THE PROFESSIONAL AUDIO DIVISION OF CROWN INTERNATIONAL, INC.

IQ SYSTEM MIXER

SERVICE MANUAL

MPX-6™
SMX-6™
AMB-5™

Mailing Address:
P.O. Box 1000
Elkhart, IN U.S.A. 46515-1000

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Plant 2 S.W.
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K-SVCIQMIX
11-96
REV. A

The information furnished in this manual does not include all of the details of design, production, or variations of the equipment. Nor does it cover every possible situation which may arise during installation, operation or maintenance. If you need special assistance beyond the scope of this manual, please contact the Crown Technical Support Group.

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CAUTION

RISK OF ELECTRICAL SHOCK DO NOT OPEN

TO PREVENT ELECTRIC SHOCK DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. DISCONNECT POWER CORD BEFORE SERVICING.

AVIS

RISQUE DE CHOC ÉLECTRIQUE N'OUVREZ PAS

À PRÉVENIR LE CHOC ÉLECTRIQUE N'ENLEVEZ PAS LES COUVERCLES. IL N'Y A PAS DES PARTIES SERVICEABLE À L'INTÉRIEUR. TOUS REPARATIONS DOIT ETRE RAIRE PAR PERSONNEL QUALIFIÉ SEULMENT.

WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE!

Table of Contents

Introduction

This manual contains service information on Crown IQ System mixer products including the SMX-6, MPX-6, and the AMB-5. It is intended to be used in conjunction with the applicable Owner's Manual or Reference Manual and other user oriented documentation. However, some important information is duplicated in this Service Manual in case the Owner's Manual is not readily available.

NOTE: THE INFORMATION IN THIS MANUAL IS INTENDED FOR USE BY AN EXPERIENCED TECHNICIAN ONLY!

SCOPE

This Service Manual applies to all versions of the MPX-6, SMX-6, and AMB-5 mixers. For parts in other IQ products contact the Crown Technical Support Group for help in finding part numbers.

This Service Manual includes several sections. These sections include Parts Information, Specifications, Voltage Conversion, Circuit Theory, Electrical Test Procedures, Non-Module Parts Lists, and Module Parts Lists. Schematics are attached. Note that component parts with circuit board comprise a complete module. Module part numbers are always associated with a specific circuit board, although an unpopulated circuit board may be built up with different parts to create different modules. Note that Crown does not sell blank (unpopulated) circuit boards.

Each of the mixers are designed for professional or commercial use. Providing high quality 6 x 2 mixing from 20Hz to 20KHz with minimum distortion, they feature balanced inputs and outputs for audio and Crown Bus and serial port communication connections. Specific features vary depending on model.

WARRANTY

Each Owner's Manual contains basic policies as related to the customer. In addition it should be stated that this service documentation is meant to be used only by properly trained service personnel. Because most Crown products carry a 3 Year Full Warranty (including round trip shipping within the United States), all warranty service should be referred to the Crown Factory or Authorized Warranty Service Center. See the applicable Owner's Manual for warranty details. To find the location of the nearest Authorized Service Center or obtain instructions for receiving Crown Factory Service please contact the Crown Technical Support Group (within North America) or your Crown/ Amcron Importer (outside North America).

Crown
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Parts Department

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Parts Information

GENERAL INFORMATION

Later sections include both mechanical and electrical parts lists for these products. Crown reserves the right to modify and improve its products for the benefit of its customers.

PART NUMBERING SYSTEMS

Crown uses a special parts numbering system for IQ products. In most cases part numbers are six digits long.

STANDARD AND SPECIAL PARTS

Many electrical and electronic parts used by Crown are stocked by and available from electronic supply houses. However, some electronic parts that appear to be standard are actually special. A part ordered from Crown assures an acceptable replacement. Structural items such as modules and panels are available from Crown only.

ORDERING PARTS

When ordering parts, be sure to include the product model, a description of each part, and part number (IQPN) from the parts listing. Price quotes are available on request.

SHIPMENT

Shipment will be normally made by UPS or best other method unless you specify otherwise. Shipments are made to and from Elkhart, Indiana USA, only. Established accounts with Crown will receive shipment freight prepaid and will be billed. All others will receive shipment on a C.O.D. or pre-payment (check or credit card) basis.

TERMS

Normal terms are prepaid. Net-30 Days applies to only those firms having pre-established accounts with Crown. If prepaying, the order must be packed and weighed before a total bill can be established, after which an amount due will be issued and shipment made upon receipt of pre-payment. New parts returned for credit are subject to a 10% restocking fee, and authorization from the Crown Parts Department must be obtained before returning parts for credit.

Crown is not a general parts warehouse. Parts sold by the Crown Parts Department are solely for servicing Crown/Amcron products. **Part prices and availability are subject to change without notice.**

Crown
Parts Department

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Specifications

GENERAL

Protection: Audio outputs can be shorted indefinitely without causing damage. If communication is lost the unit will continue functioning as programmed. If power is interrupted the unit will function as programmed before the AC failure when the power is restored.
Display: A red Enable LED lightes when power is applied to the unit. A yellow DSPI (data signal presence indicator) LED lights when commands are being received by the unit or when forced on manually via software.
AC Mains: 120VAC at 60 Hz at 20 Watts with standard three-wire grounded connector for North American units. Contact Crown for information about international versions.

CONTROLS

IQ Address: Eight segment DIP switch mounted on the side of the unit is used to set the eight bit loop address. A valid address is 1 to 250 where there are no two of the same type of mixer on the same Crown Bus loop having the same address.
Serial Port Setup: A six segment DIP switch mounted on the side of the unit is used to setup the baud and parity parameters for use of the serial port. Up to 19,200 baud is available. Parity is normally off, however if on it may be set to odd or even. A two position slide switch is used to configure the serial port for RS232 or RS422.
M/L/P Switches: A three position slide switch at each main input configures the associated input for line level, mic level, or mic level with +44VDC phantom power. In the line position 0dB gain is added, however in either the mic or phantom positions 25 dB of gain is added.
Gain Controls: A trim pot at each main input adjusts gain at the associated input by –12 to +21 dB.

CONNECTORS

Aux Port: A three pin TB-3M port is provided to control or monitor an auxiliary device. Pin 1 is grounded. Pin 2 senses a logic level high when 5VDC or higher is applied or a low when 0.8 VDC or lower is applied (if not tied to a high or low source the sense pin floats and may indicate high or low at random). Pin 3 supplies +10VDC at 16 ma when switched on or open collector output when switched off.
Main Inputs: Six main inputs, a three terminal (balanced) removable barrier block per input.
Stack Inputs: Two stacking inputs, unbalanced RCA phone jacks per input.
Main Outputs: Two buffered main outputs, three terminal (balanced) removable barrier block.
Bus Outputs: Two buffered bus outputs with isolation relays, three terminal (balanced) removable barrier block.
Crown Bus: Four terminal removable barrier block with chassis ground stud for input shield.
Serial Port: Female 25 pin D-shell connector for RS232/RS422 connection.

AUDIO

Input Type: Active differential.
Input Impedance: Line: nominally 20K ohms balanced or 13K ohms unbalanced. Mic: nominally 4K ohms balanced.
Maximum Input Level: Microphone: +7 dBu. Line: +32 dBu.
Phantom Power: +44 VDC through two 6810 ohm resistors when switched on.
Common Mode Rejection Ratio: 60 Hz to 1 kHz: 55 dB typical. 20 Hz to 20 kHz: 45 dB.
Output Type: Active differential. Transformers optional for SMX-6. For unbalanced output operation leave negative terminal unconnected.
Output Impedance: 100 ohms balanced, 50 ohms unbalanced.
Maximum Output Level: +26 dBu.
Maximum Gain: Mic: +71 dB. Line: +46 dB.
Frequency Response: +0/–1 dB from 20 Hz to 20 kHz.
Total Harmonic Distortion (THD): <0.05% at +4 dBm output, <0.15% at +20 dBm output from 20 Hz to 20 kHz measured at mic input with 40 dB gain.
Noise: Output noise all inputs off: –80 dBu (106 dB below rated output). Output noise, one line input at 0 dB gain: –80 dBu. Equivalent input noise, mic input, 46 dB gain, 150 ohm source: –125 dBu. Specs are typical, unweighted, 20 Hz to 20 kHz.
Crosstalk: Adjacent input/outputs at 1 kHz: better than –80 dB. Adjacent inputs/outputs from 20 Hz to 20 kHz: better than –65 dB.

MECHANICAL

Construction: 16 GA steel chassis, 18 GA steel cover, 0.125 inch (3.2 mm) aluminum front panel.
Finish: Black splatter-coat chassis and front panel.
Dimensions: 19 inches (48.3 cm) wide, 1.75 inches (4.4 cm) high, 9.8 inches (24.9 cm) deep behind front mounting surface, 0.15 inches (3.8 mm) in front of mounting surface.
Weight: 8 lbs, 13 oz. (4 kg).

Voltage Conversion

The IQ System mixer products may be configured for either 120VAC or 240VAC power sources. This is done by changing jumper configurations and the AC fuse. Capacitor C7 should also be changed to accomodate higher line voltage, but if C7 is already configured for 240 VAC operation it does not necessarily have to be changed to switch to 120 VAC. Figure 1 shows a chart and schematics of critical parts for AC configuration changes. Refer also to the main schematics and parts lists for the applicable mixer.

AC LINE	F1	C7	JP1	JP2	JP3
120VAC	.3A	0.01/125V	IN	IN	OUT
240VAC	.15A	0.01/250V	OUT	OUT	IN

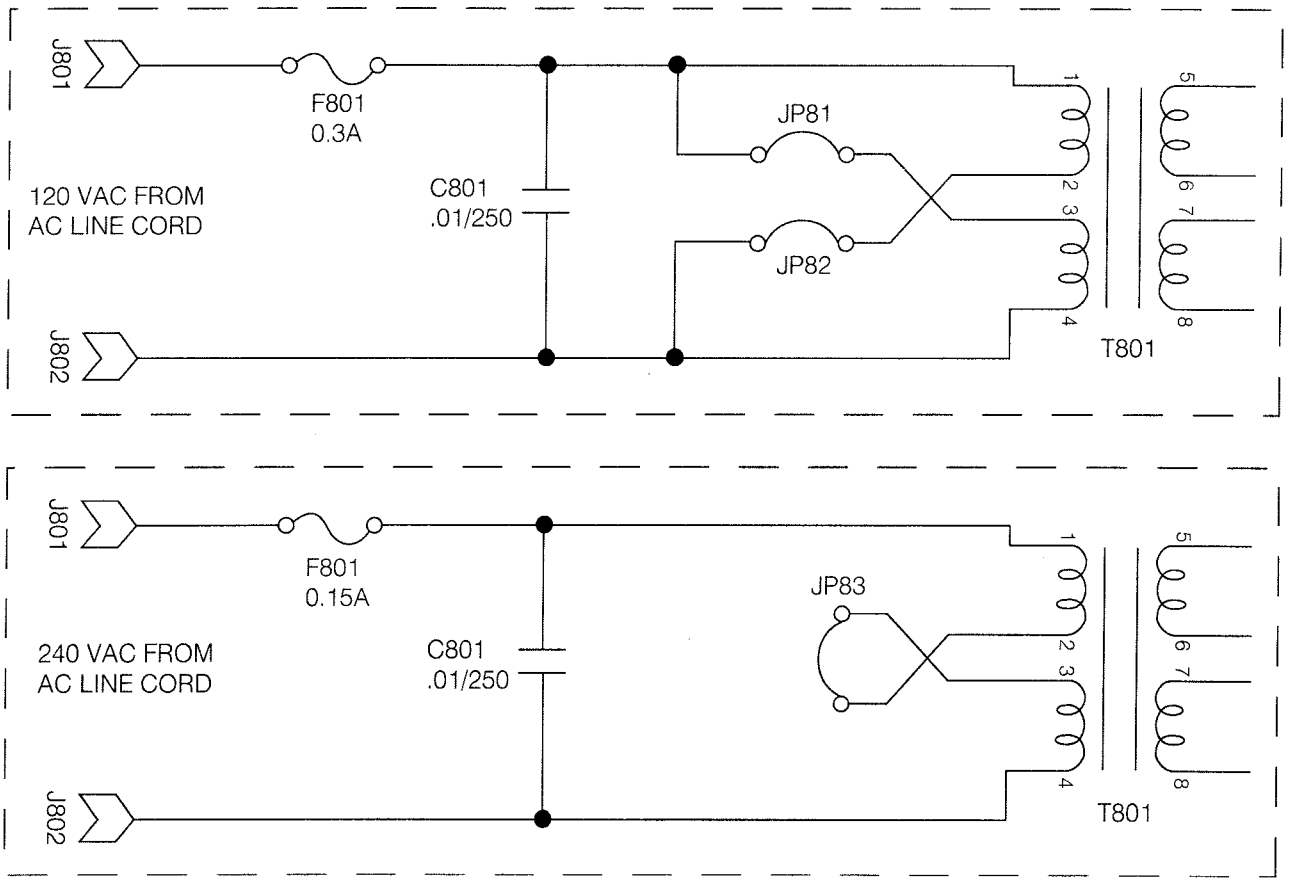


Figure 1. Mixer Line Voltage Configurations

Theory

OVERVIEW

This section of the manual explains operation of the mixer circuitry at a block diagram level. Functions of the mixers vary based on the firmware although hardware is very similar in all three models. When servicing a mixer, the firmware is not thoroughly tested for the advanced features and functions. Owner's/Reference Manuals and software documentation are the best resources for this information.

Front and rear panels of each mixer are shown in Figures 2 through 4. The block diagram in Figure 5 is the basis for most of the discussions in this section of the manual. Figure 6 shows the location and setup of the communication parameters. Refer also to schematics at the rear of this service manual.

AUDIO PATH

The audio path through each mixer is basically the same. There are six main inputs and two main outputs. Stack inputs are provided so that multiple units may be used together to provide more inputs to common mix. Bus outputs are separately buffered and relay isolated copies of the main outputs.

Preamps

Inputs go through a preamp stage and a sense node (SMX and AMB only). The preamp stage includes the rear panel gain trim adjustment (–12 dB to +21 dB) and the Mic/Line/Phantom (M/L/P) switch. The M/L/P switch provides 0 dB gain in the Line position and +25 dB gain in either the Mic or Phantom position. When in the Phantom position, +44 VDC phantom power is

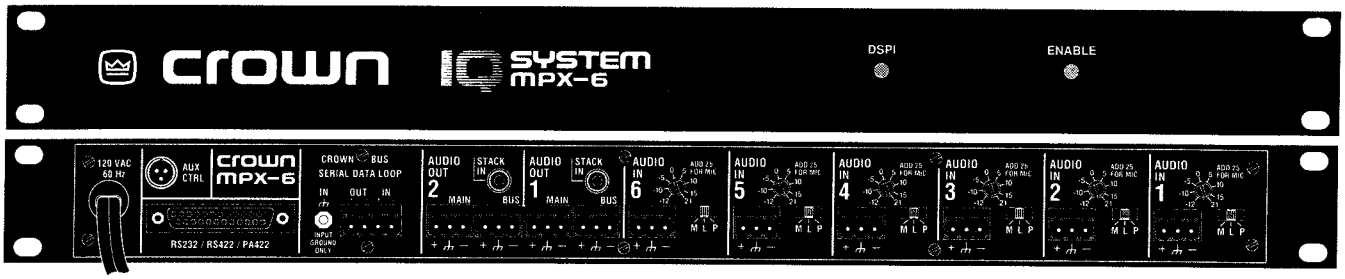


Figure 2. MPX-6 Front and Rear Panels

Figure 3. SMX-6 Front and Rear Panels

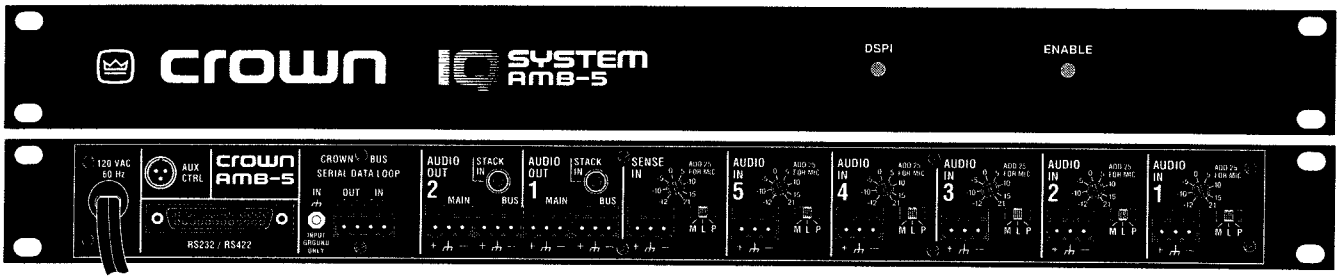


Figure 4. AMB-5 Front and Rear Panels

Theory

provided for a condenser microphone. Input impedence is also lower for mic level inputs than for line level inputs. The sense node of the SMX and AMB units is used by the processor to provide monitoring information to the operator and to perform internal automatic level adjustments such as gating and compression.

VCAs

After the sense node the signal goes to two Voltage Controlled Amplifiers (VCAs) under processor control which determine how much of the input goes to each mix bus. In the MPX there are 12 VCAs total include six for mix 1 and six for mix 2 (two VCAs per input). In the SMX there are also 12 VCAs, arranged like the MPX, but the sensing capability allows the processor to automate VCA control with advanced functions such as gating and compression. The AMB is slightly different. It offers 11 VCAs under processor control. Five VCAs deliver signal to mix 1 under manual or automatic processor control. The sixth input to output 1 is used only for sensing and is not actually allowed to enter mix 1. All six inputs may be routed to mix 2, however the processor only allows for manual mixing to mix 2. These variations in hardware and firmware differentiate the MPX-6 as a 6 x 2 manual mixer/router, the SMX-6 as a 6 x 2 automatic mixer, and the AMB-5 as a 5 x 1 automatic mixer with ambient noise compensation. The ambient noise compensation is a firmware related feature that sets the AMB-5 operation apart.

Stack Inputs

Stack inputs are unbalanced inputs which are buffered from their corresponding mix bus. The purpose of the stack inputs is to allow a signal to enter the mix without benefit of preamp and processor VCA gain control. The application for this would likely be when two or more units are used to create a wider composite mixer, such as a 12 x 2 configuration, without having to use main inputs to reprocess outputs of the upstream mixer.

Outputs

VCA outputs are passively mixed onto two mix busses. Mix (output) level is sensed in SMX and AMB units only. Mix 1 goes through a balancing buffer stage which drives the mix signal to the Main Output 1 connector. A second buffer on mix 1 is provided, called Bus Output 1, which includes relay isolation between the buffer and the output connector. Mix 2 has an identical output structure with a Main Output 2 and a Bus Output 2. Bus output relays are under processor control.

COMMUNICATION

There are two primary means of communications with a mixer. The first is direct RS232/422 via 25-pin female D Shell serial port connector. When direct communication with the mixer is established via the serial port the mixer becomes system interface for itself and any components that may be connected to the Crown Bus port of the unit. There are some restrictions on the use of a mixer as interface for other components, however. A mixer can serve as interface only for non-U-Code products, it supports only one loop, and does not support loop communication if a Drone or IQ-INT II is connected in the loop. Mixers are also limited in the number of components they can serve as interface for. The SMX is limited to as few as 20 components when operating in automatic mode. In any case, you may use a mixer as interface for itself.

The Crown Bus port is the other means of communication with the unit. The Crown Bus port is a four pin barrier block. The Crown Bus is a serial data loop implemented as a simple two-wire current loop. If the serial port on the mixer is not used, another device must be used as system interface with the mixer connected into a Crown Bus loop from that interface. Components which can serve as system interface include the IQ-INT II, IQ-PSI, Drone, or another mixer.

On the SMX mixer, the serial port may be used for an alternative form of communication called the Crown Local Net (CLN). This is a special configuration that involves interconnection of serial ports for the sharing of data when units are stacked. It should only be used when system wide duck priority structure or system wide gate count functions are required. When a CLN is used the SMX may not be used as interface.

CONTROLS

Controls on each mixer include input controls and communication settings. Input controls include the input gain trim adjust pots and M/L/P switches at each input. Refer to the Audio Path section.

Communication related settings are found at the side of the unit. See Figure 6. These include an eight segment address switch, a six segment switch for baud and parity setup, and a slide switch for selecting RS232 or RS422. Regardless of whether the serial port is used, the unit must have a valid address for commu-

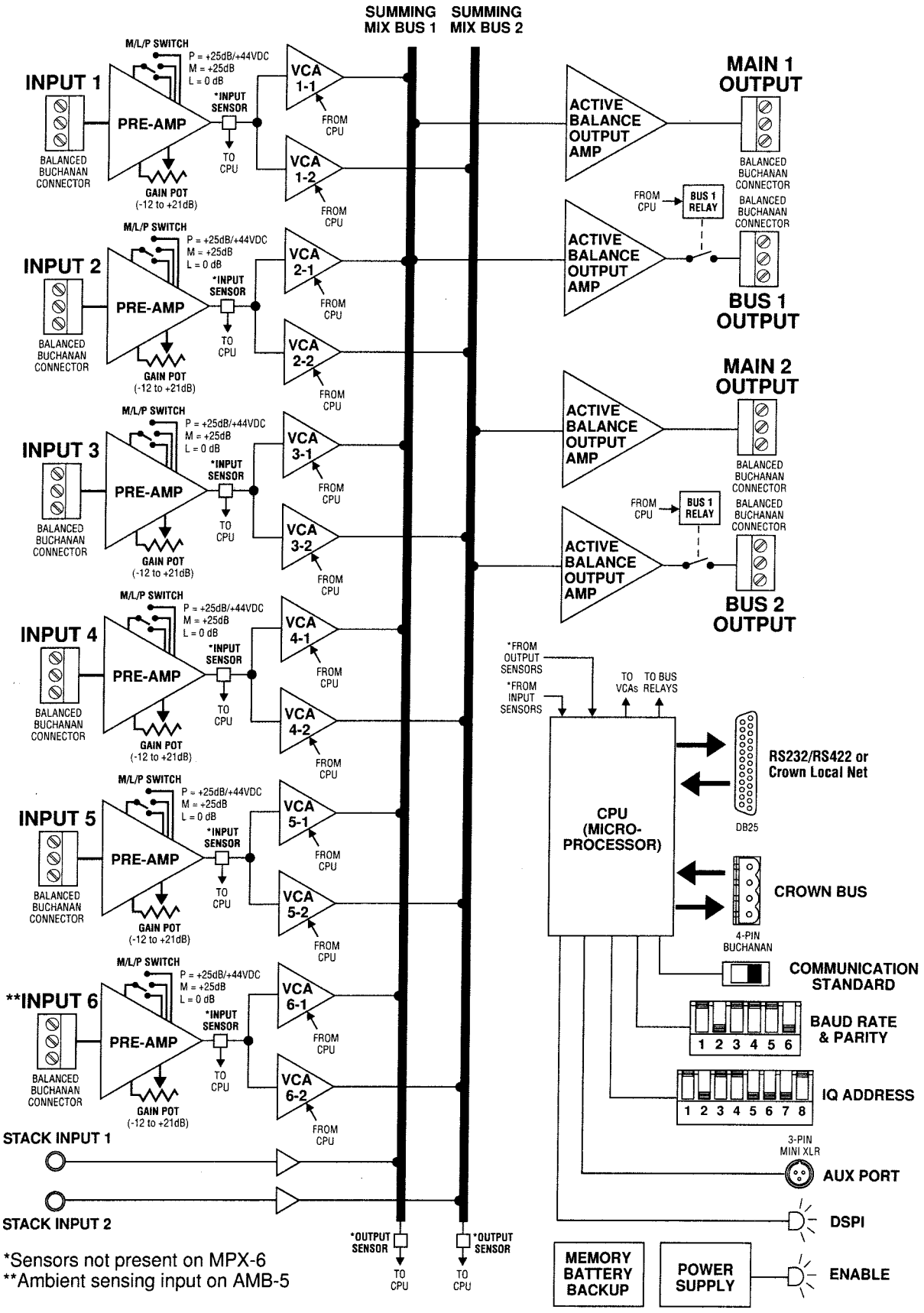


Figure 5. General IQ Mixer Block Diagram

Theory

nication to take place. A valid address is any address from 1 to 250 and is set in binary with the address switch. Also note that no two mixers of the same model may have the same address if they are on the same Crown Bus loop. Any time the serial port is used the baud, parity, and RS232/422 switches must be configured. Normally parity is off. Baud rates as high as 19,200 are supported by each mixer. The RS232/422 switch should be set to the appropriate position based on the type of computer and cable used.

INDICATORS

An Enable indicator on the front panel of each mixer shows that the unit is powered up. A Date Signal Presence Indicator (DSPI) light on the front panel of each mixer shows that data is being recieved by the unit. This light may also be forced on from software for diagnostic purposes.

AUXILIARY PORT

Each mixer is equipped with a TB-3M (mini-XLR) style three pin port known as the Aux Port. This port is used to provide a low voltage control signal for manipulation of an external device. Another pin is used for sensing a control voltage. Software is capable of sensing the status of this input and taking some type of action. Pin 3 is the output pin, pin 2 is the sense pin, and pin 1 is the ground reference pin.

POWER SUPPLIES

Mixer power supplies are conventional with a transformer, bridge rectifiers, filters, and regulators. Voltages produced and used by the mixers include ±22 VDC unregulated, and ±15 VDC, ±5 VDC, and +44 VDC regulated. The +44 VDC is used for phantom power, the ±15 VDC is used for the audio components, and the ±5 VDC supplies are used for the processor and logic components.

A rechargeable battery is used for memory backup in the event of a power loss. Once charged, the battery maintains memory for at least 60 days.

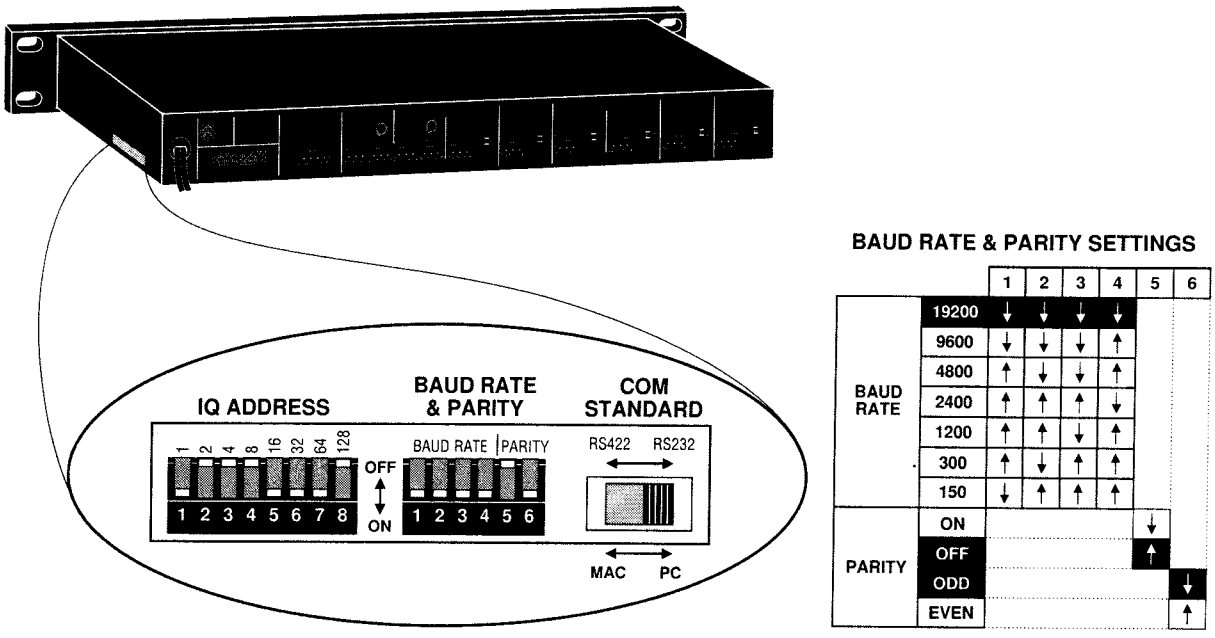


Figure 6. Mixer Communication Switches and Setup

Electrical Checkout Procedures

GENERAL INFORMATION

The following test procedures are to be used to verify operation of IQ Mixers. DO NOT connect a load or inject a signal unless directed to do so by the procedure. These tests are meant for verification and calibration of the mixer. They may also be very helpful in troubleshooting. For best results perform all tests in order. All tests assume that AC power is from a regulated 120 VAC source.

TEST EQUIPMENT REQUIRED

1. Digital mutlimeter.
2. Low distortion signal generator capable of +20 dBu.
3. Peak reading RMS calibrated ACVM capable of measuring +30 dBu (25 VAC) to –90 dBu (25 µVAC).
4. 20 Hz to 20 kHz bandpass filter for ACVM.
5. Distortion Analyzer.
6. Oscilliscope
7. Known working Crown IQ System interface (IQ-INT II recommended).
8. IQ-MSD Turbo 1.3 (or higher) software.
9. PC that meets the requirements for the software used. RS232 and RS422 ports are required, 16550 UART is required for each port used.

When testing audio, the oscilliscope should always be used to look for any anomolies such as oscillations or clipping.

STANDARD INITIAL CONDITIONS

1. Set all gain trim adjustment pots to 0 dB.
2. Set all M/L/P switches to Line position.
3. Setup unit for address 1, baud to 19,200, parity off/even, RS422.

TEST 1: POWER SUPPLY

Measure DC voltage at J12 with reference lead at J12 Pin 2:
+Audio at J12 Pin 1: +15.5 VDC ±1 VDC.
–Audio at J12 Pin 3: –15.5 VDC ±1 VDC.
Phantom at J12 Pin 4: +45 VDC ±2 VDC.
At power up these voltages should rise slowly and settle after approximately five seconds.

TEST 2: COMMUNICATION

NOTE: Any time any test calls for changing a communication setting the unit must be powered off and must remain off for at least 30 seconds for the changes to take effect.

RS232/422 Test: Set unit for RS422. Check for mixer detection using an RS422 serial port. Set unit for RS232. Check for mixer detection using an RS232 serial port.

Baud Test: Check for mixer detection at 2400 baud. Check for mixer detection at 9600 baud. Check for mixer detection at 19,200 baud.

Address Test: Check for mixer detection at address 11111010 (250). Check for mixer detection at address 00000101 (5). Set address at 00000001 (1) and verify detection.

Parity: With parity on, measure U97 pin 35 at 0V, with parity off measure +5V. With parity set to odd, measure U97 pin 39 at 0V, with parity set to even measure +5V.

TEST 3: DSPI

Switch DSPI light on and off with software and verify proper response at front panel. (Go to the F10 Control Panel screen in software while checking DSPI functions)

TEST 4: AUX PORT

Turn Aux Output off from software. Output at pin 3 (pin 1 reference) should measure 0V and 0 ma open or shorted. Turn Aux Output on from software. Output at pin 3 (pin 1 reference) should measure 16 to 18.7 ma when shorted or 8.7 to 10 VDC when open. While monitoring in software short aux port pins 2 and 1 and observe aux input reads off. While monitoring in software provide a logic high to pin 2 and observe aux input reads on. This may be done by shorting pins 2 and 3 with the aux output switched on from software. When complete set the aux output to off.

TEST 5: PREAMP STAGE

Input 1: Measure at device A11 pin 1, reference ground. Select Mic at the M/L/P switch. Set gain trim full CCW. Using an unbalanced source at the non-inverting input inject a 1 kHz sine wave at –40 dBu (7.75 mV). Measure 14 dB gain ±1 dB (34.6 to 43.6 mV). Adjust to center for 29 dB gain ±2 dB (174 to 275 mV). Adjust to full CW for 48 dB gain ±2 dB (1.55 to 2.45V). Switch polarity of the input (inverting input) and verify polarity inversion. Set M/L/P switch to Line position and measure 26 dB ±1 dB attenuation relative to Mic position (77.5 to 123 mV). Remove signal source. Set M/L/P switch to Phantom and measure +44 VDC at the non-inverting and inverting input connector pins relative to the center (ground) pin. When complete set the M/L/P switch back to Line.

Electrical Checkout Procedures

Input 2: Repeat the test performed for Input 1 measuring A11 pin 7.
Input 3: Repeat the test performed for Input 1 measuring A31 pin 1.
Input 4: Repeat the test performed for Input 1 measuring A31 pin 7.
Input 5: Repeat the test performed for Input 1 measuring A51 pin 1.
Input 6: Repeat the test performed for Input 1 measuring A51 pin 7.

TEST 6: VCA CALIBRATION

V_{ref}: Adjust VR81 for 0.5V across R813.
Preamp Setup: Inject a 1 kHz sine wave and adjust each input for –5 dBu (436 mV) at each preamp output (A11 pin 1 through A51 pin 7 as in Test 5).
Load Setup: Connect a 600 ohm load from the non-inverting output to ground on both Main Outputs. Set gain of each VCA (via software) to –100 dB.
DAC Calibration at +25 dB Gain: Set the VCA gain of input 1 to output 1 at +25 dB via software. Inject a signal at input 1. Measure output 1 (unbalanced). Adjust VR91 for +20 dBu (7.75 V) output.
DAC Calibration at –25 dB Gain: Set the VCA gain of input 1 to output 1 to –25 dB via software. Measure output 1 (unbalanced). Adjust VR81 for –30 dBu (24.5 mV) output. Recheck at +25 dB software gain and repeat adjustments as necessary until no further adjustment is needed.

TEST 7: THROUGH GAIN

This test is a followup of Test 6 and assumes no changes to hardware gain structure or signal source level have been made since completion of Test 6. Connect an unbalanced 600 ohm load to each channel as in Test 6. Check each VCA at the appropriate output, one VCA at a time, for an output level of +20 dBu ±1 dB (6.91 to 8.70 V) with VCA gain at +25 dB as set via software. If any VCA check fails reperform Tests 5 and 6.

TEST 8: STACK INPUTS

Connect unbalanced 600 ohm loads on Main Outputs as in Step 6. Inject +20 dBu on each Stack Input and measure (unbalanced) 19.4 dBu ±0.5 dB (6.83 to 7.66 V) at the output. The loss is due to loading.

TEST 9: BUS OUTPUTS

Inject a 1 kHz sine wave at any input and adjust gain for +20 dBu (7.75 V) output at each Bus Output. Verify relay operation by switching the relays from software. Verify 0.15% THD or less at each output.

TEST 10: THD

Set all VCAs to –100 dB gain via software. Setup signal generator for 5 kHz.
Input 1/Output 1 VCA: Set software gain to 0 dB and adjust signal generator source for +4 dBu (1.23 V) unbalanced at mixer output. Adjust VR12 (THD Trim) for less than 0.05% THD. Increase source level for +14 dBu (3.88 V) output and measure less than 0.15% THD.
Input 2/Output 1 VCA: Repeat check adjusting VR22 as needed.
Input 3/Output 1 VCA: Repeat check adjusting VR32 as needed.
Input 4/Output 1 VCA: Repeat check adjusting VR42 as needed.
Input 5/Output 1 VCA: Repeat check adjusting VR52 as needed.
Input 6/Output 1 VCA: Repeat check adjusting VR62 as needed.
Input 1/Output 2 VCA: Repeat check adjusting VR13 as needed.
Input 2/Output 2 VCA: Repeat check adjusting VR23 as needed.
Input 3/Output 2 VCA: Repeat check adjusting VR33 as needed.
Input 4/Output 2 VCA: Repeat check adjusting VR43 as needed.
Input 5/Output 2 VCA: Repeat check adjusting VR53 as needed.
Input 6/Output 2 VCA: Repeat check adjusting VR63 as needed.

TEST 11: LEVEL DETECTOR OFFSET

Note: This test is only applicable to the SMX and AMB mixers.
Test: With no input signals applied and all VCAs set to –100 dB via software each level detector buffer output should read 0 mV (+1.0 mV maximum). If necessary adjust the appropriate pot to obtain 0 mV or minimum positive reading. The chart below shows the level detector, the measurement point, and the applicable adjustment pot.

Detector:	Measure:	Adjust:
Input 1	A15 pin 1	VR14
Input 2	A15 pin 7	VR24
Input 3	A35 pin 1	VR34
Input 4	A35 pin 7	VR44
Input 5	A55 pin 1	VR54
Input 6	A55 pin 7	VR64
Output 1	A705 pin 1	VR71
Output 2	A705 pin 7	VR72

Electrical Checkout Procedures

TEST 12: LEVEL DETECTOR RESPONSE

Note: This test only applies to the SMX and AMB.
Test: Measurements are taken at each detector as in Test 11. Suddenly inject a 1 kHz sine wave which produces +20 dBu (7.75 V) at the applicable output. The detector output should reach 90% of its maximum value within 5 ms and drop to 10% of its maximum value in approximately 280 ms when the signal is suddenly removed.

TEST 13: LEVEL SENSE CALIBRATION

Note: This test is only applicable to the SMX and AMB mixers.
Test: Inject a 1 kHz sine wave at input 1 while measuring A11 pin 1 and while monitoring the software bar graph screen on the PC. Adjust signal level for -30 dBu (24.5 mV) at A11 pin 1. Adjust VR92 as necessary for proper display on screen (bar goes to -30 dB). Adjust signal level for +20 dBu (7.75 V) at A11 pin 1. Adjust VR93 as necessary for proper display on screen (bar goes to +20 dB). Recheck at -30 dBu and repeat adjustments as needed until no further adjustment is necessary. Adjust for 0 dBu (775 mV) at A11 pin 1 and, if necessary, adjust VR92 for a 0 dB bar graph reading.

TEST 14: COMMON MODE REJECTION

This test is performed for each input, one at a time, with signal routed to Main Output 1 (either output may be used). Set input to Line with gain trim adjust at 0 dB and VCA gain at 0 dB. Connect signal generator (+) to input (+) and generator (–) to input (–) and input ground. Set signal generator for +20 dBu (7.75 V) mixer output at 60 Hz. Making no other changes, connect signal generator (+) to mixer input (+ and –), connect generator (–) to mixer input ground. Measure less than -25 dBu (43.6 mV) at the mixer output.

TEST 15: FREQUENCY RESPONSE

Place a 600 ohm unbalanced load on Main Output 1. Set input 1 gain trim to maximum. Set VCA gain (input 1/output1) to 0 dB. Set generator to produce a 1 kHz sine wave at 0 dBu (775 mV) at Main Output 1. Sweep the generator from 20 Hz to 20 kHz and observe output level remains the same +0/–0.8 dB (707 to 775 mV). Check each input routed to Main Output 1. Check each Stack Input. Using any input and applicable VCA move the load to to the other Main Output and each of the Bus Outputs and repeat the sweep test to check output response.

TEST 16: NOISE

Noise: Place a 20 Hz to 20 kHz bandpass filter on the input to the ACVM. With all VCAs at -100 dB and no signals injected, measure less than -86 dBu (38.8 µV) unbalanced at the mixer output.
EIN Noise: Perform this test for each input, one at time. Inputs not under test should be set for Line with gain trim adjust at 0 dB and VCA gain at -100 dB. Only one output needs to be measured. Set input under test to Mic with gain trim adjusted to maximum and VCA gain at 0 dB. Using a 300 ohm balanced termination, terminate the input under test. Measure output noise. EIN Noise equals measured noise minus path gain (46 dB). EIN Noise should be less than -123.5 dBu (0.52 µV) for each input.

TEST 17: BATTERY BACKUP

Configure the mixer for a random gain setup with various VCA settings and various parameter values. Unplug the mixer from the AC mains for at least 30 seconds. Plug the unit back in and restore communication to the unit. Verify that settings are retained in memory by performing a Roll Call or Upload.

TEST 18: CROWN BUS LOOP COMMUNICATION

Use another product (such as an IQ-INT II) as system interface and connect the mixer as a component on a Crown Bus loop. Perform a Roll Call and verify detection of the mixer. Operate the DSPI indicator and check at least one VCA to verify communication. Remove the Crown Bus connection and check short circuit Crown Bus output current at 12 to 20 ma.

TEST 19: BURN IN

Set VCAs input 1/output 1 and input 2/output 2 at 0 dB and set DSPI to on. Leave the unit running at least 8 hours then interrupt power. Set inputs 1 and 2 for Line and gain trim pot to 0 dB. Noise at the output should be less than -86 dB unbalanced. Verify clean sine wave output at high and low levels for each input/output combination.

POST TESTING

Factory recommended default settings are as follows: ASA off and automatic features "flushed" (use ^F from within sub-block screens) in SMX and AMB units. All VCAs set to off (–100 dB). DSPI, Aux Output, and Bus relays off. On the hardware set all inputs to Line and 0 dB gain trim. Set communication for RS422, baud at 19,200, parity off/even, and address 00000001 (1).

MPX-6 Chassis and Miscellaneous Parts List

IQPN	Description	Qty
060120	CABLE LINE CORD W/GND 6 FT	1
060812	CABLE 8-PIN DIP 12 IN.	1
061412	CABLE 14 PIN DIP 12" RIB BOTH	1
200007	TERMINAL PC MNT .250 SPADE	2
200010	CON 3 PIN AUX MALE CHAS.	1
200025	CON DB25 FEMALE RT ANGLE	1
200025B	FEMALE SCREW LOCKS	2
200035	CON 3-TERM RT ANGLE PC M	10
200036	CON 3-TERM FEMALE CONNEC	10
200040	CON, 4-TERM BUCHANAN	1
200041	CON 4-TERM FEMALE CONNEC	1
200103	CON .100 3 PIN HOUSING	3
200204	CON .156 4 PIN HOUSING	2
201008	SOCKET 8 PIN LP DIP	6
201014	SOCKET 14 PIN LP DIP	7
201040	SOCKET 40 PIN LP DIP	3
210000	CON PIN RCA CHASSIS MNT	2
210204	CON HDR .156 4 PIN STRAIGHT	2
210302	CON HDR JPR 2-PIN .1	2
212000	CON JPR 2-PIN .1	2
250030	FUSE 0.3A (F801)	1
260001	CLIPS FUSE PC MNT 3AG	2
260002	STRAIN RELIEF 3 WIRE 18 GA	1
260005	STRAIN RELIEF, WIRE TIE 1 S	1
260050	FOOT BLACK BUMP-ON 0.5 SQ 0	3
290220	HEAT SINK TO-220 PC MNT TABS	3
601064	SM TOP COVER	1
651106	SW DIP 6 POS SPST PIANO K	1
651108	SW DIP 8 POS SPST PIANO K	1
652200	SW SLIDE PCB RA DPDT SLIDE	1
652300	SW MINIATURE SLIDE 3P3T	6
261423	SCREW 4-24 X 3/8 PAN HD PH BLK	10

SMX-6 Chassis and Miscellaneous Parts List

IQPN	Description	Qty
060120	CABLE LINE CORD W/GND 6 FT	1
060812	CABLE 8-PIN DIP 12 IN.	1
061412	CABLE 14 PIN DIP 12" RIB BOTH	1
200007	TERMINAL PC MNT .250 SPADE	2
200010	CON 3 PIN AUX MALE CHAS.	1
200025	CON DB25 FEMALE RT ANGLE	1
200025B	FEMALE SCREW LOCKS	2
200035	CON 3-TERM RT ANGLE PC M	10
200036	CON 3-TERM FEMALE CONNEC	10
200040	CON, 4-TERM BUCHANAN	1
200041	CON 4-TERM FEMALE CONNEC	1
200103	CON .100 3 PIN HOUSING	3
200204	CON .156 4 PIN HOUSING	2
201008	SOCKET 8 PIN LP DIP	6
201014	SOCKET 14 PIN LP DIP	7
201040	SOCKET 40 PIN LP DIP	3
210000	CON PIN RCA CHASSIS MNT	2
210204	CON HDR .156 4 PIN STRAIGHT	2
210302	CON HDR JPR 2-PIN .1	2
212000	CON JPR 2-PIN .1	2
250030	FUSE 0.3A (F801)	1
260001	CLIPS FUSE PC MNT 3AG	2
260002	STRAIN RELIEF 3 WIRE 18 GA	1
260005	STRAIN RELIEF, WIRE TIE 1 S	1
260050	FOOT BLACK BUMP-ON 0.5 SQ 0	3
290220	HEAT SINK TO-220 PC MNT TABS	3
601061	SM CHASSIS BOTTOM SMX	1
601062	SM FRONT PANEL SMX	1
601063	SM BACK PANEL SMX	1
601064	SM TOP COVER	1
651106	SW DIP 6 POS SPST PIANO K	1
651108	SW DIP 8 POS SPST PIANO K	1
652200	SW SLIDE PCB RA DPDT SLIDE	1
652300	SW MINIATURE SLIDE 3P3T	6
261423	SCREW 4-24 X 3/8 PAN HD PH BLK	10

AMB-5 Chassis and Miscellaneous Parts List

IQPN	Description	Qty
060120	CABLE LINE CORD W/GND 6 FT	1
060812	CABLE 8-PIN DIP 12 IN.	1
061412	CABLE 14 PIN DIP 12" RIB BOTH	1
200007	TERMINAL PC MNT .250 SPADE	2
200010	CON 3 PIN AUX MALE CHAS.	1
200025	CON DB25 FEMALE RT ANGLE	1
200025B	FEMALE SCREW LOCKS	2
200035	CON 3-TERM RT ANGLE PC M	10
200036	CON 3-TERM FEMALE CONNEC	10
200040	CON, 4-TERM BUCHANAN	1
200041	CON 4-TERM FEMALE CONNEC	1
200103	CON .100 3 PIN HOUSING	3
200204	CON .156 4 PIN HOUSING	2
201008	SOCKET 8 PIN LP DIP	6
201014	SOCKET 14 PIN LP DIP	7
201040	SOCKET 40 PIN LP DIP	3
210000	CON PIN RCA CHASSIS MNT	2
210204	CON HDR .156 4 PIN STRAIGHT	2
210302	CON HDR JPR 2-PIN .1	2
212000	CON JPR 2-PIN .1	2
250030	FUSE 0.3A (F801)	1
260001	CLIPS FUSE PC MNT 3AG	2
260005	STRAIN RELIEF, WIRE TIE 1 S	1
260050	FOOT BLACK BUMP-ON 0.5 SQ 0	3
290220	HEAT SINK TO-220 PC MNT TABS	3
602076	SM FRONT PANEL AMB	1
602077	SM BACK PANEL AMB	1
601064	SM TOP COVER	1
651106	SW DIP 6 POS SPST PIANO K	1
651108	SW DIP 8 POS SPST PIANO K	1
652200	SW SLIDE PCB RA DPDT SLIDE	1
652300	SW MINIATURE SLIDE 3P3T	6
722434	TRANSF POWER PCB 24 VA24	1
260002	STRAIN RELIEF 3 WIRE 18 GA	1
261423	SCREW 4-24 X 3/8 PAN HD PH BLK	10

MPX Input Module 463001C Parts List

Desig.	IQPN	Description
A11	323078	IC Dual Opamp MC33078
A12	323079	IC Quad Opamp MC33079
A13	352150	IC VCA 2150A
A14	352150	IC VCA 2150A
A22	323079	IC Quad Opamp MC33079
A23	352150	IC VCA 2150A
A24	352150	IC VCA 2150A
A31	323078	IC Dual Opamp MC33078
A32	323079	IC Quad Opamp MC33079
A33	352150	IC VCA 2150A
A34	352150	IC VCA 2150A
A42	323079	IC Quad Opamp MC33079
A43	352150	IC VCA 2150A
A44	352150	IC VCA 2150A
A51	323078	IC Dual Opamp MC33078
A52	323079	IC Quad Opamp MC33079
A53	352150	IC VCA 2150A
A54	352150	IC VCA 2150A
A62	323079	IC Quad Opamp MC33079
A63	352150	IC VCA 2150A
A64	352150	IC VCA 2150A
A701	323078	IC Dual Opamp MC33078
Q11	800970	PNP 2SA970 TO92
Q12	800970	PNP 2SA970 TO92
Q21	800970	PNP 2SA970 TO92
Q22	800970	PNP 2SA970 TO92
Q31	800970	PNP 2SA970 TO92
Q32	800970	PNP 2SA970 TO92
Q41	800970	PNP 2SA970 TO92
Q42	800970	PNP 2SA970 TO92
Q51	800970	PNP 2SA970 TO92
Q52	800970	PNP 2SA970 TO92
Q61	800970	PNP 2SA970 TO92
Q62	800970	PNP 2SA970 TO92
D101	224004	Diode 1N4004 400V 1A
D102	224004	Diode 1N4004 400V 1A
D103	224004	Diode 1N4004 400V 1A
D104	224004	Diode 1N4004 400V 1A
D201	224004	Diode 1N4004 400V 1A
D202	224004	Diode 1N4004 400V 1A
D203	224004	Diode 1N4004 400V 1A
D204	224004	Diode 1N4004 400V 1A
D301	224004	Diode 1N4004 400V 1A
D302	224004	Diode 1N4004 400V 1A
D303	224004	Diode 1N4004 400V 1A
D304	224004	Diode 1N4004 400V 1A
D401	224004	Diode 1N4004 400V 1A
D402	224004	Diode 1N4004 400V 1A

Desig.	IQPN	Description
D403	224004	Diode 1N4004 400V 1A
D404	224004	Diode 1N4004 400V 1A
D501	224004	Diode 1N4004 400V 1A
D502	224004	Diode 1N4004 400V 1A
D503	224004	Diode 1N4004 400V 1A
D504	224004	Diode 1N4004 400V 1A
D601	224004	Diode 1N4004 400V 1A
D602	224004	Diode 1N4004 400V 1A
D603	224004	Diode 1N4004 400V 1A
D604	224004	Diode 1N4004 400V 1A
D813	224733	Diode 1N4733A Zener 5.1V
D814	224148	Diode 1N4148 Signal
L11	400271	Choke 270µH
L12	400271	Choke 270µH
L21	400271	Choke 270µH
L22	400271	Choke 270µH
L31	400271	Choke 270µH
L32	400271	Choke 270µH
L41	400271	Choke 270µH
L42	400271	Choke 270µH
L51	400271	Choke 270µH
L52	400271	Choke 270µH
L61	400271	Choke 270µH
L62	400271	Choke 270µH
FB11	400001	Ferrite Bead With Leads
FB12	400001	Ferrite Bead With Leads
FB13	400000	Ferrite Bead No Leads
FB14	400000	Ferrite Bead No Leads
FB21	400001	Ferrite Bead With Leads
FB22	400001	Ferrite Bead With Leads
FB23	400000	Ferrite Bead No Leads
FB24	400000	Ferrite Bead No Leads
FB31	400001	Ferrite Bead With Leads
FB32	400001	Ferrite Bead With Leads
FB33	400000	Ferrite Bead No Leads
FB34	400000	Ferrite Bead No Leads
FB41	400001	Ferrite Bead With Leads
FB42	400001	Ferrite Bead With Leads
FB43	400000	Ferrite Bead No Leads
FB44	400000	Ferrite Bead No Leads
FB51	400001	Ferrite Bead With Leads
FB52	400001	Ferrite Bead With Leads
FB53	400000	Ferrite Bead No Leads
FB54	400000	Ferrite Bead No Leads
FB61	400001	Ferrite Bead With Leads
FB62	400001	Ferrite Bead With Leads
FB63	400000	Ferrite Bead No Leads
FB64	400000	Ferrite Bead No Leads

MPX Input Module 463001C Parts List

Desig.	IQPN	Description
C101	100680	Cap 68pF 50V 10% Ceramic
C102	100680	Cap 68pF 50V 10% Ceramic
C103	100152	Cap 1500pF 50V 10% Ceramic
C104	100152	Cap 1500pF 50V 10% Ceramic
C105	124470	Cap 47µF 63V Electrolytic
C106	124470	Cap 47µF 63V Electrolytic
C107	100472	Cap .0047µF 50V 10% Ceramic
C108	100472	Cap .0047µF 50V 10% Ceramic
C109	124470	Cap 47µF 63V Electrolytic
C110	124470	Cap 47µF 63V Electrolytic
C111	100221	Cap 220pF 50V 10% Ceramic
C112	100221	Cap 220pF 50V 10% Ceramic
C113	100470	Cap 47pF 50V 10% Ceramic
C114	100470	Cap 47pF 50V 10% Ceramic
C115	120471	Cap 470µF 6.3V Electrolytic
C116	150104	Cap .1µF 50V 5% Film
C117	122100	Cap 10µF 35V Electrolytic
C118	100470	Cap 47pF 50V 10% Ceramic
C119	150104	Cap .1µF 50V 5% Film
C120	122100	Cap 10µF 35V Electrolytic
C121	100470	Cap 47pF 50V 10% Ceramic
C122	100103	Cap .01µF 50V 10% Ceramic
C123	100103	Cap .01µF 50V 10% Ceramic
C124	100103	Cap .01µF 50V 10% Ceramic
C125	100103	Cap .01µF 50V 10% Ceramic
C201	100680	Cap 68pF 50V 10% Ceramic
C202	100680	Cap 68pF 50V 10% Ceramic
C203	100152	Cap 1500pF 50V 10% Ceramic
C204	100152	Cap 1500pF 50V 10% Ceramic
C205	124470	Cap 47µF 63V Electrolytic
C206	124470	Cap 47µF 63V Electrolytic
C207	100472	Cap .0047µF 50V 10% Ceramic
C208	100472	Cap .0047µF 50V 10% Ceramic
C209	124470	Cap 47µF 63V Electrolytic
C210	124470	Cap 47µF 63V Electrolytic
C211	100221	Cap 220pF 50V 10% Ceramic
C212	100221	Cap 220pF 50V 10% Ceramic
C213	100470	Cap 47pF 50V 10% Ceramic
C214	100470	Cap 47pF 50V 10% Ceramic
C215	120471	Cap 470µF 6.3V Electrolytic
C216	150104	Cap .1µF 50V 5% Film
C217	122100	Cap 10µF 35V Electrolytic
C218	100470	Cap 47pF 50V 10% Ceramic
C219	150104	Cap .1µF 50V 5% Film
C220	122100	Cap 10µF 35V Electrolytic
C221	100470	Cap 47pF 50V 10% Ceramic
C224	100103	Cap .01µF 50V 10% Ceramic
C225	100103	Cap .01µF 50V 10% Ceramic
C301	100680	Cap 68pF 50V 10% Ceramic
C302	100680	Cap 68pF 50V 10% Ceramic
C303	100152	Cap 1500pF 50V 10% Ceramic
C304	100152	Cap 1500pF 50V 10% Ceramic
C305	124470	Cap 47µF 63V Electrolytic
C306	124470	Cap 47µF 63V Electrolytic
C307	100472	Cap .0047µF 50V 10% Ceramic
C308	100472	Cap .0047µF 50V 10% Ceramic
C309	124470	Cap 47µF 63V Electrolytic
C310	124470	Cap 47µF 63V Electrolytic
C311	100221	Cap 220pF 50V 10% Ceramic
C312	100221	Cap 220pF 50V 10% Ceramic
C313	100470	Cap 47pF 50V 10% Ceramic
C314	100470	Cap 47pF 50V 10% Ceramic
C315	120471	Cap 470µF 6.3V Electrolytic
C317	122100	Cap 10µF 35V Electrolytic
C316	150104	Cap .1µF 50V 5% Film
C318	100470	Cap 47pF 50V 10% Ceramic
C319	150104	Cap .1µF 50V 5% Film
C320	122100	Cap 10µF 35V Electrolytic
C321	100470	Cap 47pF 50V 10% Ceramic
C322	100103	Cap .01µF 50V 10% Ceramic
C323	100103	Cap .01µF 50V 10% Ceramic
C324	100103	Cap .01µF 50V 10% Ceramic
C325	100103	Cap .01µF 50V 10% Ceramic
C401	100680	Cap 68pF 50V 10% Ceramic
C402	100680	Cap 68pF 50V 10% Ceramic
C403	100152	Cap 1500pF 50V 10% Ceramic
C404	100152	Cap 1500pF 50V 10% Ceramic
C405	124470	Cap 47µF 63V Electrolytic
C406	124470	Cap 47µF 63V Electrolytic
C407	100472	Cap .0047µF 50V 10% Ceramic
C408	100472	Cap .0047µF 50V 10% Ceramic
C409	124470	Cap 47µF 63V Electrolytic
C410	124470	Cap 47µF 63V Electrolytic
C411	100221	Cap 220pF 50V 10% Ceramic
C412	100221	Cap 220pF 50V 10% Ceramic
C413	100470	Cap 47pF 50V 10% Ceramic
C414	100470	Cap 47pF 50V 10% Ceramic
C415	120471	Cap 470µF 6.3V Electrolytic
C416	150104	Cap .1µF 50V 5% Film
C417	122100	Cap 10µF 35V Electrolytic
C418	100470	Cap 47pF 50V 10% Ceramic
C419	150104	Cap .1µF 50V 5% Film
C420	122100	Cap 10µF 35V Electrolytic
C421	100470	Cap 47pF 50V 10% Ceramic
C424	100103	Cap .01µF 50V 10% Ceramic
C425	100103	Cap .01µF 50V 10% Ceramic
C501	100680	Cap 68pF 50V 10% Ceramic
C502	100680	Cap 68pF 50V 10% Ceramic
C503	100152	Cap 1500pF 50V 10% Ceramic
C504	100152	Cap 1500pF 50V 10% Ceramic
C505	124470	Cap 47µF 63V Electrolytic
C506	124470	Cap 47µF 63V Electrolytic

MPX Input Module 463001C Parts List

Desig.	IQPN	Description
C507	100472	Cap .0047µF 50V 10% Ceramic
C508	100472	Cap .0047µF 50V 10% Ceramic
C509	124470	Cap 47µF 63V Electrolytic
C510	124470	Cap 47µF 63V Electrolytic
C511	100221	Cap 220pF 50V 10% Ceramic
C512	100221	Cap 220pF 50V 10% Ceramic
C513	100470	Cap 47pF 50V 10% Ceramic
C514	100470	Cap 47pF 50V 10% Ceramic
C515	120471	Cap 470µF 6.3V Electrolytic
C516	150104	Cap .1µF 50V 5% Film
C517	122100	Cap 10µF 35V Electrolytic
C518	100470	Cap 47pF 50V 10% Ceramic
C519	150104	Cap .1µF 50V 5% Film
C520	122100	Cap 10µF 35V Electrolytic
C521	100470	Cap 47pF 50V 10% Ceramic
C522	100103	Cap .01µF 50V 10% Ceramic
C523	100103	Cap .01µF 50V 10% Ceramic
C524	100103	Cap .01µF 50V 10% Ceramic
C525	100103	Cap .01µF 50V 10% Ceramic
C601	100680	Cap 68pF 50V 10% Ceramic
C602	100680	Cap 68pF 50V 10% Ceramic
C603	100152	Cap 1500pF 50V 10% Ceramic
C604	100152	Cap 1500pF 50V 10% Ceramic
C605	124470	Cap 47µF 63V Electrolytic
C606	124470	Cap 47µF 63V Electrolytic
C607	100472	Cap .0047µF 50V 10% Ceramic
C608	100472	Cap .0047µF 50V 10% Ceramic
C609	124470	Cap 47µF 63V Electrolytic
C610	124470	Cap 47µF 63V Electrolytic
C611	100221	Cap 220pF 50V 10% Ceramic
C612	100221	Cap 220pF 50V 10% Ceramic
C613	100470	Cap 47pF 50V 10% Ceramic
C614	100470	Cap 47pF 50V 10% Ceramic
C615	120471	Cap 470µF 6.3V Electrolytic
C616	150104	Cap .1µF 50V 5% Film
C617	122100	Cap 10µF 35V Electrolytic
C618	100470	Cap 47pF 50V 10% Ceramic
C619	150104	Cap .1µF 50V 5% Film
C620	122100	Cap 10µF 35V Electrolytic
C621	100470	Cap 47pF 50V 10% Ceramic
C624	100103	Cap .01µF 50V 10% Ceramic
C625	100103	Cap .01µF 50V 10% Ceramic
C701	129470	Cap 47µF 25V Electrolytic NP
C702	100470	Cap 47pF 50V 10% Ceramic
C703	129470	Cap 47µF 25V Electrolytic NP
C704	100470	Cap 47pF 50V 10% Ceramic
C705	122109	Cap 1µF 35V Electrolytic
C706	122109	Cap 1µF 35V Electrolytic
C745	100103	Cap .01µF 50V 10% Ceramic
C746	100103	Cap .01µF 50V 10% Ceramic
C747	100103	Cap .01µF 50V 10% Ceramic
C748	123331	Cap 330µF 50V Electrolytic
C823	122101	Cap 100µF 35V Electrolytic
R101	502003	200 Kohm .25W 1% MF
R102	502003	200 Kohm .25W 1% MF
R103	501002	10 Kohm .25W 1% MF
R104	501002	10 Kohm .25W 1% MF
R105	506810	681 ohm .25W 1% MF
R106	506810	681 ohm .25W 1% MF
R107	506811	6.81 Kohm .25W 1% MF
R108	506811	6.81 Kohm .25W 1% MF
R109	503011	3.01 Kohm .25W 1% MF
R110	503011	3.01 Kohm .25W 1% MF
R111	501000	100 ohm .25W 1% MF
R112	501002	10 Kohm .25W 1% MF
R113	501002	10 Kohm .25W 1% MF
R118	501002	10 Kohm .25W 1% MF
R119	501471	1.47 Kohm .25W 1% MF
R120	504990	499 ohm .25W 1% MF
R121	502002	20 Kohm .25W 1% MF
R122	502002	20 Kohm .25W 1% MF
R123	502002	20 Kohm .25W 1% MF
R124	502003	200 Kohm .25W 1% MF
R125	504999	49.9 Kohm .25W 1% MF
R126	504991	4.99 Kohm .25W 1% MF
R127	501002	10 Kohm .25W 1% MF
R128	501471	1.47 Kohm .25W 1% MF
R129	504990	499 ohm .25W 1% MF
R130	502002	20 Kohm .25W 1% MF
R131	502002	20 Kohm .25W 1% MF
R132	502002	20 Kohm .25W 1% MF
R133	502003	200 Kohm .25W 1% MF
R134	504999	49.9 Kohm .25W 1% MF
R135	504991	4.99 Kohm .25W 1% MF
R201	502003	200 Kohm .25W 1% MF
R202	502003	200 Kohm .25W 1% MF
R203	501002	10 Kohm .25W 1% MF
R204	501002	10 Kohm .25W 1% MF
R205	506810	681 ohm .25W 1% MF
R206	506810	681 ohm .25W 1% MF
R207	506811	6.81 Kohm .25W 1% MF
R208	506811	6.81 Kohm .25W 1% MF
R209	503011	3.01 Kohm .25W 1% MF
R210	503011	3.01 Kohm .25W 1% MF
R211	501000	100 ohm .25W 1% MF
R212	501002	10 Kohm .25W 1% MF
R213	501002	10 Kohm .25W 1% MF
R218	501002	10 Kohm .25W 1% MF
R219	501471	1.47 Kohm .25W 1% MF
R220	504990	499 ohm .25W 1% MF
R221	502002	20 Kohm .25W 1% MF

MPX Input Module 463001C Parts List

Desig.	IQPN	Description
R222	502002	20 Kohm .25W 1% MF
R223	502002	20 Kohm .25W 1% MF
R224	502003	200 Kohm .25W 1% MF
R225	504999	49.9 Kohm .25W 1% MF
R226	504991	4.99 Kohm .25W 1% MF
R227	501002	10 Kohm .25W 1% MF
R228	501471	1.47 Kohm .25W 1% MF
R229	504990	499 ohm .25W 1% MF
R230	502002	20 Kohm .25W 1% MF
R231	502002	20 Kohm .25W 1% MF
R232	502002	20 Kohm .25W 1% MF
R233	502003	200 Kohm .25W 1% MF
R234	504999	49.9 Kohm .25W 1% MF
R235	504991	4.99 Kohm .25W 1% MF
R301	502003	200 Kohm .25W 1% MF
R302	502003	200 Kohm .25W 1% MF
R303	501002	10 Kohm .25W 1% MF
R304	501002	10 Kohm .25W 1% MF
R305	506810	681 ohm .25W 1% MF
R306	506810	681 ohm .25W 1% MF
R307	506811	6.81 Kohm .25W 1% MF
R308	506811	6.81 Kohm .25W 1% MF
R309	503011	3.01 Kohm .25W 1% MF
R310	503011	3.01 Kohm .25W 1% MF
R311	501000	100 ohm .25W 1% MF
R312	501002	10 Kohm .25W 1% MF
R313	501002	10 Kohm .25W 1% MF
R318	501002	10 Kohm .25W 1% MF
R319	501471	1.47 Kohm .25W 1% MF
R320	504990	499 ohm .25W 1% MF
R321	502002	20 Kohm .25W 1% MF
R322	502002	20 Kohm .25W 1% MF
R323	502002	20 Kohm .25W 1% MF
R324	502003	200 Kohm .25W 1% MF
R325	504999	49.9 Kohm .25W 1% MF
R326	504991	4.99 Kohm .25W 1% MF
R327	501002	10 Kohm .25W 1% MF
R328	501471	1.47 Kohm .25W 1% MF
R329	504990	499 ohm .25W 1% MF
R330	502002	20 Kohm .25W 1% MF
R331	502002	20 Kohm .25W 1% MF
R332	502002	20 Kohm .25W 1% MF
R333	502003	200 Kohm .25W 1% MF
R334	504999	49.9 Kohm .25W 1% MF
R335	504991	4.99 Kohm .25W 1% MF
R401	502003	200 Kohm .25W 1% MF
R402	502003	200 Kohm .25W 1% MF
R403	501002	10 Kohm .25W 1% MF
R404	501002	10 Kohm .25W 1% MF
R405	506810	681 ohm .25W 1% MF
R406	506810	681 ohm .25W 1% MF
R407	506811	6.81 Kohm .25W 1% MF
R408	506811	6.81 Kohm .25W 1% MF
R409	503011	3.01 Kohm .25W 1% MF
R410	503011	3.01 Kohm .25W 1% MF
R411	501000	100 ohm .25W 1% MF
R412	501002	10 Kohm .25W 1% MF
R413	501002	10 Kohm .25W 1% MF
R418	501002	10 Kohm .25W 1% MF
R419	501471	1.47 Kohm .25W 1% MF
R420	504990	499 ohm .25W 1% MF
R421	502002	20 Kohm .25W 1% MF
R422	502002	20 Kohm .25W 1% MF
R423	502002	20 Kohm .25W 1% MF
R424	502003	200 Kohm .25W 1% MF
R425	504999	49.9 Kohm .25W 1% MF
R426	504991	4.99 Kohm .25W 1% MF
R427	501002	10 Kohm .25W 1% MF
R428	501471	1.47 Kohm .25W 1% MF
R429	504990	499 ohm .25W 1% MF
R430	502002	20 Kohm .25W 1% MF
R431	502002	20 Kohm .25W 1% MF
R432	502002	20 Kohm .25W 1% MF
R433	502003	200 Kohm .25W 1% MF
R434	504999	49.9 Kohm .25W 1% MF
R435	504991	4.99 Kohm .25W 1% MF
R501	502003	200 Kohm .25W 1% MF
R502	502003	200 Kohm .25W 1% MF
R503	501002	10 Kohm .25W 1% MF
R504	501002	10 Kohm .25W 1% MF
R505	506810	681 ohm .25W 1% MF
R506	506810	681 ohm .25W 1% MF
R507	506811	6.81 Kohm .25W 1% MF
R508	506811	6.81 Kohm .25W 1% MF
R509	503011	3.01 Kohm .25W 1% MF
R510	503011	3.01 Kohm .25W 1% MF
R511	501000	100 ohm .25W 1% MF
R512	501002	10 Kohm .25W 1% MF
R513	501002	10 Kohm .25W 1% MF
R518	501002	10 Kohm .25W 1% MF
R519	501471	1.47 Kohm .25W 1% MF
R520	504990	499 ohm .25W 1% MF
R521	502002	20 Kohm .25W 1% MF
R522	502002	20 Kohm .25W 1% MF
R523	502002	20 Kohm .25W 1% MF
R524	502003	200 Kohm .25W 1% MF
R525	504999	49.9 Kohm .25W 1% MF
R526	504991	4.99 Kohm .25W 1% MF
R527	501002	10 Kohm .25W 1% MF
R528	501471	1.47 Kohm .25W 1% MF
R529	504990	499 ohm .25W 1% MF
R530	502002	20 Kohm .25W 1% MF

MPX Input Module 463001C Parts List

Desig.	IQPN	Description
R531	502002	20 Kohm .25W 1% MF
R532	502002	20 Kohm .25W 1% MF
R533	502003	200 Kohm .25W 1% MF
R534	504999	49.9 Kohm .25W 1% MF
R535	504991	4.99 Kohm .25W 1% MF
R601	502003	200 Kohm .25W 1% MF
R602	502003	200 Kohm .25W 1% MF
R603	501002	10 Kohm .25W 1% MF
R604	501002	10 Kohm .25W 1% MF
R605	506810	681 ohm .25W 1% MF
R606	506810	681 ohm .25W 1% MF
R607	506811	6.81 Kohm .25W 1% MF
R608	506811	6.81 Kohm .25W 1% MF
R609	503011	3.01 Kohm .25W 1% MF
R610	503011	3.01 Kohm .25W 1% MF
R611	501000	100 ohm .25W 1% MF
R612	501002	10 Kohm .25W 1% MF
R613	501002	10 Kohm .25W 1% MF
R618	501002	10 Kohm .25W 1% MF
R619	501471	1.47 Kohm .25W 1% MF
R620	504990	499 ohm .25W 1% MF
R621	502002	20 Kohm .25W 1% MF
R622	502002	20 Kohm .25W 1% MF
R623	502002	20 Kohm .25W 1% MF
R624	502003	200 Kohm .25W 1% MF
R625	504999	49.9 Kohm .25W 1% MF
R626	504991	4.99 Kohm .25W 1% MF
R627	501002	10 Kohm .25W 1% MF
R628	501471	1.47 Kohm .25W 1% MF
R629	504990	499 ohm .25W 1% MF
R630	502002	20 Kohm .25W 1% MF
R631	502002	20 Kohm .25W 1% MF
R632	502002	20 Kohm .25W 1% MF
R633	502003	200 Kohm .25W 1% MF
R634	504999	49.9 Kohm .25W 1% MF
R635	504991	4.99 Kohm .25W 1% MF
R701	502002	20 Kohm .25W 1% MF
R702	502002	20 Kohm .25W 1% MF
R745	502002	20 Kohm .25W 1% MF
R746	502002	20 Kohm .25W 1% MF
R811	504021	4.02 Kohm .25W 1% MF
R812	508251	8.25 Kohm .25W 1% MF
R813	501001	1 Kohm .25W 1% MF
RN1	511203	20 Kohm 1% 4SIP Network
RN2	511203	20 Kohm 1% 4SIP Network
RN3	511203	20 Kohm 1% 4SIP Network
RN4	511203	20 Kohm 1% 4SIP Network
RN5	511203	20 Kohm 1% 4SIP Network
RN6	511203	20 Kohm 1% 4SIP Network
VR11	583123	10 Kohm Screw Adjust Pot
VR12	560104	100 Kohm Trim Pot
VR13	560104	100 Kohm Trim Pot
VR21	583123	10 Kohm Screw Adjust Pot
VR22	560104	100 Kohm Trim Pot
VR23	560104	100 Kohm Trim Pot
VR31	583123	10 Kohm Screw Adjust Pot
VR32	560104	100 Kohm Trim Pot
VR33	560104	100 Kohm Trim Pot
VR41	583123	10 Kohm Screw Adjust Pot
VR42	560104	100 Kohm Trim Pot
VR43	560104	100 Kohm Trim Pot
VR51	583123	10 Kohm Screw Adjust Pot
VR52	560104	100 Kohm Trim Pot
VR53	560104	100 Kohm Trim Pot
VR61	583123	10 Kohm Screw Adjust Pot
VR62	560104	100 Kohm Trim Pot
VR63	560104	100 Kohm Trim Pot
VR81	560102	1 Kohm Trim Pot
SW1	652300	Sw DP3T (M/L/P)
SW2	652300	Sw DP3T (M/L/P)
SW3	652300	Sw DP3T (M/L/P)
SW4	652300	Sw DP3T (M/L/P)
SW5	652300	Sw DP3T (M/L/P)
SW6	652300	Sw DP3T (M/L/P)

MPX Output Module 463002C Parts List

Desig.	IQPN	Description
A91	320074	IC Quad Opamp TL074
A92	352300	IC Analog Demux SSM2300
A93	352300	IC Analog Demux SSM2300
A701	325532	IC Dual Opamp NE5532
A702	325532	IC Dual Opamp NE5532
A703	325532	IC Dual Opamp NE5532
A704	325532	IC Dual Opamp NE5532
A801	370337	IC Regulator –Adjust LM337
A802	370317	IC Regulator +Adjust LM317
A803	373405	IC Regulator +5V LM340T-5.0
U91	350830	IC D/A Converter DAC0830
U93	314702	IC Baud Gen IM4702
U94	300074	IC Dual D Flip-FLop 74HC74A
U95	300244	IC Tristate Driver 74LS244
U96	317058	IC Processor 705
U97	316402	IC UART IM6402
U98	304093	IC Qd NAND Schmitt CD4093
U99	340007	IC Hex Buffer DM7407
U910	343691	IC Quad Line Driver DS3691
U911	342632	IC Quad Diff Line Rcvr 26LS32
U912	334200	IC Opto-Coupler HCPL4200
Q91	800093	PNP MPSA93 TO92
Q94	814401	NPN 2N4401 TO92
Q701	814401	NPN 2N4401 TO92
Q702	814401	NPN 2N4401 TO92
Q801	814401	NPN 2N4401 TO92
Q802	804403	PNP 2N4403 TO92
Q803	805551	NPN 2N5551 TO92
Q804	805551	NPN 2N5551 TO92
D91	224447	Diode 1N4447 Signal
D92	224004	Diode 1N4004 400V 1A
D93	224736	Diode 1N4736A Zener 6.8V
D94	224736	Diode 1N4736A Zener 6.8V
D701	224004	Diode 1N4004 400V 1A
D702	224004	Diode 1N4004 400V 1A
D801	220008	Diode Bridge 800V DF08M
D802	224004	Diode 1N4004 400V 1A
D803	224004	Diode 1N4004 400V 1A
D804	224004	Diode 1N4004 400V 1A
D805	224004	Diode 1N4004 400V 1A
D806	224004	Diode 1N4004 400V 1A
D807	224004	Diode 1N4004 400V 1A
D808	224004	Diode 1N4004 400V 1A
D809	220008	Diode Bridge 800V DF08M
D810	224756	Diode 1N4756 Zener 47V
D811	224004	Diode 1N4004 400V 1A
D812	224733	Diode 1N4733A Zener 5.1V
D910	220914	Diode 1N914B Signal 4ns
D911	220914	Diode 1N914B Signal 4ns

Desig.	IQPN	Description
D912	220914	Diode 1N914B Signal 4ns
D913	220914	Diode 1N914B Signal 4ns
D914	224742	Diode 1N4742B Zener 12V
D915	225819	Diode 1N5819 Schottky
D916	225819	Diode 1N5819 Schottky
D917	220914	Diode 1N914B Signal 4ns
D918	220914	Diode 1N914B Signal 4ns
D919	220914	Diode 1N914B Signal 4ns
D920	220914	Diode 1N914B Signal 4ns
D921	220914	Diode 1N914B Signal 4ns
D922	224733	Diode 1N4733A Zener 5.1V
D923	224004	Diode 1N4004 400V 1A
D924	224740	Diode 1N4740A Zener 10V
LD1	235732	LED Amber Enable
LD2	234413	LED Yellow DSPI
X91	922457	XTAL 2.4576 MHz
X92	923686	XTAL 3.6864 MHz
K1	482024	Relay 2FA 24V PRMA2A24
K2	482024	Relay 2FA 24V PRMA2A24
K3	484424	Relay 2FC 24V LM44E00
K4	482024	Relay 2FA 24V PRMA2A24
T801	722434	XFMR Power 24VA
C91	100101	Cap 100pF 50V 10% Ceramic
C92	122100	Cap 10µF 35V Electrolytic
C93	121101	Cap 100µF 25V Electrolytic
C94	100103	Cap .01µF 50V 10% Ceramic
C95	100103	Cap .01µF 50V 10% Ceramic
C96	100103	Cap .01µF 50V 10% Ceramic
C97	100103	Cap .01µF 50V 10% Ceramic
C106	121101	Cap 100µF 25V Electrolytic
C707	100101	Cap 100pF 50V 10% Ceramic
C708	100101	Cap 100pF 50V 10% Ceramic
C709	100101	Cap 100pF 50V 10% Ceramic
C710	129470	Cap 47µF 25V Electrolytic NP
C711	129470	Cap 47µF 25V Electrolytic NP
C712	100102	Cap .001µF 50V 10% Ceramic
C713	100102	Cap .001µF 50V 10% Ceramic
C714	100101	Cap 100pF 50V 10% Ceramic
C715	100101	Cap 100pF 50V 10% Ceramic
C716	100101	Cap 100pF 50V 10% Ceramic
C717	129470	Cap 47µF 25V Electrolytic NP
C718	129470	Cap 47µF 25V Electrolytic NP
C719	100102	Cap .001µF 50V 10% Ceramic
C720	100102	Cap .001µF 50V 10% Ceramic
C721	100101	Cap 100pF 50V 10% Ceramic
C722	100101	Cap 100pF 50V 10% Ceramic

MPX Output Module 463002C Parts List

Desig.	IQPN	Description
C723	100101	Cap 100pF 50V 10% Ceramic
C724	129470	Cap 47µF 25V Electrolytic NP
C725	129470	Cap 47µF 25V Electrolytic NP
C726	100102	Cap .001µF 50V 10% Ceramic
C727	100102	Cap .001µF 50V 10% Ceramic
C728	100101	Cap 100pF 50V 10% Ceramic
C729	100101	Cap 100pF 50V 10% Ceramic
C730	100101	Cap 100pF 50V 10% Ceramic
C731	129470	Cap 47µF 25V Electrolytic NP
C732	129470	Cap 47µF 25V Electrolytic NP
C733	100102	Cap .001µF 50V 10% Ceramic
C734	100102	Cap .001µF 50V 10% Ceramic
C735	100103	Cap .01µF 50V 10% Ceramic
C736	100103	Cap .01µF 50V 10% Ceramic
C737	100103	Cap .01µF 50V 10% Ceramic
C738	100103	Cap .01µF 50V 10% Ceramic
C741	100103	Cap .01µF 50V 10% Ceramic
C742	100103	Cap .01µF 50V 10% Ceramic
C743	100103	Cap .01µF 50V 10% Ceramic
C744	100103	Cap .01µF 50V 10% Ceramic
C801	102103	Cap .01µF 250V Ceramic
C802	123471	Cap 470µF 50V Electrolytic
C803	123471	Cap 470µF 50V Electrolytic
C804	100104	Cap .1µF 50V 10% Ceramic
C805	100104	Cap .1µF 50V 10% Ceramic
C806	123100	Cap 10µF 50V Electrolytic
C807	123100	Cap 10µF 50V Electrolytic
C808	123100	Cap 10µF 50V Electrolytic
C809	123100	Cap 10µF 50V Electrolytic
C810	122470	Cap 47µF 35V Electrolytic
C811	122470	Cap 47µF 35V Electrolytic
C812	100103	Cap .01µF 50V 10% Ceramic
C813	100103	Cap .01µF 50V 10% Ceramic
C814	100104	Cap .1µF 50V 10% Ceramic
C815	100104	Cap .1µF 50V 10% Ceramic
C816	122101	Cap 100µF 35V Electrolytic
C817	122101	Cap 100µF 35V Electrolytic
C818	125101	Cap 100µF 100V Electrolytic
C819	100103	Cap .01µF 50V 10% Ceramic
C820	125101	Cap 100µF 100V Electrolytic
C821	124470	Cap 47µF 63V Electrolytic
C822	121101	Cap 100µF 25V Electrolytic
C823	100103	Cap .01µF 50V 10% Ceramic
C920	101560	Cap 56pF 50V NPO Ceramic
C921	101560	Cap 56pF 50V NPO Ceramic
C922	100204	Cap .2µF 50V 10% Ceramic
C923	101200	Cap 20pF 50V NPO Ceramic
C924	101200	Cap 20pF 50V NPO Ceramic
C926	100103	Cap .01µF 50V 10% Ceramic
C927	100103	Cap .01µF 50V 10% Ceramic
C928	100103	Cap .01µF 50V 10% Ceramic
C929	100103	Cap .01µF 50V 10% Ceramic
C930	100103	Cap .01µF 50V 10% Ceramic
C931	100103	Cap .01µF 50V 10% Ceramic
C932	100103	Cap .01µF 50V 10% Ceramic
C933	100103	Cap .01µF 50V 10% Ceramic
C934	100104	Cap .1µF 50V 10% Ceramic
C935	122100	Cap 10µF 35V Electrolytic
R91	506810	681 ohm .25W 1% MF
R92	507501	7.5 Kohm .25W 1% MF
R93	501001	1 Kohm .25W 1% MF
R94	504021	4.02 Kohm .25W 1% MF
R95	504990	499 ohm .25W 1% MF
R96	502002	20 Kohm .25W 1% MF
R99	502002	20 Kohm .25W 1% MF
R100	500000	Jumper 0 Ohm
R101	502002	20 Kohm .25W 1% MF
R102	502002	20 Kohm .25W 1% MF
R105	502001	2 Kohm .25W 1% MF
R107	501000	100 ohm .25W 1% MF
R109	502001	2 Kohm .25W 1% MF
R115	502002	20 Kohm .25W 1% MF
R709	504999	49.9 Kohm .25W 1% MF
R710	504999	49.9 Kohm .25W 1% MF
R711	501003	100 Kohm .25W 1% MF
R712	501003	100 Kohm .25W 1% MF
R719	504999	49.9 Kohm .25W 1% MF
R720	504999	49.9 Kohm .25W 1% MF
R721	501003	100 Kohm .25W 1% MF
R722	501003	100 Kohm .25W 1% MF
R727	504999	49.9 Kohm .25W 1% MF
R728	504999	49.9 Kohm .25W 1% MF
R729	501003	100 Kohm .25W 1% MF
R730	501003	100 Kohm .25W 1% MF
R737	504999	49.9 Kohm .25W 1% MF
R738	504999	49.9 Kohm .25W 1% MF
R739	501003	100 Kohm .25W 1% MF
R740	501003	100 Kohm .25W 1% MF
R741	501002	10 Kohm .25W 1% MF
R742	501002	10 Kohm .25W 1% MF
R801	501102	11 Kohm .25W 1% MF
R802	501102	11 Kohm .25W 1% MF
R803	501001	1 Kohm .25W 1% MF
R804	501001	1 Kohm .25W 1% MF
R805	501002	10 Kohm .25W 1% MF
R806	501002	10 Kohm .25W 1% MF
R807	507501	7.5 Kohm .25W 1% MF
R808	501003	100 Kohm .25W 1% MF
R809	501002	10 Kohm .25W 1% MF
R810	520102	1 Kohm .25W 5% CF
R814	532220	22 ohm 2W 5%

MPX Output Module 463002C Parts List

Desig.	IQPN	Description
R920	501005	10 Mohm .1W 5% MF
R921	501003	100 Kohm .25W 1% MF
R922	501005	10 Mohm .1W 5% MF
R923	501002	10 Kohm .25W 1% MF
R925	506810	681 ohm .25W 1% MF
R926	501002	10 Kohm .25W 1% MF
R927	502491	2.49 Kohm .25W 1% MF
R928	502491	2.49 Kohm .25W 1% MF
R929	502002	20 Kohm .25W 1% MF
R930	503011	3.01 Kohm .25W 1% MF
R931	501501	1.5 Kohm .25W 1% MF
R933	520102	1 Kohm .25W 5% CF
R935	503011	3.01 Kohm .25W 1% MF
R936	503011	3.01 Kohm .25W 1% MF
R937	503011	3.01 Kohm .25W 1% MF
R939	502491	2.49 Kohm .25W 1% MF
R942	501001	1 Kohm .25W 1% MF
R943	504993	499 Kohm .25W 1% MF
R944	502001	2 Kohm .25W 1% MF
R945	501001	1 Kohm .25W 1% MF
R946	502001	2 Kohm .25W 1% MF
R947	501002	10 Kohm .25W 1% MF
R948	501003	100 Kohm .25W 1% MF
R949	501003	100 Kohm .25W 1% MF
R950	504993	499 Kohm .25W 1% MF
R951	501002	10 Kohm .25W 1% MF
R952	501002	10 Kohm .25W 1% MF
R953	501002	10 Kohm .25W 1% MF
R954	501001	1 Kohm .25W 1% MF
RN21	511103	10 Kohm 1% 4SIP Network
RN22	511103	10 Kohm 1% 4SIP Network
RN23	511103	10 Kohm 1% 4SIP Network
RN24	511103	10 Kohm 1% 4SIP Network
RN25	513203	20 Kohm 1% 3SIP Network
RN26	513203	20 Kohm 1% 3SIP Network
RN27	511103	10 Kohm 1% 4SIP Network
RN28	511103	10 Kohm 1% 4SIP Network
RN91	511103	10 Kohm 1% 4SIP Network
RN92	511103	10 Kohm 1% 4SIP Network
RN94	511203	20 Kohm 1% 4SIP Network
VR91	560102	1 Kohm Trim Pot
B1	050136	Battery
SW91	651106	Sw SPST DIP 6 Pos (Baud)
SW92	651108	Sw SPST DIP 8 Pos (Address)
SW94	652200	Sw 2 Pos Slide (RS232/422)

SMX/AMB Input Module 462001D Parts List

Desig.	IQPN	Description
A11	323078	IC Dual Opamp MC33078
A12	323079	IC Quad Opamp MC33079
A13	352150	IC VCA 2150A
A14	352150	IC VCA 2150A
A15	320412	IC Dual Opamp LF412
A22	323079	IC Quad Opamp MC33079
A23	352150	IC VCA 2150A
A24	352150	IC VCA 2150A
A31	323078	IC Dual Opamp MC33078
A32	323079	IC Quad Opamp MC33079
A33	352150	IC VCA 2150A
A34	352150	IC VCA 2150A
A35	320412	IC Dual Opamp LF412
A42	323079	IC Quad Opamp MC33079
A43	352150	IC VCA 2150A
A44	352150	IC VCA 2150A
A51	323078	IC Dual Opamp MC33078
A52	323079	IC Quad Opamp MC33079
A53	352150	IC VCA 2150A
A54	352150	IC VCA 2150A
A55	320412	IC Dual Opamp LF412
A62	323079	IC Quad Opamp MC33079
A63	352150	IC VCA 2150A
A64	352150	IC VCA 2150A
A701	323078	IC Dual Opamp MC33078
Q11	800970	PNP 2SA970 TO92
Q12	800970	PNP 2SA970 TO92
Q21	800970	PNP 2SA970 TO92
Q22	800970	PNP 2SA970 TO92
Q31	800970	PNP 2SA970 TO92
Q32	800970	PNP 2SA970 TO92
Q41	800970	PNP 2SA970 TO92
Q42	800970	PNP 2SA970 TO92
Q51	800970	PNP 2SA970 TO92
Q52	800970	PNP 2SA970 TO92
Q61	800970	PNP 2SA970 TO92
Q62	800970	PNP 2SA970 TO92
D101	224004	Diode 1N4004 400V 1A
D102	224004	Diode 1N4004 400V 1A
D103	224004	Diode 1N4004 400V 1A
D104	224004	Diode 1N4004 400V 1A
D105	224447	Diode 1N4447 Signal
D106	224447	Diode 1N4447 Signal
D107	224689	Diode 1N4689 Zener 5.1V
D108	224447	Diode 1N4447 Signal
D201	224004	Diode 1N4004 400V 1A
D202	224004	Diode 1N4004 400V 1A
D203	224004	Diode 1N4004 400V 1A
D204	224004	Diode 1N4004 400V 1A

Desig.	IQPN	Description
D205	224447	Diode 1N4447 Signal
D206	224447	Diode 1N4447 Signal
D207	224689	Diode 1N4689 Zener 5.1V
D208	224447	Diode 1N4447 Signal
D301	224004	Diode 1N4004 400V 1A
D302	224004	Diode 1N4004 400V 1A
D303	224004	Diode 1N4004 400V 1A
D304	224004	Diode 1N4004 400V 1A
D305	224447	Diode 1N4447 Signal
D306	224447	Diode 1N4447 Signal
D307	224689	Diode 1N4689 Zener 5.1V
D308	224447	Diode 1N4447 Signal
D401	224004	Diode 1N4004 400V 1A
D402	224004	Diode 1N4004 400V 1A
D403	224004	Diode 1N4004 400V 1A
D404	224004	Diode 1N4004 400V 1A
D405	224447	Diode 1N4447 Signal
D406	224447	Diode 1N4447 Signal
D407	224689	Diode 1N4689 Zener 5.1V
D408	224447	Diode 1N4447 Signal
D501	224004	Diode 1N4004 400V 1A
D502	224004	Diode 1N4004 400V 1A
D503	224004	Diode 1N4004 400V 1A
D504	224004	Diode 1N4004 400V 1A
D505	224447	Diode 1N4447 Signal
D506	224447	Diode 1N4447 Signal
D507	224689	Diode 1N4689 Zener 5.1V
D508	224447	Diode 1N4447 Signal
D601	224004	Diode 1N4004 400V 1A
D602	224004	Diode 1N4004 400V 1A
D603	224004	Diode 1N4004 400V 1A
D604	224004	Diode 1N4004 400V 1A
D605	224447	Diode 1N4447 Signal
D606	224447	Diode 1N4447 Signal
D607	224689	Diode 1N4689 Zener 5.1V
D608	224447	Diode 1N4447 Signal
D813	224733	Diode 1N4733A Zener 5.1V
D814	500000	Jumper 0 Ohm
L11	400271	Choke 270µH
L12	400271	Choke 270µH
L21	400271	Choke 270µH
L22	400271	Choke 270µH
L31	400271	Choke 270µH
L32	400271	Choke 270µH
L41	400271	Choke 270µH
L42	400271	Choke 270µH
L51	400271	Choke 270µH
L52	400271	Choke 270µH
L61	400271	Choke 270µH
L62	400271	Choke 270µH

SMX/AMB Input Module 462001D Parts List

Desig.	IQPN	Description
FB11	400001	Ferrite Bead With Leads
FB12	400001	Ferrite Bead With Leads
FB13	400000	Ferrite Bead No Leads
FB14	400000	Ferrite Bead No Leads
FB21	400001	Ferrite Bead With Leads
FB22	400001	Ferrite Bead With Leads
FB23	400000	Ferrite Bead No Leads
FB24	400000	Ferrite Bead No Leads
FB31	400001	Ferrite Bead With Leads
FB32	400001	Ferrite Bead With Leads
FB33	400000	Ferrite Bead No Leads
FB34	400000	Ferrite Bead No Leads
FB41	400001	Ferrite Bead With Leads
FB42	400001	Ferrite Bead With Leads
FB43	400000	Ferrite Bead No Leads
FB44	400000	Ferrite Bead No Leads
FB51	400001	Ferrite Bead With Leads
FB52	400001	Ferrite Bead With Leads
FB53	400000	Ferrite Bead No Leads
FB54	400000	Ferrite Bead No Leads
FB61	400001	Ferrite Bead With Leads
FB62	400001	Ferrite Bead With Leads
FB63	400000	Ferrite Bead No Leads
FB64	400000	Ferrite Bead No Leads
C101	100680	Cap 68pF 50V 10% Ceramic
C102	100680	Cap 68pF 50V 10% Ceramic
C103	100152	Cap 1500pF 50V 10% Ceramic
C104	100152	Cap 1500pF 50V 10% Ceramic
C105	124470	Cap 47µF 63V Electrolytic
C106	124470	Cap 47µF 63V Electrolytic
C107	100472	Cap .0047µF 50V 10% Ceramic
C108	100472	Cap .0047µF 50V 10% Ceramic
C109	124470	Cap 47µF 63V Electrolytic
C110	124470	Cap 47µF 63V Electrolytic
C111	100221	Cap 220pF 50V 10% Ceramic
C112	100221	Cap 220pF 50V 10% Ceramic
C113	100470	Cap 47pF 50V 10% Ceramic
C114	100470	Cap 47pF 50V 10% Ceramic
C115	120471	Cap 470µF 6.3V Electrolytic
C116	150104	Cap .1µF 50V 5% Film
C117	122100	Cap 10µF 35V Electrolytic
C118	100470	Cap 47pF 50V 10% Ceramic
C119	150104	Cap .1µF 50V 5% Film
C120	122100	Cap 10µF 35V Electrolytic
C121	100470	Cap 47pF 50V 10% Ceramic
C122	100103	Cap .01µF 50V 10% Ceramic
C123	100103	Cap .01µF 50V 10% Ceramic
C124	100103	Cap .01µF 50V 10% Ceramic
C125	100103	Cap .01µF 50V 10% Ceramic
C126	161150	Cap 15µF 25V 10% Tantalum
C127	100200	Cap 20pF 50V 10% Ceramic
C130	100103	Cap .01µF 50V 10% Ceramic
C131	100103	Cap .01µF 50V 10% Ceramic
C132	122100	Cap 10µF 35V Electrolytic
C201	100680	Cap 68pF 50V 10% Ceramic
C202	100680	Cap 68pF 50V 10% Ceramic
C203	100152	Cap 1500pF 50V 10% Ceramic
C204	100152	Cap 1500pF 50V 10% Ceramic
C205	124470	Cap 47µF 63V Electrolytic
C206	124470	Cap 47µF 63V Electrolytic
C207	100472	Cap .0047µF 50V 10% Ceramic
C208	100472	Cap .0047µF 50V 10% Ceramic
C209	124470	Cap 47µF 63V Electrolytic
C210	124470	Cap 47µF 63V Electrolytic
C211	100221	Cap 220pF 50V 10% Ceramic
C212	100221	Cap 220pF 50V 10% Ceramic
C213	100470	Cap 47pF 50V 10% Ceramic
C214	100470	Cap 47pF 50V 10% Ceramic
C215	120471	Cap 470µF 6.3V Electrolytic
C216	150104	Cap .1µF 50V 5% Film
C217	122100	Cap 10µF 35V Electrolytic
C218	100470	Cap 47pF 50V 10% Ceramic
C219	150104	Cap .1µF 50V 5% Film
C220	122100	Cap 10µF 35V Electrolytic
C221	100470	Cap 47pF 50V 10% Ceramic
C222	100103	Cap .01µF 50V 10% Ceramic
C223	100103	Cap .01µF 50V 10% Ceramic
C224	100103	Cap .01µF 50V 10% Ceramic
C225	100103	Cap .01µF 50V 10% Ceramic
C226	161150	Cap 15µF 25V 10% Tantalum
C227	100200	Cap 20pF 50V 10% Ceramic
C232	122100	Cap 10µF 35V Electrolytic
C301	100680	Cap 68pF 50V 10% Ceramic
C302	100680	Cap 68pF 50V 10% Ceramic
C303	100152	Cap 1500pF 50V 10% Ceramic
C304	100152	Cap 1500pF 50V 10% Ceramic
C305	124470	Cap 47µF 63V Electrolytic
C306	124470	Cap 47µF 63V Electrolytic
C307	100472	Cap .0047µF 50V 10% Ceramic
C308	100472	Cap .0047µF 50V 10% Ceramic
C309	124470	Cap 47µF 63V Electrolytic
C310	124470	Cap 47µF 63V Electrolytic
C311	100221	Cap 220pF 50V 10% Ceramic
C312	100221	Cap 220pF 50V 10% Ceramic
C313	100470	Cap 47pF 50V 10% Ceramic
C314	100470	Cap 47pF 50V 10% Ceramic
C315	120471	Cap 470µF 6.3V Electrolytic
C317	122100	Cap 10µF 35V Electrolytic
C316	150104	Cap .1µF 50V 5% Film
C318	100470	Cap 47pF 50V 10% Ceramic
C319	150104	Cap .1µF 50V 5% Film

SMX/AMB Input Module 462001D Parts List

Desig.	IQPN	Description
C320	122100	Cap 10µF 35V Electrolytic
C321	100470	Cap 47pF 50V 10% Ceramic
C322	100103	Cap .01µF 50V 10% Ceramic
C323	100103	Cap .01µF 50V 10% Ceramic
C324	100103	Cap .01µF 50V 10% Ceramic
C325	100103	Cap .01µF 50V 10% Ceramic
C326	161150	Cap 15µF 25V 10% Tantalum
C327	100200	Cap 20pF 50V 10% Ceramic
C330	100103	Cap .01µF 50V 10% Ceramic
C331	100103	Cap .01µF 50V 10% Ceramic
C332	122100	Cap 10µF 35V Electrolytic
C401	100680	Cap 68pF 50V 10% Ceramic
C402	100680	Cap 68pF 50V 10% Ceramic
C403	100152	Cap 1500pF 50V 10% Ceramic
C404	100152	Cap 1500pF 50V 10% Ceramic
C405	124470	Cap 47µF 63V Electrolytic
C406	124470	Cap 47µF 63V Electrolytic
C407	100472	Cap .0047µF 50V 10% Ceramic
C408	100472	Cap .0047µF 50V 10% Ceramic
C409	124470	Cap 47µF 63V Electrolytic
C410	124470	Cap 47µF 63V Electrolytic
C411	100221	Cap 220pF 50V 10% Ceramic
C412	100221	Cap 220pF 50V 10% Ceramic
C413	100470	Cap 47pF 50V 10% Ceramic
C414	100470	Cap 47pF 50V 10% Ceramic
C415	120471	Cap 470µF 6.3V Electrolytic
C416	150104	Cap .1µF 50V 5% Film
C417	122100	Cap 10µF 35V Electrolytic
C418	100470	Cap 47pF 50V 10% Ceramic
C419	150104	Cap .1µF 50V 5% Film
C420	122100	Cap 10µF 35V Electrolytic
C421	100470	Cap 47pF 50V 10% Ceramic
C422	100103	Cap .01µF 50V 10% Ceramic
C423	100103	Cap .01µF 50V 10% Ceramic
C424	100103	Cap .01µF 50V 10% Ceramic
C425	100103	Cap .01µF 50V 10% Ceramic
C426	161150	Cap 15µF 25V 10% Tantalum
C427	100200	Cap 20pF 50V 10% Ceramic
C432	122100	Cap 10µF 35V Electrolytic
C501	100680	Cap 68pF 50V 10% Ceramic
C502	100680	Cap 68pF 50V 10% Ceramic
C503	100152	Cap 1500pF 50V 10% Ceramic
C504	100152	Cap 1500pF 50V 10% Ceramic
C505	124470	Cap 47µF 63V Electrolytic
C506	124470	Cap 47µF 63V Electrolytic
C507	100472	Cap .0047µF 50V 10% Ceramic
C508	100472	Cap .0047µF 50V 10% Ceramic
C509	124470	Cap 47µF 63V Electrolytic
C510	124470	Cap 47µF 63V Electrolytic
C511	100221	Cap 220pF 50V 10% Ceramic
C512	100221	Cap 220pF 50V 10% Ceramic
C513	100470	Cap 47pF 50V 10% Ceramic
C514	100470	Cap 47pF 50V 10% Ceramic
C515	120471	Cap 470µF 6.3V Electrolytic
C516	150104	Cap .1µF 50V 5% Film
C517	122100	Cap 10µF 35V Electrolytic
C518	100470	Cap 47pF 50V 10% Ceramic
C519	150104	Cap .1µF 50V 5% Film
C520	122100	Cap 10µF 35V Electrolytic
C521	100470	Cap 47pF 50V 10% Ceramic
C522	100103	Cap .01µF 50V 10% Ceramic
C523	100103	Cap .01µF 50V 10% Ceramic
C524	100103	Cap .01µF 50V 10% Ceramic
C525	100103	Cap .01µF 50V 10% Ceramic
C526	161150	Cap 15µF 25V 10% Tantalum
C527	100200	Cap 20pF 50V 10% Ceramic
C530	100103	Cap .01µF 50V 10% Ceramic
C531	100103	Cap .01µF 50V 10% Ceramic
C532	122100	Cap 10µF 35V Electrolytic
C601	100680	Cap 68pF 50V 10% Ceramic
C602	100680	Cap 68pF 50V 10% Ceramic
C603	100152	Cap 1500pF 50V 10% Ceramic
C604	100152	Cap 1500pF 50V 10% Ceramic
C605	124470	Cap 47µF 63V Electrolytic
C606	124470	Cap 47µF 63V Electrolytic
C607	100472	Cap .0047µF 50V 10% Ceramic
C608	100472	Cap .0047µF 50V 10% Ceramic
C609	124470	Cap 47µF 63V Electrolytic
C610	124470	Cap 47µF 63V Electrolytic
C611	100221	Cap 220pF 50V 10% Ceramic
C612	100221	Cap 220pF 50V 10% Ceramic
C613	100470	Cap 47pF 50V 10% Ceramic
C614	100470	Cap 47pF 50V 10% Ceramic
C615	120471	Cap 470µF 6.3V Electrolytic
C616	150104	Cap .1µF 50V 5% Film
C617	122100	Cap 10µF 35V Electrolytic
C618	100470	Cap 47pF 50V 10% Ceramic
C619	150104	Cap .1µF 50V 5% Film
C620	122100	Cap 10µF 35V Electrolytic
C621	100470	Cap 47pF 50V 10% Ceramic
C622	100103	Cap .01µF 50V 10% Ceramic
C623	100103	Cap .01µF 50V 10% Ceramic
C624	100103	Cap .01µF 50V 10% Ceramic
C625	100103	Cap .01µF 50V 10% Ceramic
C626	161150	Cap 15µF 25V 10% Tantalum
C627	100200	Cap 20pF 50V 10% Ceramic
C632	122100	Cap 10µF 35V Electrolytic
C701	129470	Cap 47µF 25V Electrolytic NP
C702	100470	Cap 47pF 50V 10% Ceramic
C703	129470	Cap 47µF 25V Electrolytic NP
C704	100470	Cap 47pF 50V 10% Ceramic
C705	122109	Cap 1µF 35V Electrolytic

SMX/AMB Input Module 462001D Parts List

Desig.	IQPN	Description
C706	122109	Cap 1µF 35V Electrolytic
C745	100103	Cap .01µF 50V 10% Ceramic
C746	100103	Cap .01µF 50V 10% Ceramic
C747	100103	Cap .01µF 50V 10% Ceramic
C748	123331	Cap 330µF 50V Electrolytic
C823	122101	Cap 100µF 35V Electrolytic
R101	502003	200 Kohm .25W 1% MF
R102	502003	200 Kohm .25W 1% MF
R103	501002	10 Kohm .25W 1% MF
R104	501002	10 Kohm .25W 1% MF
R105	506810	681 ohm .25W 1% MF
R106	506810	681 ohm .25W 1% MF
R107	506811	6.81 Kohm .25W 1% MF
R108	506811	6.81 Kohm .25W 1% MF
R109	503011	3.01 Kohm .25W 1% MF
R110	503011	3.01 Kohm .25W 1% MF
R111	501000	100 ohm .25W 1% MF
R112	501002	10 Kohm .25W 1% MF
R113	501002	10 Kohm .25W 1% MF
R118	501002	10 Kohm .25W 1% MF
R119	501471	1.47 Kohm .25W 1% MF
R120	504990	499 ohm .25W 1% MF
R121	502002	20 Kohm .25W 1% MF
R122	502002	20 Kohm .25W 1% MF
R123	502002	20 Kohm .25W 1% MF
R124	502003	200 Kohm .25W 1% MF
R125	504999	49.9 Kohm .25W 1% MF
R126	504991	4.99 Kohm .25W 1% MF
R127	501002	10 Kohm .25W 1% MF
R128	501471	1.47 Kohm .25W 1% MF
R129	504990	499 ohm .25W 1% MF
R130	502002	20 Kohm .25W 1% MF
R131	502002	20 Kohm .25W 1% MF
R132	502002	20 Kohm .25W 1% MF
R133	502003	200 Kohm .25W 1% MF
R134	504999	49.9 Kohm .25W 1% MF
R135	504991	4.99 Kohm .25W 1% MF
R137	501002	10 Kohm .25W 1% MF
R138	505621	5.62 Kohm .25W 1% MF
R141	504993	499 Kohm .25W 1% MF
R142	504991	4.99 Kohm .25W 1% MF
R143	504999	49.9 Kohm .25W 1% MF
R201	502003	200 Kohm .25W 1% MF
R202	502003	200 Kohm .25W 1% MF
R203	501002	10 Kohm .25W 1% MF
R204	501002	10 Kohm .25W 1% MF
R205	506810	681 ohm .25W 1% MF
R206	506810	681 ohm .25W 1% MF
R207	506811	6.81 Kohm .25W 1% MF
R208	506811	6.81 Kohm .25W 1% MF
R209	503011	3.01 Kohm .25W 1% MF
R210	503011	3.01 Kohm .25W 1% MF
R211	501000	100 ohm .25W 1% MF
R212	501002	10 Kohm .25W 1% MF
R213	501002	10 Kohm .25W 1% MF
R218	501002	10 Kohm .25W 1% MF
R219	501471	1.47 Kohm .25W 1% MF
R220	504990	499 ohm .25W 1% MF
R221	502002	20 Kohm .25W 1% MF
R222	502002	20 Kohm .25W 1% MF
R223	502002	20 Kohm .25W 1% MF
R224	502003	200 Kohm .25W 1% MF
R225	504999	49.9 Kohm .25W 1% MF
R226	504991	4.99 Kohm .25W 1% MF
R227	501002	10 Kohm .25W 1% MF
R228	501471	1.47 Kohm .25W 1% MF
R229	504990	499 ohm .25W 1% MF
R230	502002	20 Kohm .25W 1% MF
R231	502002	20 Kohm .25W 1% MF
R232	502002	20 Kohm .25W 1% MF
R233	502003	200 Kohm .25W 1% MF
R234	504999	49.9 Kohm .25W 1% MF
R235	504991	4.99 Kohm .25W 1% MF
R237	501002	10 Kohm .25W 1% MF
R238	505621	5.62 Kohm .25W 1% MF
R241	504993	499 Kohm .25W 1% MF
R242	504991	4.99 Kohm .25W 1% MF
R243	504999	49.9 Kohm .25W 1% MF
R301	502003	200 Kohm .25W 1% MF
R302	502003	200 Kohm .25W 1% MF
R303	501002	10 Kohm .25W 1% MF
R304	501002	10 Kohm .25W 1% MF
R305	506810	681 ohm .25W 1% MF
R306	506810	681 ohm .25W 1% MF
R307	506811	6.81 Kohm .25W 1% MF
R308	506811	6.81 Kohm .25W 1% MF
R309	503011	3.01 Kohm .25W 1% MF
R310	503011	3.01 Kohm .25W 1% MF
R311	501000	100 ohm .25W 1% MF
R312	501002	10 Kohm .25W 1% MF
R313	501002	10 Kohm .25W 1% MF
R318	501002	10 Kohm .25W 1% MF
R319	501471	1.47 Kohm .25W 1% MF
R320	504990	499 ohm .25W 1% MF
R321	502002	20 Kohm .25W 1% MF
R322	502002	20 Kohm .25W 1% MF
R323	502002	20 Kohm .25W 1% MF
R324	502003	200 Kohm .25W 1% MF
R325	504999	49.9 Kohm .25W 1% MF
R326	504991	4.99 Kohm .25W 1% MF
R327	501002	10 Kohm .25W 1% MF

SMX/AMB Input Module 462001D Parts List

Desig.	IQPN	Description
R328	501471	1.47 Kohm .25W 1% MF
R329	504990	499 ohm .25W 1% MF
R330	502002	20 Kohm .25W 1% MF
R331	502002	20 Kohm .25W 1% MF
R332	502002	20 Kohm .25W 1% MF
R333	502003	200 Kohm .25W 1% MF
R334	504999	49.9 Kohm .25W 1% MF
R335	504991	4.99 Kohm .25W 1% MF
R337	501002	10 Kohm .25W 1% MF
R338	505621	5.62 Kohm .25W 1% MF
R341	504993	499 Kohm .25W 1% MF
R342	504991	4.99 Kohm .25W 1% MF
R343	504999	49.9 Kohm .25W 1% MF
R401	502003	200 Kohm .25W 1% MF
R402	502003	200 Kohm .25W 1% MF
R403	501002	10 Kohm .25W 1% MF
R404	501002	10 Kohm .25W 1% MF
R405	506810	681 ohm .25W 1% MF
R406	506810	681 ohm .25W 1% MF
R407	506811	6.81 Kohm .25W 1% MF
R408	506811	6.81 Kohm .25W 1% MF
R409	503011	3.01 Kohm .25W 1% MF
R410	503011	3.01 Kohm .25W 1% MF
R411	501000	100 ohm .25W 1% MF
R412	501002	10 Kohm .25W 1% MF
R413	501002	10 Kohm .25W 1% MF
R418	501002	10 Kohm .25W 1% MF
R419	501471	1.47 Kohm .25W 1% MF
R420	504990	499 ohm .25W 1% MF
R421	502002	20 Kohm .25W 1% MF
R422	502002	20 Kohm .25W 1% MF
R423	502002	20 Kohm .25W 1% MF
R424	502003	200 Kohm .25W 1% MF
R425	504999	49.9 Kohm .25W 1% MF
R426	504991	4.99 Kohm .25W 1% MF
R427	501002	10 Kohm .25W 1% MF
R428	501471	1.47 Kohm .25W 1% MF
R429	504990	499 ohm .25W 1% MF
R430	502002	20 Kohm .25W 1% MF
R431	502002	20 Kohm .25W 1% MF
R432	502002	20 Kohm .25W 1% MF
R433	502003	200 Kohm .25W 1% MF
R434	504999	49.9 Kohm .25W 1% MF
R435	504991	4.99 Kohm .25W 1% MF
R437	501002	10 Kohm .25W 1% MF
R438	505621	5.62 Kohm .25W 1% MF
R441	504993	499 Kohm .25W 1% MF
R442	504991	4.99 Kohm .25W 1% MF
R443	504999	49.9 Kohm .25W 1% MF
R501	502003	200 Kohm .25W 1% MF
R502	502003	200 Kohm .25W 1% MF
R503	501002	10 Kohm .25W 1% MF
R504	501002	10 Kohm .25W 1% MF
R505	506810	681 ohm .25W 1% MF
R506	506810	681 ohm .25W 1% MF
R507	506811	6.81 Kohm .25W 1% MF
R508	506811	6.81 Kohm .25W 1% MF
R509	503011	3.01 Kohm .25W 1% MF
R510	503011	3.01 Kohm .25W 1% MF
R511	501000	100 ohm .25W 1% MF
R512	501002	10 Kohm .25W 1% MF
R513	501002	10 Kohm .25W 1% MF
R518	501002	10 Kohm .25W 1% MF
R519	501471	1.47 Kohm .25W 1% MF
R520	504990	499 ohm .25W 1% MF
R521	502002	20 Kohm .25W 1% MF
R522	502002	20 Kohm .25W 1% MF
R523	502002	20 Kohm .25W 1% MF
R524	502003	200 Kohm .25W 1% MF
R525	504999	49.9 Kohm .25W 1% MF
R526	504991	4.99 Kohm .25W 1% MF
R527	501002	10 Kohm .25W 1% MF
R528	501471	1.47 Kohm .25W 1% MF
R529	504990	499 ohm .25W 1% MF
R530	502002	20 Kohm .25W 1% MF
R531	502002	20 Kohm .25W 1% MF
R532	502002	20 Kohm .25W 1% MF
R533	502003	200 Kohm .25W 1% MF
R534	504999	49.9 Kohm .25W 1% MF
R535	504991	4.99 Kohm .25W 1% MF
R537	501002	10 Kohm .25W 1% MF
R538	505621	5.62 Kohm .25W 1% MF
R541	504993	499 Kohm .25W 1% MF
R542	504991	4.99 Kohm .25W 1% MF
R543	504999	49.9 Kohm .25W 1% MF
R601	502003	200 Kohm .25W 1% MF
R602	502003	200 Kohm .25W 1% MF
R603	501002	10 Kohm .25W 1% MF
R604	501002	10 Kohm .25W 1% MF
R605	506810	681 ohm .25W 1% MF
R606	506810	681 ohm .25W 1% MF
R607	506811	6.81 Kohm .25W 1% MF
R608	506811	6.81 Kohm .25W 1% MF
R609	503011	3.01 Kohm .25W 1% MF
R610	503011	3.01 Kohm .25W 1% MF
R611	501000	100 ohm .25W 1% MF
R612	501002	10 Kohm .25W 1% MF
R613	501002	10 Kohm .25W 1% MF
R618	501002	10 Kohm .25W 1% MF
R619	501471	1.47 Kohm .25W 1% MF
R620	504990	499 ohm .25W 1% MF
R621	502002	20 Kohm .25W 1% MF

SMX/AMB Input Module 462001D Parts List

Desig.	IQPN	Description
R622	502002	20 Kohm .25W 1% MF
R623	502002	20 Kohm .25W 1% MF
R624	502003	200 Kohm .25W 1% MF
R625	504999	49.9 Kohm .25W 1% MF
R626	504991	4.99 Kohm .25W 1% MF
R627	501002	10 Kohm .25W 1% MF
R628	501471	1.47 Kohm .25W 1% MF
R629	504990	499 ohm .25W 1% MF
R630	502002	20 Kohm .25W 1% MF
R631	502002	20 Kohm .25W 1% MF
R632	502002	20 Kohm .25W 1% MF
R633	502003	200 Kohm .25W 1% MF
R634	504999	49.9 Kohm .25W 1% MF
R635	504991	4.99 Kohm .25W 1% MF
R637	501002	10 Kohm .25W 1% MF
R638	505621	5.62 Kohm .25W 1% MF
R641	504993	499 Kohm .25W 1% MF
R642	504991	4.99 Kohm .25W 1% MF
R643	504999	49.9 Kohm .25W 1% MF
R701	502002	20 Kohm .25W 1% MF
R702	502002	20 Kohm .25W 1% MF
R745	502002	20 Kohm .25W 1% MF
R746	502002	20 Kohm .25W 1% MF
R811	504021	4.02 Kohm .25W 1% MF
R812	507501	7.5 Kohm .25W 1% MF
R813	501001	1 Kohm .25W 1% MF
RN1	511203	20 Kohm 1% 4SIP Network
RN2	511203	20 Kohm 1% 4SIP Network
RN3	511203	20 Kohm 1% 4SIP Network
RN4	511203	20 Kohm 1% 4SIP Network
RN5	511203	20 Kohm 1% 4SIP Network
RN6	511203	20 Kohm 1% 4SIP Network
RN7	513203	20 Kohm 1% 3SIP Network
RN8	513203	20 Kohm 1% 3SIP Network
RN9	513203	20 Kohm 1% 3SIP Network

Desig.	IQPN	Description
RN10	513203	20 Kohm 1% 3SIP Network
RN11	513203	20 Kohm 1% 3SIP Network
RN12	513203	20 Kohm 1% 3SIP Network
VR11	583123	10 Kohm Screw Adjust Pot
VR12	560104	100 Kohm Trim Pot
VR13	560104	100 Kohm Trim Pot
VR14	560104	100 Kohm Trim Pot
VR21	583123	10 Kohm Screw Adjust Pot
VR22	560104	100 Kohm Trim Pot
VR23	560104	100 Kohm Trim Pot
VR24	560104	100 Kohm Trim Pot
VR31	583123	10 Kohm Screw Adjust Pot
VR32	560104	100 Kohm Trim Pot
VR33	560104	100 Kohm Trim Pot
VR34	560104	100 Kohm Trim Pot
VR41	583123	10 Kohm Screw Adjust Pot
VR42	560104	100 Kohm Trim Pot
VR43	560104	100 Kohm Trim Pot
VR44	560104	100 Kohm Trim Pot
VR51	583123	10 Kohm Screw Adjust Pot
VR52	560104	100 Kohm Trim Pot
VR53	560104	100 Kohm Trim Pot
VR54	560104	100 Kohm Trim Pot
VR61	583123	10 Kohm Screw Adjust Pot
VR62	560104	100 Kohm Trim Pot
VR63	560104	100 Kohm Trim Pot
VR64	560104	100 Kohm Trim Pot
VR81	560102	1 Kohm Trim Pot
SW1	652300	Sw DP3T (M/L/P)
SW2	652300	Sw DP3T (M/L/P)
SW3	652300	Sw DP3T (M/L/P)
SW4	652300	Sw DP3T (M/L/P)
SW5	652300	Sw DP3T (M/L/P)
SW6	652300	Sw DP3T (M/L/P)

SMX/AMB Output Module 462002D Parts List

Desig.	IQPN	Description
A91	320074	IC Quad Opamp TL074
A92	352300	IC Analog Demux SSM2300
A93	352300	IC Analog Demux SSM2300
A94	323079	IC Quad Opamp MC33079
A701	325532	IC Dual Opamp NE5532
A702	325532	IC Dual Opamp NE5532
A703	325532	IC Dual Opamp NE5532
A704	325532	IC Dual Opamp NE5532
A705	320412	IC Dual Opamp LF412
A801	370337	IC Regulator –Adjust LM337
A802	370317	IC Regulator +Adjust LM317
A803	373405	IC Regulator +5V LM340T-5.0
U91	350830	IC D/A Converter DAC0830
U92	350816	IC A/D Converter ADC0816
U93	314702	IC Baud Gen IM4702
U94	300074	IC Flip Flop 74LS74
U95	300244	IC Tristate Driver 74LS244
U96	317058	IC Microcontroller 705
U97	316402	IC UART IM6402
U98	304093	IC Quad NAND CD4093
U99	340007	IC Hex Buffer DM7407
U910	343691	IC Quad Line Driver DS3691
U911	342632	IC Quad Diff Line Rcvr 26LS32
U912	334200	IC Opto-Coupler HCPL4200
Q90	817400	NPN Dual 7SIP UPA74HA
Q91	800093	PNP MPSA93 TO92
Q94	814401	NPN 2N4401 TO92
Q701	814401	NPN 2N4401 TO92
Q702	814401	NPN 2N4401 TO92
Q801	814401	NPN 2N4401 TO92
Q802	804403	PNP 2N4403 TO92
Q803	805551	NPN 2N5551 TO92
Q804	805551	NPN 2N5551 TO92
D91	224447	Diode 1N4447 Signal
D92	224004	Diode 1N4004 400V 1A
D93	224736	Diode 1N4736A Zener 6.8V
D94	224736	Diode 1N4736A Zener 6.8V
D96	500000	Jumper 0 Ohm
D97	224733	Diode 1N4733A Zener 5.1V
D98	224447	Diode 1N4447 Signal
D99	224447	Diode 1N4447 Signal
D100	225819	Diode 1N5819 Schottky
D101	225819	Diode 1N5819 Schottky
D102	225819	Diode 1N5819 Schottky
D103	224689	Diode 1N4689 Zener 5.1V
D701	224004	Diode 1N4004 400V 1A
D702	224004	Diode 1N4004 400V 1A
D703	224447	Diode 1N4447 Signal
D704	224447	Diode 1N4447 Signal

Desig.	IQPN	Description
D705	224689	Diode 1N4689 Zener 5.1V
D706	224447	Diode 1N4447 Signal
D707	224447	Diode 1N4447 Signal
D708	224447	Diode 1N4447 Signal
D709	224689	Diode 1N4689 Zener 5.1V
D710	224447	Diode 1N4447 Signal
D801	220008	Diode Bridge 800V DF08M
D802	224004	Diode 1N4004 400V 1A
D803	224004	Diode 1N4004 400V 1A
D804	224004	Diode 1N4004 400V 1A
D805	224004	Diode 1N4004 400V 1A
D806	224004	Diode 1N4004 400V 1A
D807	224004	Diode 1N4004 400V 1A
D808	224004	Diode 1N4004 400V 1A
D809	220008	Diode Bridge 800V DF08M
D810	224756	Diode 1N4756 Zener 47V
D811	224004	Diode 1N4004 400V 1A
D812	224733	Diode 1N4733A Zener 5.1V
D910	224447	Diode 1N4447 Signal
D911	224447	Diode 1N4447 Signal
D912	224447	Diode 1N4447 Signal
D913	224447	Diode 1N4447 Signal
D914	224742	Diode 1N4742B Zener 12V
D915	225819	Diode 1N5819 Schottky
D916	225819	Diode 1N5819 Schottky
D917	224447	Diode 1N4447 Signal
D918	224447	Diode 1N4447 Signal
D919	224447	Diode 1N4447 Signal
D920	224447	Diode 1N4447 Signal
D921	224447	Diode 1N4447 Signal
D922	224733	Diode 1N4733A Zener 5.1V
D923	224004	Diode 1N4004 400V 1A
D924	224740	Diode 1N4740A Zener 10V
LD1	235732	LED Amber Enable
LD2	234413	LED Yellow DSPI
X91	922457	XTAL 2.4576 MHz
X92	923686	XTAL 3.6864 MHz
K1	482024	Relay 2FA 24V PRMA2A24
K2	482024	Relay 2FA 24V PRMA2A24
K3	484424	Relay 2FC 24V LM44E00
K4	482024	Relay 2FA 24V PRMA2A24
T801	722434	XFMR Power 24VA
C91	100101	Cap 100pF 50V 10% Ceramic
C92	122100	Cap 10µF 35V Electrolytic
C93	121101	Cap 100µF 25V Electrolytic
C94	100103	Cap .01µF 50V 10% Ceramic

SMX/AMB Output Module 462002D Parts List

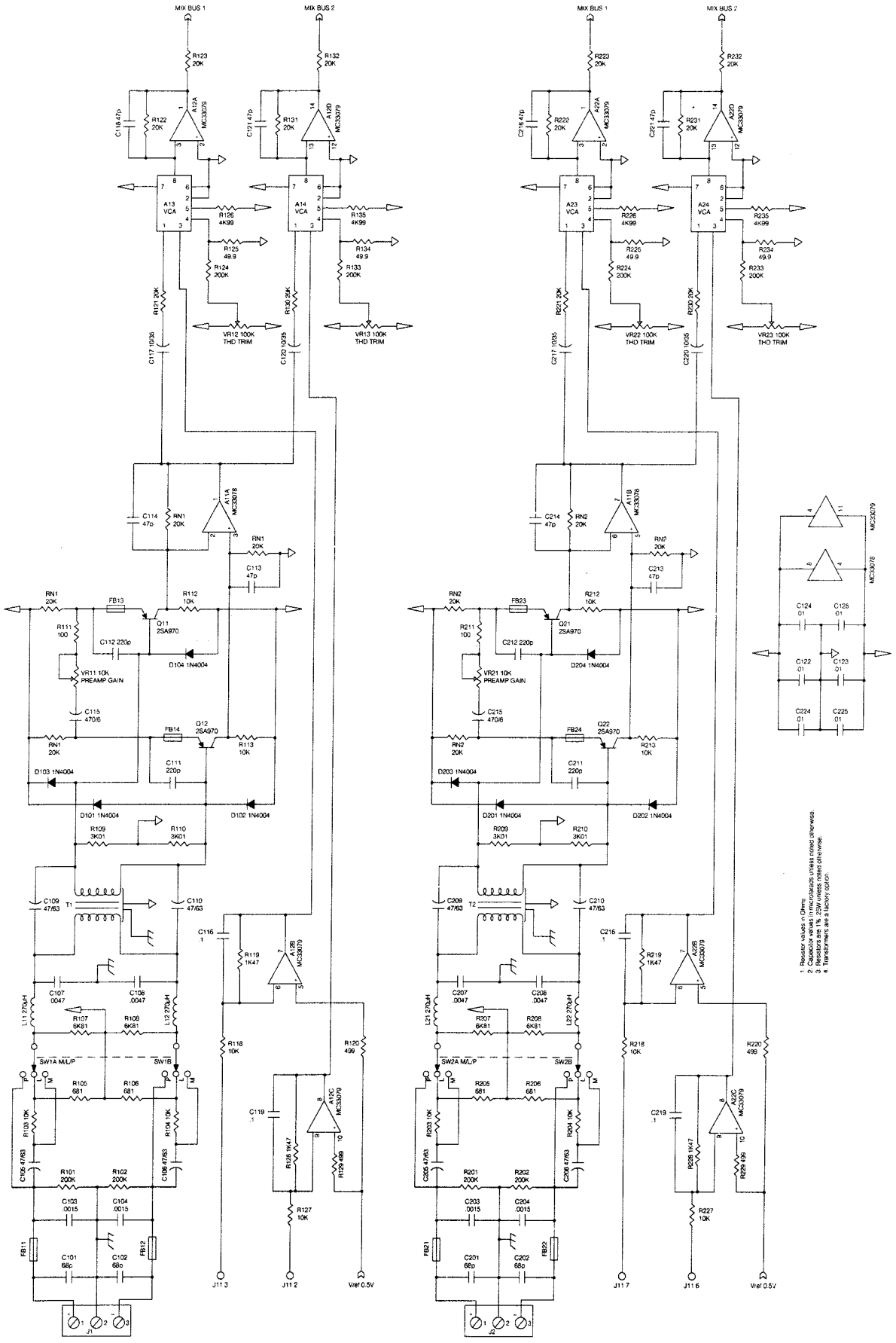
Desig.	IQPN	Description
C95	100103	Cap .01µF 50V 10% Ceramic
C96	100103	Cap .01µF 50V 10% Ceramic
C97	100103	Cap .01µF 50V 10% Ceramic
C98	122100	Cap 10µF 35V Electrolytic
C99	100331	Cap 330pF 50V 10% Ceramic
C100	100150	Cap 15pF 50V 10% Ceramic
C101	100332	Cap .0033µF 50V 10% Ceramic
C102	100102	Cap .001µF 50V 10% Ceramic
C103	100103	Cap .01µF 50V 10% Ceramic
C104	100103	Cap .01µF 50V 10% Ceramic
C105	100103	Cap .01µF 50V 10% Ceramic
C106	121101	Cap 100µF 25V Electrolytic
C707	100101	Cap 100pF 50V 10% Ceramic
C708	100101	Cap 100pF 50V 10% Ceramic
C709	100101	Cap 100pF 50V 10% Ceramic
C710	129470	Cap 47µF 25V Electrolytic NP
C711	129470	Cap 47µF 25V Electrolytic NP
C712	100102	Cap .001µF 50V 10% Ceramic
C713	100102	Cap .001µF 50V 10% Ceramic
C714	100101	Cap 100pF 50V 10% Ceramic
C715	100101	Cap 100pF 50V 10% Ceramic
C716	100101	Cap 100pF 50V 10% Ceramic
C717	129470	Cap 47µF 25V Electrolytic NP
C718	129470	Cap 47µF 25V Electrolytic NP
C719	100102	Cap .001µF 50V 10% Ceramic
C720	100102	Cap .001µF 50V 10% Ceramic
C721	100101	Cap 100pF 50V 10% Ceramic
C722	100101	Cap 100pF 50V 10% Ceramic
C723	100101	Cap 100pF 50V 10% Ceramic
C724	129470	Cap 47µF 25V Electrolytic NP
C725	129470	Cap 47µF 25V Electrolytic NP
C726	100102	Cap .001µF 50V 10% Ceramic
C727	100102	Cap .001µF 50V 10% Ceramic
C728	100101	Cap 100pF 50V 10% Ceramic
C729	100101	Cap 100pF 50V 10% Ceramic
C730	100101	Cap 100pF 50V 10% Ceramic
C731	129470	Cap 47µF 25V Electrolytic NP
C732	129470	Cap 47µF 25V Electrolytic NP
C733	100102	Cap .001µF 50V 10% Ceramic
C734	100102	Cap .001µF 50V 10% Ceramic
C735	100103	Cap .01µF 50V 10% Ceramic
C736	100103	Cap .01µF 50V 10% Ceramic
C737	100103	Cap .01µF 50V 10% Ceramic
C738	100103	Cap .01µF 50V 10% Ceramic
C739	100103	Cap .01µF 50V 10% Ceramic
C740	100103	Cap .01µF 50V 10% Ceramic
C741	100103	Cap .01µF 50V 10% Ceramic
C742	100103	Cap .01µF 50V 10% Ceramic
C743	100103	Cap .01µF 50V 10% Ceramic
C744	100103	Cap .01µF 50V 10% Ceramic
C750	122100	Cap 10µF 35V Electrolytic
C751	100200	Cap 20pF 50V 10% Ceramic
C752	161150	Cap 15µF 25V 10% Tantalum
C753	122100	Cap 10µF 35V Electrolytic
C754	100200	Cap 20pF 50V 10% Ceramic
C755	161150	Cap 15µF 25V 10% Tantalum
C802	123471	Cap 470µF 50V Electrolytic
C803	123471	Cap 470µF 50V Electrolytic
C804	100104	Cap .1µF 50V 10% Ceramic
C805	100104	Cap .1µF 50V 10% Ceramic
C806	123100	Cap 10µF 50V Electrolytic
C807	123100	Cap 10µF 50V Electrolytic
C808	123100	Cap 10µF 50V Electrolytic
C809	123100	Cap 10µF 50V Electrolytic
C810	122470	Cap 47µF 35V Electrolytic
C811	122470	Cap 47µF 35V Electrolytic
C812	100103	Cap .01µF 50V 10% Ceramic
C813	100103	Cap .01µF 50V 10% Ceramic
C814	100104	Cap .1µF 50V 10% Ceramic
C815	100104	Cap .1µF 50V 10% Ceramic
C816	122101	Cap 100µF 35V Electrolytic
C817	122101	Cap 100µF 35V Electrolytic
C818	125101	Cap 100µF 100V Electrolytic
C819	100103	Cap .01µF 50V 10% Ceramic
C820	125101	Cap 100µF 100V Electrolytic
C821	124470	Cap 47µF 63V Electrolytic
C822	121101	Cap 100µF 25V Electrolytic
C823	100103	Cap .01µF 50V 10% Ceramic
C920	101560	Cap 56pF 50V NPO Ceramic
C921	101560	Cap 56pF 50V NPO Ceramic
C922	100204	Cap .2µF 50V 10% Ceramic
C923	101200	Cap 20pF 50V NPO Ceramic
C924	101200	Cap 20pF 50V NPO Ceramic
C926	100103	Cap .01µF 50V 10% Ceramic
C927	100103	Cap .01µF 50V 10% Ceramic
C928	100103	Cap .01µF 50V 10% Ceramic
C929	100103	Cap .01µF 50V 10% Ceramic
C930	100103	Cap .01µF 50V 10% Ceramic
C931	100103	Cap .01µF 50V 10% Ceramic
C932	100103	Cap .01µF 50V 10% Ceramic
C933	100103	Cap .01µF 50V 10% Ceramic
C934	100104	Cap .1µF 50V 10% Ceramic
C935	122100	Cap 10µF 35V Electrolytic
R91	506810	681 ohm .25W 1% MF
R92	503011	3.01 Kohm .25W 1% MF
R93	504990	499 ohm .25W 1% MF
R94	504021	4.02 Kohm .25W 1% MF
R95	504990	499 ohm .25W 1% MF
R96	502002	20 Kohm .25W 1% MF
R99	502002	20 Kohm .25W 1% MF
R100	500000	Jumper 0 Ohm

SMX/AMB Output Module 462002D Parts List

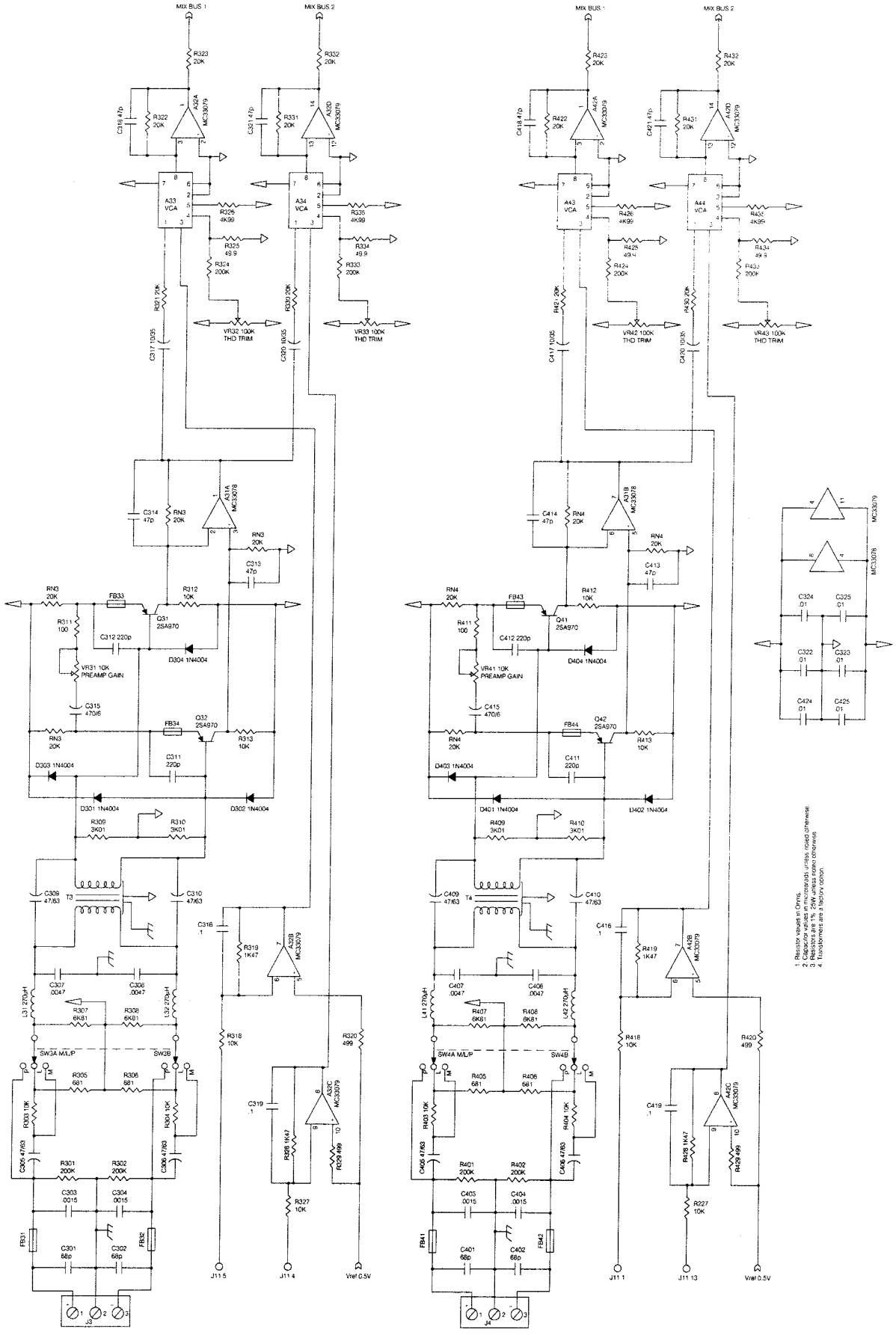
Desig.	IQPN	Description
R101	502002	20 Kohm .25W 1% MF
R102	502002	20 Kohm .25W 1% MF
R103	501004	1 Mohm .25W 1% MF
R104	501001	1 Kohm .25W 1% MF
R105	502001	2 Kohm .25W 1% MF
R106	501001	1 Kohm .25W 1% MF
R107	501000	100 ohm .25W 1% MF
R108	501501	1.5 Kohm .25W 1% MF
R109	502001	2 Kohm .25W 1% MF
R110	551000	100 ohm .25W 5% 3300PPM/°C
R111	501004	1 Mohm .25W 1% MF
R112	501002	10 Kohm .25W 1% MF
R113	501001	1 Kohm .25W 1% MF
R115	502002	20 Kohm .25W 1% MF
R709	504999	49.9 Kohm .25W 1% MF
R710	504999	49.9 Kohm .25W 1% MF
R711	501003	100 Kohm .25W 1% MF
R712	501003	100 Kohm .25W 1% MF
R719	504999	49.9 Kohm .25W 1% MF
R720	504999	49.9 Kohm .25W 1% MF
R721	501003	100 Kohm .25W 1% MF
R722	501003	100 Kohm .25W 1% MF
R727	504999	49.9 Kohm .25W 1% MF
R728	504999	49.9 Kohm .25W 1% MF
R729	501003	100 Kohm .25W 1% MF
R730	501003	100 Kohm .25W 1% MF
R737	504999	49.9 Kohm .25W 1% MF
R738	504999	49.9 Kohm .25W 1% MF
R739	501003	100 Kohm .25W 1% MF
R740	501003	100 Kohm .25W 1% MF
R741	501002	10 Kohm .25W 1% MF
R742	501002	10 Kohm .25W 1% MF
R750	504993	499 Kohm .25W 1% MF
R751	504991	4.99 Kohm .25W 1% MF
R752	501002	10 Kohm .25W 1% MF
R753	504999	49.9 Kohm .25W 1% MF
R754	504993	499 Kohm .25W 1% MF
R755	504991	4.99 Kohm .25W 1% MF
R756	501002	10 Kohm .25W 1% MF
R757	504999	49.9 Kohm .25W 1% MF
R758	505621	5.62 Kohm .25W 1% MF
R759	505621	5.62 Kohm .25W 1% MF
R801	501102	11 Kohm .25W 1% MF
R802	501102	11 Kohm .25W 1% MF
R803	501001	1 Kohm .25W 1% MF
R804	501001	1 Kohm .25W 1% MF
R805	501002	10 Kohm .25W 1% MF
R806	501002	10 Kohm .25W 1% MF
R807	507501	7.5 Kohm .25W 1% MF
R808	501003	100 Kohm .25W 1% MF
R809	501002	10 Kohm .25W 1% MF
R810	520102	1 Kohm .25W 5% CF
R814	532220	22 ohm 2W 5%
R920	501005	10 Mohm .1W 5% MF
R921	501003	100 Kohm .25W 1% MF
R922	501005	10 Mohm .1W 5% MF
R923	501002	10 Kohm .25W 1% MF
R925	506810	681 ohm .25W 1% MF
R926	501002	10 Kohm .25W 1% MF
R927	502491	2.49 Kohm .25W 1% MF
R928	502491	2.49 Kohm .25W 1% MF
R929	502002	20 Kohm .25W 1% MF
R930	503011	3.01 Kohm .25W 1% MF
R931	501501	1.5 Kohm .25W 1% MF
R933	520102	1 Kohm .25W 5% CF
R935	503011	3.01 Kohm .25W 1% MF
R936	503011	3.01 Kohm .25W 1% MF
R937	503011	3.01 Kohm .25W 1% MF
R939	502491	2.49 Kohm .25W 1% MF
R942	501001	1 Kohm .25W 1% MF
R943	504993	499 Kohm .25W 1% MF
R944	502001	2 Kohm .25W 1% MF
R945	501001	1 Kohm .25W 1% MF
R946	502001	2 Kohm .25W 1% MF
R947	501002	10 Kohm .25W 1% MF
R948	501003	100 Kohm .25W 1% MF
R949	501003	100 Kohm .25W 1% MF
R950	504993	499 Kohm .25W 1% MF
R951	501002	10 Kohm .25W 1% MF
R952	501002	10 Kohm .25W 1% MF
R953	501002	10 Kohm .25W 1% MF
R954	501001	1 Kohm .25W 1% MF
RN21	511103	10 Kohm 1% 4SIP Network
RN22	511103	10 Kohm 1% 4SIP Network
RN23	511103	10 Kohm 1% 4SIP Network
RN24	511103	10 Kohm 1% 4SIP Network
RN25	513203	20 Kohm 1% 3SIP Network
RN26	513203	20 Kohm 1% 3SIP Network
RN27	511103	10 Kohm 1% 4SIP Network
RN28	511103	10 Kohm 1% 4SIP Network
RN91	511103	10 Kohm 1% 4SIP Network
RN92	511103	10 Kohm 1% 4SIP Network
RN94	511203	20 Kohm 1% 4SIP Network
VR71	560104	100 Kohm Trim Pot
VR72	560104	100 Kohm Trim Pot
VR91	560102	1 Kohm Trim Pot
VR92	560103	10 Kohm Trim Pot
VR93	560102	1 Kohm Trim Pot

SMX/AMB Output Module 462002D Parts List

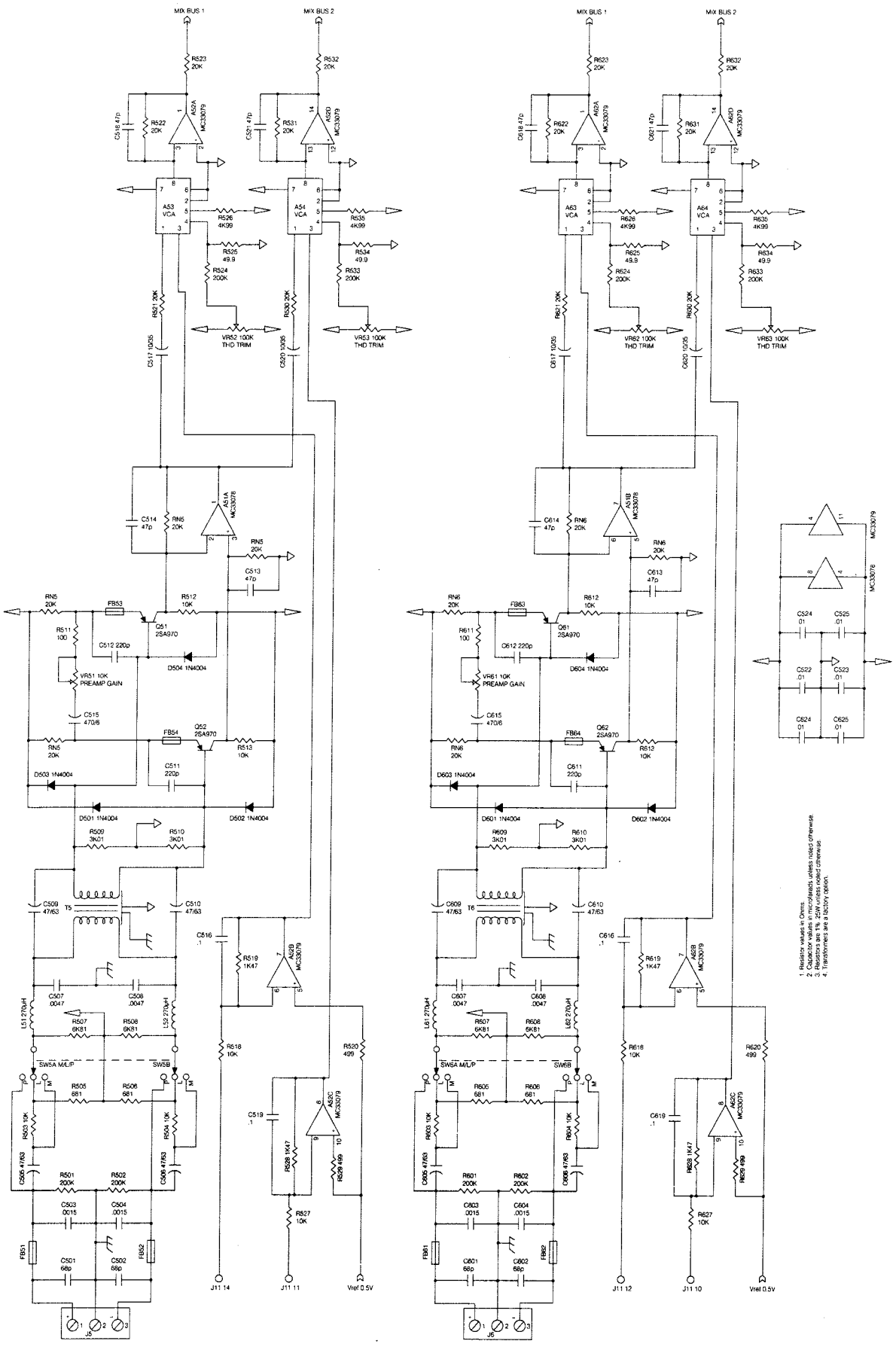
Desig.	IQPN	Description
B1	050136	Battery
SW91	651106	Sw SPST DIP 6 Pos (Baud)
SW92	651108	Sw SPST DIP 8 Pos (Address)
SW94	652200	Sw 2 Pos Slide (RS232/422)

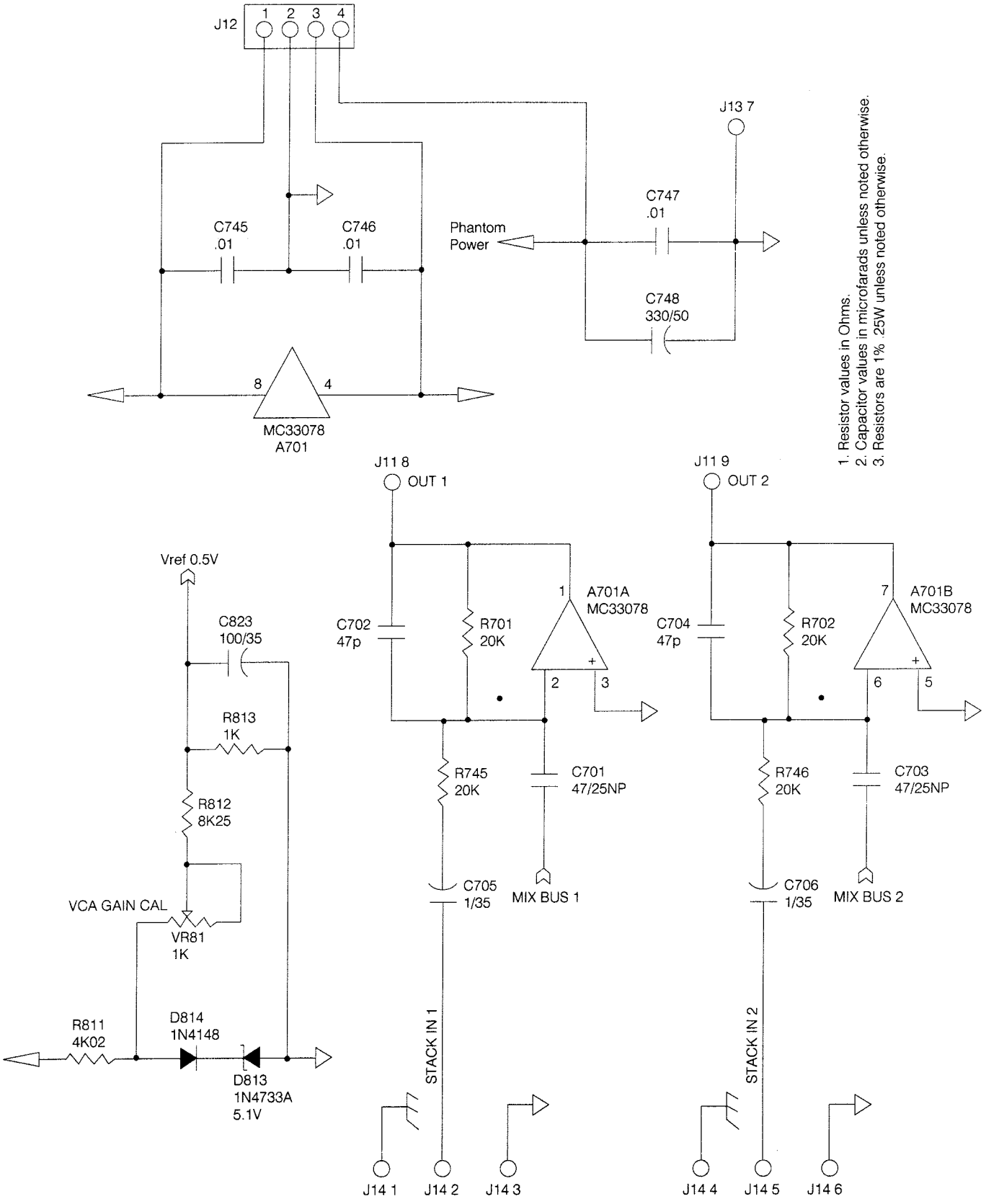


MPX Audio Inputs 1 and 2 Schematic

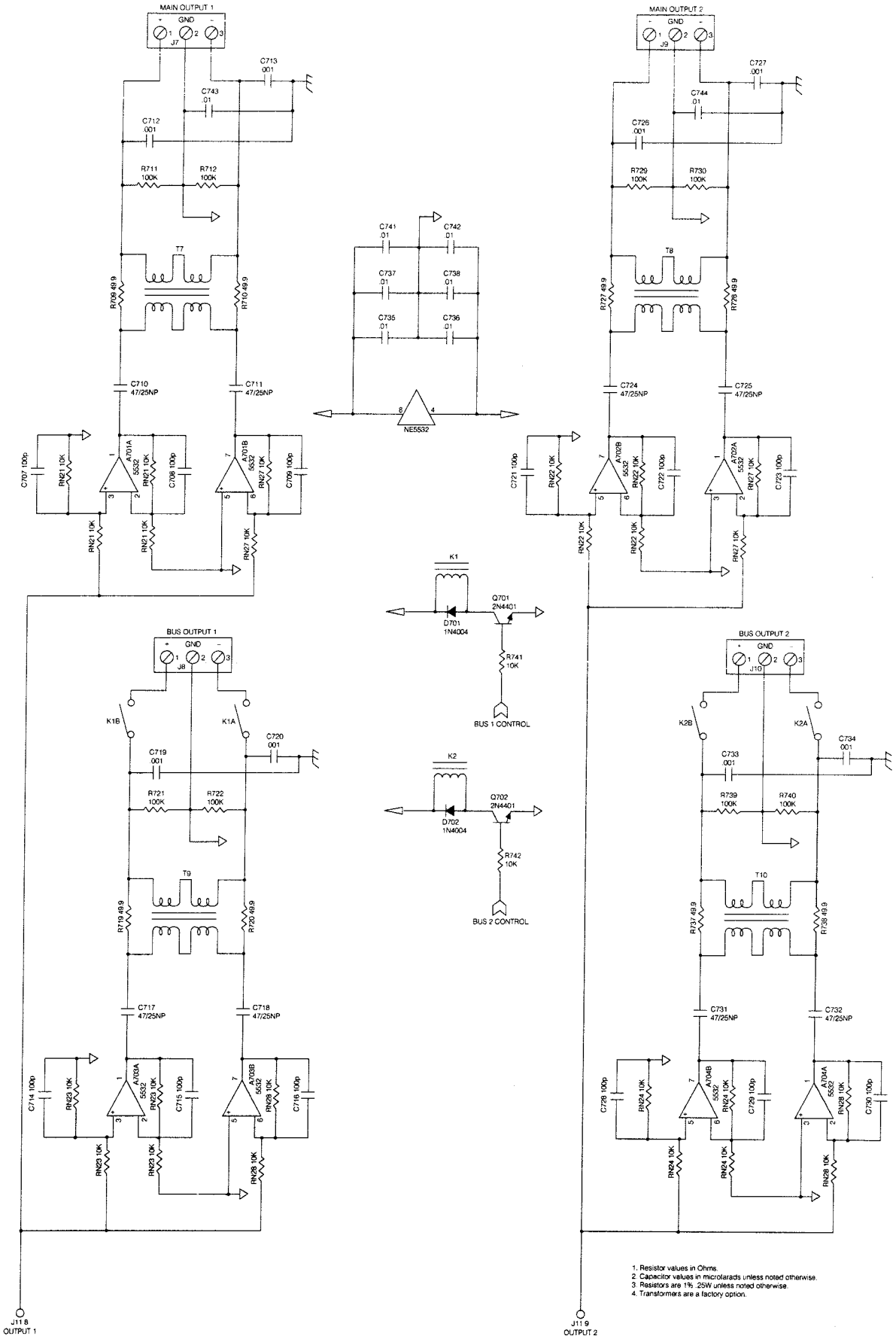


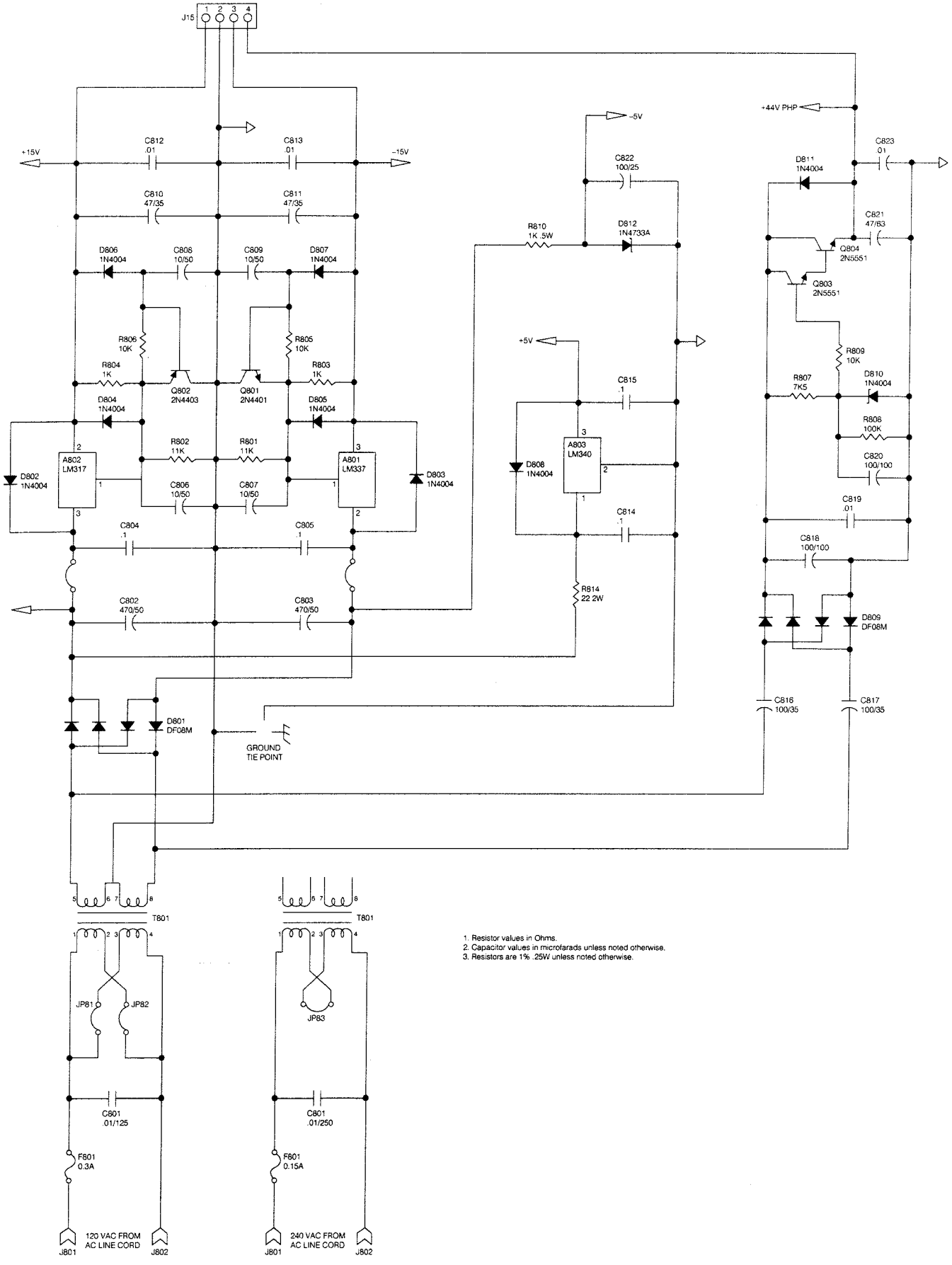
MPX Audio Inputs 3 and 4 Schematic


MIX BUS 1
MIX BUS 2
A53 VCA
A54 VCA
A63 VCA
A64 VCA
VR52 100K THD TRIM
VR53 100K THD TRIM
VR62 100K THD TRIM
VR63 100K THD TRIM
VR51 10K PREAMP GAIN
VR61 10K PREAMP GAIN
Q51 2SA970
Q52 2SA970
Q61 2SA970
Q62 2SA970
D501 1N4004
D502 1N4004
D503 1N4004
D504 1N4004
D601 1N4004
D602 1N4004
D603 1N4004
D604 1N4004
SW5A M/LP
SW5B
SW6A M/LP
SW6B
J5
J6
J11 14
J11 11
J11 12
J11 10
Vref 0.5V
MC33079
1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1% metal film unless noted otherwise.
4. Transformers are a factory option.



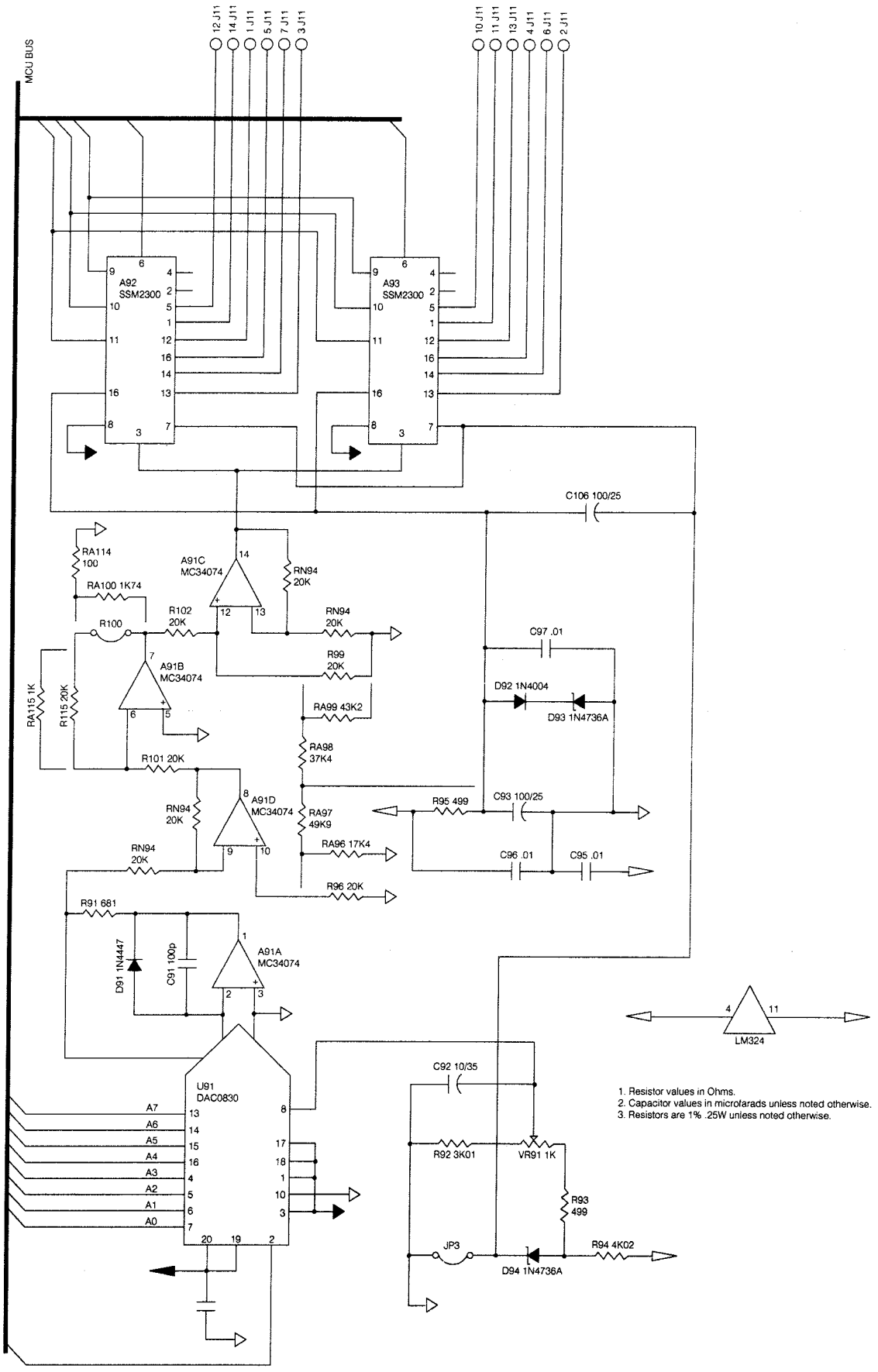
MPX VCA Gain Calibration and Stack Input Schematic


MAIN OUTPUT 1
MAIN OUTPUT 2
BUS OUTPUT 1
BUS OUTPUT 2
NE5532
BUS 1 CONTROL
BUS 2 CONTROL
1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1%, .25W unless noted otherwise.
4. Transformers are a factory option.



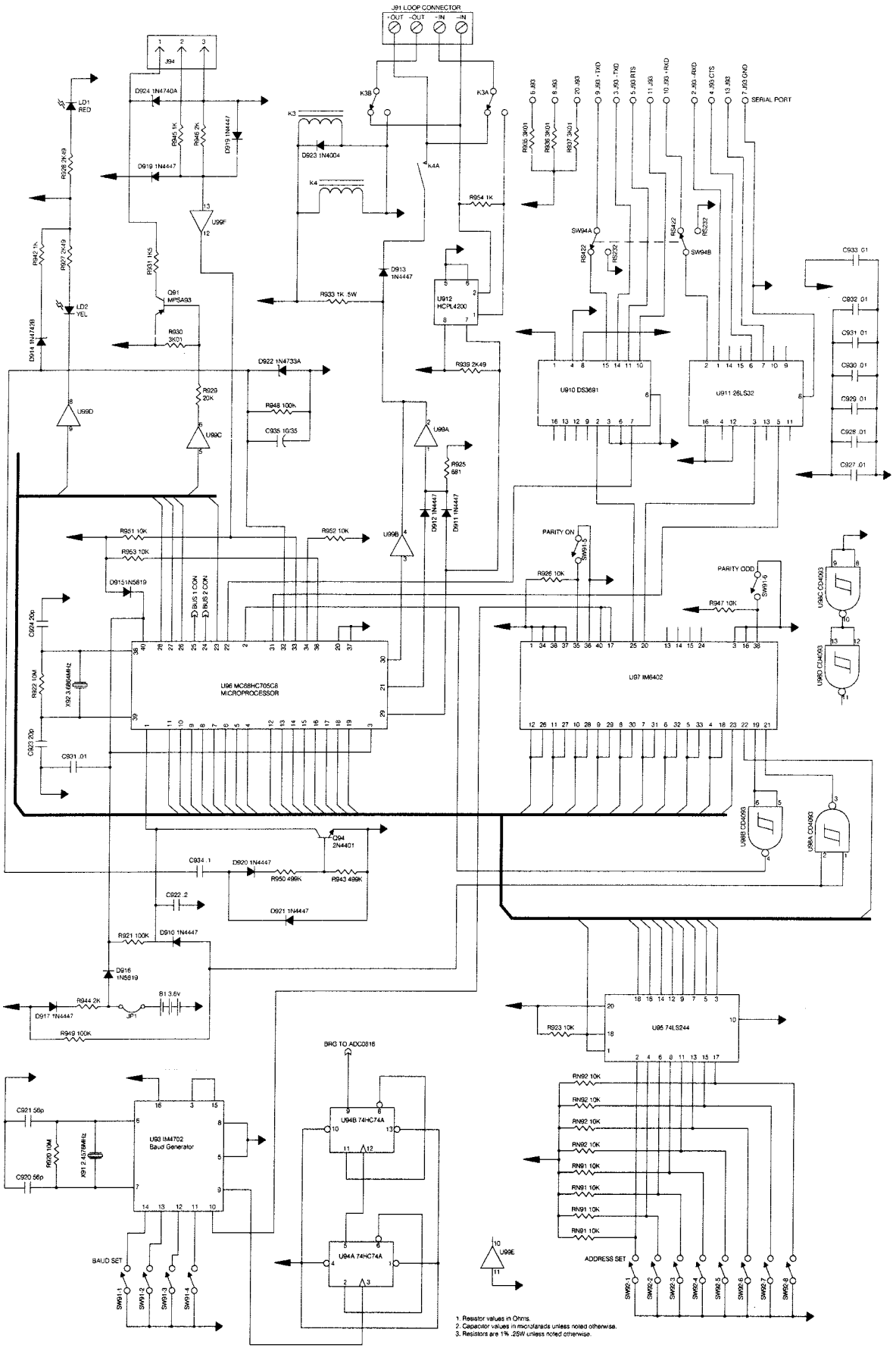
1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1% .25W unless noted otherwise.

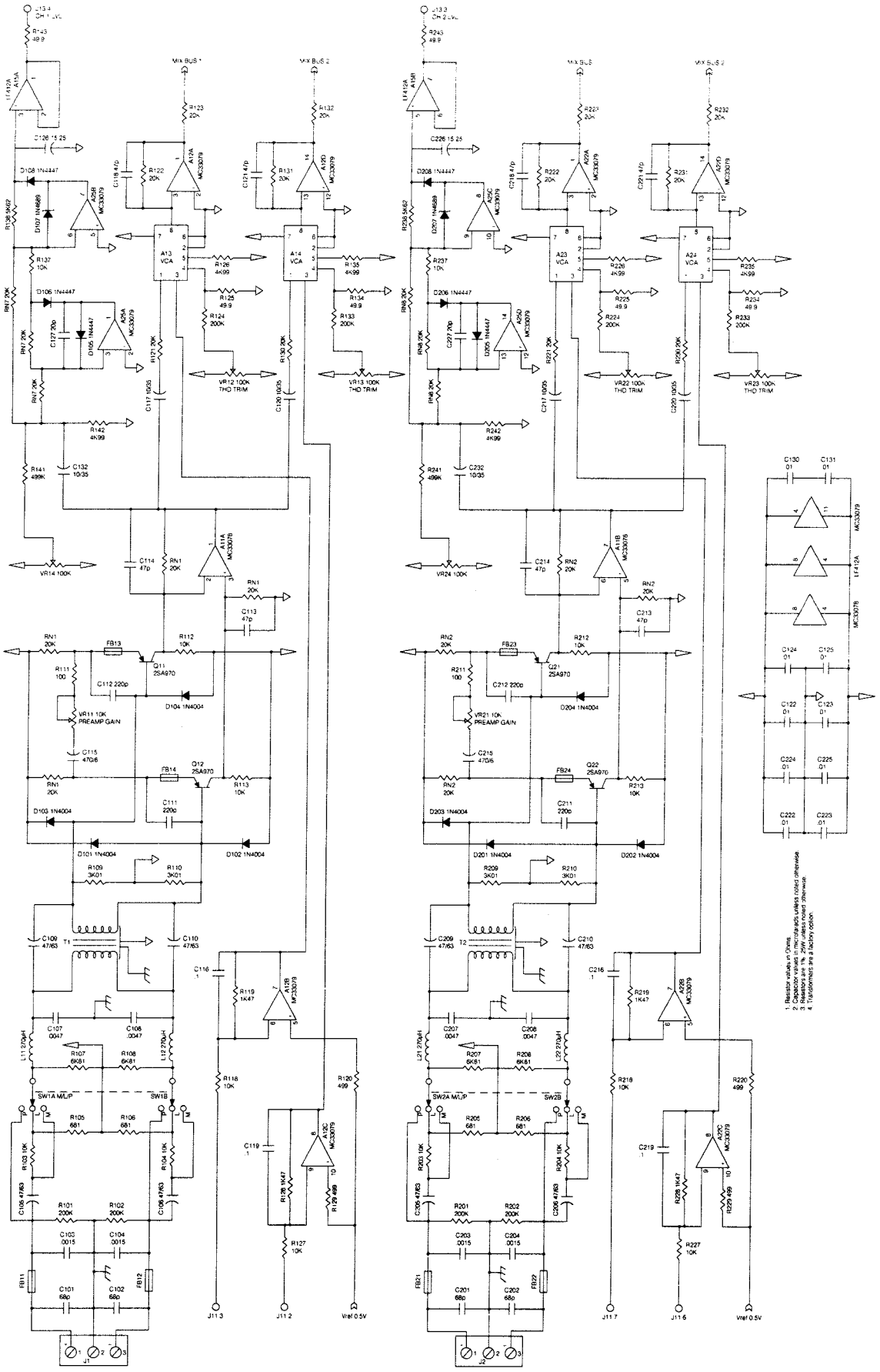
MPX Power Supply Schematic



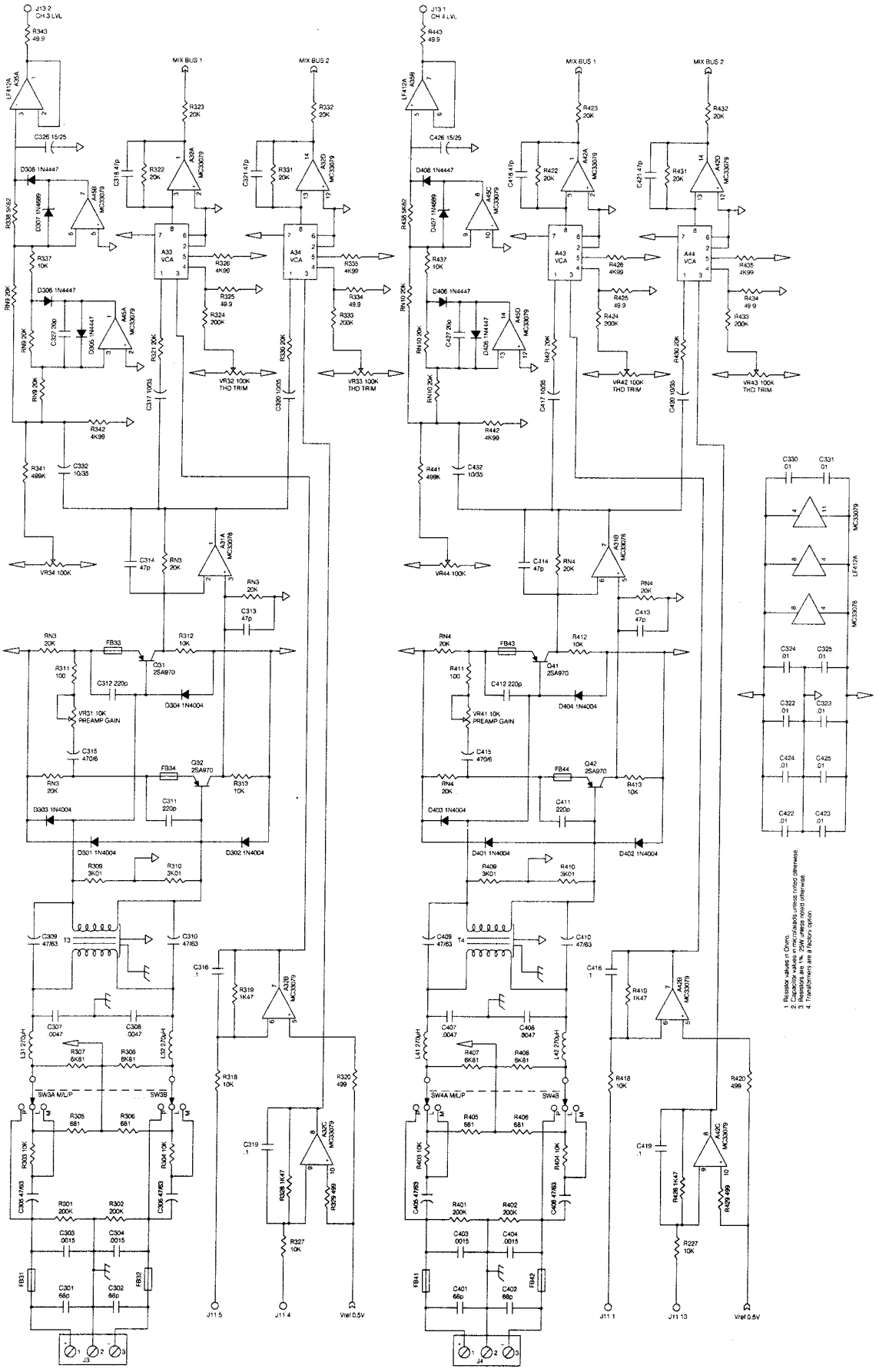
1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1% .25W unless noted otherwise.

MPX Gain Calibration Schematic

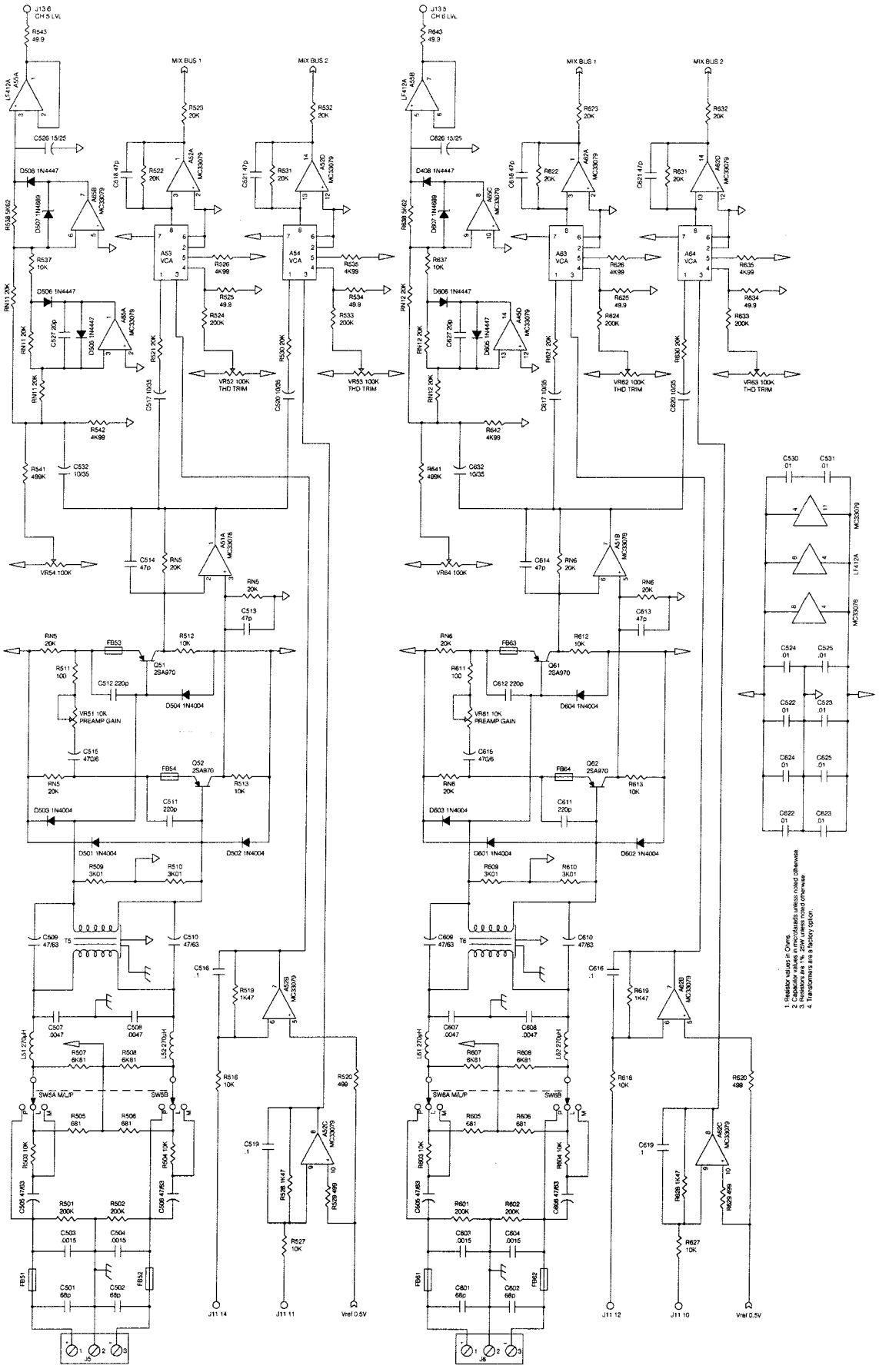

J91 LOOP CONNECTOR
+OUT
-OUT
-IN
+IN
J94
D924 1N4740A
LD1 RED
R926 2K49
R945 1K
R946 2K
D919 1N4447
D919 1N4447
U99F
R947 1K
R907 2K49
R931 1K5
Q91 MPSA93
LD2 YEL
D914 1N4742A
R930 3K01
K3
D923 1N4004
K4
K3B
K3A
K4A
R954 1K
D913 1N4447
R933 1K 5W
U912 HCPL4200
D922 1N4733A
R939 2K49
R929 20K
R948 100K
C935 10/35
U99D
U99C
U99A
R925 681
D912 1N4447
D911 1N4447
U99B
R951 10K
R952 10K
R953 10K
D915 1N5819
BUS 1 CON
BUS 2 CON
C924 20p
R922 10M
X92 3.6864MHz
C923 20p
C931 .01
U96 MC68HC705C8 MICROPROCESSOR
Q94 2N4401
C934 .1
D920 1N4447
R950 499K
R943 499K
C922 .2
D921 1N4447
R921 100K
D910 1N4447
D916 1N5819
R944 2K
D917 1N4447
JP1
B1 3.6V
R949 100K
U910 DS3691
U911 26LS32
C933 .01
C932 .01
C931 .01
C930 .01
C929 .01
C928 .01
C927 .01
PARITY ON
SW91-5
PARITY ODD
SW91-6
R926 10K
R947 10K
U97 IM6402
U98C CD4093
U98D CD4093
U98A CD4093
U98B CD4093
R923 10K
U95 74LS244
RN92 10K
RN92 10K
RN92 10K
RN92 10K
RN91 10K
RN91 10K
RN91 10K
RN91 10K
ADDRESS SET
SW90-1
SW90-2
SW90-3
SW90-4
SW90-5
SW90-6
SW90-7
SW90-8
SERIAL PORT
R932 3K01
R938 3K01
R937 3K01
SW94A
SW94B
RS422
RS232
BRG TO ADC0816
C921 56p
C920 56p
R920 10M
X91 2.4576MHz
U93 IM4702 Baud Generator
U94B 74HC74A
U94A 74HC74A
U99E
BAUD SET
SW91-1
SW91-2
SW91-3
SW91-4
1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1% .25W unless noted otherwise.

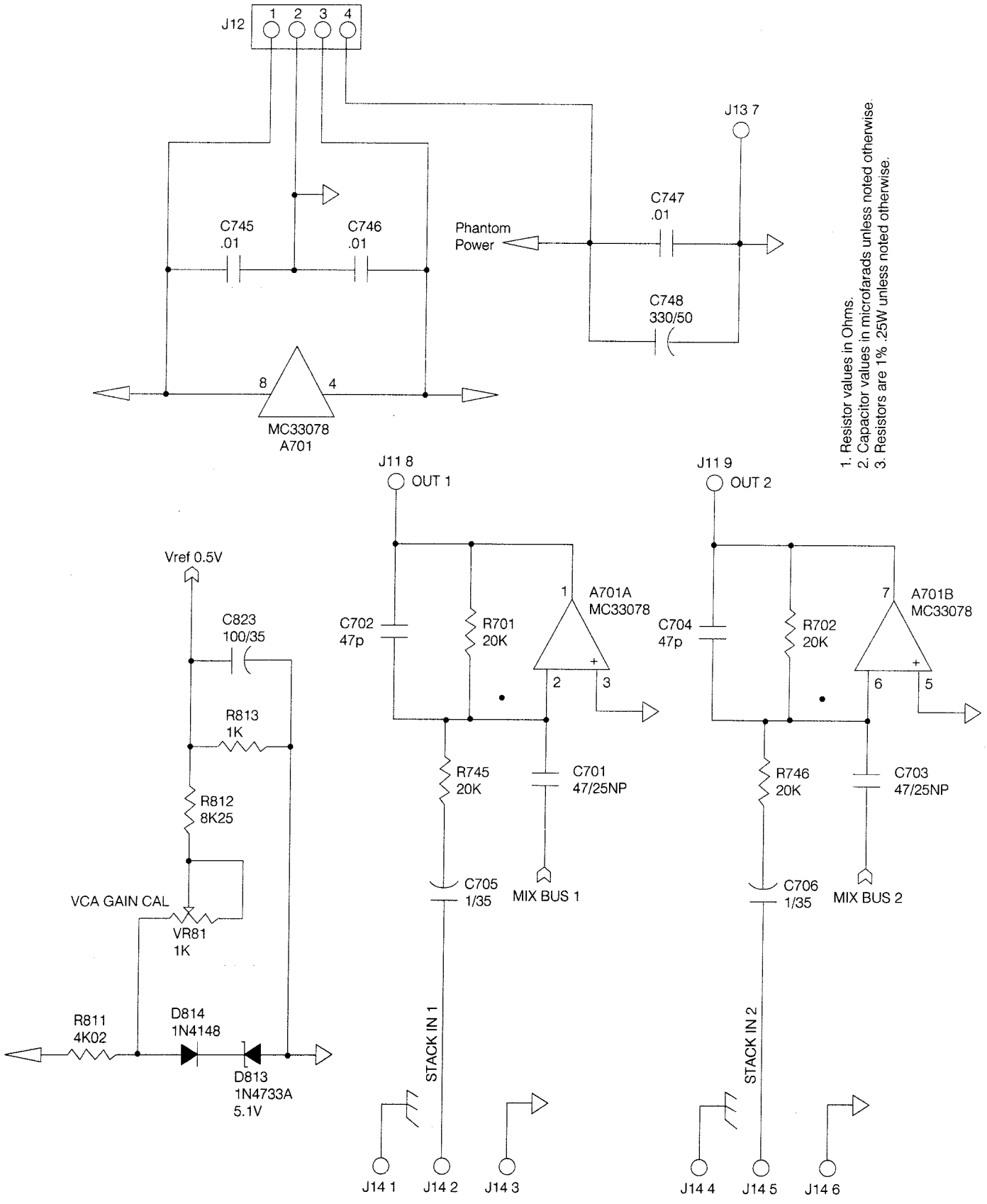


SMX/AMB Audio Inputs 1 and 2 Schematic

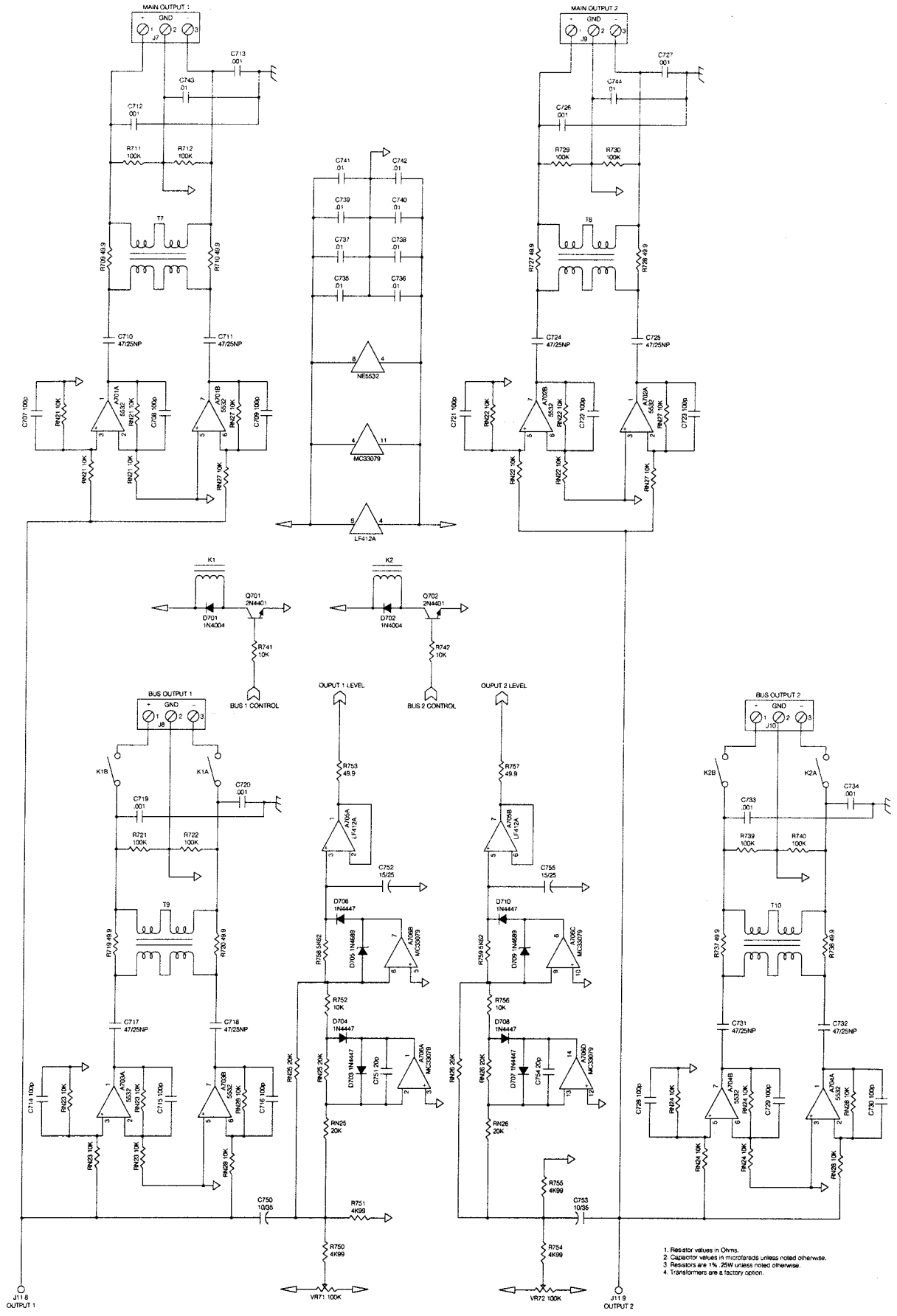


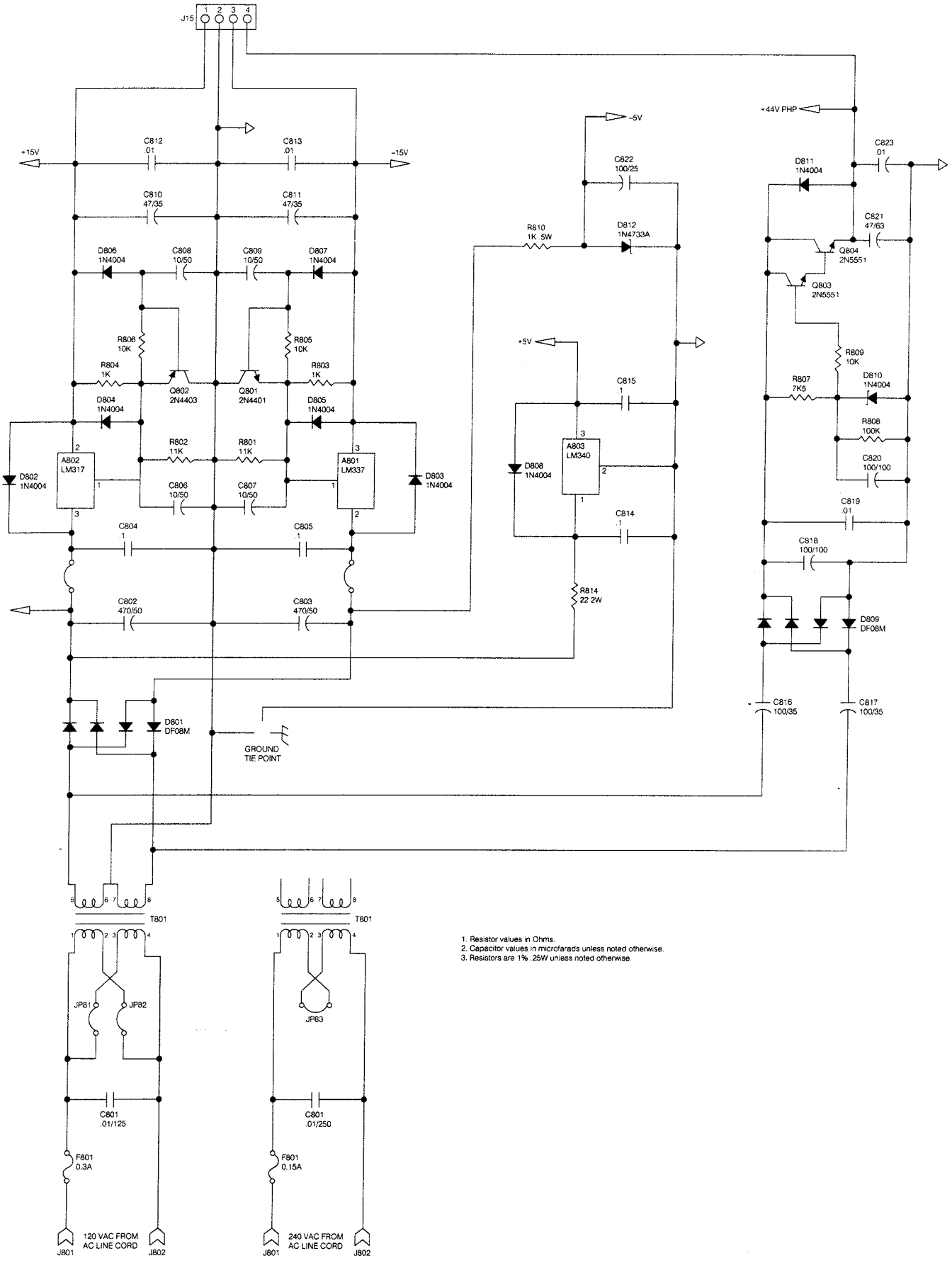
SMX/AMB Audio Inputs 3 and 4 Schematic


J13 6 CH 5 LVL
J13 5 CH 6 LVL
MIX BUS 1
MIX BUS 2
VR52 100K THD TRIM
VR53 100K THD TRIM
VR62 100K THD TRIM
VR63 100K THD TRIM
VR54 100K
VR64 100K
VR51 10K PREAMP GAIN
SW5A MUP
SW5B
J11 14
J11 11
Vref 0.5V
J11 12
J11 10
J5
J6
1. Resistor values in Ohms.
2. Capacitor values in mfd/ratings unless noted otherwise.
3. Resistors are 1% metal film unless noted otherwise.
4. Transformers are a factory option.



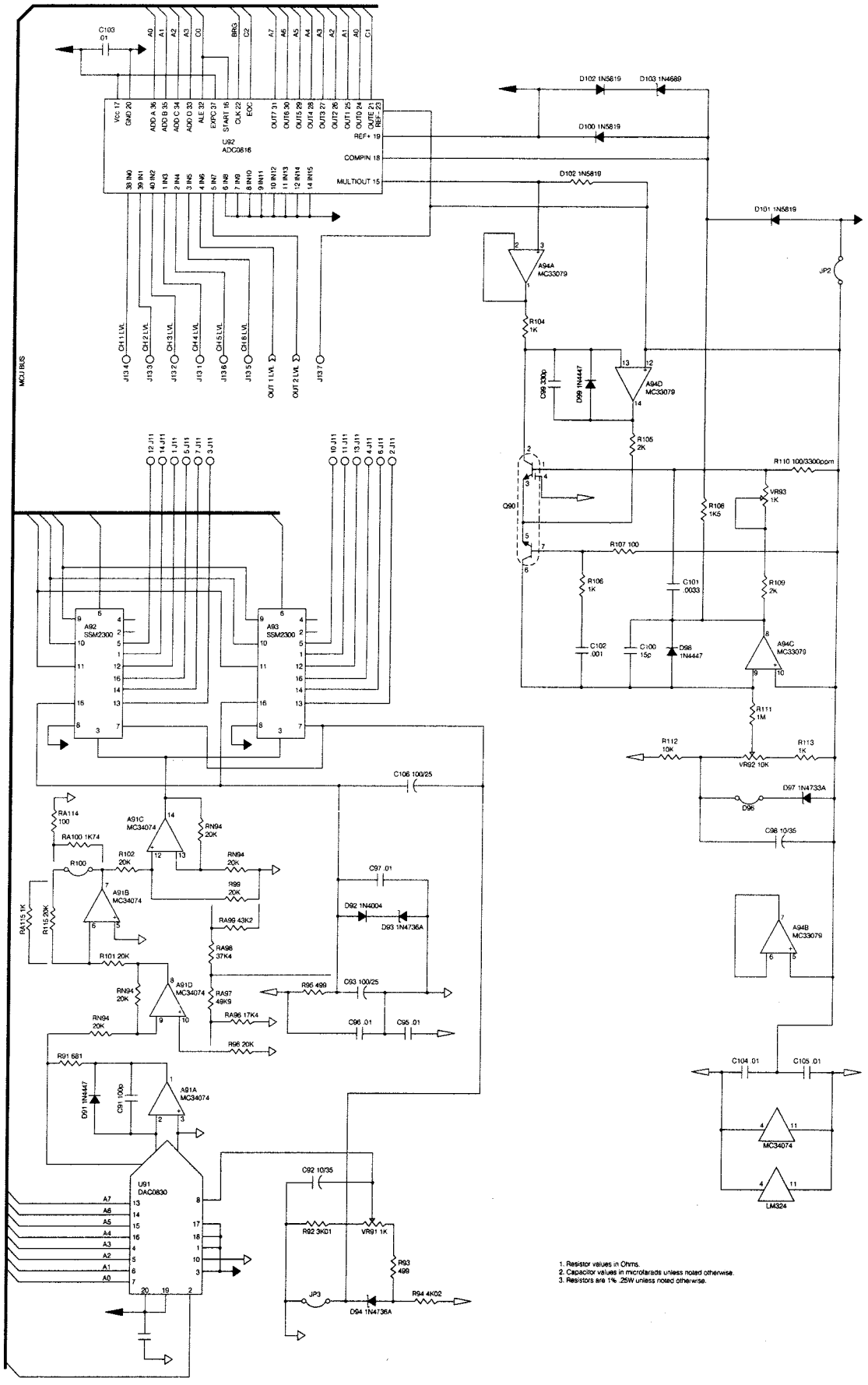
SMX/AMB VCA Gain Calibration and Stack Input Schematic


MAIN OUTPUT 1
MAIN OUTPUT 2
BUS OUTPUT 1
BUS OUTPUT 2
OUPUT 1 LEVEL
OUPUT 2 LEVEL
BUS 1 CONTROL
BUS 2 CONTROL
NE5532
MC33079
LF412A
1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1%, .25W unless noted otherwise.
4. Transformers are a factory option.

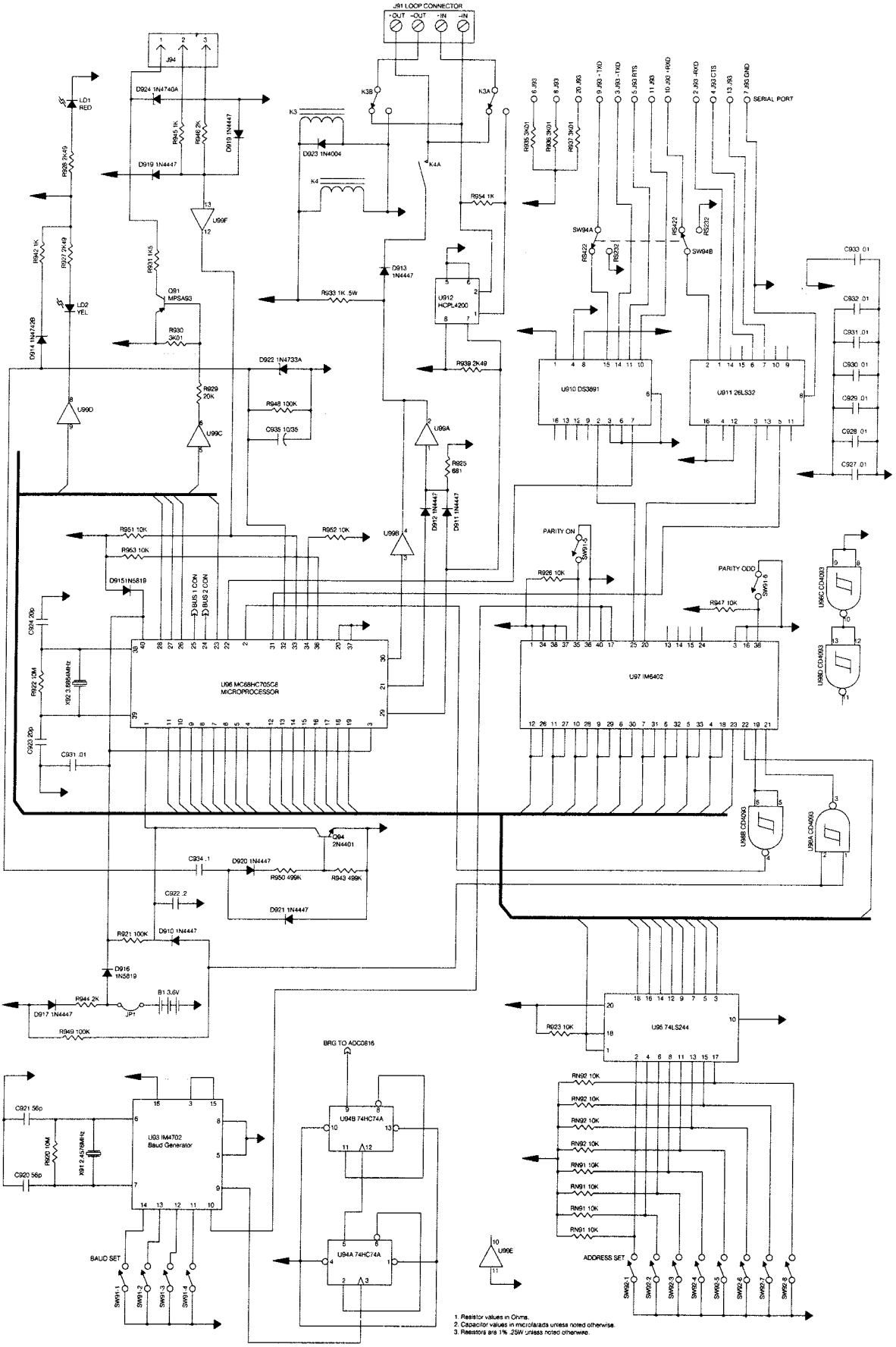


1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1% .25W unless noted otherwise.

SMX/AMB Power Supply Schematic



SMX/AMB Gain and Level Detection Calibration Schematic


J91 LOOP CONNECTOR
+OUT
-OUT
+IN
-IN
SERIAL PORT
U96 MC68HC705C8
MICROPROCESSOR
U97 IM6402
U93 IM4702
Baud Generator
U95 74LS244
U910 DS3891
U911 26LS32
U912 HCPL4200
U94B 74HC74A
U94A 74HC74A
BRG TO ADC0816
BAUD SET
ADDRESS SET
PARITY ON
PARITY ODD
BUS 1 CON
BUS 2 CON
1. Resistor values in Ohms.
2. Capacitor values in microfarads unless noted otherwise.
3. Resistors are 1% .25W unless noted otherwise.

SMX-6T Transformer Isolated Version

SMX-6T

The SMX-6T is a special version of the SMX-6 with transformer isolation at each of the six main inputs, both main outputs, and both bus outputs.

Although transformer isolated versions of the AMB-5 and MPX-6 are not available as standard models from Crown, they could be transformer isolated by adding the listed transformers and removing the other listed parts.

The parts listed in this section are included for support of the SMX-6T. These lists may also be used to modify a standard SMX-6, MPX-6, or AMB-5 for isolation.

Refer to the applicable audio input and output schematics for circuit locations.

SMX-6T Input Module Adds:

T1	702200	XFMR MIC IN 1:1
T2	702200	XFMR MIC IN 1:1
T3	702200	XFMR MIC IN 1:1
T4	702200	XFMR MIC IN 1:1
T5	702200	XFMR MIC IN 1:1
T6	702200	XFMR MIC IN 1:1

SMX-6T Output Module Adds:

T7	702600	XFMR AUDIO OUT 1:1
T8	702600	XFMR AUDIO OUT 1:1
T9	702600	XFMR AUDIO OUT 1:1
T10	702600	XFMR AUDIO OUT 1:1

SMX-6T Input Module Deletes:

C109, C110, C209, C210, C309, C310, C409, C410, C509, C510, C609, C610

SMX-6T Output Module Deletes:

R709, R710, R719, R720, R727, R728, R737, R738