RELEASED
DATE 10-10-99 REV NC INIT PT

LTR	ZONE	DESCRIPTION OF CHANGE
NC		SHT. 1. PARTS LIST:
		1. ADDED FLAG NOTE 2 CALLOUT TO ITEM 4.
		2. ADDED FLAG NOTE 20 CALLOUT TO ITEM 11.
		3. ADDED FLAG NOTE 9 CALLOUT TO ITEM 13.
		4. ADDED FLAG NOTE 19 CALLOUT TO ITEM 23.
		5. ADDED FLAG NOTE 23 CALLOUT TO ITEM 31. P/N WAS CD74HC163M.
		6. ITEM 37 P/N SDG46116121-301. WAS SDG46116121-701.
		7. DELETED ITEM 38.
		8. ITEM 41 QTY. 4. WAS 2.
		9. DELETED ITEM 42.
		10. ITEM 44 P/N MS35649-224. WAS CD4870.
		11. ADDED ITEMS 45-49.
		12. ADDED ITEM 50.
		13. ITEM 2 DESCRIPTION WAS LOCKTITE. P/N WAS 222-21. QTY. WAS AR
		SHT. 1. NOTES:
		14. ADDED NOTES 9 AND 10.
		15. ADDED F1 TO FLAG NOTE 9
		16. ADDED FLAG NOTES 23-27.
		SHT. 2:
	C-6	17. ADDED FLAG NOTE 24 CALLOUT TO FIELD OF DRAWING
	C-3	18. ADDED BALLOON ITEM 41 TO FIELD OF DRAWING.
		SHT. 3:
		19. ADDED FLAG NOTE 24 CALLOUT TO FIELD OF DRAWING.
	B-6	20. ADDED BALLOON ITEM 49 TO FIELD OF DRAWING.
		DELETED BALLOON ITEM 39.
	B-7	BALLOON ITEM 41 WAS 42.
		21. DELETED BALLOON ITEM 42 FROM FIELD OF DRAWING.
		22. ADDED -302 ASSY TO SHT. 1. PARTS LIST.

27. PCB IS MISLABELED. CHANGE SDG46115961 TO SEG46115961 ON CIRCUIT BOARD. -002 ONLY.

26. LITTON, DES PLAINES, IL.

25. PARK, SUMMERSET, MA.

24. MASK THIS AREA USING TAPE (ITEM 46). DO NOT APPLY CONFORMAL COATING TO PADS E1 AND E2, AND CONNECTOR P1 (ITEM 16).

23. MC74HC163M MAY BE SUBSTITUTED FOR CD74HC163M.

22. APPLY LOCKTITE TO SCREWS (ITEM 41) AND (ITEM 42), PER JSB 8080.5, STD. M/P-10.

21. LOCKTITE CORP., ROCKY HILL, CT.

20. MURB1620CT MAY BE SUBSTITUTED FOR MBRB20100CT (ITEM 11).

19. RWR80S2001FS MAY BE SUBSTITUTED FOR (ITEM 23).

18. MOUNT PCB TO STANDOFF; MOUNT FET TO STANDOFF WITH PINS INSERTED INTO THE PCB, THEN SOLDER PINS.

17. CP CLARE, BEVERLY, MA.

16. PICO ELECTRONICS, MT. VERNON, N.Y.

15. RAYCHEM, MENLO PARK, CA.

14. TEXAS INSTRUMENTS, DALLAS, TX.

13. MAXIM, SUNNYVALE, CA.

12. HARRIS, MELBOURNE, FL.

11. GENERAL INSTRUMENT, MELVILLE, NY.

10. DOW CORNING, MIDLAND, MI.

9. STAKE ITEMS C1-C3, AND F1, WITH 3145 PER NAS 5300.4 (3J-1).

8. PHILLIPS COMPONENTS, WEST PALM BEACH, FL

7. AIRBORN, GEORGETOWN, TX.

6. APEM, WAKEFIELD, MA. (REMOVE PLASTIC COVER FROM SWITCH).

5. INTERNATIONAL RECTIFIER, EL SEGUNDO, CA.

4. MOTOROLA, TEMPE, AZ.

3. KEMET, GREENVILLE, SC.

2. PERMANENT INK MARK ASSY DASH NO., S/N AND REV. IN .12 HIGH CHARACTERS WITH 73X WHITE INK PER NASA/JSC PRC-9002. SERIAL NUMBERS SHALL BE ASSIGNED BY EDCC IN ACCORDANCE WITH EDS MANUAL JPG 8500.4, PARA 3.1.2. LOCATE APPROXIMATELY AS SHOWN.

1. INDEPENDENT INK INC., GARDENA, CA.

FLAG NOTES:

11. THIS ASSEMBLY DOES NOT CONTAIN FRACTURE CRITICAL PARTS.
10. PRIME PER NAS 5300.4(3J-1).PARA 3J402 USING 1204 PRIMER (ITEM 47). AFTER MASKING P1,E1, AND E2. BRUSH APPLY CONFORMAL COATING (ITEM 5). THINNED WITH 2713 NAPTHA (ITEM 48) TO BOTH SIDES OF BOARD; .003 - .009 (.1MM - .2MM) THICK PER NAS 5300.4 (3J-1). PARA 3J500.3J501,AND 3J502.
9. SOLDER SURFACE MOUNT COMPONENTS PER NAS 5300.4(3M), USING SOLDER PASTE NC-840 (ITEM 45).
8. ALL REFERENCED SPECIFICATIONS AND STANDARDS SHALL BE OF THE LATEST REVISION LEVEL OR AS SPECIFIED IN THE PROCUREMENT DOCUMENT. IN THE CASE OF CONFLICT, THE PROCUREMENT DOCUMENT SHALL TAKE PRECEDENCE.
7. THIS ASSEMBLY CONTAINS SOME COMPONENTS THAT ARE ESD SENSITIVE; HANDLE PER NASA-STD-8739.7.
6. CLEANLINESS REQUIREMENTS PER SN-C-0005 GC (LEVEL).
5. AFTER MOUNTING BOTH STANDOFFS (ITEM 37), AND FET (ITEM 17), TO PWB, APPLY 3140 CONFORMAL COATING TO BOTH SIDES OF PRINTED WIRING BOARD 0.003-0.009" THICK PER NAS 5300.4 (3J-1). CONNECTOR PINS, STANDOFF SURFACE OPPOSITE TO PWB (MOUNTING SURFACE AND THERMAL INTERFACE TO THIS ASSEMBLY) AND SHAFT OF SW2 SHALL BE FREE OF CONFORMAL COATING.
4. TORQUE NO. 6 FASTENERS TO 3-5 IN. LBS. ABOVE RUNNING TORQUE.
3. TORQUE NO. 2 FASTENERS TO 2-3 IN. LBS. ABOVE RUNNING TORQUE.
2. SOLDER COMPONENTS PER NASA/JSC PRC-7001.
1. INTERPRET PER EDS MANUAL JPG 8500.4.

NOTES: UNLESS OTHERWISE SPECIFIED

-302	-301	PART NUMBER	DESCRIPTION	REFERENCE DESIGNATOR	SPECIFICATION	ITEM
AR	AR	222-21	LOCKTITE		21	50
2	2	NAS1101E02-5	SCREW, #2		22	49
AR	AR	2713	THINNER, NAPTHA		25	48
AR	AR	1204	PRIMER		10	47
AR	AR	5413-1	TAPE, KAPTON		10	46
AR	AR	NC-840	SOLDER PASTE		26	45
2	2	MS35649-224	NUT, SMALL PATTERN	7	22	44
4	4	AN960C	WASHER #6			43
						42
4	4	NAS620C2	WASHER, #2		22	41
4	4	NAS1101E06-4	SCREW, #6 X 1/4"			40
						39
2	2	NAS1101E02-4	SCREW, #2 X 1/4"		22	38
2	2	SDG46116121-301	PWBA, STANDOFF, FAN CONTROLLER			37
4	4	D55342K07B4E75R	RESISTOR , CHIP 4.75K	R4, R10, R19, R20	MIL-R-55342	36
1	1	MC78L05ACP	VOLTAGE REGULATOR 5V, 3 TERMINAL	VR2	4	35
1	1	MC78L12CP	VOLTAGE REGULATOR 12V, 3 TERMINAL	VR1	4	34
1	1	CD74HC02M	IC, QUAD 2-INPUT	U8	12	33
1	1	LM358AD	IC, DUAL OP-AMP	U6	14	32
1	1	CD74HC163M	IC, PRESETTABLE COUNTER, 4 BIT	U4 23	12	31
2	2	MAX705CSA	IC, TIMER, WD	U3, U5	13	30
1	1	PT65521	SWITCH, ROTARY, DIP	SW2	6	29
1	1	LCA110	OPTICAL COUPLER, FET	SW1	17	28
1	1	D55342K07B26E7R	RESISTOR, CHIP 26.7K	R15	MIL-R-55342	27
1	1	D55342K07B6E81R	RESISTOR, CHIP 6.81K, 1/8W	R14	MIL-R-55342	26
1	1	D55342K07B15E8R	RESISTOR, CHIP 15.8K, 1/8W	R13	MIL-R-55342	25
2	2	D55342K07B1E50R	RESISTOR, CHIP 1.5K, 1/8W	R12, R18	MIL-R-55342	24
1	1	RWR80N2001FS	RESISTOR, 2K, 2W	R8 19	MIL-R-39007	23
2	2	D55342K07B1F00R	RESISTOR, CHIP, 1M	R9, R3	MIL-R-55342	22
2	2	D55342K07B20E0R	RESISTOR, CHIP 20K, 1/8W	R5, R17	MIL-R-55342	21
5	5	D55342K07B100ER	RESISTOR, CHIP 100K, 1/8W	R2,R6,R7,R11,R16	MIL-R-55342	20
1	1	RWR80N49R9FR	RESISTOR, 49.9, 2W	R1	MIL-R-39007	19
2	2	PZT2222AT1	TRANSISTOR, ENCAPSULATED NPN	Q2, Q3	11	18
1	1	IRF1540G	FET, ISOLATED	Q1	5	17
1	1	WTB14PR7J	CONNECTOR, 14 PIN	P1	7	16
1	1	72265	INDUCTOR, 50 uH	L2	16	15
1	1	49401	CHOKE, COMMON MODE	L1	16	14
1	1	RXE185	FUSE, 1.85A	F1 9	15	13
3	3	SGL-41-40	DIODE, SCHOTTKY	D2, D3, D4	11	12
0	0	MBRB20100CT	RECTIFIER, POWER 20A, 100V	D1 20	4	11
4	4	CWR11KH475KC	CAPACITOR, TANTALUM CHIP, 4.7 uF, 25V	C4,C5,C7,C10 3	MIL-C-55681	10
3	3	CDR33BX104AKWS	CAPACITOR, CERAMIC CH10, .1 uF, 50V	C6, C8, C9 3	MIL-C-5565	9
1	1	M39006/22-0631	CAPACITOR, TANTALUM 22 uF, 100V	C2 8 9	MIL-C-3900	8
2	2	M39006/22-0405	CAPACITOR, TANTALUM 4.7 uF, 100V	C1, C3 8 9	MIL-C-5530	7
AR	AR	3145	ADHESIVE, RTV		10	6
AR	AR	3140	SEALANT		10	5
AR	AR	73X	INK, MARKING,WHITE	2	1	4
AR	AR	63/37.025P3REL15	SOLDER		QQ-S-571	3
1	1	SDG46115960-003	PWB, FAN CONTROLLER			2
1	1	SDG46115960-002	PWB, FAN CONTROLLER	27		1
REF	REF	SIG46115962	SCHEMATIC FAN CONTROLLER			
-	-	-302	PRINTED WIRING ASSEMBLY			
-	-	-301	PRINTED WIRING ASSEMBLY			

DIMENSIONAL TOLERANCE UNLESS NOTED OTHERWISE: .0 ± .1, .000 ± .010, .00 ± .03, ANGULAR ± .5 DEG.

SURFACE FINISH IN MICROINCHES AND MICRO-INCHES

FRACTURE CRITICAL: YES / NO

NEXT ASSY: N/A

DWG FILE: 5961A1.HP
LIBRARY: \PCAD\RELEASE\ASSY

APPLICABLE SPEC

SIGNATURES		DATE
DR	Z. PALMER	10/19/98
ENG		11/8/98
CH		11/9/98
APP		11/9/98
QE		11/9/99
MATL		
STRESS		11/8/99
AUTH		

NATIONAL AERONAUTICS & SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER HOUSTON, TEXAS

PRINTED WIRING ASSEMBLY FAN CONTROLLER HRF (LPI)

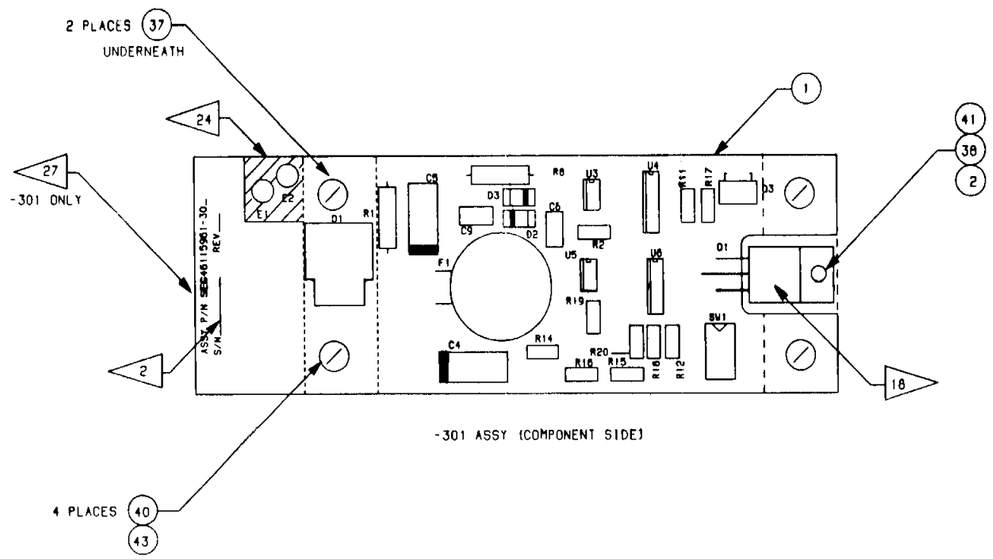
PROJECT: ETAC

SIZE	CODE IDENT NO.	DWG NO.	REV.
D	21356	SEG46115961	NC

SCALE 2/1 | DOC. EAM | SHEET 1 OF 3

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

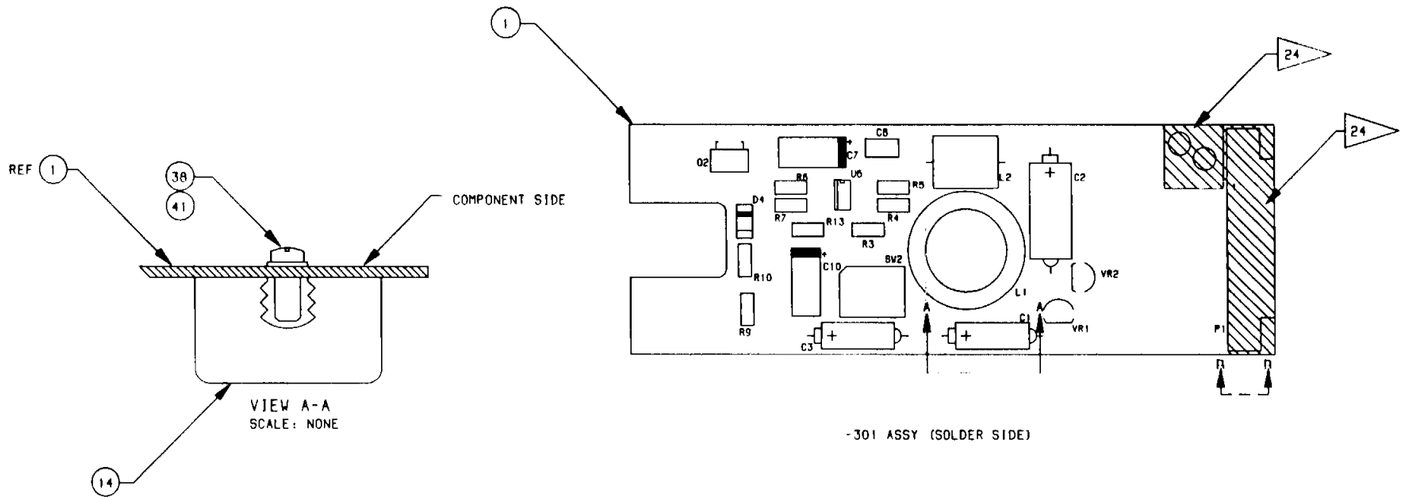
RELEASED Date 9-1-99 Rev Init.



-301 ASSY (COMPONENT SIDE)

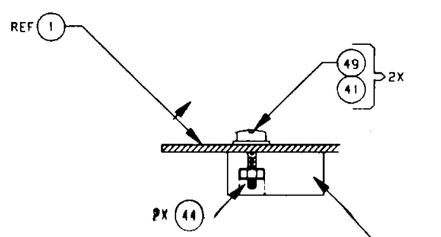
DWG FILE: 5961A2.HP LIBRARY: \PCAD\RELEASE\ASSY	SIZE D	CODE IDENT NO. 21356	DWG NO. SEG46115961
	SCALE 2 / 1	ORG. EA5	SHEET 2 OF 3

LTR	ZONE	DSECRIPTION OF CHANGE
		SEE SHEET 1.



VIEW A-A
SCALE: NONE

-301 ASSY (SOLDER SIDE)



VIEW B-B
2 PLACES
SCALE: NONE

DWG FILE: 5961A3.MP LIBRARY: \PCAD\RELEASE\ASSY	SIZE D	CODE IDENT NO. 21356	DWG NO. SEG46115961
	SCALE: 2:1	ORG. EA5	SHEET 3 OF 3