	19
6.8	Support ring vacuum shell	T-13D	DE_VSDwSRgST13D	20
6.9	Vac. Shell Graphite Ring SDT/a	T-30D	TE_VCS_GR_ST30D	21
7	Vac. Shell Graphite Ring SDT/a	T-31D	TE_VCS_GR_ST31D	22
7.1	Mux9A_CAL1		DE_Mux9A_CAL1	23
7.2	Mux9A_CAL2		DE_Mux9A_CAL2	24
7.3	GMA Pre-Regulator Pressure A	GP2	DE_GMA____GP2	25
7.4	GMA Inlet Pressure Gyro 2 A	GP10	DE_GMA____GP10	26
7.5	GMA Tank Pressure	GP1	DE_GMA____GP1	27
7.6	GMA Inlet Pressure Gyro 1 A	GP7	DE_GMA____GP7	28
7.7	GMA Inlet Pressure Gyro 3 A	GP11	DE_GMA____GP11	29
7.8	GMA Post Regulator Pressure A	GP4	DE_GMA____GP4	30
7.9	GMA Inlet Pressure Gyro 4 A	GP13	DE_GMA____GP13	31
8	Calibration voltage/a		VE_Mux10A_VCAL	32
8.1	GMA Switch (Mock GMA Only)	V18	DE_GMA_SW____V18	41
8.2	GMA Switch (Mock GMA Only)	V22	DE_GMA_SW____V22	42
8.3	GMA Switch (Mock GMA Only)	V28	DE_GMA_SW____V28	43
8.4	GMA Switch (Mock GMA Only)	V30	DE_GMA_SW____V30	44
8.5	GMA Switch (Mock GMA Only)	V7	DE_GMA_SW____V7	45
8.6	GMA Switch (Mock GMA Only)	V19	DE_GMA_SW____V19	46
8.7	GMA Switch (Mock GMA Only)	V27	DE_GMA_SW____V27	47
8.8	GMA Switch	Spare	DE_GMA_SW____CV4	48
8.9	Vatt Valve - A Closed monitor		VE_VAT_A_CLOSED	53
9	Vacuum gauge power	P9A	DE_VACG_P9A_PWR	59
9.1	Vacuum gauge signal	P9A	DE_VACG_P9A_SIG	60
9.2	Vacuum gauge range	P9A	DE_VACG_P9A_RNG	61
9.3	Heat pulse meter heater current/a	(H-01D)	CE_HPMH_I_ah01d	62
9.4	Magnetometer-1 X-out		DE_MAG1_X_OUT	63
9.5	Magnetometer-1 Y-out		DE_MAG1_Y_OUT	64
9.6	Magnetometer-1 Z-out		DE_MAG1_Z_OUT	65
9.7	Magnetometer-2 X-out		DE_MAG2_X_OUT	66
9.8	Magnetometer-2 Y-out		DE_MAG2_Y_OUT	67
9.9	Magnetometer-2 Z-out		DE_MAG2_Z_OUT	68

ECU Sample Tables

10	+5V Monitor/a		VE_Mux11A_VCAL	69
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ECU Sample Tables

g) IOC ADC 3A update rate and monitors left out

IOC ADC 3A update rate			IOC ADC 3A Left Out	
Every 5 seconds	(H-10D)	CE_FICH_I_ah10d	spare	DE_Mux11A_SP10
"	(H-05AD)	CE_FIMHI_ah05ad	spare	DE_Mux11A_SP11
"	(H-01D)	CE_HPMH_I_ah01d	spare	DE_Mux11A_SP12
"	(H-13AD)	CE_PPH_I_ah13ad	spare	DE_Mux11A_SP13
"	GP1	DE_GMA___GP1	spare	DE_Mux11A_SP14
"	GP10	DE_GMA___GP10		
"	GP11	DE_GMA___GP11	IOC ADC 3A Additions from ADC 3B	
"	GP13	DE_GMA___GP13	Gyro3 Htr V/a	VE_Gyr3_HTR_V_A
"	GP2	DE_GMA___GP2		
"	GP4	DE_GMA___GP4		
"	GP7	DE_GMA___GP7		
"		DE_MAG1_X_OUT		
"		DE_MAG1_Y_OUT		
"		DE_MAG1_Z_OUT		
"		DE_MAG2_X_OUT		
"		DE_MAG2_Y_OUT		
"		DE_MAG2_Z_OUT		
"		DE_Mux9A_CAL1		
"		DE_Mux9A_CAL2		
"	T-13D	DE_VSDwSRgST13D		
"		TE_ECU_Aft_SDT1		
"		TE_UV_BASE_SDTa		
"		TE_VAT_EV1_SDTa		
"		TE_VAT_EV2_SDTa		
"		TE_VAT_EV3_SDTa		
"		TE_VAT_EV4_SDTa		
"		TE_VAT_LV1_SDTa		
"		TE_VAT_LV2_SDTa		
"		TE_VCS_GR_ST30D		
"		TE_VCS_GR_ST31D		
"	H-01P	VE_FF1_2_ah01P		
"	H-03P	VE_FF3_4_ah03P	IOC ADC 3A update rate -cont	
"		VE_Gyr1_HTR_V_A	Every 10 seconds	DE_GMA_SW___V5
"		VE_Mux11A_VCAL	"	DE_GMA_SW___V30
"	H-05P	VE_QBS_H_a_H05P	"	DE_GMA_SW___V7
			"	DE_GMA_SW___V8
Every 10 seconds		CE_UVLampA_I	"	DE_UVLampA_OUT
"		DE_GMA_SW___CV4	"	DE_VACG_P9A_PWR
"		DE_GMA_SW___V1	"	DE_VACG_P9A_RNG
"		DE_GMA_SW___V10	"	DE_VACG_P9A_SIG
"		DE_GMA_SW___V11	"	TE_GMA_SDT_1A
"		DE_GMA_SW___V14	"	TE_GMA_SDT_2A
"		DE_GMA_SW___V15	"	TE_GMA_SDT_3A
"		DE_GMA_SW___V18	"	TE_UVLampA_T2
"		DE_GMA_SW___V19	"	VE_Gyr2_HTR_V_A
"		DE_GMA_SW___V22	"	VE_Gyr3_HTR_V_A
"		DE_GMA_SW___V27	"	VE_Mux10A_VCAL
"		DE_GMA_SW___V28	"	VE_VAT_A_CLOSED
"		DE_GMA_SW___V3	"	VE_VAT_A_OPEN

ECU Sample Tables

Table 9.2.3.5-6 ECU IOC Sample Table List for ADC 3B

Sample Time	Description	GRT #	Mnemonic	Item
0.1	Flow meter heater current/b	(H-05BD)	CE_FlMHI_bh05bd	1
0.2	Flow control heater current/b	(H-11D)	CE_FlCH_I_bh11d	2
0.3	Porous plug heater current/b	(H-13BD)	CE_PPH_I_bh13bd	3
0.4	Quartz block support heater V	H-06P	VE_QBS_H_b_H06P	4
0.5	Gyro4 Htr V/b		VE_GYR4_HTR_V_B	5
0.6	Gyro3 Htr V/b		VE_GYR3_HTR_V_B	6
0.7	Final Filter 3&4 Htr V/b	H-04P	VE_FF3_4_bh04P	7
0.8	Final Filter 1&2 Htr V/b	H-02P	VE_FF1_2_bh02P	8
0.9	GMA #1B SDT/b		TE_GMA_SDT_1B	9
1	GMA #2B SDT/b		TE_GMA_SDT_2B	10
1.1	Leakage valve 1 SDT/b		TE_VAT_LV1_SDTb	12
1.2	Leakage valve 2 SDT/b		TE_VAT_LV2_SDTb	13
1.3	UV-B base SDT/b		TE_UV_BASE_SDTb	14
1.4	GMA Monitor board SDT/b		TE_ECU_AFT_SDT2	15
1.5	Exhaust valve 1 SDT/b		TE_VAT_EV1_SDTb	16
1.6	Exhaust valve 2 SDT/b		TE_VAT_EV2_SDTb	17
1.7	Exhaust valve 3 SDT/b		TE_VAT_EV3_SDTb	18
1.8	Exhaust valve 4 SDT/b		TE_VAT_EV4_SDTb	19
1.9	Bottom vacuum shell	T-14D	DE_VSDwBotST14D	20
2	Vac Shell Graphite Ring SDT/a	T-32D	TE_VCS_GR_ST32D	21
2.1	Mux9B_CAL1		DE_Mux9B_CAL1	23
2.2	Mux9B_CAL2		DE_Mux9B_CAL2	24
2.3	GMA Inlet Pressure Gyro 1 B	GP8	DE_GMA____GP8	25
2.4	GMA Vent Outlet Pressure B	GP14	DE_GMA____GP14	26
2.5	GMA Inlet Pressure Gyro 2 B	GP9	DE_GMA____GP9	27
2.6	GMA Inlet Pressure Gyro 4 B	GP12	DE_GMA____GP12	28
2.7	GMA Pre-Regulator Pressure B	GP3	DE_GMA____GP3	29
2.8	GMA Post-Regulator Pressure B	GP5	DE_GMA____GP5	30
2.9	GMA Post-Regulator Orifice	GP6	DE_GMA____GP6	31
3	GMA Switch (Mock GMA Only)	V2	DE_GMA_SW__V2	33
3.1	GMA Switch (Mock GMA Only)	V4	DE_GMA_SW__V4	34
3.2	GMA Switch (Mock GMA Only)	V6	DE_GMA_SW__V6	35
3.3	GMA Switch (Mock GMA Only)	V9	DE_GMA_SW__V9	36
3.4	GMA Switch (Mock GMA Only)	V13	DE_GMA_SW__V13	37
3.5	GMA Switch (Mock GMA Only)	V17	DE_GMA_SW__V17	38
3.6	GMA Switch (Mock GMA Only)	V20	DE_GMA_SW__V20	39
3.7	GMA Switch (Mock GMA Only)	V21	DE_GMA_SW__V21	40
3.8	Vatt Valve - B Closed monitor		VE_VAT_B_CLOSED	53
3.9	UV Lamp-B output		DE_UVLampB_OUT	49
4	UV Lamp-B current		CE_UVLampB_I	50
4.1	UV Lamp-B bulb temperature		TE_UVLampB_T2	51
4.2	Vatt Valve - B Open monitor		VE_VAT_B_OPEN	52
4.3	Heat pulse meter heater current/b	(H-2D)	CE_HPMH_I_bh02d	62
4.4	Magnetometer-3 X-out		DE_MAG3_X_OUT	63
4.5	Magnetometer-3 Y-out		DE_MAG3_Y_OUT	64
4.6	Magnetometer-3 Z-out		DE_MAG3_Z_OUT	65
4.7	Magnetometer-4 X-out		DE_MAG4_X_OUT	66
4.8	Magnetometer-4 Y-out		DE_MAG4_Y_OUT	67
4.9	Magnetometer-4 Z-out		DE_MAG4_Z_OUT	68

ECU Sample Tables

5	+5V Monitor/a		VE_Mux11B_VCAL	69
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ECU Sample Tables

Table 9.2.3.5-6 ECU IOC Sample Table List for ADC 3B -cont

Sample Time	Description	GRT #	Mnemonic	Item
5.1	Flow meter heater current/b	(H-05BD)	CE_FlMHI_bh05bd	1
5.2	Flow control heater current/b	(H-11D)	CE_FlCH_I_bh11d	2
5.3	Porous plug heater current/b	(H-13BD)	CE_PPH_I_bh13bd	3
5.4	Quartz block support heater V	H-06P	VE_QBS_H_b_H06P	4
5.5	Gyro4 Htr V/b		VE_GYR4_HTR_V_B	5
5.6	Gyro3 Htr V/b		VE_GYR3_HTR_V_B	6
5.7	Final Filter 3&4 Htr V/b	H-04P	VE_FF3_4_bh04P	7
5.8	Final Filter 1&2 Htr V/b	H-02P	VE_FF1_2_bh02P	8
5.9	GMA #3B SDT/b		TE_GMA_SDT_3B	11
6	Leakage valve 1 SDT/b		TE_VAT_LV1_SDTb	12
6.1	Leakage valve 2 SDT/b		TE_VAT_LV2_SDTb	13
6.2	UV-B base SDT/b		TE_UV_BASE_SDTb	14
6.3	GMA Monitor board SDT/b		TE_ECU_AFT_SDT2	15
6.4	Exhaust valve 1 SDT/b		TE_VAT_EV1_SDTb	16
6.5	Exhaust valve 2 SDT/b		TE_VAT_EV2_SDTb	17
6.6	Exhaust valve 3 SDT/b		TE_VAT_EV3_SDTb	18
6.7	Exhaust valve 4 SDT/b		TE_VAT_EV4_SDTb	19
6.8	Bottom vacuum shell	T-14D	DE_VSDwBotST14D	20
6.9	Vac Shell Graphite Ring SDT/a	T-32D	TE_VCS_GR_ST32D	21
7	Mux9B_CAL1		DE_Mux9B_CAL1	23
7.1	Mux9B_CAL2		DE_Mux9B_CAL2	24
7.2	GMA Inlet Pressure Gyro 1 B	GP8	DE_GMA____GP8	25
7.3	GMA Vent Outlet Pressure B	GP14	DE_GMA____GP14	26
7.4	GMA Inlet Pressure Gyro 2 B	GP9	DE_GMA____GP9	27
7.5	GMA Inlet Pressure Gyro 4 B	GP12	DE_GMA____GP12	28
7.6	GMA Pre-Regulator Pressure B	GP3	DE_GMA____GP3	29
7.7	GMA Post-Regulator Pressure B	GP5	DE_GMA____GP5	30
7.8	GMA Post-Regulator Orifice	GP6	DE_GMA____GP6	31
7.9	Calibration voltage/b		VE_Mux10B_VCAL	32
8	GMA Switch (Mock GMA Only)	V23	DE_GMA_SW__V23	41
8.1	GMA Switch (Mock GMA Only)	V25	DE_GMA_SW__V25	42
8.2	GMA Switch (Mock GMA Only)	V26	DE_GMA_SW__V26	43
8.3	GMA Switch (Mock GMA Only)	V29	DE_GMA_SW__V29	44
8.4	GMA Switch (Mock GMA Only)	V12	DE_GMA_SW__V12	45
8.5	GMA Switch (Mock GMA Only)	V16	DE_GMA_SW__V16	46
8.6	GMA Switch (Mock GMA Only)	V24	DE_GMA_SW__V24	47
8.7	GMA Switch	Spare	DE_GMA_SW__CV5	48
8.8	Vatt Valve - B Open monitor		VE_VAT_B_OPEN	52
8.9	Vatt Valve - B Closed monitor		VE_VAT_B_CLOSED	53
9	Vacuum Gauge Power	P9B	DE_VACG_P9B_PWR	59
9.1	Vacuum Gauge Signal	P9B	DE_VACG_P9B_SIG	60
9.2	Vacuum Gauge Range	P9B	DE_VACG_P9B_RNG	61
9.3	Heat pulse meter heater current/b	(H-2D)	CE_HPMH_I_bh02d	62
9.4	Magnetometer-3 X-out		DE_MAG3_X_OUT	63
9.5	Magnetometer-3 Y-out		DE_MAG3_Y_OUT	64
9.6	Magnetometer-3 Z-out		DE_MAG3_Z_OUT	65
9.7	Magnetometer-4 X-out		DE_MAG4_X_OUT	66
9.8	Magnetometer-4 Y-out		DE_MAG4_Y_OUT	67
9.9	Magnetometer-4 Z-out		DE_MAG4_Z_OUT	68

ECU Sample Tables

10	+5V Monitor/a		VE_Mux11B_VCAL	69
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ECU Sample Tables

h) IOC ADC 3B update rate and monitors left out

IOC ADC 3B update rate			IOC ADC 3B Left Out	
Every 5 seconds	(H-11D)	CE_FICH_I_bh11d	spare	DE_Mux11B_SP10
"	(H-05BD)	CE_FIMHI_bh05bd	spare	DE_Mux11B_SP11
"	(H-2D)	CE_HPMH_I_bh02d	spare	DE_Mux11B_SP12
"	(H-13BD)	CE_PPH_I_bh13bd	spare	DE_Mux11B_SP13
"	GP12	DE_GMA___GP12	spare	DE_Mux11B_SP14
"	GP14	DE_GMA___GP14	spare	DE_Mux9B_SP0D
"	GP3	DE_GMA___GP3		
"	GP5	DE_GMA___GP5		
"	GP6	DE_GMA___GP6		
"	GP8	DE_GMA___GP8		
"	GP9	DE_GMA___GP9		
"		DE_MAG3_X_OUT		
"		DE_MAG3_Y_OUT		
"		DE_MAG3_Z_OUT		
"		DE_MAG4_X_OUT		
"		DE_MAG4_Y_OUT		
"		DE_MAG4_Z_OUT		
"		DE_Mux9B_CAL1		
"		DE_Mux9B_CAL2		
"	T-14D	DE_VSDwBotST14D		
"		TE_ECU_AFT_SDT2		
"		TE_UV_BASE_SDTb		
"		TE_VAT_EV1_SDTb		
"		TE_VAT_EV2_SDTb		
"		TE_VAT_EV3_SDTb		
"		TE_VAT_EV4_SDTb		
"		TE_VAT_LV1_SDTb		
"		TE_VAT_LV2_SDTb		
"	T-32D	TE_VCS_GR_ST32D		
"	H-02P	VE_FF1_2_bH02P		
"	H-04P	VE_FF3_4_bH04P		
"		VE_GYR3_HTR_V_B		
"		VE_GYR4_HTR_V_B		
"		VE_Mux11B_VCAL		
"	H-06P	VE_QBS_H_b_H06P		
"		VE_VAT_B_CLOSED	IOC ADC 3B update rate -cont	
"		VE_VAT_B_OPEN	Every 10 seconds	DE_GMA_SW___V26
			"	DE_GMA_SW___V29
Every 10 seconds		CE_UVLampB_I	"	DE_GMA_SW___V4
"		DE_GMA_SW___CV5	"	DE_GMA_SW___V6
"		DE_GMA_SW___V12	"	DE_GMA_SW___V9
"		DE_GMA_SW___V13	"	DE_UVLampB_OUT
"		DE_GMA_SW___V16	"	DE_VACG_P9B_PWR
"		DE_GMA_SW___V17	"	DE_VACG_P9B_RNG
"		DE_GMA_SW___V2	"	DE_VACG_P9B_SIG
"		DE_GMA_SW___V20	"	TE_GMA_SDT_1B
"		DE_GMA_SW___V21	"	TE_GMA_SDT_2B
"		DE_GMA_SW___V23	"	TE_GMA_SDT_3B
"		DE_GMA_SW___V24	"	TE_UVLampB_T2
"		DE_GMA_SW___V25	"	VE_Mux10B_VCAL

ECU Sample Tables

ECU Flux Reduction Sample Table for ADC 1A

Sample Time	Description	GRT #	Mnemonic	Item
2	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
4	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
6	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
8	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
10	Main tank internal GRT/a	T-10D	TE_MTkIn_aGT10D	1
12	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
14	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
16	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
18	Mux1A CAL1		DE_Mux1A_CAL1	7
20	Mux1A CAL2		DE_Mux1A_CAL2	8
22	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
24	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
26	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
28	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
30	Telescope detector mount +Y GRT	T-21Q	TE_TelDM_YGT21Q	10
32	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
34	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
36	Main tank internal GRT/a	T-10D	TE_MTkIn_aGT10D	1
38	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
40	Mux2A CAL1		DE_Mux2A_CAL1	19
42	Mux2A CAL2		DE_Mux2A_CAL2	20
44	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
46	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
48	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
50	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
52	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
54	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
56	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
58	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
60	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2
62	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
64	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
66	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
68	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
70	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
72	Mux4A CAL1		DE_Mux4A_CAL1	31
74	Mux4A CAL2		DE_Mux4A_CAL2	32
76	Main tank internal GRT/a	T-10D	TE_MTkIn_aGT10D	1
78	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
80	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
82	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
84	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
86	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
88	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
90	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
92	Main tank internal GRT/a	T-10D	TE_MTkIn_aGT10D	1
94	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
96	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
98	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
100	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2

ECU Sample Tables

2) ECU Flux Reduction Sample Table

a) As defined in ECUC00_Chg_Sample_Table_Flux_Reduction.spc VERSION: 1.5 DATE: 02/24/03

b) Includes unique ADC 1A & 1B

i) ADC1A & 1B updated to increase the telemetry rate of the monitors used by the ECU PID algorithm during Flux Reduction.

ii) ADC2A, 2B, 3A & 3B remain unchanged from onboard Sample Table

c) Flux Reduction ADC #1A update rate and monitors left out

Flux Reduction ADC #1A update rate			Flux Reduction ADC #1A Left Out	
Every 20 seconds	T-15P	TE_CryPm_aGT15P	Mux1A CAL3	DE_Mux1A_CAL3
"	T-06P	TE_Fil_2_aGT06P	Mux1A CAL4	DE_Mux1A_CAL4
"	T-08P	TE_Fi3_4_aGT08P	Mux2A CAL3	DE_Mux2A_CAL3
"	T-10P	TE_QBS_a_GT10P	Mux2A CAL4	DE_Mux2A_CAL4
			spare	DE_Mux2A_SP44
Every 25 seconds	T-10D	TE_MTKIn_aGT10D	spare	DE_Mux2A_SP45
"	T-12AD	TE_PPEX_aGT12AD	spare	DE_Mux2A_SP49
	T-01D	TE_St2Dw_aGT01D	Mux3A CAL1	DE_Mux3A_CAL1
			Mux3A CAL2	DE_Mux3A_CAL2
Every 34 seconds	T-05Q	TE_Q_Aft_GT05Q	Mux3A CAL3	DE_Mux3A_CAL3
"	T-17Q	TE_Q_ForEGGT17Q	spare	DE_Mux4A_SP24
	T-05P	TE_St2Pr_aGT05P	spare	DE_Mux4A_SP25
			spare	DE_Mux4A_SP26
Every 50 seconds	T-18D	TE_FIM_a_GT18D	spare	DE_Mux4A_SP27
			Gyroscope #1 GRT	TE_Gyro_1_GT01Q
Every 100 seconds		DE_Mux1A_CAL1	Gyroscope #3 GRT	TE_Gyro_3_GT03Q
"		DE_Mux1A_CAL2	Telescope detector #1 GRT	TE_TelD_1_GT12Q
"		DE_Mux2A_CAL1	Telescope detector #2 GRT	TE_TelD_2_GT13Q
"		DE_Mux2A_CAL2		
"		DE_Mux4A_CAL1		
"		DE_Mux4A_CAL2		
"	T-21Q	TE_TelDM_YGT21Q		

ECU Sample Tables

ECU Flux Reduction Sample Table for ADC 1B

2	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
4	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
6	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
8	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
10	Main tank internal GRT/b	T-11D	TE_MTkIn_bGT11D	1
12	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
14	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
16	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
18	Mux1B CAL1		DE_Mux1B_CAL1	7
20	Mux1B CAL2		DE_Mux1B_CAL2	8
22	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
24	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
26	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
28	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
30	Mux3B CAL2		DE_Mux3B_CAL2	26
32	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
34	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
36	Main tank internal GRT/b	T-11D	TE_MTkIn_bGT11D	1
38	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
40	Mux2B CAL1		DE_Mux2B_CAL1	19
42	Mux2B CAL2		DE_Mux2B_CAL2	20
44	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
46	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
48	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
50	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
52	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
54	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
56	Main tank internal GRT/b	T-11D	TE_MTkIn_bGT11D	1
58	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
60	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2
62	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
64	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
66	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
68	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
70	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
72	Mux4B CAL1		DE_Mux4B_CAL1	31
74	Mux4B CAL2		DE_Mux4B_CAL2	32
76	Main tank internal GRT/b	T-11D	TE_MTkIn_bGT11D	1
78	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
80	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
82	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
84	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
86	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
88	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
90	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
92	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
94	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
96	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
98	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
100	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2

ECU Sample Tables

d) Flux Reduction ADC #1B update rate and monitors left out

Flux Reduction ADC #1B update rate			Flux Reduction ADC #1B Left Out	
Every 20 seconds	T-16P	TE_CryPm_bGT16P	Mux1B CAL3	DE_Mux1B_CAL3
"	T-07P	TE_Fi1_2_bGT07P	Mux1B CAL4	DE_Mux1B_CAL4
"	T-09P	TE_Fi3_4_bGT09P	Mux2B CAL3	DE_Mux2B_CAL3
"	T-11P	TE_QBS_b_GT11P	Mux2B CAL4	DE_Mux2B_CAL4
"	T-02D	TE_St2Dw_bGT02D	spare	DE_Mux2B_SP43
"	T-28P	TE_St2Pr_bGT28P	spare	DE_Mux2B_SP44
			spare	DE_Mux2B_SP45
Every 25 seconds	T-11D	TE_MtkIn_bGT11D	spare	DE_Mux2B_SP48
"	T-12BD	TE_PPEX_bGT12BD	spare	DE_Mux2B_SP49
			Mux3B CAL1	DE_Mux3B_CAL1
Every 34 seconds	T-06Q	TE_Q_Flng_GT06Q	Mux3B CAL3	DE_Mux3B_CAL3
			spare	DE_Mux4B_SP24
Every 50 seconds	T-19D	TE_FlMtr_bGT19D	spare	DE_Mux4B_SP25
			spare	DE_Mux4B_SP26
Every 100 seconds		DE_Mux1B_CAL1	spare	DE_Mux4B_SP27
"		DE_Mux1B_CAL2	Gyroscope #2 GRT	TE_Gyro_2_GT02Q
"		DE_Mux2B_CAL1	Gyroscope #4 GRT	TE_Gyro_4_GT04Q
"		DE_Mux2B_CAL2	Telescope corrector plate #1 GRT	TE_TelCP_1GT14Q
"		DE_Mux3B_CAL2	Telescope corrector plate #2 GRT	TE_TelCP_2GT15Q
"		DE_Mux4B_CAL1		
"		DE_Mux4B_CAL2		

ECU Sample Tables

ECU LTB Sample Table for ADC 1A

Sample Time	Description	GRT #	Mnemonic	Item
2	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
4	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
6	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
8	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
10	Mux1A CAL2		DE_Mux1A_CAL2	8
12	Mux2A CAL2		DE_Mux2A_CAL2	20
14	Mux3A CAL2		DE_Mux3A_CAL2	26
16	Mux4A CAL2		DE_Mux4A_CAL2	32
18	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
20	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
22	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
24	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
26	Gyroscope #1 GRT	T-01Q	TE_Gyro_1_GT01Q	3
28	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
30	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
32	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
34	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
36	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
38	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
40	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
42	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
44	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
46	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
48	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
50	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
52	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
54	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
56	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
58	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
60	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
62	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
64	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
66	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
68	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
70	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
72	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
74	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
76	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
78	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
80	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
82	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
84	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
86	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
88	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
90	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
92	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
94	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
96	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
98	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
100	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30

ECU Sample Tables

3) ECU Low Temperature Bakeout Sample Table

a) As defined in ECUC00_Chg_Sample_Table_Low_Temp_B_O.spc VERSION: 1.2 DATE: 07/03/03

b) Includes unique ADC 1A & 1B

i) ADC1A & 1B updated to increase the telemetry rate of the monitors used by the ECU PID algorithm during Low Temperature Bakeout.

ii) ADC2A, 2B, 3A & 3B remain unchanged from onboard Sample Table

c) Low Temperature Bakeout ADC #1A update rate and monitors left out

Low Temperature Bakeout ADC #1A update rate			Low Temperature Bakeout ADC #1A Left Out	
Every 10 Seconds	T-15P	TE_CryPm_aGT15P	Mux1A CAL1	DE_Mux1A_CAL1
"	T-06P	TE_Fi1_2_aGT06P	Mux1A CAL3	DE_Mux1A_CAL3
"	T-08P	TE_Fi3_4_aGT08P	Mux1A CAL4	DE_Mux1A_CAL4
"	T-10P	TE_QBS_a__GT10P	Mux2A CAL1	DE_Mux2A_CAL1
			Mux2A CAL3	DE_Mux2A_CAL3
Every 100 Seconds		DE_Mux1A_CAL2	Mux2A CAL4	DE_Mux2A_CAL4
"		DE_Mux2A_CAL2	spare	DE_Mux2A_SP44
"		DE_Mux3A_CAL2	spare	DE_Mux2A_SP45
"		DE_Mux4A_CAL2	spare	DE_Mux2A_SP49
"	T-01Q	TE_Gyro_1_GT01Q	Mux3A CAL1	DE_Mux3A_CAL1
"	T-10D	TE_MTKIn_aGT10D	Mux3A CAL3	DE_Mux3A_CAL3
"	T-12AD	TE_PPEX_aGT12AD	Mux4A CAL1	DE_Mux4A_CAL1
"	T-05Q	TE_Q_Aft__GT05Q	spare	DE_Mux4A_SP24
"	T-01D	TE_St2Dw_aGT01D	spare	DE_Mux4A_SP25
"	T-05P	TE_St2Pr_aGT05P	spare	DE_Mux4A_SP26
			spare	DE_Mux4A_SP27
			Flow meter vent line GRT/a	TE_FIM_a__GT18D
			Gyroscope #3 GRT	TE_Gyro_3_GT03Q
			Quartz block forward end GRT	TE_Q_ForEGGT17Q
			Telescope detector #1 GRT	TE_TelD_1_GT12Q
			Telescope detector #2 GRT	TE_TelD_2_GT13Q
			Telescope detector mount +Y GRT	TE_TelDM_YGT21Q

ECU Sample Tables

ECU LTB Sample Table for ADC 1B

Sample Time	Description	GRT #	Mnemonic	Item
2	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
4	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
6	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
8	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
10	Mux1B CAL2		DE_Mux1B_CAL2	8
12	Mux2B CAL2		DE_Mux2B_CAL2	20
14	Mux3B CAL2		DE_Mux3B_CAL2	26
16	Mux4B CAL2		DE_Mux4B_CAL2	32
18	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
20	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
22	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
24	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
26	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
28	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
30	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
32	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
34	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
36	Main tank internal GRT/b	T-11D	TE_MTKIn_bGT11D	1
38	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
40	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
42	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
44	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
46	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
48	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
50	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
52	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
54	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
56	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
58	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
60	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
62	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
64	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
66	Gyroscope #4 GRT	T-04Q	TE_Gyro_4_GT04Q	4
68	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
70	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
72	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
74	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
76	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
78	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
80	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
82	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
84	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
86	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
88	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
90	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
92	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
94	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
96	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
98	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
100	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30

ECU Sample Tables

d) Low Temperature Bakeout ADC #1B update rate and monitors left out

Low Temperature Bakeout ADC #1B update rate			Low Temperature Bakeout ADC #1B Left Out	
Every 10 Seconds	T-16P	TE_CryPm_bGT16P	Mux1B CAL1	DE_Mux1B_CAL1
"	T-07P	TE_Fi1_2_bGT07P	Mux1B CAL3	DE_Mux1B_CAL3
"	T-09P	TE_Fi3_4_bGT09P	Mux1B CAL4	DE_Mux1B_CAL4
"	T-11P	TE_QBS_b__GT11P	Mux2B CAL1	DE_Mux2B_CAL1
			Mux2B CAL3	DE_Mux2B_CAL3
Every 100 Seconds		DE_Mux1B_CAL2	Mux2B CAL4	DE_Mux2B_CAL4
"		DE_Mux2B_CAL2	spare	DE_Mux2B_SP43
"		DE_Mux3B_CAL2	spare	DE_Mux2B_SP44
"		DE_Mux4B_CAL2	spare	DE_Mux2B_SP45
"		TE_Gyro_4_GT04Q	spare	DE_Mux2B_SP48
"		TE_MTKIn_bGT11D	spare	DE_Mux2B_SP49
"		TE_PPEX_bGT12BD	Mux3B CAL1	DE_Mux3B_CAL1
"		TE_Q_Flng_GT06Q	Mux3B CAL3	DE_Mux3B_CAL3
"	T-02D	TE_St2Dw_bGT02D	Mux4B CAL1	DE_Mux4B_CAL1
"	T-28P	TE_St2Pr_bGT28P	spare	DE_Mux4B_SP24
			spare	DE_Mux4B_SP25
			spare	DE_Mux4B_SP26
			spare	DE_Mux4B_SP27
			Flow meter vent line GRT/b	TE_FIMtr_bGT19D
			Gyroscope #2 GRT	TE_Gyro_2_GT02Q
			Telescope corrector plate #1 GRT	TE_TelCP_1GT14Q
			Telescope corrector plate #2 GRT	TE_TelCP_2GT15Q

ECU Sample Tables

ECU Science Sample Table for ADC 1A

2	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
4	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
6	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2
8	Gyroscope #1 GRT	T-01Q	TE_Gyro_1_GT01Q	3
10	Gyroscope #3 GRT	T-03Q	TE_Gyro_3_GT03Q	4
12	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
14	Telescope detector #1 GRT	T-12Q	TE_TelD_1_GT12Q	6
16	Mux1A CAL1		DE_Mux1A_CAL1	7
18	Mux1A CAL2		DE_Mux1A_CAL2	8
20	Telescope detector #2 GRT	T-13Q	TE_TelD_2_GT13Q	9
22	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
24	Telescope detector mount +Y GRT	T-21Q	TE_TelDM_YGT21Q	10
26	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
28	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
30	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
32	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
34	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
36	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
38	Mux2A CAL1		DE_Mux2A_CAL1	19
40	Mux2A CAL2		DE_Mux2A_CAL2	20
42	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
44	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
46	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
48	Final filter 1&2 GRT/a	T-06P	TE_Fil_2_aGT06P	29
50	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
52	Mux4A CAL2		DE_Mux4A_CAL2	32
54	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2
56	Gyroscope #1 GRT	T-01Q	TE_Gyro_1_GT01Q	3
58	Gyroscope #3 GRT	T-03Q	TE_Gyro_3_GT03Q	4
60	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
62	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
64	Telescope detector #1 GRT	T-12Q	TE_TelD_1_GT12Q	6
66	Mux1A CAL2		DE_Mux1A_CAL2	8
68	Telescope detector #2 GRT	T-13Q	TE_TelD_2_GT13Q	9
70	Telescope detector mount +Y GRT	T-21Q	TE_TelDM_YGT21Q	10
72	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
74	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
76	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
78	Mux2A CAL2		DE_Mux2A_CAL2	20
80	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
82	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
84	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
86	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
88	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
90	Mux2A CAL1		DE_Mux2A_CAL1	19
92	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
94	Final filter 1&2 GRT/a	T-06P	TE_Fil_2_aGT06P	29
96	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
98	Mux4A CAL1		DE_Mux4A_CAL1	31
100	Mux4A CAL2		DE_Mux4A_CAL2	32

ECU Sample Tables

4) ECU Science Sample Table

a) As defined in ECUC00_ECU_Science_Sample_Table.spc VERSION: 1.1 DATE: 07/17/03

i) Includes unique ADC 1A, 1B, 2A, 2B, 3A, 3B

ii) Removes Liquid Point Sensor & cleans up monitors unused during science phase.

b) Science Sample Table ADC #1A update rate and monitors left out

Science ADC #1A update rate			Science ADC #1A Left Out	
every 20 seconds	T-10P	TE_QBS_a_GT10P	Mux1A CAL3	DE_Mux1A_CAL3
			Mux1A CAL4	DE_Mux1A_CAL4
every 25 seconds	T-10D	TE_MTKIn_aGT10D	Mux2A CAL3	DE_Mux2A_CAL3
"	T-12AD	TE_PPEX_aGT12AD	Mux2A CAL4	DE_Mux2A_CAL4
			spare	DE_Mux2A_SP44
every 34 seconds	T-05P	TE_St2Pr_aGT05P	spare	DE_Mux2A_SP45
			spare	DE_Mux2A_SP49
every 50 seconds		DE_Mux1A_CAL2	Mux3A CAL1	DE_Mux3A_CAL1
"		DE_Mux2A_CAL1	Mux3A CAL2	DE_Mux3A_CAL2
"		DE_Mux2A_CAL2	Mux3A CAL3	DE_Mux3A_CAL3
"		DE_Mux4A_CAL2	spare	DE_Mux4A_SP24
"	T-15P	TE_CryPm_aGT15P	spare	DE_Mux4A_SP25
"	T-06P	TE_Fi1_2_aGT06P	spare	DE_Mux4A_SP26
"	T-08P	TE_Fi3_4_aGT08P	spare	DE_Mux4A_SP27
"	T-18D	TE_FIM_a_GT18D		
"	T-01Q	TE_Gyro_1_GT01Q		
"	T-03Q	TE_Gyro_3_GT03Q		
"	T-05Q	TE_Q_Aft_GT05Q		
"	T-17Q	TE_Q_ForEGGT17Q		
"	T-01D	TE_St2Dw_aGT01D		
"	T-12Q	TE_TelD_1_GT12Q		
"	T-13Q	TE_TelD_2_GT13Q		
"	T-21Q	TE_TelDM_YGT21Q		
every 100 seconds		DE_Mux1A_CAL1		
"		DE_Mux4A_CAL1		

ECU Sample Tables

ECU Science Sample Table for ADC 1B

2	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
4	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
6	Mux2B CAL1		DE_Mux2B_CAL1	19
8	Mux2B CAL2		DE_Mux2B_CAL2	20
10	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
12	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
14	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
16	Mux3B CAL1		DE_Mux3B_CAL1	25
18	Mux3B CAL2		DE_Mux3B_CAL2	26
20	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
22	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
24	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
26	Mux4B CAL1		DE_Mux4B_CAL1	31
28	Mux4B CAL2		DE_Mux4B_CAL2	32
30	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
32	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
34	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2
36	Gyroscope #2 GRT	T-02Q	TE_Gyro_2_GT02Q	3
38	Gyroscope #4 GRT	T-04Q	TE_Gyro_4_GT04Q	4
40	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
42	Telescope corrector plate #1 GRT	T-14Q	TE_TelCP_1GT14Q	6
44	Mux1B CAL2		DE_Mux1B_CAL2	8
46	Telescope corrector plate #2 GRT	T-15Q	TE_TelCP_2GT15Q	9
48	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
50	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
52	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
54	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
56	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
58	Mux2B CAL1		DE_Mux2B_CAL1	19
60	Mux2B CAL2		DE_Mux2B_CAL2	20
62	Mux3B CAL2		DE_Mux3B_CAL2	26
64	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
66	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
68	Mux4B CAL1		DE_Mux4B_CAL1	31
70	Mux4B CAL2		DE_Mux4B_CAL2	32
72	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
74	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
76	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2
78	Gyroscope #2 GRT	T-02Q	TE_Gyro_2_GT02Q	3
80	Gyroscope #4 GRT	T-04Q	TE_Gyro_4_GT04Q	4
82	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
84	Telescope corrector plate #1 GRT	T-14Q	TE_TelCP_1GT14Q	6
86	Mux1B CAL1		DE_Mux1B_CAL1	7
88	Mux1B CAL2		DE_Mux1B_CAL2	8
90	Telescope corrector plate #2 GRT	T-15Q	TE_TelCP_2GT15Q	9
92	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
94	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
96	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
98	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
100	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13

ECU Sample Tables

c) Science Sample Table ADC #1B update rate and monitors left out

Science ADC #1B update rate			Science ADC #1B Left Out	
every 20 seconds	T-11P	TE_QBS_b_GT11P	Mux1B CAL3	DE_Mux1B_CAL3
			Mux1B CAL4	DE_Mux1B_CAL4
every 25 seconds	T-11D	TE_MtIn_bGT11D	Mux2B CAL3	DE_Mux2B_CAL3
"	T-12BD	TE_PPEX_bGT12BD	Mux2B CAL4	DE_Mux2B_CAL4
			spare	DE_Mux2B_SP43
every 34 seconds	T-28P	TE_St2Pr_bGT28P	spare	DE_Mux2B_SP44
			spare	DE_Mux2B_SP45
every 50 seconds		DE_Mux1B_CAL2	spare	DE_Mux2B_SP48
"		DE_Mux2B_CAL1	spare	DE_Mux2B_SP49
"		DE_Mux2B_CAL2	Mux3B CAL3	DE_Mux3B_CAL3
"		DE_Mux3B_CAL2	spare	DE_Mux4B_SP24
"		DE_Mux4B_CAL1	spare	DE_Mux4B_SP25
"		DE_Mux4B_CAL2	spare	DE_Mux4B_SP26
"	T-16P	TE_CryPm_bGT16P	spare	DE_Mux4B_SP27
"	T-07P	TE_Fi1_2_bGT07P		
"	T-09P	TE_Fi3_4_bGT09P		
"	T-19D	TE_FIMtr_bGT19D		
"	T-02Q	TE_Gyro_2_GT02Q		
"	T-04Q	TE_Gyro_4_GT04Q		
"	T-06Q	TE_Q_Flng_GT06Q		
"	T-02D	TE_St2Dw_bGT02D		
"	T-14Q	TE_TelCP_1GT14Q		
"	T-15Q	TE_TelCP_2GT15Q		
every 100 seconds		DE_Mux1B_CAL1		
"		DE_Mux3B_CAL1		

ECU Sample Tables

ECU Science Sample Table for ADC 2A

0.1	+10 V ref/a		VE_Mux7A_VREF	1
0.2	Heat pulse meter heater voltage/a	H-01D	VE_HPMH_a_H01D	2
0.3	Flow meter heater voltage/a	H-05AD	VE_FIMH_a_H05AD	3
0.4	Flow control heater voltage/a	H-10D	VE_FICH_a_H10D	4
0.5	Window #4 frame PRT/a	T-29P	TE_Win_4_aPT29P	42
0.6	+10 V ref/a		VE_Mux7A_VREF	1
0.7	Dewar top plate SDT	T-17D	TE_TpPltDwST17D	24
0.8	Window #4 frame PRT/a	T-29P	TE_Win_4_aPT29P	42
0.9	HEX-1 dewar SDT	T-03D	TE_HEX1Dw_ST03D	15
1	VCS1 middle SDT	T-04D	TE_VCS1Md_ST04D	16
1.1	VCS1 bottom SDT	T-05D	TE_VCS1Bt_ST05D	17
1.2	Vacuum shell probe SDT/a	T-13P	TE_VSPR_a_ST13P	19
1.3	Vacuum shell probe SDT/a	T-13P	TE_VSPR_a_ST13P	19
1.4	Dewar top plate SDT	T-17D	TE_TpPltDwST17D	24
1.5	Plumbing saddle STA194 SDT/a	T-17P	TE_PISad_aST17P	26
1.6	Pressure sense line STA156 SDT/a	T-19P	TE_PrSLn_aST19P	27
1.7	Window #1 frame SDT/a	T-21P	TE_Win_1_aST21P	28
1.8	Window #2 frame SDT/a	T-23P	TE_Win_2_aST23P	29
1.9	Window #3 frame SDT/a	T-25P	TE_Win_3_aST25P	30
2	HEX-4 probe SDT	T-27P	TE_HEX4Pr_ST27P	31
2.1	HEX-1 probe SDT	T-01P	TE_HEX1Pr_ST01P	32
2.2	HEX-3 probe SDT	T-03P	TE_HEX3Pr_ST03P	33
2.3	Forward ECU1 SDT		TE_ECU_FOR_SDT1	39
2.4	Plumbing saddle STA194 SDT/a	T-17P	TE_PISad_aST17P	26
2.5	Window #4 frame PRT/a	T-29P	TE_Win_4_aPT29P	42
2.6	Heat pulse meter heater voltage/a	H-01D	VE_HPMH_a_H01D	2
2.7	Flow meter heater voltage/a	H-05AD	VE_FIMH_a_H05AD	3
2.8	Flow control heater voltage/a	H-10D	VE_FICH_a_H10D	4
2.9	Pressure sense line STA156 SDT/a	T-19P	TE_PrSLn_aST19P	27
3	Window #1 frame SDT/a	T-21P	TE_Win_1_aST21P	28
3.1	Window #2 frame SDT/a	T-23P	TE_Win_2_aST23P	29
3.2	Window #3 frame SDT/a	T-25P	TE_Win_3_aST25P	30
3.3	HEX-1 dewar SDT	T-03D	TE_HEX1Dw_ST03D	15
3.4	VCS1 middle SDT	T-04D	TE_VCS1Md_ST04D	16
3.5	VCS1 bottom SDT	T-05D	TE_VCS1Bt_ST05D	17
3.6	Vacuum shell probe SDT/a	T-13P	TE_VSPR_a_ST13P	19
3.7	HEX-1 probe SDT	T-01P	TE_HEX1Pr_ST01P	32
3.8	HEX-1 dewar SDT	T-03D	TE_HEX1Dw_ST03D	15
3.9	HEX-3 probe SDT	T-03P	TE_HEX3Pr_ST03P	33
4	Plumbing saddle STA194 SDT/a	T-17P	TE_PISad_aST17P	26
4.1	Pressure sense line STA156 SDT/a	T-19P	TE_PrSLn_aST19P	27
4.2	Window #1 frame SDT/a	T-21P	TE_Win_1_aST21P	28
4.3	Window #2 frame SDT/a	T-23P	TE_Win_2_aST23P	29
4.4	Window #3 frame SDT/a	T-25P	TE_Win_3_aST25P	30
4.5	HEX-4 probe SDT	T-27P	TE_HEX4Pr_ST27P	31
4.6	HEX-1 probe SDT	T-01P	TE_HEX1Pr_ST01P	32
4.7	HEX-3 probe SDT	T-03P	TE_HEX3Pr_ST03P	33
4.8	Forward ECU1 SDT		TE_ECU_FOR_SDT1	39
4.9	VCS1 middle SDT	T-04D	TE_VCS1Md_ST04D	16
5	VCS1 bottom SDT	T-05D	TE_VCS1Bt_ST05D	17

ECU Sample Tables

d) Science Sample Table ADC #2A update rate and monitors left out

Science ADC #2A update rate			Science ADC #2A Left Out	
Every 1.67 seconds	T-03D	TE_HEX1Dw_ST03D	Mux7A SD2 CAL1	DE_Mux7A_SD2_C1
"	T-01P	TE_HEX1Pr_ST01P	Mux7A SD2 CAL2	DE_Mux7A_SD2_C2
"	T-03P	TE_HEX3Pr_ST03P	Mux7A SD4 CAL1	DE_Mux7A_SD4_C1
"	T-17P	TE_PISad_aST17P	Mux7A SD4 CAL2	DE_Mux7A_SD4_C2
"	T-19P	TE_PrSLn_aST19P	spare	DE_Mux7A_SP05
"	T-05D	TE_VCS1Bt_ST05D	spare	DE_Mux7A_SP06
"	T-04D	TE_VCS1Md_ST04D	spare	DE_Mux7A_SP07
"	T-13P	TE_VSP_r_a_ST13P	spare	DE_Mux7A_SP25
"	T-21P	TE_Win_1_aST21P	spare	DE_Mux7A_SP41
"	T-23P	TE_Win_2_aST23P	spare	DE_Mux7A_SP62
"	T-25P	TE_Win_3_aST25P	spare	DE_Mux7A_SP63
"	T-29P	TE_Win_4_aPT29P	spare	DE_Mux7A_SP64
			PODS#10 continuity	DE_PODS10_R10D
Every 2.5 seconds		TE_ECU_FOR_SDT1	PODS#11 continuity	DE_PODS11_R11D
"	T-27P	TE_HEX4Pr_ST27P	PODS#12 continuity	DE_PODS12_R12D
"	T-17D	TE_TpPltDwST17D	PODS#7 continuity	DE_PODS7_R07D
"	H-10D	VE_FICH_a_H10D	PODS#8 continuity	DE_PODS8_R08D
"	H-05AD	VE_FIMH_a_H05AD	PODS#9 continuity	DE_PODS9_R09D
"	H-01D	VE_HPMH_a_H01D	Liquid point sensor voltage	LP-01D
"		VE_Mux7A_VREF	Guard tank bottom SDT	TE_GrdTk_ST16D
			Quartz block forward end SDT	TE_Q_ForESST18Q
			Quartz block G3/G4 SDT	TE_Q_G3_G4ST07Q

ECU Sample Tables

ECU Science Sample Table for ADC 2B

0.1	+10 V ref/b		VE_Mux7B_VREF	1
0.2	Heat pulse meter heater voltage/b	H-02D	VE_HPMH_b_H02D	2
0.3	Flow meter heater voltage/b	H-05BD	VE_FIMH_b_H05BD	3
0.4	Flow control heater voltage/b	H-11D	VE_FICH_b_H11D	4
0.5	HEX-2 probe SDT	T-02P	TE_HEX2Pr_ST02P	32
0.6	Window #2 SDT/b	T-24P	TE_Win_2_bST24P	29
0.7	Vacuum shell probe SDT/b	T-14P	TE_VSPR_b_ST14P	19
0.8	Window #3 SDT/b	T-26P	TE_Win_3_bST26P	30
0.9	HEX-2 dewar SDT	T-06D	TE_HEX2Dw_ST06D	15
1	HEX-3 dewar SDT	T-07D	TE_HEX3Dw_ST07D	16
1.1	HEX-4 dewar SDT	T-08D	TE_HEX4Dw_ST08D	17
1.2	Vacuum shell probe SDT/b	T-14P	TE_VSPR_b_ST14P	19
1.3	Forward ECU2 SDT		TE_ECU_FOR_SDT2	39
1.4	HEX-4 probe SDT	T-04P	TE_HEX4Pr_ST04P	33
1.5	Plumbing saddle SDT/b	T-18P	TE_PISad_bST18P	26
1.6	Pressure sense line SDT/b	T-20P	TE_PrSLn_bST20P	27
1.7	Window #4 frame PRT/b	T-30P	TE_Win_4_bPT30P	42
1.8	Flow control heater voltage/b	H-11D	VE_FICH_b_H11D	4
1.9	+10 V ref/b		VE_Mux7B_VREF	1
2	HEX-2 probe SDT	T-02P	TE_HEX2Pr_ST02P	32
2.1	HEX-4 probe SDT	T-04P	TE_HEX4Pr_ST04P	33
2.2	Forward ECU2 SDT		TE_ECU_FOR_SDT2	39
2.3	Plumbing saddle SDT/b	T-18P	TE_PISad_bST18P	26
2.4	Pressure sense line SDT/b	T-20P	TE_PrSLn_bST20P	27
2.5	Window #4 frame PRT/b	T-30P	TE_Win_4_bPT30P	42
2.6	Heat pulse meter heater voltage/b	H-02D	VE_HPMH_b_H02D	2
2.7	Flow meter heater voltage/b	H-05BD	VE_FIMH_b_H05BD	3
2.8	Flow control heater voltage/b	H-11D	VE_FICH_b_H11D	4
2.9	Vacuum shell probe SDT/b	T-14P	TE_VSPR_b_ST14P	19
3	Forward ECU2 SDT		TE_ECU_FOR_SDT2	39
3.1	HEX-2 dewar SDT	T-06D	TE_HEX2Dw_ST06D	15
3.2	Window #2 SDT/b	T-24P	TE_Win_2_bST24P	29
3.3	HEX-2 dewar SDT	T-06D	TE_HEX2Dw_ST06D	15
3.4	HEX-3 dewar SDT	T-07D	TE_HEX3Dw_ST07D	16
3.5	HEX-4 dewar SDT	T-08D	TE_HEX4Dw_ST08D	17
3.6	Vacuum shell probe SDT/b	T-14P	TE_VSPR_b_ST14P	19
3.7	HEX-3 dewar SDT	T-07D	TE_HEX3Dw_ST07D	16
3.8	Window #3 SDT/b	T-26P	TE_Win_3_bST26P	30
3.9	+10 V ref/b		VE_Mux7B_VREF	1
4	Plumbing saddle SDT/b	T-18P	TE_PISad_bST18P	26
4.1	Pressure sense line SDT/b	T-20P	TE_PrSLn_bST20P	27
4.2	Heat pulse meter heater voltage/b	H-02D	VE_HPMH_b_H02D	2
4.3	Window #2 SDT/b	T-24P	TE_Win_2_bST24P	29
4.4	Flow meter heater voltage/b	H-05BD	VE_FIMH_b_H05BD	3
4.5	HEX-2 probe SDT	T-02P	TE_HEX2Pr_ST02P	32
4.6	HEX-4 probe SDT	T-04P	TE_HEX4Pr_ST04P	33
4.7	Window #4 frame PRT/b	T-30P	TE_Win_4_bPT30P	42
4.8	Forward ECU2 SDT		TE_ECU_FOR_SDT2	39
4.9	HEX-4 dewar SDT	T-08D	TE_HEX4Dw_ST08D	17
5	Window #3 SDT/b	T-26P	TE_Win_3_bST26P	30

ECU Sample Tables

e) Science Sample Table ADC #2B update rate and monitors left out

Science Sample Table ADC #2B update rate			Science Sample Table ADC #2B Left Out	
Every 1.25 seconds	T-14P	TE_VSPr_b_ST14P	not used	DE_Ecu_none1
"		TE_ECU_FOR_SDT2	Mux7B SD2 CAL1	DE_Mux7B_SD2_C1
			Mux7B SD2 CAL2	DE_Mux7B_SD2_C2
Every 1.67 seconds	T-06D	TE_HEX2Dw_ST06D	Mux7B SD4 CAL1	DE_Mux7B_SD4_C1
"	T-02P	TE_HEX2Pr_ST02P	Mux7B SD4 CAL2	DE_Mux7B_SD4_C2
"	T-07D	TE_HEX3Dw_ST07D	Spare	DE_Mux7B_SP05
"	T-08D	TE_HEX4Dw_ST08D	Spare	DE_Mux7B_SP06
"	T-04P	TE_HEX4Pr_ST04P	Spare	DE_Mux7B_SP07
"	T-18P	TE_PISad_bST18P	Spare	DE_Mux7B_SP23
"	T-20P	TE_PrSLn_bST20P	Spare	DE_Mux7B_SP25
"	T-14P	TE_VSPr_b_ST14P	Spare	DE_Mux7B_SP40
"	T-24P	TE_Win_2_bST24P	Spare	DE_Mux7B_SP41
"	T-26P	TE_Win_3_bST26P	Spare	DE_Mux7B_SP61
"	T-30P	TE_Win_4_bPT30P	Spare	DE_Mux7B_SP62
"	H-11D	VE_FICH_b_H11D	Spare	DE_Mux7B_SP63
"	H-05BD	VE_FIMH_b_H05BD	Spare	DE_Mux7B_SP64
"	H-02D	VE_HPMH_b_H02D	PODS#1 continuity	DE_PODS1_R01D
"		VE_Mux7B_VREF	PODS#2 continuity	DE_PODS2_R02D
			PODS#3 continuity	DE_PODS3_R03D
			PODS#4 continuity	DE_PODS4_R04D
			PODS#5 continuity	DE_PODS5_R05D
			PODS#6 continuity	DE_PODS6_R06D
			Quartz block support SDT	TE_QBS_SDTST12P
			Science telescope SDT	TE_SciTel_ST16Q
			Window #1 SDT/b	TE_Win_1_bST22P
			Porous plug heater voltage/b	VE_PPH_b_H13BD

ECU Sample Tables

ECU Science Sample Table for ADC 3A

0.1	Flow meter heater current/a	(H-05AD)	CE_FIMHI_ah05ad	1
0.2	Flow control heater current/a	(H-10D)	CE_FICH_I_ah10d	2
0.3	Support ring vacuum shell	T-13D	DE_VSDwSRgST13D	20
0.4	Quartz block support heater V	H-05P	VE_QBS_H_a_H05P	4
0.5	Gyro3 Htr V/a		VE_Gyr3_HTR_V_A	5
0.6	Gyro1 Htr V/a		VE_Gyr1_HTR_V_A	6
0.7	Final Filter 3&4 Htr V/a	H-03P	VE_FF3_4_ah03P	7
0.8	Final Filter 1&2 Htr V/a	H-01P	VE_FF1_2_ah01P	8
0.9	GMA #1A SDT/a		TE_GMA_SDT_1A	9
1	GMA #2A SDT/a		TE_GMA_SDT_2A	10
1.1	Leakage valve 1 SDT/a		TE_VAT_LV1_SDTa	12
1.2	Leakage valve 2 SDT/a		TE_VAT_LV2_SDTa	13
1.3	UV-A base SDT/a		TE_UV_BASE_SDTa	14
1.4	GMA Monitor board SDT/a		TE_ECU_Aft_SDT1	15
1.5	Exhaust valve 1 SDT/a		TE_VAT_EV1_SDTa	16
1.6	Exhaust valve 2 SDT/a		TE_VAT_EV2_SDTa	17
1.7	Exhaust valve 3 SDT/a		TE_VAT_EV3_SDTa	18
1.8	Exhaust valve 4 SDT/a		TE_VAT_EV4_SDTa	19
1.9	Support ring vacuum shell	T-13D	DE_VSDwSRgST13D	20
2	Vac. Shell Graphite Ring SDT/a	T-30D	TE_VCS_GR_ST30D	21
2.1	Vac. Shell Graphite Ring SDT/a	T-31D	TE_VCS_GR_ST31D	22
2.2	Quartz block support heater V	H-05P	VE_QBS_H_a_H05P	4
2.3	UV-A base SDT/a		TE_UV_BASE_SDTa	14
2.4	GMA Pre-Regulator Pressure A	GP2	DE_GMA____GP2	25
2.5	GMA Inlet Pressure Gyro 2 A	GP10	DE_GMA____GP10	26
2.6	GMA Tank Pressure	GP1	DE_GMA____GP1	27
2.7	GMA Inlet Pressure Gyro 1 A	GP7	DE_GMA____GP7	28
2.8	GMA Inlet Pressure Gyro 3 A	GP11	DE_GMA____GP11	29
2.9	GMA Post Regulator Pressure A	GP4	DE_GMA____GP4	30
3	GMA Inlet Pressure Gyro 4 A	GP13	DE_GMA____GP13	31
3.1	Vac. Shell Graphite Ring SDT/a	T-30D	TE_VCS_GR_ST30D	21
3.2	Vac. Shell Graphite Ring SDT/a	T-31D	TE_VCS_GR_ST31D	22
3.3	Quartz block support heater V	H-05P	VE_QBS_H_a_H05P	4
3.4	UV-A base SDT/a		TE_UV_BASE_SDTa	14
3.5	GMA Monitor board SDT/a		TE_ECU_Aft_SDT1	15
3.6	Support ring vacuum shell	T-13D	DE_VSDwSRgST13D	20
3.7	Exhaust valve 1 SDT/a		TE_VAT_EV1_SDTa	16
3.8	Exhaust valve 2 SDT/a		TE_VAT_EV2_SDTa	17
3.9	UV Lamp-A output		DE_UVLampA_OUT	49
4	UV Lamp-A current		CE_UVLampA_I	50
4.1	UV Lamp-A bulb temperature		TE_UVLampA_T2	51
4.2	Vatt Valve - A Open monitor		VE_VAT_A_OPEN	52
4.3	Heat pulse meter heater current/a	(H-01D)	CE_HPMH_I_ah01d	62
4.4	Magnetometer-1 X-out		DE_MAG1_X_OUT	63
4.5	Magnetometer-1 Y-out		DE_MAG1_Y_OUT	64
4.6	Magnetometer-1 Z-out		DE_MAG1_Z_OUT	65
4.7	Magnetometer-2 X-out		DE_MAG2_X_OUT	66
4.8	Magnetometer-2 Y-out		DE_MAG2_Y_OUT	67
4.9	Magnetometer-2 Z-out		DE_MAG2_Z_OUT	68
5	+5V Monitor/a		VE_Mux11A_VCAL	69

ECU Sample Tables

ECU Science Sample Table for ADC 3A -cont

5.1	Flow meter heater current/a	(H-05AD)	CE_FIMHI_ah05ad	1
5.2	Flow control heater current/a	(H-10D)	CE_FICH_I_ah10d	2
5.3	UV-A base SDT/a		TE_UV_BASE_SDTa	14
5.4	Quartz block support heater V	H-05P	VE_QBS_H_a_H05P	4
5.5	Gyro2 Htr V/a		VE_Gyr2_HTR_V_A	5
5.6	Gyro1 Htr V/a		VE_Gyr1_HTR_V_A	6
5.7	Final Filter 3&4 Htr V/a	H-03P	VE_FF3_4_aH03P	7
5.8	Final Filter 1&2 Htr V/a	H-01P	VE_FF1_2_aH01P	8
5.9	GMA #3A SDT/a		TE_GMA_SDT_3A	11
6	Leakage valve 1 SDT/a		TE_VAT_LV1_SDTa	12
6.1	Leakage valve 2 SDT/a		TE_VAT_LV2_SDTa	13
6.2	UV-A base SDT/a		TE_UV_BASE_SDTa	14
6.3	GMA Monitor board SDT/a		TE_ECU_Aft_SDT1	15
6.4	Exhaust valve 1 SDT/a		TE_VAT_EV1_SDTa	16
6.5	Exhaust valve 2 SDT/a		TE_VAT_EV2_SDTa	17
6.6	Exhaust valve 3 SDT/a		TE_VAT_EV3_SDTa	18
6.7	Exhaust valve 4 SDT/a		TE_VAT_EV4_SDTa	19
6.8	Support ring vacuum shell	T-13D	DE_VSDwSRgST13D	20
6.9	Vac. Shell Graphite Ring SDT/a	T-30D	TE_VCS_GR_ST30D	21
7	Vac. Shell Graphite Ring SDT/a	T-31D	TE_VCS_GR_ST31D	22
7.1	GMA Monitor board SDT/a		TE_ECU_Aft_SDT1	15
7.2	Support ring vacuum shell	T-13D	DE_VSDwSRgST13D	20
7.3	GMA Pre-Regulator Pressure A	GP2	DE_GMA____GP2	25
7.4	GMA Inlet Pressure Gyro 2 A	GP10	DE_GMA____GP10	26
7.5	GMA Tank Pressure	GP1	DE_GMA____GP1	27
7.6	GMA Inlet Pressure Gyro 1 A	GP7	DE_GMA____GP7	28
7.7	GMA Inlet Pressure Gyro 3 A	GP11	DE_GMA____GP11	29
7.8	GMA Post Regulator Pressure A	GP4	DE_GMA____GP4	30
7.9	GMA Inlet Pressure Gyro 4 A	GP13	DE_GMA____GP13	31
8	Calibration voltage/a		VE_Mux10A_VCAl	32
8.1	Vac. Shell Graphite Ring SDT/a	T-30D	TE_VCS_GR_ST30D	21
8.2	Vac. Shell Graphite Ring SDT/a	T-31D	TE_VCS_GR_ST31D	22
8.3	Quartz block support heater V	H-05P	VE_QBS_H_a_H05P	4
8.4	UV Lamp-A output		DE_UVLampA_OUT	49
8.5	UV Lamp-A current		CE_UVLampA_I	50
8.6	UV Lamp-A bulb temperature		TE_UVLampA_T2	51
8.7	Exhaust valve 1 SDT/a		TE_VAT_EV1_SDTa	16
8.8	Exhaust valve 2 SDT/a		TE_VAT_EV2_SDTa	17
8.9	Vatt Valve - A Closed monitor		VE_VAT_A_CLOSED	53
9	Vacuum gauge power	P9A	DE_VACG_P9A_PWR	59
9.1	Vacuum gauge signal	P9A	DE_VACG_P9A_SIG	60
9.2	Vacuum gauge range	P9A	DE_VACG_P9A_RNG	61
9.3	Heat pulse meter heater current/a	(H-01D)	CE_HPMH_I_ah01d	62
9.4	Magnetometer-1 X-out		DE_MAG1_X_OUT	63
9.5	Magnetometer-1 Y-out		DE_MAG1_Y_OUT	64
9.6	Magnetometer-1 Z-out		DE_MAG1_Z_OUT	65
9.7	Magnetometer-2 X-out		DE_MAG2_X_OUT	66
9.8	Magnetometer-2 Y-out		DE_MAG2_Y_OUT	67
9.9	Magnetometer-2 Z-out		DE_MAG2_Z_OUT	68
10	+5V Monitor/a		VE_Mux11A_VCAl	69

ECU Sample Tables

f) Science Sample Table ADC #3A update rate and monitors left out

Science Sample Table #ADC 3A update rate			Science Sample Table #ADC 3A Left Out	
every 2 seconds	T-13D	DE_VSDwSRgST13D	Porous plug heater current/a	CE_PPH_I_ah13ad
"		TE_UV_BASE_SDTa	GMA Switch	DE_GMA_SW__CV4
"	H-05P	VE_QBS_H_a_H05P	GMA Switch (Mock GMA Only)	DE_GMA_SW__V1
			GMA Switch (Mock GMA Only)	DE_GMA_SW__V10
every 2.5 seconds		TE_ECU_Aft_SDT1	GMA Switch (Mock GMA Only)	DE_GMA_SW__V11
"		TE_VAT_EV1_SDTa	GMA Switch (Mock GMA Only)	DE_GMA_SW__V14
"		TE_VAT_EV2_SDTa	GMA Switch (Mock GMA Only)	DE_GMA_SW__V15
"	T-30D	TE_VCS_GR_ST30D	GMA Switch (Mock GMA Only)	DE_GMA_SW__V18
"	T-31D	TE_VCS_GR_ST31D	GMA Switch (Mock GMA Only)	DE_GMA_SW__V19
			GMA Switch (Mock GMA Only)	DE_GMA_SW__V22
every 5 seconds	(H-10D)	CE_FICH_I_ah10d	GMA Switch (Mock GMA Only)	DE_GMA_SW__V27
"	(H-05AD)	CE_FIMHI_ah05ad	GMA Switch (Mock GMA Only)	DE_GMA_SW__V28
"	(H-01D)	CE_HPMH_I_ah01d	GMA Switch (Mock GMA Only)	DE_GMA_SW__V3
"		CE_UVLampA_I	GMA Switch (Mock GMA Only)	DE_GMA_SW__V30
"	GP1	DE_GMA__GP1	GMA Switch (Mock GMA Only)	DE_GMA_SW__V5
"	GP10	DE_GMA__GP10	GMA Switch (Mock GMA Only)	DE_GMA_SW__V7
"	GP11	DE_GMA__GP11	GMA Switch (Mock GMA Only)	DE_GMA_SW__V8
"	GP13	DE_GMA__GP13	Spare	DE_Mux11A_SP10
"	GP2	DE_GMA__GP2	Spare	DE_Mux11A_SP11
"	GP4	DE_GMA__GP4	Spare	DE_Mux11A_SP12
"	GP7	DE_GMA__GP7	Spare	DE_Mux11A_SP13
"		DE_MAG1_X_OUT	Spare	DE_Mux11A_SP14
"		DE_MAG1_Y_OUT	Mux9A_CAL1	DE_Mux9A_CAL1
"		DE_MAG1_Z_OUT	Mux9A_CAL2	DE_Mux9A_CAL2
"		DE_MAG2_X_OUT	Science ADC #3A Additions from ADC 3B	
"		DE_MAG2_Y_OUT	Gyro3 Htr V/a	VE_Gyr3_HTR_V_A
"		DE_MAG2_Z_OUT		
"		DE_UVLampA_OUT		
"		TE_UVLampA_T2		
"		TE_VAT_EV3_SDTa		
"		TE_VAT_EV4_SDTa		
"		TE_VAT_LV1_SDTa		
"		TE_VAT_LV2_SDTa		
"	H-01P	VE_FF1_2_aH01P		
"	H-03P	VE_FF3_4_aH03P		
"		VE_Gyr1_HTR_V_A		
"		VE_Mux11A_VCAL		
every 10 seconds		DE_VACG_P9A_PWR		
"	P9A	DE_VACG_P9A_PWR		
"	P9A	DE_VACG_P9A_RNG		
"	P9A	DE_VACG_P9A_SIG		
"		TE_GMA_SDT_1A		
"		TE_GMA_SDT_2A		
"		TE_GMA_SDT_3A		
"		VE_Gyr2_HTR_V_A		
"		VE_Gyr3_HTR_V_A		
"		VE_Mux10A_VCAL		
"		VE_VAT_A_CLOSED		
"		VE_VAT_A_OPEN		

ECU Sample Tables

ECU Science Sample Table List for ADC 3B

0.1	Flow meter heater current/b	(H-05BD)	CE_FIMHI_bh05bd	1
0.2	Flow control heater current/b	(H-11D)	CE_FICH_I_bh11d	2
0.3	Bottom vacuum shell	T-14D	DE_VSDwBotST14D	20
0.4	Quartz block support heater V	H-06P	VE_QBS_H_b_H06P	4
0.5	Gyro4 Htr V/b		VE_GYR4_HTR_V_B	5
0.6	Gyro3 Htr V/b		VE_GYR3_HTR_V_B	6
0.7	Final Filter 3&4 Htr V/b	H-04P	VE_FF3_4_bh04P	7
0.8	Final Filter 1&2 Htr V/b	H-02P	VE_FF1_2_bh02P	8
0.9	GMA #1B SDT/b		TE_GMA_SDT_1B	9
1	GMA #2B SDT/b		TE_GMA_SDT_2B	10
1.1	Leakage valve 1 SDT/b		TE_VAT_LV1_SDTb	12
1.2	Leakage valve 2 SDT/b		TE_VAT_LV2_SDTb	13
1.3	UV-B base SDT/b		TE_UV_BASE_SDTb	14
1.4	GMA Monitor board SDT/b		TE_ECU_AFT_SDT2	15
1.5	Exhaust valve 1 SDT/b		TE_VAT_EV1_SDTb	16
1.6	Exhaust valve 2 SDT/b		TE_VAT_EV2_SDTb	17
1.7	Exhaust valve 3 SDT/b		TE_VAT_EV3_SDTb	18
1.8	Exhaust valve 4 SDT/b		TE_VAT_EV4_SDTb	19
1.9	Bottom vacuum shell	T-14D	DE_VSDwBotST14D	20
2	Vac Shell Graphite Ring SDT/a	T-32D	TE_VCS_GR_ST32D	21
2.1	UV-B base SDT/b		TE_UV_BASE_SDTb	14
2.2	GMA Monitor board SDT/b		TE_ECU_AFT_SDT2	15
2.3	GMA Inlet Pressure Gyro 1 B	GP8	DE_GMA____GP8	25
2.4	GMA Vent Outlet Pressure B	GP14	DE_GMA____GP14	26
2.5	GMA Inlet Pressure Gyro 2 B	GP9	DE_GMA____GP9	27
2.6	GMA Inlet Pressure Gyro 4 B	GP12	DE_GMA____GP12	28
2.7	GMA Pre-Regulator Pressure B	GP3	DE_GMA____GP3	29
2.8	GMA Post-Regulator Pressure B	GP5	DE_GMA____GP5	30
2.9	GMA Post-Regulator Orifice	GP6	DE_GMA____GP6	31
3	Quartz block support heater V	H-06P	VE_QBS_H_b_H06P	4
3.1	Exhaust valve 1 SDT/b		TE_VAT_EV1_SDTb	16
3.2	Exhaust valve 2 SDT/b		TE_VAT_EV2_SDTb	17
3.3	Exhaust valve 3 SDT/b		TE_VAT_EV3_SDTb	18
3.4	Exhaust valve 4 SDT/b		TE_VAT_EV4_SDTb	19
3.5	Vac Shell Graphite Ring SDT/a	T-32D	TE_VCS_GR_ST32D	21
3.6	Leakage valve 1 SDT/b		TE_VAT_LV1_SDTb	12
3.7	Leakage valve 2 SDT/b		TE_VAT_LV2_SDTb	13
3.8	Vatt Valve - B Closed monitor		VE_VAT_B_CLOSED	53
3.9	UV Lamp-B output		DE_UVLampB_OUT	49
4	UV Lamp-B current		CE_UVLampB_I	50
4.1	UV Lamp-B bulb temperature		TE_UVLampB_T2	51
4.2	Vatt Valve - B Open monitor		VE_VAT_B_OPEN	52
4.3	Heat pulse meter heater current/b	(H-2D)	CE_HPMH_I_bh02d	62
4.4	Magnetometer-3 X-out		DE_MAG3_X_OUT	63
4.5	Magnetometer-3 Y-out		DE_MAG3_Y_OUT	64
4.6	Magnetometer-3 Z-out		DE_MAG3_Z_OUT	65
4.7	Magnetometer-4 X-out		DE_MAG4_X_OUT	66
4.8	Magnetometer-4 Y-out		DE_MAG4_Y_OUT	67
4.9	Magnetometer-4 Z-out		DE_MAG4_Z_OUT	68
5	+5V Monitor/a		VE_Mux11B_VCAL	69

ECU Sample Tables

ECU Science Sample Table List for ADC 3B

5.1	Flow meter heater current/b	(H-05BD)	CE_FIMHI_bh05bd	1
5.2	Flow control heater current/b	(H-11D)	CE_FICH_I_bh11d	2
5.3	Bottom vacuum shell	T-14D	DE_VSDwBotST14D	20
5.4	Quartz block support heater V	H-06P	VE_QBS_H_b_H06P	4
5.5	Gyro4 Htr V/b		VE_GYR4_HTR_V_B	5
5.6	Gyro3 Htr V/b		VE_GYR3_HTR_V_B	6
5.7	Final Filter 3&4 Htr V/b	H-04P	VE_FF3_4_bh04P	7
5.8	Final Filter 1&2 Htr V/b	H-02P	VE_FF1_2_bh02P	8
5.9	GMA #3B SDT/b		TE_GMA_SDT_3B	11
6	Leakage valve 1 SDT/b		TE_VAT_LV1_SDTb	12
6.1	Leakage valve 2 SDT/b		TE_VAT_LV2_SDTb	13
6.2	UV-B base SDT/b		TE_UV_BASE_SDTb	14
6.3	GMA Monitor board SDT/b		TE_ECU_AFT_SDT2	15
6.4	Exhaust valve 1 SDT/b		TE_VAT_EV1_SDTb	16
6.5	Exhaust valve 2 SDT/b		TE_VAT_EV2_SDTb	17
6.6	Exhaust valve 3 SDT/b		TE_VAT_EV3_SDTb	18
6.7	Exhaust valve 4 SDT/b		TE_VAT_EV4_SDTb	19
6.8	Bottom vacuum shell	T-14D	DE_VSDwBotST14D	20
6.9	Vac Shell Graphite Ring SDT/a	T-32D	TE_VCS_GR_ST32D	21
7	UV-B base SDT/b		TE_UV_BASE_SDTb	14
7.1	GMA Monitor board SDT/b		TE_ECU_AFT_SDT2	15
7.2	GMA Inlet Pressure Gyro 1 B	GP8	DE_GMA_GP8	25
7.3	GMA Vent Outlet Pressure B	GP14	DE_GMA_GP14	26
7.4	GMA Inlet Pressure Gyro 2 B	GP9	DE_GMA_GP9	27
7.5	GMA Inlet Pressure Gyro 4 B	GP12	DE_GMA_GP12	28
7.6	GMA Pre-Regulator Pressure B	GP3	DE_GMA_GP3	29
7.7	GMA Post-Regulator Pressure B	GP5	DE_GMA_GP5	30
7.8	GMA Post-Regulator Orifice	GP6	DE_GMA_GP6	31
7.9	Calibration voltage/b		VE_Mux10B_VCAL	32
8	Quartz block support heater V	H-06P	VE_QBS_H_b_H06P	4
8.1	Exhaust valve 1 SDT/b		TE_VAT_EV1_SDTb	16
8.2	Exhaust valve 2 SDT/b		TE_VAT_EV2_SDTb	17
8.3	Exhaust valve 3 SDT/b		TE_VAT_EV3_SDTb	18
8.4	Exhaust valve 4 SDT/b		TE_VAT_EV4_SDTb	19
8.5	Vac Shell Graphite Ring SDT/a	T-32D	TE_VCS_GR_ST32D	21
8.6	Leakage valve 1 SDT/b		TE_VAT_LV1_SDTb	12
8.7	Leakage valve 2 SDT/b		TE_VAT_LV2_SDTb	13
8.8	Vatt Valve - B Open monitor		VE_VAT_B_OPEN	52
8.9	Vatt Valve - B Closed monitor		VE_VAT_B_CLOSED	53
9	Vacuum Gauge Power	P9B	DE_VACG_P9B_PWR	59
9.1	Vacuum Gauge Signal	P9B	DE_VACG_P9B_SIG	60
9.2	Vacuum Gauge Range	P9B	DE_VACG_P9B_RNG	61
9.3	Heat pulse meter heater current/b	(H-2D)	CE_HPMH_I_bh02d	62
9.4	Magnetometer-3 X-out		DE_MAG3_X_OUT	63
9.5	Magnetometer-3 Y-out		DE_MAG3_Y_OUT	64
9.6	Magnetometer-3 Z-out		DE_MAG3_Z_OUT	65
9.7	Magnetometer-4 X-out		DE_MAG4_X_OUT	66
9.8	Magnetometer-4 Y-out		DE_MAG4_Y_OUT	67
9.9	Magnetometer-4 Z-out		DE_MAG4_Z_OUT	68
10	+5V Monitor/a		VE_Mux11B_VCAL	69

ECU Sample Tables

g) Science Sample Table ADC #3B update rate and monitors left out

Science ADC #3B update rate			Science #ADC 3B Left Out	
every 2.5 seconds	T-14D	DE_VSDwBotST14D	Porous plug heater current/b	CE_PPH_I_bh13bd
"		TE_ECU_AFT_SDT2	GMA Switch	DE_GMA_SW__CV5
"		TE_UV_BASE_SDTb	GMA Switch (Mock GMA Only)	DE_GMA_SW__V12
"		TE_VAT_EV1_SDTb	GMA Switch (Mock GMA Only)	DE_GMA_SW__V13
"		TE_VAT_EV2_SDTb	GMA Switch (Mock GMA Only)	DE_GMA_SW__V16
"		TE_VAT_EV3_SDTb	GMA Switch (Mock GMA Only)	DE_GMA_SW__V17
"		TE_VAT_EV4_SDTb	GMA Switch (Mock GMA Only)	DE_GMA_SW__V2
"		TE_VAT_LV1_SDTb	GMA Switch (Mock GMA Only)	DE_GMA_SW__V20
"		TE_VAT_LV2_SDTb	GMA Switch (Mock GMA Only)	DE_GMA_SW__V21
"	T-32D	TE_VCS_GR_ST32D	GMA Switch (Mock GMA Only)	DE_GMA_SW__V23
"	H-06P	VE_QBS_H_b_H06P	GMA Switch (Mock GMA Only)	DE_GMA_SW__V24
			GMA Switch (Mock GMA Only)	DE_GMA_SW__V25
every 5 seconds	(H-11D)	CE_FICH_I_bh11d	GMA Switch (Mock GMA Only)	DE_GMA_SW__V26
"	(H-05BD)	CE_FIMHI_bh05bd	GMA Switch (Mock GMA Only)	DE_GMA_SW__V29
"	(H-2D)	CE_HPMH_I_bh02d	GMA Switch (Mock GMA Only)	DE_GMA_SW__V4
"	GP12	DE_GMA__GP12	GMA Switch (Mock GMA Only)	DE_GMA_SW__V6
"	GP14	DE_GMA__GP14	GMA Switch (Mock GMA Only)	DE_GMA_SW__V9
"	GP3	DE_GMA__GP3	spare	DE_Mux11B_SP10
"	GP5	DE_GMA__GP5	spare	DE_Mux11B_SP11
"	GP6	DE_GMA__GP6	spare	DE_Mux11B_SP12
"	GP8	DE_GMA__GP8	spare	DE_Mux11B_SP13
"	GP9	DE_GMA__GP9	spare	DE_Mux11B_SP14
"		DE_MAG3_X_OUT	Mux9B_CAL1	DE_Mux9B_CAL1
"		DE_MAG3_Y_OUT	Mux9B_CAL2	DE_Mux9B_CAL2
"		DE_MAG3_Z_OUT	spare	DE_Mux9B_SP0D
"		DE_MAG4_X_OUT		
"		DE_MAG4_Y_OUT		
"		DE_MAG4_Z_OUT		
"	H-02P	VE_FF1_2_bH02P		
"	H-04P	VE_FF3_4_bH04P		
"		VE_GYR3_HTR_V_B		
"		VE_GYR4_HTR_V_B		
"		VE_Mux11B_VCAL		
"		VE_VAT_B_CLOSED		
"		VE_VAT_B_OPEN		
every 10 seconds		CE_UVLampB_I		
		DE_UVLampB_OUT		
		DE_VACG_P9B_PWR		
		DE_VACG_P9B_RNG		
		DE_VACG_P9B_SIG		
		TE_GMA_SDT_1B		
		TE_GMA_SDT_2B		
		TE_GMA_SDT_3B		
		TE_UVLampB_T2		
		VE_Mux10B_VCAL		

ECU Sample Tables

ECU Alternate QBS ACCL Sample Table for ADC 1A

2	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
4	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
6	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2
8	Gyroscope #1 GRT	T-01Q	TE_Gyro_1_GT01Q	3
10	Gyroscope #3 GRT	T-03Q	TE_Gyro_3_GT03Q	4
12	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
14	Telescope detector #1 GRT	T-12Q	TE_TelD_1_GT12Q	6
16	Mux1A CAL1		DE_Mux1A_CAL1	7
18	Mux1A CAL2		DE_Mux1A_CAL2	8
20	Telescope detector #2 GRT	T-13Q	TE_TelD_2_GT13Q	9
22	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
24	Telescope detector mount +Y GRT	T-21Q	TE_TelDM_YGT21Q	10
26	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
28	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
30	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
32	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
34	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
36	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
38	Mux2A CAL1		DE_Mux2A_CAL1	19
40	Mux2A CAL2		DE_Mux2A_CAL2	20
42	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
44	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
46	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
48	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
50	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
52	Mux4A CAL2		DE_Mux4A_CAL2	32
54	Flow meter vent line GRT/a	T-18D	TE_FIM_a_GT18D	2
56	Gyroscope #1 GRT	T-01Q	TE_Gyro_1_GT01Q	3
58	Gyroscope #3 GRT	T-03Q	TE_Gyro_3_GT03Q	4
60	Quartz block aft end GRT	T-05Q	TE_Q_Aft_GT05Q	5
62	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
64	Telescope detector #1 GRT	T-12Q	TE_TelD_1_GT12Q	6
66	Mux3A CAL2		DE_Mux3A_CAL2	26
68	Telescope detector #2 GRT	T-13Q	TE_TelD_2_GT13Q	9
70	Telescope detector mount +Y GRT	T-21Q	TE_TelDM_YGT21Q	10
72	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
74	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
76	Quartz block forward end GRT	T-17Q	TE_Q_ForEGGT17Q	16
78	Mux2A CAL2		DE_Mux2A_CAL2	20
80	Cryo-pump GRT/a	T-15P	TE_CryPm_aGT15P	21
82	Quartz block support GRT/a	T-10P	TE_QBS_a_GT10P	28
84	Main tank internal GRT/a	T-10D	TE_MTKIn_aGT10D	1
86	Porous plug exit GRT/a	T-12AD	TE_PPEX_aGT12AD	14
88	Station 200 probe GRT	T-05P	TE_St2Pr_aGT05P	15
90	Mux3A CAL1		DE_Mux3A_CAL1	25
92	Station 200 dewar GRT/a	T-01D	TE_St2Dw_aGT01D	13
94	Final filter 1&2 GRT/a	T-06P	TE_Fi1_2_aGT06P	29
96	Final filter 3&4 GRT/a	T-08P	TE_Fi3_4_aGT08P	30
98	Mux4A CAL1		DE_Mux4A_CAL1	31
100	Mux4A CAL2		DE_Mux4A_CAL2	32

ECU Sample Tables

5) ECU Alternate QBS ACCL Sample Table

a) As defined in Loss of Primary QBS AC Closed Loop Heater Contingency Outline.

- i) Includes unique ADC 1A, 1B
- ii) Removes Mux3A CAL1 & CAL2 monitors from ADC 1A and adds Mux3B CAL1 & CAL2 monitors to ADC 1B to allow use of the QBS/b AC Closed Loop Heater.
- iii) ADC2A, 2B, 3A & 3B remain unchanged from onboard Sample Table

b) Alternate QBS ACCL Sample Table ADC #1A update rate and monitors left out

Alt QBS Sample Table ADC #1A update rate			Alt QBS Sample Table ADC #1A Left Out	
Every 20 seconds	T-10P	TE_QBS_a_GT10P	Mux1A CAL3	DE_Mux1A_CAL3
			Mux1A CAL4	DE_Mux1A_CAL4
Every 25 seconds	T-10D	TE_MTKIn_aGT10D	Mux2A CAL3	DE_Mux2A_CAL3
	"	TE_PPEX_aGT12AD	Mux2A CAL4	DE_Mux2A_CAL4
			spare	DE_Mux2A_SP44
Every 34 seconds	T-05P	TE_St2Pr_aGT05P	spare	DE_Mux2A_SP45
			spare	DE_Mux2A_SP49
Every 50 seconds		DE_Mux2A_CAL2	Mux3A CAL3	DE_Mux3A_CAL3
		DE_Mux4A_CAL2	spare	DE_Mux4A_SP24
"	T-15P	TE_CryPm_aGT15P	spare	DE_Mux4A_SP25
"	T-06P	TE_Fi1_2_aGT06P	spare	DE_Mux4A_SP26
"	T-08P	TE_Fi3_4_aGT08P	spare	DE_Mux4A_SP27
"	T-18D	TE_FIM_a_GT18D		
"	T-01Q	TE_Gyro_1_GT01Q		
"	T-03Q	TE_Gyro_3_GT03Q		
"	T-05Q	TE_Q_Aft_GT05Q		
"	T-17Q	TE_Q_ForEGGT17Q		
"	T-01D	TE_St2Dw_aGT01D		
"	T-12Q	TE_TelD_1_GT12Q		
"	T-13Q	TE_TelD_2_GT13Q		
"	T-21Q	TE_TelDM_YGT21Q		
Every 100 seconds		DE_Mux1A_CAL1		
	"	DE_Mux1A_CAL2		
	"	DE_Mux2A_CAL1		
		DE_Mux3A_CAL1		
		DE_Mux3A_CAL2		
		DE_Mux4A_CAL1		

ECU Sample Tables

ECU Alternate QBS ACCL Sample Table for ADC 1B

2	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
4	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
6	Mux2B CAL1		DE_Mux2B_CAL1	19
8	Mux2B CAL2		DE_Mux2B_CAL2	20
10	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
12	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
14	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
16	Mux1B CAL1		DE_Mux1B_CAL1	7
18	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
20	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
22	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
24	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
26	Mux4B CAL1		DE_Mux4B_CAL1	31
28	Mux4B CAL2		DE_Mux4B_CAL2	32
30	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
32	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
34	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2
36	Gyroscope #2 GRT	T-02Q	TE_Gyro_2_GT02Q	3
38	Gyroscope #4 GRT	T-04Q	TE_Gyro_4_GT04Q	4
40	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
42	Telescope corrector plate #1 GRT	T-14Q	TE_TelCP_1GT14Q	6
44	Mux1B CAL2		DE_Mux1B_CAL2	8
46	Telescope corrector plate #2 GRT	T-15Q	TE_TelCP_2GT15Q	9
48	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
50	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13
52	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
54	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
56	STA 200 probe GRT/b	T-28P	TE_St2Pr_bGT28P	15
58	Mux2B CAL1		DE_Mux2B_CAL1	19
60	Mux2B CAL2		DE_Mux2B_CAL2	20
62	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
64	Final filter 1&2 GRT/b	T-07P	TE_Fi1_2_bGT07P	29
66	Final filter 3&4 GRT/b	T-09P	TE_Fi3_4_bGT09P	30
68	Mux4B CAL1		DE_Mux4B_CAL1	31
70	Mux4B CAL2		DE_Mux4B_CAL2	32
72	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
74	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
76	Flow meter vent line GRT/b	T-19D	TE_FIMtr_bGT19D	2
78	Gyroscope #2 GRT	T-02Q	TE_Gyro_2_GT02Q	3
80	Gyroscope #4 GRT	T-04Q	TE_Gyro_4_GT04Q	4
82	Quartz block flange GRT	T-06Q	TE_Q_Flng_GT06Q	5
84	Telescope corrector plate #1 GRT	T-14Q	TE_TelCP_1GT14Q	6
86	Mux1B CAL1		DE_Mux1B_CAL1	7
88	Mux1B CAL2		DE_Mux1B_CAL2	8
90	Telescope corrector plate #2 GRT	T-15Q	TE_TelCP_2GT15Q	9
92	Quartz block support GRT/b	T-11P	TE_QBS_b_GT11P	28
94	Cryo-pump GRT/b	T-16P	TE_CryPm_bGT16P	10
96	Main tank internal GRT/b	T-11D	TE_MtkIn_bGT11D	1
98	Porous plug exit GRT/b	T-12BD	TE_PPEX_bGT12BD	14
100	Station 200 dewar GRT/b	T-02D	TE_St2Dw_bGT02D	13

ECU Sample Tables

c) Alternate QBS ACCL Sample Table ADC #1B update rate and monitors left out

Alt QBS Sample Table ADC #1A update rate			Alt QBS Sample Table ADC #1A Left Out	
Every 20 seconds	T-11D	TE_MtkIn_bGT11D	Mux1B CAL3	DE_Mux1B_CAL3
"	T-12BD	TE_PPEX_bGT12BD	Mux1B CAL4	DE_Mux1B_CAL4
"	T-11P	TE_QBS_b_GT11P	Mux2B CAL3	DE_Mux2B_CAL3
			Mux2B CAL4	DE_Mux2B_CAL4
Every 34 seconds	T-28P	TE_St2Pr_bGT28P	spare	DE_Mux2B_SP43
			spare	DE_Mux2B_SP44
Every 50 seconds		DE_Mux1B_CAL1	spare	DE_Mux2B_SP45
"		DE_Mux1B_CAL2	spare	DE_Mux2B_SP48
"		DE_Mux2B_CAL1	spare	DE_Mux2B_SP49
"		DE_Mux2B_CAL2	Mux3B CAL1	DE_Mux3B_CAL1
"		DE_Mux4B_CAL1	Mux3B CAL2	DE_Mux3B_CAL2
"		DE_Mux4B_CAL2	Mux3B CAL3	DE_Mux3B_CAL3
"	T-16P	TE_CryPm_bGT16P	spare	DE_Mux4B_SP24
"	T-07P	TE_Fi1_2_bGT07P	spare	DE_Mux4B_SP25
"	T-09P	TE_Fi3_4_bGT09P	spare	DE_Mux4B_SP26
"	T-19D	TE_FIMtr_bGT19D	spare	DE_Mux4B_SP27
"	T-02Q	TE_Gyro_2_GT02Q		
"	T-04Q	TE_Gyro_4_GT04Q		
"	T-06Q	TE_Q_Flng_GT06Q		
"	T-02D	TE_St2Dw_bGT02D		
"	T-14Q	TE_TelCP_1GT14Q		
"	T-15Q	TE_TelCP_2GT15Q		