

**FAST FIELDS INSTRUMENT**  
**MODE : 34**

09/21/97  
REE

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**SUMMARY**

SLOW SURVEY: 14,366 bit/s  
FAST SURVEY: 491,520 bit/s  
BURST: 4,364,698 bit/s  
SLOT: 13

**General Science 7 DC\_16k**  
**CAMPAIGN**  
**HG=1/4 (Rev: 5)**

**A. SPHERE CONFIGURATION.** Spheres in Current Mode: 6,7; Ne range 1 to 4x10<sup>4</sup> cm<sup>-3</sup>

**B. SLOW SURVEY**

APID SUMMARY	DATA	SMPL/s	BITS/s
SVY0	V1-V4_S	32	512
APID 1032	V5-V8_S	32	512
2,048 bit/s	V9-V10_S	32	512
(1/128 max rate)	Mag1dc	8	128
	Mag2dc	8	128
	Mag3dc	8	128
	Therm	8	128
SVY1	V1-V2_S	32	512
APID 1033	V3-V4_S	32	512
2,048 bit/s	Ne6_S	32	512
(1/128 max rate)	V7-V8_S	32	512
SVY2	Mag1ac_S	32	512
APID 1034	Mag2ac_S	32	512
2,048 bit/s	Mag3ac_S	32	512
(1/128 max rate)	V10_S	8	128
	V4_S	8	128
	V8_S	8	128
	LFF1	8	64
	LFF2	8	64
LFF1 set to V1-V2_HG. LFF2 set to V5-V8_HG.			
BBF	V1-V4_BBF	0	0
APID 1035	V5-V8_BBF	0	0
0 bit/s	Mag3ac_BBF	0	0
(OFF)	V9-V10_BBF	0	0
SFA_AVE	V1-V4_SFA	64	512
APID 1036	V5-V8_SFA	64	512
2,048 bit/s	Mag3ac_SFA	64	512
(Ave 64 sweeps)	V1-V4_TRK	64	512
Each Ch.: 1 swp/4s, 256 pts/sweep, Swp: 0 - 2 MHz.			
DSP	V1-V4_DSP	<128	<1,024
APID 1037	V5-V8_DSP	<128	<1,024
6,144 bit/s	V9-V10_DSP	<128	<1,024
(Ave 128 sweeps)	V1-V4TRK_DSP	128	1,024
	D8_DSP	128	1,024
	Mag3ac_DSP	128	1,024
Each Ch.: 1 swp/4s, 512 pts/sweep, Swp: 0 - 16 kHz.			
HFQ	PD12	0	0
APID 1038	PD13	0	0
0 bit/s	PD14	0	0
(OFF)	PD23	0	0
	PD24	0	0
	PD34	0	0
	TRK_FRQ	0	0
	FRQ1	0	0
	FRQ2	0	0
	FRQ3	0	0
	FRQ4	0	0

**C. FAST SURVEY**

APID SUMMARY	DATA	SMPL/s	BITS/s
SVY0	V1-V4_S	2,048	32,768
APID 1032	V5-V8_S	2,048	32,768
131,072 bit/s	V9-V10_S	2,048	32,768
(Max rate)	Mag1dc	512	8,196
	Mag2dc	512	8,196
	Mag3dc	512	8,196
	Therm	512	8,196
SVY1	V1-V2_S	2,048	32,768
APID 1033	V3-V4_S	2,048	32,768
131,072 bit/s	Ne6_S	2,048	32,768
(Max rate)	V7-V8_S	2,048	32,768
SVY2	Mag1ac_S	2,048	32,768
APID 1034	Mag2ac_S	2,048	32,768
131,072 bit/s	Mag3ac_S	2,048	32,768
(Max rate)	V10_S	512	8,196
	V4_S	512	8,196
	V8_S	512	8,196
	LFF1	512	4,092
	LFF2	512	4,092
LFF1 set to V1-V4_HG. LFF2 set to V5-V8_HG.			
BBF	V1-V4_BBF	512	4,096
APID 1035	V5-V8_BBF	512	4,096
16,384 bit/s	Mag3ac_BBF	512	4,096
(1/8 max rate)	V9-V10_BBF	512	4,096
SFA_AVE	V1-V4_SFA	512	4,096
APID 1036	V5-V8_SFA	512	4,096
16,384 bit/s	Mag3ac_SFA	512	4,096
(Ave 8 sweeps)	V1-V4_TRK	512	4,096
Each Ch.: 2 swp/s, 256 pts/sweep, Swp: 0 - 2 MHz.			
DSP	V1-V4_DSP	1,024	8,192
APID 1037	V5-V8_DSP	1,024	8,192
49,152 bit/s	V9-V10_DSP	1,024	8,192
(Ave 16 sweeps)	V1-V4TRK_DSP	1,024	8,192
	D8_DSP	1,024	8,192
	Mag3ac_DSP	1,024	8,192
Each Ch.: 2 swp/s, 512 pts/sweep, Swp: 0 - 16 kHz.			
HFQ	PD12	128	1,024
APID 1038	PD13	128	1,024
16,384 bit/s	PD14	128	1,024
(Only rate)	PD23	128	1,024
	PD24	128	1,024
	PD34	128	1,024
	TRK_FRQ	128	2,048
	FRQ1	128	2,048
	FRQ2	128	2,048
	FRQ3	128	2,048
	FRQ4	128	2,048

\* LFF, BBF, SFA, DSP, and PD are 8-bit words.

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**D. BURST**

APID SUMMARY	DATA	SMPL/s	BITS/s
ADC1	V1-V4_ADC1	32,768	524,288
APID 1048			
524,288 bit/s			
(Max rate)			
ADC2	V5-V8_ADC2	32,768	524,288
APID 1049			
524,288 bit/s			
(Max rate)			
ADC3	V9-V10_ADC3	32,768	524,288
APID 1050			
524,288 bit/s			
(Max rate)			
ADC4	V1-V4TRK_ADC4	32,768	524,288
APID 1051			
524,288 bit/s			
(Max rate)			
ADC5	D8_ADC5	32,768	524,288
APID 1052			
524,288 bit/s			
(Max rate)			
ADC6	Mag3ac_ADC6	32,768	524,288
APID 1053			
524,288 bit/s			
(Max rate)			
ADC7	Mag1ac_ADC7a	8,192	131,072
APID 1054	Mag2ac_ADC7b	8,192	131,072
524,288 bit/s	Mag3ac_ADC7c	8,192	131,072
(Max rate)	V1-V2_ADC7d	8,192	131,072
ADC8	V7-V8_ADC8	32,768	524,288
APID 1055			
524,288 bit/s			
(Max rate)			
WPC	All Quantities	307	39,322
APID 1056			
039,322 bit/s			
(1/4 rate)			
Field input: V1-V4_LF (1-16 kHz)			
	V5-V8_LF (1-16 kHz)		
BCOR OFF			
SFA	V1-V4_SFA	4,096	32,768
APID 1057	V5-V8_SFA	4,096	32,768
131,072 bit/s	Mag3ac_SFA	4,096	32,768
(1/2 rate)	V1-V4_TRK	4,096	32,768
Each Ch.: 16 swp/s, 256 pts/sweep, Swp: 0 - 2 MHz.			
Track Frequency - V1-V4 Zero Crossing.			
HSBM	V1-V4_HSBM		
APID 1058	V5-V8_HSBM		
Memory allocation: Mag3ac_HSBM			
20,971,520 bytes	V9-V10_HSBM		
Sample rate: 0.5 us.			
Buffer size: 2,621,440 bytes.			
Triga=BBF1. TrigB=LFF2.			
PROC MODE =15, OL = 7, 4 second latency.			
(Capture during fast survey or burst.)			

**E. MODE SET UP**

POWER			
Command sequence (setbit):			
F9 0 :	System 7	Fields survey	ON
F8 14 :	System 4	Fluxgate	ON
F8 6 :	System 6	BEB1,2: Spheres 1,2,3,4.	ON
F8 7 :	System 23	BEB3,4: Spheres 5,6,7,8.	ON
F8 8 :	System 24	AXBEB; Spheres 9,10.	ON
F9 1 :	System 8	Fields LF analog	ON
F8 15 :	System 3	Search Coil	ON
F9 2 :	System 9	Fields HF analog, Osc.	ON
F9 3 :	System 10	SFA	ON
F9 4 :	System 11	WPC, BFF, HFQ	ON
** :	System 12	HSEB	ON
** :	System 13	DSP	ON
** :	System 14	DSP ROM	ON
** -	Driver turn on.	HSEB:.61000001. DSP:.60000001.	
BEB1	IBIAS2	-6.25 nA	480080 IBIAS3 0 nA
400078	STUB2	+300 mV	490080 STUB3 0.0 V
420078	IBIAS1	-6.25 nA	4A0080 IBIAS4 0 nA
430090	STUB1	+300 mV	4B0080 STUB4 0.0 V
440080	GUARD	-5.0 V	4C0000 GUARD 0 V
450001	SPH2	V_Mode	4D0001 SPH3 V_Mode
BEB3	VBIAS6	+15 V	558078 VBIAS7 -6.25 nA
510090	STUB6	+300 mV	590090 STUB7 +300 mV
520078	IBIAS5	-6.25 nA	5A0078 IBIAS8 -6.25 nA
530090	STUB5	+300 mV	5B0090 STUB8 +300 mV
540080	GUARD	-5.0 V	5C0080 GUARD -5.0 V
55000A	SPH6	GL/I_Mode	5D0001 SPH7 V_Mode
FORMATTER	APID ON/OFF		AXBEB
D82800	Rate SFA,ADC,BBF		600080 IBIAS9 0 nA
D90067	CLRBIT D5 8		610080 IBIAS10 0 nA
			620005 V9, V10 V_Mode
ANALOG A/B	SVY 1/128 SPEED		ANALOG C
800016	ADC1 to ADC 4		A00006 ANC, BCOR TRIG
823B00	ADC5 to ADC 8		A16EA2 ESA HEAD POS
830399	ADC7 MUX		A20000 BCOR OFF
8401AC	ADC7 MUX		A40000 FREQ-T
85FFFF	ADC8 V78_16k		DSP
860009	TRIGGERS		9080FC ADC1 to ADC6
880C00	ANB, SFATRK		948007 AVERAGE 2^7
SFA	SWP to 2MHz		HSBM
A8852C	HFDDIST		98B803 MSZ=7, ZMS/s
A977FC	SFA TRACK		99B8A0 LFF2/BBF1 Levels
AA2600			9A8803 Sel BBF1,LFF2
SLOW -> FAST			FAST -> SLOW
D80000			D82800
D90064			D90067
800016			800016
9080FC			9080FC
948007			948007
-ree/fast/modes/frm3/mode034.frm			
Note:			
1. HG=1/4.			
2. HSBM=No retrig.TPOS=1/4.			