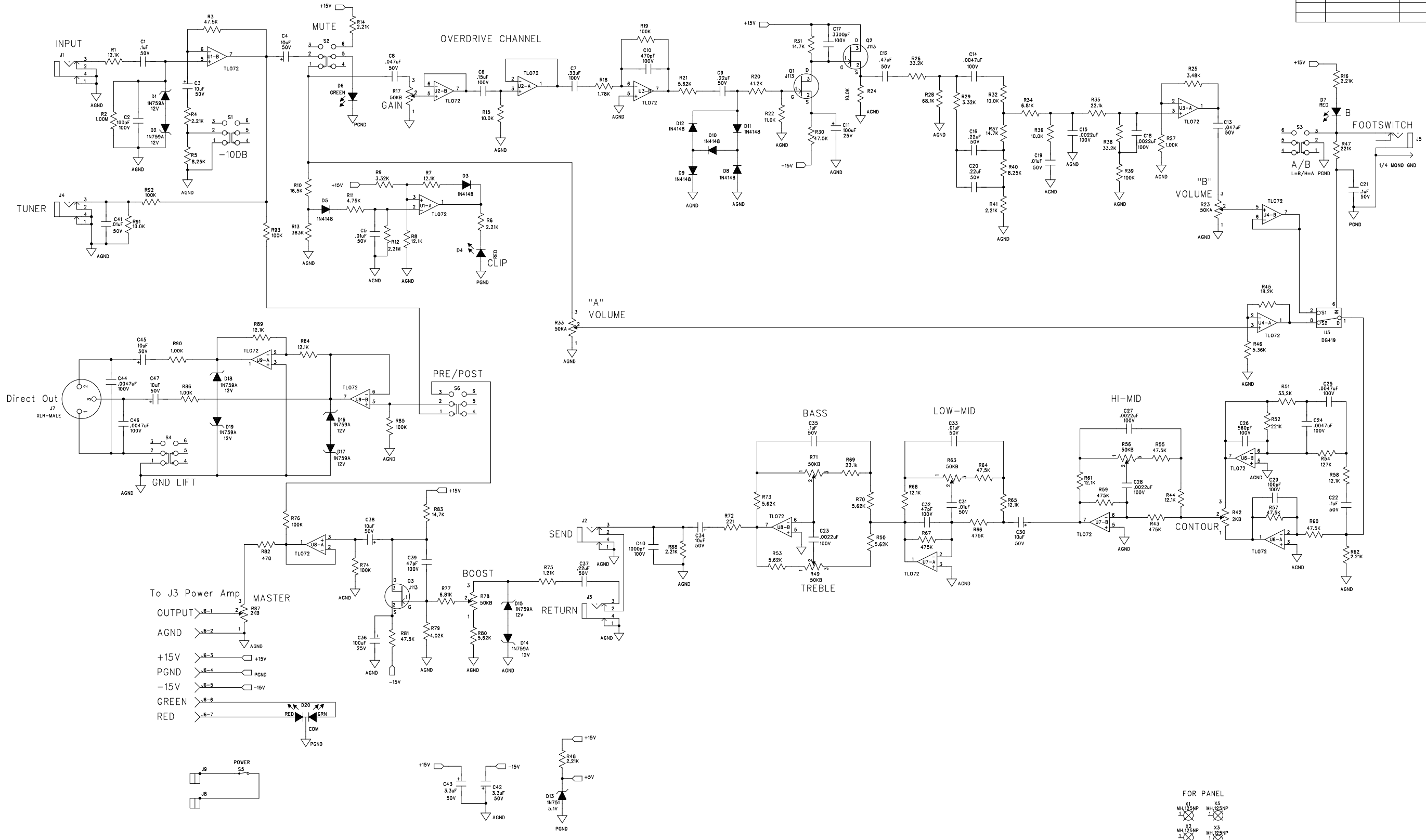


REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:
A1	New library parts		



D

C

B

A

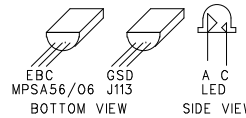
D

C

B

A

6109A Backline 250 Preamp.sch-1 - Tue Jul 16 15:12:03 2002



NOT VALID UNLESS STAMP IS RED

gallien technology

2240 PARAGON DRIVE
 SAN JOSE CA. 95131
 VOICE: 408-441-8081
 FAX: 408-441-8085

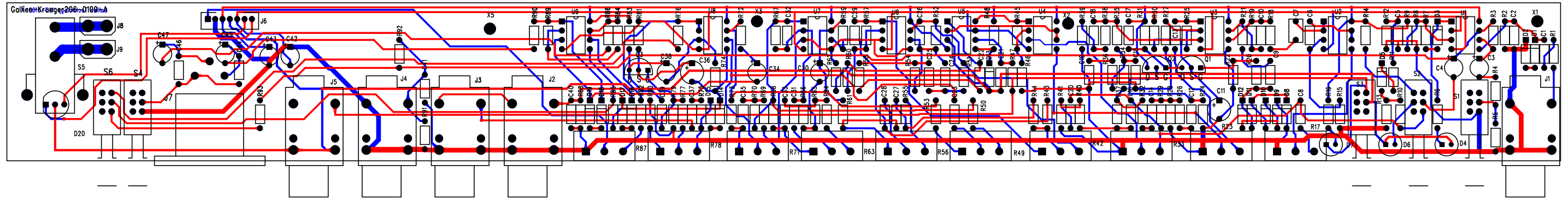
APPROVALS		DATE		TITLE	
INIT				BACKLINE 250 PRE-AMP	
DESIGNED:	R.A.G.	1-31-01		REV.	
DRAWN:	R.A.G.	6/20/01		SIZE	B
ELEC:				DRAWING NO:	406-0109-A
MECH:				PART NO:	206-0109-A
Q/A:				COMPANY:	
RELEASED:				FILENAME:	6109A Backline 250 Preamp.sch

A

Bill of Materials Backline 115 Preamp 206-0109-A

Qty	Reference	Description	Part No.	Mfr	Mfr Part No.
5	C5 C19 C31 C33 C41	CAP CER AXIAL,103,10%,50V,X7R	030-2103-0	KEMET	C410C103K5R5CA
2	C8 C13	CAP CER AXIAL, 0.047UF, 10%, 50V, X7R	030-2473-0	KEMET	C410C473K5R5CA
1	C6	CAP,PE,154,10%,100V,	032-4154-0	PACCOM	85154J100A5S5
4	C1 C21-22 C35	CAP CER AXIAL,104,10%,50V,X7R	030-2104-0	KEMET	C412C104K5R5CA
4	C9 C16 C20 C37	CAP CER AXIAL,224,20%,50V,Z5U	030-2224-0	KEMET	C410C224M5U5CA
1	C7	CAP,PE,334,5%,100V,	032-4334-0	PACCOM	85334J100A5S5
1	C12	CAP CER AXIAL,474,20%,50V,Z5U	030-2474-0	AVX	SA305E474MAA
1	C40	CAP CER AXIAL,102,10%,100V,X7R	030-4102-0	KEMET	C410C102K1R5CA
2	C2 C29	CAP CER AXIAL,101,5%,100V,COG	030-4101-0	KEMET	C410C101J1G5CA
2	C11 C36	CAP,ELEC,RAD,107,20%,25V	031-1107-0	UNITED CHEMI-CON	SMG25VB101M6X11LL
7	C3-4 C30 C34 C38 C45 C47	CAP,ELEC,RAD, 106, 20%, 50V	031-2106-0	UNITED CHEMI-CON	SMG50VB10RM5X11LL
5	C15 C18 C23 C27-28	CAP CER AXIAL,222,10%,100V,X7R	030-2222-0	KEMET	C410C222K1R5CA
2	C42-43	CAP,ELEC,RAD,335,20%,50V	031-2335-0	UNITED CHEMI-CON	SMG50VB3R3M5X11LL
1	C17	CAP CER AXIAL,332,10%,100V,X7R	030-4332-0	KEMET	C410C332K1R5CA
5	C14 C24-25 C44 C46	CAP CER AXIAL, 472, 10%, 100V,,X7R	030-4472-0	KEMET	C410C472K1R5CA
1	C10	CAP CER AXIAL,471,5%,100V,NPO	030-4471-0	KEMET	C410C471J1G5CA
2	C32 C39	CAP CER AXIAL,47PF,5%,100V,NPO	030-4470-0	KEMET	C410C470J1G5CA
1	C26	CAP CER AXIAL,561,10%,100V,X7R	030-4561-0	KEMET	C410C561K1R5CA
4	J1-4	JACK,1/4",MONO,PC,NON GROUNDING	092-0081-0	NEUTRIK	S102-84
1	J5	JACK,1/4",MONO,PC, GROUNDING	092-0082-0	NEUTRIK	S102-84G
2	J8-9	FASTON, M, PC, .250"	092-0066-0	KEYSTONE	1021
1	J7	CON,XLR,MALE,PC,PL, SCREW MNT	092-0084-0	NEUTRIK	X906-05
7	D3 D5 D8-12	1N4148, RECT-FAST, 200MA, 100V	020-1000-0	MOTOROLA	1N4148
1	D13	1N751, ZENER,5.1V,10%,400MW,DO-35	020-0050-0	NATIONAL	1N751A
8	D1-2 D14-19	1N759A, ZENER,12V,5%,400MW, DO-35	020-0120-0	MOTOROLA	1N759A
1	J6	HDR, 2MMX7, VERT, SHROUDED	093-2005-0	JST	B7B-PH-K-S
1	U5	DG419, Analog Switch	001-3029-0	MAXIM	DG419DJ
8	U1-4 U6-9	TLO72CP, LOW NOISE JFET OPAMP	001-1030-1	MOTOROLA	TL072CP
1	D6	LED,GREEN, 3MM, 565NM, 6MCD, 10MA	025-0101-0	EVERLIGHT	EL204GD
1	D20	LED,RED/GRN,5MM,630NM/560NM,15MCD/15M	025-0012-0	STANLEY	VRPG5614S
2	D4 D7	LED,RED, 3MM, 635NM, 6MCD, 10MA, 40DEG	025-0116-0	EVERLIGHT	EL204ID
4	X1-3 X5	.125 HOLE, NON-PLATED	000-0000-0		
2	R42 R87	POT,2KB,7MM,KNURL,.1W	070-1522-0	SONG HUEI	16K1-B2K,L115KC/7MM
2	R23 R33	POT,50K-15A,7MM,KNURL,.1W	070-1513-0	SONG HUEI	16K-A50K,L-15KC/7MM
6	R17 R49 R56 R63 R71 R78	POT,50KB,7MM,KNURL,.1W	070-1514-0	SONG HUEI	16K1-B50K,L15KC/7MM
1	R54	RES,METAL FILM, 127K, 1/8W,1%	060-1274-0		
3	R27 R86 R90	RES,METAL FILM, 1.00K, 1/8W, 1%	060-1002-0	ECI	M1F1AK001.00
1	R2	RES, MF, 1.00M, 1%,1/8W, 060-1005-0	060-1005-0	ECI	M1F1AM001.00
1	R75	RES,METAL FILM, 1.21K, 1/8W, 1%	060-1212-0	ECI	M1F1AK001.21
1	R18	RES,METAL FILM, 1.78K, 1/8W, 1%	060-1782-0		
5	R15 R24 R32 R36 R91	RES,METAL FILM, 10.0K, 1/8W,1%	060-1003-0	ECI	M1F1AK010.00
7	R19 R39 R74 R76 R85 R92-93	RES,METAL FILM, 100K, 1/8W, 1%	060-1004-0	ECI	M1F1AK100.00
1	R22	RES,METAL FILM, 11.0K, 1/8W, 1%	060-1103-0	ECI	M1F1AK011.00
10	R1 R7-8 R44 R58 R61 R65 R68 R84 R89	RES,METAL FILM, 12.1K OHM, 1/8W, 1%	060-1213-0	ECI	M1F1AK012.10
3	R31 R37 R83	RES,METAL FILM, 14.7K, 1/8W, 1%	060-1473-0		
1	R10	RES,METAL FILM, 16.5K, 1/8W, 1%	060-1653-0		
1	R45	RES,METAL FILM, 18.2K, 1/8W, 1%	060-1823-0	ECI	M1F1AK018.20
8	R4 R6 R14 R16 R41 R48 R62 R88	RES,METAL FILM, 2.21K, 1/8W, 1%	060-2212-0	ECI	M1F1AK002.21
1	R12	RES, METAL FILM, 2.21M, 1/8W, 1%	060-2215-0	ECI	M1F1AM002.21
2	R35 R69	RES,METAL FILM, 22.1K, 1/8W, 1%	060-2213-0	ECI	M1F1AK022.10
2	R47 R52	RES,METAL FILM, 221K, 1/8W, 1%	060-2214-0	ECI	M1F1AK221.00
1	R72	RES,METAL FILM, 221 ohm, 1/8W, 1%	060-2211-0	ECI	M1F1AJ221.00
2	R9 R29	RES,METAL FILM, 3.32K, 1/8W, 1%	060-3322-0	ECI	M1F1AK003.32
1	R25	RES,METAL FILM, 3.48K, 1/8W, 1%	060-3482-0		
3	R26 R38 R51	RES,METAL FILM, 33.2K, 1/8W, 1%	060-3323-0	ECI	M1F1AK033.20
1	R13	RES,METAL FILM, 1.00K, 1/8W, 1%	060-3834-0		
1	R79	RES,METAL FILM, 1.00K, 1/8W, 1%	060-4022-0		
1	R11	RES,METAL FILM, 4.75K, 1/8W, 1%	060-4752-0		

1	R20	RES,METAL FILM, 1.00K, 1/8W, 1%	060-4123-0		
7	R3 R30 R55 R57 R60 R64 R81	RES,METAL FILM, 47.5K, 1/8W, 1%	060-4753-0	ECI	M1F1AK047.50
1	R82	RES, CARBON FILM, 470 OHM, 1/8W, 5%	050-4701-0		
4	R43 R59 R66-67	RES,METAL FILM, 475K, 1/8W, 1%	060-4754-0	ECI	M1F1AK475.00
1	R46	RES,METAL FILM, 5.36K, 1/8W, 1%	060-5362-0		
6	R21 R50 R53 R70 R73 R80	RES,METAL FILM, 5.62K, 1/8W, 1%	060-5622-0	ECI	M1F1AK005.62
2	R34 R77	RES,METAL FILM, 6.81K, 1/8W, 1%	060-6812-0	ECI	M1F1AK006.81
1	R28	RES,METAL FILM, 68.1K, 1/8W, 1%	060-6813-0	ECI	M1F1AK068.10
2	R5 R40	RES,METAL FILM, 8.25K, 1/8W, 1%	060-8252-0	ECI	M1F1AK008.25
5	S1-4 S6	SWITCH,MIMI PP,DPDT,.1A BRK/MAKE,PC TER	090-0012-0	ELKECTRONIC COMP	MTH2UEE-1D911
1	S5	SWITCH, 8A/128A,250V,PP,PCB	090-0007-0	TECX	KDC-A04-10-B, B2-F
3	Q1-3	J113,N-JFET,35V,2MA,TO-92	010-2010-0	NATIONAL	J113



PCB WORK INSTRUCTIONS

DWG #420-0109-A

NOTES:

UNLESS OTHERWISE SPECIFIED:

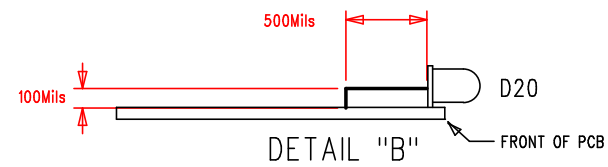
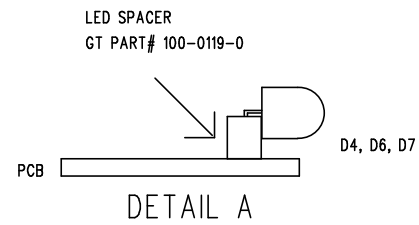
1. SQUARE PADS ON THRU HOLE PARTS (ie: CONNECTORS, DIPS, SIPS, LEADS) DENOTE PIN 1.
2. ALL BOARDS REQUIRE A COMPLETE AND THOROUGH VISUAL INSPECTIONS.
3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANSI/IPC-A-610B.

LOADING

5. CLIP BUSHING TABS OFF ON POTS R17, 23, 33, 42, 49, 58, 63, 71, 78, 87
6. SEE DETAIL A FOR MOUNTING D4, 6 AND 7
7. SEE DETAIL "B" FOR MOUNTING D20

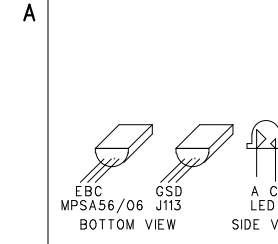
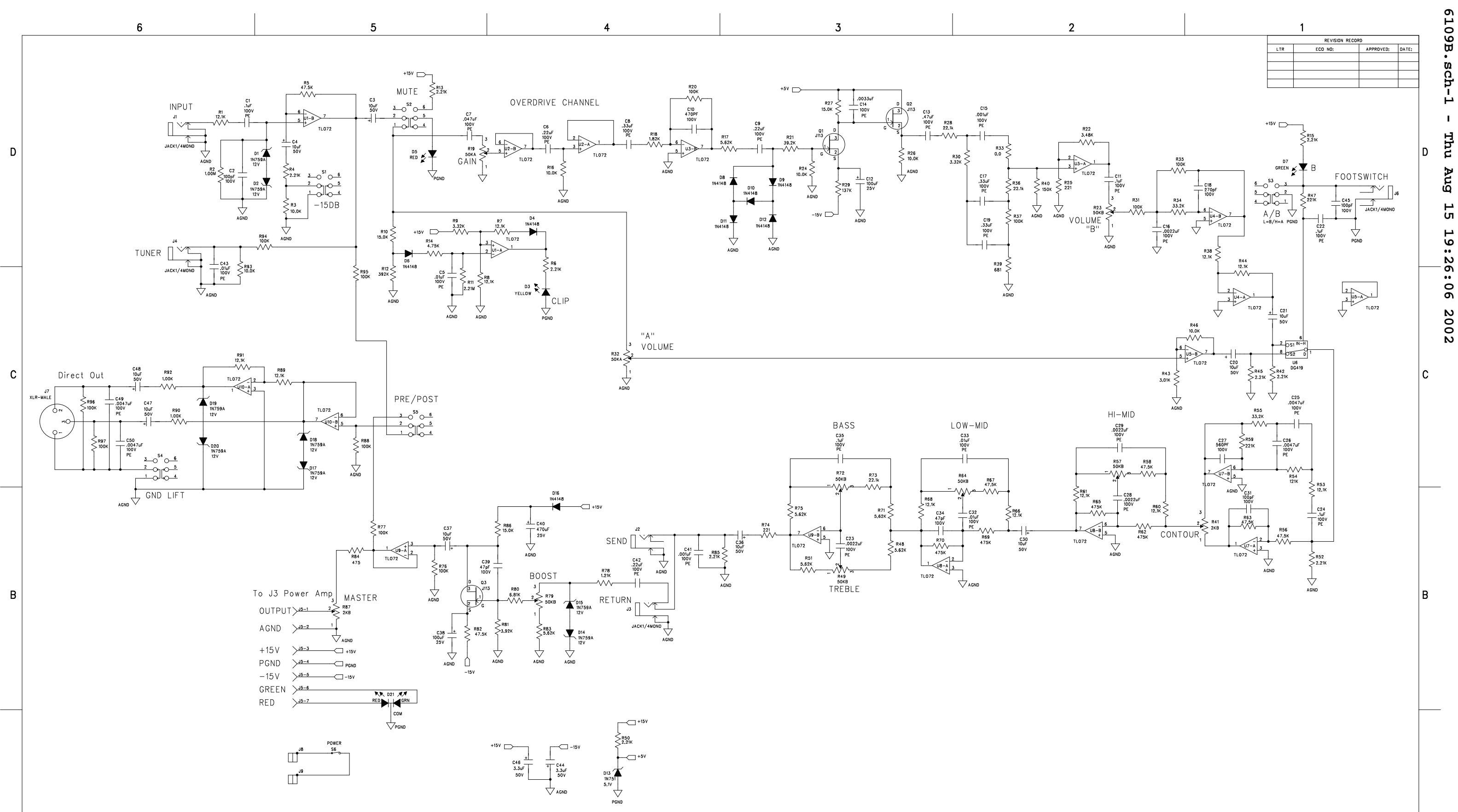
FINAL QA

8. CHECK TO SEE ALL POTS, JACKS, AND SWITCHES ARE MOUNTED FLUSH AND STRAIGHT



NOT VALID UNLESS STAMP IS RED				2240 PARAGON DRIVE SAN JOSE CA. 95131 VOICE: 408-441-8081 FAX: 408-441-8085	
				TITLE: BACKLINE PREAMP BD	
DESIGNED: R.A.G.		DATE: 12/115/00		SIZE: B	DRAWING NO: 405-0109-A PART NO: 145-0109-A
DRAWN: R.A.G.		DATE: 04/11/01			
ELEC:				COMPANY: GALLIEN-KRUEGER	SCALE: Note: Moved J6 1/2 inch to left.
MECH:					
GERBER FILE NAME: sst0126.rph				FILENAME: 5109A	
LAYER DESCRIPTION: TOP SIDE SOLKSCREEN					

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



NOT VALID UNLESS STAMP IS RED

gallien technology

2240 PARAGON DRIVE
SAN JOSE CA. 95131
VOICE: 408-441-8081
FAX: 408-441-8085

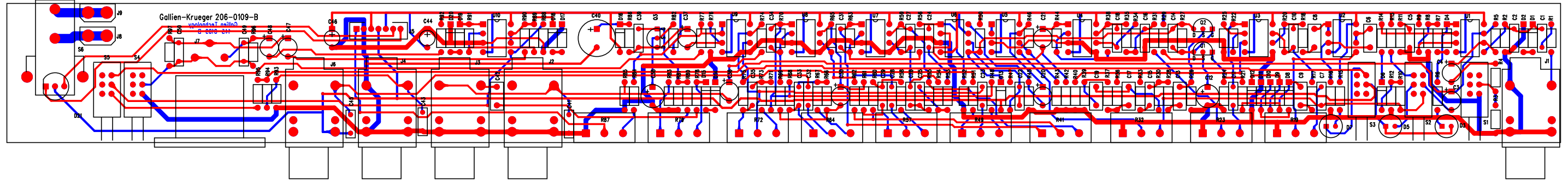
APPROVALS		TITLE: BACKLINE 115 PREAMP	
INIT	DATE	REV	DRAWING NO:
DESIGNED: R.A.G.	1-31-01	B	406-0109-B
DRAWN: R.A.G.	8/13/02		PART NO: 206-0109-B
ELEC:			COMPANY: GALLIEN-KRUEGER
MECH:			FILENAME: 6109B.SCH
Q/A:			
RELEASED:			

1. CHANGE ALL C-AXIAL CAPS TO POLYESTER OR RADIAL CER.
2. GAIN TO A TAPER AND VOL-B TO B TAPER
3. ADD PDP CKT TO Q3.
4. ADD CAB SIM TO CHAN "B".
5. MUTE-RED, CLIP-YEL, "B"-GREEN.
6. BLEAD RESISTORS TO D1.

GK GALLIEN-KRUEGER

Backline 115 Preamp 206-0109-B

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-1030-1	U1-5 U7-10	TLO72CP, LOW NOISE JFET OPAMP	MOTOROLA	TL072CP
001-3029-0	U6	DG419, Analog Switch	MAXIM	DG419DJ
010-2010-0	Q1-3	J113,N-JFET,35V,2MA,TO-92	NATIONAL	J113
020-0050-0	D13	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0120-0	D1-2 D14-15 D17-20	1N759A, ZENER,12V,5%,400MW, DO-35	MOTOROLA	1N759A
020-1000-0	D4 D6 D8-12 D16	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
025-0012-0	D21	LED,RED/GRN,5MM,630NM/560NM,15MCD/15	STANLEY	VRPG5614S
025-0023-0	D3	LED,YELLOW, 3MM, 585NM, 5MCD, 10MA	EVERLIGHT	EL204YD
025-0101-0	D7	LED,GREEN, 3MM, 565NM, 6MCD, 10MA	EVERLIGHT	EL204GD
025-0116-0	D5	LED,RED, 3MM, 635NM, 6MCD, 10MA, 40DEG	EVERLIGHT	EL2041D
031-1107-0	C12 C38	CAP,ELEC,RAD,107,20%,25V	UNITED CHEMI-CON	SMG25VB101M6X11LL
031-1477-0	C40	CAP, ELEC, RAD, 470uF, 20%, 25V	UNITED CHEMI-CON	SMG25VB471M10X12LL
031-2106-0	C3,4,20,21,30,36,37,47 C48	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2335-0	C44 C46	CAP,ELEC,RAD,335,20%,50V	UNITED CHEMI-CON	SMG50VB3R3M5X11LL
032-4102-0	C15 C41	CAP,PE,102,5%,100V,	PANASONIC	ECQB1102JF
032-4103-0	C5 C32-33 C43	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C1 C11 C22 C24 C35	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-4222-0	C16 C23 C28-29	CAP,PE,222,5%,100V,	PANASONIC	ECQB1222JF
032-4224-0	C6 C9 C42	CAP,PE,224,5%,100V,	PANASONIC	ECQV1224JM
032-4332-0	C14	CAP,PE,332,5%,100V,	PANASONIC	ECQB1332JF
032-4334-0	C8 C17 C19	CAP,PE,334,5%,100V,	PANASONIC	ECQV1334JM
032-4472-0	C25-26 C49-50	CAP,PE,472,5%,100V,	PANASONIC	ECQB1472JF
032-4473-0	C7	CAP,PE,473,5%,100V,	PANASONIC	ECQV1473JM
032-4474-0	C13	CAP,PE,474,5%,100V,	PANASONIC	ECQV1474JM
034-4101-0	C2 C31 C45	CAP,MCR,100pF,5%,100V,	TAITRON	TMRS101J100NPOB
034-4271-0	C18	CAP,MCR,270pF,5%,100V,	TAITRON	TMRS271J100NPOB
034-4470-0	C34 C39	CAP,MCR,47PF,5%,100V,NPO	TAITRON	TMRS470J100NPOB
034-4471-0	C10	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-4561-0	C27	CAP,MCR,560pF,5%,100V,	TAITRON	TMRS561J100NPOB
060-1002-0	R90 R92	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R3,16,24,26,46,93	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R20,31,35,37,76,77,88 R94-97	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1005-0	R2	RES, MF, 1.00M, 1%,1/8W, 060-1005-0	ECI	M1F1AM001.00
060-1212-0	R78	RES,METAL FILM, 1.21K, 1/8W, 1%	ECI	M1F1AK001.21
060-1213-0	R1,7,8,38,44,53,60,61 R66,68,89,91	RES,METAL FILM, 12.1K OHM, 1/8W, 1%	ECI	M1F1AK012.10
060-1214-0	R54	RES,METAL FILM, 121K, 1/8W, 1%	ECI	M1F1AK121.00
060-1374-0	R29	RES,METAL FILM, 137K, 1/8W, 1%	ECI	M1F1AK137.00
060-1503-0	R10 R27 R86	RES,METAL FILM, 15.0K, 1/8W, 1%	ECI	M1F1AK015.00
060-1504-0	R40	RES,METAL FILM, 150K, 1/8W, 1%	ECI	M1F1AK150.00
060-1822-0	R18	RES,METAL FILM, 1.82K, 1/8W, 1%	ECI	M1F1AK001.82
060-2211-0	R25 R74	RES,METAL FILM, 221 ohm, 1/8W, 1%	ECI	M1F1AJ221.00
060-2212-0	R4,6,13,15,42,45,50,52 R85	RES,METAL FILM, 2.21K, 1/8W, 1%	ECI	M1F1AK002.21
060-2213-0	R28 R36 R73	RES,METAL FILM, 22.1K, 1/8W, 1%	ECI	M1F1AK022.10
060-2214-0	R47 R59	RES,METAL FILM, 221K, 1/8W, 1%	ECI	M1F1AK221.00
060-2215-0	R11	RES, METAL FILM, 2.21M, 1/8W, 1%	ECI	M1F1AM002.21
060-3012-0	R43	RES,METAL FILM, 3.01K, 1/8W, 1%	ECI	M1F1AK003.01
060-3322-0	R9 R30	RES,METAL FILM, 3.32K, 1/8W, 1%	ECI	M1F1AK003.32
060-3323-0	R34 R55	RES,METAL FILM, 33.2K, 1/8W, 1%	ECI	M1F1AK033.20
060-3482-0	R22	RES,METAL FILM, 3.48K, 1/8W, 1%	ECI	M1F1AK003.48
060-3922-0	R81	RES,METAL FILM, 3.92K, 1/8W, 1%	ECI	M1F1AK003.92
060-3923-0	R21	RES,METAL FILM,39.2K,1/8W,1%	ECI	M1F1AK039.2
060-3924-0	R12	RES,METAL FILM, 392K, 1/8W, 1%	ECI	M1F1AK392.00
060-4751-0	R84	RES,METAL FILM, 475 ohm, 1/8W, 1%	ECI	M1F1AJ475.00
060-4752-0	R14	RES,METAL FILM, 4.75K, 1/8W, 1%	ECI	M1F1AK004.75
060-4753-0	R5,56,58,63,67,82	RES,METAL FILM, 47.5K, 1/8W, 1%	ECI	M1F1AK047.50
060-4754-0	R62 R65 R69-70	RES,METAL FILM, 475K, 1/8W, 1%	ECI	M1F1AK475.00
060-5622-0	R17,48,51,71,75,83	RES,METAL FILM, 5.62K, 1/8W, 1%	ECI	M1F1AK005.62
060-6811-0	R39	RES,METAL FILM, 681 ohm, 1/8W, 1%	ECI	M1F1AJ681.00
060-6812-0	R80	RES,METAL FILM, 6.81K, 1/8W, 1%	ECI	M1F1AK006.81
062-0000-0	R33	RES, WIRE, 0.0 Ohm, 1/8W	ECI	R1 0.0 OHM
070-1513-0	R19 R32	POT,50K-15A,7MM,KNURL,..1W	SONG HUEI	16K1-A50K-L15KC



PCB WORK INSTRUCTIONS

DWG #420-0109-B

NOTES:

UNLESS OTHERWISE SPECIFIED:

1. SQUARE PADS ON THRU HOLE PARTS (ie: CONNECTORS, DIPS, SIPS, LEDES) DENOTE PIN 1.
2. ALL BOARDS REQUIRE A COMPLETE AND THOROUGH VISUAL INSPECTIONS.
3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANSI/IPC-A-610B.

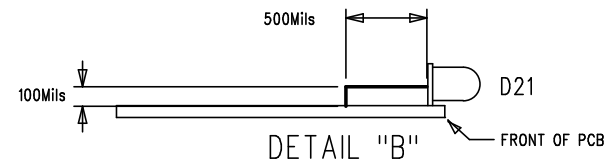
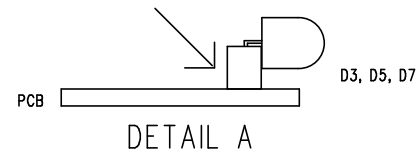
LOADING

5. CLIP BUSHING TABS OFF ON POTS R19, 23, 32, 41, 49, 57, 64, 72, 79, 87
6. SEE DETAIL A FOR MOUNTING D3, 5 AND 7
7. SEE DETAIL "B" FOR MOUNTING D21

FINAL QA

8. CHECK TO SEE ALL POTS, JACKS, AND SWITCHES ARE MOUNTED FLUSH AND STRAIGHT

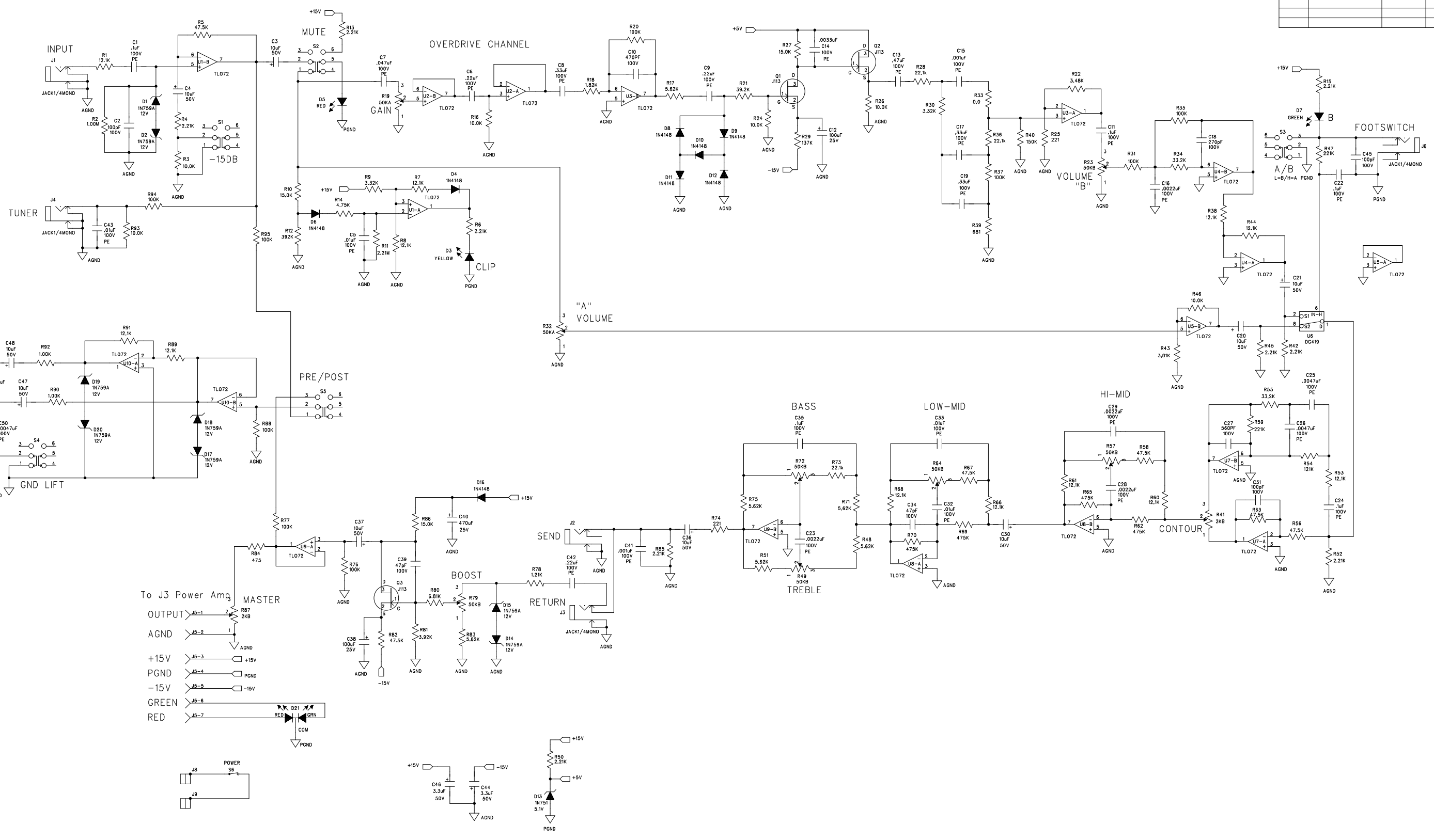
LED SPACER
GT PART# 100-0119-0



NOT VALID UNLESS STAMP IS RED

<p>gallien technology</p> <p>2240 PARAGON DRIVE SAN JOSE CA, 95131 VOICE: 408-441-8081 FAX: 408-441-8085</p>		TITLE: BACKLINE 115 PREAMP BD		
		APPROVALS	DATE	
DESIGNED: R.A.G.	12/115/00	SIZE: B	DRAWING NO: 405-0109-B	REV. B
DRAWN: R.A.G.	8/13/02		PART NO: 145-0109-B	
ELEC:		COMPANY: GALLIEN-KRUEGER		
MECH:		FILENAME: 5109B		
GERBER FILE NAME: sort0126.rpt				
LAYER DESCRIPTION: TOP SIDE SOUTHSREEN				

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



6

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4

3

2

1

D

D

C

C

B

B

A

A

NOT VALID UNLESS STAMP IS RED

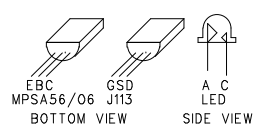
gallien technology

2240 PARAGON DRIVE
SAN JOSE CA. 95131
VOICE: 408-441-8081
FAX: 408-441-8085

1. CHANGE ALL POTS TO BRACKET STYLE.

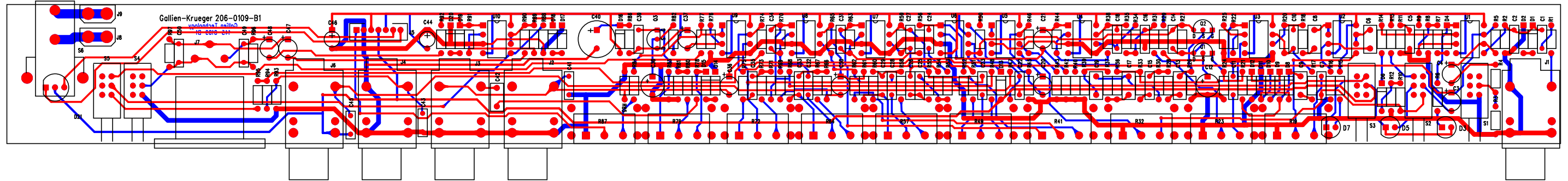
APPROVALS		TITLE:	
INIT	DATE	REV	DRAWING NO:
DESIGNED: R.A.G.	1-31-01	B	406-0109-B1
DRAWN: R.A.G.	9/10/02		206-0109-B1
ELEC:			
MECH:			
Q/A:			
RELEASED:			

BACKLINE 115 PREAMP
PART NO: 406-0109-B1
COMPANY: GALLIEN-KRUEGER
FILENAME: 6109B1.SCH



Backline 115 Preamp 206-0109-B1

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-1030-1	U1-5 U7-10	TLO72CP, LOW NOISE JFET OPAMP	MOTOROLA	TL072CP
001-3029-0	U6	DG419, Analog Switch	MAXIM	DG419DJ
010-2010-0	Q1-3	J113,N-JFET,35V,2MA,TO-92	NATIONAL	J113
020-0050-0	D13	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0120-0	D1-2 D14-15 D17-20	1N759A, ZENER, 12V,5%,400MW, DO-35	MOTOROLA	1N759A
020-1000-0	D4 D6 D8-12 D16	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
025-0012-0	D21	LED,RED/GRN,5MM,630NM/560NM,15MCD/15	STANLEY	VRPG5614S
025-0023-0	D3	LED,YELLOW, 3MM, 585NM, 5MCD, 10MA	EVERLIGHT	EL204YD
025-0101-0	D7	LED,GREEN, 3MM, 565NM, 6MCD, 10MA	EVERLIGHT	EL204GD
025-0116-0	D5	LED,RED, 3MM, 635NM, 6MCD, 10MA, 40DEG	EVERLIGHT	EL2041D
031-1107-0	C12 C38	CAP,ELEC,RAD,107,20%,25V	UNITED CHEMI-CON	SMG25VB101M6X11LL
031-1477-0	C40	CAP, ELEC, RAD, 470uF, 20%, 25V	UNITED CHEMI-CON	SMG25VB471M10X12LL
031-2106-0	C3,4,20,21,30,36,37,47 C48	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2335-0	C44 C46	CAP,ELEC,RAD,335,20%,50V	UNITED CHEMI-CON	SMG50VB3R3M5X11LL
032-4102-0	C15 C41	CAP,PE,102,5%,100V,	PANASONIC	ECQB1102JF
032-4103-0	C5 C32-33 C43	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C1 C11 C22 C24 C35	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-4222-0	C16 C23 C28-29	CAP,PE,222,5%,100V,	PANASONIC	ECQB1222JF
032-4224-0	C6 C9 C42	CAP,PE,224,5%,100V,	PANASONIC	ECQV1224JM
032-4332-0	C14	CAP,PE,332,5%,100V,	PANASONIC	ECQB1332JF
032-4334-0	C8 C17 C19	CAP,PE,334,5%,100V,	PANASONIC	ECQV1334JM
032-4472-0	C25-26 C49-50	CAP,PE,472,5%,100V,	PANASONIC	ECQB1472JF
032-4473-0	C7	CAP,PE,473,5%,100V,	PANASONIC	ECQV1473JM
032-4474-0	C13	CAP,PE,474,5%,100V,	PANASONIC	ECQV1474JM
034-4101-0	C2 C31 C45	CAP,MCR,100pF,5%,100V,	TAITRON	TMRS101J100NPOB
034-4271-0	C18	CAP,MCR,270pF,5%,100V,	TAITRON	TMRS271J100NPOB
034-4470-0	C34 C39	CAP,MCR,47PF,5%,100V,NPO	TAITRON	TMRS470J100NPOB
034-4471-0	C10	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-4561-0	C27	CAP,MCR,560pF,5%,100V,	TAITRON	TMRS561J100NPOB
060-1002-0	R90 R92	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R3,16,24,26,46,93	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R20,31,35,37,76,77,88 R94-97	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1005-0	R2	RES, MF, 1.00M, 1%,1/8W, 060-1005-0	ECI	M1F1AM001.00
060-1212-0	R78	RES,METAL FILM, 1.21K, 1/8W, 1%	ECI	M1F1AK001.21
060-1213-0	R1,7,8,38,44,53,60,61 R66,68,89,91	RES,METAL FILM, 12.1K OHM, 1/8W, 1%	ECI	M1F1AK012.10
060-1214-0	R54	RES,METAL FILM, 121K, 1/8W, 1%	ECI	M1F1AK121.00
060-1374-0	R29	RES,METAL FILM, 137K, 1/8W, 1%	ECI	M1F1AK137.00
060-1503-0	R10 R27 R86	RES,METAL FILM, 15.0K, 1/8W, 1%	ECI	M1F1AK015.00
060-1504-0	R40	RES,METAL FILM, 150K, 1/8W, 1%	ECI	M1F1AK150.00
060-1822-0	R18	RES,METAL FILM, 1.82K, 1/8W, 1%	ECI	M1F1AK001.82
060-2211-0	R25 R74	RES,METAL FILM, 221 ohm, 1/8W, 1%	ECI	M1F1AJ221.00
060-2212-0	R4,6,13,15,42,45,50,52 R85	RES,METAL FILM, 2.21K, 1/8W, 1%	ECI	M1F1AK002.21
060-2213-0	R28 R36 R73	RES,METAL FILM, 22.1K, 1/8W, 1%	ECI	M1F1AK022.10
060-2214-0	R47 R59	RES,METAL FILM, 221K, 1/8W, 1%	ECI	M1F1AK221.00
060-2215-0	R11	RES, METAL FILM, 2.21M, 1/8W, 1%	ECI	M1F1AM002.21
060-3012-0	R43	RES,METAL FILM, 3.01K, 1/8W, 1%	ECI	M1F1AK003.01
060-3322-0	R9 R30	RES,METAL FILM, 3.32K, 1/8W, 1%	ECI	M1F1AK003.32
060-3323-0	R34 R55	RES,METAL FILM, 33.2K, 1/8W, 1%	ECI	M1F1AK033.20
060-3482-0	R22	RES,METAL FILM, 3.48K, 1/8W, 1%	ECI	M1F1AK003.48
060-3922-0	R81	RES,METAL FILM, 3.92K, 1/8W, 1%	ECI	M1F1AK003.92
060-3923-0	R21	RES,METAL FILM,39.2K,1/8W,1%	ECI	M1F1AK039.2
060-3924-0	R12	RES,METAL FILM, 392K, 1/8W, 1%	ECI	M1F1AK392.00
060-4751-0	R84	RES,METAL FILM, 475 ohm, 1/8W, 1%	ECI	M1F1AJ475.00
060-4752-0	R14	RES,METAL FILM, 4.75K, 1/8W, 1%	ECI	M1F1AK004.75
060-4753-0	R5,56,58,63,67,82	RES,METAL FILM, 47.5K, 1/8W, 1%	ECI	M1F1AK047.50
060-4754-0	R62 R65 R69-70	RES,METAL FILM, 475K, 1/8W, 1%	ECI	M1F1AK475.00
060-5622-0	R17,48,51,71,75,83	RES,METAL FILM, 5.62K, 1/8W, 1%	ECI	M1F1AK005.62
060-6811-0	R39	RES,METAL FILM, 681 ohm, 1/8W, 1%	ECI	M1F1AJ681.00
060-6812-0	R80	RES,METAL FILM, 6.81K, 1/8W, 1%	ECI	M1F1AK006.81
062-0000-0	R33	RES, WIRE, 0.0 Ohm, 1/8W	ECI	R1 0.0 OHM
070-1513-0	R19 R32	POT,50K-15A,7MMB,KNURL,BRACKET	SONG HUEI	16K1-A50K-L15KC



PCB WORK INSTRUCTIONS

DWG #420-0109-B1

NOTES:

UNLESS OTHERWISE SPECIFIED:

1. SQUARE PADS ON THRU HOLE PARTS (ie: CONNECTORS, DIPS, SIPS, LEADS) DENOTE PIN 1.
2. ALL BOARDS REQUIRE A COMPLETE AND THOROUGH VISUAL INSPECTIONS.
3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANSI/IPC-A-610B.

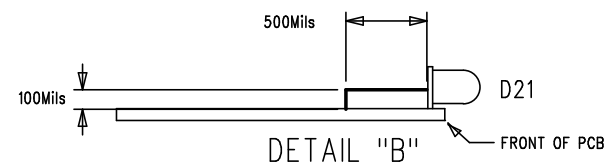
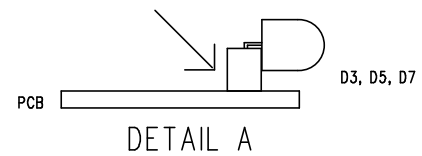
LOADING

5. CLIP BUSHING TABS OFF ON POTS R19, 23, 32, 41, 49, 57, 64, 72, 79, 87
6. SEE DETAIL A FOR MOUNTING D3, 5 AND 7
7. SEE DETAIL "B" FOR MOUNTING D21
8. CLIP BRACK FROM RIGHT SIDE OF R19 TO CLEAR D7.

FINAL QA

8. CHECK TO SEE ALL POTS, JACKS, AND SWITCHES ARE MOUNTED FLUSH AND STRAIGHT

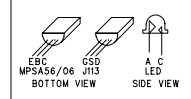
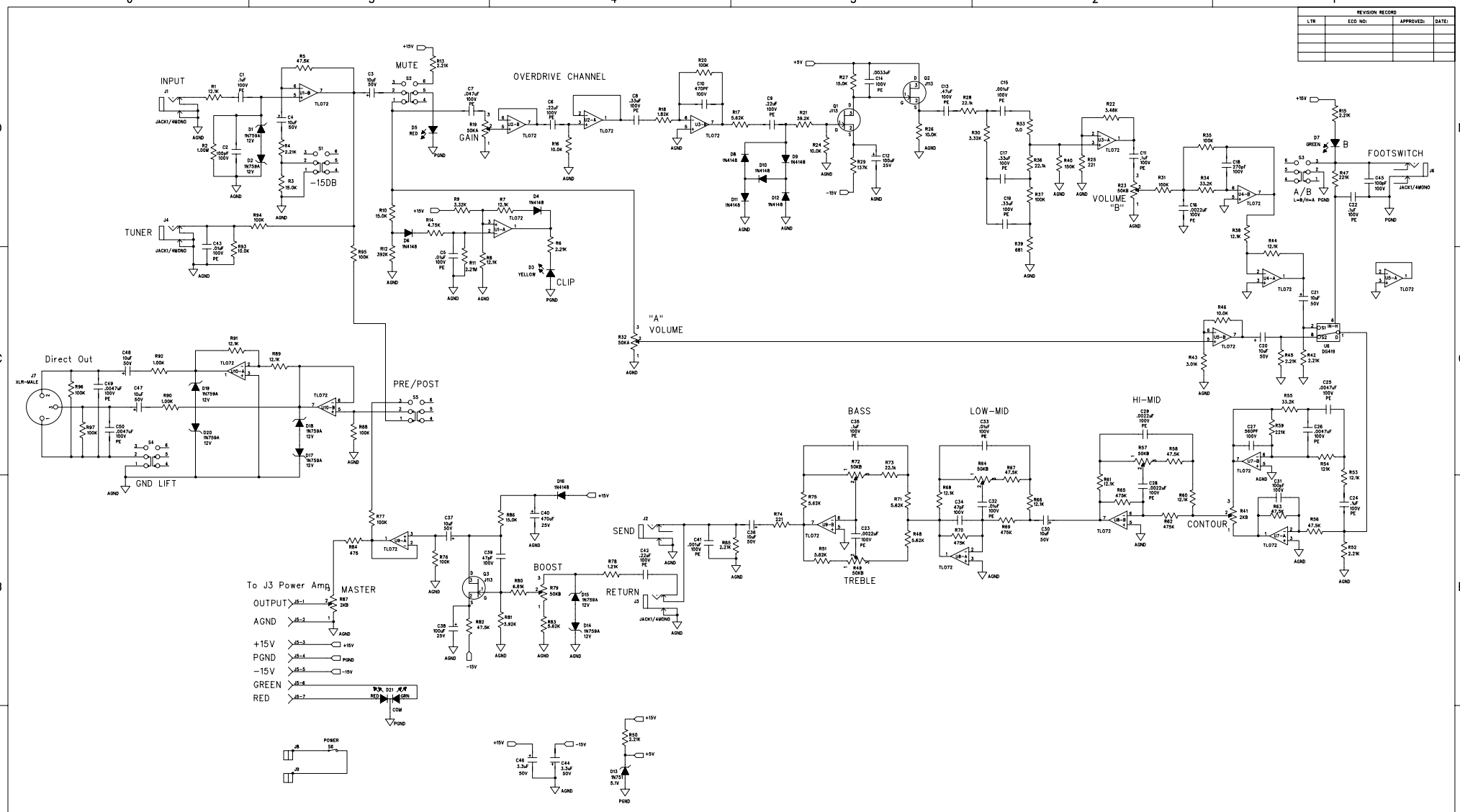
LED SPACER
GT PART# 100-0119-0



NOT VALID UNLESS STAMP IS RED				2240 PARAGON DRIVE SAN JOSE CA, 95131 VOICE: 408-441-8081 FAX: 408-441-8085	
APPROVALS		TITLE: BACKLINE 115 PREAMP BD			
INIT	DATE	SIZE	DRAWING NO:	REV.	
DESIGNED: R.A.G.	12/115/00	B	405-0109-B1	B1	
DRAWN: R.A.G.	9/10/02		PART NO:	145-0109-B1	
ELEC:		COMPANY: GALLIEN-KRUEGER		FILENAME: 5109B1	
MECH:		GERBER FILE NAME: sort0126.rpt			
LAYER DESCRIPTION: TOP SIDE SOUTHSREEN					

Customer Name:	Gallien-Krueger			Current Rev #:	A0	New ECO Rev #:	B2	
Model:	Backline 250BL and 115			Distribute To:		Page:	1	Of: 1
Assembly Description:	preamp board			Originator:	A.R. Villaflor			
Assembly Numbers:	206-0109-B2			Approved by:				
				Effective Date:	11/7/2002			
Effective				Document Update		Date	Initials	
<input type="checkbox"/>	All in Process	<input checked="" type="checkbox"/>	Next Buy	<input type="checkbox"/>	Artwork			
<input type="checkbox"/>	All in Service	<input checked="" type="checkbox"/>	Next Production Run	<input type="checkbox"/>	Assembly Dwg.			
<input type="checkbox"/>	All in Stock	<input type="checkbox"/>		<input type="checkbox"/>	Board Artwork			
Beginning Serial Number:				<input checked="" type="checkbox"/>	BOM		TC	
Reason For Change				<input type="checkbox"/>	Control Form			
B-Change all ceramic caps to polyester "box" caps.				<input checked="" type="checkbox"/>	Costing		TC	
Change overdrive ch. pot tapers to match 2001RB.				<input type="checkbox"/>	Fab Drawing			
Improve over drive channel voicing.Improve				<input type="checkbox"/>	Inspection Proc.			
turn-off muting circuitry. New LED color scheme.				<input checked="" type="checkbox"/>	Part Master File		RAG	
				<input checked="" type="checkbox"/>	Schematic		RAG	
B1-Change all pots to bracket style.				<input type="checkbox"/>	Service Manual			
				<input checked="" type="checkbox"/>	Test Procedure		NOLI	
B2-Change -10dB circuit to attenuate -15dB.				<input type="checkbox"/>				
				<input type="checkbox"/>				
				Other Affected Assemblies				
				209-0180-A, 303-0180-A,				
				303-1180-A, 303-2180-A				
<input type="checkbox"/>	Continued on ECO Supplement Page							
Description Of Change				Distribution		Date	Initials	
B- Gain pot is "A" taper, Level is "B" taper.				<input checked="" type="checkbox"/>	Accounting			
Added cabinet emulator to "B" channel.				<input type="checkbox"/>	Assembly			
LED color scheme; Mute = red, Clip = yellow,				<input type="checkbox"/>	Customer			
Ch. B on = green.				<input checked="" type="checkbox"/>	Engineering			
				<input checked="" type="checkbox"/>	Incoming Q.C.			
B1- All pots are bracket style.				<input type="checkbox"/>	Planning			
				<input checked="" type="checkbox"/>	Production Eng.			
B2- Changed R3 from 10K to 15K ohms.				<input checked="" type="checkbox"/>	Purchasing			
				<input type="checkbox"/>	Q.A.			
Update board rev to B2. Rev B and rev B1 were not				<input type="checkbox"/>	Receiving			
released to production.				<input checked="" type="checkbox"/>	Service			
Use Rev B2 BOM				<input checked="" type="checkbox"/>	Test			
				<input type="checkbox"/>	Vendor			
				<input type="checkbox"/>				
				<input type="checkbox"/>				
<input type="checkbox"/>	Continued on ECO Supplement Page			<input type="checkbox"/>	Drawing(s) attached			
Part Number	Description	Parts Added		Parts Deleted				
		Qty	Ref. Designator	Qty	Ref. Designator			

REVISION RECORD			
LTR	ECO NO.	APPROVED	DATE



NOT VALID UNLESS STAMP IS RED

gallien technology

2240 PARAGON DRIVE
 SAN JOSE CA. 95131
 VOICE: 408-441-8081
 FAX: 408-441-8085

1. Changed R3 from 10k to 10k

APPROVALS		TITLE	
DESIGNER	DATE	REV	DESCRIPTION
R.A.G.	1-15-01	B	BACKLINE 115 PREAMP
R.A.G.	10/3/02	B	406-0109-B2
			206-0109-B2

COMPANY: GALLIEN-KRUEGER
 FILENAME: 6109B1.SCH

Backline 115 Preamp 206-0109-B2

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-1030-1	U1-5 U7-10	TLO72CP, LOW NOISE JFET OPAMP	MOTOROLA	TL072CP
001-3029-0	U6	DG419, Analog Switch	MAXIM	DG419DJ
010-2010-0	Q1-3	J113,N-JFET,35V,2MA,TO-92	NATIONAL	J113
020-0050-0	D13	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0120-0	D1-2 D14-15 D17-20	1N759A, ZENER,12V,5%,400MW, DO-35	MOTOROLA	1N759A
020-1000-0	D4 D6 D8-12 D16	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
025-0012-0	D21	LED,RED/GRN,5MM,630NM/560NM,15MCD/15	STANLEY	VRPG5614S
025-0023-0	D3	LED,YELLOW, 3MM, 585NM, 5MCD, 10MA	EVERLIGHT	EL204YD
025-0101-0	D7	LED,GREEN, 3MM, 565NM, 6MCD, 10MA	EVERLIGHT	EL204GD
025-0116-0	D5	LED,RED, 3MM, 635NM, 6MCD, 10MA, 40DEG	EVERLIGHT	EL2041D
031-1107-0	C12 C38	CAP,ELEC,RAD,107,20%,25V	UNITED CHEMI-CON	SMG25VB101M6X11LL
031-1477-0	C40	CAP, ELEC, RAD, 470uF, 20%, 25V	UNITED CHEMI-CON	SMG25VB471M10X12LL
031-2106-0	C3,4,20,21,30,36,37,47 C48	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2335-0	C44 C46	CAP,ELEC,RAD,335,20%,50V	UNITED CHEMI-CON	SMG50VB3R3M5X11LL
032-4102-0	C15 C41	CAP,PE,102,5%,100V,	PANASONIC	ECQB1102JF
032-4103-0	C5 C32-33 C43	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C1 C11 C22 C24 C35	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-4222-0	C16 C23 C28-29	CAP,PE,222,5%,100V,	PANASONIC	ECQB1222JF
032-4224-0	C6 C9 C42	CAP,PE,224,5%,100V,	PANASONIC	ECQV1224JM
032-4332-0	C14	CAP,PE,332,5%,100V,	PANASONIC	ECQB1332JF
032-4334-0	C8 C17 C19	CAP,PE,334,5%,100V,	PANASONIC	ECQV1334JM
032-4472-0	C25-26 C49-50	CAP,PE,472,5%,100V,	PANASONIC	ECQB1472JF
032-4473-0	C7	CAP,PE,473,5%,100V,	PANASONIC	ECQV1473JM
032-4474-0	C13	CAP,PE,474,5%,100V,	PANASONIC	ECQV1474JM
034-4101-0	C2 C31 C45	CAP,MCR,100pF,5%,100V,	TAITRON	TMRS101J100NPOB
034-4271-0	C18	CAP,MCR,270pF,5%,100V,	TAITRON	TMRS271J100NPOB
034-4470-0	C34 C39	CAP,MCR,47PF,5%,100V,NPO	TAITRON	TMRS470J100NPOB
034-4471-0	C10	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-4561-0	C27	CAP,MCR,560pF,5%,100V,	TAITRON	TMRS561J100NPOB
060-1002-0	R90 R92	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R16,24,26,46,93	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R20,31,35,37,76,77,88 R94-97	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1005-0	R2	RES, MF, 1.00M, 1%,1/8W, 060-1005-0	ECI	M1F1AM001.00
060-1212-0	R78	RES,METAL FILM, 1.21K, 1/8W, 1%	ECI	M1F1AK001.21
060-1213-0	R1,7,8,38,44,53,60,61 R66,68,89,91	RES,METAL FILM, 12.1K OHM, 1/8W, 1%	ECI	M1F1AK012.10
060-1214-0	R54	RES,METAL FILM, 121K, 1/8W, 1%	ECI	M1F1AK121.00
060-1374-0	R29	RES,METAL FILM, 137K, 1/8W, 1%	ECI	M1F1AK137.00
060-1503-0	R3 R10 R27 R86	RES,METAL FILM, 15.0K, 1/8W, 1%	ECI	M1F1AK015.00
060-1504-0	R40	RES,METAL FILM, 150K, 1/8W, 1%	ECI	M1F1AK150.00
060-1822-0	R18	RES,METAL FILM, 1.82K, 1/8W, 1%	ECI	M1F1AK001.82
060-2211-0	R25 R74	RES,METAL FILM, 221 ohm, 1/8W, 1%	ECI	M1F1AJ221.00
060-2212-0	R4,6,13,15,42,45,50,52 R85	RES,METAL FILM, 2.21K, 1/8W, 1%	ECI	M1F1AK002.21
060-2213-0	R28 R36 R73	RES,METAL FILM, 22.1K, 1/8W, 1%	ECI	M1F1AK022.10
060-2214-0	R47 R59	RES,METAL FILM, 221K, 1/8W, 1%	ECI	M1F1AK221.00
060-2215-0	R11	RES, METAL FILM, 2.21M, 1/8W, 1%	ECI	M1F1AM002.21
060-3012-0	R43	RES,METAL FILM, 3.01K, 1/8W, 1%	ECI	M1F1AK003.01
060-3322-0	R9 R30	RES,METAL FILM, 3.32K, 1/8W, 1%	ECI	M1F1AK003.32
060-3323-0	R34 R55	RES,METAL FILM, 33.2K, 1/8W, 1%	ECI	M1F1AK033.20
060-3482-0	R22	RES,METAL FILM, 3.48K, 1/8W, 1%	ECI	M1F1AK003.48
060-3922-0	R81	RES,METAL FILM, 3.92K, 1/8W, 1%	ECI	M1F1AK003.92
060-3923-0	R21	RES,METAL FILM,39.2K,1/8W,1%	ECI	M1F1AK039.2
060-3924-0	R12	RES,METAL FILM, 392K, 1/8W, 1%	ECI	M1F1AK392.00
060-4751-0	R84	RES,METAL FILM, 475 ohm, 1/8W, 1%	ECI	M1F1AJ475.00
060-4752-0	R14	RES,METAL FILM, 4.75K, 1/8W, 1%	ECI	M1F1AK004.75
060-4753-0	R5,56,58,63,67,82	RES,METAL FILM, 47.5K, 1/8W, 1%	ECI	M1F1AK047.50
060-4754-0	R62 R65 R69-70	RES,METAL FILM, 475K, 1/8W, 1%	ECI	M1F1AK475.00
060-5622-0	R17,48,51,71,75,83	RES,METAL FILM, 5.62K, 1/8W, 1%	ECI	M1F1AK005.62
060-6811-0	R39	RES,METAL FILM, 681 ohm, 1/8W, 1%	ECI	M1F1AJ681.00
060-6812-0	R80	RES,METAL FILM, 6.81K, 1/8W, 1%	ECI	M1F1AK006.81
062-0000-0	R33	RES, WIRE, 0.0 Ohm, 1/8W	ECI	R1 0.0 OHM
070-1513-0	R19 R32	POT,50K-15A,7MMB,KNURL,BRACKET	SONG HUEI	16K1-A50K-L15KC

Customer Name:	Gallien-Krueger	Current Rev #:		New ECO Rev #:	A1
Model:	Backline 250BL and 115	Distribute To:		Page:	1 Of: 1
Assembly Description:	preamp board	Originator:	RAG		
Assembly Numbers:	206-0181-A	Approved by:			
		Effective Date:			

Effective		Document Update		Date	Initials
<input type="checkbox"/>	All in Process	<input checked="" type="checkbox"/>	Next Buy		
<input type="checkbox"/>	All in Service	<input checked="" type="checkbox"/>	Next Production Run		
<input type="checkbox"/>	All in Stock	<input type="checkbox"/>			
Beginning Serial Number:		<input checked="" type="checkbox"/>	BOM		TC
Reason For Change		<input type="checkbox"/>	Control Form		
		<input checked="" type="checkbox"/>	Costing		TC
		<input type="checkbox"/>	Fab Drawing		
		<input type="checkbox"/>	Inspection Proc.		
		<input checked="" type="checkbox"/>	Part Master File		RAG
		<input checked="" type="checkbox"/>	Schematic		
		<input type="checkbox"/>	Service Manual		
		<input checked="" type="checkbox"/>	Test Procedure		
		<input type="checkbox"/>			
		<input type="checkbox"/>			

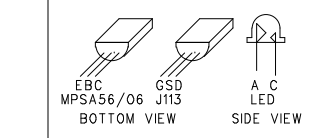
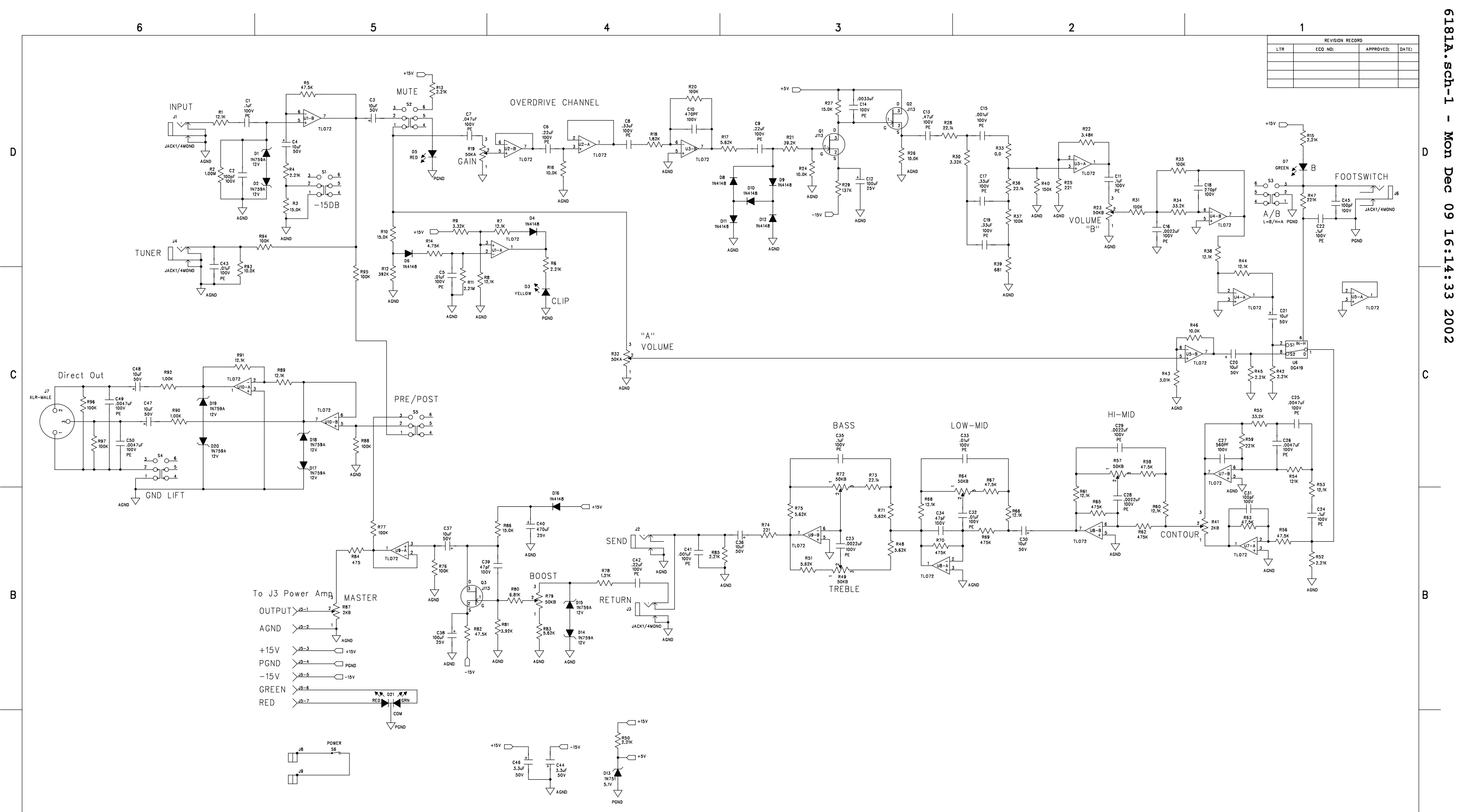
Other Affected Assemblies	
209-0180-A, 303-0180-A, 303-1180-A, 303-2180-A	

<input type="checkbox"/>	Continued on ECO Supplement Page				
Description Of Change		Distribution		Date	Initials
Update board to 206-0181-A from 206-0109-B2.		<input checked="" type="checkbox"/>	Accounting		
Update all pad and hole sizes.		<input type="checkbox"/>	Assembly		
		<input type="checkbox"/>	Customer		
		<input checked="" type="checkbox"/>	Engineering		
		<input checked="" type="checkbox"/>	Incoming Q.C.		
		<input type="checkbox"/>	Planning		
		<input checked="" type="checkbox"/>	Production Eng.		
		<input checked="" type="checkbox"/>	Purchasing		
		<input type="checkbox"/>	Q.A.		
		<input type="checkbox"/>	Receiving		
		<input checked="" type="checkbox"/>	Service		
		<input checked="" type="checkbox"/>	Test		
		<input type="checkbox"/>	Vendor		
		<input type="checkbox"/>			
		<input type="checkbox"/>			

<input type="checkbox"/>	Continued on ECO Supplement Page	<input type="checkbox"/>	Drawing(s) attached
--------------------------	----------------------------------	--------------------------	---------------------

Part Number	Description	Parts Added		Parts Deleted	
		Qty	Ref. Designator	Qty	Ref. Designator

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



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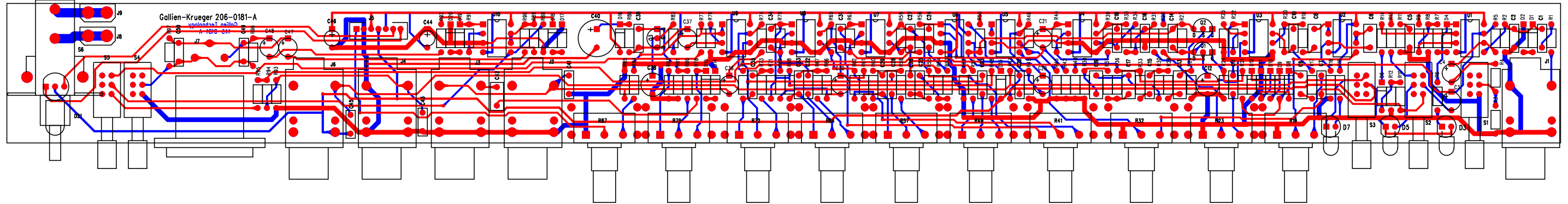
2240 PARAGON DRIVE
SAN JOSE CA. 95131
VOICE: 408-441-8081
FAX: 408-441-8085

1. UPDATE BOARD NO. TO 206-0181-A FROM 206-0109-A		APPROVALS		TITLE: BACKLINE 115 PREAMP
DESIGNED: R.A.G.	DATE: 1-31-01	INIT	DATE	REV. A
DRAWN: R.A.G.	DATE: 12/8/02			
ELEC:				
MECH:				
Q/A:				
RELEASED:				

COMPANY: GALLIEN-KRUEGER
PART NO: 206-0181-A
DRAWING NO: 406-0181-A
FILENAME: 6181A.SCH

Backline 115 Preamp 206-0181-A

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-1030-1	U1-5 U7-10	TLO72CP, LOW NOISE JFET OPAMP	MOTOROLA	TL072CP
001-3029-0	U6	DG419, Analog Switch	MAXIM	DG419DJ
010-2010-0	Q1-3	J113,N-JFET,35V,2MA,TO-92	NATIONAL	J113
020-0050-0	D13	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0120-0	D1-2 D14-15 D17-20	1N759A, ZENER,12V,5%,400MW, DO-35	MOTOROLA	1N759A
020-1000-0	D4 D6 D8-12 D16	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
025-0012-0	D21	LED,RED/GRN,5MM,630NM/560NM,15MCD/15	STANLEY	VRPG5614S
025-0023-0	D3	LED,YELLOW, 3MM, 585NM, 5MCD, 10MA	EVERLIGHT	EL204YD
025-0101-0	D7	LED,GREEN, 3MM, 565NM, 6MCD, 10MA	EVERLIGHT	EL204GD
025-0116-0	D5	LED,RED, 3MM, 635NM, 6MCD, 10MA, 40DEG	EVERLIGHT	EL2041D
031-1107-0	C12 C38	CAP,ELEC,RAD,107,20%,25V	UNITED CHEMI-CON	SMG25VB101M6X11LL
031-1477-0	C40	CAP, ELEC, RAD, 470uF, 20%, 25V	UNITED CHEMI-CON	SMG25VB471M10X12LL
031-2106-0	C3,4,20,21,30,36,37,47 C48	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2335-0	C44 C46	CAP,ELEC,RAD,335,20%,50V	UNITED CHEMI-CON	SMG50VB3R3M5X11LL
032-4102-0	C15 C41	CAP,PE,102,5%,100V,	PANASONIC	ECQB1102JF
032-4103-0	C5 C32-33 C43	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C1 C11 C22 C24 C35	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-4222-0	C16 C23 C28-29	CAP,PE,222,5%,100V,	PANASONIC	ECQB1222JF
032-4224-0	C6 C9 C42	CAP,PE,224,5%,100V,	PANASONIC	ECQV1224JM
032-4332-0	C14	CAP,PE,332,5%,100V,	PANASONIC	ECQB1332JF
032-4334-0	C8 C17 C19	CAP,PE,334,5%,100V,	PANASONIC	ECQV1334JM
032-4472-0	C25-26 C49-50	CAP,PE,472,5%,100V,	PANASONIC	ECQB1472JF
032-4473-0	C7	CAP,PE,473,5%,100V,	PANASONIC	ECQV1473JM
032-4474-0	C13	CAP,PE,474,5%,100V,	PANASONIC	ECQV1474JM
034-4101-0	C2 C31 C45	CAP,MCR,100pF,5%,100V,	TAITRON	TMRS101J100NPOB
034-4271-0	C18	CAP,MCR,270pF,5%,100V,	TAITRON	TMRS271J100NPOB
034-4470-0	C34 C39	CAP,MCR,47PF,5%,100V,NPO	TAITRON	TMRS470J100NPOB
034-4471-0	C10	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-4561-0	C27	CAP,MCR,560pF,5%,100V,	TAITRON	TMRS561J100NPOB
060-1002-0	R90 R92	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R16,24,26,46,93	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R20,31,35,37,76,77,88 R94-97	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1005-0	R2	RES, MF, 1.00M, 1%,1/8W, 060-1005-0	ECI	M1F1AM001.00
060-1212-0	R78	RES,METAL FILM, 1.21K, 1/8W, 1%	ECI	M1F1AK001.21
060-1213-0	R1,7,8,38,44,53,60,61 R66,68,89,91	RES,METAL FILM, 12.1K OHM, 1/8W, 1%	ECI	M1F1AK012.10
060-1214-0	R54	RES,METAL FILM, 121K, 1/8W, 1%	ECI	M1F1AK121.00
060-1374-0	R29	RES,METAL FILM, 137K, 1/8W, 1%	ECI	M1F1AK137.00
060-1503-0	R3 R10 R27 R86	RES,METAL FILM, 15.0K, 1/8W, 1%	ECI	M1F1AK015.00
060-1504-0	R40	RES,METAL FILM, 150K, 1/8W, 1%	ECI	M1F1AK150.00
060-1822-0	R18	RES,METAL FILM, 1.82K, 1/8W, 1%	ECI	M1F1AK001.82
060-2211-0	R25 R74	RES,METAL FILM, 221 ohm, 1/8W, 1%	ECI	M1F1AJ221.00
060-2212-0	R4,6,13,15,42,45,50,52 R85	RES,METAL FILM, 2.21K, 1/8W, 1%	ECI	M1F1AK002.21
060-2213-0	R28 R36 R73	RES,METAL FILM, 22.1K, 1/8W, 1%	ECI	M1F1AK022.10
060-2214-0	R47 R59	RES,METAL FILM, 221K, 1/8W, 1%	ECI	M1F1AK221.00
060-2215-0	R11	RES, METAL FILM, 2.21M, 1/8W, 1%	ECI	M1F1AM002.21
060-3012-0	R43	RES,METAL FILM, 3.01K, 1/8W, 1%	ECI	M1F1AK003.01
060-3322-0	R9 R30	RES,METAL FILM, 3.32K, 1/8W, 1%	ECI	M1F1AK003.32
060-3323-0	R34 R55	RES,METAL FILM, 33.2K, 1/8W, 1%	ECI	M1F1AK033.20
060-3482-0	R22	RES,METAL FILM, 3.48K, 1/8W, 1%	ECI	M1F1AK003.48
060-3922-0	R81	RES,METAL FILM, 3.92K, 1/8W, 1%	ECI	M1F1AK003.92
060-3923-0	R21	RES,METAL FILM,39.2K,1/8W,1%	ECI	M1F1AK039.2
060-3924-0	R12	RES,METAL FILM, 392K, 1/8W, 1%	ECI	M1F1AK392.00
060-4751-0	R84	RES,METAL FILM, 475 ohm, 1/8W, 1%	ECI	M1F1AJ475.00
060-4752-0	R14	RES,METAL FILM, 4.75K, 1/8W, 1%	ECI	M1F1AK004.75
060-4753-0	R5,56,58,63,67,82	RES,METAL FILM, 47.5K, 1/8W, 1%	ECI	M1F1AK047.50
060-4754-0	R62 R65 R69-70	RES,METAL FILM, 475K, 1/8W, 1%	ECI	M1F1AK475.00
060-5622-0	R17,48,51,71,75,83	RES,METAL FILM, 5.62K, 1/8W, 1%	ECI	M1F1AK005.62
060-6811-0	R39	RES,METAL FILM, 681 ohm, 1/8W, 1%	ECI	M1F1AJ681.00
060-6812-0	R80	RES,METAL FILM, 6.81K, 1/8W, 1%	ECI	M1F1AK006.81
062-0000-0	R33	RES, WIRE, 0.0 Ohm, 1/8W	ECI	R1 0.0 OHM
070-1513-0	R19 R32	POT,50K-15A,7MMB,KNURL,BRACKET	SONG HUEI	16K1-A50K-L15KC



PCB WORK INSTRUCTIONS

DWG #420-0181-A

NOTES:

UNLESS OTHERWISE SPECIFIED:

1. SQUARE PADS ON THRU HOLE PARTS (ie: CONNECTORS, DIPS, SIPS, LEDES) DENOTE PIN 1.
2. ALL BOARDS REQUIRE A COMPLETE AND THOROUGH VISUAL INSPECTIONS.
3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANSI/IPC-A-610B.

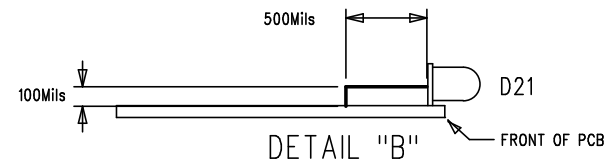
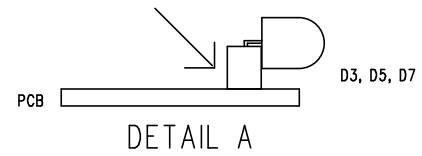
LOADING

5. CLIP BRACK FROM RIGHT SIDE OF R19 TO CLEAR D7.
6. SEE DETAIL A FOR MOUNTING D3, 5 AND 7
7. SEE DETAIL "B" FOR MOUNTING D21

FINAL QA

8. CHECK TO SEE ALL POTS, JACKS, AND SWITCHES ARE MOUNTED FLUSH AND STRAIGHT

LED SPACER
GT PART# 100-0119-0



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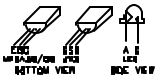
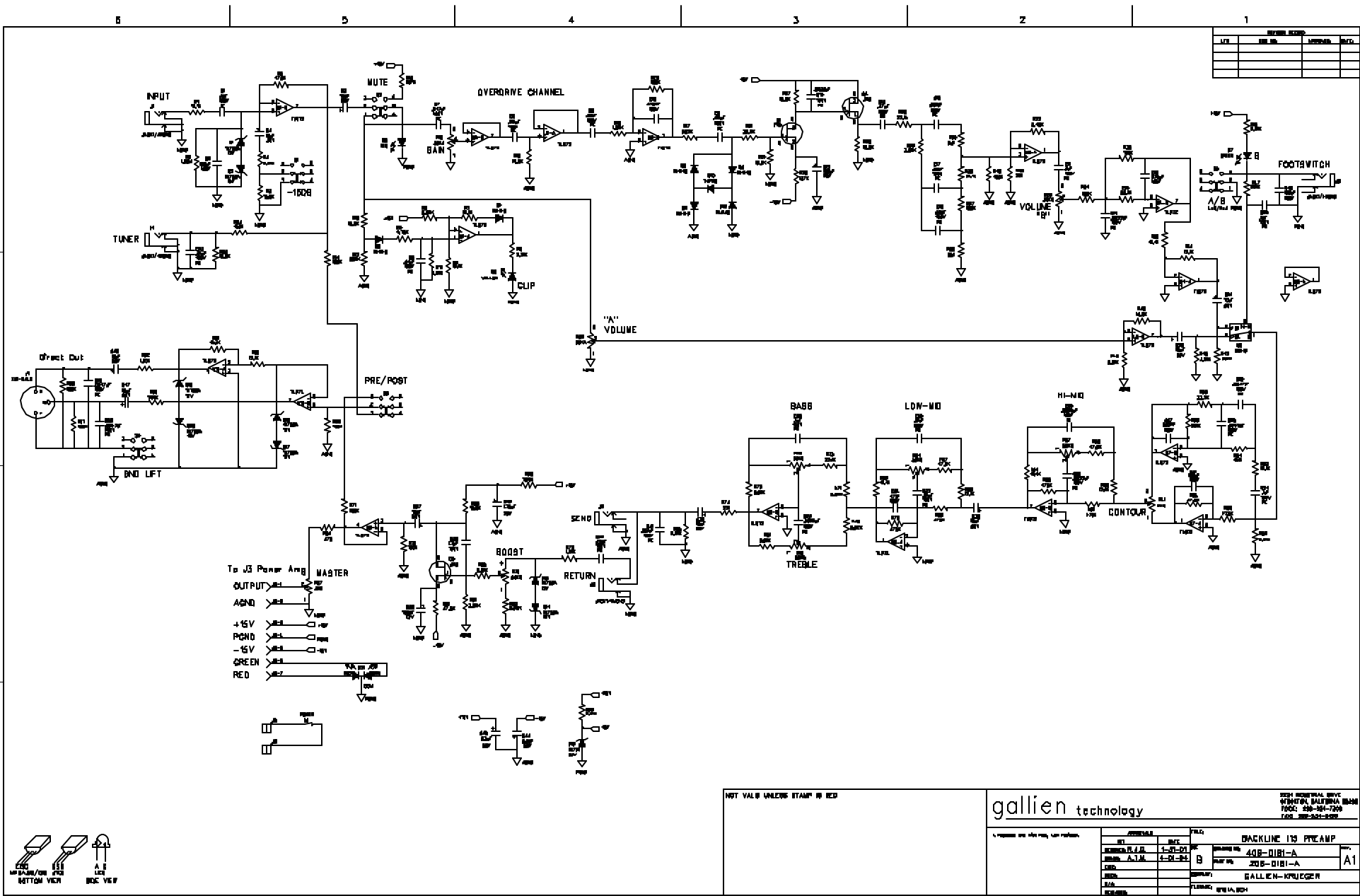
gallien technology

2240 PARAGON DRIVE
SAN JOSE CA, 95131
VOICE: 408-441-8081
FAX: 408-441-8085

APPROVALS		TITLE:	
INIT	DATE	BACKLINE 115 PREAMP BD	
DESIGNED: R.A.G.	12/115/00	SIZE: B	DRAWING NO: 405-0181-A
DRAWN: R.A.G.	12/8/02		PART NO: 145-0181-A
ELEC:		REV. A	
MECH:		COMPANY: GALLIEN-KRUEGER	
GERBER FILE NAME: ssd020.pho		FILENAME: 5181A	

LAYER DESCRIPTION:
TOP SIDE IS OUTSIDE IN

Customer Name:	Gallien-Krueger	Current Rev #:		New ECO Rev #:	A1
Model:	Backline 250BL and 115	Distribute To:		Page:	1 Of: 1
Assembly Description:	preamp board	Originator:	Arnel Millet		
Assembly Numbers:	206-0181-A	Approved by:			
		Effective Date:	4/1/2004		
Effective		Document Update		Date	Initials
<input type="checkbox"/>	All in Process	<input checked="" type="checkbox"/>	Next Buy		
<input type="checkbox"/>	All in Service	<input checked="" type="checkbox"/>	Next Production Run		
<input type="checkbox"/>	All in Stock	<input type="checkbox"/>			
Beginning Serial Number:		<input checked="" type="checkbox"/>	BOM		TC
Reason For Change		<input type="checkbox"/>	Control Form		
The BOOST circuit on the preamp board is loosing its bias causing it to loose the signal during normal operation.		<input checked="" type="checkbox"/>	Costing		TC
		<input type="checkbox"/>	Fab Drawing		
		<input type="checkbox"/>	Inspection Proc.		
		<input checked="" type="checkbox"/>	Part Master File		RAG
		<input checked="" type="checkbox"/>	Schematic		ATM
		<input type="checkbox"/>	Service Manual		
		<input checked="" type="checkbox"/>	Test Procedure		ATM
		<input type="checkbox"/>			
		<input type="checkbox"/>			
Other Affected Assemblies					
		209-0180-A, 303-0180-A, 303-1180-A, 303-2180-A			
<input type="checkbox"/>	Continued on ECO Supplement Page				
Description Of Change		Distribution		Date	Initials
Replace D16 with 1.0K resistor to bias the BOOST circuit properly.		<input checked="" type="checkbox"/>	Accounting		
		<input type="checkbox"/>	Assembly		
		<input type="checkbox"/>	Customer		
		<input checked="" type="checkbox"/>	Engineering		
		<input checked="" type="checkbox"/>	Incoming Q.C.		
		<input type="checkbox"/>	Planning		
		<input checked="" type="checkbox"/>	Production Eng.		
Update board # to 206-0181-A1 from 206-0181-A		<input checked="" type="checkbox"/>	Purchasing		
		<input type="checkbox"/>	Q.A.		
		<input type="checkbox"/>	Receiving		
		<input checked="" type="checkbox"/>	Service		
		<input checked="" type="checkbox"/>	Test		
		<input type="checkbox"/>	Vendor		
		<input type="checkbox"/>			
		<input type="checkbox"/>			
<input type="checkbox"/>	Continued on ECO Supplement Page				
<input type="checkbox"/>	Drawing(s) attached				
Part Number	Description	Parts Added		Parts Deleted	
		Qty	Ref. Designator	Qty	Ref. Designator
020-1000-0	1N4148, DIODE			1	D10
060-1002-0	1.0K, 1/8W, 1%	1	R69		



Backline 250 and 115 Test Wave Forms

Initial Set up

Input Condition:

Generator @ 200 Hz square wave and @ -33dB level (22.4 mVrms)

Scope Set up:

2 V/div and 1 ms/div

Unit under test:

No load, All switches out, Gain @ maximum (10), Level "A" and "B" @ 12 o'clock, Contour @ minimum (0), All active EQ @ 12 o'clock, Boost @ minimum (0) and Master @ Maximum (10).

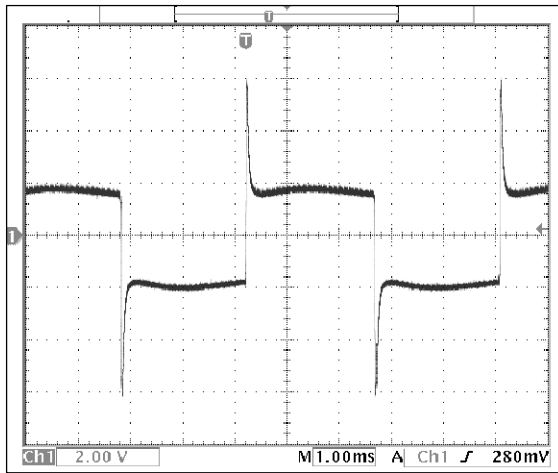


FIGURE 1

Set up: Per initial

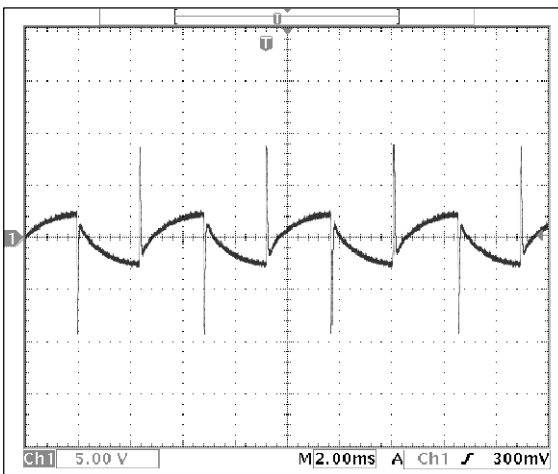


FIGURE 2

Set up: With reference to initial set up
Set Contour to maximum (10)
Scope @ 5 V/div and 2ms/div

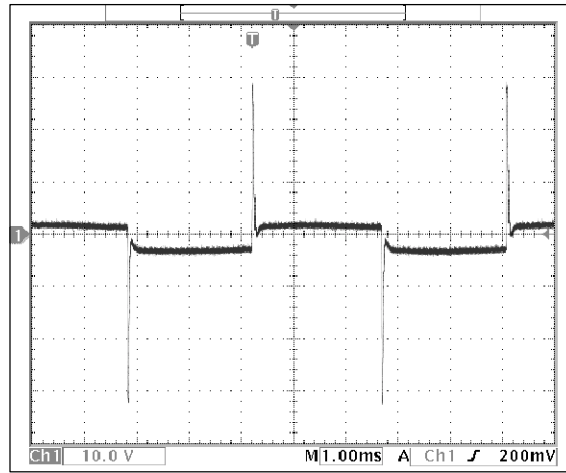


FIGURE 3

With reference to initial set up
Set Treble to maximum (10)
Scope @ 10 V/div and 1ms/div

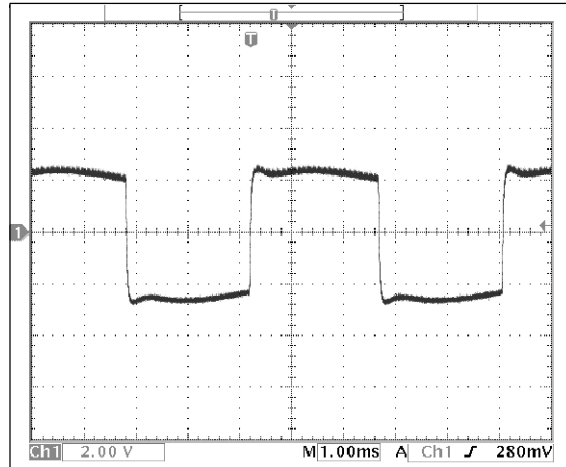


FIGURE 4

With reference to initial set up
Set Treble to minimum (0)
Scope @ 2V/div and 1ms/div

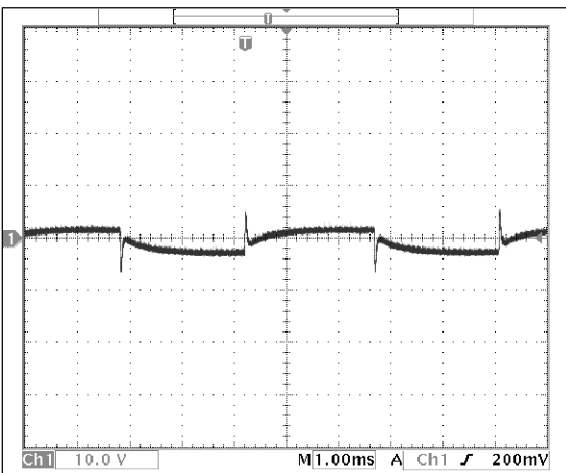


FIGURE 5

With reference to initial set up
Set Hi-Mid to minimum (0)
Scope @ 10V/div and 1ms/div

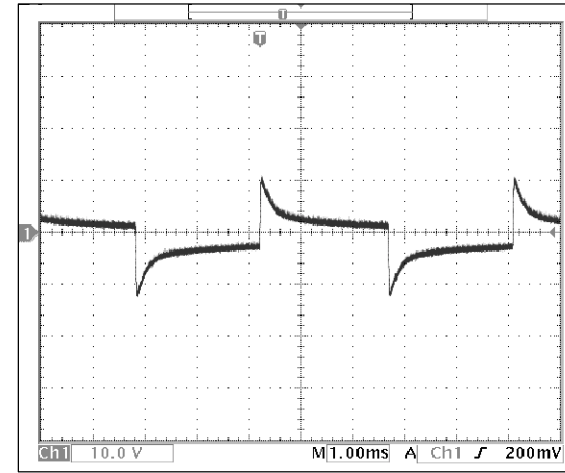


FIGURE 6

With reference to initial set up
Set Hi-Mid to maximum (10)
Scope @ 10 V/div and 1ms/div

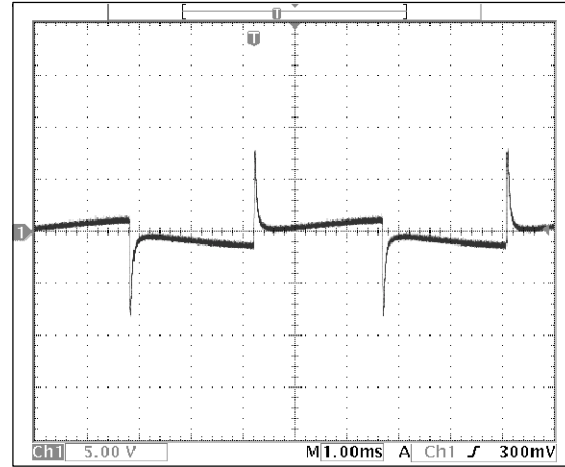


FIGURE 7

With reference to initial set up
Set Low-Mid to minimum (0)
Scope @ 5V/div and 1ms/div

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APPROVAL

DEPT.	INITIAL	DATE

gallien technology
2240 PARAGON DRIVE
SAN JOSE, CA 95131

TITLE
BACKLINE 250/115 TEST WAVE FORMS

FILE NAME	REV.
DOCUMENT NUMBER	SIZE
SCALE	SHEET 1 of 2

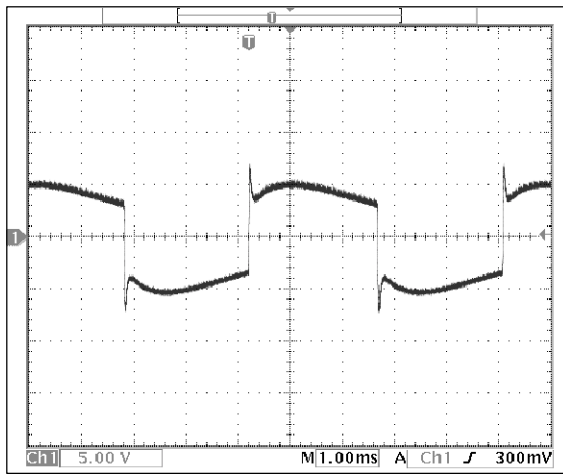


FIGURE 8

With reference to initial set up
Set Low-Mid to maximum (10)
Scope @ 5 V/div and 1ms/div

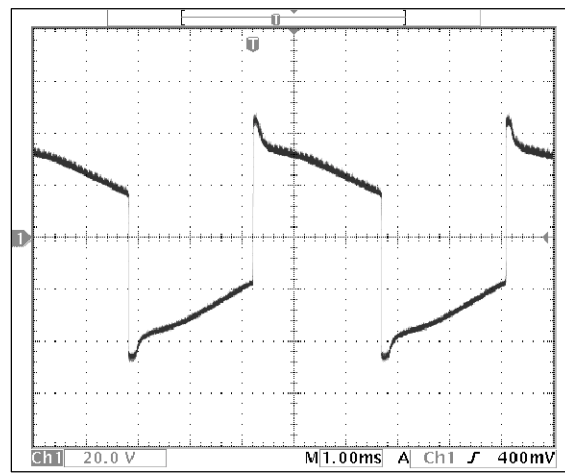


FIGURE 11

With reference to initial set up
Set boost to maximum (10)
Scope @ 20 V/div and 1ms/div

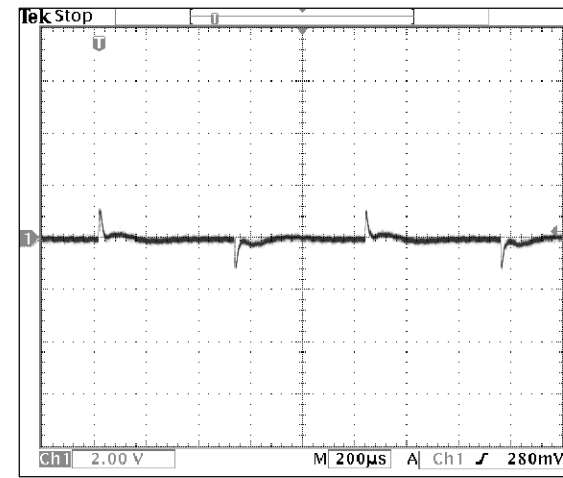


FIGURE 13

With reference to Over Drive channel set up
Set Gain to minimum (0)
Scope @ 2 V/div and 200 micro second/div

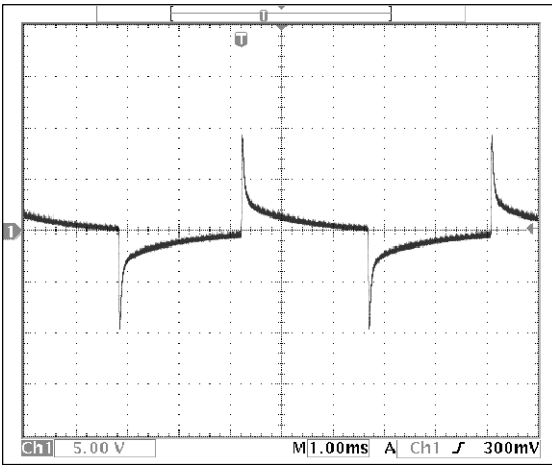


FIGURE 9

With reference to initial set up
Set Bass to minimum (0)
Scope @ 5V/div and 1ms/div

**Backline 250 and 115 Test Wave Forms
Over Drive Channel ("B")**

With reference to initial set up, set switch A/B to in position.
Set input signal to 1Khz square wave, level to -33 dB (22.4m Vrms).
Scope @ 2V/div and 200 micro second/div.

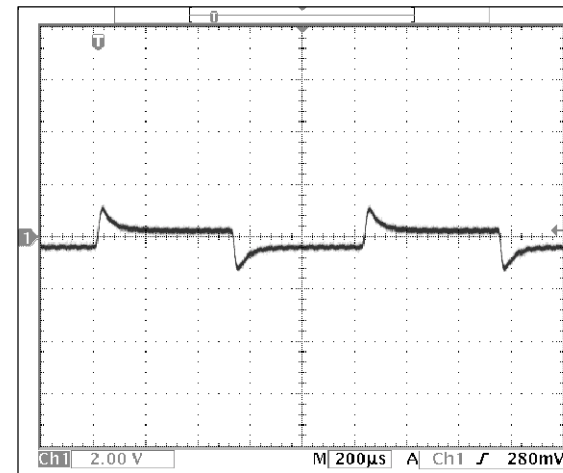


FIGURE 14

With reference to initial set up
Set -10dB switch to in position
Scope @ 2 V/div and 200 micro second/div

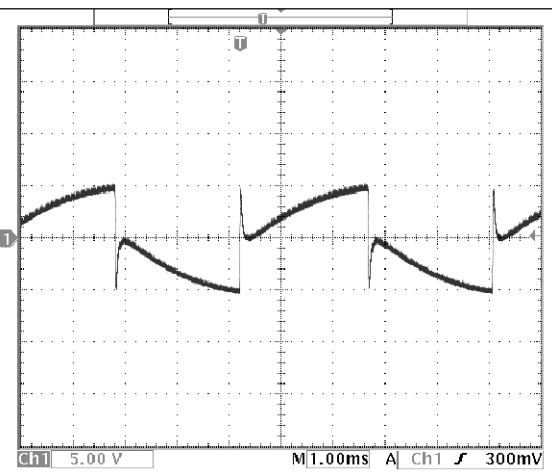


FIGURE 10

With reference to initial set up
Set Bass to maximum (10)
Scope @ 10V/div and 1ms/div

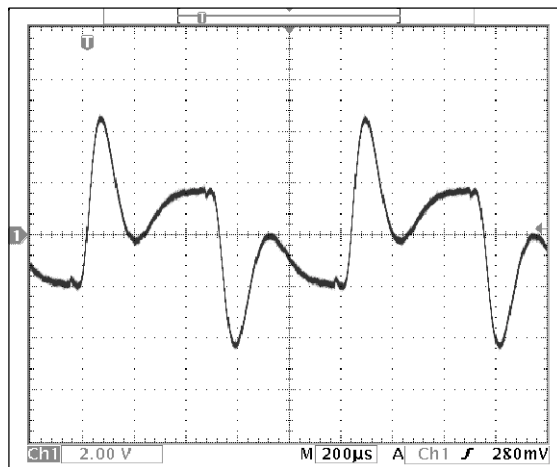


FIGURE 12

Per above mentioned set up

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APPROVAL

DEPT.	INITIAL	DATE

gallien technology
2240 PARAGON DRIVE
SAN JOSE, CA 95131

TITLE
**BACKLINE 250/115
TEST WAVE FORMS**

FILE NAME	REV.
DOCUMENT NUMBER	SIZE
SCALE	SHEET 2 of 2