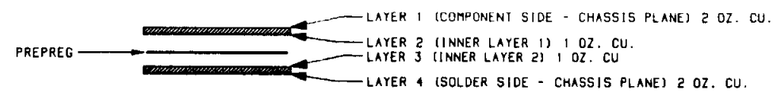
RELEASED
Date 11-9-98 Rev Initl

LTR	ZONE	DESCRIPTION OF CHANGE
B		1. ADDED -003.



LAYER STACKING
SCALE = NONE

3. -001,-002, ARE PROTOTYPE PRINTED WIRING BOARDS, AND WILL NOT BE RELEASED.

2. DRILL HOLE TO .166 DIA. AFTER TOOLING PURPOSES.

1. MARK AREA INDICATED WITH THE DATE CODE, TRACEBILITY CODE AND MANUFACTURERS CODE (FEDERAL SUPPLY CODE FOR MANUFACTURERS) WITH PERMANENT INK (NON CONDUCTIVE) OR IN COPPER ETCH.

-NOTES-

17. SOLDER PLUG ALL .018 DIA. HOLES. DOES NOT MEET MINIMUN ANNULAR RING REQUIREMENTS PER MIL-P-55110.
16. 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.
15. LAYER TO LAYER MISREGISTRATION NOT TO EXCEED .005.
14. MIL-P-55110 QUALITY ASSURANCE PROVISIONS APPLY.
13. UNDIMENSIONED HOLES ARE LOCATED ON A .005 GRID.
12. UNLESS OTHERWISE SPECIFIED IN THE HOLE LEGEND, ALL HOLES ARE PLATED THRU AND SHALL BE THE SPECIFIED DIAMETER AFTER PLATING.
11. THIS DRAWING USED IN CONJUNCTION WITH SCHEMATIC SIG46115961.
10. VENDOR SHALL PROVIDE PRINTED WIRING BOARD COUPONS AS INDICATED.
9. ARTWORK DEPICTED ON THIS DRAWING IS FOR DOCUMENTATION ONLY.
8. ARTWORKS DEPICTED ON THIS DRAWING ARE PHOTO POSITIVES UNLESS OTHERWISE SPECIFIED AND ARE VIEWED FROM COMPONENT SIDE.
7. SOLDER MASK (GREEN) BOTH SIDES.
6. WITH WHITE EPOXY INK PER MIL-I-43553, TYPE II (NON CONDUCTIVE).
5. PLATE EXTERNAL CONDUCTIVE PATTERNS PER MIL-P-81728.
4. BOARD MATERIAL TO BE EPOXY FIBERGLASS PER MIL-P-13949/4, TYPE GF. WITH EPOXY PREPREG IN ACCORDANCE WITH MIL-P-13949/4. STARTING COPPER WEIGHT SHALL BE 2 OZ. LAYERS 1 AND 4, AND 1 OZ. LAYERS 2 AND 3. FINISH BOARD LAMINATE MATERIAL THICKNESS SHALL BE .062 + .008.
3. FABRICATE PRINTED WIRING BOARD PER MIL-P-55110 WITH ETCHBACK.
2. ALL DIMENSIONS ARE IN INCHES.
1. INTERPRET PER JPG 8500.4.

NOTES: UNLESS OTHERWISE SPECIFIED

-003	-002	-001	PART NUMBER	DESCRIPTION	MTRL/REF DES	SPECIFICATION	ITEM
1	—	—	SDG46115960-003	PWB FAN CONTROLLER			
—	1	—	SDG46115960-002	PWB, FAN CONTROLLER	3		
—	—	1	SDG46115960-001	PWB. FAN CONTROLLER	3		-

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

SURFACE FINISH IN MICROINCHES RMS UNLESS NOTED OTHERWISE ✓

FRACTURE CRITICAL ☐ YES ☒ NO

NEXT ASSY SEG46115961

DWG FILE: 59603D1.HP
LIBRARY: \PCAD\RELEASE\PCB

☒ PLT HDWD ☐ APPLICABLE SPEC
☐ OTHER (SPECIFY)

SIGNATURES		DATE
DR	Z. PALMER	05/16/98
ENG		
CH		5/14/98
APR		10-1-98
QE		11-1-98
MATL		
STRESS		
AUTH		

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

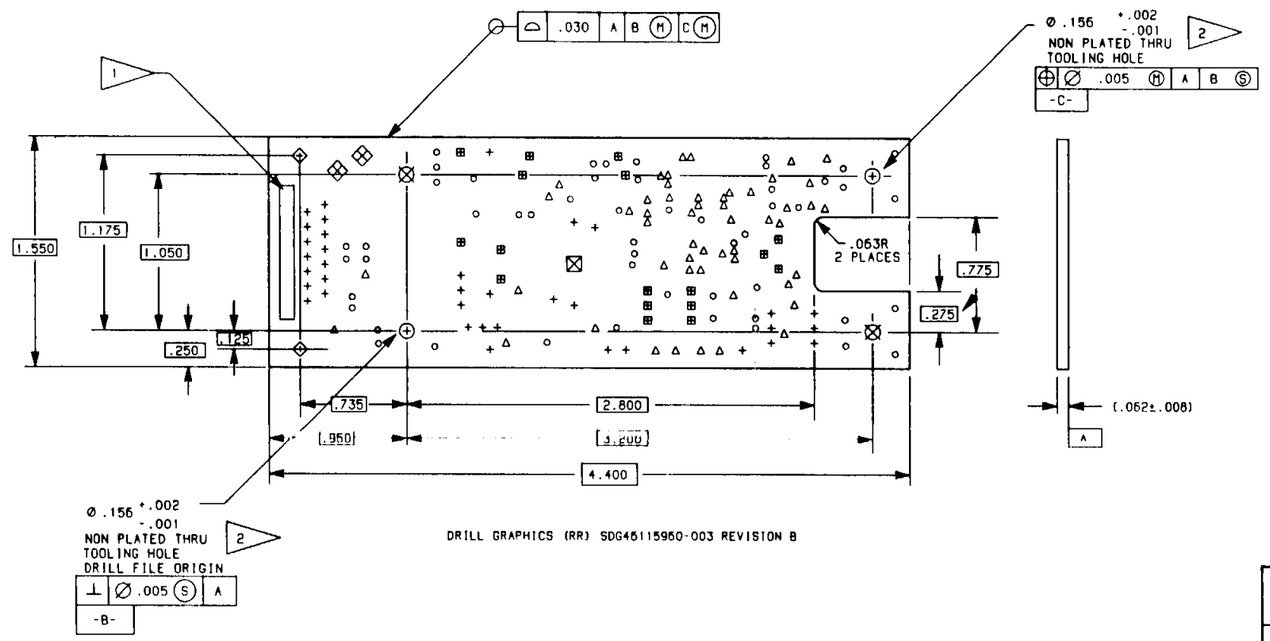
PRINTED WIRING BOARD
FAN CONTROLLER
HRF (LP1)

PROJECT ETAC

SIZE	CODE IDENT NO.	DWG NO.	REV.
D	21356	SDG46115960	

SCALE 2 / 1 ORG. EAB SHEET 1 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.



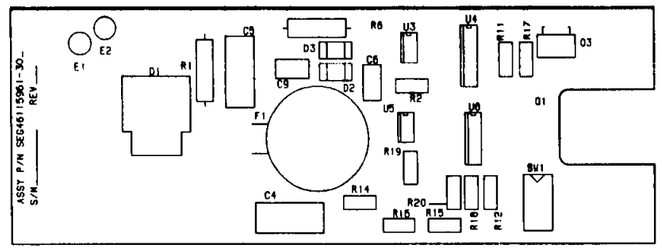
DRILL GRAPHICS (RR) SDG46115960-003 REVISION B

HOLE SIZE SYMBOL	NUMBER OF HOLES	FINISHED_HOLE_DIAMETER ⊕ Ø .005 M A B S C S	
△	52	.018 ±.003	PLATED_THRU_HOLE
○	52	.025 ±.003	PLATED_THRU_HOLE
+	36	.035 ±.004	PLATED_THRU_HOLE
⊞	17	.043 ±.004	PLATED_THRU_HOLE
◈	2	.075 ±.006	PLATED_THRU_HOLE
⊠	1	.117 +.005 -.002	NOT_PLATED_THRU
◇	2	.125 +.005 -.002	NOT_PLATED_THRU
⊗	2	.166 +.005 -.002	NOT_PLATED_THRU

DWG FILE: 59603 D2B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EA5	SHEET 2 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

RELEASED
Date Rev Int
11-2-90 B

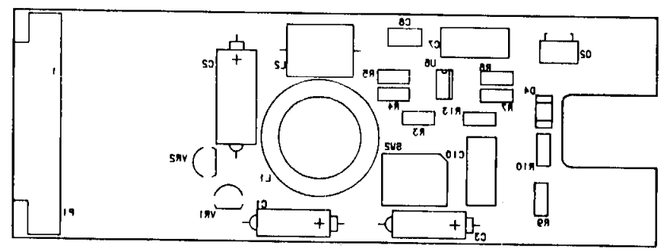


SILKSCREEN (COMPONENT SIDE) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 D3B.HP	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
LIBRARY: \PCAD\RELEASE\PCB	SCALE 2 / 1	ORG. EA5	SHEET 3 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

RELEASED
Date 11-2-93 Rev F Init

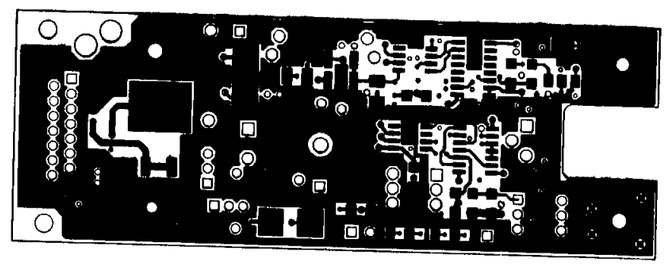


SILKSCREEN (SOLDER SIDE) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 D4B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EA5	SHEET 4 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

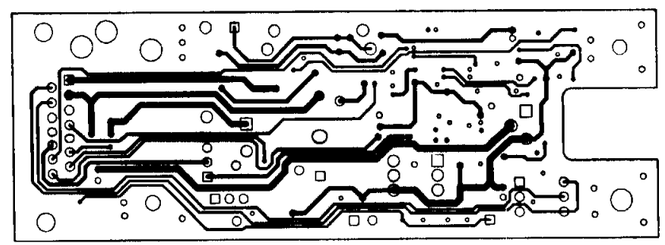
RELEASED
Date 11-2-93 Rev E Init PT



LAYER 1 (COMPONENT SIDE - CHASSIS PLANE) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 D5B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EA5	SHEET 5 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

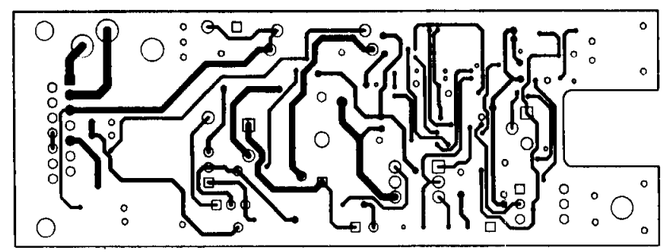


LAYER 2 (INNER LAYER 1) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 06B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EA5	SHEET 6 OF 10

Date	Rev	Int
11-2-93	B	

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

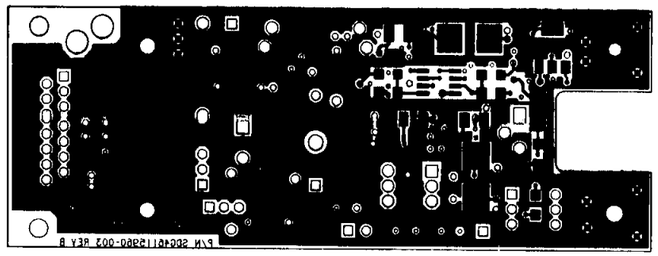


LAYER 3 (INNER LAYER 2) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 D7B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EAS	SHEET 7 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

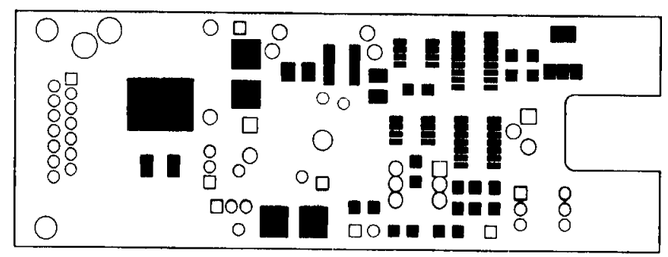
Date	Rev	Int
11-2-95	2	



LAYER 4 (SOLDER SIDE-CHASSIS PLANE) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 D8B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EAS	SHEET 8 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

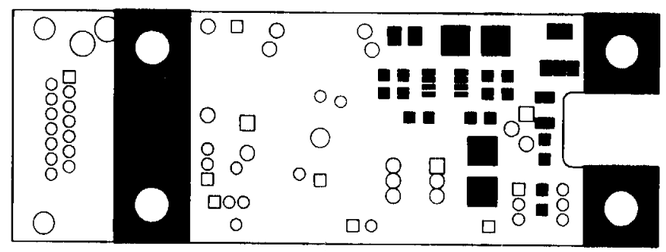


SOLDERMASK (COMPONENT SIDE) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 D9B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EAS	SHEET 9 OF 10

LTR	ZONE	DESCRIPTION OF CHANGE
		SEE SHEET 1.

Date	Rev	Init



SOLDERMASK (SOLDER SIDE) (RR) SDG46115960-003 REVISION B

DWG FILE: 59603 D10B.HP LIBRARY: \PCAD\RELEASE\PCB	SIZE D	CODE IDENT NO. 21356	DWG NO. SDG46115960
	SCALE 2 / 1	ORG. EA5	SHEET 10 OF 10