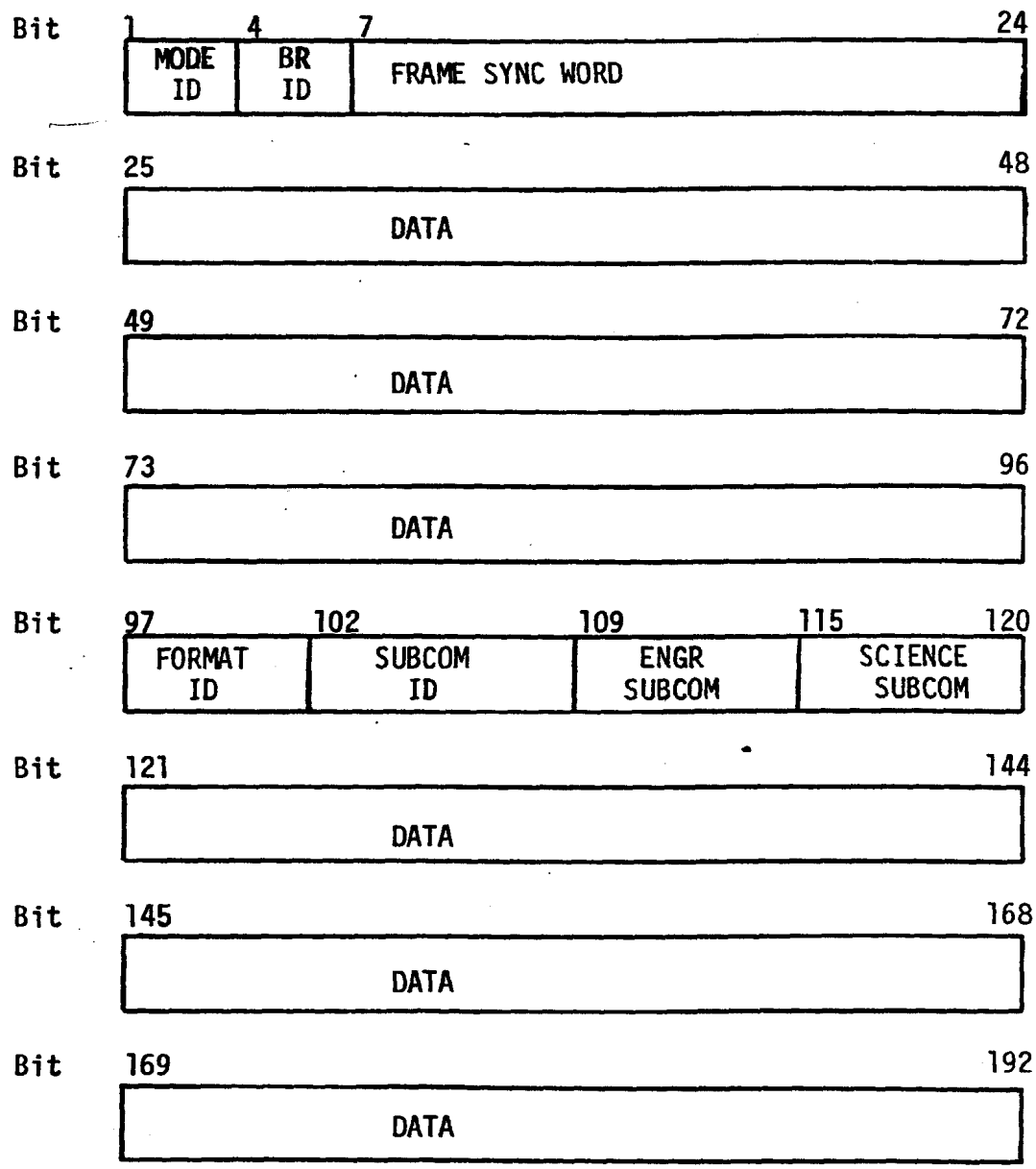

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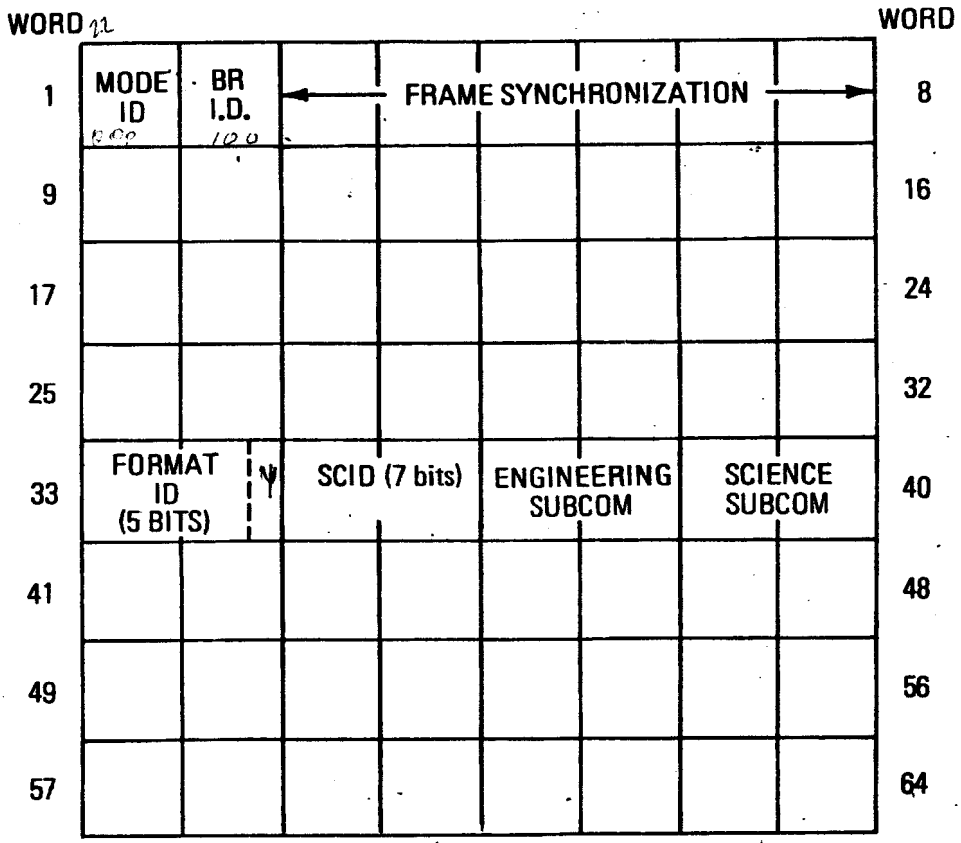

NOTES:
1. FORMATS A AND B ARE THE BASIC SCIENTIFIC FORMATS WITH A WORD SIZE OF 3 bits.
2. SCID = SUBCOMMUTATOR IDENTIFICATION.
3. EACH MAIN FRAME WORD SLOT IS SAMPLED AT A NOMINAL RATE OF BR/192, WHERE BR = bit rate (bits per second).
4. FRAME SYNC: 111 100 110 101 000 000 (746500_8)
5. MODE ID:

	DTU REDUNDACY A	B
REAL TIME	000	001
MRO	010	011
TS	100	101

6. BIT RATE ID:

16 bps	000	256 bps	100
32	001	512	101
64	010	1024	110
128	011	2048	111

7. FORMAT ID: FORMAT A – 0100φ
   FORMAT B – 0000φ
8. φ INDICATES "DON'T CARE" STATE

FORMAT ID
C1 0φ100
C2 0φ101
C3 0φ110
C4 0φ111

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		FIG. 6.2.2.1

WORD								WORD	
1	MODE AND BR ID	FRAME SYNC.						8	C1
9								16	
17	FORMAT AND SCID	ENGR. SC	SCI. SC					24	
25								32	
33	MODE AND BR ID	FRAME SYNC.						40	C2
41								48	
49	FORMAT AND SCID	ENGR. SC	SCI. SC					56	
57								64	
65	MODE AND BR ID	FRAME SYNC.						72	C3
73								80	
81	FORMAT AND SCID	ENGR. SC	SCI. SC					88	
89								96	
97	MODE AND BR ID	FRAME SYNC.						104	C4
105								112	
113	FORMAT AND SCID	ENGR. SC	SCI. SC					120	
121								128	

NOTES:
1. WORD SIZE IS 6 BITS
2. THIRTY-TWO OF THE 6-BIT DATA WORDS ARE INHIBITED BY THE MAIN FRAME FIXED WORDS AS INDICATED.
3. FORMAT ID: C1-0ϕ100 C3-0ϕ110
   C2-0ϕ101 C4-0ϕ111
4. ϕ INDICATES "DON'T CARE" STATE

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FIG. 6.2.2.2-1

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TITLE: WORD ASSIGNMENT FOR FORMAT C

WORD	BIT	MEASUREMENT	IDENTIFIER		COMMANDS AFFECTING
C-101		*DTU A/D Calibration Voltage, Low (168 MVDC)	DDTULV	0	
C-102		*DTU A/D Calibration Voltage, Med (1.512 VDC)	DDTUMV	1	
C-103		*DTU A/D Calibration Voltage, High (2.424 VDC)	DDTUHV	2	
C-104	1	*Extended SCID-MSB (2^{12})	DSCIDEC	3	
	2	*Extended SCID (2^{11})	"		
	3	*Extended SCID (2^{10})	"		
	4	*Extended SCID (2^{9})	"		
	5	*Extended SCID (2^{8})	"		
	6	*Extended SCID-LSB (2^{7})	"		
C-105		RTG 2 Current (0-11A)	PRTG2I	4	
C-106		Battery Voltage (0-15 VDC)	PBATV	5	
C-107		DC Bus Voltage (26-30 VDC)	PBUSEV	6	
C-108	1	JPL/HVM Power (ON/OFF)	PHVMWS	7	HVM9/0, INSO (4)
	2	ARC/PA Power (ON/OFF)	PPAYWS		PAY9/0, "
	3	UC/CPI Power (ON/OFF)	PCPDWS		CPD9/0, "
	4	UI/GTT Power (ON/OFF	PGTTWS		GTT9/0, "
	5	GSFC/CRT Power (ON/OFF)	PCRTWS		CRT9/0, "
	6	SPARE			
C-109		Battery Charge Current (0-0.3A)	PBCHGI	8	
C-110		RTG 1 Voltage (0-6 VDC)	PRTG1V	9	
C-111		Receiver A AGC Conscan (0-3 VDC) (± 4 dB)	RRACAGCM	10	
C-112	1	Roll Attitude Timer-MSB (2^{11})	DRATC	11	
	2	Roll Attitude Timer (2^{10})	"		
	3	Roll Attitude Timer (2^{9})	"		
	4	Roll Attitude Timer (2^{8}) — 1/2 sec resolution	"		
	5	Roll Attitude Timer (2^{7})	"		
	6	Roll Attitude Timer (2^{6})	"		
C-113		RTG 4 Voltage (0-6 VDC) (4)	PRTG4V	12	
C-114		RTG 3 Current (0-11A)	PRTG3I	13	
C-115		Battery Temperature (-20°F to + 120°F)	PBATT	14	
C-116	1	Roll Attitude Timer (2^{5})	DRATC	15	
	2	Roll Attitude Timer (2^{4})	"		
	3	Roll Attitude Timer (2^{3}) — 1/128 sec resolution	"		
	4	Roll Attitude Timer (2^{2})	"		
	5	Roll Attitude Timer (2^{1})	"		
	6	Roll Attitude Timer (2^{0})	"		

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FIG. 6.2.2.2-2

WORD	BIT	MEASUREMENT	IDENTIFIER	COMMANDS AFFECTING	
C-117		*TRF + 5 Volt Output CDU Bus A (0-6 VDC)	PTRFAV 16		
C-118		*TRF + 5 Volt Output CDU Bus B (0-6 VDC)	PTRFBV 17		
C-119		*DC Bus Voltage (0-30 VDC)	PBUSV 18		
C-120	1	*JPL/HVM Boom Status (Not Released/Released)	CDEP3S 19	DEP3 & 4	
	2	*RTG 1/2 Deployed (Not Deployed/Deployed)	CDEP1S	DEP1 & 2	
	3	*RTG 3/4 Deployed (Not Deployed/Deployed)	CDEP2S	DEP1 & 2	
	4	*S/C Separation Status (Not Separated/Separated)	CSEPS		
	5	*Decoder A Addressed (Addressed/Not Addressed)	CDECAS	ALL CMDS	
	6	*Decoder B Addressed (Addressed/Not Addressed)	CDECBS	ALL CMDS	
C-121		Receiver B AGC Conscan (0-3 VDC) (± 4db)	RRBCAGCM 20		
C-122		Shunt Bus Current (0-3A)	PSHNTI 21		
C-123		RTG 4 Current (0-11A)	PRTG4I 22		
C-124	1	UCSD/TRD Power Status (ON/OFF)	PTRDWS 23	TRD9/0, INSO	4
	2	USC/UV Power Status (ON/OFF)	PUVYWS	UVP9/0. INSO	
	3	UA/IPP Power Status (ON/OFF)	PIPYWS	IPY9/0, INSO	
	4	CIT/IR Power Status (ON/OFF)	PIRRWS	IRR9/0, INSO	
	5	GE/AMD Power Status (ON/OFF)	PAMDWS	AMD9/0, INSO	
	6	LaRC/MD Power Status (ON/OFF)	PMEDWS	MED9/0, INSO	
C-125		RTG 2 Voltage (0-6 VDC)	PRTG2V		
C-126		Battery Discharge Current (0-10A)	PDCHGI 24	BAT3 & 4	
C-127		RTG 1 Current (0-11A)	PRTG1I 25		
C-128	1	Battery Charge Status (FLOAT/AUTO)	PBCHGS 26	BAT2/1	4
	2	Battery Discharge Enable Status (DISABLE/ENABLE)	PDCHGS 27	BAT4/3	4
	3	SPARE			
	4	SPARE			
	5	Ordnance Relay Status, Prime (ARMED/SAFE)	CORDRPS	ORD2/1	4
	6	Ordnance Relay Status, Redundant (ARMED/SAFE)	CORDRRS	ORD2/1	4
C-129		DC Bus Current (0-6A)	PBUSI 28		
C-130		Nitrogen Tank Temperature 4	ANITRTK 29		
C-131		RTG 3 Voltage (0-6 VDC)	PRTG3V 30		
C-132	1	Data Coding Mode (CODED/UNCODED)	DCCUMS 31	CCM1/ UCM1	4
	2	RTG 1/2 & Mag Boom Ordnance Status (ARMED/SAFE)	CORD1S	ORD2/1	
	3	RTG 3/4 Ordnance Status (ARMED/SAFE)	CORD3S	ORD2/1	
	4	RTG 1/2 Redundant Ordnance Status (ARMED/SAFE)	CORD1RS	ORD2/1	
	5	RTG 3/4 Redundant Ordnance Status (ARMED/SAFE)	CORD3RS	ORD2/1	
	6	CDU Sequencer Status (ENABLED/DISABLED)	CSEQS	SEQ2/1	

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FIG. 6.2.2.2-2
SHEET 2 OF 14

WORD	BIT	MEASUREMENT	IDENTIFIER		COMMANDS AFFECTING
C-201		*RTG 1 Fin Root Temperature (160°F to 360°F)	PRTG1FRT	32	
C-202		*RTG 2 Fin Root Temperature (160°F to 360°F)	PRTG2FRT	33	
C-203		*RTG 3 Fin Root Temperature (160°F to 360°F)	PRTG3FRT	34	
C-204		*RTG 4 Fin Root Temperature (160°F to 360°F)	PRTG4FRT	35	
C-205		TWT A Temperature (40°F to 125°F)	RTWTAT	36	
C-206		Driver A Temperature (20°F to 110°F)	RDRVAT	37	
C-207		TWT A Converter Temperature (40°F to 125°F)	RTACONT	38	
C-208		TWT A Cathode Current (24 - 30 mA)	RTACATI	39	
C-209		Shunt Bus Current (0-3A) (Redundant)	PSHNTRI	40	
C-210		Propellant Supply Pressure (0-600 PSIA)	APROPP	41	
C-211		TWT A Helix Current (0 - 10 mA)	RTAHLXI	42	
C-212		Receiver A Loop Stress (-100 kHz to +100 kHz)	RRASPEM	43	
C-213		Receiver B Signal Strength (-149 to -63 dBm)	RRBSSTRM	44	
C-214		TWT B RF Output Power (26 - 40.4 dBm)	RTBRFW	45	TRB0&9 (4)
C-215		TWT B Cathode Current (24 - 30 mA)	RTBCATI	46	
C-216		TWT B Helix Current (0 - 10 mA)	RTBHLXI	47	
C-217		*RTG 4 Hot Junction Temperature (880°F to 1200°F)	PRTG4HJT	48	
C-218		*RTG 3 Hot Junction Temperature (880°F to 1200°F)	PRTG3HJT	49	
C-219		*RTG 2 Hot Junction Temperature (880°F to 1200°F)	PRTG2HJT	50	
C-220		*RTG 1 Hot Junction Temperature (880°F to 1200°F)	PRTG1HJT	51	
C-221		TWT B Converter Temperature (40°F to 125°F)	RTBCONT	52	
C-222		Receiver A VCO Temperature (20°F to 110°F)	RRAVCOT	53	
C-223		Driver B Temperature (20°F to 110°F)	RDRVBT	54	
C-224		TWT A Reference Voltage (0-28 VDC)	RTAREFV	55	
C-225		+Y PSA Line Temperature (0-140°F)	TPLYT	56	
C-226		-Y PSA Line Temperature (0-140°F)	TMIYT	57	
C-227		Receiver B VCO Temperature (20°F to 110°F)	RRBVCOT	58	
C-228		TWT B Temperature (40°F to 125°F)	RTWTBT	59	
C-229		Receiver B Loop Stress (-100 to +100 kHz)	RRBSPEM	60	
C-230		TWT B Reference Voltage (0-28 VDC)	RTBREFV	61	
C-231		TWT A RF Output Power (26 - 40.4 dBm)	RTARFW	62	TRA0&9 (4)
C-232		Receiver A Signal Strength (-149 to -63 dBm)	RRASSTRM	63	
C-301		*S/C Platform Temperature 1 (0°F to 140°F)	TPLAT1T	64	
C-302		*S/C Platform Temperature 2 (0°F to 140°F)	TPLAT2T	65	
C-303		*SRA Temperature (-10°F to +95°F)	TSRAT	66	
C-304		*S/C Platform Temperature 3 (0°F to 140°F)	TPLAT3T	67	

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FIG. 6.2.2.2-2

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WORD	BIT	MEASUREMENT		IDENTIFIER	COMMANDS AFFECTING	Rev.
C-305	1	Stored Command Time Register-MSB	Refer to Figure 6.3.5 Pages 9 & 10 for resolution	CSCRTIMM	CDS 1, 2, 3, & 4	
	2	Stored Command Time Register		"	CDR 1 & 2	
	3	Stored Command Time Register		"	CDS 1 & 2	
	4	Stored Command Time Register		"	"	
	5	Stored Command Time Register		"	"	
	6	Stored Command Time Register		"	"	
C-306	1	Stored Command, Time Register-LSB		"	"	
	2	Stored Command Register-MSB (2^7)	$0-377_8$	CSCRCMDM	"	
	3	Stored Command Register (2^6)		"	"	
	4	Stored Command Register (2^5)		"	"	
	5	Stored Command Register (2^4)		"	"	
	6	Stored Command Register (2^3)		"	"	
C-307	1	Stored Command Register (2^2)		"	"	
	2	Stored Command Register (2^1)		"	"	
	3	Stored Command Register-LSB (2^0)		"	"	
	4	Stored Command Register Identification-Bit 2^2	0-4	CSCRIDC	"	
	5	Stored Command Register Identification-Bit 2^1		"	"	
	6	Stored Command Register Identification-Bit 2^0		"	"	
C-308	1	Receiver A Signal Presence Status (Present/Not)		RRASIGPS		
	2	Receiver B Signal Presence Status (Present/Not)		RRBSIGPS		
	3	Receiver A Oscillator Status (Enabled/Disabled)		RRAOSCS	COA 1/2	⚠4
	4	Receiver B Oscillator Status (Enabled/Disabled)		RRBOSCS	COB 1/2	⚠4
	5	Spin Thruster B Pulse Status (Toggles)		ASPTHBPS	SPN2	
	6	Spin Thruster A Pulse Status (Toggles)		ASPTHAPS	SPN2	
C-309		Velocity Thruster Cluster 1 Temperature (40°F to 200°F)		AVELC1T		
C-310		Spin Thruster Cluster Temperature (40°F to 200°F)		ASPTHCLT		
C-311		VPT-1 Thruster Temperature (400° - 1800°F)		AVPT1T		
C-312		VPT-2 Thruster Temperature (400° - 1800°F)		AVPT2T		
C-313	1	Conscan-Thruster Phase Output Status (180°/0°)		RCSTPOS	CNS4/3	⚠4
	2	Conscan Threshold Mode Status (HI/MED)		RCSTHMS	CNS 1/2	⚠4
	3	Conscan A Sin θ - LSB	Twos Complement	RCSASIN		
	4	Conscan A Sin θ		"		
	5	Conscan A Sin θ		"		
	6	Conscan A Sin θ		"		

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FIG. 6.2.2.2-2

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WORD	BIT	MEASUREMENT	IDENTIFIER		COMMANDS AFFECTING	
C-314	1	Conscan A Sin θ }	RCSASIN	77		
	2	Conscan A Sin θ } Twos Complement	"			
	3	Conscan A Sin θ }	"			
	4	Conscan A Sin θ - MSB Sign Bit	"			
	5	Conscan A Cos θ - LSB }	RCSACOS			
	6	Conscan A Cos θ }	"			
C-315	1	Conscan A Cos θ }	"	78		
	2	Conscan A Cos θ } Twos Complement	"			
	3	Conscan A Cos θ }	"			
	4	Conscan A Cos θ }	"			
	5	Conscan A Cos θ }	"			
	6	Conscan A Cos θ - MSB Sign Bit	"			
C-316	1	Conscan Power Status (ON/OFF)	RCSWS	79	CNS9/0	4
	2	Conscan Signal (ABOVE/BELOW) Threshold	RCSTHS		CNS1 & 2	4
	3	SPARE				
	4	Receiver A Switch To Antenna (HI/MED)	RRAXS		ANT3/4	4
	5	Transmitter A Switch to Antenna (HI/MED)	RTAXS		ANT1/2	4
	6	Antenna Feed Switch (OFFSET/NORMAL)	RANTFXS			
C-317		*SSA Temperature (-30°F to +194°F)	TSSAT	80		
C-318		*S/C Platform Temperature 4 (0°F to 140°F)	TPLAT4T	81		
C-319		*S/C Platform Temperature 5 (-20°F to 110°F)	TPLAT5T	82		
C-320		*S/C Platform Temperature 6 (-20°F to 110°F)	TPLAT6T	83		
C-321	1	Velocity Thruster 2 Pulse Count - MSB (2^5)	AVELT2C	84		
	2	Velocity Thruster 2 Pulse Count (2^4)	"			
	3	Velocity Thruster 2 Pulse Count (2^3)	"			
84	4	Velocity Thruster 2 Pulse Count (2^2)	"			
	5	Velocity Thruster 2 Pulse Count (2^1)	"			
	6	Velocity Thruster 2 Pulse Count - LSB (2^0)	"			
C-322	1	Velocity Thruster 4 Pulse Count - MSB (2^5)	AVELT4C	85		
	2	Velocity Thruster 4 Pulse Count (2^4)	"			
	3	Velocity Thruster 4 Pulse Count (2^3)	"			
85	4	Velocity Thruster 4 Pulse Count (2^2)	"			
	5	Velocity Thruster 4 Pulse Count (2^1)	"			
	6	Velocity Thruster 4 Pulse Count - LSB (2^0)	"			
C-323	1	SPARE				
	2	SPARE		86		

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FIG. 6.2.2.2-2

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FIG. 6.2.2.2-2

WORD	BIT	MEASUREMENT	IDENTIFIER		COMMANDS AFFECTING	
C-323	3	SPARE				
	4	SPARE				
96	5	SPARE				
	6	SPARE				
C-324	1	Stored Command REG Countdown Status (STANDBY/COUNTING)	CSCRCDS	87	CDX2/1	4
	2	SPARE				
41	3	SPARE				
	4	SPARE				
	5	SPARE				
	6	Command Execute Flip-Flop Status(Toggles Once Per Cmd)	CCMDEXS		All Commands	
C-325	88	VPT-4 Thruster Temperature (400° - 1800°F)	AVPT4T	88		
C-326	89	Velocity Thruster Cluster 2 Temp (40°F to 200°F)	AVELC2T	89		
C-327	90	Propellant Supply Temperature (40°F to 160°F)	APROPT	90		
C-328	91	VPT-3 Thruster Temperature (400° - 1800°F)	AVPT3T	91		
C-329	1	Velocity Thruster 1 Pulse Count - MSB (2^5)	AVELT1C	92		
	2	Velocity Thruster 1 Pulse Count (2^4)	"			
92	3	Velocity Thruster 1 Pulse Count (2^3)	"			
	4	Velocity Thruster 1 Pulse Count (2^2)	"			
	5	Velocity Thruster 1 Pulse Count (2^1)	"			
	6	Velocity Thruster 1 Pulse Count - LSB (2^0)	"			
C-330	1	Velocity Thruster 3 Pulse Count - MSB (2^5)	AVELT3C	93		
	2	Velocity Thruster 3 Pulse Count (2^4)	"			
93	3	Velocity Thruster 3 Pulse Count (2^3)	"			
	4	Velocity Thruster 3 Pulse Count (2^2)	"			
	5	Velocity Thruster 3 Pulse Count (2^1)	"			
	6	Velocity Thruster 3 Pulse Count - LSB (2^0)	"			
C-331	1	SPARE				
	2	SPARE		94		
94	3	SPARE				
	4	SPARE				
	5	SPARE				
	6	SPARE				
C-332	1	CDU Sequencer Power Status (ON/OFF)	CSEQWS	95	SEQ1	
	2	Overload Protection Status (OFF/ON)	POLPROS		PSP2/3	4
95	3	Receiver Reverse Enable Status (INHIBIT/ENABLE)	RRECREVS		ANT6/5	4

WORD	BIT	MEASUREMENT	IDENTIFIER	COMMANDS AFFECTING
C-332	4	Stored Command Reg Processor Select Status (A/B)	CSCRPSS	CDU1 & 2
93	5	Stored Command Reg DTU Identification (DTU/CDU)	CSCRDIDS	CDS & CDR CMDS
	6	CDU +5V Bus Select Status (A/B)	CCDUBUSS	CDU3 & 4
C-401	1	*SPARE		
	2	*SPARE		
96	3	*SPARE		
	4	*SPARE		
	5	*SPARE		
	6	*SPARE		
C-402		*SPARE		
C-403	1	*Precession Pair Select (VPT 1&4/VPT 2&3)	APREPRS	PRE2/PRE1 (4)
	2	*Pulse Length Select	APLSLNGM	PUL1,2,3,4, & 5 (4)
98	3	*Pulse Length Select — Note 7	"	
	4	*Pulse Length Select	"	
	5	*Delta V Pair Select (VPT 1 & 3/VPT 2 & 4)	AVELPRS	VEL2/VEL1 (4)
	6	*Spin Control Direction Status (DOWN/UP)	ASPNDIRS	SPN4/SPN3 (4)
C-404	1	*Star Time Gate - LSB (2^0)	ASTGTTC	
	2	*Star Time Gate (2^1)	"	
99	3	*Star Time Gate (2^2) — 1/4 sec resolution	"	
	4	*Star Time Gate (2^3)	"	
	5	*Star Time Gate - MSB (2^4)	"	
	6	*SCT Delta V Mode Status (ENABLED/DISABLED)	ASCTDVMS	VEL4
C-405	1	Spin Period - MSB (2^{17})	ASPNPDC	
	2	Spin Period (2^{16})	"	
100	3	Spin Period (2^{15})	"	
	4	Spin Period (2^{14}) — 1/8192 sec resolution	"	
	5	Spin Period (2^{13})	"	
	6	Spin Period (2^{12})	"	
C-406	1	Spin Period (2^{11})	"	
	2	Spin Period (2^{10})	"	
	3	Spin Period (2^9)	"	
101	4	Spin Period (2^8)	"	
	5	Spin Period (2^7)	"	
	6	Spin Period (2^6)	"	
C-407	1	Spin Period (2^5)	"	
102	2	Spin Period (2^4)	"	

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FIG. 6.2.2.2-2

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WORD	BIT	MEASUREMENT		IDENTIFIER	COMMANDS AFFECTING
C-407	3	Spin Period (2^3)		ASPNPDC	
	4	Spin Period (2^2)		"	
102	5	Spin Period (2^1)		"	
	6	Spin Period - LSB (2^0)		"	
C-408	1	Roll Pulse/Roll-Index Pulse Phase Error (2^4)	1/512 sec resolution	ARIPPHEC	
	2	Roll Pulse/Roll-Index Pulse Phase Error (2^3)		"	
103	3	Roll Pulse/Roll-Index Pulse Phase Error (2^2)		"	
	4	Roll Pulse/Roll-Index Pulse Phase Error (2^1)		"	
	5	Roll Pulse/Roll-Index Pulse Phase Error (2^0)		"	
	6	Phase Error Sign - (Roll Pulse Before Index Pulse = 1)		"	
C-409	1	VPT 1 Firing Status (Firing/Not Firing)		AVPT1FS	
	2	VPT 2 Firing Status (Firing/Not Firing)		AVPT2FS	
104	3	VPT 4 Firing Status (Firing/Not Firing)		AVPT4FS	
	4	VPT 3 Firing Status (Firing/Not Firing)		AVPT3FS	
	5	SCT 1 Firing Status (Firing/Not Firing)		ASCT1FS	
	6	SCT 2 Firing Status (Firing/Not Firing)		ASCT2FS	
C-410	1	Despin Status (ON/OFF) Note 8		ADSPNS	SPN1/NONE △4
	1	Auto Star Mode (ON/OFF) Note 8		ADSPNS △4	SEN4/SEN1,2,or 3
105	2	Conscan to DSL (Enabled/Inhibited)		RCSS	CNS5/6
	3	Clock Select Note 5		ACLKS	ACR1, ACA1, ACB1
	4	Clock Select		"	
	5	Star Angle Gate (45°/360°)		ASTAGTS	SAS1/2 △4
	6	Roll Pulse Present (YES/NO)		DROLLPS	△4
C-411	1	No. 1 Precession Magnitude - LSB (2^0)	8 sec resolution	APRE1M	
	2	No. 1 Precession Magnitude (2^1)		"	
106	3	No. 1 Precession Magnitude (2^2)		"	
	4	No. 1 Precession Magnitude (2^3)		"	
	5	No. 1 Precession Magnitude (2^4)		"	
	6	No. 1 Precession Magnitude (2^5)		"	
C-412	1	No. 1 Precession Magnitude (2^6)		"	
	2	No. 1 Precession Magnitude (2^7)		"	
107	3	No. 1 Precession Magnitude (2^8)		"	
	4	No. 1 Precession Magnitude (2^9)		"	
	5	No. 1 Precession Magnitude - MSB (2^{10})		"	
	6	Delta V Magnitude - LSB (2^0)		AVELM	
C-413	1	Delta V Magnitude (2^1)		"	
108	2	Delta V Magnitude (2^2)		"	

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C-413	3	Delta V Magnitude (2^3)		AVELM	
108	4	Delta V Magnitude (2^4)		"	
	5	Delta V Magnitude (2^5)	1 sec resolution	"	
	6	Delta V Magnitude (2^6)		"	
C-414	1	Delta V Magnitude (2^7)		"	
	2	Delta V Magnitude (2^8)		"	
109	3	Delta V Magnitude (2^9)		"	
	4	Delta V Magnitude (2^{10})		"	
	5	Delta V Magnitude (2^{11})		"	
	6	Delta V Magnitude - MSB (2^{12})		"	
C-415	1	No. 2 Precession Magnitude - LSB (2^0)		APRE2M	
	2	No. 2 Precession Magnitude (2^1)		"	
110	3	No. 2 Precession Magnitude (2^2)	8 sec resolution	"	
	4	No. 2 Precession Magnitude (2^3)		"	
	5	No. 2 Precession Magnitude (2^4)		"	
	6	No. 2 Precession Magnitude (2^5)		"	
C-416	1	No. 2 Precession Magnitude (2^6)		"	
	2	No. 2 Precession Magnitude (2^7)		"	
	3	No. 2 Precession Magnitude (2^8)		"	
111	4	No. 2 Precession Magnitude (2^9)		"	
	5	No. 2 Precession Magnitude - MSB (2^{10})		"	
	6	Star Coincidence (YES/NO)		ASTCOIS	
C-417	1	*SPSG Roll Reference (180°/0°)		ASPSGRRS	
	2	*SPSG Mode Select	Note 4	ASPSGMS	
112	3	*SPSG Mode Select		"	
	4	*SPARE			
	5	*SPARE			
	6	*SPARE			
C-418		*SPARE			
C-419	1	*Star Delay - LSB (2^0)		ASTDLYC	SAS3,4,5, & 6 (4)
	2	*Star Delay (2^1)	1/256 sec resolution	"	
114	3	*Star Delay (2^2)		"	
	4	*Star Delay (2^3)		"	
	5	*Star Delay (2^4)		"	
	6	*Star Delay (2^5)		"	

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WORD	BIT	MEASUREMENT		IDENTIFIER	COMMANDS AFFECTING
C-420	1	*Star Delay (2^6)		ASTDLYC	
	2	*Star Delay (2^7)		"	
105	3	*Star Delay (2^8)		"	
	4	*Star Delay (2^9)		"	
	5	*Star Delay (2^{10})		"	
	6	*Star Delay - MSB (2^{11})		"	
C-421	1	Star Count - LSB (2^0)		ASTC	
	2	Star Count (2^1)		"	
116	3	Star Count - MSB (2^2)		"	
	4	CEA Power Status	(1=DSLA power on) Note 6	ACEAWS	
	5	CEA Power STatus	(1=DSLB power on)	"	
	6	CEA Power Status	(1=PSE power on)	"	
C-422	1	Spacing Bit		ASPABITC	
	2	Spacing Bit		"	
117	3	Spacing Bit		"	
	4	Spacing Bit		"	
	5	Spacing Bit		"	
	6	No. 2 Precession Redundant Magnitude - LSB (2^0)		APRE2RM	
C-423	1	No. 2 Precession Redundant Magnitude (2^1)	64 sec re-	"	
	2	No. 2 Precession Redundant Magnitude (2^2)	solution	"	
118	3	No. 2 Precession Redundant Magnitude (2^3)		"	
	4	No. 2 Precession Redundant Magnitude (2^4)		"	
	5	No. 2 Precession Redundant Magnitude (2^5)		"	
	6	No. 2 Precession Redundant Magnitude (2^6)		"	
C-424	1	No. 2 Precession Redundant Magnitude - MSB (2^7)		"	
	2	No. 2 Precession Angle - LSB (2^0)		APRE2AM	
119	3	No. 2 Precession Angle (2^1)		"	
	4	No. 2 Precession Angle (2^2)		"	
	5	No. 2 Precession Angle (2^3)	0.703125^o	"	
	6	No. 2 Precession Angle (2^4)	resolution	"	
C-425	1	No. 2 Precession Angle (2^5)		"	
	2	No. 2 Precession Angle (2^6)		"	
120	3	No. 2 Precession Angle (2^7)		"	
	4	No. 2 Precession Angle (2^8)		"	
	5	Delta V Redundant Magnitude - LSB (2^0)		AVELRM	
	6	Delta V Redundant Magnitude (2^1)		"	

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FIG. 6.2.2.2-2

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WORD	BIT	MEASUREMENT		IDENTIFIER	COMMANDS AFFECTING	
C-426	1	Delta V Redundant Magnitude (2^2)		AVELRM		
	2	Delta V Redundant Magnitude (2^3)	32 sec	"		
	3	Delta V Redundant Magnitude (2^4)	resolution	"		
121	4	Delta V Redundant Magnitude (2^5)		"		
	5	Delta V Redundant Magnitude (2^6)		"		
	6	Delta V Redundant Magnitude - MSB (2^7)		"		
C-427	1	Time Delay - LSB (2^0)		ATIMDLYM		
	2	Time Delay (2^1)		"		
	3	Time Delay (2^2)	64 sec resolution	"		
122	4	Time Delay (2^3)		"		
	5	Time Delay (2^4)		"		
	6	Time Delay (2^5)		"		
C-428	1	Time Delay - MSB (2^6)		"		
	2	No. 1 Precession Redundant Magnitude - LSB (2^0)		APRE1RM		
	3	No. 1 Precession Redundant Magnitude (2^1)		"		
123	4	No. 1 Precession Redundant Magnitude (2^2)		"		
	5	No. 1 Precession Redundant Magnitude (2^3)	64 sec re-	"		
	6	No. 1 Precession Redundant Magnitude (2^4)	solution	"		
C-429	1	No. 1 Precession Redundant Magnitude (2^5)		"		
	2	No. 1 Precession Redundant Magnitude (2^6)		"		
	3	No. 1 Precession Redundant Magnitude - MSB (2^7)		"		
124	4	No. 1 Precession Angle - LSB (2^0)		APRE1AM		
	5	No. 1 Precession Angle (2^1)		"		
	6	No. 1 Precession Angle (2^2)		"		
C-430	1	No. 1 Precession Angle (2^3)	0.703125^o	"		
	2	No. 1 Precession Angle (2^4)	resolution	"		
	3	No. 1 Precession Angle (2^5)		"		
125	4	No. 1 Precession Angle (2^6)		"		
	5	No. 1 Precession Angle (2^7)		"		
	6	No. 1 Precession Angle - MSB (2^8)		"		
C-431	1	ACS Sequence Status		ASEQS	ACX4 & 5	4
	2	ACS Sequence Status	Note 3	"		
	3	ACS Sequence Status		"		
126	4	Star Time Gate Enable Status (Disabled/Enabled)		ASTGTS	SAS1,SAS2/SAT1	4
	5	Reference Select	Note 2	AREFSELS	SEN1,2, & 3	4

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WORD	BIT	MEASUREMENT	IDENTIFIER	COMMANDS AFFECTIN
C-431	6	Reference Select Note 2	AREFSELS	
C-432	1	Star Location - Octant 1 (Present/Absent)	ASTLOCC	
	2	Star Location - Octant 8 (Present/Absent)	"	
	3	ACS Registers Inhibit Status (NORMAL/INHIBIT)	AREGINHS	ACX1,2,3, & 4
129	4	Precession Register 1 Status (Arm/Disarm)	APRER1S	ACS1 ④
	5	Delta V Register Status (Arm/Disarm)	AVELREGS	ACS2
	6	Precession Register 2 Status (Arm/Disarm)	APRER2S	ACS3

NOTES:

1. All logic are represented with '1' state first (1/0). An asterick (*) indicates parameters which only appear in the subcom (never get accelerated to main frame rates).
2. Reference Select Status - Word C431 Bits 5 & 6

5 6	DISPLAY	④
00 Error	ERR	
01 Star	STAR	
10 Sun B	SUNB	
11 Sun A	SUNA	

3. ACS Sequence Status - Word C431 Bits 1, 2, & 3

1 2 3	Display	
000 Reset	RSET	④
100 Delay #1	DLY1	
010 Precession #1	PRE1	
110 Delay #2	DLY2	
001 Delta Vel.	DELV	④
101 Delay #3	DLY3	
011 Precession #2	PRE2	
111 Not Used	TILT	

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NOTES:

4. SPSG MODE - Word C417 Bits 2 & 3 ④

2 3		DISPLAY
00	Non Averaging	NAVG
01	ACS Mode	ACS
10	Averaging	AVG
11	Not Used	

5. Clock Select - Word C410 Bit 3 and 4 ④

3 4			DISPLAY
11	Normal Reset	(A & B)	NORM
01	Clock A	(A only)	CLKA
10	Clock B	(B only)	CLKB
00	Reset Reverse	(B & A)	REVR

6. CEA Power Status - Word C421 Bits 4, 5, & 6 ④

4 5 6		DISPLAY
000	Mode A - Standby (No Power ON)	MODA
100	Mode C - Partial 1 (DSLA Power On, DSLB and PSE Power Off)	MODC
010	Mode D - Partial 2 (DSLB Power On, DSLA and PSE Power Off)	MODD
110	Not Used	
001	Mode B - Storage (PSE Power On; DSLA and DSLB Power Off)	MODB
101	Mode E - Total 1 (PSE and DSLA Power On; DSLB Power Off)	MODE
011	Mode F - Total 2 (PSE and DSLB Power On; DSLA Power Off)	MODF
111	Not Used	

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FIG. 6.2.2.2-2

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NOTES:

7. Pulse Length - Word C403 Bits 2, 3, & 4

2 3 4		DISPLAY
000	Not used	ERR
001	0.03125 sec.	31.2
010	Not used	ERR
011	0.125 sec.	125
100	2.0 sec.	2000
101	Not used	ERR
110	1.0 sec.	1000
111	0.5 sec.	500

4

8. Despin Status/Auto Star Mode - Word C-410 Bit 1 4

a. Despin Status indicated when Star Time Gate Disabled.

b. Auto Star Mode indicated when Star Time Gate Enabled.

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FIG. 6.2.2.2-2

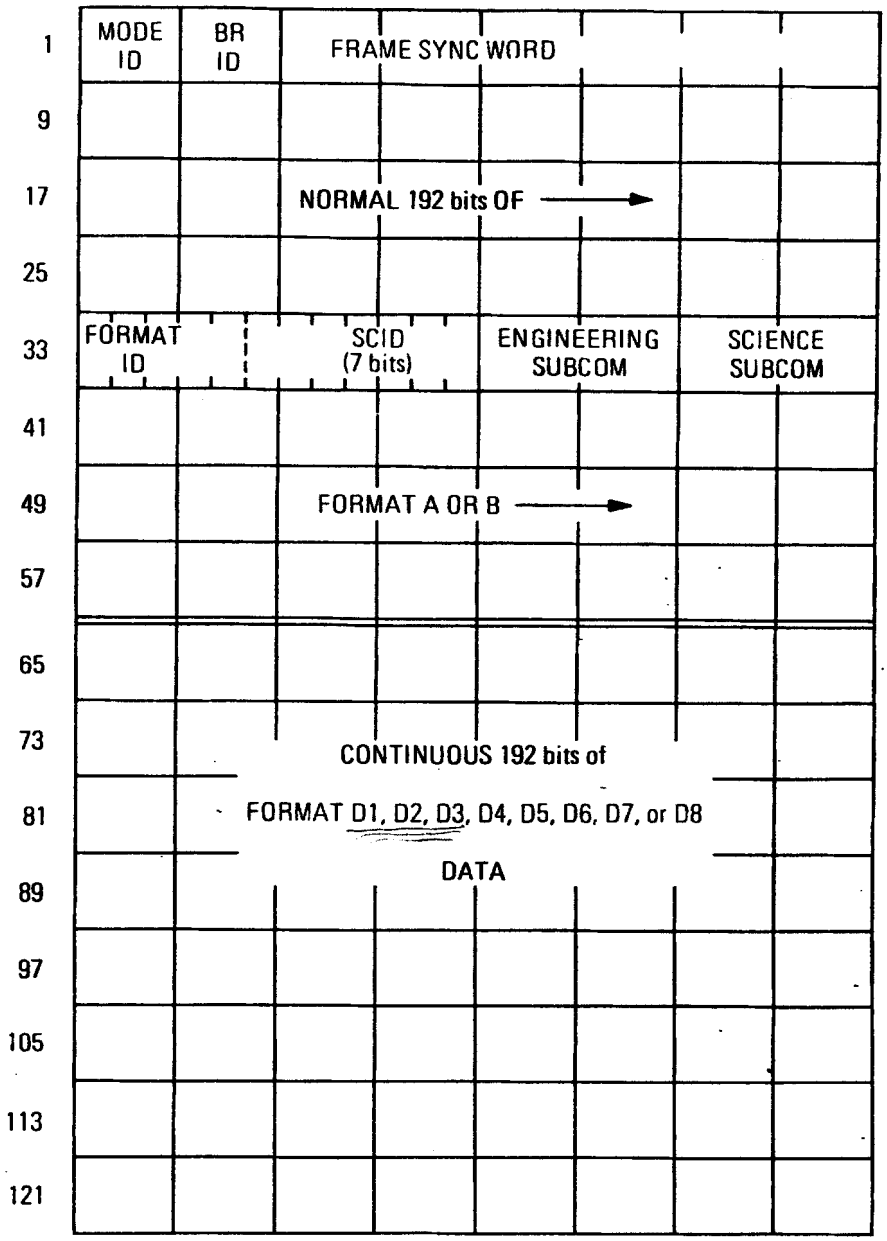
Format ID (42,41,40)	Format
01000 = 20,21,22,23	A
00000 = 00,01,02,03	B
0X100 = 30,31, 10,11	C 1
0X101 32,33, 12,13	C 2
0X110 34,35, 14,15	C 3
0X111 36,37, 16,17 (ROTARY / INDIVIDUAL)	C 4
11000	D1 with A
10000	D1 with B
11001	D2 with A
10001	D2 with B
11010	D3 with A
10010	D3 with B
11011	*D4 with A
10011	*D4 with B
11100	*D5 with A
10100	*D5 with B
11101	*D6 with A
10101	*D6 with B
11110	*D7 with A
10110	*D7 with B
11111	*D8 with A
10111	*D8 with B

(3)

Notes: * = Not used on Pioneer F
ø = Don't care state (may be a one or a zero)
X = 1 when in Rotary C (Operationally Forced) (3)

Table I

Format ID Assignments



NOTES:

1. WORD SIZE IS 3 BITS
2. EACH BIT IN THIS TOTAL A/D OR B/D FORMAT IS SAMPLED AT A RATE OF BR/384, (WHERE BR = bit rate)
3. THE FRAME SYNC AND OTHER FIXED WORDS OCCUR ONLY IN THE FIRST HALF OF THE TOTAL 384 BIT FRAME
4. IN FORMAT D1, ALL 192 BITS IS FROM THE DSU (IPP data)
5. IN FORMAT D2, ONLY THE LAST 168 BITS ARE FROM THE DSU (IPP data) AND THE FIRST 24 BITS ARE IR DATA (REAL TIME)

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	Pioneer F/G Scientific Data Formats D_1 thru D_8	DOC. NO. PC-224.00
		FIG. 6.2.2.3
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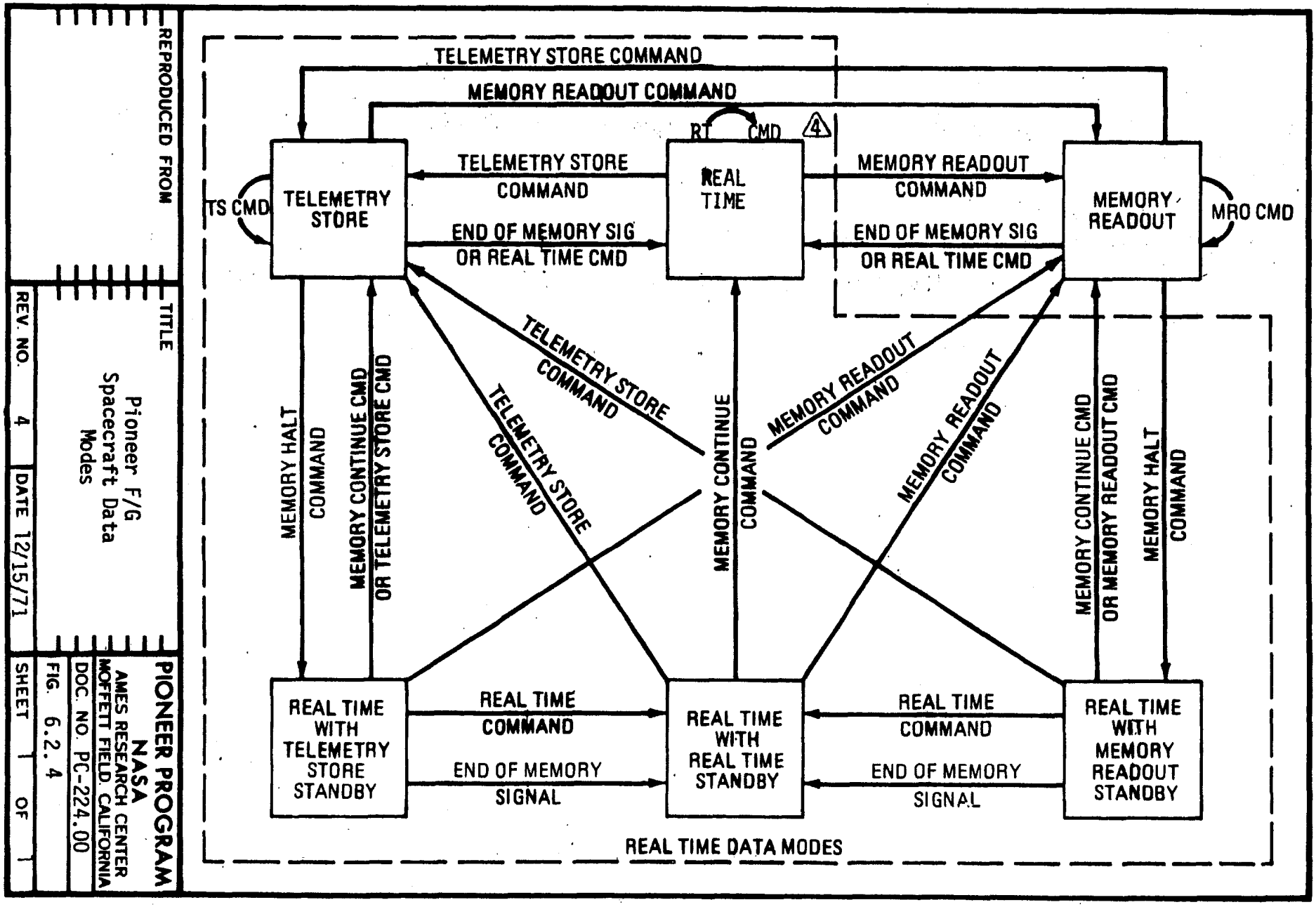

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