

**FAST FIELDS INSTRUMENT**  
**MODE : 65**

3/21/97  
REE

**FAST FIELDS INSTRUMENT**  
**MODE : 65**

3/21/97  
REE

2

**SUMMARY**

SLOW SURVEY: 14,366 bit/s  
FAST SURVEY: 491,520 bit/s  
BURST: 4,482,664 bit/s  
SLOT: 12

**Low Alt 2**

**Fast**

**3-Wire (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	Ne2_S	32	512
APID 1033	V3-V4_S	32	512
2,048 bit/s	V5-V6_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-V4_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)	V9-V10_4M	64	512
Each Ch.: 1 swp/4s, 256 pts/sweep, Swp: 0 - 2 MHz.			
DSP	V5-V8_DSP	<128	<1,024
APID 1037	Mag3ac_DSP	<128	<1,024
6,144 bit/s	V5-V6_DSP	<128	<1,024
(Ave 128 sweeps)	V7-V8_DSP	128	1,024
	V56_V78_COH	128	1,024
	V56_V78_PHS	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	Ne2_S	2,048	32,768
APID 1033	V3-V4_S	2,048	32,768
131,072 bit/s	V5-V6_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)	V9-V10_4M	512	4,096
Each Ch.: 2 swp/s, 256 pts/sweep, Swp: 0 - 2 MHz.			
DSP	V5-V8_DSP	1,024	8,192
APID 1037	Mag3ac_DSP	1,024	8,192
49,152 bit/s	V5-V6_DSP	1,024	8,192
(Ave 16 sweeps)	V7-V8_DSP	1,024	8,192
	V56_V78_COH	1,024	8,192
	V56_V78_PHS	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.

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

**D. BURST**

APID SUMMARY	DATA	SMPL/S	BITS/s
APID 1048	V1_ADC1	32,768	524,288
524,288 bit/s			
(Max rate)			
APID 1049	V5-V8_ADC2	32,768	524,288
524,288 bit/s			
(Max rate)			
APID 1050	V9-V10_ADC3	32,768	524,288
524,288 bit/s			
(Max rate)			
APID 1051	V8_ADC4	32,768	524,288
524,288 bit/s			
(Max rate)			
APID 1052		0	0
0 bit/s			
(Off)			
APID 1053	Mag3ac_ADC6	32,768	524,288
524,288 bit/s			
(Max rate)			
APID 1054	V5-V6_ADC7	32,768	524,288
524,288 bit/s			
(Max rate)			
APID 1055	V7-V8_ADC8	32,768	524,288
524,288 bit/s			
(Max rate)			
WPC	All Quantities	307	157,288
APID 1056			
157,288 bit/s			
(Max 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)	V9-V10_4M	4,096	32,768
Each Ch.: 16 swp/s, 256 pts/sweep, Swp: 0 - 2 MHz.			
Track Frequency - V1-V4 Zero Crossing.			
HSMB	V1-V4_HSMB		
APID 1058	V7-V8_HSMB		
Memory allocation: V5-V6_HSMB			
20,971,520 bytes	V9-V10_HSMB		
Sample rate: 4.0 us.			
Buffer size: 2,621,440 bytes.			
Triga=BBF3 (DISABLED). 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	HSMB	ON
** :	System 13	DSP	ON
** :	System 14	DSP ROM	ON
** -	Driver turn on.	HSMB:.61000001. DSP:.60000001.	
BEB1	IBIAS2	-12.5 nA	IBIAS3 0 nA
400070	STUB2	+150 mV	490080 STUB3 0.0 V
410088	IBIAS1	-12.5 nA	4A0080 IBIAS4 0 nA
420070	STUB1	+150 mV	4B0080 STUB4 0.0 V
430088	GUARD	-5.0 V	4C0000 GUARD 0 V
440080	SPH2	V_Mode	4D0001 SPH3 V_Mode
450001			
BEB3	VBIAS6	+15 V	BEB4 VBIAS7 +15 V
5000C0	STUB6	0.0 V	590088 STUB7 0.0 V
510088	IBIAS5	-12.5nA	5A0070 IBIAS8 -12.5nA
520070	STUB5	0.0 V	5B0088 STUB8 0.0 V
530088	GUARD	-5.0 V	5C0080 GUARD -5.0 V
540080	SPH6	GL/I_Mode	5D000A SPH7 GL/I_Mode
55000A			
FORMATTER	APID ON/OFF	AXBEB	
D82810	Rate SFA,ADC,BBF	600080 IBIAS9 0 nA	
D90067	CLRBIT D5 8	610080 IBIAS10 0 nA	
		620055 V9, V10 V_Mode	
ANALOG A/B		ANALOG C	
80001E	SVY 1/128 SPEED	A00004 ANC, BCOR TRIG	
823A10	ADC1 to ADC 4	A16EA2 ESA HEAD POS	
830358	ADC5 to ADC 8	A20000 BCOR OFF	
84FFFF	ADC7 MUX	A40000 FREQ-T	
85FFFF	ADC8 MUX	DSP	
860001	TRIGGERS	908288 ADC2678	
881C00	ANB, No Track	948087 AVERAGE 2^7,XTAL	
SFA	A80D20 SWP to 2MHz	HSMB	
A977FB	HPDIST	988B00 MSZ=7, 256 k/s/s	
AA2600	SFA TRACK	99A0FF LFF2/BBF3 Levels	
		9A88A2 Sel BBF3,LFF2	
SLOW -> FAST		FAST -> SLOW	
D80010		D82810	
D90064		D90067	
80001E		80001E	
908288		908288	
948084		948087	
disks/plasmal/home/ree/fast/modes/frm3/mode065.frm			
Rev. 5: - Low Altitude Bias Tables			
- HSMB LFF2 Trig only 256 ksample/s			
- DSP Cross Spectral!			
- SFA sweep 4 M on axial.			