CONTROL MODE AND STATUS SIGNALS

004	DE	SATURN ULL OR VENT	DE	ULLAGE THRUST PRES	(106)	DE	ABORT	74	A04
005	DENC	G/N MONITOR MODE							
066	DE	SIVB SEPARATE	DE	SIVB SEPARATE/ABORT	(42)	DE	ABORT STAGE	75	A05
007	DE	LIFT OFF	DE	LIFT OFF (SIVB)	(108)	DE	AUTO THROTTLE	68	A08
068	DE	GUIDANCE RELEASE	DE	GUID REF RELEASE	(101)	DE	DISPLAY INERTIAL DATA	77	A12
058	DE	G/N DV MODE							
060	DE	G/N ENTRY MODE	DE	LEM ATTACHED	(44)	DENC	SPARE CHN 32 BIT 11		
067	DE	CM-SM SEPERATION	DE	SM SEPERATE	(43)	DE	STAGE VERIFY	73	A23
040	DE	G/N ATT CNTRL MODE	DE	HOLD FUNCTION	(58)	DE	ATTITUDE HOLD MODE	65	A02
065	DENC	SCS DV MODE	DE	FREE FUNCTION	(59)	DE	AUTO STABILIZATION	64	A01
083			DE	ACCEPT UPLNK	(60)	DE	ACCEPT UPLNK (PERN WIRED IN)		
082			DE	SPS READY	(41)	DE	ENGINE ARMED	76	A06
841			CBNC			CB	- ROLL GIMBAL TRIM	32	D08

SPARE INBITS AND OUTBITS

084	DENC SPARE CHN 30-08	DENC SPARE CHN 30-08
033	DENC SPARE CHN 32-12 *	DENC SPARE CHN 32-12 *
034	DENC SPARE CHN 32-13 *	DENC SPARE CHN 32-13 *
844	DENC SPARE CHN 32-14 *	DENC SPARE CHN 32-14 *
845	DENC SPARE CHN 32-16 *	DENC SPARE CHN 32-16 *
840	DENC SPARE CHN 33-01	DENC SPARE CHN 33-01
848	CBNC SPARE CHN 11-08 *	CBNC SPARE CHN 11-08 *
850	CBNC SPARE CHN 11-10 *	CBNC SPARE CHN 11-10 *
851	CBNC SPARE CHN 11-11 *	CBNC SPARE CHN 11-11 *
852	CBNC SPARE CHN 11-12 *	CBNC SPARE CHN 11-12 *
854	CBNC SPARE CHN 12-7	CBNC SPARE CHN 12-7
855	CBNC SPARE CHN 11-16 *	CBNC SPARE CHN 11-16 *

* NOT WIRED TO THE INTERFACE CONNECTOR.

BLOCK 100

BLOCK II LEM

REACTION CONTROL JETS

	SM	CM							
801	CB +X/+PCH	+PCH/-X/+YAW (9)	CB	-X/-P/+R,	4U	NO	1	15	E07
806	CB -X/-PCH	-PCH/+Z (12)	CB	+X/+P/-R	4D	NO	2	9	E01
805	CB -X/+PCH	+PCH/-X/-YAW(11)	CB	-X/+R/+P	3U	NO	5	13	E05
802	CB +X/-PCH	-PCH/+Z (10)	CB	+X/-R/-P,	3D	NO	6	10	E02
803	CB +X/+YAW	+YAW/-X/+PCH(13)	CB	-X/+P/-R,	2U	NO	9	14	E06
808	CB -X/-YAW	-YAW/-X/-PCH(16)	CB	+X/-P/+R,	2D	NO	10	11	E03
807	CB -X/+YAW	+YAW/-X/-PCH(15)	CB	-X/-R/-P,	1U	NO	13	16	E08
804	CB +X/-YAW	-YAW/-X/+PCH(14)	CB	+X/+R/+P,	1D	NO	14	12	E04
813	CB +Z/+RLL	+RLL/(+Y,+Z)(17)	CB	+Z/+YAW,	3F	NO	7	22	E14
816	CB -Z/-RLL	-RLL/(-Y,-Z)(20)	CB	-Z/-YAW,	4F	NO	3	23	E15
815	CB -Z/+RLL	+RLL/(+Y,-Z)(19)	CB	-Z/+YAW,	1F	NO	15	24	E16
814	CB +Z/-RLL	-RLL/(-Y,+Z)(18)	CB	+Z/-YAW,	2F	NO	11	21	E13
809	CB +Y/+RLL	(21)	CB	+Y/+YAW,	2S	NO	12	17	E09
812	CB -Y/-RLL	(24)	CB	-Y/-YAW,	3S	NO	8	20	E12
811	CB -Y/+RLL	(23)	CB	-Y/+YAW,	4S	NO	4	19	E11
810	CB +Y/-RLL	(22)	CB	+Y/-YAW,	1S	NO	16	18	E18

BLOCK 100

BLOCK II

LEM

ATTITUDE SIGNALS

093	DE	+ PITCH MAN ROT	(27)	DE	+EL (LPD) ,+PMI		A33
094	DE	- PITCH MAN ROT	(28)	DE	-EL (LPD) ,-PMI		A34
095	DE	+ YAW MAN ROT	(31)	DE	+YMI		A32
096	DE	- YAW MAN ROT	(32)	DE	-YMI		A31
097	DE	+ ROLL MAN ROT	(29)	DE	+AZ (LPD) ,+RMI		A30
098	DE	- ROLL MAN ROT	(30)	DE	-AZ (LPD) ,-RMI		A29
858	A-NC			A -	PROP PITCH RATE CMD	40	C01
859	A-NC			A -	PROP ROLL RATE CMD	41	C02
860	A-NC			A -	PROP YAW RATE CMD	42	C03
817	YG	+ PITCH BMAG	(62)	YGNC			
818	YG	- PITCH BMAG	(62)	YGNC			
819	YG	+ ROLL BMAG	(63)	YGNC			
820	YG	- ROLL BMAG	(63)	YGNC			
821	YG	+ YAW BMAG	(64)	YGNC			
822	YG	- YAW BMAG	(64)	YGNC			

008			BLOCK II			
009			MAIN ENGINE SIGNALS			
011	XB	ENGINE ON/OFF (SPS)	XANC			
013	XBNC	THRUST COMMAND SIVB	XANC			
407A	SD	C23 G/N ATT CNTRL SELECT	CB	SPS ENG ON/OFF (25)	XA	INCR THR RATE DESC EN 27 D01
407O			CBNC		XA	DECR THR RATE DESC EN 28 D02
408	SD	C24 G/N DV SELECT	SD *	INJ SEQU STRT (SIVB)104)	CB	ENG ON ASC OR DESC 25 D03
409A	SD	C25 G/N ENTRY SELECT	WD *	INJ SEQU STRT RET	CB	ENGINE OFF ASC OR DESC26 D04
409O					SD	LRDR POS CMD (HOVER) G04
409C			SD *	CUT OFF CMD (SIVB) (111)	WD	LR HOVER POS RET
410	SD	C26 CM-SM SEP. CMD	WD *	CUT OFF CMD RET		
411	SD	C27 +X TRANSLATION	WDNC		SD	RR AUTO TRK ENABLE F10
430	SD	G/N ERROR (USE OF TEL FAIL)			WDNC	
454	SD	C28 SPARE			WD	RR AUTO ANGLE ENABLE RET
431	SD	C29 AUTO .05G IND.				
432	SD	C30 GIMBAL MOTR PWR CNTRL				
433	SD	C31 FDAI ALIGN				
435	SD	C32 TELECOM. SWITCH				
436	SD	C33 ABORT COMMAND				
338A			SDNC*	G HIGH LIGHT		
338O			WDNC*	G HIGH RET		
340A			SDNC*	G LOW LIGHT		
340O			WDNC*	G LOW RET		

* SHARE SAME ADDRESS
407,338/409,340

TRANSLATIONAL COMMANDS

018	DE	+X TRANS COMM (MAN) (34)	DE	+X TRANS COMM (MAN)	43	B01
019	DE	-X TRANS COMM (MAN) (35)	DE	-X TRANS COMM (MAN)	44	B02
020	DE	+Y TRANS COMM (MAN) (36)	DE	+Y TRANS COMM (MAN)	45	B03
021	DE	-Y TRANS COMM (MAN) (37)	DE	-Y TRANS COMM (MAN)	46	B04
022	DE	+Z TRANS COMM (MAN) (38)	DE	+Z TRANS COMM (MAN)	47	B05
023	DE	-Z TRANS COMM (MAN) (39)	DE	-Z TRANS COMM (MAN)	48	B06

BLOCK 100 BLOCK II LEM

RENDEVOUS RADAR

031	YGNC RDR IN 0	YGNC	YG	RRDR IN 0	F02
032	YGNC RDR IN 1	YGNC	YG	RRDR IN 1	F01
063	DENC REN RDR DATA GOOD				
104	DE ZERO OPT	*DE ZERO OPT	*DE	RR DATA GOOD (LRS DTGD)	F07 *
041	XANC RANGE GATE	XANC	XA	RRDR RANGE GATE (LRS BE MD S)	F04
042	XANC RANGE RATE GATE	XANC	XA	RRDR RANGE RATE GATE (LRS TST)	F05
047	XANC SYNC FOR READ OUT	XANC	XA	RRDR SYNC FOR READ OUT	F06
048	XCNC RADAR GATE RESET	XCNC	XC	RRDR GATE RESET	F03
050	XCNC DISCRETE SIG CARR				
409A	SD C25 G/N ENTRY SELECT	*SD * CUT OFF CMD (SIVB) (111)	*SD	RR AUTO TRK ENABLE (LRS TREN)	F10 *
4090		*WD * CUT OFF CMD RET	*WD	(LRS TR EN RT)	*
409C		*WDNC SPARE	*WD	RR AUTO ANGLE ENABLE RET	*
064	DENC G/N AUTO RR	DENC	DE	RR POWER ON / AUTO (LRS BEMD)	F08
069		DENC	DE	RR RANGE LOW SCALE (LRS LK ON)	F09
092	YENC SPARE (IN0-9)				
035	YENC SPARE (IN0-14)				

* SIGNAL APPEARS HERE ONLY FOR COMPLETENESS-NOT TO BE INCLUDED IN CIRCUIT COUNT.

LANDING RADAR

071			YGNC	YG	LRDR IN 0	G08	
072			YGNC	YG	LRDR IN 1	G07	
106	DE	OPT MODE SW2 (AGC CNTRL)	*DE OPT MODE SW2 (AGC CNTRL)	*DE	LRDR RANGE DATA GOOD	G09	*
107	DE	OPT MD SW3 (ST TR ON)	*DE OPT MD SW3 (STR TR ON)	*DE	LR POSITION 1 (DESC)	G10	*
183	YE	STAR PRES	*DE STAR PRES	*DE	LR POSITION 2 (HOVER)	G11	*
039			DENC	DE	LRDR VEL DATA GOOD	G12	
043			XANC	XA	LRDR XA VELOCITY GATE	G03	
044			XANC	XA	LRDR YA VELOCITY GATE	G04	
045			XANC	XA	LRDR ZA VELOCITY GATE	G05	
046			XANC	XA	LRDR RANGE GATE	G02	
051			XANC	XA	LRDR SYNC FOR READ OUT	G06	
052			XCNC	XC	LRDR GATE RESET	G01	
407A	SD	C23 G/N ATT CNTRL SELECT	*SD * INJ SEQU STRT (SIVB)104)	*SD	LRDR POS CMD (HOVER)	G04	*
4070			*WD * INJ SEQU STRT RET	*WD	LR HOVER POS RET		*
061			DENC	DE	LR RANGE LO SCALE	G13	

* SIGNAL APPEARS HERE ONLY FOR COMPLETENESS-NOT TO BE INCLUDED IN CIRCUIT COUNT.

MASTER CLOCK AND TELEMETRY

001	XC	MASTER CLOCK	XC	MASTER CLOCK	XC	MASTER CLOCK	H05
014	Y-	DLNK START	Y-	DLNK START	Y-	DLNK START	H01
015	Y-	DLNK END	Y-	DLNK END	Y-	DLNK END	H02
016	Y-	DLNK SYNC	Y-	DLNK SYNC	Y-	DLNK SYNC	H03
017	X-	DLNK DATA	X-	DLNK DATA	X-	DLNK DATA	H04
085			X-NC	DLNK DATA	X-	DLNK DATA (AGS)	M05
024	YG	ULNK 0	YG	ULNK 0	YG	ULNK 0	J14
025	YG	ULNK 1	YG	ULNK 1	YG	ULNK 1	J13
078			XANC	'0' BIT CROSS OUT	XANC	'0' BIT CROSS OUT	M01
079			XANC	'1' BIT CROSS OUT	XANC	'1' BIT CROSS OUT	M02
080			YGNC	'0' BIT CROSS IN	YGNC	'0' BIT CROSS IN	M03
081			YGNC	'1' BIT CROSS IN	YGNC	'1' BIT CROSS IN	M04

DISPLAY SIGNALS

026	SDNC	COMP PWR FAIL
401	SDNC	CDU ZERO LIGHT (C5)
402	SD	CDU FAIL LIGHT (C6)
403	SD	PIPA FAIL LIGHT (C7)
404	SD	IMU FAIL LIGHT (C8)
405	SDNC	SPARE LAMP (C9)
406	WD	COMMON (401-405,451C)
412	SD	PROGRAM ALARM (TEL)
413	SD	COMP ACTIVITY (TEL)
414	SD	G/N ERROR (TEL)
415	SD	PRGRM CHK FAILALARM (TEL)
416	SD	SCALER FAIL ALARM (TEL)
417	SD	PARITY FAIL ALARM (TEL)
418	SD	COUNTER FAIL ALARM (TEL)
419	SD	KEY RELEASE (TEL)
420	SD	RUPT LOCK ALARM (TEL)
421	SD	TC TRAP ALARM (TEL)
422	WD	CRC 0V
423	SD	BLOCK UPLINK
424	SD	ENCODER ZEROING (TEL)
425	SD	CDU FAIL (TEL)
426	SD	PIPA FAIL (TEL)
427	SD	IMU FAIL (TEL)
428	WD	CRC +5V

DISPLAY SIGNALS

434	WD	GRP 11 RET						
002			XANC			XA	ALT MTER '1'	7 L02
003			XANC			XA	ALT MTER '0'	7 L01
010			XANC			XA	ALT RATE MTR '1'	8 L04
012			XANC			XA	ALT RATE MTR '0'	8 L03
028			CBNC			CBNC	ALT METER SYNC	L05
029			XANC	ENTRY VEL +		XANC	MONITOR INCR (+)	K01
030			XANC	ENTRY VEL -		XANC	MONITOR INCR (-)	K02
439C			WDNC			WDNC		
439A			SD	ISS WARNING LGHT	(51)	SD	ISS WARNING LGHT	95 I03
440C			WDNC			WDNC		
440A			SD	G/N CAUTION LGHT	(52)	SD	PGNS CAUTION LGHT	96 I02
4410			WDNC			WDNC		
441A			SD	AGC WARNING LGHT	(53)	SD	LGC WARNING LGHT	97 I01
450			WD	RETURN 439-441		WD	RETURN 439-441	
4440			WDNC			WDNC		
444A			SDNC	SPARE (1100-5)		SDNC	SPARE (1100-5)	
444C			WDNC			WDNC		
4450			WDNC			WDNC		
445A			SDNC	SPARE (1100-7)		SDNC	SPARE (1100-7)	
445C			WDNC			WDNC		
4510	WDNC		WDNC			WDNC		
451A	SD	G/N ERROR LIGHT	SDNC	AGC WARNING		SD	LGC WARNING (LMP) (LMP/ OVIMU)	J16
451C	WD	TIES TO 406				WD	INHIBIT PIPA (PLS TORQ) (LMP/)	
4520	WDNC		WDNC			WD		
452A	SDNC	G/N ERROR	SDNC	ISS WARNING		SD	ISS WARNING (LMP)	J15
452C	WDNC		WDNC			WDNC		
4530			WDNC			WDNC		
453A			SDNC	STANBY		SDNC	STANBY	
453C			WDNC			WDNC		

DISPLAY POWER

442	RD	DSKY DIMMER CONTROL SIG	RD	DSKY DIMMER CONTROL SIG	N 01
443	WD	DSKY DIMMER CONTROL RET	WD	DSKY DIMMER CONTROL RET	
448	WD	5V STATUS LGHT PWR HI	WD	5V STATUS LGHT PWR HI	N 03
449	WD	5V STATUS LGHT PWR LO	WD	5V STATUS LGHT PWR LO	
446	WD	5V CAUT LGHT PWR HI	WD	5V CAUT LGHT PWR HI	N 04
447	WD	5V CAUT LGHT PWR LO	WD	5V CAUT LGHT PWR LO	
437	W-	115V VARIABLE 400 CPS SIG	W-	115V VARIABLE 400 CPS SIG	N 02
438	W-	115V VARIABLE CPS RET	W-	115V VARIABLE 400 CPS RET	

	BLOCK 100		BLOCK II		LEM		
102	DE MARK		DE MARK		DE RATE OF DESCENT (+)		A10
103	D- MARK BAR		D- MARK RESET		D- RATE OF DESCENT RESET		A09
182	-- REJECT MARK (CORONA)		DE REJECT MARK		DE RATE OF DESCENT (-)		A11
104	DE ZERO OPT		DE ZERO OPT		DE RR DATA GOOD		F07
105	DE OPT MODE SW1 (SEX ON)						
106	DE OPT MODE SW2 (AGC CNTRL)		DE OPT MODE SW2 (AGC CNTRL)		DE LR RANGE DATA GD		G09
107	DE OPT MD SW3 (ST TR ON)		DE OPT MD SW3 (STR TR ON)		DE LR POSITION 1 (DESC)		G10
108	YG OPT +X (SHAFT)		YG OPT +X (SHAFT)		YG +RR SHAFT		
109	YG OPT -X (SHAFT)		YG OPT -X (SHAFT)		YG -RR SHAFT		
110	YG OPT +Y (TRUNN)		YG OPT +Y (TRUNN)		YG +RR TRUNNION		
111	YG OPT -Y (TRUNN)		YG OPT -Y (TRUNN)		YG -RR TRUNNION		
112	YENC OPT FAIL		DE OPT CDU FAIL		DE RR CDU FAIL		
056	XC OPT DISCRETE CARR						
114	XA +X OPT CDU (SHAFT)		XA +X OPT CDU (SHAFT)		XA + RR SHAFT		
115	XA -X OPT CDU (SHAFT)		XA -X OPT CDU (SHAFT)		XA - RR SHAFT		
116	XA +Y OPT CDU (TRUNN)		XA +Y OPT CDU (TRUNN)		XA +RR TRUNNION		
117	XA -Y OPT CDU (TRUNN)		XA -Y OPT CDU (TRUNN)		XA -RR TRUNNION		
183	YE STAR PRES		DE STAR PRES		DE LR POSITION 2 (HOVER)		G11
906			CB ZERO OPTICS		CB - PITCH GIMBAL TRIM	30	D06
185			CB ZERO OPT CDU		CB ZERO REN RDR CDU		
186			CB ERR CNTR ENABLE OPT		CB ERR CNTR ENABLE REN RDR		
902			CB DISSENGAGE OPTICS DAC		CB + ROLL GIMBAL TRIM	31	D07

DD MEMO NO. 185 REV.14-BOWLER

BLOCK 100

			BLOCK II		LEM		
184							
158	DE	K1	DE IMU OPERATE		DE IMU OPERATE		
159	DE	K2	DE S/C CNTRL OF SAT (105)		DE G/N CONTROL OF S/C	63	A07
160	DE	K3	DE G/C AUTOPIL CNTRL (26)		DE ATT CONTRL OUT OF DET.	61	A03
161	DE	K4	CB SIVB TAKE OVER ENABLE		CB + PITCH GIMBAL TRIM	29	D05
162	DE	K12	CB TVC ENABLE		CB DISPLAY INERTIAL DATA		
163	DE	K5	CB STAR TRACKERS ON		CBNC HORIZ VEL LO SCALE		
164	DE	TRN5W					
171			DE MIN IMPULSE + PITCH		DE THRUSTER 4D/4S FAIL	78	A15
172			DE MIN IMPULSE - PITCH		DE THRUSTER 3U/3S FAIL	79	A16
173			DE MIN IMPULSE + YAW		DE THRUSTER 4U/4F FAIL	80	A1
174			DE MIN IMPULSE - YAW		DE THRUSTER 3D/3F FAIL	81	A18
188			DE MIN IMPULSE + ROLL		DE THRUSTER 1D/1S FAIL	82	A19
189			DE MIN IMPULSE - ROLL		DE THRUSTER 1U/1F FAIL	83	A20
831			DENC		DE THRUSTER 2U/2S FAIL	84	A21
832			DENC		DE THRUSTER 2D/2F FAIL	85	A22
842			DENC		DE GIMBAL OFF	86	D09
843			DENC		DE APPARENT GIMBAL FAIL	87	D10
191			XC CDU CLOCK (51.2KPPS)		XC CDU CLOCK (51.2 KPPS)		
194			CB COARSE ALIGN ENABLE		CB COARSE ALIGN ENABLE		
195			CB ZERO IMU CDU'S		CB ZERO IMU CDU'S		
196			CB ERR CNTR ENABLE IMU		CB ERR CNTR ENABLE IMU		
193			DE IMU CAGE		DE IMU CAGE		
113			DE ISS TURN ON REQUEST		DE ISS TURN ON REQUEST		
909			CB ISS TURN ON DELAY CMPLT		CB ISS TURN ON DELAY CMPLT		

		BLOCK 100	BLOCK II		LEM	
142	XA	+DX GYRO RATE	XB	+ X GYRO SELECT	XB	+ X GYRO SELECT
143	XA	-DX GYRO RATE	XB	- X GYRO SELECT	XB	- X GYRO SELECT
144	XA	+DY GYRO RATE	XB	+ Y GYRO SELECT	XB	+ Y GYRO SELECT
145	XA	-DY GYRO RATE	XB	- Y GYRO SELECT	XB	- Y GYRO SELECT
146	XA	+DZ GYRO RATE	XB	+ Z GYRO SELECT	XB	+ Z GYRO SELECT
147	XA	-DZ GYRO RATE	XB	- Z GYRO SELECT	XB	- Z GYRO SELECT
148	XC	GYRO RESET	XA	GYRO RESET	XA	GYRO RESET
198			XA	GYRO SET	XA	GYRO SET
192			XB	GYRO COMM ENABLE	XB	GYRO COMM ENABLE
149	XC	800 PPS SET	XC	800 PPS SET	XC	800 PPS SET
150	XC	800 PPS RESET	XC	800 PPS RESET	XC	800 PPS RESET
151	XC	3.2 KPPS SET	XC	3.2 KPPS A	XC	3.2 KPPS A
152	XC	3.2 KPPS RESET	XC	3.2 KPPS B	XC	3.2 KPPS RESET B
153	XC	25.6 KPPS SET	XCNC	3.2 KPPS C *	XCNC	3.2 KPPS RESET C *
154	XC	25.6 KPPS RESET	XCNC	3.2 KPPS D *	XCNC	3.2 KPPS RESET D *
155	XC	12.8 KPPS (PWR SUP SYNC)	XC	12.8 KPPS (PWR SUP SYNC)	XC	12.8 KPPS PWR SUP SYNC
901			XC	25.6 KPPS (PWR SUP SYNC)	XC	25.6 KPPS (PWR SUP SYNC)
156	XC	DISCRT SIG CARR				
157	SD	POWER FAIL				

* NOT WIRED TO INTERFACE

	BLOCK 100			BLOCK II			LEM		
118	YG	+X CDU	(OUT GMBL)	YG	+X CDU	(OUT GMBL)	YG	+X CDU	(OUT GMBL)
119	YG	-X CDU	(OUT GMBL)	YG	-X CDU	(OUT GMBL)	YG	-X CDU	(OUT GMBL)
120	YG	+Y CDU	(INN GMBL)	YG	+Y CDU	(INN GMBL)	YG	+Y CDU	(INN GMBL)
121	YG	-Y CDU	(INN GMBL)	YG	-Y CDU	(INN GMBL)	YG	-Y CDU	(INN GMBL)
122	YG	+Z CDU	(MID GMBL)	YG	+Z CDU	(MID GMBL)	YG	+Z CDU	(MID GMBL)
123	YG	-Z CDU	(MID GMBL)	YG	-Z CDU	(MID GMBL)	YG	-Z CDU	(MID GMBL)
124	YE	CDU FAIL		DE	CDU FAIL	(ISS)	DE	CDU FAIL	(ISS)
126	XA	CDU +X	(OUT GMBL)	XA	CDU +X	(OUT GMBL)	XA	CDU +X	(OUT GMBL)
127	XA	CDU -X	(OUT GMBL)	XA	CDU -X	(OUT GMBL)	XA	CDU -X	(OUT GMBL)
128	XA	CDU +Y	(INN GMBL)	XA	CDU +Y	(INN GMBL)	XA	CDU +Y	(INN GMBL)
129	XA	CDU -Y	(INN GMBL)	XA	CDU -Y	(INN GMBL)	XA	CDU -Y	(INN GMBL)
130	XA	CDU +Z	(MID GMBL)	XA	CDU +Z	(MID GMBL)	XA	CDU +Z	(MID GMBL)
131	XA	CDU -Z	(MID GMBL)	XA	CDU -Z	(MID GMBL)	XA	CDU -Z	(MID GMBL)
141	YE	IMU FAIL		DE	IMU FAIL		DE	IMU FAIL	
132	YG	+DVX		YG	+DVX	(STROBED)	YG	+DVX	(STROBED)
133	YG	-DVX		YG	-DVX	(STROBED)	YG	-DVX	(STROBED)
134	YG	+DVY		YG	+DVY	(STROBED)	YG	+DVY	(STROBED)
135	YG	-DVY		YG	-DVY	(STROBED)	YG	-DVY	(STROBED)
136	YG	+DVZ		YG	+DVZ	(STROBED)	YG	+DVZ	(STROBED)
137	YG	-DVZ		YG	-DVZ	(STROBED)	YG	-DVZ	(STROBED)
138	YE	PIPA FAIL							
125				DE	TEMP WITHIN LIMITS		DE	TEMP WITHIN LIMITS	

	BLOCK 100		BLOCK II		LEM		
139	XC	PIPA INTERR 3200SB1	XC	PIPA INTERR 3200SB4	XC	PIPA INTERROGATE 3200SB4	
140	XC	PIPA SWCH 3200SB2	XC	PIPA SWCH 3200SB1	XC	PIPA SWITCHING 3200SB1	
197			XC	PIPA DATA PULSE 3200SB2	XC	PIPA DATA PULSE 3200SB2	
167	WD	+28 A BUSS	WD	+28 A BUSS	WD	+28 ABUSS	P01
168	WD	+28 B BUSS	WD	+28 B BUSS	WD	+28 ABUSS	P01
169	WD	0V A BUSS	WD	0V A•BBUSS	WD	0V A BUSS	P02
170	WD	0V B BUSS					
177	RD	0V (TP)	WD	0V (TP)	WD	0V (TP)	
175	RD	3VA (TP)	RD	4VA (TP)	RD	4V A (TP)	
176	RD	13VA (TP)	RD	14VA (TP)	RD	14V A (TP)	
166	RD	+28 V COMP. (TP)	RD	+28 V COMP. (TP)	RD	+28 V COMP. (TP)	
178	WD	GRP IV SHIELD COMMON					
179	WD	S/C. GRP V SHLD COMMON					
180	WD	GRP V SHIELD COMMON					
181	WD	SHIELD					
199	RD	TEMP MON.	RD	TEMP MON 1	RD	TEMP MON 1	
903			RDNC	28V (AGC OPERATE)	RDNC	28V (AGC OPERATE)	
911			W-	CNTRL 2 (ACE) (HIGH)	W-	CNTRL 2 (ACE) (HIGH)	
910			W-	CNTRL 1 (ACE) (LOW)	W-	CNTRL 1 (ACE) (LOW)	
912			D-	INHIBIT POWER FAIL	D-	INHIBIT POWER FAIL	

BLOCK 100

201	KE	KEY CODE 1 (N,M)
202	KE	KEY CODE 2 (N,M)
203	KE	KEY CODE 3 (N,M)
204	KE	KEY CODE 4 (N,M)
205	KE	KEY CODE 5 (N,M)
209	K-	KYBD RESET (N)
253		
254		
255		
256		
257		
206	K-	KYBD RESET (M)
207	D-	TEST ALARM
208	K-	ERR LGHT RESET
210	'KE'	OR OF 'C' RELAYS
211	W-	SPARE
251	WD	KYBD GRND
213	W-	SPARE
214	TE	OUTO-1
215	TE	OUTO-2
216	TE	OUTO-3
217	TE	OUTO-4
218	TE	OUTO-5
219	TE	OUTO-6
220	TE	OUTO-7

BLOCK II

DE	KEY CODE 1	(N)
DE	KEY CODE 2	(N)
DE	KEY CODE 3	(N)
DE	KEY CODE 4	(N)
DE	KEY CODE 5	(N)
D-	KYBD RESET	(N)
DE	KEY CODE 1	(M)
DE	KEY CODE 2	(M)
DE	KEY CODE 3	(M)
DE	KEY CODE 4	(M)
DE	KEY CODE 5	(M)
D-	KEYBD RESET	(M)
D-	STANDBY	(NM)
D-	RESET (LGHT)	(NM)
W-	SPARE	(NM)
RD	+28 KYBD	(M) (3R)
RD	+28 KYBD	(N) (3R)
W- *	SPARE	
CE	CHN 10-1	
CE	CHN 10-2	
CE	CHN 10-3	
CE	CHN 10-4	
CE	CHN 10-5	
CE	CHN 10-6	
CE	CHN 10-7	

* NOT TO CONNECTOR

LEM

DENC

DENC

DE	MARK X (AOT)	90	A25
DE	MARK Y (AOT)	91	A26
DE	REJECT MARK (AOT)		A28
D-	MARK RESET (AOT)		A27
DE	KEY CODE 1		001
DE	KEY CODE 2		002
DE	KEY CODE 3		003
DE	KEY CODE 4		004
DE	KEY CODE 5		005
D-	KYBD RESET		006
D-	STANDBY		007
D-	RESET (LGHT)		008
W-	SPARE		009
RD	+28 KEYBD (3R)		010
RD	+28 (203-205/209) (3R)		
W- *	SPARE		039
CE	CHN 10-1		011
CE	CHN 10-2		012
CE	CHN 10-3		013
CE	CHN 10-4		014
CE	CHN 10-5		015
CE	CHN 10-6		016
CE	CHN 10-7		017

BLOCK 100

221	TE	OUTO-8
222	TE	OUTO-9
223	TE	OUTO-10
224	TE	OUTO-11
225	TE	OUTO-12
226	TE	OUTO-13
227	TE	OUT 0-14
228	TE	OUTO-15
229	T-	PROGRAM ALARM
230	T-	COMPUTER ACTIVITY
231	T-	TEL ALARM / G/N ERROR
232	T-	PROGRM CHK FAIL AL
233	T-	SCALER FAIL ALARM
234	T-	PARITY ALARM
258		
235	T-	COUNTER FAIL ALARM
236	T-	KEY RELEASE
237	T-	RUPT LOCK ALARM
238	T-	TC TRAP ALARM
244	TC	TIMING
212	TC	POWER SUP SYNC N
242	TC	POWER SYNC M
246	KE	ACCEPT UPLNK
239	WD	DISKY GRND
240	W-	SPARE

BLOCK II

CE	CHN 10-8	
CE	CHN 10-9	
CE	CHN 10-10	
CE	CHN 10-11	
CE	CHN 10-12	
CE	CHN 10-13	
CE	CHN 10-14	
CE	CHN 10-15	
CB	ISS WARNING	
CB	COMPUTER ACTIVITY	
CB	STANDBY LGHT	
C-	RESTART	
CB	SIVB INJ SEQ STRT	
CB	SIVB CUT OFF	
CB	TEMP CAUTION	
CB	UPLNK ACTIVITY	
CB	KEY RELEASE (FLASH)	
C-	CGC WARNING BAR	
CB	VERB/NOUN (FLASH)	
CB	OPERATOR ERROR (FLASH)	
CC	POWER SUPPLY SYNC N	
CC	POWER SYNC M	
W- *	SPARE	
WD	DISKY GRND	
WD	14V B (SWITCHED)	

LEM

CE	CHN 10-8	018
CE	CHN 10-9	019
CE	CHN 10-10	020
CE	CHN 10-11	021
CE	CHN 10-12	022
CE	CHN 10-13	023
CE	CHN 10-14	024
CE	CHN 10-15	025
CB	ISS WARNING	026
CB	COMPUTER ACTIVITY	027
CB	STANDBY LGHT	028
C-	RESTART	029
CB	L RDR POS CMD	031
CB	RR ENABLE LOCK ON	030
CB	TEMP CAUTION	038
CB	UPLNK ACTIVITY	032
CB	KEY RELEASE (FLASH)	033
C-	LGC WARNING BAR	034
CB	VERB/NOUN (FLASH)	035
CB	OPERATOR ERROR (FLASH)	036
CCNC		
CC	POWER SYNC M	037
W- *	SPARE	040
WD	DISKY GRND	041
WD	14V B (SWITCHED)	043

* NOT WIRED TO THE COMPUTER CONNECTOR.

BLOCK 100

241	WD	+13V B
243	WD	+28V
355		
245	WD	GRP II SHLD
247	W-	SPARE
248	W-	SPARE
249	W-	SPARE
250	WD	GRP III SHLD
252	WD	GRP III RETURNS GRND

BLOCK II

W-	SPARE	
WD	+28V	(M)
WD	+28V	(N)

LEM

W-	SPARE		042
WD	+28V	(M)	044
WDNC	+28V	(N)	

301	SD	LGHTS ENCOD ZER LMP (C5)
302	SD	LGHTS CDU FAIL LMP (C6)
303	SD	LGHTS PIPA FAIL LMP (C7)
304	SD	LGHTS IMU FAIL LMP (C8)
305	SD	SPARE (C9)
306	WD	COMMON (301-305)
307	SD	C1 ZERO ENCODER (K1)
308	SD	C2 COARSE ALIGN (K2)
309	SD	C3 LOCK CDU (K3)
310	SD	C4 FINE ALIGN (K4)
311	SD	C11 ROLL REENTRY (K5)
312	WD	COMMON (307-311)
313	SD	NOT AVAIL FOR USE
314	SD	ATT CONTR HI (C10)
315	WD	ATT CONTR COMMON (C10)
316	SD	C 12 ZERO'S OPT CDU'S
331	WD	COMMON (316-317)
317	SD	C 13 TRNS STR TRKR ON
318	SDNC	SPARE
319	SDNC	SPARE
320	SDNC	SPARE
321	SDNC	SPARE
322	SDNC	SPARE
323	SDNC	SPARE

	BLOCK 100	BLOCK II	LEM
3240 324A 324C	SDNC SPARE	WDNC SDNC I55 WARNING WDNC	
3250 325A 325C	SDNC SPARE	WD AGC WARNING BAR (TEL) SD OV IMU WD INHIBIT PIPA PULSE TORQ.	
3260 326A 326C	SD OR OF ALL ALARMS	WDNC SDNC SPARE (1100-7) WDNC	
327	WD COMMON (326)		
3280 328A 328C	SD COND LAMP TEST	WDNC SDNC SPARE (1100-5) WDNC	
329	SDNC SPARE		
330	WD GRP II RETURNS GRND		
343 344		W- 115V VARIABLE 400 CPS SIG W- 115V VARIABLE 400 CPS RET	
345 346		RD DSKY DIMMER CONTROL SIG WD DSKY DIMMER RET	
347 348		W- 5V STATUS LGHT PWR HI W- 5V STATUS LGHT PWR LO	
349 350		W- 5V CAUT LGHT PWR HI W- 5V CAUT LGHT PWR LO	
342O 342A 351C 351A 352C 352A 353		WD SD AGC (WARNING) WD SD ISS (WARNING) WD SD PGNS (CAUTION) WD RETURN (342,351,352)	
354C 354A 3540		WDNC SDNC STANBY WDNC RETURN	

	BLOCK 100	BLOCK II	LEM
086	RD 67	RD 67	RD 40/65/159
087	RD 66	RD 40/65/83/60	RD 4/66/82
088	RD 68/7/4	RD 40/65/83/60 *	RD 4/66/82 *
091	RD 68/7/4	RD 40/65	RD 7/158
861		RD 66	RD 160/841/902/906
869		RDNC SPARE	RD 67/68
863		RDNC SPARE	RD 83
904		RD 171-174/188/189	RD 171/172
865		RDNC SPARE	RD 173/174
866		RDNC SPARE	RD 188/189
867		RDNC SPARE	RD 831/832
868		RDNC SPARE	RDNC
870		RDNC SPARE *	RDNC *
907		RD 102-104/107/106/182/183	RD 18-23
908		RD 102-104/106/107/182/183 *	RD 18-23 *
874		RD 4/7/68	RD 104/64/69
875		RD 4/7/68 *	RD 104/64/69 *

* WILL NOT APPEAR ON THE INTERFACE CONNECTOR.

BLOCK 100

876		
877		
878		
879		
101	RD	102-107/182
089	RD	102-107/182
165	RD	158-164
090	RD	158-164
027	WDNC	CHASSIS GRND

BLOCK II

RDNC SPARE

RDNC SPARE

RDNC SPARE

RDNC SPARE

RDNC SPARE

LEM

RD	106/107/183
RD	842/843
RD	39 /61
RD	93-98
RD	102/103/182

INPUT COUNTERS

CNTR NO.	TYPE	BLOCK II	LEM
NO. 24	+ ONLY	T2	T2
NO. 25	+ ONLY	T1	T1
NO. 26	M-NOT	T3	T3
NO. 27	M-NOT	T4	T4
NO. 30	M-NOT	T5 (100)	T5 (100)
NO. 31	DINC	T6 (1600)	T6 (1600)
NO. 32	MODULAR (+-)	X CDU	X CDU
NO. 33	MODULAR (+-)	Y CDU	Y CDU
NO. 34	MODULAR (+-)	Z CDU	Z CDU
NO. 35	MODULAR (+-)	T CDU	T CDU
NO. 36	MODULAR (+-)	S CDU	S CDU
NO. 37	MAGNITUDE (+-)	X PIPA	X PIPA
NO. 40	MAGNITUDE (+-)	Y PIPA	Y PIPA
NO. 41	MAGNITUDE (+-)	Z PIPA	Z PIPA
NO. 42	MAGNITUDE (+-)	X BMAG (PITCH)	HAND CONTROLLER (PITCH)
NO. 43	MAGNITUDE (+-)	Y BMAG (ROLL)	HAND CONTROLLER (YAW)
NO. 44	MAGNITUDE (+-)	Z BMAG (YAW)	HAND CONTROLLER (ROLL)
NO. 45	SHIFT	INLNK (UpLNK, CROSSLNK)	INLNK (UpLNK, CRSSLNK)
NO. 46	SHIFT	RR RADAR IN, SPARE	REN RDR IN, LAN RDR IN

OUTPUT COUNTERS

CNTR NO.	TYPE	BLOCK II	LEM
NO. 47	DINC	GYROS (X,Y,Z)	GYROS (X,Y,Z)
NO. 50	DINC	X CDU	X CDU
NO. 51	DINC	Y CDU	Y CDU
NO. 52	DINC	Z CDU	Z CDU
NO. 53	DINC	T CDU	T CDU
NO. 54	DINC	S CDU	S CDU
NO. 55	DINC	SPARE	THRUST
NO. 56	DINC	ENTRY VELOCITY	LEM MONITOR
NO. 57	SHIFT	OUTLNK	OUTLNK
NO. 60	SHIFT	SPARE, SPARE	ALTTITUDE, ALT. RATE

BLOCK II LEM

DISPLAY LIGHTS

NO ATTITUDE	NO ATTITUDE
UPLNK ACTIVITY	UPLNK ACTIVITY
KEY RELEASE	KEY RELEASE
OPERATOR ERROR	OPERATOR ERROR
RESTART	RESTART
PROGRAM CAUTION	PROGRAM CAUTION
TEMP	TEMP
TRKR CAUTION	TRKR CAUTION
COMPUTER ACTIVITY	COMPUTER ACTIVITY
GIMBAL LOCK CAUTION	GIMBAL LOCK CAUTION
STANDBY	STANDBY

BLOCK II LEM

RELAY ASSIGNMENTS

105 R FOR CHARACTERS

6 R FOR SIGNS

A	VERB/NOUN (FLASH)	VERB/NOUN (FLASH)
A	OP ERROR (FLASH) (SL)	OP ERROR (SL)
A	CGC WARNING	LGC WARNING
A	RESTART (CL)	RESTART (CL)
A	SIVB INJ SEQ STRT / HI G	L RDR POS CMD
A	SIVB CUT OFF / LO G	RRDR ENABLE
A	TEMP (CL)	TEMP (CL)
A	ISS WARNING (FAIL)	ISS WARNING (FAIL)
A	COMP ACT (L) EL	COMP ACT (L) EL
A	STANDBY (SL)	STANDBY(SL)
A	UPLNK ACT (SL)	UPLNK ACT (SL)
A	KEY RELSE (FLASH) (SL)	KEY RLSE (SL)
R	SPARE (1100-1)	SPARE (1100-1)
R	SPARE (1100-2)	SPARE (1100-2)
R	SPARE (1100-3)	SPARE (1100-3)
R	NO ATTITUDE (SL)	NO ATTITUDE (SL)
R	SPARE (1100-5)	SPARE (1100-5)
R	GMBAL LOCK (CL)	GMBAL LOCK (CL)
R	SPARE (1100-7)	SPARE (1100-7)
R	TRKR CAUTION (CL)	TRKR CAUTION (CL)
R	PROGRAM CAUTION (CL)	PROGRAM CAUTION (CL)

BLOCK II

ISS WARNING

PIPA FAIL (1 SEC) (PRGM)
IMU FAIL (PRGM)
ISS CDU FAIL (PRGM)

CGC WARNING

28V LOSS
SCALER FAIL
WARNING FILTER OUTPUT
ALARM TEST
SCALER DOUBLE
VOLTAGE FAIL (STBY.NHVFAL/)
DOFILT (STBY/)
COUNTER FAIL
GO JAM = RESTART
OSC FAIL
MONITOR START
VOLTAGE FAIL
STANDBY
ALGA (NHALGA/)
PARITY FAIL
NIGHT WATCHMAN
RUPT LOCK
TC TRAP

TRACKER CAUTION

PGNS CAUTION (OR OF RELAYS)

IMU TEMP OUT OF LIM (PRGM)
GMBAL LOCK (PRGM)
SCALER FAIL (WIRE)
WAR FIL OUTPUT (WIRE)
PRGRM CAUTION (PRGM)
TRKR CAUTION (PRGM)

LEM

ISS WARNING

PIPA FAIL (1 SEC) (PRGM)
IMU FAIL (PRGM)
ISS CDU FAIL (PRGM)

LGC WARNING

(WIRE)
(WIRE)
(WIRE)

TRACKER CAUTION

RR DATA GD BAR EN (PRGM)
LR DATA GD BAR (PRGM)
RR CDU FAIL (PRGM)

PGNS CAUTION (OR OF RELAYS)

IMU TEMP OUT OF L (PRGM)
GMBAL LOCK (PRGM)
SCALER FAIL (WIRE)
WAR FIL OUTPUT (WIRE)
PRGM CAUTION (PRGM)
TRKR CAUTION (PRGM)

	BLOCK 100	BLOCK II	LEM
		INTERRUPTS	
		GO	GO
1	T3 RUPT	T6 RUPT (1600)	T6 RUPT (1600)
2	RPTZ	T5 RUPT	T5 RUPT
3	T4 RUPT	T3 RUPT	T3 RUPT
4	KEYRUPT	T4 RUPT	T4 RUPT
5	UPRUPT	KEYRUPT 1 (MAIN)	KEYRUPT 1 (MAIN)
6	DOWNRUPT	KEYRUPT 2 (NAV, MARK)	KEYRUPT 2 (DESCENT, MARK)
7		UPRUPT	UPRUPT
8		DOWNRUPT	DOWNRUPT
9		RADAR	RADAR
10		HAND CNTRL RUPT	HAND CNTRL RUPT

MAJOR CHANGES SINCE REV 13

CH8NGES BLOCK 100

PAGE 18, SIGNAL 207, CHANGED K TO D

CHANGES TO BLOCK II CM

PAGE 11, SIGNAL 444A, DELETED STATUS LIGHT.
PAGE 17, SIGNAL 177, CHANGED R TO W BECAUSE GROUND PINS ADDED TO COMPUTER.
PAGE 17, SIGNAL 903, CHANGED 14VB TO 28
PAGE 19, SIGNAL 237, ADDED BAR TO NAME
PAGE 22, SIGNAL 328A, DELETED STATUS LIGHT.
PAGE 25, SIGNALS 42-44, CLARIFIED BMAG SIGNAL NAMES.
PAGE 28, NOTED THAT AUTO, HOLD, FREE, AND SPARE STATUS LIGHTS HAVE BEEN REMOVED.
PAGE 29, REVISED CGC WARNING AND CAUTION DEFINITIONS

CHANGES LEM

PAGE 5, SIGNALS 093-098, ADDED ICD NUMBERS
PAGE 11, SIGNAL 444A, DELETED STATUS LIGHT.
PAGE 11, SIGNAL 451A , CHANGED AGC TO LGC
PAGE 14, SIGNAL 842, CHANGED SIGNAL NAME
PAGE 14, SIGNAL 843, CHANGED SIGNAL NAME
PAGE 17, SIGNAL 177, CHANGED R TO W BECAUSE GROUND PINS ADDED TO COMPUTER.
PAGE 17, SIGNAL 903, CHANGED 14VB TO 28
PAGE 19, SIGNAL 237, ADDED BAR TO NAME
PAGE 23, SIGNALS 86 AND 91, CORRECTED SIGNAL NAMES.
PAGE 28, NOTED THAT AUTO, HOLD, FREE, AND SPARE STATUS LIGHTS HAVE BEEN REMOVED.
PAGE 29, REVISED LGC WARNING AND CAUTION DEFINITIONS

CIRCUIT COUNT BLOCK 2

67	C TYPE
73	D TYPE
54	X TYPE
33	Y TYPE
3	A TYPE
33	R TYPE
2	THERMISTORS
18	INPUT POWER
5	DSKY PWR
2	SPARE WIRES TO DSKY S
2	W- TYPE TO ACE

DISTRIBUTION

GROUP 23
D. HOAG
R RAGAN
W STAMERIS
J DAHLEN
J RHODE
J SHILLINGFORD
GROUP 35
ELDON HALL
R. ALONSO
A. HOPKINS
A LAPOINTE
D HANLEY
9T HEMPKER (NAA)
A HARANO
A GREEN
H THALER
BOB WERNER
D BOWLER
GROUP 16
A METZGER
J NEVINS
A KOSO
R LARSEN
D SCOLAMEIRO
GROUP 63
JOHN MILLER
R CRISP
J FLANDERS
R MCKERN
JOHN GREEN
J GILMORE
L WILK
R LONES
S FELIX
J KIERNAN
J FLEMING JR
R ERICKSON
W PAIGE (RAY RES.)
D SPRAGUE (RAY RES)
W SALTZBERG

GROUP 73
JIM MILLER 1 COPY
E COPPS
P FELLEMAN
M SULLIVAN (2 COPIES)
G CHERRY
B YOUNG
P. NIMO
J GOETZINGER
A KLUMPP
D EYLES
NAA/AMR/GAEC

A SILAGI (NAA)
T LAWTON (HOUSTON)
G REASOR (HOUSTON
H HOWARD (NASA-3 COPIES)
M ADAMS
J LAWRENCE
W SREBNICK (GAEC)

G SILVER (KSFC)
R O DONNELL (KSFC)
W LUND (RAY) 1 VELLUM
H BLAIR-SMITH

THE END