

# ALESIS

## MultiMix 16 USB (XU7)

# Service Manual

P/N: 8-31-0157-A

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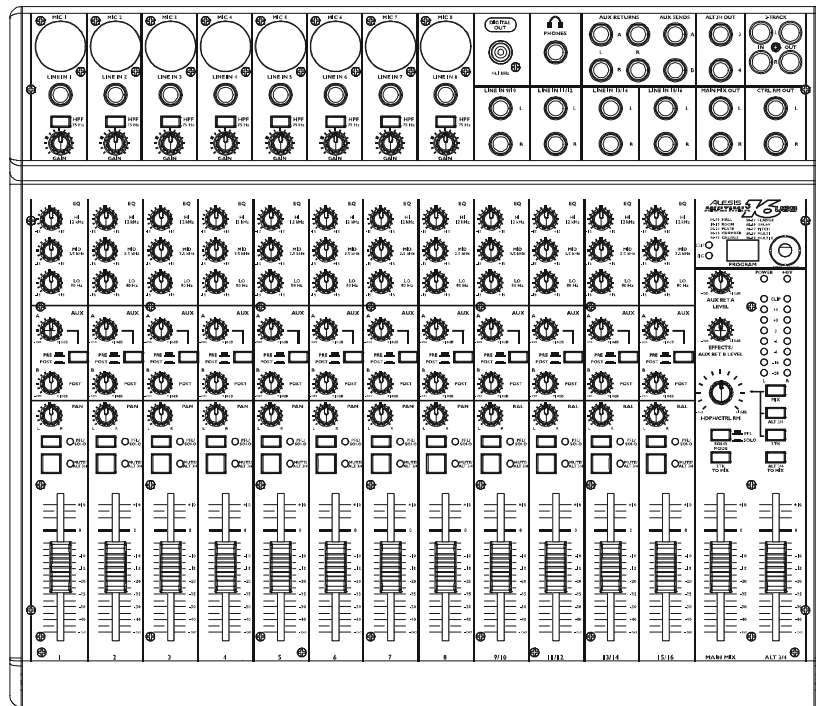
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# SERVICE MANUAL

MODEL: MULTIMIX 16USB



## Multimix 16 USB Key Features

### Three Models:

Multimix 16 USB (8 mic/line preamps, 4 stereo inputs)

**Clean and powerful preamps** – up to 50dB of preamp gain for capturing quiet sources. Globally switched phantom power.

**4 Stereo inputs** – Great for line-level instruments.

**Internal digital effects processor with 100 preset effects and an easy-to-read display** – includes a variety of reverbs, delays, choruses, flanges, a pitch transposer and multiple combinations of these.

**3-band EQ per channel** – a potent tool for sonically shaping each channel to get that perfect mix.

**1 pre/post-fader aux send per channel (switchable)** – gives you control over the level of the pre- or post-fader signal being routed to an external device.

**1 post-fader aux send/effects send per channel** – a control for the signal being routed to another external device or to the onboard effects processor.

**Control room output level** – provides control over the separate control room output

**2-track send and return** – lets you mix your audio to tape or other media and to add a tape deck or CD player to the mix.

**Stereo USB input and output** – routes the main output and the 2-track return through the USB port in crystal-

clean, 16-bit, 44.1 kHz stereo digital audio. Use the Multimix USB as a high-quality soundcard for recording and playback with Windows and Macintosh computers.

## Specifications

For the more technical-minded, here are some detailed specifications for the MultiMix's operating levels.

### Input Channels

Mic In Sensitivity Range: -60dBu to -10dBu nominal, +5dBu Maximum

Line In Sensitivity Range: -40dBu to +10dBu nominal, +25dBu maximum

Mic/Line Gain Range: +10 to +60dB

### Equalization

High-Pass Filter: 75Hz, 18dB/octave

High Shelving: 12kHz, +/- 15dB

Mid Bandpass/Band Reject: 2.5 kHz, +/- 15dB

Low Shelving: 80Hz, +/- 15dB

### Aux Sends

Aux Send A & B Gain Range: - to +10dB

### Aux Returns

Aux Return A Gain Range: - to +15dB

Effects Level/

Aux Return B Gain Range: - to +15dB

### Channel Levels

Channel Level Gain Range: - to +10dB

### Master Levels

Main Mix, Ctrl Room Gain

Range: - to +10dB

**1/4" Inputs**

Stereo Aux Return Level: +4dBu nominal, +20dBu maximum

**RCA Inputs**

Tape In Level: -10dBV nominal, +5dBV maximum

**1/4" Outputs**

Main Mix, Ctrl Room,

Aux 3/4, Ext Aux

Send Level: +4dBu nominal, +20dBu maximum

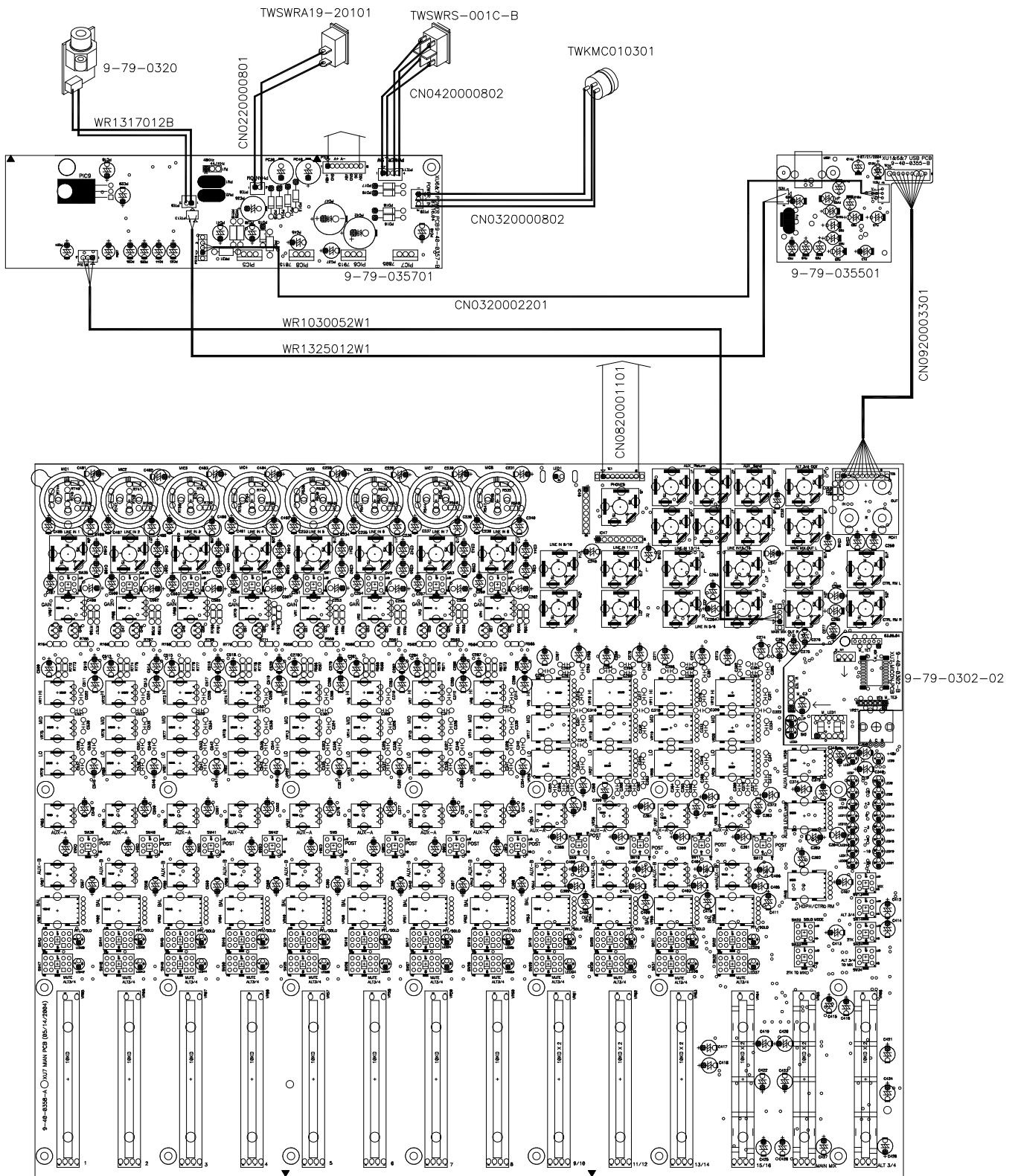
Headphone Output: 75 ohm output impedance  
>105mW into 75 ohms, >40mW  
into 600ohms

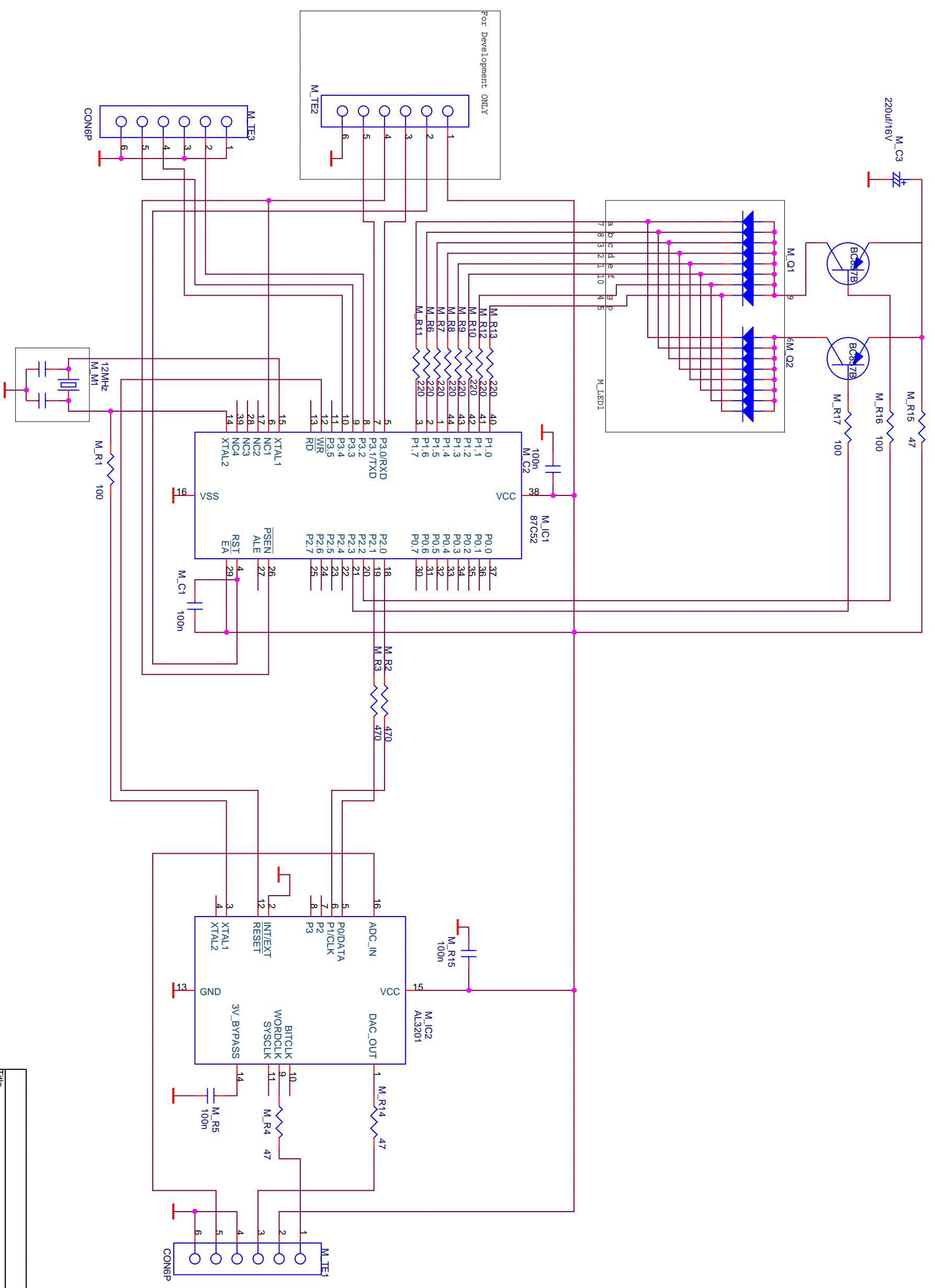
**RCA Outputs**

Tape Out Level: -10dBV nominal, +5dBV maximum

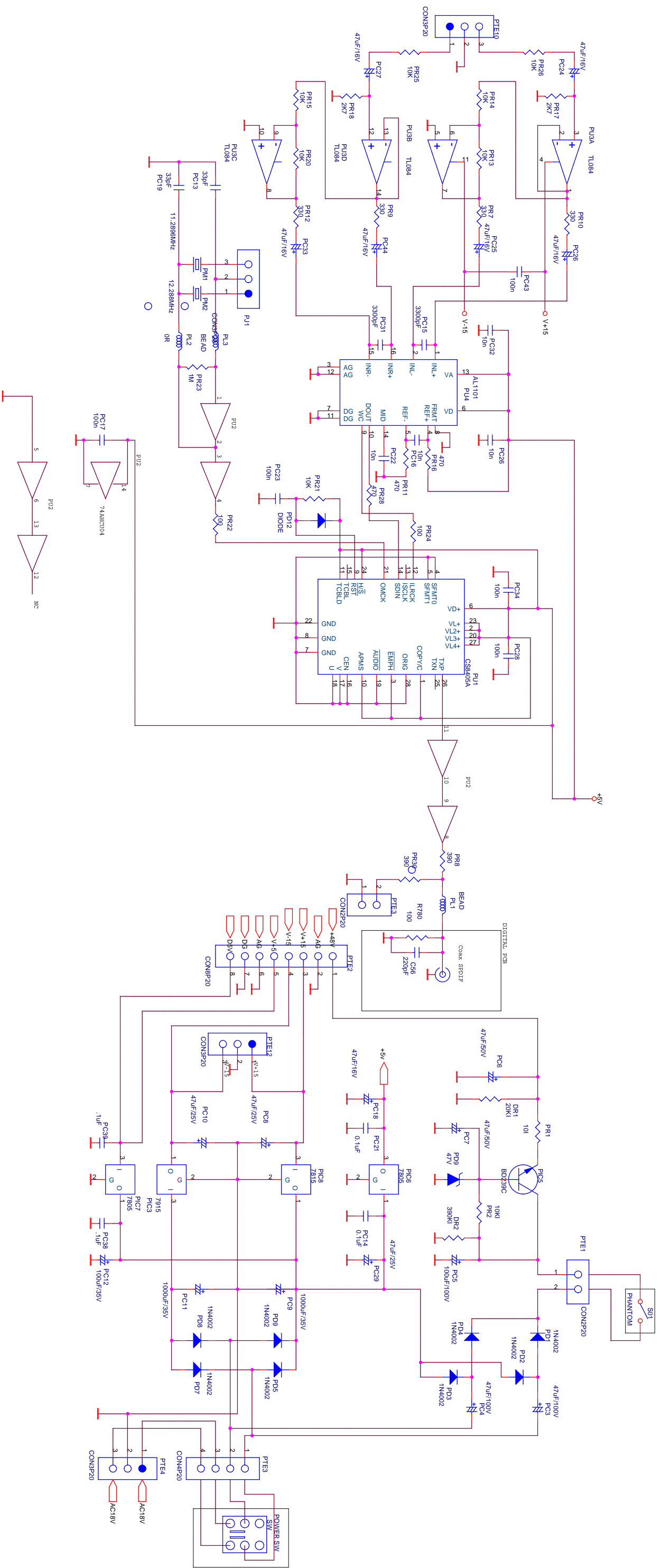
# WIRING DIAGRAM

## (US/EU/UK/AUS NZ)

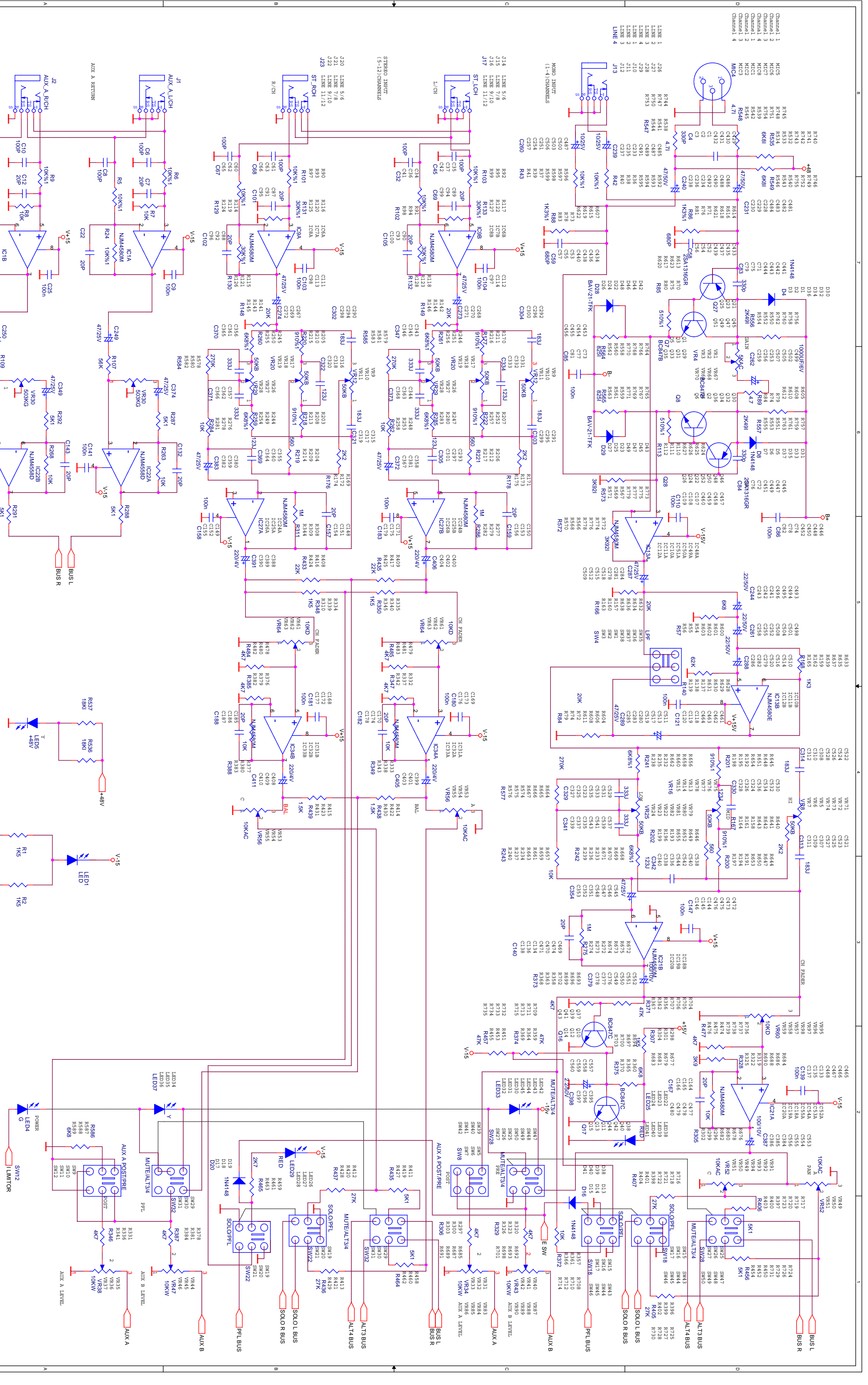




Title		MICON_DSP for XAXU SERIES	
Size	Document Number	XAXXAXMICON	
A3	Rev	PP	
Date:	Tuesday, September 16, 2003	Sheet	3 of 3



Title	Digital Out for XLR6XU7
Size	A2
Document Number	XLR6XU6 POWER
Date:	Monday, August 30, 2004
Sheet	1 of 0
Rev	

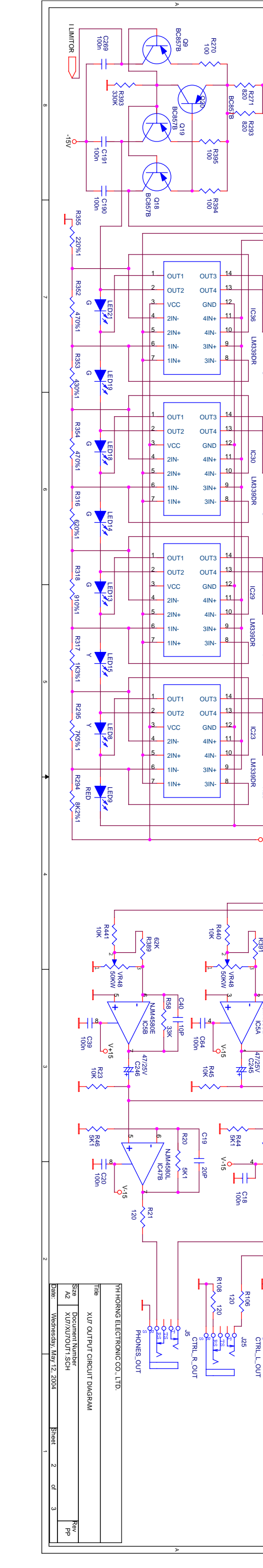
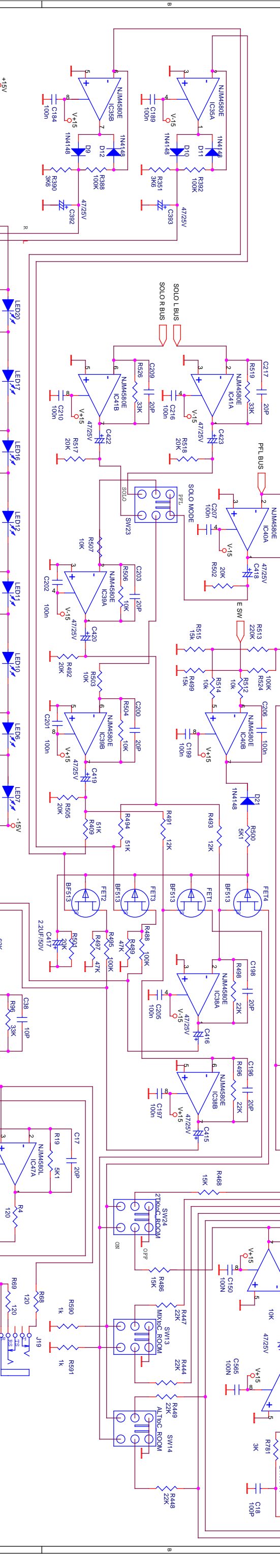
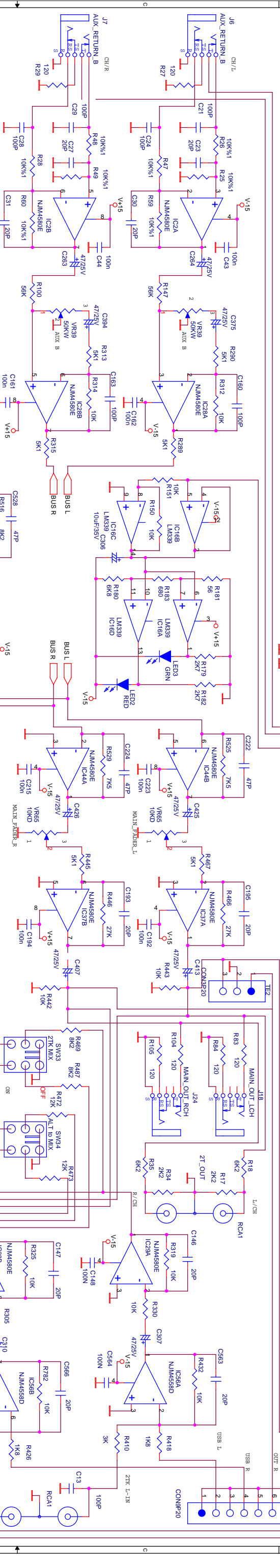
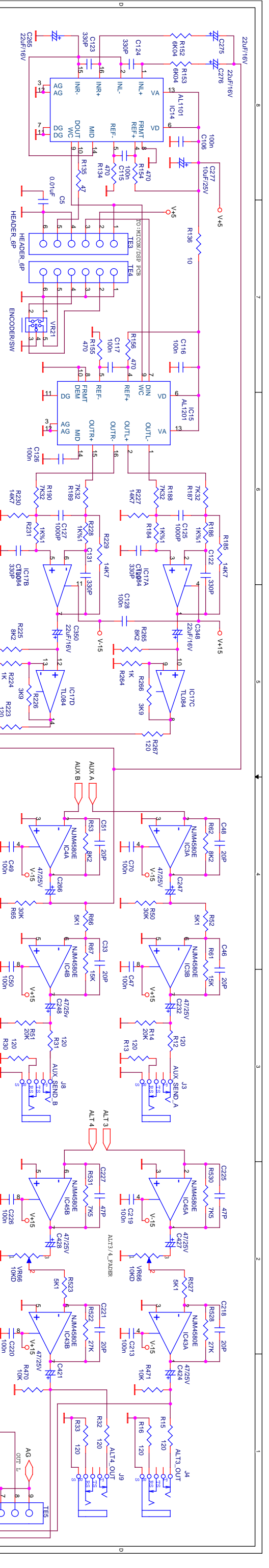


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Title: XLR INPUT CIRCUIT DIAGRAM

Size: Document Number: XUYX/UTINI-SCH

Date: Wednesday, May 12, 2004 Sheet: 1 of 3



Rev	PP
1	
2	
3	

Sheet 1 of 3

Date: Wednesday, May 12, 2004

File: XUP\_OUTPUT\_CIRCUIT\_DIAGRAM

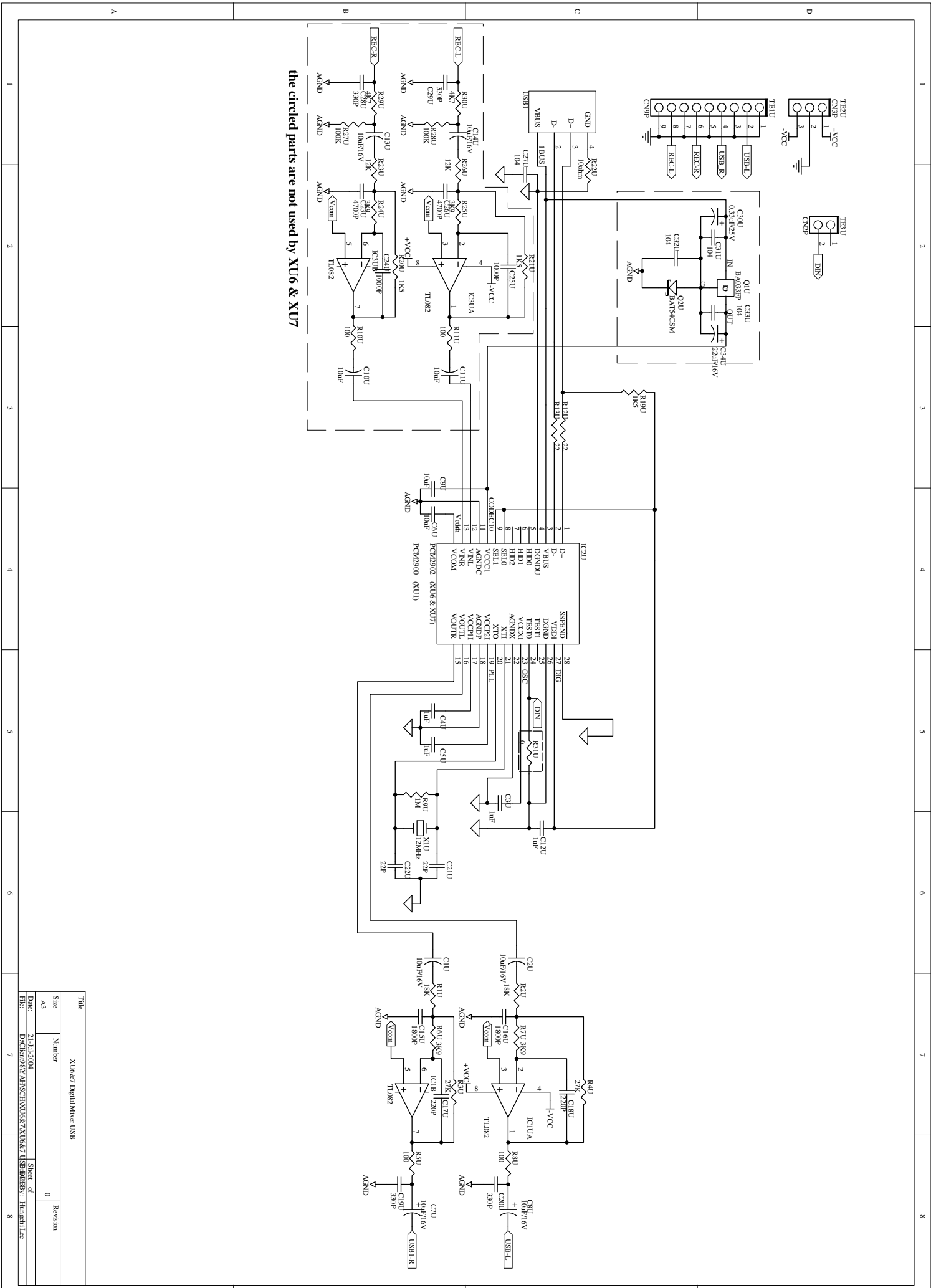
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Size: XUP\_OUT/OUT1.SCH

YIHORNG ELECTRONIC CO., LTD.

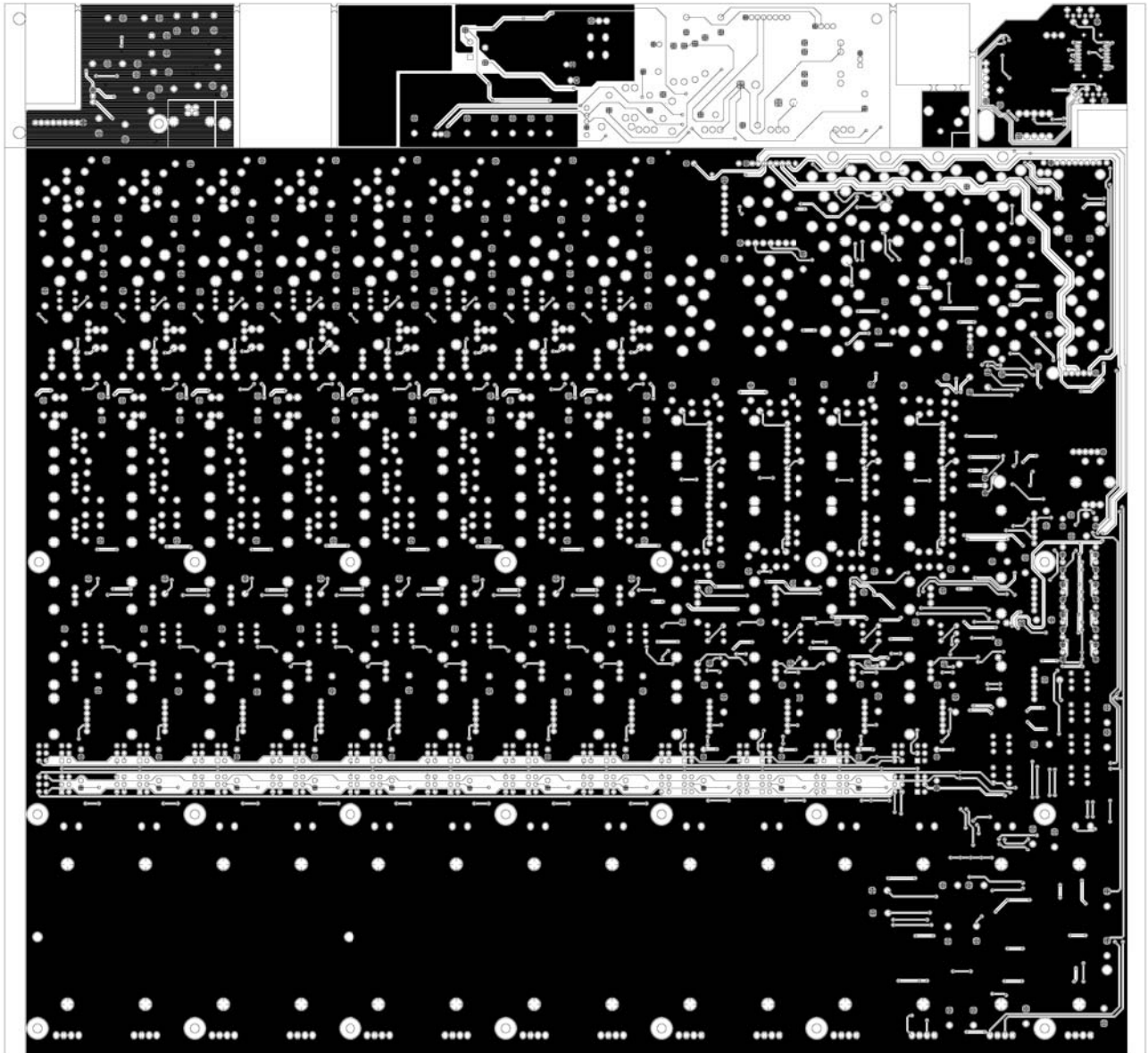
XUP OUTPUT CIRCUIT DIAGRAM

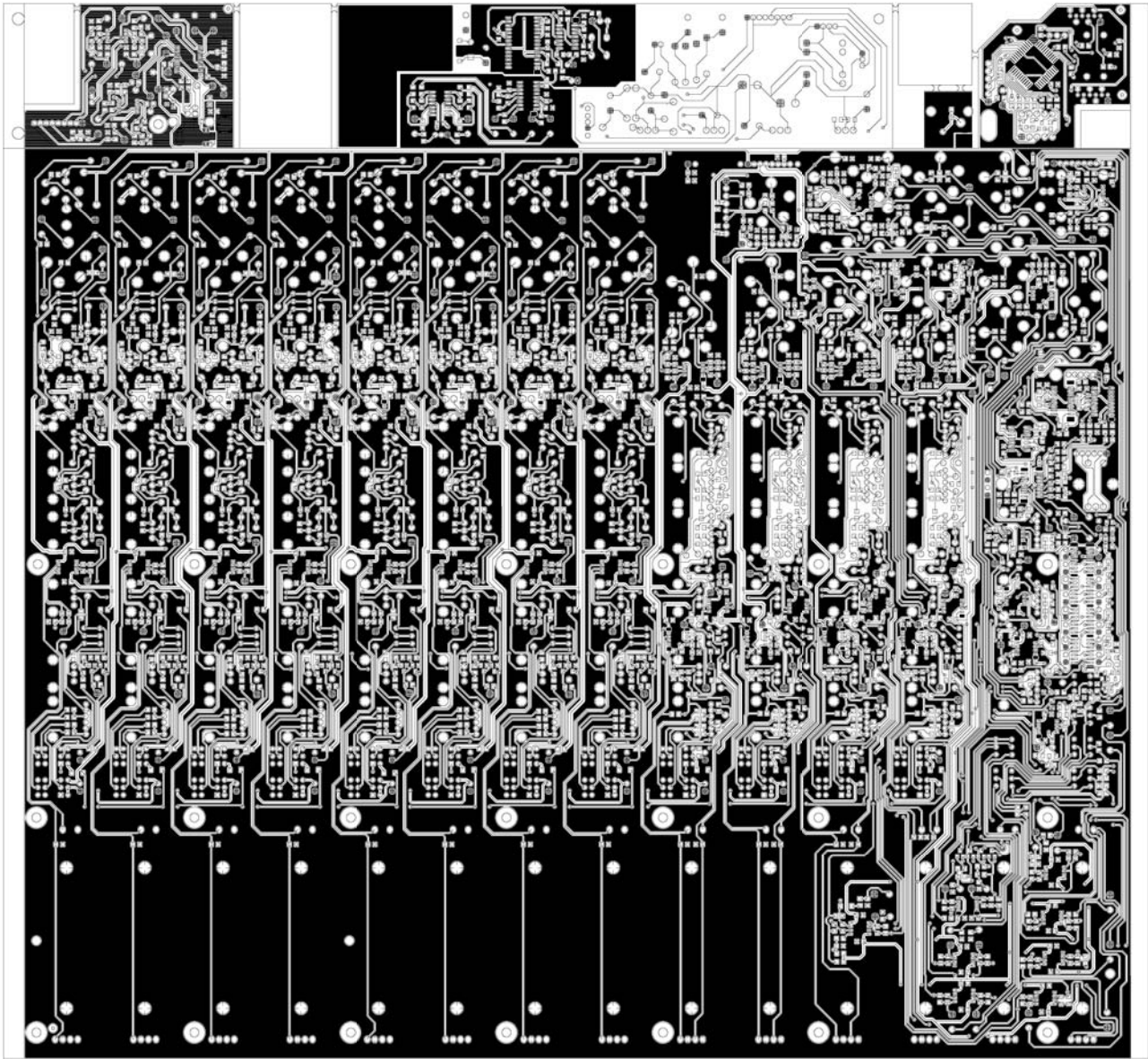


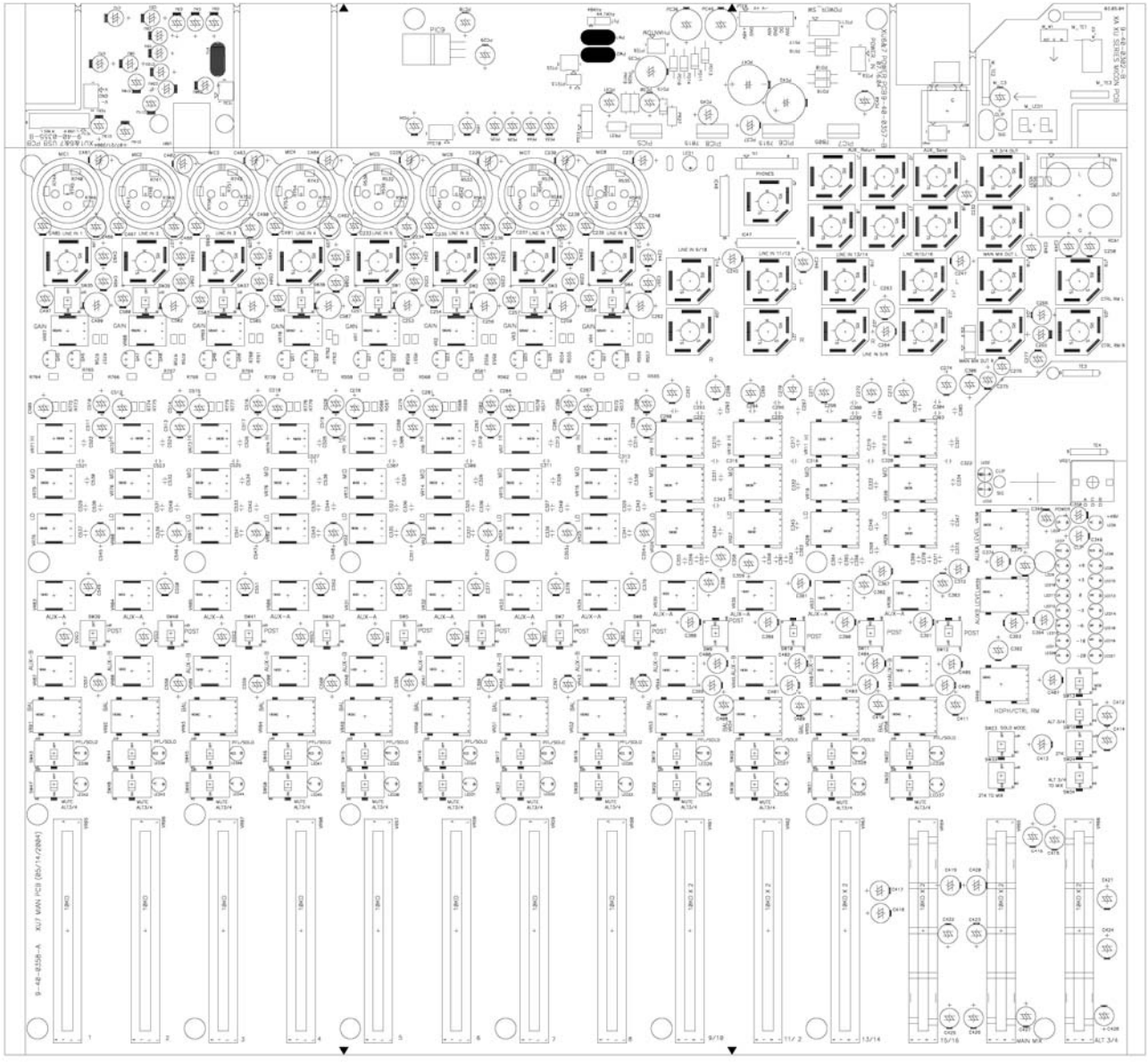


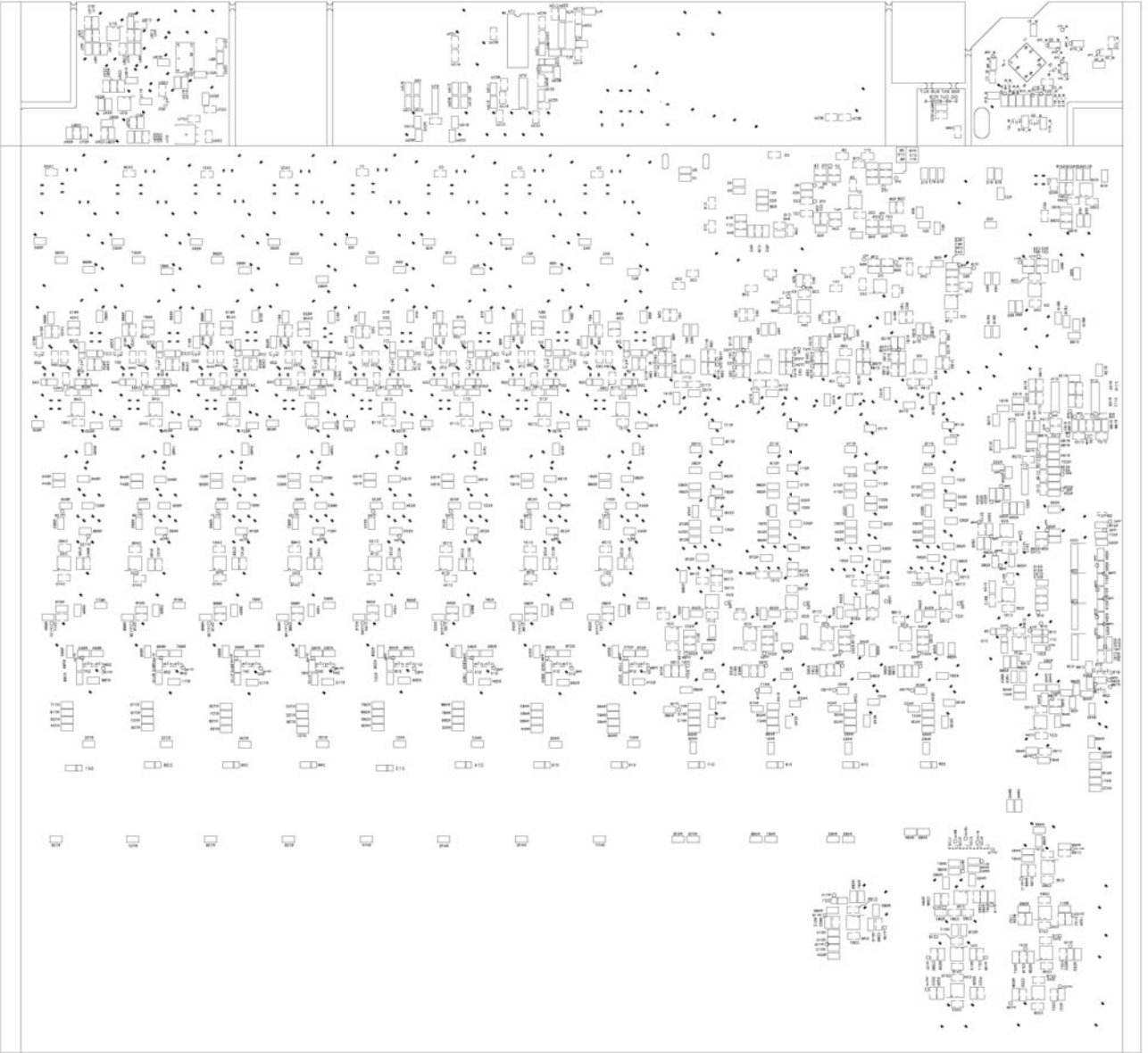
the circled parts are not used by XU6 & XU7

Title		X16&K7 Digital Mixer USB	
Size	Number	Revision	0
A3			
Date	Sheet of		
21 Jul 2004	1		
File	D:\Component\AV\SH\X16&K7\USB\033P.DOC		
	Filename: 16m3311ce		









# ALESIS

## MultiMix 16 USB (XU7)

### BOM

## MULTIMIX 16USB BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
1	PT1310617	KNOB CAP LARGE BLUE	1	33
1	PT1310618	KNOB LARGE	1	34
1	PT1310619	KNOB CAP SMALL BLUE	37	1
1	PT1310620	KNOB CAP SMALL GREEN	14	4
1	PT1310621	KNOB CAP SMALL RED	24	3
1	PT1310622	KNOB CAP SMALL BLACK	8	20
1	PT1310623	KNOB SMALL	74	2
1	PT1310624	SWITCH CAP	38	8
1	PT1310628	ENDCAP PLASTIC LEFT	1	7
1	PT1310627	ENDCAP PLASTIC RIGHT	1	23
1	MT1330019	FRONT PLATE	1	39
1	MT1330322	BOTTOM CHASSIS	1	31
1	SC0306RIBI	SCREW	39	5
1	MT130443701	ALUMINUM PAMEL	1	12
1	LAC22ALE26	STICKER BARCODE UPC	1	25
1	PXU7ALE02	PACK	1	
2	CGXU7310ALE01	INNER CARTON	1	
2	CTXU7513ALE01	OUTTER CARTON	0.5	
2	7-91-1002	GEL SILICA	1	
2	PLXA201	POLY FOAM	1	
2	7-51-1219	SHEET	1	
2	PE150350BO	POLYBAG	0.01	
2	PE5161304RHP	POLYBAG	0.01	
2	PUXA701	FOAM	1	
2	PLXA701	POLYFOAM	1	
2	7-51-0181	INSTRUCTION BOOK	1	
1	5-00-1308	SCREW	30	6
1	9-23-1024	FEET RUBBER	4	32
1	BATO-220	GASKET	1	18
1	NP613ALE27	NAME PLATE	1	36
1	PT1310626	SLIDER CAP	14	11
1	PT1310634	INDICATOR	14	10
1	PT1310625	SWITCH CAP	12	9
1	LAP67YAH255	LABEL	3	
1	RU1304406	RUBBER	1	41
1	RU1304407	GASKET	1	16
1	NUT0104IZI	NUT	4	45
1	CA040218001	6P CONNECTOR	1	
1	RU1304404	RUBBER	1	29
1	NP613ALE24	BEZEL LED DISPLAY XA SERIES MIXERS	1	35
1	PT1310633	KNOB	4	13
1	MT1304430	METEL PLATE	8	14
1	RU1304402	RUBBER	1	15
1	MT1303210	FIXED PLATE	1	19
1	PT1310635	KNOB	8	21
1	PT1310652	KNOB	1	22
1	LAC52ALE01	LABEL	1	30
1	WS114009605IN	WASHER	29	40
1	BAKCA-04	PCB HOLDER	2	43
1	CA040218001	6P CONNECTOR	1	44
<b>1</b>	<b>TWJKMC010301</b>	<b>POWER ASS'Y</b>	<b>1</b>	<b>26</b>
2	CN0320000802	3P CONNECTOR (80mm)	1	

## MULTIMIX 16USB BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
2	JKMC0103	MIC BASE	1	
<b>1</b>	<b>TWSWRA19-20101</b>	<b>POWER SWITCH ASS'Y</b>	<b>1</b>	<b>28</b>
2	CN0220000801	2P CONNECTOR (80mm)	1	
2	SWR19A-2	POWER SWITCH	1	
<b>1</b>	<b>TWSWRS-001C-B</b>	<b>POWER SWITCH ASS'Y</b>	<b>1</b>	<b>27</b>
2	CN0420000802	4P CONNECTOR (80mm)	1	
2	SWRS-001C-B	POWER SWITCH	1	
<b>1</b>	<b>9-79-035801</b>	<b>MIXER PCB ASS'Y</b>	<b>1</b>	<b>24</b>
<b>2</b>	<b>9-79-0302-02</b>	<b>MICON PCB ASS'Y</b>	<b>1</b>	<b>17</b>
3	EC22716TS	ELECT 220UF/16V (S)	1	M_C3
3	LDT2601G	LED	1	M_LED1
3	MT1303214	FIXED PLATE	1	(M_IC2)
3	RS10118J05	RESISTOR 100O (SMD)	3	M_R1,M_R16,M_R17
3	RS22118J05	RESISTOR 220O (SMD)	8	M_R6~M_R13
3	RS47018J05	RESISTOR 47O (SMD)	3	M_R4,M_R14,M_R15
3	RS47118J05	RESISTOR 470O (SMD)	2	M_R2,M_R3
3	TE162000601	TERMINAL	2	M_TE1,M_TE3
3	TRBC857B	TRANSISTOR BC857B	2	M_Q1,M_Q2
3	1-56-0104	CERAMIC 0.1UF (SMD)	4	M_C1,M_C2,M_C5,M_C15
3	2-27-0060	IC AL3201B	1	M_IC2
3	7-01-0033	CRYSTAL 12MHZ	1	M_M1
3	9-40-0302	MICON PCB	1	
3	9-61-0106	IC 87C518K	1	M_IC1
<b>2</b>	<b>9-79-0320</b>	<b>DIGITAL OUT PCB ASS'Y</b>	<b>1</b>	<b>38</b>
3	CS221J5005COG	CERAMIC 220P (SMD)	1	C561
3	MT1304439	FRAME PANEL	1	(J30)
3	RJ1081	RCA JACK	1	J30
3	RS10118J05	RESISTOR 100O (SMD)	1	R780
3	TE612000202	CONNECTOR 2P	1	PTE7
3	WR1317012B	CONNECTOR 2P (170mm)	1	(PTE7)
3	1-56-0104	CERAMIC 0.1UF (SMD)	1	C562
3	9-40-0320	DIGITAL OUT PCB	1	
<b>2</b>	<b>9-79-035502</b>	<b>USB PCB ASS'Y</b>	<b>1</b>	<b>37</b>
3	CS182K5005X7R	CERAMIC 1800P (SMD)	2	C15U,16U
3	CS220J5005COG	CERAMIC 22P (SMD)	2	C21U,22U
3	CS221J5005COG	CERAMIC 220P (SMD)	2	C17U,18U
3	CS331J5005COG	CERAMIC 330P (SMD)	2	C19U,20U
3	EC10550T	ELECT 1UF/50V	4	C3U,4U,5U,12U
3	EC10616T	ELECT 10UF/16V	6	C1U,2U,6U,7U,8U,9U
3	ICPCM2902E	IC PCM2902E	1	IC2U
3	RS10018J05	RESISTOR 100 (SMD)	1	R22U
3	RS10118J05	RESISTOR 100O (SMD)	2	R5U,8U
3	RS10518J05	RESISTOR 1M (SMD)	1	R9U
3	RS15218J05	RESISTOR 1K5 (SMD)	1	R19U
3	RS18318J05	RESISTOR 18K (SMD)	2	R1U,2U
3	RS22018J05	RESISTOR 22O (SMD)	2	R12U,13U
3	RS27318J05	RESISTOR 27K (SMD)	2	R3U,4U
2	RS39218J05	RESISTOR 3K9 (SMD)	2	R6U,7U



## MULTIMIX 16USB BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
3	TE612000202	CONNECTOR 2P	1	(TE3U)
3	TE612000301	CONNECTOR 3P	1	(TE2U)
3	TE612000901	CONNECTOR 9P	1	(TE1U)
3	XTM12000X3	CRYSTAL 12MHz	1	X1U
3	1-56-0104	CERAMIC 0.1UF (SMD)	1	C27U
3	2-71-0082	IC TL082	1	IC1U
3	4-08-0402	USB PLUG	1	USB1
3	9-40-0355	USB PCB	1	
<b>2</b>	<b>9-79-0357-01</b>	<b>POWER PCB ASS'Y</b>	<b>1</b>	<b>42</b>
3	CN0320002201	3P CONNECTOR (220mm)	1	PTE12
3	CS103Z5005Y5V	CERAMIC 0.01UF (SMD)	4	PC16,20,22,32
3	CS330J5005COG	CERAMIC 33P (SMD)	2	PC13,19
3	CS332K5005X7R	CERAMIC 3300P (SMD)	2	PC15,31
3	DIENLL4148SM	DIODE	1	PD12
3	DIN4002	DIODE	8	PD10,11,13,14,16,17,18,19
3	DIZBZX79C47V	DIODE	1	PD15
3	EC107100	ELECT 100UF/100V	1	PC35
3	EC10735T	ELECT 100UF/35V	1	PC40
3	EC10835	ELECT 1000UF/35V	2	PC42,47
3	EC476100	ELECT 47UF/100V	2	PC36,46
3	EC47625T	ELECT 47UF/25V	10	PC18,24,25,26,27,29,33,37,44,45
3	EC47650T	ELECT 47UF/50V	2	PC30,41
3	ICCS8405A	IC CS8405A	1	PU1
3	IC7805	IC 7805	2	PIC7,9
3	IC7815	IC 7815	1	PIC8
3	IC7915	IC 7915	1	PIC6
3	NUT0130IID	NUT	1	(PIC9)
3	RS00018J05	RESISTOR 00 (SMD)	1	PL12
3	RS10118J05	RESISTOR 1000 (SMD)	2	PR22,24
3	RS10318F05	RESISTOR 10K (SMD)1%	7	PR13,14,15,20,21,25,26
3	RS10518J05	RESISTOR 1M (SMD)	1	PR23
3	RS27218J05	RESISTOR 2K7 (SMD)	2	PR17,18
3	RS33118J05	RESISTOR 3300 (SMD)	4	PR7,9,10,12
3	RS39118J05	RESISTOR 3900 (SMD)	2	PR8,30
3	RS47118J05	RESISTOR 4700 (SMD)	3	PR11,16,28
3	R10018	RESISTOR 100 1/4W	1	PR31
3	R10318	RESISTOR 10K 1/4W	1	PR27
3	R20318	RESISTOR 20K 1/4W	1	PR19
3	R39418	RESISTOR 390K 1/4W	1	PR29
3	SC0308RIZI	SCREW	1	(PIC9)
3	TE512540301	TERMINAL 3P 2.54mm	1	PJ1
3	TE612000202	CONNECTOR 2P	2	(PTE5,6)
3	TE612000301	CONNECTOR 3P	2	(PTE9,10)
3	TE612000402	CONNECTOR 4P	1	(PTE11)
3	TE612000801	CONNECTOR 8P	1	(PTE8)
3	TE812000311	CONNECTOR 3P	1	(PTE12)
3	TE8731002	MINI JUMP	1	(PJ1)
3	TRBD239C	TRANSISTOR BD239C	1	PIC5
3	UH11-2012-102T	BEAD (SMD)	2	PL1,3
3	WR1325012W1	WIRE (250mm)	1	PTE13
3	1-56-0104	CERAMIC 0.1UF (SMD)	9	PC14,17,21,23,28,34,38,39,43
3	2-62-1004	IC 74AHCU04	1	PU2

## MULTIMIX 16USB BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
3	2-71-0084	IC TL084	1	PU3
3	2-75-1101	IC AL1101	1	PU4
3	7-01-0023	CRYSTAL 11.2896MHz	1	PM1
3	7-01-0024	CRYSTAL 12.288MHz	1	PM2
3	9-40-0357	POWER PCB	1	
<b>2</b>	<b>9-79-0358</b>	<b>MIXER PCB ASS'Y</b>	<b>1</b>	
3	CN0820001101	8P CONNECTOR (110mm)	1	TE1
3	CN0920003601	9P CONNECTOR (360mm)	1	ET5
3	CS100J5005COG	CERAMIC 10P (SMD)	2	C38,40
3	CS101J5005COG	CERAMIC 100P (SMD)	28	C6,8,10,11,14,21,24,26,28,29,32,34,35,36,37,41,42,45,60,61,62,63,65,66,67,68,160,163
3	CS102K5005X7R	CERAMIC 1000P (SMD)	2	C125,127
3	CS103K5005X7R	CERAMIC 0.01UF (SMD)	1	C5
3	CS200J5005COG	CERAMIC 20P (SMD)	78	51,69,87~96,99~102,105,132,134,136,138,140,143,148,150,151,153,154,156,157,159,164~167,170,174,178,182,185~188,193,195,196,198,200,203,209,211,214,217,218,221,469,470,471,474,477~480,563,566
3	CS331J5005COG	CERAMIC 330P (SMD)	30	4,129~131,429~432,441~445,447,449,451
3	CS470J5005COG	CERAMIC 47P (SMD)	5	C208,222,224,225,227
3	CS681J5005COG	CERAMIC 680P (SMD)	16	C52~59,433~440
3	DIENLL4148SM	DIODE	49	D1~49
3	EC10625T	ELECT 10UF/25V	17	C233,235,237,239,251,254,257,260,277,485,487,489,491,497,500,503,506
3	EC10635TS	ELECT 10UF/35V (S)	1	C306
3	EC10710TS	ELECT 100UF/10V (S)	16	C376~379,384~387,549~556
3	EC10806T	ELECT 1000UF/6.3V	8	C253,256,259,262,499,502,505,507
3	EC22450T	ELECT 0.22UF/50V	16	C241~244,252,255,258,261,493~496,498,501,504,508
3	EC22450TS	ELECT 0.22UF/50V (S)	8	C279,282,286,288,510,514,516,520
3	EC22550TS	ELECT 2.2UF/50V (S)	9	C395~398,417,557~560
3	EC22616TS	ELECT 22UF/16V (S)	5	C265,275,276,348,350
3	EC22710TS	ELECT 220UF/10V (S)	16	C388,389,390,391,399,400,401,402,403,404,405,406,408,409,410,411
3	EC47625TS	ELECT 47UF/25V (S)	73	C232,245~250,263,264,266~274,278,280,281,283,284,285,287,289,349,351~354,358,359,367,372,374,375,380~383,392~394,407,412~416,418~428,509,511~513,515,517~519,545~548
3	EC47650T	ELECT 47UF/50V	16	C228~231,234,236,238,240,481~484,486,488,490,492
3	IC4580L	IC NJM4580L	1	IC47
3	JK5031	XLR BASE	8	MIC1~8
3	JK6353-02-250	6.3F BASE	29	J1~29
3	LD-LG2040	GREEN LED	12	LED3,4,11,12,13,14,16,17,18,19,20,21
3	LDLT0311-41	RED LED	15	LED2,7,9,22~29,38,39,40,41
3	LDLY2040A	YELLOW LED	17	LED5,6,8,10,15,30~37,42~45
3	LDU326V4M	GREEN LED	1	LED1
3	MC12350TTF	MALYER CAP 0.012UF/50VJ	32	326,328,330~334,336,338,340,342,355,360,364,369,530,532,534,536,538,540,542,544
3	MC18350TTF	MALYER CAP 0.018UF/50VJ	32	C290~292,294~296,298~300,302~304,307~315,317,319,321,521~528

## MULTIMIX 16USB BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
3	MC33350TTF	MALYER CAP 0.033UF/50VJ	32	C323,325,327,329,335,337,339,341,343~347,356,357,361~363,365,366,368,370,371,373,529,531,533,535,537,539,541,543
3	MR249116	RESISTOR 2.49K 1/16W	16	R550~557,756~763
3	MR392116	RESISTOR 3.92K 1/16W	16	R566~573,772~779
3	MR680116	RESISTOR 6.8K 1/16W	16	R532~535,540,543,546,549,740~743,746,749,752,755
3	MR825016	RESISTOR 825O 1/16W	16	R558~565,764~771
3	MT1305501	COLLAR SHAFT	21	
3	PT111040105	FIXED BASE LED	44	(LED2~45)
3	PT1310658	LED HOLDER	1	(LED1)
3	RJGJ107NI	RCA JACK	1	RCA1
3	RS04718J05	RESISTOR 4.7O (SMD)	8	R74,79,84,89,605,608,610,612
3	RS10018J05	RESISTOR 10O (SMD)	1	R136
3	RS10118J05	RESISTOR 100O (SMD)	3	R270,394,395
3	RS10218F05	RESISTOR 1K (SMD)1%	8	R184,186,224,228,231,264,590,591
3	RS10318F05	RESISTOR 10K (SMD)1%	112	R5~11,23~26,28,36~43,45,47~49,59,60,90~95,97~99,101~103,114,119,124,129,150,151,234,237,240,243,248,253,258,262,263,268,276,278,281,284,296,299,302,305,312,314,333,338,343,349,357,361,366,372,377,380,383,386,432,440~443,470,471,503,504,506,507,509,511,512,514,592~599,657,659,661,663,676,678,680,682,708,710,712,714,782
3	RS10418J05	RESISTOR 100K (SMD)	5	R388,392,488,495,524
3	RS10518J05	RESISTOR 1M (SMD)	16	R272~275,277,279,282,286,672~675,308,309,311,314
3	RS12118J05	RESISTOR 120O (SMD)	22	R4,12,13,15,16,21,27,29,30,31,32,33,63,64,68,69,104,105,106,108,223,267
3	RS12318J05	RESISTOR 12K (SMD)	4	R472,473,491,493
3	RS13218F05	RESISTOR 1K3 (SMD)1%	25	R71,73,76,78,81,83,86,88,159,162,165,168,317,607,614,615,616,618,619,621,622,633,635,637,639
3	RS15218J05	RESISTOR 1K5 (SMD)	26	R1,2,298,301,304,307,310,334,335,339,340,345,348,350,414,415,422,423,430,431,438,439,677,679,681,683
3	RS15318J05	RESISTOR 15K (SMD)	6	R61,67,468,486,499,515
3	RS18218J05	RESISTOR 1K8 (SMD)	2	R418,426
3	RS20318J05	RESISTOR 20K (SMD)	32	R14,51,72,77,82,87,141~146,148,149,157,160,163,166,492,501,502,505,517,518,604,606,609,611,632,634,636,638
3	RS22118F05	RESISTOR 220O (SMD)1%	1	R355
3	RS22218J05	RESISTOR 2K2 (SMD)	18	R17,34,158,161,164,167,169,171~176,178,640~643
3	RS22318J05	RESISTOR 22K (SMD)	14	R408,409,416,417,424,425,433,434,444,447,448,449,496,498
3	RS22418J05	RESISTOR 220K (SMD)	1	R513
3	RS27218J05	RESISTOR 2K7 (SMD)	6	R179,182,459,461,463,465
3	RS27318J05	RESISTOR 27K (SMD)	28	R396,398,399,401,402,404,405,407,412,413,420,421,428,429,436,437,446,466,522,528,716,718,721,722,725,727,728,730
2	RS27418F05	RESISTOR 270K (SMD)1%	16	R574~585,664~667
3	RS30218J05	RESISTOR 3K (SMD)	2	R410,781
3	RS30318F05	RESISTOR 30K (SMD)1%	18	R50,65,115,116,117,118,120,121,122,123,125,126,127,128,130,131,132,133
3	RS33218J05	RESISTOR 3K3 (SMD)	2	R508,510
3	RS33318J05	RESISTOR 33K (SMD)	4	R58,96,519,526

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LEVEL	P/N	DESCRIPTION	QTY	REF
3	RS33418J05	RESISTOR 330K (SMD)	1	R393
3	RS36218J05	RESISTOR 3K6 (SMD)	2	R351,390
3	RS39218J05	RESISTOR 3K9 (SMD)	10	R226,266,319,322,325,328,684,686,688,690
3	RS43118F05	RESISTOR 430 O (SMD)1%	1	R353
3	RS47118F05	RESISTOR 470O (SMD)1%	7	R134,135,154,155,156,352,354
3	RS47218J05	RESISTOR 4K7 (SMD)	56	R297,300,303,306,320,323,326,329,331,332,336,337,341,342,346,347,358,363,368,373,376,378,379,381,382,384,385,387,474~485,685,687,689,691~693,695,696,698,699,701,702,736~739
3	RS47318J05	RESISTOR 47K (SMD)	26	R356,359,362,364,367,369,371,374,451,453,455,457,489,497,704,705,706,707,709,711,713,715,732~735
3	RS51118F05	RESISTOR 510O (SMD)	16	R70,75,80,85,110,111,112,113,613,617,620,623~627
3	RS51218J05	RESISTOR 5K1 (SMD)	43	R19,20,44,46,52,66,287~292,313,315,397,400,403,406,411,419,427,435,445,450,452,454,456,458,460,462,464,467,500,523,527,717,719,720,723,724,726,729,731
3	RS51318J05	RESISTOR 51K (SMD)	2	R490,494
3	RS56018J05	RESISTOR 56O (SMD)	1	R181
3	RS56118J05	RESISTOR 560O (SMD)	16	R193,196,199,202,204,206,209,212,214,217,219,221,646,649,652,655
3	RS56218J05	RESISTOR 5K6 (SMD)	2	R520,521
3	RS56318J05	RESISTOR 56K (SMD)	4	R100,107,109,147
3	RS62118F05	RESISTOR 620O (SMD)1%	1	R316
3	RS62218J05	RESISTOR 6K2 (SMD)	2	R18,35
3	RS62318J05	RESISTOR 62K (SMD)	10	R137~140,389,391,628~631
3	RS68118J05	RESISTOR 680O (SMD)	1	R183
3	RS68218F05	RESISTOR 6K8 (SMD)1%	53	R54~57,180,232,233,235,236,238,239,241,242,244~247,249~251,254,255,256,259~261,280,283,285,360,365,370,375,586~589,600~603,656,658,660,662,668~671,694,697,700,703
3	RS75218F05	RESISTOR 7K5 (SMD)1%	5	R295,525,529,530,531
3	RS82118J05	RESISTOR 820O (SMD)	2	R271,293
3	RS82218F05	RESISTOR 8K2 (SMD)1%	8	R53,62,225,265,294,469,487,516
3	RS91118F05	RESISTOR 910O (SMD)1%	33	R170,177,191,192,194,195,197,198,200,201,203,205,207,208,210,211,213,215,216,218,220,222,252,257,318,644,645,647,648,650,651,653,654
3	R04716	RESISTOR 4.7O 1/16W	16	R538,539,541,542,544,545,547,548,744,745,747,748,750,751,753,754
3	R18316T	RESISTOR 18K (SMD)	2	R536,537
3	SC0306RIBI	SCREW	21	
3	SWSFPC12MC02	PUSH SWITCH	26	SW1~14,23,24,33~42
3	SWSFPC14MA01	PUSH SWITCH	24	SW15~22,25~32,43~50
3	TE162000602	TERMINAL	2	TE3,4
3	TE812000811	8P CONNECTOR	1	(TE1)
3	TE812000911	9P CONNECTOR	1	(TE5)
3	TRA1316GR	TRANSISTOR SA1316GR	16	Q21~28,45~52
3	TRBC847B	TRANSISTOR BC847B	32	Q1~8,10~17,29~44
3	TRBC857B	TRANSISTOR BC857B	4	Q9,18,19,20
3	TRBF513	TRANSISTOR BF513	4	FET1,2,3,4
3	VRK10301202	VR 103AC	12	VR49~56,91~94
3	VRK1030904	VR 103W	24	VR31~38,40~47,83~90

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LEVEL	P/N	DESCRIPTION	QTY	REF
3	VRK5020902	VR 502R	8	VR1~4,67~70
3	VRK50301203	VR 503B	12	VR9~12,17~20,26~29
3	VRK50301204	VR 503W	3	VR30,39,48
3	VRK5030903	VR 503B	24	VR5~8,13~16,22~25,71~82
3	VRS10306007	VR 10KD	8	VR57~60,95~98
3	VRS10306008	VR 10KDX2	6	VR61~66
3	WR1030052W1	CONNECTOR 3P	1	TE2
3	0-16-1472	RESISTOR 14.7K (SMD)1%	4	R182,227,229,230
3	0-16-6041	RESISTOR 6.04K (SMD)1%	2	R152,153
3	0-16-7321	RESISTOR 7.32K (SMD)1%	4	R187~190
3	1-56-0104	CERAMIC 0.1UF (SMD)	120	C9,18,20,25,39,43,44,47,49,50,64,70,73,74,77,78,81,82,85,86,97,98,103,104,106,107~121,126,128,133,135,137,139,14,1142,144~147,149,152,155,158,161,162,68,169,171,172,173,175~177,179~181,183,184,189,190~192,194,197,199,201,202,204,205~207,210,212,213,215,216,219,220,223,226,269,446,448,450,452~468,472,473,475,476,564,565
3	2-71-0084	IC TL084	1	IC17
3	2-71-4580	IC NJM4580E	46	IC1~13,18~22,24~28,31~35,37~45,48~56
3	2-72-0339	IC LM339	5	IC16,23,29,30,36
3	2-75-1101	IC AL1101	1	IC14
3	2-75-1201	IC AL1201	1	IC15
3	6-00-0008	ENCODER	1	VR21
3	9-40-0358	MIXER PCB	1	