FAST FIELDS INSTRUMENT
MODE : 129

02/18/99
REE

SUMMARY

SLOW SURVEY: 14,366 bit/s
FAST SURVEY: 196,608 bit/s
BURST: 4,364,698 bit/s
SLOT: 9

Low-Alt: Multi-Point
Medium Speed
3-Wire (Rev: 6)

A. SPHERE CONFIGURATION. Spheres in Current Mode: 9,10; Ne range 1 to 4x10^4 cm^-3

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	Ne9_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	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)	Ne10_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_BBFF	0	0
0 bit/s	Mag3ac_BBF	0	0
(OFF)	Ne9_BBF_xxx	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_DSP	<128	<1,024
APID 1037	V5-V8_DSP	<128	<1,024
6,144 bit/s	V1-V4_TRK	<128	<1,024
(Ave 128 sweeps)	Mag3ac_DSP	128	1,024
	V5-V6_DSP	128	1,024
	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	512	8,192
APID 1032	V5-V8_S	512	8,192
32,768 bit/s	Ne9_S	512	8,192
(1/4 max rate)	Mag1dc	128	2,048
	Mag2dc	128	2,048
	Mag3dc	128	2,048
	Therm	128	2,048
SVY1	V1-V2_S	512	8,192
APID 1033	V3-V4_S	512	8,192
32,768 bit/s	V5-V6_S	512	8,192
(1/4 max rate)	V7-V8_S	512	8,192
SVY2	Mag1ac_S	512	8,192
APID 1034	Mag2ac_S	512	8,192
32,768 bit/s	Mag3ac_S	512	8,192
(1/4 max rate)	Ne10_S	128	2,048
	V4_S	128	2,048
	V8_S	128	2,048
	LFF1	128	1,024
	LFF2	128	1,024
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)	Ne9_BBF_xxx	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_DSP	1,024	8,192
APID 1037	V5-V8_DSP	1,024	8,192
49,152 bit/s	V1-V4_TRK	1,024	8,192
(Ave 16 sweeps)	Mag3ac_DSP	1,024	8,192
	V5-V6_DSP	1,024	8,192
	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

D. BURST

APID SUMMARY	DATA	SMPL/S	BITS/s
ADC1	V1_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	V1-V4TRK_ADC3	32,768	524,288
APID 1050			
524,288 bit/s			
(Max rate)			
ADC4	V8_ADC4	32,768	524,288
APID 1051			
524,288 bit/s			
(Max rate)			
ADC5	V1-V2_ADC5	32,768	524,288
APID 1052			
0 bit/s			
(Off)			
ADC6	Mag3ac_ADC6	32,768	524,288
APID 1053			
524,288 bit/s			
(Max rate)			
ADC7	V5-V6_ADC7	32,768	524,288
APID 1054			
524,288 bit/s			
(Max rate)			
ADC8	V7-V8_ADC8	32,768	524,288
APID 1055			
524,288 bit/s			
(Max rate)			
WPC	All Quantities	307	39,322
APID 1056			
39,322 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)	V9-V10_SFA	4,096	32,768
Each Ch.: 16 swp/s, 256 pts/sweep, Swp: 0 - 2 MHz.			
Track Frequency - V1-V4 Zero Crossing.			
HSBM	V1-V2_HSBM		
APID 1058	V7-V8_HSBM		
Memory allocation:	V5-V6_HSBM		
20,971,520 bytes	Ne9_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	HSBM		ON
** :	System 13	DSP		ON
** :	System 14	DSP ROM		ON

** - Driver turn on. HSBM:.61000001. DSP:.60000001.

BEB1

400078	IBIAS2	-6.25 nA	
410090	STUB2	+300 mV	
420078	IBIAS1	-6.25 nA	
430090	STUB1	+300 mV	
440000	GUARD	0 V	
450001	SPH2	V_Mode	

BEB2

480080	IBIAS3	0 nA	
490080	STUB3	0.0 V	
4A0080	IBIAS4	0 nA	
4B0080	STUB4	0.0 V	
4C0000	GUARD	0 V	
4D0001	SPH3	V_Mode	

BEB3

500078	VBIAS6	-6.25 nA	
510090	STUB6	+300 mV	
520078	IBIAS5	-6.25 nA	
530090	STUB5	+300 mV	
540000	GUARD	0 V	
550001	SPH6	V_Mode	

BEB4

580078	VBIAS7	-6.25 nA	
590090	STUB7	+300 mV	
5A0078	IBIAS8	-6.25 nA	
5B0090	STUB8	+300 mV	
5C0000	GUARD	0 V	
5D0001	SPH7	V_Mode	

FORMATTER

D82800	APID ON/OFF	
D90067	Rate SFA,ADC,BBF	
CLRBIT D5 8		

AXBEB

600080	IBIAS9	0 nA
610080	IBIAS10	0 nA
620005	V9, V10	V_Mode

ANALOG A/B

80001E	SVY 1/128 SPEED
823A00	ADC1 to ADC 4
831358	ADC5 to ADC 8
84FFFF	ADC7 MUX
85FFFF	ADC8 MUX
860001	TRIGGERS
881400	ANB, No Track

ANALOG C

A00006	ANC, BCOR TRIG
A16EA2	ESA HEAD POS
A20000	BCOR OFF
A40000	FREQ-T

DSP

90839C	ADC123678
948087	AVERAGE 2^7,XTAL

SFA

A8052A	SWP to 2MHz
A977E0	HFDIST
AA2600	SFA TRACK

HSBM

98B803	MSZ=7, 2MS/s
99B094	LFF2/BBF1 Levels
9A8803	Sel BBF1,LFF2

SLOW -> FAST

D80000
D90064
800018
90839C
948084

FAST -> SLOW

D82800
D90067
80001E
90839C
948087

disks/plasma1/home/ree/fast/modes/frm3/mode129.frm
Rev. 5: - High Alt Bias Tables
- HSBM All short - Muliti-Point
- DSP Cross Spectral!
- Ne9, 10.
- HSBM No Retrig/ TPOS = 1/4.