

FIELD
ENGINEERING
BULLETIN

MODEL ALL ADO'S
BULLETIN NO. 61137 SHEET 1 OF 8
DATE 10/86 BK-8610-12

TO IMPROVE THE SIGNAL TO NOISE RATIO OF THE KEY SIGNAL
(ADO's 3000, 2000 and 1000)

I. APPLICABILITY

All ADO's equipped with D/A PWA, P/N 1420424-01 through -06.

II. PURPOSE

To prevent amplifier U38 on the D/A from oscillating. A band limiting capacitor has been added.

III. DISCUSSION

Adding a 3PF capacitor to form a feedback path will cause the band-width to be limited to within the operating range. This will stop any parasitic oscillation which will degrade the signal to noise ratio.

IV. PARTS REQUIRED

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.

<u>Ampex Part Number</u>	<u>Description</u>	<u>Quantity</u>
034-345	Capacitor, Mica 3PF, 500V +/- .5PF	1

MODEL	ALL ADO'S	SHEET 2 OF 8
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V. PROCEDURE

1. Remove the D/A from the analogue chassis.
2. Add a 3PF capacitor, P/N 034-345, and install it as follows:
 - a) Connect one end to the junction of U38 pin 10 and resistors R79 and R78.
 - b) Connect the free end to the junction of U38 pin 2 and resistor R72.
3. Designate the added capacitor C150. Return the PWA to the chassis and verify that it works.

AMPEX

Ampex Corporation
REDWOOD CITY, CALIFORNIA

LIST OF MATERIALS

F.E.B. 61137 - BK-8610-12

PRINTED WIRING ASSEMBLY
D/A CONVERTER, NTSC/PAL

LIST OF MATERIALS NO.
1420424

REVISION T

ITEM NO.	PART NUMBER	DESCRIPTION	REF DESIG	QTY REQD PER DASH NUMBER																
				-04	-05	-06	-07	-08	-09	-10	-11									
1	1420425	PRINTED WIRING BOARD																		
2																				
3	1420426	SCHEMATIC																		
4																				
5	1374388-AE	INDUCTOR, VARIABLE, 2.7uH, ±10%	L17,18	2	2	2	2													
6	1374388-AJ	5.6uH	L20	1	1	1	1													
7	1374388-AL	8.2uH	L15	1	1	1	1													
8	1374388-AM	10uH	L3,8,14	3	3	3	3													
9	1374388-AN	12uH	L5,10	2	2	2	2													
10	1374388-AP	15uH	L12,16	2	2	2	2													
11	1374388-AS	22uH	L11	1	1	1	1													
12	1374388-AL	33uH	L2,7	2	2	2	2													
13	1374388-AV	39uH	L1,6	2	2	2	2													
14	1374388-AX	56uH	L4,9	2	2	2	2													
15	1374388-AH	4.8uH	L13	1	1	1	1													
16	1374388-AT	INDUCTOR, VARIABLE 27.5uH, ±10%	L19	1	1	1	1													
17	1379491-AF	TRANSFORMER, BIFILIAR, VAR., 76.5uH	T3	1	1	1	1													
18	1379491-AG	TRANSFORMER, BIFILIAR, VAR., 38.0uH	T4	1	1	1	1													
19	1400004-01	HANDLE, EXTRACTOR, PWB		1	1	1	1													
20	1420404-01	SHIELD, ANALOG		1	1	1	1													
21	1420243-AB	TRANSFORMER	T1,2	2	2	2	2													
22	1462928-AG	LABEL, EXTRACTOR		1	1	1	1													
23																				
24	064-652	CAPACITOR, CER., .01uF, 50V, ±20%	C5,6,7,8,37,38,39 40,68,70,72,77, 78,80,81,108,109 110,111,140	20	20	20	20													
25	064-653	CAPACITOR, CER., .1uF, 50V, ±20%	C3,4,9,10,11,33,34, 36,41-44,66,67,69, 71,73-76,79,82, 83,103,105,107, 112-115,136,137, 138,143,147,148	36	36	36	36													
26	038-249	CAPACITOR, CER., VAR., 2.8pF	C135																	
27	034-156	CAPACITOR, MICA., 5pF 500V, ±.5pF	C130,132	2	2	2	2													
28	034-157	2pF ±.5pF	C19,52,117, 120	4	4	4	4													
29	034-215	10pF ±.5pF	C17,50,121	3	3	3	3													
30	034-212	120pF ±1%	C95,144	2	2	2	2													
31	034-221	200pF ±1%	C22,55,127	3	3	3	3													
32	034-224	160pF ±1%	C16,24,49, 57,122	5	5	5	5													
33	034-239	130pF ±1%	C28,61,85	3	3	3	3													
34	034-241	CAPACITOR, MICA., 360pF, 500V, ±1%	C13,46	2	2	2	2													

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				-04	-05	-06	-07					
35	034-251	CAPACITOR, MICA., 39pF, 500V, ±.5pF	C123				1					
36	034-252	82pF ±1%	C89,99	2	2	2	2					
37	034-253	330pF ±1%	C91	1	1		1					
38	034-259	56pF ±1%	C86	1	1		1					
39	034-287	300pF ±1%	C21,54	2	2	2	2					
40	034-309	560pF ±1%	C133	1	1		1					
41	034-311	1000pF ±1%	C25,27,58,60,98	5	5	5	5					
42	034-345	3pF ±.5pF	C90,128	2	2	2	-					
43	034-360	24pF ±.5pF	C96	1	1		1					
44	034-367	91pF ±1%	C118	1	1		1					
45	034-371	510pF ±1%	C20,53	2	2	2	2					
46	034-532	1pF ±.5pF	C97	1	1		1					
47	034-540	51pF ±1%	C14,47	2	2	2	2					
48	034-543	240pF ±1%	C30,63	2	2	2	2					
49	034-677	680pF ±1%	C18,51	2	2	2	2					
50	034-688	30pF ±.5pF	C131	1	1		1					
51	034-918	CAPACITOR, MICA., 68pF, 500V, ±1%	C23,56,84,176	4	4	4	4					
52												
53	038-250	CAPACITOR, CER., VAR., 3-15pF	C135	1	1		1					
54	056-022	CAPACITOR, MICA., 6.8pF, 500V, ±.5pF	C15,48	2	2	2	2					
55	056-140	20pF ±.5pF	C88	1	1		1					
56	056-412	36pF ±.5pF	C129	1	1		1					
57	056-486	4pF ±.5pF	C124,125	2	2	2	2					
58	056-580	CAPACITOR, MICA., 12pF 500V, ±.5pF	C12,29,45,62,119	5	5	5	5					
59												
60	056-649	CAPACITOR, MICA., 6pF 500V, ±.5pF	C26,59	2	2	2	2					
61	056-650	11pF, ±.5pF	C92	1	1		1					
62	034-298	390pF ±1%	C93	1	1		1					
63	056-204	16pF ±.5pF	C94	1	1		1					
64	034-248	50pF ±1%	C101	1	1		1					
65	056-140	20pF ±.5pF	C102	1	1		1					
66	056-602	9.1pF	C87	1	1		1					
67	034-345	CAPACITOR, MICA., 3pF, 500V, ±.5pF	C90,128,150								3	
68												
69												
70	037-812	CAPACITOR, TANT., 10uF, 25V, ±20%	C32,65,134,142,146	5	5	5	5					
71	037-892	47uF, 20V, ±20%	C1,35,104,139,141	5	5	5	5					
72	037-936	22uF, 35V, ±20%	C31,64,145	3	3	3	3					
73	037-965	CAPACITOR, TANT., 120uF, 10V, ±20%	C2,106	2	2	2	2					
74	570-590	DELAY LINE, TZB 92-10, 350NS	DL1,2				2					
75	570-590	DELAY LINE, TZB 92-10, 350NS	DL1	1	1		-					
76	570-591	DELAY LINE, TZB 94-10, 400NS	DL2	1	1		-					
77	570-511	DELAY LINE, SP526, 150NS	DL3	1	1		1					
78	570-386	DELAY LINE, TZB 66-1G, 100NS	DL4	1	1		1					
79												

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AMPEX

Ampex Corporation
REDWOOD CITY, CALIFORNIA

CODE IDENT NO
92739

LIST OF MATERIALS

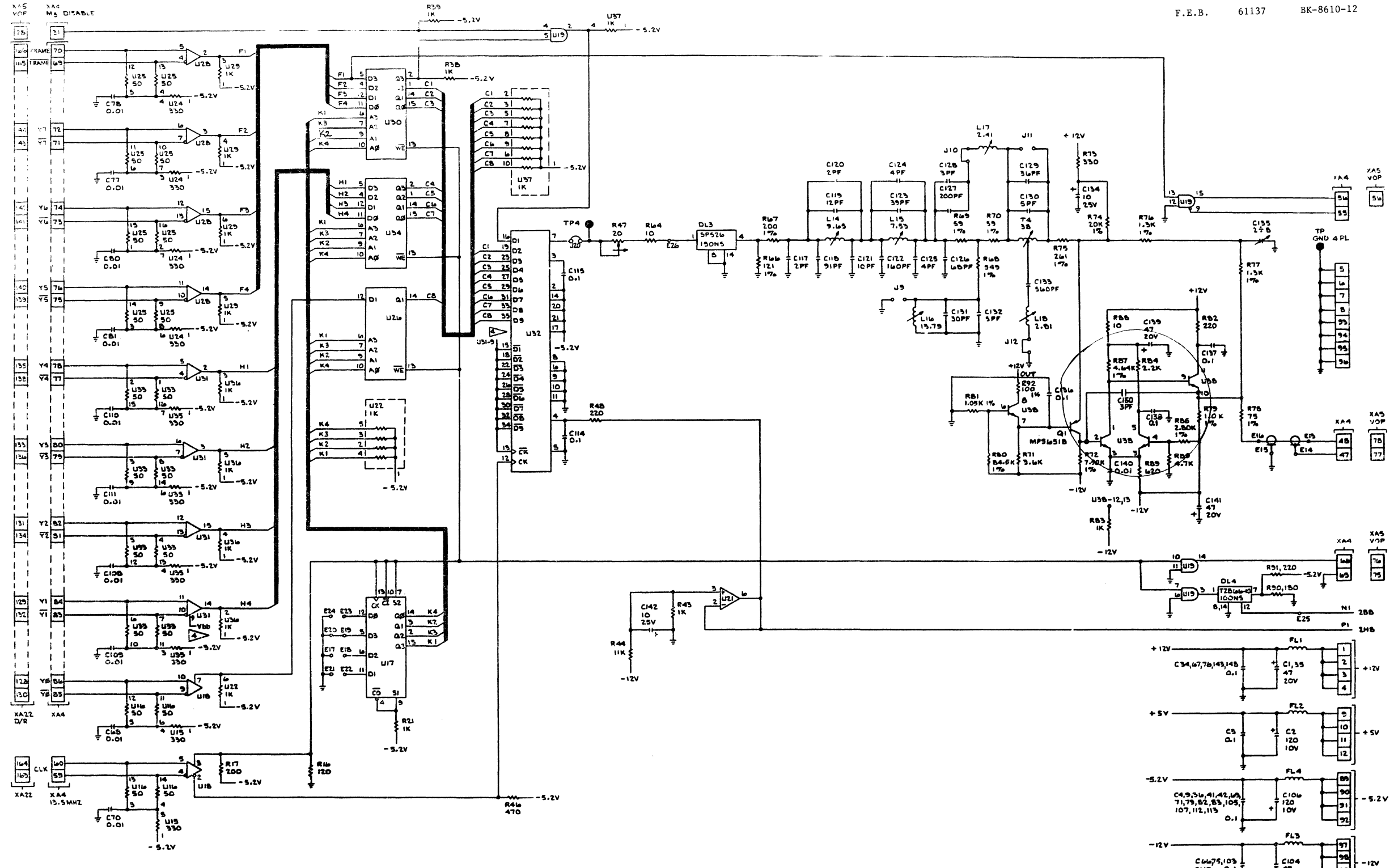
F.E.B. 61137 - BK-8610-12

ITEM NO	PART NUMBER	DESCRIPTION	REF DESIG	QTY REQD PER DASH NUMBER			
				-04	-05	-06	-07
80							
81	013-166	DIODE, ZENER, 3.3V, 1N746A	VR1,2,3	3	3	3	3
82							
83	051-770	FERRITE - CHOKE	FL1,2,3,4	4		4	4
84							
85	586-204	INTEGRATED CIRCUIT, CA3018	U5,12,27	3	3	3	3
86	590-611	741	U21	1	1	1	1
87	590-721	CA3046	U38	1	1	1	1
88	590-543	10116	U18	1	1	1	1
89	590-326	10131	U3,11	2	2	2	2
90	000-153	10104	U19	1	1	1	1
91	587-550	10136	U17	1	1	1	1
92	590-330	10115	U6,8,28,31	4	4	4	4
93	590-049	10145	U26,30,34	3	3	3	3
94	590-811	TDC1016J-9	U32	1	1	1	1
95	590-971	TDC1016J-8	U7,14,23	3	3	3	3
96	590-982	INTEGRATED CIRCUIT, 10186	U9	1	1	1	1
97							
98							
99							
100	039-163	NETWORK, RESISTOR, 470 OHMS	U4,20	2	2	2	2
101	039-223	1K	U22,29,36	3	3	3	3
102	039-283	50	U2,10,16,25,33	5	5	5	5
103	039-294	1K	U37	1	1	1	1
104	039-300	NETWORK, RESISTOR, 330 OHMS	U1,13,15,24,35	5	5	5	5
105							
106	066-661	RESISTOR, C.F., 120 OHMS, 1/4W, ±5%	R16	1	1	1	1
107	066-662	200	R17	1	1	1	1
108	066-663	220	R2,24,41,48,82,91	6	6	6	6
109	066-665	1K	R12,14,19,21,34,36,38,38,39,45,60,83	11	11	11	11
110	066-666	2.7K	R10,32,58	3	3	3	3
111	066-668	4.7K	R85	1	1	1	1
112	066-689	2.2K	R84	1	1	1	1
113	066-715	1.2K	R62	1	1	1	1
114	066-810	10	R11,33,42,49,59,64,88	7	7	7	7
115	066-818	470	R18,20,22,46	4	4	4	4
116	066-819	620	R89	1	1	1	1
117							
118							
119	066-828	4.3K	R9,31,57	3	3	3	3
120	066-838	330	R73	1	1	1	1
121	066-863	3.6K	R71	1	1	1	1
122							
123							
124	076-004	RESISTOR, C.F., 180 OHMS, 1/4W, ±5%	R1,23,90	3	3	3	3

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ITEM NO.	PART NUMBER	DESCRIPTION	REF DESIG	QTY REQD PER DASH NUMBER			
				-04	-05	-06	-07
125	062-624	RESISTOR, M.F., 1.0K, OHMS, 1/4W, ±1%	R43,79	2	2	2	2
126	062-693	20K	R8,30,74	3	3	3	3
127	062-847	100	R92	1	1	1	1
128	062-599	1.3K	R76,77	2	2	2	2
129	062-600	11K	R44	1	1	1	1
130	062-948	2.55K	R61	1	1	1	1
131	062-625	1.21K	R61	-	-	-	-
132	062-693	20K	R8,30,56,74	4	4	4	4
133	062-836	75	R15,37,63,78	4	4	4	4
134	062-855	121	R50,66	2	2	2	2
135	062-874	200	R51,67	2	2	2	2
136	062-881	261	R7,29,55,75	4	4	4	4
137	062-906	549	R3,25,52,68	4	4	4	4
138	062-977	7.50K	R72	1	1	1	1
139	062-951	2.80K	R86	1	1	1	1
140	062-965	4.64K	R87	1	1	1	1
141	066-986	84.5K	R80	1	1	1	1
142	076-341	59	R4,5,26,27,53,54,69,70	8	8	8	8
143	062-936	1.74K	R28	1	1	1	1
144	062-925	1.05K	R81	1	1	1	1
145	066-751	RESISTOR, M.F., 1.13K, OHMS, 1/4W, ±1%	R6	1	1	1	1
146	058-498	RESISTOR, VAR., 500 OHMS	R13,35	2	2	2	2
147	058-584	RESISTOR, VAR., 20 OHMS	R40,47	2	2	2	2
148	173-024	TERMINAL, STUD, TURRET	TP, GND	4	4	4	4
149	602-044	PLUG, SHORTING	J2,4,6,8,10,12,14,16-20	2	2	2	2
150	187-354	TERMINAL, PUSH-IN	TP1-4	4	4	4	4
151	014-781	TRANSISTOR, 6518	Q1	1	1	1	1
152							
153	143-981	CONN., SIGNAL CIRCUIT, JACK, P.C., TIP	REF:J1-20	40	40	40	40
154	582-282	I.C., MTG HDW., 40 PINS	REF:U7,14,23,32	4	4	4	4
155	582-329	8 PINS	REF:U21	1	1	1	1
156	582-330	14 PINS	REF:U33	1	1	1	1
157	582-331	I.C., MTG HDW., 16 PINS	REF:U3,6,8,9,11,17,18,19,26,28,30,31,34	3	3	3	3
158							
159	173-024	TERMINAL, STUD, TURRET, SWAGE (TP GND)		4	4	4	4
160	283-105	SPACER		1	1	1	1
161	473-324	SCREW, PAN HD., X-REC, 4-40 X .250 LG		5	5	5	5
162	473-326	SCREW, PAN HD., X-REC, 4-40 X .375 LG		1	1	1	1
163	501-008	WASHER, PLAIN, #4		1	1	1	1
164	501-169	WASHER, PLAIN, SM PATTERN, #4		5	5	5	5
165	506-011	WASHER, BOWED, .257 MIN ID		1	1	1	1
166	600-618	SLEEVING, TEFLON		A/R	A/R	A/R	A/R
167	615-004	WIRE, SOLID, UNINSULATED, 24 AWG		A/R	A/R	A/R	A/R
168	616-569	CABLE, COAXIAL, 75 OHM		A/R	A/R	A/R	A/R
169	302-395	STRAP, CABLE, MOUSETAIL		4	4	4	4

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NOTES: UNLESS OTHERWISE SPECIFIED.
 1. RESISTANCE VALUES ARE IN OHMS 1/4W, 5%.
 2. CAPACITANCE VALUES ARE IN MICROFARADS.
 3. INDUCTANCE VALUES ARE IN MICRONEERIES.
 CK DI TO D5 TO Vbb.

IC LIST										REF. DES.	
REF. DES	U1,3,15,24,35	U2,10,16,25,33	U3,11	U4,20	U5,12,27	U6,8,28,31	U7,14,23	U9	U17	LAST USED	NOT USED
AMPEX P/N	039-300	039-283	5B7-139	039-163	586-204	5B7-630	590-971	590-982	5B7-550	C150	C100,116
VENDOR P/N	RES. NET	RES. NET	10191	RES. NET	CA301B	10115	TDC101W-B	10186	10136	DL4	
VOLTAGE (PIN)	(1) -5.2V		-5.2V (8)	(1) -5.2V		-5.2V (8)		-5.2V (8)	-5.2V (8)	E24	
GROUND (PIN)	(1,16)					(1,16)		(16)	(1,16)	FL4	
REF. DES.	U16	U19	U21	U22,29,36	U26,30,34	U32	U37	U38		L20	
AMPEX P/N	5B-133	5B7-549	5B6-764	039-734	590-049	590-811	039-213	586-276		Q1	R56,65
VENDOR P/N	10116	10104	741	RES. NET	10145	TDC101W-B	RES. NET	CA3046		R92	
VOLTAGE (PIN)	-5.2V (8)	-5.2V (8)	+12V (7)		-5.2V (8)		-5.2V (1)			T4	
GROUND (PIN)	(1,16)	(1,16)	-12V (4)		(16)					TP4	
										VR3	

SCHEMATIC DIAGRAM
 D/A CONVERTER
 1420426

AMPEX