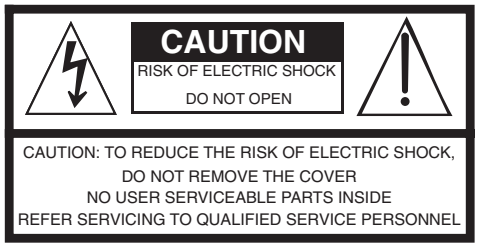
K2600 Series

Service Manual

KURZWEIL
Music Systems

Part Number: 910396 Rev. A



The lightning flash with the arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY & INSTALLATION INSTRUCTIONS

INSTRUCTIONS PERTAINING TO THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

WARNING: When using electric products, basic precautions should always be followed, including the following:

1. Read all of the Safety and Installation Instructions and Explanation of Graphic Symbols before using the product.
2. Do not use this product near water—for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a stand or cart that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
8. This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
9. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power supply cord, do not pull on the cord, but grasp it by the plug.
10. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
11. The product should be serviced by qualified service personnel when:
    A. The power supply cord or the plug has been damaged;
    B. Objects have fallen onto, or liquid has been spilled into the product;
    C. The product has been exposed to rain;
    D. The product does not appear to be operating normally or exhibits a marked change in performance;
    E. The product has been dropped, or the enclosure damaged.
12. Do not attempt to service the product beyond that described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.
13. **WARNING:** Do not place objects on the product's power supply cord, or place the product in a position where anyone could trip over, walk on, or roll anything over cords of any type. Do not allow the product to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

RADIO AND TELEVISION INTERFERENCE

WARNING: Changes or modifications to this instrument not expressly approved by Young Chang could void your authority to operate the instrument.

IMPORTANT: When connecting this product to accessories and/or other equipment use only high quality shielded cables.

NOTE: This instrument has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the instrument is used in a commercial environment. This instrument generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this instrument in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

Changes and modifications not expressly approved by the manufacturer or registrant of this instrument can void the user's authority to operate this instrument under Federal Communications Commission rules.

In order to maintain compliance with FCC regulations, shielded cables must be used with this instrument. Operation with unapproved equipment or unshielded cables is likely to result in harmful interference to radio and television reception.

NOTICE

This apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

AVIS

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la class A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

SAVE THESE INSTRUCTIONS

Young Chang Distributors

Contact the nearest Young Chang office listed below to locate your local Young Chang/Kurzweil representative.

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Chapter 1
Introduction

This chapter provides the service technician with a layout of the front and rear panel features, as well as a brief explanation of their functions. For in-depth descriptions of the many features the K2600 Series instruments include, consult the *Musician's Guide*.

This chapter also includes a description of the models available in the K2600 Series and a description of the symbols used throughout this manual.

Note: If possible, all user data should be saved prior to opening the unit, entering the Boot Loader to run diagnostics or to perform a hard reset. For instructions to save all user data, refer to Chapter 5, *Saving User Data* on page 5-1.

Models

There are seven models in the K2600 Series. The available models are listed below.

- K2600, 76-note keyboard
- K2600S, 76-note keyboard with built-in sampler
- K2600X, 88-note keyboard
- K2600XS, 88-note keyboard with built-in sampler
- K2600R, Rack-mount
- K2600RS, Rack-mount with built-in sampler
- K2600 AES, 88-note keyboard with built-in sampler, digital I/O, DMTI, and sample libraries

Notes, Cautions, Warnings

Please pay special attention to all Notes, Cautions, and Warnings used throughout this manual as they not only point out specific instructions, but also alert you to differences between the K2600R rack units, the 76-note K2600 keyboard, and the 88-note K2600X keyboard. Certain chapters and sections are solely for the keyboard or rack unit. Other chapters combine both the keyboard and rack units.

A brief description of these symbols follows:

Note: Provides additional information, indicates differences between models, and emphasizes specific instructions.

Caution: Highlights areas to instruct you to proceed cautiously so that damage does not occur to the unit or individual components.

Warning: Alerts you so that damage does not occur to yourself, others, or external equipment and devices.

K2600/X Rear Panel

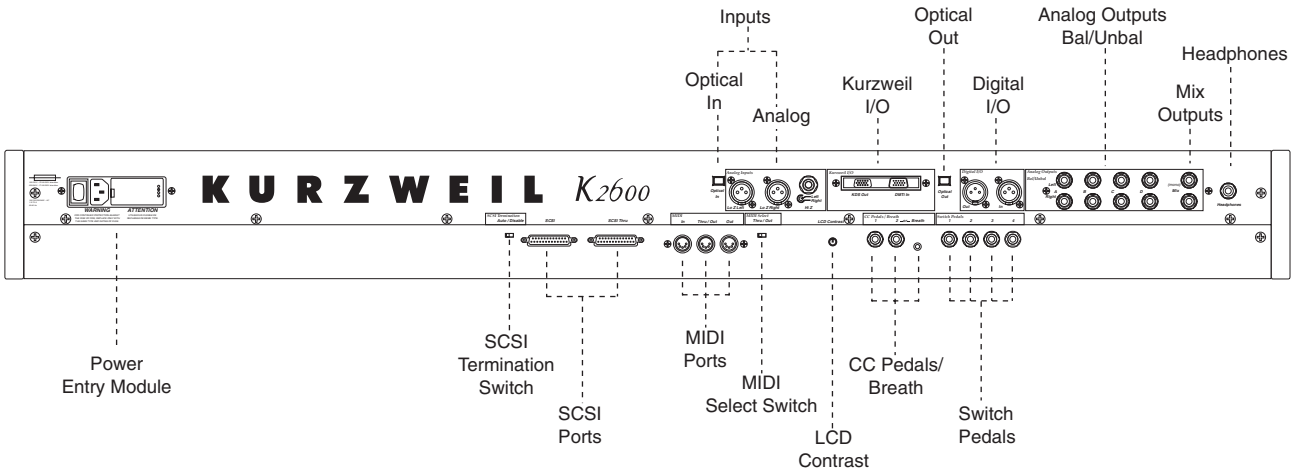


Figure 1-1 K2600/X rear panel

K2600R Rear Panel

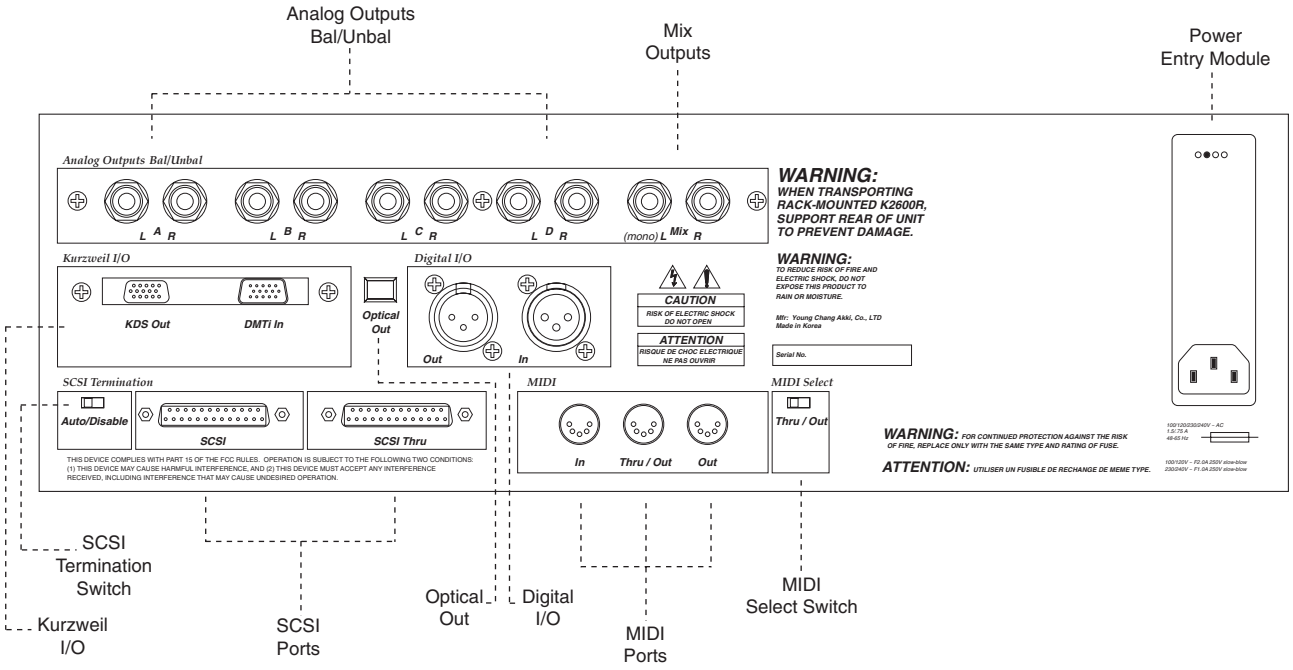


Figure 1-2 K2600R rear panel

Rear Panel Features

All Models

- **Mix Outputs**, use these two 1/4" jacks (Left is mono) to connect either T/S or T/R/S cables.
- **Analog Outputs Bal/Unbal**, configure these 1/4" jacks (four pairs, A–D) as stereo pairs of individual mono outputs.
- **SCSI** ports, use these two ports to connect a hard drive or other SCSI devices.
- **SCSI Termination** switch, a slide switch to select either Auto or Disable for SCSI termination.
- **MIDI** ports, In, Thru/Out, and Out, to use with other MIDI devices to receive, pass, and send MIDI data.
- **MIDI Select** switch, a slide switch to select the operation of the Thru/Out port.
- **Kurzweil I/O**, use these serial ports to send or receive the Kurzweil KDS format.
- **Digital I/O**, use these XLR jacks to send or receive digital information.
- **Optical Out**, use this jack to send or receive digital information from external devices with an optical in jack.

Keyboard Models only

- **Power Entry Module**, includes the power switch, AC connector, fuse holder, and voltage select switch.
- **LCD Contrast**, turn this potentiometer to adjust the LCD for the best visibility.
- **CC Pedals/Breath**, use these two 1/4" jacks to connect external control pedals (10kΩ linear taper potentiometer, ring/tip/sleeve). Use the 3.5mm jack to connect a breath controller.
- **Switch Pedals**, use these four 1/4" jacks to connect footswitches.
- **Inputs**, this section is covered by a plate if the sampling option is not installed.
    - For units with the sampling option, use either the two Lo Z XLR or the Hi Z 1/4" (tip/ring/sleeve) jacks for sampling from an analog source.
    - Optical In, If sampling from a digital source with an optical out jack, use this input.
- **Headphones**: use this 1/4" jack to connect headphones.

Rack Models only

- **Power Entry Module**, includes the AC connector, fuse holder, and voltage select switch.

K2600/X Front Panel

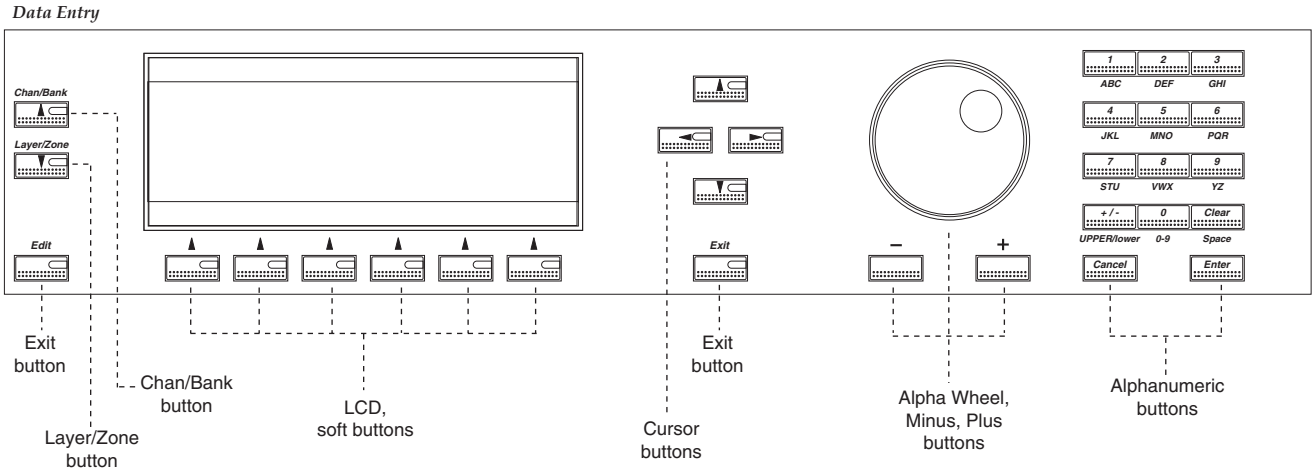


Figure 1-3 Data Entry Section

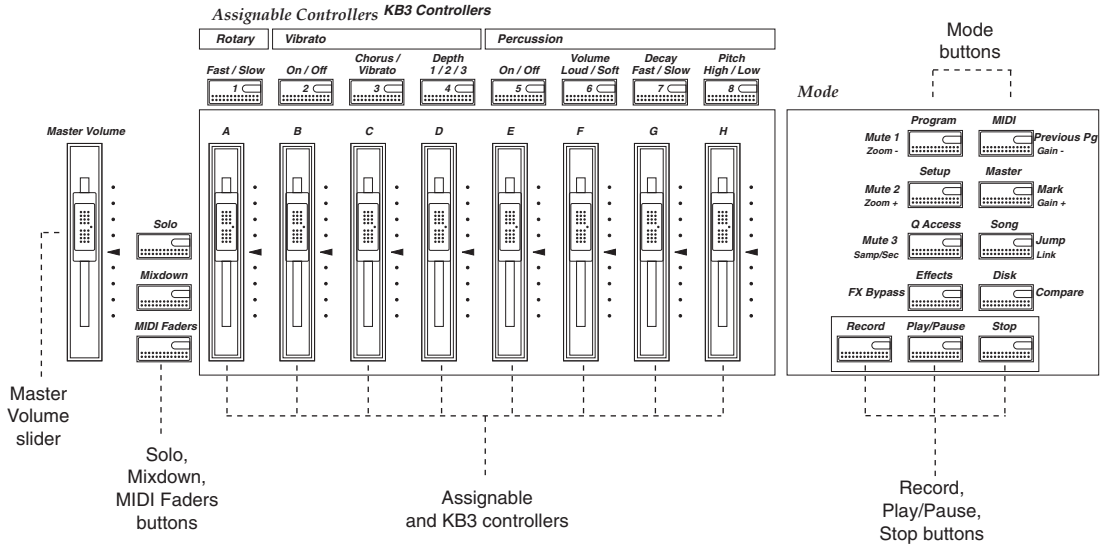


Figure 1-4 Assignable Controllers and Mode Sections

Front Panel Features

All Models

- **LCD**, backlit graphic display
- **Soft** buttons, use these buttons to select an action or item shown directly above a button in the LCD.
- **Cursor** buttons, use these buttons to navigate through the LCD.
- **Alpha Wheel**, use the Alpha Wheel to increase or decrease a value by one or several increments.
- **Plus (+)** and **Minus (–)** buttons, these buttons operate similar to the Alpha Wheel. Pressing the Plus (+) or Minus (**-)** button allows you to increase or decrease a value by one.
- **Alphanumeric Keypad**, use these buttons to enter characters (both uppercase and lowercase), numbers, and spaces.
- **Mode** buttons, use these buttons to select one of the eight operating modes.
- **Chan/Bank** and **Layer/Zone** buttons, depending on the current editor, use these buttons to scroll through layers, presets, values, and zones.
- **Exit** button, press this button to leave the current editor.
- **Edit** button, use this button to modify a selected object or parameter.

Keyboard Models only

- **Master Volume** slider, adjusts the overall volume of the mixed audio outputs and the headphone jack.
- **Assignable and KB3 Controllers**, use these buttons to define the functions of these sliders for zones or KB3 organ programs.
- **Record**, **Play/Pause**, and **Stop** buttons, use these buttons in Song mode.
- **Solo** button, this button mutes all but the current zone.
- **Mixdown** button, press this button to enter the Mixdown page to select the functions of the physical controllers during MIDI mixdown.
- **MIDI Faders** button, press this button to enter the MIDI Faders page to define the functions of the sliders.
- **Ribbon Controller** (not shown), define the parameters for the ribbon controller to respond to finger positions and pressure. It can be programmed to control one section or up to three sections.
- **Disk Drive** (not shown), use the disk drive to load, save, and copy data to a floppy disk.
- **Mod/Pitch Wheel Assembly** (not shown)
    - Mod and Pitch wheels, use these wheels to vary modulation and pitch.
    - Small Ribbon Controller, use this controller to add expression such as vibrato.
    - **SW1** and **SW2** buttons, assignable buttons for use in the Setup Editor.

K2600R Front Panel

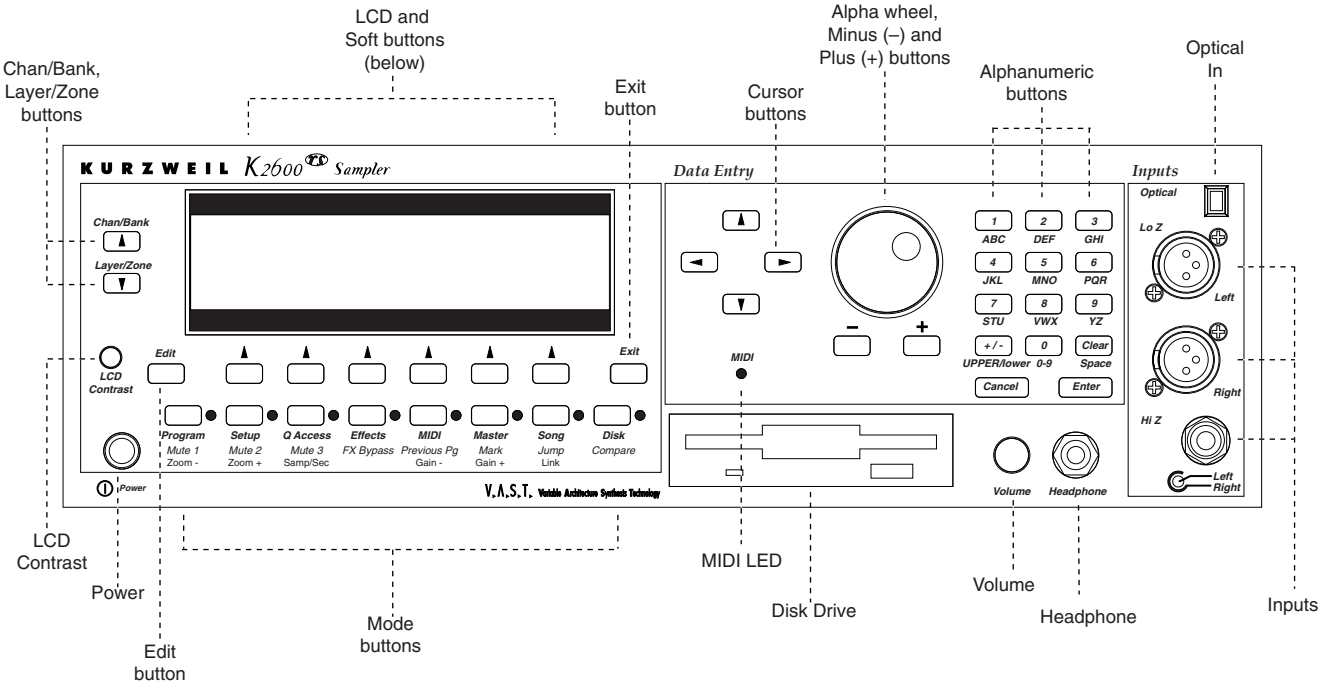


Figure 1-5 Front panel, K2600RS rack model

Rack Models only

- **Power** switch, push switch to turn the unit on and off.
- **MIDI LED**, this LED flashes when receiving data from a MIDI controller.
- **Headphone** jack, use this 1/4" jack to connect headphones.
- **Volume** potentiometer, adjusts the overall volume of the mixed audio outputs and the headphone jack.
- **LCD Contrast**, turn this potentiometer to adjust the LCD for the best visibility.
- **Disk Drive**, use the disk drive to load, save, and copy data to a floppy disk. Use formatted double-sided, double density (DSDD—720K or high-density (HD—1.4M) disks.
- **Inputs**, this section is covered by a plate if the sampling option is not installed.
    - For units with the sampling option, use either the two Lo Z XLR or the Hi Z 1/4" (tip/ring/sleeve) jacks for sampling from an analog source.
    - Optical In, If sampling from a digital source with an optical out jack, use this input.

Chapter 2
Diagnostics

Diagnostic Tests

Test Name	Description
LCD	Tests the LCD
Engine Blk	Tests the Operating System (installed in FlashROM)
Object Blk	Tests the Setups (installed in FlashROM)
RAM/PRAM	Tests the RAM (volatile, non-volatile and expansion)
I/O Port	Tests the Microcontroller's port pins
FDD Init	Tests the Floppy Disk Drive controller
Scanner	Tests the Scanner communications
MIDI Uart	Tests MIDI In and Out
FDD R/W	Tests the Floppy Disk Drive
SCSI	Tests drive(s) on the SCSI bus
VLSI & ZRAM	Tests Janis, Hobbes, and Lisa (not Lisa option)
Sampling Opt	Tests the Sampling Option
Sine Wave	Tests the sound hardware with sine waves
Sound ROM	Tests the Sound ROM
Sound RAM	Tests the Sound RAM
1st NVRAM	Writes to the Non-Volatile and Expansion RAM
2nd NVRAM	Checks the pattern written by the 1st NVRAM test
Digital IO	Tests the Lisa Option

Table 2-1 Diagnostic Tests

Saving User Data

Warning: Be sure to save all user data and remove any user disk from the disk drive before entering diagnostics.

To save user data, insert a formatted floppy disk into the disk drive and press the **Disk** button. In Disk Mode, use the **Down** cursor button to scroll through the list until `Everything` appears in the LCD. Press the soft button under **OK** and follow the instructions displayed in the LCD. See *Saving User Data* on page 5-2 for additional information.

Entering Diagnostics

1. Apply power to the unit. When the `Please wait...` message appears in the LCD, quickly press and release the **Exit** button. The LCD shows the following:

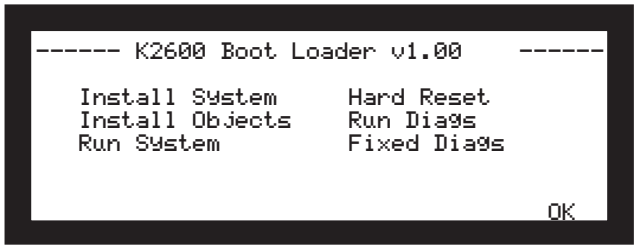


Figure 2-1 LCD example, boot loader menu

2. Use the cursor buttons or turn the Alpha Wheel until `Run Diags` is highlighted. Press the soft button under **OK**.
3. The LCD briefly shows a message that the integrity of the operating system is being checked and then displays a message warning you that some diagnostic tests will erase data stored in user RAM.

Warning: If you have not saved the data stored in user RAM and wish to do so before proceeding, turn the unit off to exit the diagnostic tests, power up and save the data. If you need instructions, refer to *Saving User Data* on page 5-2.

4. If you have already saved data stored in user RAM, press any button to continue.
5. The LCD shows the following:

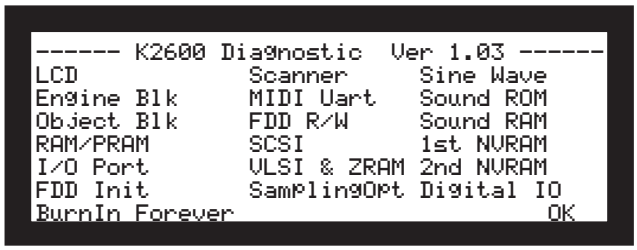


Figure 2-2 LCD example, K2600 diagnostic menu

LCD and Front Panel Buttons

The LCD displays the list of tests, test modes, actions, and test results.

Press the **Left**, **Right**, **Up**, or **Down** cursor buttons or turn the Alpha Wheel to navigate through the available tests.

Use the soft buttons located below the LCD to select different test modes or actions.

Test Results

At the completion of an individual test, the LCD displays the results of the test. Figure 2-3 shows an example of the display for the Engine Blk test.

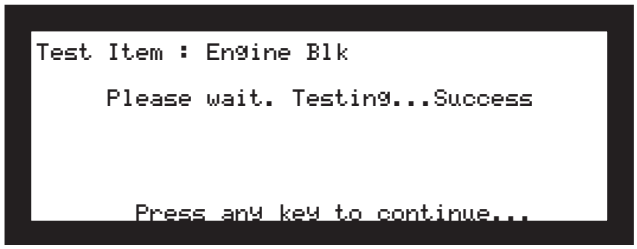


Figure 2-3 LCD example, Engine Blk test

Diagnostic Test Menus

After following the steps described in *Entering Diagnostics*, you'll see the main diagnostic menu in the LCD. The following describes the steps required to run the tests in the three menus.

Main Menu

To run an individual test, press **Left**, **Right**, **Up**, or **Down** cursor buttons or turn the Alpha Wheel to highlight the test name, then press the soft button below **OK** to execute the test. When the test has completed, whether pass or fail, press any button to return to the main menu and use the cursor buttons or Alpha Wheels to select another test.

Burn-In Menu

Burn-In continuously runs the sequence of tests listed in Figure 2-4.

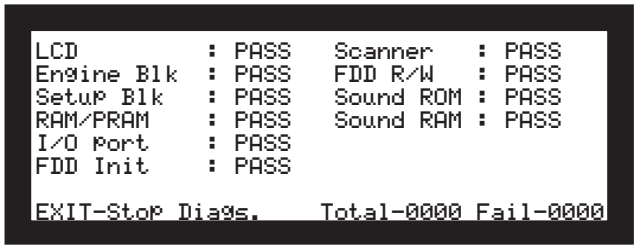


Figure 2-4 LCD example, Burn-In tests

Press the soft button below **Burn-In** in the LCD to begin running the tests. The tests continue to run until you press the **Exit** button.

Forever

Forever continuously runs an individual test. The test continues to run until you press the **Exit** button. The number of tests performed and the result is displayed in the LCD. You can return to the diagnostic main menu by pressing the soft button below **EXIT-Stop Diag.** in the LCD.

Description of Tests

LCD

This test writes a group of characters to the LCD and verifies that the same characters can be read back again. The LCD Test includes four test phases that run automatically. The four steps include the following:

1. Data test phase for the LCD character display memory
2. Address test phase for the LCD character display memory
3. Data test phase for the LCD graphics display memory
4. Address test phase for the LCD graphics display memory

The data test phase repeatedly writes the following 17-byte data pattern to the LCD:

0x00, 0xFF, 0x00, 0x0F, 0xF0, 0xCC, 0x33, 0xAA, 0x55, 0x11, 0xEE, 0x22, 0xDD, 0x44, 0xB, 0x88, 0x77

After the pattern is written, it is read back. If a difference is detected, the test fails.

The address test phase writes consecutive values to consecutive locations in the LCD. Then these values are read back. If a difference is detected, the test fails.

A failure of this test indicates a problem with the LCD, Engine Board, connections between the two boards or related circuitry.

Engine Blk (Engine Block)

This test computes an observed 32-bit check value of the setup area of the Flash ROMs (U4 and U5) on the Engine Board. This value is then compared to the expected value, which is stored in the flash itself. If the values differ, an error is reported.

If this test fails, install the latest Operating System and run the test again.

A failure of this test indicates a problem with the microcontroller, Flash ROMs, or related circuitry on the Engine Board.

Object Blk (Object Block)

This test computes an observed 32-bit check value of the setup area of the Flash ROMs (U4 and U5) on the Engine Board. The value is then compared to the expected value, stored in the Flash ROMs. If the values differ, the test fails.

If this test fails, install the latest Operating System and Objects and run the test again.

A failure of this test indicates a problem with the Flash ROMs or related circuitry on the Engine Board.

RAM/PRAM

Caution: This test destroys all non-volatile user RAM! If you haven't already saved user data, power cycle the unit and save the data now. If you need instructions, refer to *Saving User Data* on page 5-2.

The RAM/PRAM test performs a data test and an address test on each of the processor RAM sections. These sections include volatile RAM at addresses 0x2100000 through 0x213FFFF and the non-volatile RAM at addresses 0x02000000 through 0x0203FFFF.

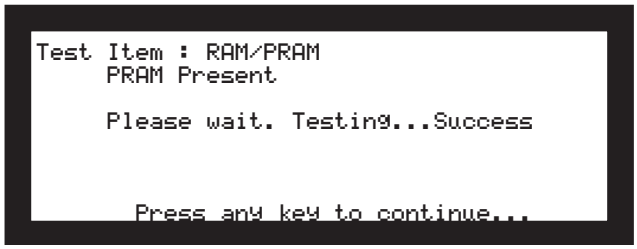


Figure 2-5 LCD example, RAM/PRAM test

If the PRAM optional expansion non-volatile RAM is installed, this test checks addresses 0x01F00000 through 0x01FFFFFF. After the volatile and non-volatile RAM is tested, the message `PRAM Present` is displayed in the LCD. If the PRAM optional expansion is not installed, the LCD shows `PRAM Absent`.

The data test phase of this test writes a value derived from a 23-word test sequence to each RAM location. While the value is in memory, it is bitwise-inverted twice. This should bring the data back to its original value. The data is then compared with the original data. If a difference is detected, an error occurs and the test fails.

The address-test phase of this test writes RAM addresses sequentially throughout RAM. The addresses are then read back. If a difference is detected, an error occurs and the test fails.

A failure of this test may indicate a problem with the RAM or related circuitry.

Note: If a PRAM option is installed and the test fails, remove the optional PRAM Board and rerun the test.

If the PRAM optional expansion RAM is installed and the LCD shows `PRAM Absent`, be sure that the PRAM option board is correctly installed. If the LCD doesn't show `PRAM Present`, there may be a problem with either the PRAM Board, the Engine Board or related circuitry.

I/O Port

The I/O Port test mutes and unmutes the audio circuitry to verify that the signal is transmitted correctly.

A failure of this test may indicate a problem with the Engine or DSP Board.

FDD Init (Floppy Disk Drive Initialize)

Note: Insert a blank formatted disk into the floppy disk drive before running this test!

The FDD Init test recalibrates the disk drive.

A failure of this test may indicate a problem with the connection between the floppy drive and the Engine Board, the floppy drive, or floppy drive's controller (U9 on the Engine Board).

Scanner

This test lights sequentially the LEDs for the eight mode select buttons:

Program, Setup, Q Access, Effects, MIDI, Master, Song, and Disk

This test confirms scanner communications by sending data to the scanner, 37451, (U1 on the Scanner Board-keyboard units and on the Front Panel/Scan Board-rack units). After processing the data, the scanner sends a result back to the main processor (U3 on the Engine Board). If the returned value is not as expected or if the scanner does not reply as expected, the test fails.

Failure of this test indicates a failure of the main processor or the scanner. Note that failed scanner communications will likely disable operating the diagnostics from the control panel, since control panel signals must be read and written through the scanner.

MIDI Uart

The MIDI Uart test performs a loop-back of the serial port by sending a 23-byte pattern over the external MIDI link. This test requires a MIDI loop (a MIDI cable that connects two MIDI jacks). The test will fail if a MIDI cable is not connected between two MIDI jacks. Be sure to run this test with MIDI cables connected as follows:

Note: Be sure to use a functional MIDI cable!

1. Connect a MIDI cable to the MIDI In and MIDI Out jacks and run the test.
2. Connect a MIDI cable to the MIDI In and MIDI Out/Thru jack and set the Out/Thru switch on the rear panel to Out. Run the test.

Failure of this test could be caused by failure of the serial port, other MIDI circuitry, or a problem on the Engine or DSP Board.

FDD R/W (Floppy Disk Drive Read/Write)

Note: Insert a blank formatted disk into the floppy disk drive before running this test! Be sure to insert a blank disk; any data on the disk will be lost and could cause this test to fail.

This test initializes the floppy disk drive and performs a write/read test of the disk in the drive.

If this test fails, check the cable connections from the floppy disk drive to the Engine Board. Failure of this test may indicate a problem with the floppy disk drive, the floppy drive's controller (U9 on the Engine Board), or related circuitry.

SCSI

The LCD shows the following when you select the SCSI test.

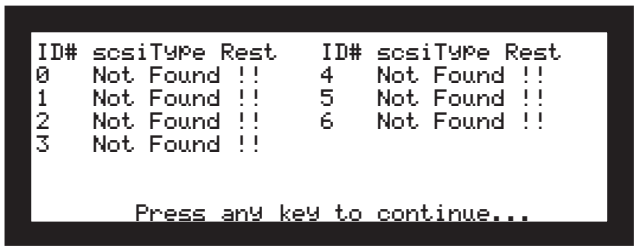


Figure 2-6 LCD example, SCSI test

The SCSI tests the functionality of the SCSI ports. This test sets the K2600's SCSI ID to **7** and scans the SCSI bus. When it finds a connected SCSI device (such as an internal or external hard drive) the K2600 writes random data to each block, then checks to see if data has been retained.

Warning: The attempt is made to retain user data on an internal or external hard drive by saving the contents of each block before testing and restoring it at the completion of the test. However, it is always wise to back up critical data prior to executing this test.

Failure of this test may indicate a problem with SCSI ID settings, a fault of the SCSI device or connection, or a problem on the Engine Board.

Note: For more information on SCSI configurations and guidelines, refer to the *K2600 Series Musician's Reference* and *Musician's Guide*.

VLSI & ZRAM

The test writes data to the VLSI chip registers and internal RAM, and then confirms that the data has been retained by these memories. The following lists the areas that are tested. This list does not, however, correlate to the testing sequence.

Hobbes

- Hobbes time slot data
- Hobbes accumulator store
- Hobbes dither store
- Hobbes output unit-hold register

Janis

- Janis channel registers
- Janis sample cache

Lisa

- Lisa microcode RAM (only Engine Board Lisa), not optional

Failure of this test generally indicates a problem on the DSP Board; it should be replaced.

Sampling Opt (Sampling Option)

Figure 2-7 illustrates the full menu of sampling option tests. To display this page, select Sampling Option from the main menu and use the **Up** or **Down** button or the Alpha Wheel to scroll through the menu options.

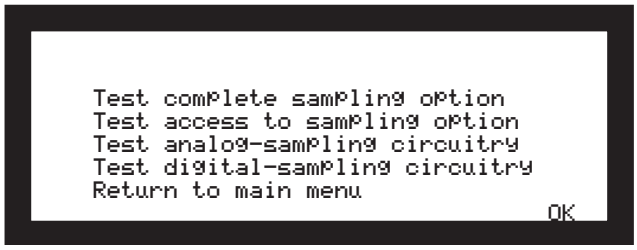


Figure 2-7 LCD example, Sampling Option test

Note: If the sampling option is not installed, the LCD indicates that the option is not installed.

You can select the first option to test the complete sampling option, or choose from one of the following:

Test access to sampling option

This test plays a 1KHz sine wave in left output C, plays a 1.5KHz sine wave in right output C, and performs a series of one-second samples from the internal audio loopback from the Audio Board. These samples are acquired using each of the four access modes, and a number of measurements are made on each sample.

Test analog-sampling circuitry

The LCD prompts you to perform the following:

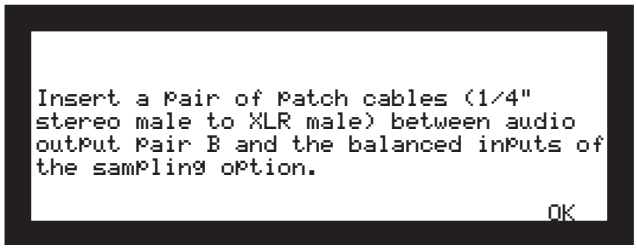


Figure 2-8 LCD example, analog-sampling

This test plays a 1KHz sine wave in the left channel and a 1.5KHz sine wave in the right channel.

Test digital-sampling circuitry

The LCD prompts you to perform the following:

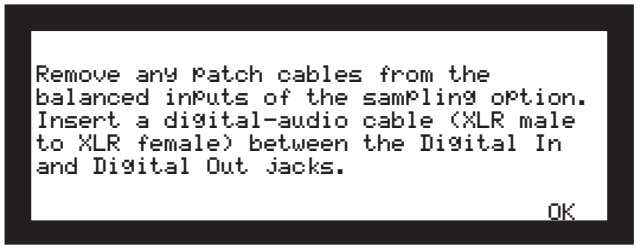


Figure 2-9 LCD example, digital-sampling

This test plays a 1KHz sine wave in the left channel and a 1.5KHz sine wave in the right channel. These sine waves are not sampled, but are merely used to generate digital data with which to test the digital audio circuitry.

Note: For more information on sampling, refer to the *K2600 Series Musician's Reference* and *Musician's Guide*.

Sine Wave

This test produces six sine waves to confirm the clarity of each sine wave.

Warning: This test generates loud constant sine waves! Before executing this test, turn the volume on the K2600 and your sound system down to minimum.

As soon as this test is executed, you should hear the first sine wave. Press any button or move the Alpha Wheel to step through the remaining five frequencies.

Note: The LCD does not prompt you during this test. You must press a button or move the Alpha Wheel to administer this test!

To test the frequency of each sine wave, connect an oscilloscope to the headphone or mix output jacks. The six sine waves should generate at the following frequencies:

100Hz, 500Hz, 1KHz, 2.5KHz, 5.0KHz, 10.0KHz

To hear each sine wave, connect a set of headphones to the headphone jack and begin running the test.

A failure of this test may indicate a problem with the Engine Board, Audio Board, or related circuitry.

Sound ROM

The Sound ROM test performs a checksum of each megabyte of Sound ROM. The computed checksum is compared to the checksum stored in ROM.

The asterisk groups displayed in the LCD change to `PASS` or `FAIL` at the completion of each sound block test. If a sound block is not installed that portion will fail.

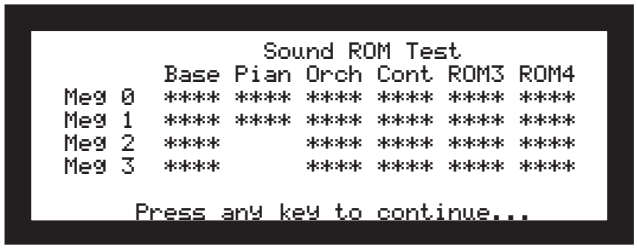


Figure 2-10 LCD example, Sound ROM test

A failure of this test indicates a problem with a Sound ROM or the Engine Board.

Sound RAM

Note: The length of the testing time to run this test depends on the amount of RAM installed. The more RAM present, the longer the test time. The test time for each megabyte of RAM is approximately 20 seconds. It should take approximately 15 minutes to run this test for a unit with 128M.

This test checks the amount of sound RAM installed and displays the amount found in each bank in the LCD. The test then writes a bit pattern to each block of sound RAM. The bit pattern is confirmed and an inverse of this pattern is written into RAM for confirmation.

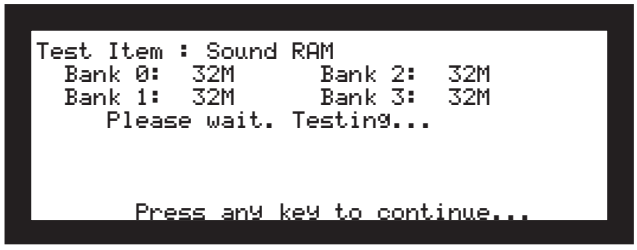


Figure 2-11 LCD example, Sound RAM test

A failure of this test may indicate a problem with the SIMMs, their installation, the Engine Board, or related circuitry.

1st NVRAM

Caution: This test destroys all non-volatile user RAM! If you haven't already saved user data, power cycle the unit and save the data now. If you need instructions, refer to *Saving User Data* on page 5-2.

The 1st NVRAM test checks the function of the battery-backed RAM by writing a bit pattern to it, and works in conjunction with the 2nd NVRAM test. After the test is executed, the LCD prompts you to remove power from the unit, wait two minutes, apply power, and immediately execute the 2nd NVRAM test.

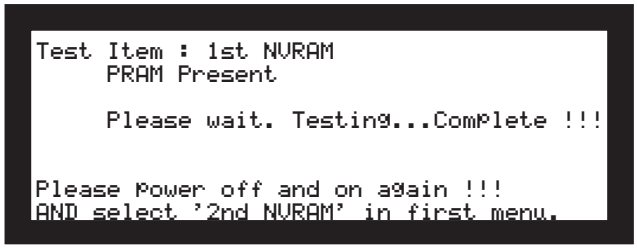


Figure 2-12 LCD example, 1st NVRAM test

2nd NVRAM

This test confirms that the bit pattern written to it during the 1st NVRAM test has been retained, thereby constituting a successful test.

A failure of this test may indicate a problem with the battery, or related circuitry on the Engine Board.

Digital IO

This test performs a test of the microcode RAM and delay RAM of all Lisa chips on the Digital IO option. If this option is not installed, the LCD indicates not found.

Chapter 3
K2600R Disassembly/Assembly

Introduction

The chapter contains all the procedures for the disassembly and assembly of the K2600R instruments including factory-installed and after-market options. In some instances a procedure may instruct you to remove a cable from an after-market option board or device that may not be present. Simply skip this step of the procedure and continue.

Saving User Data

Warning: Be sure to save all user data and remove any user disk from the disk drive before disassembly.

To save user data, insert a formatted floppy disk into the disk drive and press the **Disk** button. In Disk Mode, use the **Down** cursor button to scroll through the list until `Everything` appears in the LCD. Press the soft button under `OK` and follow the instructions displayed in the LCD. For detailed instructions to save the user data, please refer to *Saving User Data* on page 5-2.

Cables, Connectors

All flat ribbon cable connectors are keyed, and therefore cannot be reversed. Flat ribbon cables have locking cable clips. Be sure to reapply the clips when connecting cables.

In some cases, tape secures cable connections or fastens cables to the top cover and bottom enclosure. Always peel back the tape from one side when disconnecting cables so that the tape remains properly positioned.

Tools Required

- No. 1 Phillips head screwdriver
- No. 2 Phillips head screwdriver
- No. 2 Phillips head screwdriver right angle
- 1/2" nut driver
- 5MM nut driver (hex standoffs)
- Allen Wrench
- Foam blocks

Opening the K2600R

Removing the Top Cover

Before you begin disassembly, please be sure that the power is off, and that the AC cord and all other cables are disconnected.

1. The top cover is secured to the K2600R with ten screws: four screws on each side of the unit and two screws on the rear.
2. Remove the four screws on the left and four screws on the right side of the top cover. Notice that the screws positioned closest to the rear panel are shorter.
3. Remove the two screws (use #1 screwdriver) from the upper rear panel edge of the top cover.
4. The top cover locks into a groove on the Front Panel Assembly. To remove it, lift it and slide it back toward the rear panel.
5. Place the top cover safely aside to avoid damage.

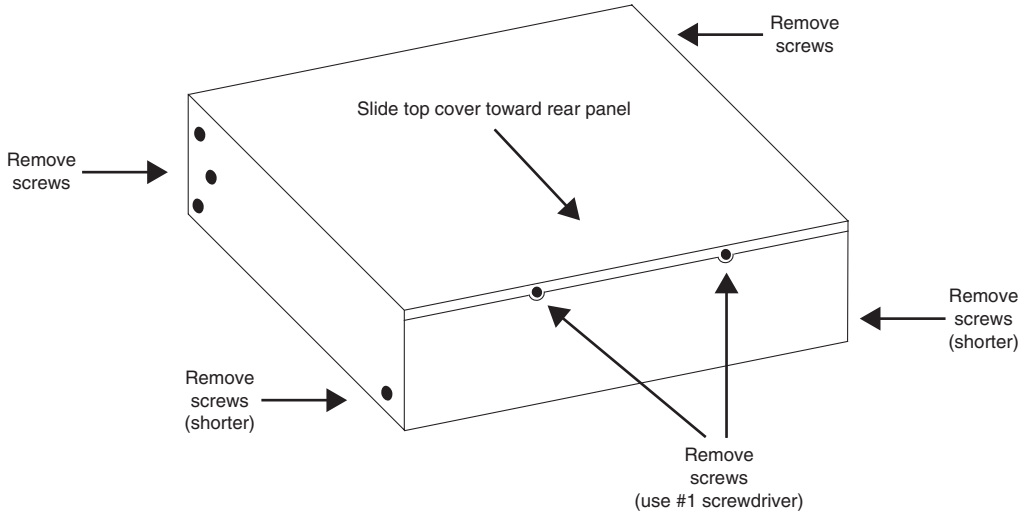


Figure 3-1 K2600R Removing the top cover

Replacing the Top Cover

1. Place the top cover in position and move it toward the Front Panel Assembly to slide it into the groove on the Front Panel Assembly.
2. Install the four screws on the left and right sides of the top cover.

Caution: Be sure to install the shorter screws closest to the rear panel. Failure to do so could damage or short out components located near these positions.

3. Install the two screws on the rear panel edge of the top cover.

Removing the Audio Board

1. Disconnect the cables listed in Table 3-1.

   All flat ribbon cables use cable locking clips that secure the cables to the connectors. Remove the cable locking clip from the flat ribbon cable on the Audio Board. Be sure to set it safely aside so that you can reinstall it when you reconnect the cable.

Ref.	Name	Cable Type	Destination
J601	DAC	flat ribbon	CPU Board
J602	Audio Power	stranded	Power Supply Board
J611	Sampler	shielded wire	Sampling Board
J612	Volume	shielded wire	Phone/Volume Board
J615	Phones	shielded wire	Phone/Volume Board

Table 3-1 K2600R Audio Board cables

2. Remove the three screws that secure the Audio Board to the rear panel.
3. Remove the Audio Board.

Replacing the Audio Board

1. Place the Audio Board in position so that the output jacks are aligned properly with the openings provided for them in the rear panel.
2. Install the three screws that secure the Audio Board to the rear panel.
3. Connect the flat ribbon cable to location J601 and install the locking cable clip.
4. Connect the remaining cables listed in Table 3-1.

Removing the Digital I/O Option Board

You must remove the Audio Board before removing the Digital I/O Option Board. Follow the procedure on page 3-3 to remove the Audio Board.

1. Remove the cap from the Optical Out jack.
2. Remove the two Digital I/O port screws.
3. Remove the four Digital I/O Out and In jack screws.
4. The Digital I/O Option Board is mounted component side down. Move the board slightly toward the front panel to free the jacks from the openings provided for them in the rear panel.
5. Disconnect the three cables listed in Table 3-2.

Ref.	Name	Cable Type	Destination
J1001	Digital I/O to DSP	flat ribbon	DSP Board
J1002	Sampling Bd. (SOB)	shielded wire	Sampling Board
J1003	Sampling Bd. (SOB)	shielded wire	Sampling Board

Table 3-2 K2600R Digital I/O Option Board cables

6. Remove the cable locking clip and disconnect the flat ribbon cable from the DSP Board.
7. Disconnect the shielded wire cables.
8. Remove the Digital I/O Option Board.

Replacing the Digital I/O Option Board

1. Hold the board vertically over the DSP Board (Digital I/O XLR jacks facing down) and connect the shielded wire cables at locations J1002 and J1003 on the Digital I/O Option Board.
2. Lower the board to a horizontal position and connect the flat ribbon cable. Be sure to install the cable locking clip.
3. Position the board so the Digital I/O jacks, Optical jack, and Digital I/O ports are aligned properly and through the openings provided for them in the rear panel.
4. Install the four screws that secure the Digital I/O Out and In jacks to the rear panel.
5. Install the two screws that secure the Digital I/O ports to the rear panel.
6. Install the cap on the Optical jack.
7. Follow the procedure on page 3-3 to replace the Audio Board.

Removing the Small Digital I/O Board

You must remove the Audio Board before removing the Small Digital I/O Board. Follow the procedure on page 3-3 to remove the Audio Board.

1. Remove the cap from the Optical Out jack.
2. Remove the four screws that secure the Digital I/O Out and In jacks to the rear panel.
3. The Small Digital I/O Board is mounted component side down. Move the board slightly toward the front panel to free the jacks from the openings provided for them in the rear panel.
4. Disconnect the cables listed in Table 3-3.

Ref.	Name	Cable Type	Destination
J1201	Sampling Bd. (SOB)	shielded wire	Sampling Board
J1205	Sampling Bd. (SOB)	shielded wire	Sampling Board

Table 3-3 K2600R Small Digital I/O Board cables

5. Remove the Small Digital I/O Board.

Replacing the Small Digital I/O Board

1. Hold the board vertically over the DSP Board (Digital I/O XLR jacks facing down) and connect the shielded wire cables at locations J1201 and J1205 on the Small Digital I/O Board.
2. Lower the board and position it so that the Digital I/O jacks and Optical jack are aligned properly with the openings provided for them in the rear panel.
3. Install the four screws that secure the Digital I/O Out and In jacks to the rear panel.
4. Install the cap on the Optical jack.
5. Follow the procedure on page 3-3 to replace the Audio Board.

Removing the DSP Board

You must remove the Audio Board before removing the DSP Board. Follow the procedure on page 3-3 to remove the Audio Board. If the K2600R you are servicing has a Small Digital I/O or Digital I/O Option Board installed, remove it before removing the DSP Board. Follow the procedure on page 3-4 to remove the Small Digital I/O Board or page 3-3 to remove the Digital I/O Option Board.

The DSP Board is mounted on the CPU Board and is held in place by four nylon PC board standoffs and two 50-pin connectors.

1. Several cables are routed over the DSP Board. It is not necessary to disconnect all the cables. However to make the removal of the DSP Board easier, we recommend disconnecting two flat ribbon cables, as described in Steps 2 and 3.
2. On the CPU Board, remove the locking cable clip and disconnect the cable that connects the LCD Board to the CPU Board.
3. On the Sampling Board, remove the locking cable clip and disconnect the cable that connects the CPU Board to the Sampling Board.
4. After disconnecting the two flat ribbon cables, fold them back, away from the DSP Board.
5. There are two styles of nylon standoffs securing the DSP Board. The standoffs on the right side of the DSP Board (as viewed standing at the rear panel) have tabs that clip over the top edge of the DSP Board. The standoffs on the left side of the DSP Board protrude through the DSP Board.
6. Start with the standoffs on the right of the DSP Board. Press the tabs of the standoffs away from the DSP Board and slightly lift the right edge of the DSP Board to clear the tabs.

7. To release the DSP Board from the standoffs on the left side of the board, squeeze the top of the standoffs and slightly lift the left side of the DSP Board.
8. Once the DSP Board is free of the standoffs, lift the DSP Board straight up to disconnect the two 50-pin connectors from the CPU Board.

Replacing the DSP Board

1. Place the DSP Board in position onto the four nylon PC board standoffs.
2. Verify that the DSP Board pins are lined up properly with the two 50-pin connectors located on the CPU Board.
3. Press the DSP Board down to insert the pins on the back of the DSP Board into the two 50-pin connectors on the CPU Board. This will also secure the DSP Board into the four standoffs.
4. Connect the flat ribbon cable from the CPU Board to the Sampling Board.
5. Connect the flat ribbon cable from the LCD Board to the CPU Board.
6. Be sure to replace the locking cable clips on the flat ribbon cables.
7. If the K2600R you are servicing has a Digital I/O Option, follow the procedure on page 3-4 to replace it. If the K2600R you are servicing has a Small Digital I/O Board, follow the procedure on page 3-5 to replace it.
8. Follow the procedure on page 3-3 to replace the Audio Board.

Removing the CPU Board

The CPU Board is secured at several locations. There are five attachment points on the bottom enclosure. The first is a moveable holding bracket secured with a screw, see Figure 3-2. The other four locations are mounting posts that rise up out of the bottom enclosure. Three nylon PC board standoffs and a screw secure the CPU Board to the four mounting posts, see Figure 3-3. The CPU Board is also held in place by the fasteners that secure the SCSI ports and MIDI jacks to the rear panel.

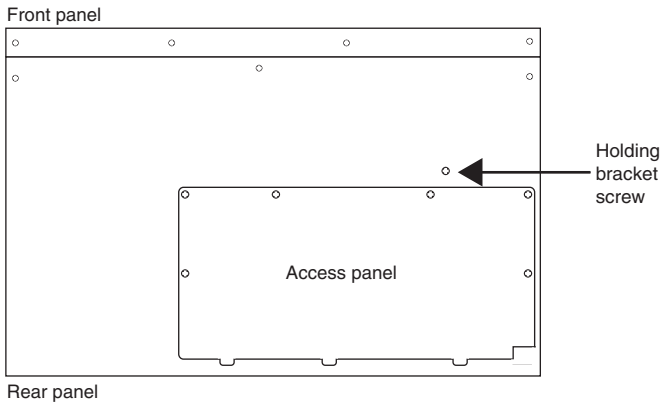


Figure 3-2 K2600R bottom

1. Follow the procedures previously described to remove the Audio Board, Digital I/O Option (if installed) or the Small Digital I/O Board, and the DSP Board.
2. Place the K2600R on its side. Hold the CPU holding bracket and remove the holding bracket screw from the bottom enclosure. Place the CPU holding bracket aside.

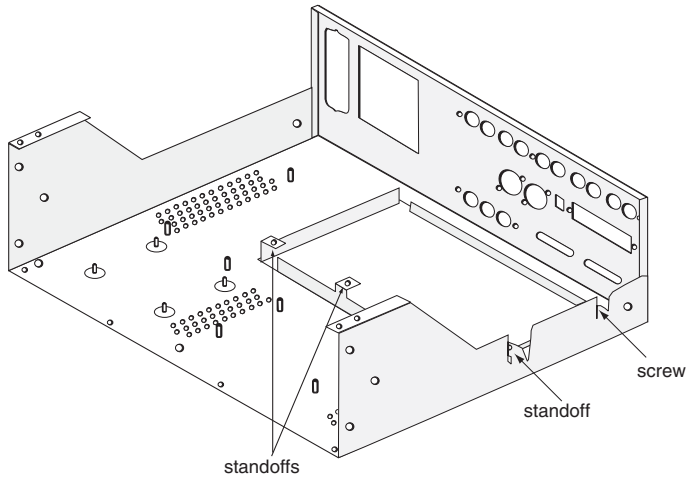


Figure 3-3 K2600R internal attachment points

3. Place the K2600R flat in its normal position.
4. All flat ribbon cables use cable locking clips that secure the cables to the connectors. Remove the cable locking clips from the flat ribbon cables on the CPU Board. Be sure to set them safely aside so that you can reinstall them when you reconnect the cables.
5. Disconnect the cables listed in Table 3-4. All but one of these cables connect to the CPU Board. The exception is Ref. J108, which connects to the Power Supply Board.

Note: The flat ribbon cable that connects the LCD Board to the CPU Board should already be removed from location J804 on the CPU Board. Therefore, it is not listed in Table 3-4.

Ref.	Name	Cable Type	Destination
J801	Sampler	flat ribbon	Sampling Board
J805	Floppy	flat ribbon	Disk Drive
J807	Floppy Power	stranded wire	Disk Drive
J808	DAC	flat ribbon	Audio Board
J813	Scanner	flat ribbon	Front Panel/Scanner Board
J814	DC Power	stranded wire	Power Supply Board
J108	Scanner Power	stranded wire	Front Panel/Scanner Board

Table 3-4 Cables to disconnect for CPU Board removal

6. Remove the two screws that secure the MIDI jacks to the rear panel.
7. Remove the four hex standoffs and flat washers that secure the SCSI ports to the rear panel.
8. Remove the screw that secures the CPU Board to the mounting post.
9. Press the tabs of the three nylon PC board standoffs away from the CPU Board and lift the board clear of the tabs.
10. Remove the CPU Board by moving it toward the front panel to clear the SCSI ports and MIDI jacks.

Replacing the CPU Board

1. Place the CPU Board in position over the three nylon PC board standoffs. Be sure the SCSI ports and MIDI jacks are positioned through the openings provided for them in the rear panel.
2. Press the CPU Board down that secure it onto the standoffs.
3. Install the screw that secures the CPU Board to the mounting post.
4. Install the two screws that secure the MIDI jacks to the rear panel.
5. Install the four hex standoffs and flat washers that secure the SCSI ports to the rear panel.
6. Place the K2600R on its side.
7. Hold the CPU holding bracket in position over its mounting hole on the bottom enclosure and install the screw through the bottom enclosure.
8. Place the K2600R flat in its normal position.
9. A number of CPU Board cables cross over the DSP Board. When reconnecting cables, do so in the following order.

   Connect the flat ribbon cable from the Front Panel/Scanner Board to the CPU Board, location J813. Be sure to install the cable locking clip.

   Caution: The Disk Drive and Sampling Option flat ribbon cables are the same size and could easily be reversed. Be sure to pay special attention when reconnecting these cables, connecting these cables incorrectly could cause the cables to literally melt.

   Connect the flat ribbon and shielded wire cables from the floppy disk drive to the CPU Board, locations J805 and J807. Be sure to install the cable locking clip on the flat ribbon cable.

   If you disconnected the cables from locations J808 (DAC) and J801 (Sampler) connect them and install the locking cable clips on all flat ribbon cables.

   Connect the stranded wire cable from the Front Panel/Scanner Board to the Power Supply Board, location J108.

10. Follow the procedure on page 3-6 to replace the DSP Board.

11. If the K2600R you are servicing has a Digital I/O Option, follow the procedure on page 3-4 to replace it. If the K2600R you are servicing has a Small Digital I/O Board, follow the procedure on page 3-5 to replace it.
12. Follow the procedure on page 3-3 to replace the Audio Board.

Removing the Power Supply Board

1. Disconnect the cables listed in Table 3-5.

Ref.	Name	Cable Type	Destination
J101	System Secondary	stranded wire	Transformer
J102	HDD Secondary	stranded wire	Transformer
J103	Fan Supply	stranded wire	Fan Assembly
J104	Backlight Supply	stranded wire	Backlight Power Board
J105	CPU DC Power	stranded wire	CPU Board
J106	HDD Supply	stranded wire	HDD
J107	Audio Power	stranded wire	Audio Board
J108	Scanner Power	stranded wire	Front Panel/Scanner Board

Table 3-5 Power Supply Board cables

2. The Power Supply Board is secured to the K2600R bottom enclosure with four screws. Two screws are located at the left edge of the board (as viewed standing at the rear panel), and two screws are located at the heatsink mounting bracket. Remove these screws.
3. Remove the Power Supply Board.

Replacing the Power Supply Board

1. Place the Power Supply Board in position over the mounting standoffs on the bottom enclosure. Be certain that the area is clear of disconnected cables and loose hardware.
2. Install the four screws that secure the Power Supply Board to the bottom enclosure.
3. Connect the cables listed in Table 3-5.

Removing the Transformer

1. Disconnect the stranded wire cable from the transformer to the AC Entry Module.
2. Disconnect the two stranded wire cables from the Power Supply Board at locations J101 and J102.
3. Disconnect the stranded wire cable from the Backlight Board. This cable connects to J104 on the Power Supply Board.
4. Remove the four screws and split washers that secure the transformer to the bottom enclosure, and remove the transformer.

Replacing the Transformer

1. Position the transformer over the mounting holes provided for it on the bottom enclosure.
2. Install the four screws and split washers that secure the transformer to the bottom enclosure.
3. Connect the stranded wire cable that connects the Backlight Board to the Power Supply Board at location J104.
4. Connect the two stranded wire cables that connect the transformer to the Power Supply Board at locations J102 and J101.
5. Connect the stranded wire cable that connects the transformer to the AC Entry Module.

Removing the Backlight Board

The Backlight Board is mounted on the front panel mounting bracket and is secured with four screws.

1. Disconnect the stranded wire cable that connects the Backlight Board to the Power Supply Board.
2. Disconnect the stranded wire cable that connects the Backlight Board to the LCD Board.
3. Remove the four screws that secure the board to the front panel mounting bracket. These screws also secure the cover plate over the board. Be aware that once the screws are removed, the cover plate is no longer attached to the board.

Note: Access to the lower right screw (as viewed standing at the rear panel) is limited due to its close proximity to the transformer. Be sure to use an appropriate style screwdriver to avoid damaging the transformer.

4. Remove the Backlight Board.

Replacing the Backlight Board

1. Position the Backlight Board over the mounting standoffs on the front panel mounting bracket. Be sure that the cover plate is correctly positioned over the board.
2. Install the four screws that secure the board to the front panel mounting bracket. Use an appropriate style screwdriver to avoid damaging the transformer.
3. Connect the stranded wire cable from the LCD Board to its location on the Backlight Board.
4. Connect the stranded wire cable from the Power Supply Board to its location on the Backlight Board.

Removing the Fan

1. Disconnect the stranded wire cable that connects the fan to the Power Supply Board.
2. Remove the four screws that secure the fan to the rear panel. Each screw has one flat washer and one split lock washer. You will need to use a screwdriver with a right angle to remove the two lower screws.
3. The fan is held in place on the rear panel with standoffs. Move the fan away from the rear panel to free it from the standoffs.
4. Remove the fan.

Replacing the Fan

1. Place the fan in position over the standoffs provided for it on the rear panel. The fan should be positioned so that the stranded wire cable is located at the bottom right corner of the fan (as viewed standing at the rear panel). Press the fan toward the rear panel so that the standoffs protrude through the mounting holes of the fan.

Note: If you are installing a new fan, be sure that the fan is positioned so that air will flow *out* of the opening in the rear panel. An arrow on the side of the fan indicates airflow.

2. Install the four screws, flat washers, and split lock washers that secure the fan to the rear panel.
3. Connect the stranded wire cable that connects the fan to J103 on the Power Supply Board.

Front Panel Assembly

Removing the Front Panel Cover

1. Place the K2600R on its side and remove the four screws along the bottom edge of the front panel cover.
2. Place the K2600R flat in its normal position.
3. From the Optical Inputs section of the front panel, remove the cap from the Optical jack.
4. Remove the nut and washer from the Optical Input 1/4" jack on the front panel cover and the four screws (use a #1 screwdriver) from the Optical Input XLR jacks.
5. From the Data Entry section of the front panel, remove the nut and washer from the Headphone jack.
6. Remove the two screws from the top right and left corners of the front panel cover.
7. Remove the front cover. Place it safely aside to avoid damage.

Replacing the Front Panel Cover

1. Place the front cover in position. Be sure that the front panel switches, knobs, jacks, and potentiometers are correctly positioned and visible through the openings provided for them on the front panel cover.
2. Install the four screws (use a #1 screwdriver) that secure the front cover to the Optical Input XLR jacks, and install the Optical jack cap.
3. Install the nut and washer that secure the Headphone jack, and install the nut and washer that secure the Optical Input 1/4" jack.
4. Install the two screws that secure the top right and left corners of the front panel cover.
5. Place the K2600R on its side and install the four screws along the bottom edge of the front panel cover.

Removing the Front Panel Mounting Bracket

1. Remove the front panel cover, as described on page 3-12.
2. Remove the two brass screws that secure the power switch to the Front Panel/Scanner Board, and slide the power switch assembly into the K2600R to clear it from the Front Panel/Scanner Board and the front panel mounting bracket.

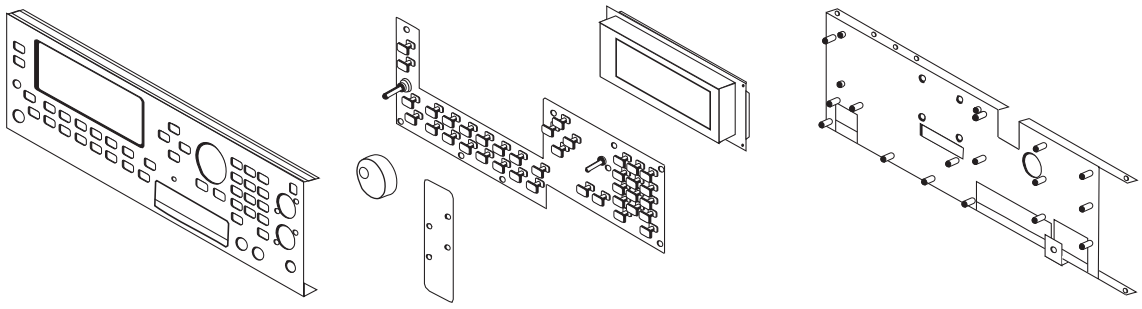


Figure 3-4 Front Panel Assembly, exploded view

3. Tilt the front of the K2600R up and remove the three screws along the bottom edge of the front panel mounting bracket.

Caution: If the unit you are servicing has a Sampling Board installed, the hardware that secured it was removed during the removal of the front panel cover. At this point, the Sampling Board is held in place only by the cables connected to it. When you tilt the K2600R up to remove the screws located on the bottom edge, be careful to not allow the board to move freely and cause damage to it or other components.

4. Place the K2600R flat in its normal position.
5. Remove the two screws from the top of the front panel mounting bracket. The screws are at the corners of the bracket.
6. The Headphone/Volume Board is attached to the front panel mounting bracket. It is secured to the front panel mounting bracket with the volume potentiometer mounting hardware.
7. Unless the service you are providing requires that you have access to the components on the Headphone/Volume Board, it is not necessary to remove the board when removing the front panel mounting bracket. However, two shielded wire cables are connected to the Headphone/Volume Board. These cables are soldered into the board and are routed to the Audio Board. Disconnect the two shielded wire cables from the Headphone/Volume Board at locations J612 and J615 on the Audio Board.
8. Remove the locking cable clip and disconnect the flat ribbon cable connecting the CPU Board to the LCD Board.
9. Two Front Panel/Scanner Board cables are routed over the disk drive mounting bracket and are secured to it with tape. Peel back the tape from one side.
10. Remove the locking cable clip and disconnect the flat ribbon cable from the Front Panel/Scanner Board.
11. Disconnect the shielded wire cable from the Front Panel/Scanner Board.
12. Remove the front panel mounting bracket. To clear the top cover mounting holes located on the left side of the bottom enclosure, slide the mounting bracket out from the right side of the K2600R.

Replacing the Front Panel Mounting Bracket

1. Insert the front panel mounting bracket into the left side of the bottom enclosure. (This is done to clear the top cover mounting holes on the left side.) Then slide the right side of the front panel mounting bracket. The floppy disk drive should easily insert through the opening provided for it on the front panel mounting bracket.

2. Install the two screws into the top corners of the front panel mounting bracket. Be sure to line up and install the screws in the second hole back from the front edge. (The first hole is used that secure the front panel cover.)

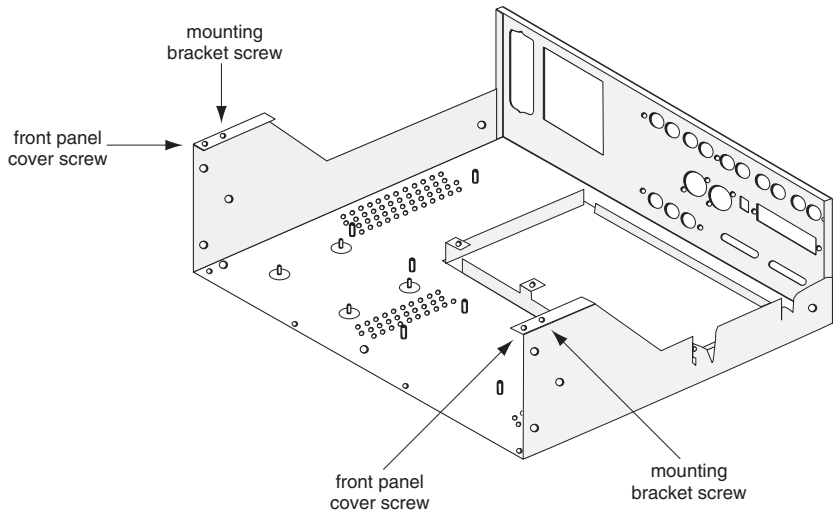


Figure 3-5 Front panel mounting bracket attachment points

3. Position the power switch through the opening provided for it on the front panel mounting bracket and Front Panel/Scanner Board. Install the two brass screws that secure the power switch to the Front Panel/Scanner Board.

4. Tilt the front of the K2600R up and install the three screws along the bottom edge of the front panel mounting bracket.

Caution: If the unit you are servicing has a Sampling Board installed, the hardware that secured it was removed with the removal front panel cover. At this point, the Sampling Board is held in place only by the cables connected to it. When you tilt the K2600R up to install the screws located on the bottom edge, be careful to not allow the board to move freely and cause damage to it or other components.

5. Place the K2600R flat in its normal position.

6. Connect the shielded wire cable from the Power Supply Board to location J701 on the Front Panel/Scanner Board.

7. Connect the flat ribbon cable from the CPU Board to location J702 on the Front Panel/Scanner Board, and install the locking cable clip.

8. Secure the two cables to the disk drive mounting bracket with the tape.
9. Connect the flat ribbon cable from the LCD Board to the CPU Board and install the locking cable clip.
10. Connect the two shielded wire cables from the Headphone/Volume Board to locations J612 and J615 on the Audio Board.
11. Follow the procedure on page 3-12 to install the front panel cover. Follow the procedure on page 3-14 to install the front panel mounting bracket.

Removing the Front Panel/Scanner Board

You must remove the front panel cover and mounting bracket before removing the Front Panel/Scanner Board. Follow the procedures on page 3-12 to remove the front panel cover and mounting bracket.

1. Using an Allen wrench, loosen the set screw and remove the spinner knob.

Note: Step 1 is necessary to gain access to a screw located beneath the spinner knob.

2. Remove the 16 screws that secure the Front Panel/Scanner Board to the front panel mounting bracket.
3. Remove the two brass screws that secure the power switch to the Front Panel/Scanner Board.
4. Remove the Front Panel/Scanner Board.

Replacing the Front Panel/Scanner Board

1. Place the Front Panel/Scanner Board in position and install the four screws that secure the corners of the board to the front panel mounting bracket.

Note: To be certain that the board is correctly positioned and that it will line up properly with the front panel cover, place the front panel cover over the board to verify the switch cap positions. If the switch caps are not correctly positioned, remove the front panel cover and adjust the corner screws. If the switch caps are correctly positioned, remove the front panel cover and place it safely aside.

2. Install the remaining 12 screws.
3. Position the power switch through the opening provided for it on the Front Panel/Scanner Board.
4. Install the two brass screws that secure the power switch to the Front Panel/Scanner Board.
5. Place the spinner knob on the shaft and use an Allen wrench to tighten the set screw. The spinner potentiometer has a “D” shaft and cannot be installed incorrectly.
6. Follow the procedure on page 3-12 to replace the front panel cover and mounting bracket.

Removing the LCD Board

To remove the LCD Board, it is necessary to first remove the front cover and Front Panel/Scanner Board. Follow the procedure on page 3-12 to remove the front cover and the procedure on page 3-15 to remove the Front Panel/Scanner Board.

1. Remove the locking cable clip and disconnect the flat ribbon cable from the LCD Board at its location on the CPU Board (J804).
2. Disconnect the stranded wire cable from the LCD Board at its location on the Backlight Board (J2).
3. Remove the four screws and flat washers that secure the LCD Board to the front panel mounting bracket.
4. Lift the LCD Board off of the front panel mounting bracket. Be sure to feed the flat ribbon cable through the opening provided for it on the front panel mounting bracket.

Replacing the LCD Board

1. Feed the flat ribbon cable through the opening provided for it on the front panel mounting bracket.
2. Position the LCD Board over the four mounting standoffs on the front panel mounting bracket.

Note: The correct placement of the LCD Board should seem obvious. However, an arrow is printed on the LCD Board just below the stranded wire cable connection to indicate the "Up" direction.

3. Install the four screws and flat washers that secure the board.
4. Connect the stranded wire cable from the LCD Board to its location on the Backlight Board.
5. Connect the flat ribbon cable from the LCD Board to its location on the CPU Board, and install the locking cable clip.
6. Follow the procedure on page 3-15 to install the Front Panel/Scanner Board.
7. Follow the procedure on page 3-12 to install the front panel cover.

Removing the AC Entry Module

1. Remove the two screws that secure AC Entry Module to the rear panel.
2. A nut and two star washers (one on each side of the lug) secure the ground wire from the AC Entry Module to the bottom enclosure. Remove the nut from the ground wire connection on the bottom enclosure.
3. A cable harness connects the AC Entry Module to the transformer and the power switch. A molex connector is in-line so that the AC Entry Module can be disconnected from the transformer. Disconnect the molex connector.
4. To completely remove the AC Entry Module from the unit, you would need to remove the power switch as well. Follow the procedure on page 3-12 to remove the front panel cover.

5. Remove the two screws that secure the power switch to the Front Panel/Scanner Board, and push the power switch into the unit.
6. Remove the AC Entry Module.

Replacing the AC Entry Module

1. Position the power switch through the opening provided for it on the Front Panel/Scanner Board, and install the two screws that secure it to the board.
2. Follow the procedure on page 3-12 to replace the front panel cover.
3. Place the AC Entry Module in position on the rear panel and install the two screws that secure it.
4. Connect the molex connector on the harness to the transformer.
5. Connect the ground wire to the bottom enclosure and secure it with the nut and star washers. Be sure there is a star washer on each side of the lug.

Removing the Floppy Disk Drive

The floppy disk drive is installed in a mounting bracket.

1. Two cables are routed over the disk drive mounting bracket and are secured to it with tape. Peel back the tape from one side.
2. Remove the locking cable clip and disconnect the flat ribbon cable from the Front Panel/Scanner Board.
3. Disconnect the shielded wire cable from the Front Panel/Scanner Board.
4. Disconnect the stranded wire cable from the LCD Board to the Backlight Board.
5. Remove the four screws that secure the disk drive mounting bracket to the bottom enclosure. These screws have been reinforced with glyptol.
6. Slide the disk drive mounting bracket back toward the rear panel. This should free the front cover of the floppy disk drive from the front panel.
7. Carefully lift the back end of the disk drive mounting bracket and move it back and up until it clears the CPU and DSP Boards.
8. Remove the cable locking clip and disconnect the flat ribbon and shielded wire cable from the floppy disk drive.
9. Remove the disk drive mounting bracket.
10. To remove the disk drive from the mounting bracket, remove the four screws from the bottom of the mounting bracket.

Replacing the Floppy Disk Drive

1. If you are installing a new floppy disk drive, place the floppy disk drive into the disk drive mounting bracket and install the four screws through the bottom of the mounting bracket to secure the floppy disk drive. Be sure that the front plate of the floppy disk drive is aligned with the opening in the top of the mounting bracket so that the opening is facing the front panel.

2. Connect the flat ribbon and shielded wire cable to the floppy disk drive. Be sure to install the cable locking clip on the flat ribbon cable.
3. Standing at the front panel, tilt the front end of the disk drive mounting bracket down toward you and lower it into position.
4. Install the four screws that secure the disk drive mounting bracket to the bottom enclosure.
5. Connect the stranded wire cable from the LCD Board to the Backlight Board.
6. Connect the shielded wire cable from the Power Supply Board to the Front Panel/Scanner Board.
7. Connect the flat ribbon cable from the CPU Board to the Front Panel/Scanner Board, and install the locking cable clip.
8. Reapply the tape over the two cables that secure them to the top of the disk drive mounting bracket.

Removing the Hard Disk Drive

1. Remove the cable locking clip and disconnect the flat ribbon cable from the Hard Disk Drive.
2. Disconnect the power cable from the Hard Disk Drive. This cable connects to J106 on the Power Supply Board.
3. Remove the four screws that secure the drive to the mounting bracket.
4. Remove the Hard Disk Drive.

Replacing the Hard Disk Drive

1. Position the Hard Disk Drive into the mounting bracket.
2. Install the four screws that secure it to the mounting bracket.
3. Connect the power cable from the Power Supply Board to the Hard Disk Drive.
4. Connect the flat ribbon cable from the CPU Board to the Hard Disk Drive. Be sure to install the cable locking clip.

Removing the Sampling Board

1. Disconnect the cables listed in Table 3-6.

Ref.	Name	Cable Type	Destination
J1101	CPU Host	flat ribbon	CPU Board
J1102	SMP DIG I/O	shielded wire	Digital I/O Board
J1103	Audio	shielded wire	Audio Board
J1108	Optical Digital Out	shielded wire	Digital I/O Board

Table 3-6 Sampling Board cables

2. From the Optical Inputs section of the front panel, remove the cap from the Optical jack.
3. Remove the nut and washer from Analog Input 1/4" jack.
4. Remove the four screws (use a #1 screwdriver) from the Analog Input XLR jacks.
5. Slide the board back toward the rear panel to free the jacks from the front panel cover, and lift the back end of the board (closest to the rear panel) to remove the Sampling Board.

Replacing the Sampling Board

1. Tilt the front end of the Sampling Board down and place the board in position. Be sure that the jacks are correctly aligned through the openings provided for them in the front panel cover.

Note: You will notice a rubber bumper located on the bottom enclosure. This helps protect and position the bottom edge of the Sampling Board.

2. Install the four screws (use a #1 screwdriver) that secure the Analog Input XLR jacks.
3. Install the nut and washer that secure the Analog Input 1/4" jack.
4. Install the cap onto the Optical jack.
5. Connect the cables listed in Table 3-6. Be sure to install the locking cable clip on the flat ribbon cable.

Chapter 4
K2600/K2600X Disassembly/Assembly

Introduction

This chapter contains all the procedures for the disassembly and reassembly of both the 76-note K2600 and the 88-note K2600X—as well as instruments with factory-installed or after-market options. In some instances a procedure may instruct you to remove a cable from an after-market option board or device that may not be present. Simply skip this step of the procedure and continue.

There are five main sections: *Opening the K2600/K2600X*, *Top Enclosure*, *Bottom Enclosure*, *K2600 Keyboard Assembly*, and *K2600X Keyboard Assembly*.

Saving User Data

Warning: Be sure to save all user data and remove any user disk from the disk drive before disassembly. For detailed instructions to save the user data, please refer to *Saving User Data* on page 5-2.

Notes, Cautions, Warnings

Please pay special attention to all Notes, Cautions, and Warnings as they not only point out specific instructions, but also alert you to differences between the 76-note K2600 keyboard and the 88-note K2600X keyboard.

Cables, Connectors

All flat ribbon cable connectors are keyed, and therefore cannot be reversed. Flat ribbon cables have locking cable clips. Be sure to reapply the clips when connecting cables.

In some cases, tape secures cable connections or fastens cables to the bottom enclosure. Always peel back the tape from one side when disconnecting cables so that the tape remains properly positioned.

Tools Required

- Dowel (3mm diameter)
- No. 1 Phillips head screwdriver
- No. 2 Phillips head screwdriver
- Small flat screwdriver
- Small blunt-end tool (Q-Tip, toothpick, etc.)
- Foam blocks
- 5MM Nut driver (hex standoffs)
- 1/2" Nut driver
- Needle-nose pliers

Opening the K2600/K2600X

K2600 Bottom

1. Refer to Figure 4-1. Remove the enclosure support wall screws and the endblock locking bracket screws (not the endblock screws). Dotted lines indicate the locations of the enclosure support wall screws. Arrows show the locations of the endblock locking bracket screws.

Note: Do not remove the five endblock screws at this point.

2. Tilt the K2600 up and remove the seven enclosure support wall screws. These attach the support wall to the bottom enclosure.
3. Remove the four endblock locking brackets screws (two on each side of the bottom enclosure).
4. Slide the endblock locking brackets out of the K2600 and set them aside.

Note: The left and right endblock locking brackets are identical. Therefore, you don't need to keep them separate.

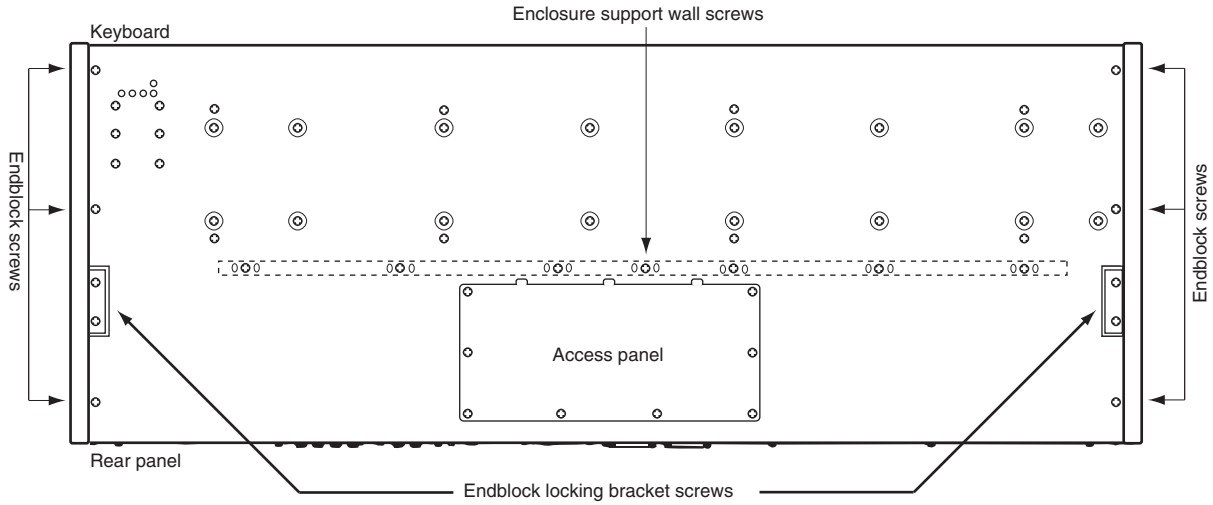


Figure 4-1 K2600 bottom enclosure

5. Place the K2600 flat on your work surface.

K2600X Bottom

1. Refer to Figure 4-2. Remove the enclosure support wall screws and the endblock locking bracket screws (not the endblock screws). Arrows show the locations of the enclosure support wall and endblock locking bracket screws.

Note: Do not remove the five endblock screws at this point.

2. Tilt the K2600X up and remove the eight enclosure support wall screws. These attach the support wall to the bottom enclosure.
3. Remove the four endblock locking brackets screws (two on each side of the bottom enclosure).
4. Slide the endblock locking brackets out of the K2600X and set them aside.

Note: The left and right endblock locking brackets are identical. Therefore, you don't need to keep them separate.

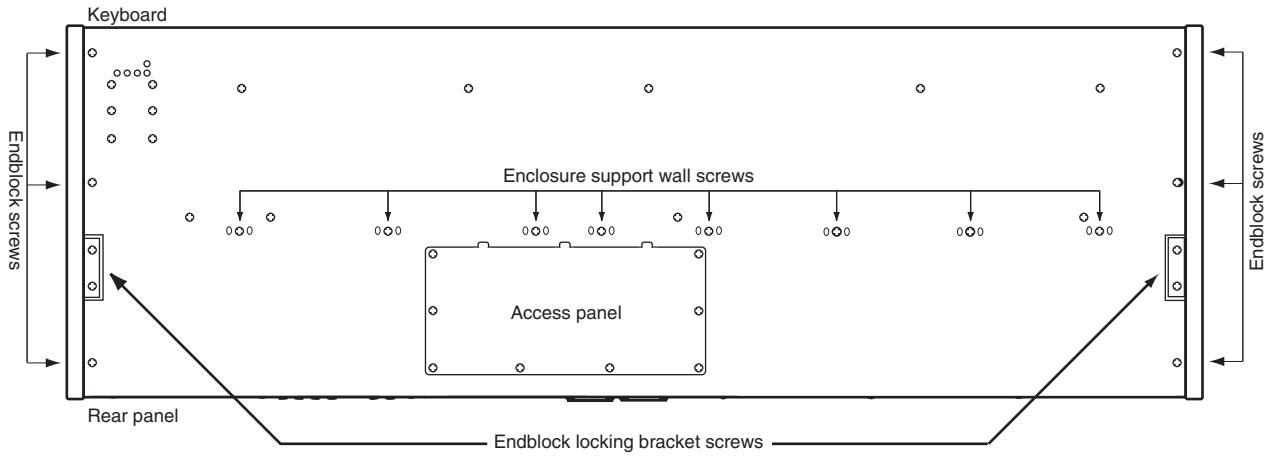


Figure 4-2 K2600X bottom enclosure

5. Place the K2600X flat on your work surface.

Removing the Top Enclosure

1. Refer to Figure 4-3. To remove the top enclosure, remove the left and right endcaps, and the screws that secure the top enclosure to the bottom enclosure.

Note: Figure 4-3 is an illustration of the K2600 rear panel. An illustration of the K2600X rear panel has not been included because the difference between the two is minimal. The number of screws to be removed is the same and the position of the endblock screws is identical. The only difference is the spacing of the seven rear panel screws.

2. Remove the seven rear panel screws. These secure the rear panel portion of the top enclosure.
3. Remove the four endblock screws.

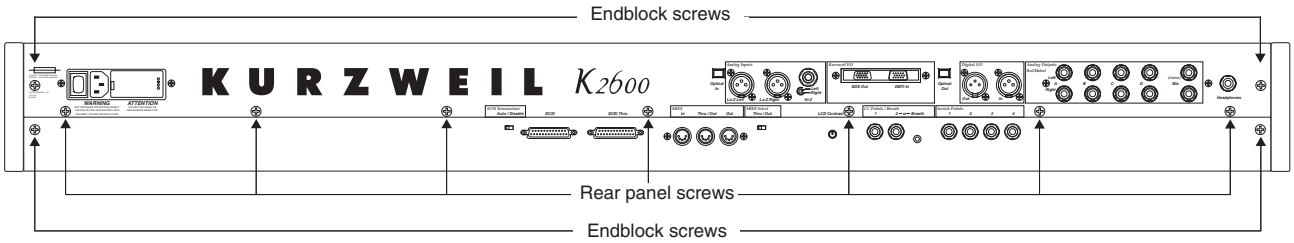


Figure 4-3 K2600 rear panel

Caution: The following steps describe removing the left and right endcaps. To avoid damage to an endblock, be sure to hold onto the endblock when removing the screws. When the these screws are removed, the endblock will be free of the unit.

4. Refer to Figure 4-2. Move the unit so that one end hangs over the edge of your work surface. Remove the three endblock screws from the bottom enclosure. Set the endblock safely aside. Repeat for the other endblock.

Warning: Be sure to have your work surface prepared. This includes placing foam blocks behind the unit. When the top enclosure is removed, place it on the foam blocks to avoid damaging the Alpha Wheel, control panel buttons, and sliders. The following procedure requires enough room behind the rear of the unit to place the top enclosure face down on your work surface.

5. Lift the top enclosure straight up, at least three inches.

Caution: The Audio Board extends approximately two inches beyond the rear panel portion of the top enclosure. When you remove the top enclosure, if you do not lift the top enclosure up at least three inches, you could damage the Audio Board.

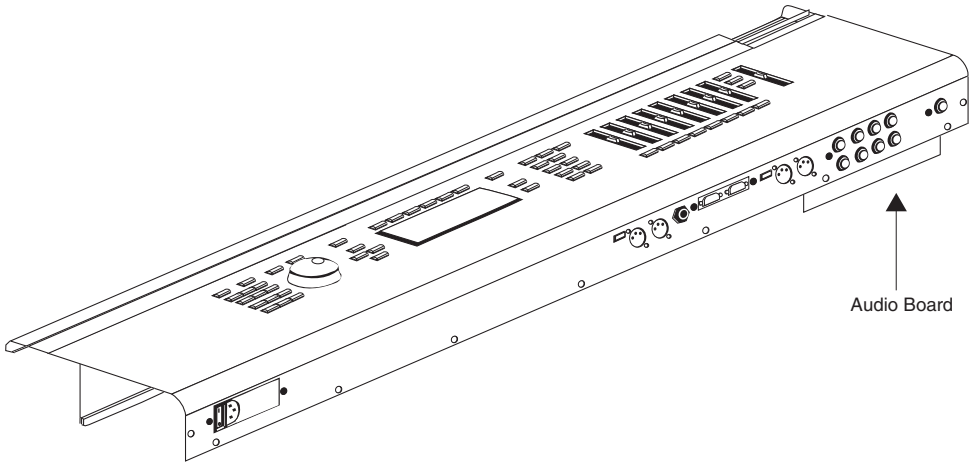


Figure 4-4 Top Enclosure, Audio Board location

6. Turn the top enclosure over and place it face down onto your work surface.

Replacing the Top Enclosure

1. Lift the top enclosure up and place it in position over the bottom enclosure.

Caution: Remember that the Audio Board extends beyond the rear panel.

2. Be sure that the cables are properly routed and are not caught between the rear panel or enclosure support wall.
3. Refer to Figure 4-3 and install the seven rear panel screws.

Closing the K2600/K2600X

1. Refer to Figure 4-2. Slide one side of the unit off of your surface and hold the appropriate endblock in position. Install the three endblock screws in the bottom enclosure. Repeat for the other endblock.
2. Install the four endblock screws in the rear panel.
3. Tilt the unit up and install the enclosure support wall screws.

Note: If you are servicing a K2600, there are seven screws securing the enclosure support wall. If you are servicing a K2600X, there are eight screws.

4. Insert one endblock locking bracket and install the two endblock locking bracket screws. Repeat for the other endblock locking bracket.

Top Enclosure

The top enclosure includes five boards: Audio, Slider, Control Panel, LCD, and Backlight. The Disk Drive and the Power Entry Module are also located on the top enclosure. Figure 4-5 shows the placement of the boards, Disk Drive, and Power Entry Module. Figure 4-6 shows the top enclosure with the Digital I/O and Sampling Boards installed.

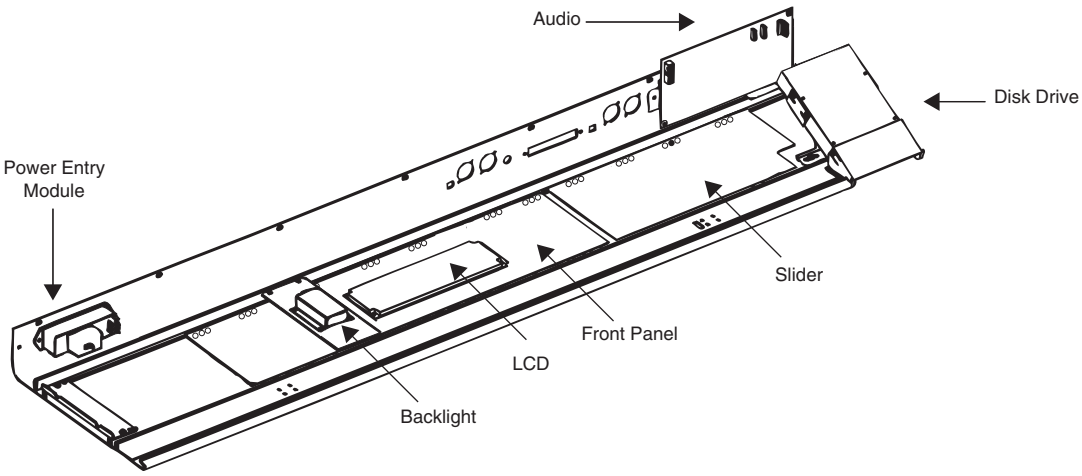


Figure 4-5 Top Enclosure, boards and assemblies

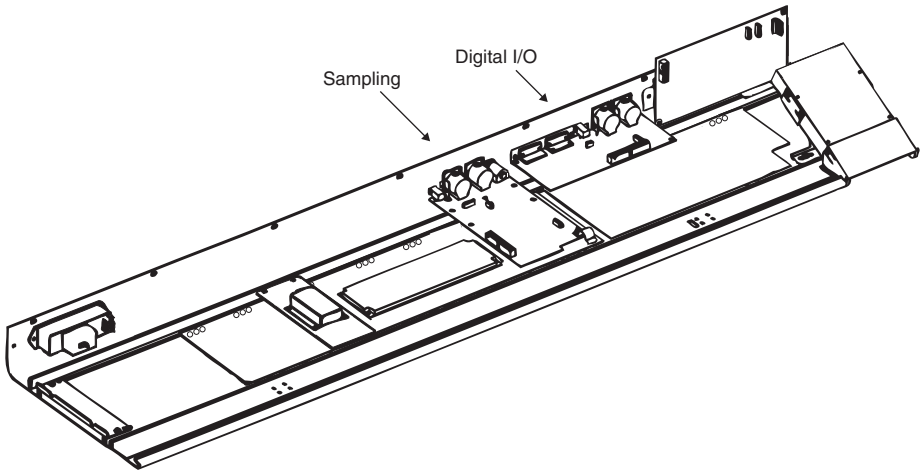


Figure 4-6 Top Enclosure, option boards

Removing the Audio Board

The Audio Board is mounted onto the rear panel portion of the top enclosure.

1. Disconnect the cables listed in Table 4-1.

Ref.	Name	Cable Type	Destination
J601	DAC	flat ribbon	CPU Board
J602	Audio Power	stranded	Power Supply Board
J611	Sampler	shielded wire	Sampling Board
J612	Slider	shielded wire	Slider Board

Table 4-1 Audio Board cables

2. Remove the two screws that secure the Audio Board to the rear panel, and remove the Audio Board.

Note: Do not remove the nuts and washers from the audio jacks.

Replacing the Audio Board

1. Hold the Audio Board and position it so that the jacks are aligned properly with the holes provided for them on the rear panel portion of the top enclosure.
2. Install the two screws that secure the Audio Board to the rear panel.
3. Connect the cables listed in Table 4-1.

Removing the Disk Drive

1. Peel back the adhesive tape securing the flat ribbon cable to the disk drive retainer bracket.
2. Remove the cable locking clip and disconnect the flat ribbon and stranded wire cables from the disk drive.
3. Remove the four screws that secure the disk drive to the disk drive retainer bracket, and remove the disk drive.
4. If you are replacing the disk drive with a new disk drive, remove the front bezel from the old disk drive. It is secured with two screws and flat washers.

Replacing the Disk Drive

1. If you are installing a new disk drive, install the two screws and flat washers that secure the top enclosure bezel to the disk drive.
2. Position the disk drive on the retainer bracket and install the four screws to secure it to the retainer bracket.
3. Connect the stranded wire cable and flat ribbon cable to the disk drive. Be sure to apply the adhesive tape over the flat ribbon cable and install the cable locking clip.

Removing the Digital I/O Option Board

1. Following Steps 2 and 3 disconnect the cables listed in Table 4-2.

Ref.	Name	Cable Type	Destination
J1001	Digital I/O to DSP	flat ribbon	DSP Board
J1002	Sampling Bd. (SOB)	shielded wire	Sampling Board
J1003	Sampling Bd. (SOB)	shielded wire	Sampling Board

Table 4-2 K2600/K2600X Digital I/O Option Board cables

2. Remove the cable locking clip and disconnect the flat ribbon cable. Be sure to place the cable locking clip safely aside so that you can install it when replacing the board.
3. Disconnect the shielded wire cables.
4. Remove the cap from the Optical Out jack.
5. The Digital I/O Option Board is secured to the rear panel with six screws. Remove these screws, and remove the Digital I/O Option Board.

Replacing the Digital I/O Option Board

1. Position the board so the Digital I/O jacks, Optical jack, and Digital I/O ports are aligned properly through the openings provided for them in the rear panel.
2. Install the four screws that secure the Digital I/O Out and In jacks to the rear panel.
3. Install the two screws that secure the Digital I/O ports to the rear panel.
4. Install the cap on the Optical jack.
5. Connect the cables listed in Table 4-2. Be sure to install the cable locking clip on the flat ribbon cable.

Removing the Small Digital I/O Board

1. Remove the four screws that secure the Digital I/O Out and In jacks to the rear panel.
2. Remove the cap at the Optical Out jack.
3. Disconnect the two cables listed in Table 4-3.

Ref.	Name	Cable Type	Destination
J1002	Sampling Bd. (SOB)	shielded wire	Sampling Board
J1003	Sampling Bd. (SOB)	shielded wire	Sampling Board

Table 4-3 K2600 Small Digital I/O Board cables

4. Remove the Small Digital I/O Board.

Replacing the Small Digital I/O Board

1. Position the board so that the Digital I/O and Optical jacks are aligned properly through the openings provided for them in the rear panel.
2. Install the four screws that secure the Digital I/O Out and In jacks to the rear panel.
3. Install the cap on the Optical jack.
4. Connect the two cables listed in Table 4-3.

Removing the Sampling Board

1. Disconnect the cables listed in Table 4-4.

Ref.	Name	Cable Type	Destination
J1101	CPU Host	flat ribbon	CPU Board
J1102	SMP DIG I/O	shielded wire	Digital I/O Option Board
J1103	Audio	shielded wire	Audio Board
J1108	Optical Digital Out	shielded wire	Digital I/O Option Board

Table 4-4 Sampling Board cables

2. Remove the cap from the Optical In jack.
3. Remove the nut and washer from 1/4" jack.
4. Remove the four screws (use a #1 screwdriver) from the Optical Input XLR jacks.
5. The Sampling Board has a mounting clip that is secured to it with a screw and a nut. This bracket inserts into a groove on the enclosure support wall.
6. Remove the screws securing the enclosure support wall.

Note: If you are servicing a K2600, there are seven screws securing the enclosure support wall. If you are servicing a K2600X, there are eight screws.

7. Move the board away from the rear panel to free the jacks from the openings provided for them on the rear panel.

Replacing the Sampling Board

1. Hold the Sampling Board and position it so that the jacks are aligned properly with the holes provided for them on the rear panel portion of the top enclosure.
2. Install the four screws (use a #1 screwdriver) that secure the Optical Input XLR jacks.
3. Install the nut and washer to secure the Optical Input 1/4" jack.
4. Install the Optical jack cap.
5. Connect the cables listed in Table 4-4. Be sure to install the locking cable clip on the flat ribbon cable.

6. Place the enclosure support wall in position. Be sure that the mounting clip on the Sampling Board is positioned into the upper groove on the enclosure support wall.
7. Place the enclosure support wall in position and install the screws that secure it to the top enclosure. You should see thread marks in the extrusion to verify proper positioning of the enclosure support wall screws.

Note: If you are servicing a K2600, there are seven screws securing the enclosure support wall. If you are servicing a K2600X, there are eight screws.

Removing the Slider Board

1. If the unit you are servicing has a Digital I/O Option Board, remove it prior to removing the Slider Board. See page 4-8 for instructions.
2. Disconnect the cables in Table 4-5.

Ref.	Name	Cable Type	Destination
J301	Volume	shielded wire	Audio Board
J302	Sliders	shielded wire	Keyboard Scanner Board
J304	IBBB Bridge	shielded wire	Mod Wheel Assembly

Table 4-5 Slider Board cables

3. Remove the enclosure support wall screws and set the enclosure support wall aside.

Note: If you are servicing a K2600, there are seven screws securing the enclosure support wall. If you are servicing a K2600X, there are eight screws.

4. Remove the four screws that secure the Slider Board to the top enclosure.

Caution: The Slider Board is connected to the Control Panel Board with a short flat ribbon cable. Do not lift the Slider Board until you have performed Step 5.

5. Lift the Slider Board up slightly and disconnect the flat ribbon cable that connects the Slider Board, location J303, to the Control Panel Board, and remove the Slider Board.

Note: The switch button caps and slider knobs remain attached to the Slider Board.

Replacing the Slider Board

1. Connect the flat ribbon cable that connects the Control Panel Board to J303 on the Slider Board.
2. Place the Slider Board in position. Be sure that the slider and switch button caps are correctly positioned through the openings provided for them in the top enclosure. To verify that the switch button caps are correctly positioned, hold the Slider Board in

position and tilt up the top enclosure. Press individual switch button caps to verify that their corresponding switches click.

3. Install the four screws that secure the Slider Board to the top enclosure.
4. Place the enclosure support wall in position and install the enclosure support wall screws. You should see thread marks in the extrusion to verify proper positioning of the enclosure support wall screws.

Note: If you are servicing a K2600, there are seven screws securing the enclosure support wall. If you are servicing a K2600X, there are eight screws.

5. Connect the shielded wire cable from the Audio Board to J301 on the Slider Board.
6. Connect the shielded wire cable from the Keyboard Scanner Board to J302 on the Slider Board.
7. Connect the shielded wire cable from the Mod Wheel Assembly to J304 on the Slider Board.

Removing the LCD Board

The following procedure assumes that you have removed the top enclosure from the unit. The LCD Board is secured to a bezel that is attached to the Control Panel Board. When the LCD Board is removed, the bezel remains attached to the Control Panel Board.

1. Disconnect the stranded wire cable that connects the LCD Board to the Backlight Board. This cable is bent to form a loop. The loop portion is then inserted through a tie wrap that is affixed to the Backlight Board mounting plate. Disconnecting the cable should pull the cable free of the tie wrap.
2. Remove the cable locking clip and disconnect the flat ribbon cable that connects the LCD Board to location J804 in the CPU Board.
3. Remove the four screws that secure the LCD Board to the bezel.
4. Remove the LCD Board.

Replacing the LCD Board

1. Place the LCD Board in position face down onto the bezel. The placement of the LCD Board should seem obvious because of cable length and positioning. However to eliminate any question, be sure that the arrow imprinted on the back of the LCD Board is pointed toward the rear panel.
2. Install the four screws that secure the LCD Board to the bezel.
3. Connect the flat ribbon cable that connects the LCD Board to the CPU Board. Be sure to install the cable locking clip.
4. Connect the stranded wire cable that connects the LCD Board to the Backlight Board. Be sure to position the cable to insert it as a loop into the tie wrap secured to the Backlight Board mounting plate.

Removing the Backlight Board

1. Disconnect the stranded wire cable that connects the Backlight Board to the LCD Board. This cable is bent to form a loop. The loop portion is then inserted through a tie wrap that is affixed to the Backlight Board mounting plate. Disconnecting the cable should pull the cable free of the tie wrap.
2. Disconnect the stranded wire cable from the Power Supply Board to the Backlight Board.
3. The Backlight Board is secured to a mounting plate. The mounting plate is secured to the top enclosure with two screws at one edge of the mounting plate (rear panel edge); the other edge fits into a groove on the enclosure support wall.
4. Remove the two screws that secure the mounting plate to the top enclosure.
5. Slide the mounting bracket toward the rear panel.
6. Remove the Backlight Board and mounting plate.

Note: If you are replacing the Backlight Board with a new board, remove the Backlight Board from the mounting plate, as described in Steps 7 and 8.

7. Remove the four screws that secure the Backlight Board to the mounting plate. These screws also secure a shield over the board.
8. Remove the Backlight Board and shield from the mounting plate.

Replacing the Backlight Board

If you're replacing the Backlight Board with a new one, secure the new board onto the mounting plate. Refer to Steps 1 and 2.

1. Place the Backlight Board onto the mounting plate and position the shield over the board.
2. Install the four screws that secure the shield and the board.
3. Slide the mounting plate into the groove on the enclosure support wall.
4. Position the Backlight Board mounting plate on the top enclosure. You should see thread marks in the extrusion to verify proper placement.
5. Install the two screws that secure the mounting plate to the top enclosure.
6. Connect the stranded wire cable from the Power Supply Board to the Backlight Board.
7. Connect the stranded wire cable that connects the Backlight Board to the LCD Board. Be sure to position the cable to insert as a loop into the tie wrap secured to the Backlight Board mounting plate.

Removing the Control Panel Board

1. Follow the procedures on page 4-11 to remove the LCD and Backlight Boards. If the unit you are servicing has a Sampling Board, follow the procedure on page 4-9 to remove it.
2. The Control Panel-to-Keyboard Scanner Board flat ribbon cable is soldered into the Control Panel Board. Remove the cable locking clip and disconnect the flat ribbon cable from the Keyboard Scanner Board, location J705.
3. The enclosure support wall secures the front edge of the Control Panel Board to the top enclosure. Remove the enclosure support wall screws, and set the wall aside.

Note: If you are servicing a K2600, there are seven screws securing the enclosure support wall. If you are servicing a K2600X, there are eight screws.

4. Once the enclosure support wall is removed, you will notice that the Control Panel Board also has adhesive-backed black felt that secures the front edge of the board to the top enclosure. Peel back the black felt to release the front edge of the board.

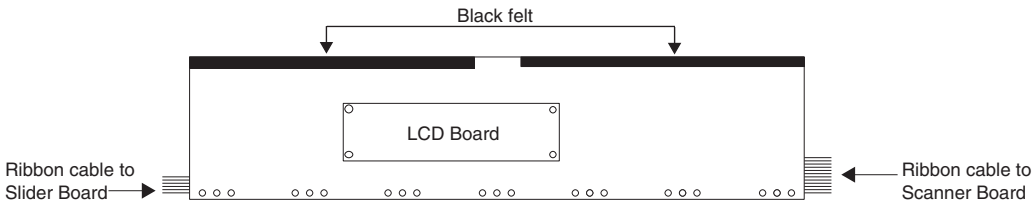


Figure 4-7 Control Panel Board

5. Remove the seven screws that secure the rear panel edge of the Control Panel Board to the top enclosure.
6. Slightly lift the Control Panel Board up horizontally just enough to insure that the spinknob and switch caps clear the openings provided for them.
7. Lift the right side of the board up vertically to gain access to the flat ribbon cable that connects the Control Panel Board to the Slider Board.
8. This cable is soldered into the Control Panel Board. Disconnect the cable from the Slider Board, location J303.
9. Remove the Control Panel Board.

Replacing the Control Panel Board

1. Position the Control Panel Board over the top enclosure and lower the left side of the board so that you can connect the flat ribbon cable to the Slider Board.
2. Once this cable is connected, lay the Control Panel Board flat, then raise the top enclosure up slightly to verify that the spinknob and switch caps are correctly positioned through the openings provided for them in the top enclosure.
3. Install the seven screws that secure the Control Panel Board to the top enclosure.
4. Reapply the adhesive-backed black felt on the front edge of the board.

5. Place the enclosure support wall in position.
6. Install the enclosure support wall screws. You should see thread marks in the extrusion to verify proper positioning of the enclosure support wall screws.

Note: If you are servicing a K2600, there are seven screws securing the enclosure support wall. If you are servicing a K2600X, there are eight screws.

7. Connect the flat ribbon cable that connects the Control Panel Board to the Keyboard Scanner Board. Be sure to install the cable locking clip.

Bottom Enclosure

Removing the Keyboard Scanner Board

1. All flat ribbon cables use cable locking clips to secure the cables to the connectors. Remove the cable locking clips from the flat ribbon cables at locations J704, J705, and J714 on the Keyboard Scanner Board. Be sure to set them safely aside so that you can reinstall them when you reconnect the cables.
2. Disconnect the cables listed in Table 4-6.

Ref.	Name	Cable Type	Destination
J701	Player Control	shielded wire	Mod/Pitch Wheel Assembly
J702	Slider	shielded wire	Slider Board
J704	Keyboard	flat ribbon	Keyboard Assembly
J705	Front Panel	flat ribbon	Control Panel Board
J709	Scanner Power	shielded wire	Power Supply Board
J714	CPU	flat ribbon	CPU Board

Table 4-6 Keyboard Scanner Board cables

3. The Keyboard Scanner Board is mounted onto the rear panel portion of the bottom enclosure. It is secured to the rear panel with the same nuts and flat washers that secure the Switch Pedal and Pedal/Breath jacks.
4. Remove the six nuts and six flat washers that secure the jacks.
5. Remove the Keyboard Scanner Board.

Replacing the Keyboard Scanner Board

1. Place the Keyboard Scanner Board in position through the rear panel portion of the bottom enclosure. Be certain that the area is clear of disconnected cables, loose hardware, and locking cable clips.
2. Install the six flat washers and six nuts that secure the Switch Pedal and Pedal/Breath jacks to the rear panel.
3. Connect the flat ribbon cables listed in Table 4-6. Be sure to install the locking cable clips.
4. Connect the remaining cables listed in Table 4-6.

Removing the DSP Board

The DSP Board is mounted on the CPU Board and held in place with four nylon PC board standoffs and two 50-pin connectors that connect the DSP Board to the CPU Board. Two styles of nylon standoffs secure the DSP Board. Those on the left side (as viewed standing at the keyboard) of the DSP Board have tabs that clip over the top edge of the DSP Board. Those on the right side of the DSP Board insert through the DSP Board.

1. Start with the standoffs on the left side of the board. Press the tabs of the standoffs away from the DSP Board and slightly lift the left edge of the DSP Board to clear the tabs.
2. To release the DSP Board from the standoffs on the right side of the board, squeeze the top of the standoffs and slightly lift the right side of the DSP Board.
3. Once the DSP Board is free of the four standoffs, lift the DSP Board straight up to disconnect the two 50-pin connectors from the CPU Board.

Replacing the DSP Board

1. Place the DSP Board in position onto the four nylon PC board standoffs. This should place the DSP Board in the correct position over the two 50-pin connectors.
2. Verify that the DSP Board pins are lined up properly with the two 50-pin connectors located on the CPU Board.
3. Press the DSP Board down to insert the pins on the back of the DSP Board into the two 50-pin connectors on the CPU Board. This also secures the DSP Board into the four standoffs.

Removing the CPU Board

The CPU Board is secured to the bottom enclosure with mounting posts that are part of the bottom enclosure. The mounting posts rise up out of the bottom enclosure and the CPU Board is secured at four positions.

The CPU Board is secured using three nylon PC board standoffs, a screw, a moveable bracket, and hardware that secures the SCSI ports and MIDI jacks to the rear panel.

1. Follow the procedure for removing the DSP Board.
2. All flat ribbon cables use cable locking clips to secure the cables to the connectors. Remove the cable locking clips from the flat ribbon cables on the CPU Board. Be sure to set them safely aside so that you can reinstall them when you reconnect the cables.
3. Disconnect the cables listed in Table 4-7.

Ref.	Name	Cable Type	Destination
J801	Sampler	flat ribbon	Sampling Board
J804	LCD	flat ribbon	LCD Board
J805	Floppy	flat ribbon	Disk Drive
J807	Floppy Power	stranded wire	Disk Drive
J808	DAC	flat ribbon	Audio Board
J813	Scanner	flat ribbon	Keyboard Scanner Board
J814	DC Power	stranded wire	Power Supply Board

Table 4-7 CPU Board cables

4. Remove the two screws that secure the MIDI jacks to the rear panel.

5. Remove the four hex standoffs and flat washers that secure the SCSI ports to the rear panel.
6. Remove the screw that secures the CPU Board to the mounting post.
7. The three nylon PC board standoffs that secure the CPU Board have tabs that clip over the top edge of the board. Press the tabs of the standoffs away from the CPU Board and lift the board up to clear the tabs.
8. A moveable bracket also holds the CPU Board in position. (This bracket is secured by the hardware that secures the enclosure support wall.) When the top enclosure is removed from the unit, the moveable bracket is held in place with tape securing the bracket to the bottom enclosure. This bracket can tilt away from the CPU Board.
9. Remove the CPU Board by moving it toward the keyboard until it clears the SCSI ports and MIDI jacks.

Replacing the CPU Board

1. Place the CPU Board in position over the three nylon PC board standoffs. Be sure the MIDI Select and SCSI Termination switches, SCSI ports, and MIDI jacks are correctly positioned through the rear panel.
2. Press the CPU Board down to secure it onto the three standoffs.
3. Install the screw that secures the CPU Board to the mounting post.
4. Install the two screws that secure the MIDI jacks to the rear panel.
5. Install the four hex standoffs and flat washers that secure the SCSI ports to the rear panel.
6. Be sure that the moveable bracket is in position and is secured to the bottom enclosure.
7. Connect the cables listed in Table 4-7.
8. Be sure to install the locking cable clips on all flat ribbon cables.
9. Follow the instructions on page 4-16 to install the DSP Board.

Removing the Power Supply Board

1. Disconnect the cables listed in Table 4-8.

Ref.	Name	Cable Type	Destination
J101	System Secondary	stranded wire	Transformer
J102	HDD Secondary	stranded wire	Transformer
J103	Fan Supply	stranded wire	Fan Assembly
J104	Backlight Supply	stranded wire	Backlight Power Board
J105	CPU DC Power	stranded wire	CPU Board
J106	HDD Supply	stranded wire	HDD
J107	Audio Power	stranded wire	Audio Board
J108	Scanner Power	stranded wire	Keyboard Scanner Board

Table 4-8 Power Supply cables

2. The Power Supply Board is secured to the bottom enclosure with four screws. Two screws are located at the left edge (as viewed standing at the keyboard) of the board; the other two are located at the heatsink mounting bracket. Remove these screws.
3. Remove the Power Supply Board.

Replacing the Power Supply Board

1. Place the Power Supply Board in position on the bottom enclosure. Be certain that the area is clear of disconnected cables and loose hardware.
2. Install the four screws that secure the Power Supply Board to the bottom enclosure.
3. Connect the cables listed in Table 4-8.

Removing the Transformer

1. Disconnect the stranded wire cable from the transformer to the Power Entry Module.
2. Disconnect the two stranded wire cables from the Power Supply Board at locations J101 and J102.
3. Remove the four screws, flat washers, and lock washers that secure the transformer to the bottom enclosure. One of these screws secures a ground wire from the Power Entry Module to the transformer.
4. Remove the transformer.

Replacing the Transformer

1. Place the transformer in position over the mounting holes provided for it on the bottom enclosure.
2. Install the four screws that secure it to the bottom enclosure. Be sure to connect the ground wire cable from the Power Entry Module.
3. Connect the stranded wire cable that connects the transformer to the Power Entry module.
4. Connect the two stranded wire cables that connect the transformer to the Power Supply Board at locations J102 and J101.

Removing the Fan

1. Follow the procedure on page 4-17 for removing the Power Supply Board.
2. Remove the four screws that secure the fan to the bottom enclosure. Each screw has one flat washer and one split lock washer.
3. The fan is held in place on the bottom enclosure with standoffs. Lift the fan up to free it from the standoffs.

Replacing the Fan

1. Place the fan in position over the standoffs provided for it on the bottom enclosure. Push the fan down so that the standoffs come up through the mounting holes of the fan.
2. The fan should be positioned so that the stranded wire cable is located at the right rear side of the fan (as viewed standing at the keyboard), toward the rear panel portion of the bottom enclosure.

Note: If you are installing a new fan, be sure that the fan is positioned so that air will flow *out* of the opening in the bottom enclosure. An arrow on the side of the fan indicates airflow.

3. Install the four screws, flat washers and split lock washers that secure the fan to the bottom enclosure.
4. Follow the procedure on page 4-18 to install the Power Supply Board.

Removing the Hard Disk Drive

1. Remove the cable locking clip and disconnect the flat ribbon cable from the Hard Disk Drive.
2. Disconnect the power cable from the Hard Disk Drive. This cable connects to J106 on the Power Supply Board.
3. Remove the four screws, flat washers, and locks washers that secure the drive mounting brackets to the bottom enclosure.
4. Remove the Hard Disk Drive.
5. If you are installing a new disk drive, you will need to remove the mounting brackets from the old drive. To do so, remove the four screws and grommets that secure the mounting brackets to the drive, then remove the brackets.

Replacing the Hard Disk Drive

1. If you are installing a new drive, install the four screws and grommets to attach the left and right mounting brackets.
2. Connect the power cable from the Power Supply Board to the Hard Disk Drive.
3. Connect the flat ribbon cable from the CPU Board to the Hard Disk Drive. Be sure to install the cable locking clip.
4. Place the drive in position on the bottom enclosure and install the four screws, flat washers, and lock washers that secure the mounting brackets to the bottom enclosure.

Removing the Mod Wheel Assembly

1. Slide the left side of the unit forward so that you can see the four screws and washers securing the Mod Wheel Assembly to the bottom enclosure. Refer to Figure 4-8 on page 4-21 to locate the screws.
2. Lift the Mod Wheel Assembly and peel back the nylon reinforced tape securing the Aftertouch flex cable(s). Disconnect the cable(s).

Note: If you are servicing a K2600, one flat flex cable attaches to the Mod Wheel Assembly, location J403. If you are servicing a K2600X, two flat flex cables attach to the Mod Wheel Assembly, locations J403 and J404.

3. Disconnect the shielded wire cable from J302 on the Slider Board. This cable connects to the small button board on the Mod Wheel Assembly and is soldered into the board at that location.
4. From the Mod Wheel Assembly, disconnect the two shielded wire cables from locations J401 and J406. Both of these cables connect to the Keyboard Scanner Board.

Note: At this point the Mod Wheel Assembly can be moved for access to its components. If you are replacing the Mod Wheel Assembly, continue with Step 5.

5. The shielded cable that connects the small button board on the Mod Wheel Assembly to location J302 on the Slider Board is soldered directly to the small button board. This cable and other cables are bundled together in two places with tie wraps. Cut the tie wraps to free the small button board cable, and remove the Mod Wheel Assembly.

Replacing the Mod Wheel Assembly

1. Hold the Mod Wheel Assembly in position over the bottom enclosure.
2. Connect the flat flex cable(s).

Note: If you are servicing a K2600, connect the flat flex cable to location J403 on the Mod Wheel Assembly. If you are servicing a K2600X, connect the two flat flex cables to locations J403 and J404 on the Mod Wheel Assembly.

3. Connect the shielded wire cable to J302 on the Slider Board.
4. Connect the two shielded wire cables to locations J401 and J406 on the Mod Wheel Assembly.
5. Reapply the nylon reinforced tape to the flat flex cable(s).
6. Lower the Mod Wheel Assembly into position.
7. If you are installing a replacement Mod Wheel Assembly, be sure to install the two tie wraps to bundle the cables.
8. Slide the left side of the unit forward so that you can install the four screws and washers to secure the Mod Wheel Assembly to the bottom enclosure.

K2600 Keyboard Assembly

This section describes the removal and replacement of the K2600 (76-note) Keyboard Assembly. See page 4-28 for the corresponding procedures for the K2600X (88-note) Keyboard Assembly.

Removing the K2600 Keyboard Assembly

The following procedure assumes that the K2600 is open and that you have followed the instructions on page 4-4 to remove the top enclosure.

The K2600 keyboard is mounted onto a wooden spacer and is secured to the wooden spacer with 16 screws. The Keyboard Assembly refers to the keyboard and the wooden spacer. The assembly is secured to the bottom enclosure with eight screws.

Note: The following steps describe the procedure to remove the keyboard from the K2600 and the wooden spacer to gain access to the keys, contacts, contact boards, and key weights. If you need to gain access to the keys only (i.e. key replacement), you can do so by following the procedure described on page 4-23, *Disconnecting the K2600 Keyboard*.

1. Refer to Figure 4-8. This illustration shows the locations of the keyboard and keyboard wooden spacer screws. Both sets of screws are accessible from the bottom enclosure.

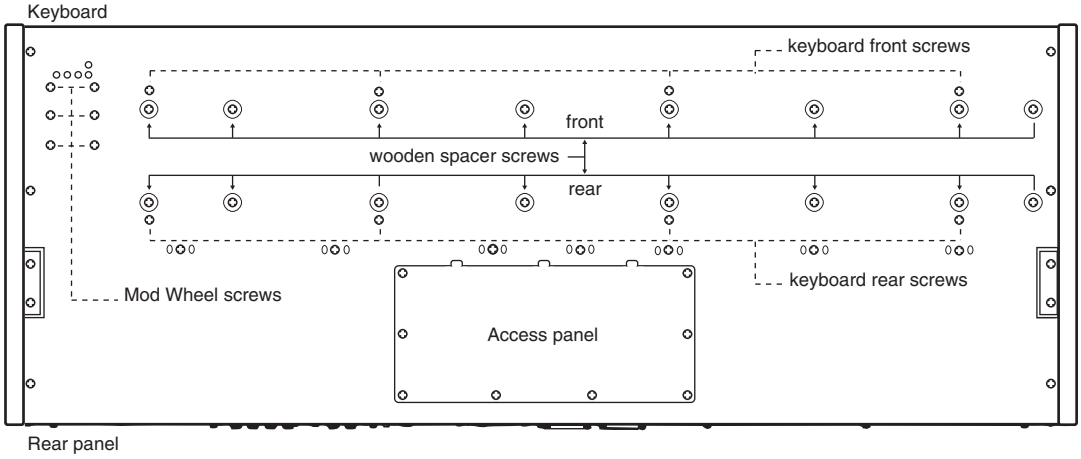


Figure 4-8 K2600 76-note keyboard bottom

2. Tilt the K2600 up and remove the four keyboard rear screws, then lay the K2600 flat on your work surface.
3. Move the K2600 forward so that the front hangs over the edge of your work surface, giving you access to the remaining screws.
4. Remove the four keyboard front screws.
5. Remove the four Mod Wheel screws and washers. At this point the keyboard is loose in the bottom enclosure, but it has cables connected to the Mod Wheel Assembly and the Keyboard Scanner Board.

6. Slide the K2600 back onto your work surface.
7. Lift the Mod Wheel Assembly and disconnect the Aftertouch flex cable. This cable has nylon reinforced tape securing it to the bottom enclosure. Peel back the tape from one side to free the cable.
8. Place the Mod Wheel Assembly in its position on the bottom enclosure.
9. Remove the cable locking clip and disconnect the flat ribbon cable from the Keyboard Scanner Board. This cable is also secured to the bottom enclosure with nylon reinforced tape. Peel back the tape from one side to free the cable.
10. Remove the Keyboard Assembly.
11. The keyboard is mounted onto a wooden spacer. Sixteen screws secure the spacer to the keyboard.
12. Lay the Keyboard Assembly upside down on a flat protected surface and remove the 16 screws. Remove the spacer and set it aside. The keyboard components are now accessible for maintenance and repair.

Replacing the K2600 Keyboard Assembly

Note: If you have disconnected the Bass and Treble ends of the flat ribbon cable from the keyboard during service, be sure that you have reconnected them and reapplied the tape to secure the connectors.

1. Place the keyboard upside down on a flat protected surface and position the wooden spacer over the keyboard. Install the 16 screws that secure the wooden spacer to the keyboard.
2. Place the Keyboard Assembly on the bottom enclosure. Be sure that the flat ribbon cable from the keyboard is correctly positioned.
3. Connect the flat ribbon cable to the Keyboard Scanner Board and reapply the cable locking clip. Be sure to reapply the nylon reinforced tape that secures the flat ribbon cable to the bottom enclosure.
4. Lift the Mod Wheel Assembly and connect the Aftertouch flex cable. Place the Mod Wheel Assembly in its position on the bottom enclosure. Be sure to reapply the nylon reinforced tape that secures the flex cable to the bottom enclosure.
5. Move the K2600 forward so that the front hangs over the edge of your work surface, and install the four keyboard front screws.
6. Install the four Mod Wheel Assembly screws and washers.
7. Slide the K2600 back onto your work surface.
8. Tilt the K2600 up and install the four keyboard rear screws.

Disconnecting the K2600 Keyboard

Follow this procedure if you are merely replacing one or more keys.

1. Refer to Figure 4-8.
2. Tilt the K2600 up and remove the four keyboard rear screws, then lay the K2600 flat on your work surface.
3. Move the K2600 forward so that the front hangs over the edge of your work surface, giving you access to the remaining screws.
4. Remove the four keyboard front screws.

Caution: The keyboard Aftertouch flex cable from the keyboard is connected to the Mod Wheel Assembly and is secured to the bottom enclosure with reinforced tape. When following the instructions below, be certain that you only slightly lift or move the Keyboard Assembly, to avoid damage to the flex cable.

5. The 16 screws that secure the keyboard to the wooden spacer rest in holes provided for them on the bottom enclosure. To move the keyboard, lift the keyboard up slightly to free the 16 screws from their positions on the bottom enclosure.
6. Lift the keyboard up slightly and move it approximately one inch to the right (as viewed standing at the keyboard).
7. You can now move the keyboard back approximately one inch toward the rear panel so that you can remove keys for replacement. See page 4-24 for procedures for removing and replacing keys.

Connecting the Keyboard

1. Position the keyboard so that the 16 screws that secure the wooden spacer to the keyboard are resting in the holes provided for them on the bottom enclosure.

Caution: Be certain that the Aftertouch flex cable is correctly positioned and that the nylon reinforced tape securing it to the bottom enclosure is still properly applied.

2. Refer to Figure 4-8.
3. Move the K2600 forward so that the front hangs over the edge of your work surface, and install the four keyboard front screws.
4. Slide the K2600 back onto your work surface.
5. Tilt the K2600 up and install the four keyboard rear screws.

Removing Keys

The following procedure assumes you have removed the top enclosure from the K2600.

1. Follow the procedure for removing the keyboard (page 4-21) or disconnecting the keyboard (page 4-23.)
2. The following diagrams illustrate the outlines of the natural and sharp keys and the locations and functions of the components described in the following procedures.

Natural/White Key

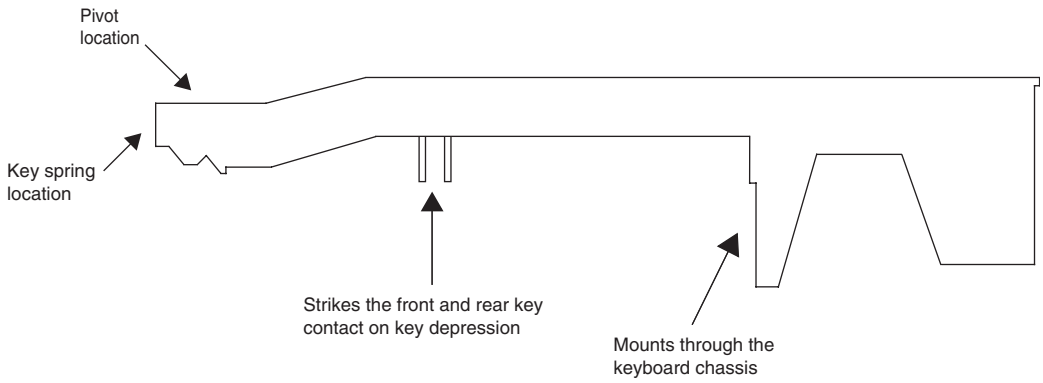


Figure 4-9 Natural/White key, 76-note keyboard

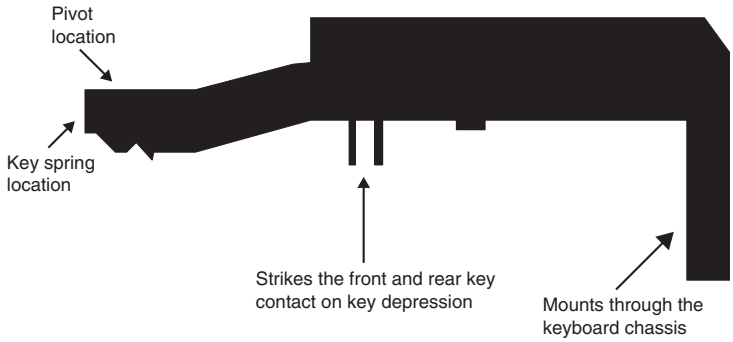


Figure 4-10 Sharp/Black key, 76-note keyboard

Natural/White Keys

1. Each key has a spring located at the rear of the key. Using needle-nose pliers, slightly pull up the top portion of the spring to release it from the key.

Caution: Be careful not to pull up too much, which could damage the spring.

2. Unlock the key from the pivot anchoring the key to the keyboard chassis. To do this, insert a small flat screwdriver at the back end of the pivot and press toward the front edge of the keyboard. While doing so, lift the back end of the key (where the spring was positioned).

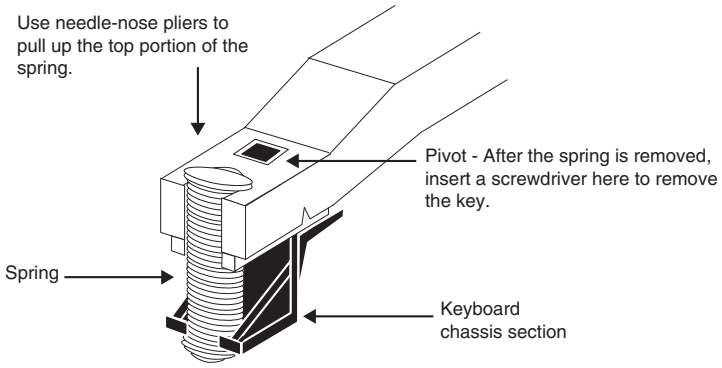


Figure 4-11 Key spring location, 76-note keyboard

3. The key should now be free of the pivot. Remove the screwdriver.
4. Lift the key up slightly, then forward. You should be able to feel when the key is free of the pivot. A portion of the key hooks onto the keyboard chassis (see Figure 4-9). Lifting the back end of the key forward unhooks the key from the keyboard chassis.

Sharp/Black Keys

1. To remove a sharp key, first remove the adjacent natural keys, as described in the previous procedure.
2. Each key has a spring located at the rear of the key. Using needle-nose pliers, slightly pull up the top portion of the spring to release from the key.

Caution: Be careful not to pull up too much, which could damage the spring.

3. Unlock the key from the pivot anchoring the key to the keyboard chassis. To do this, insert a small flat screwdriver at the back end of the pivot and press toward the front edge of the keyboard. While doing so, lift the back end of the key (where the spring was positioned).
4. The key should now be free of the pivot. Remove the screwdriver.
5. Lift the key up slightly, then forward. You should be able to feel when the key is free of the pivot. A portion of the key hooks onto the keyboard chassis (see Figure 4-10). Lifting the back end of the key forward unhooks the key from the keyboard chassis.

Replacing a Key

The following instructions apply to both natural and sharp keys.

Note: Always replace a sharp key before replacing the adjacent natural keys.

1. Place the key on the keyboard chassis and lower the key into position.
2. Align the pivot with the hole at the rear of the key. Push down on the key. It should snap into position on the pivot.
3. Install the spring.

Servicing the Keyboard Contact Boards

Follow the procedure on page 4-21 to remove the Keyboard Assembly.

1. Place the keyboard upside down on a flat soft surface. Be sure that the keys are resting on a soft surface to avoid scratching or other damage. The Treble and Bass Contact Boards are now visible.

Removing the Treble Contact Board

1. Peel back the nylon tape securing the connector, and disconnect the flat ribbon cable from the Treble Contact Board.
2. Remove the 24 screws that secure the Treble Contact Board to the keyboard chassis, and remove the Treble Contact Board.

Replacing the Treble Contact Board

1. Position the Treble Contact Board on the keyboard chassis. Be sure that the rubber key contacts line up properly through the holes in the keyboard chassis.
2. Install the 24 screws that secure the board to the keyboard chassis.
3. Connect the Treble end of the flat ribbon cable and reapply the nylon tape to the connector.

Removing the Bass Contact Board

1. Peel back the nylon tape securing the connector, and disconnect the flat ribbon cable from the Bass Contact Board.
2. Remove the 18 screws that secure the board to the keyboard chassis, and remove the Bass Contact Board.

Replacing the Bass Contact Board

1. Position the Bass Contact Board on the keyboard chassis. Be sure that the rubber key contacts line up properly through the holes in the keyboard chassis.
2. Install the 18 screws that secure the board to the keyboard chassis.
3. Connect the Bass end of the flat ribbon cable and reapply the nylon tape to the connector.

Removing the Keyboard Contact Strips

1. Place the keyboard upside down on a flat soft surface. Be sure that the keys are resting on a soft surface to avoid scratching or other damage.
2. Follow the procedure for removing the Bass and Treble Keyboard Contact Boards on page 4-26.
3. Examine the keyboard contact strips and look at the design of an individual contact. The top portion of the contact has two indentations. One indentation is deeper than the other. When replacing the keyboard contact strips, the deeper indentation is always positioned toward the rear of the key.
4. The keyboard contact strips have mounting pegs that secure the contact strips to the keyboard contact boards.
5. To remove a keyboard contact strip, gently lift and free the strip from its position. Be careful not to rip or damage any contact in the process.

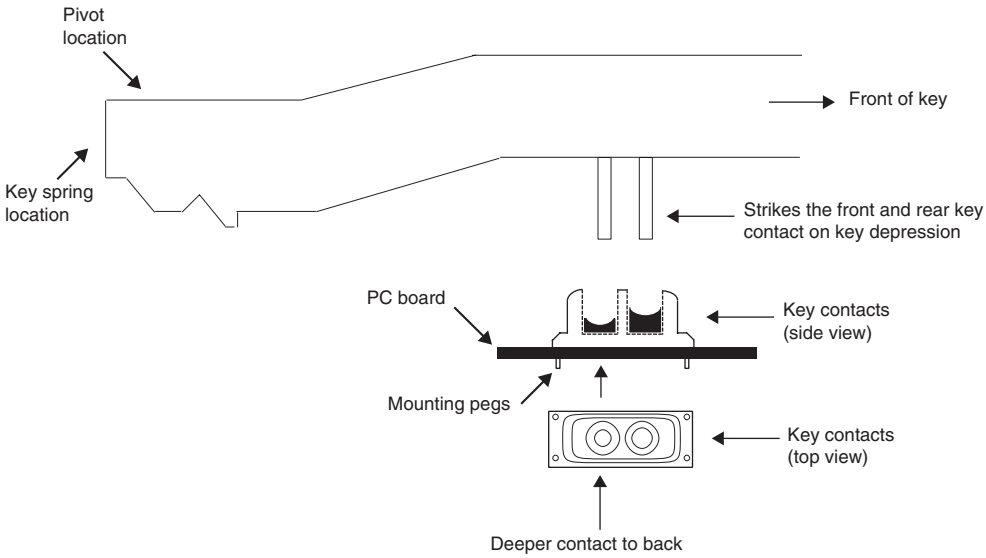


Figure 4-12 Rear view of natural/white key, 76-note keyboard

Replacing the Keyboard Contact Strips

1. Position the contact strip on the keyboard contact board.

Note: Be sure that the deeper indentation is positioned toward the rear of the key.

2. Line up the contact strip mounting pegs with their respective mounting holes on the keyboard contact board.
3. Using a small blunt-end tool (Q-Tip, toothpick, etc.), gently push the mounting pegs through the holes. Do not use too much force or use a tool that can poke a hole through the mounting pegs. However, be sure that the mounting pegs are installed through the holes.

K2600X Keyboard Assembly

Removing the K2600X Keyboard Assembly

The following procedure assumes that the K2600X is open and that you have followed the instructions to remove the top enclosure.

1. The keyboard is secured to the bottom enclosure using nine screws. Refer to Figure 4-13 for the position of the screws. Arrows identify the locations of the nine screws.
2. Tilt the K2600X up and remove the four keyboard rear screws, then lay the K2600X flat on your work surface.
3. Move the K2600X forward so that the front hangs over the edge of your work surface to access the remaining screws, and remove the five keyboard front screws.
4. Remove the four Mod Wheel screws and washers. At this point the keyboard is loose in the bottom enclosure, but it has cables connected to the Mod Wheel Assembly and the Keyboard Scanner Board.

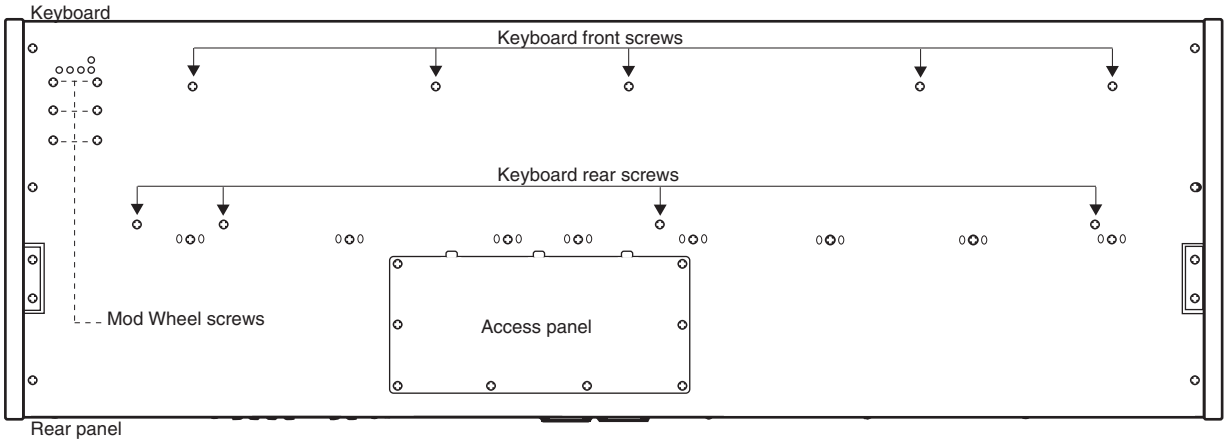


Figure 4-13 K2600X 88-note keyboard bottom

5. Slide the K2600X back onto your work surface.
6. Lift the Mod Wheel Assembly and disconnect the Aftertouch flex cables. These cables have nylon reinforced tape securing them to the bottom enclosure. Peel back the tape from one side to free the cables.
7. Place the Mod Wheel Assembly in its position on the bottom enclosure.
8. Remove the cable locking clip and disconnect the flat ribbon cable from the Keyboard Scanner Board. This cable is also secured to the bottom enclosure with nylon reinforced tape. Peel back the tape from one side to free the cable.

Note: If you are merely replacing one or more keys, it is not necessary to entirely remove the Keyboard Assembly from the K2600X. Follow the procedure on page 4-29.

9. Remove the Keyboard Assembly.

Replacing the K2600X Keyboard Assembly

1. Place the keyboard on the bottom enclosure. Be sure that the flat ribbon cable from the keyboard is correctly positioned to connect it to the Keyboard Scanner Board.

Note: If you have disconnected the Bass and Treble ends of the flat ribbon cable during service, be sure that you have reconnected them and secured them with tape. Be sure that the small ribbon cable connecting the Bass and Treble Contact Boards is connected.

2. Connect the flat ribbon cable to the Keyboard Scanner Board and reapply the cable locking clip.
3. Secure the flat ribbon cable to the bottom enclosure with the nylon reinforced tape.
4. Lift the Mod Wheel Assembly and connect the Aftertouch flex cables. Be sure to reapply the nylon reinforced tape that secures the flex cables to the bottom enclosure.
5. Slide the K2600X forward so that you can install the five keyboard front screws.
6. Install the four Mod Wheel Assembly screws.
7. Slide the K2600X back on to your work surface.
8. Tilt the K2600X up and install the four keyboard rear screws.

Removing Keys

The following procedure assumes you have removed the top enclosure from the K2600X.

1. Follow the procedure for removing the keyboard.

Note: If you are merely replacing one or more keys, it is not necessary to entirely remove the keyboard from the K2600X. Once the keyboard is loose, you can slide it toward the rear panel to give you enough access to remove keys.

2. The following diagrams illustrate the outlines of the natural and sharp keys and the location and functions of the components described in the following procedures.

Natural/White Key

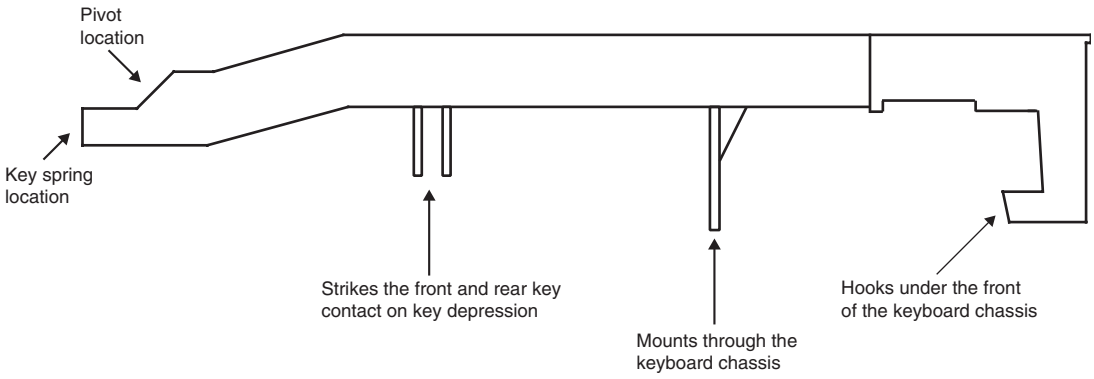


Figure 4-14 Natural/white key, 88-note keyboard

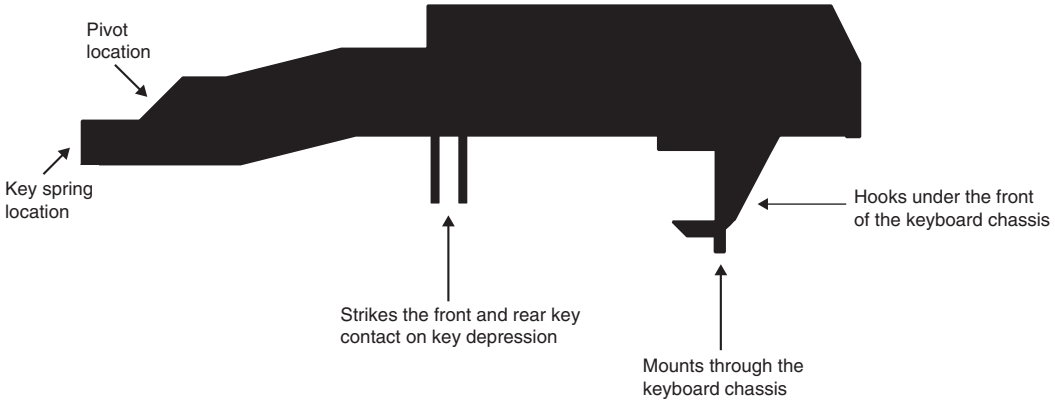


Figure 4-15 Sharp/black key, 88-note keyboard

Natural/White Keys

1. Remove the silver key spring located at the rear of the key. You will notice that the bottom of the spring is secured to the keyboard chassis by a hook.

   You can remove the spring by inserting a dowel (3mm diameter) into the spring, and pushing down on it slightly. Then pull the top of the dowel toward the front of the keyboard. This will unhook the spring from the keyboard chassis.

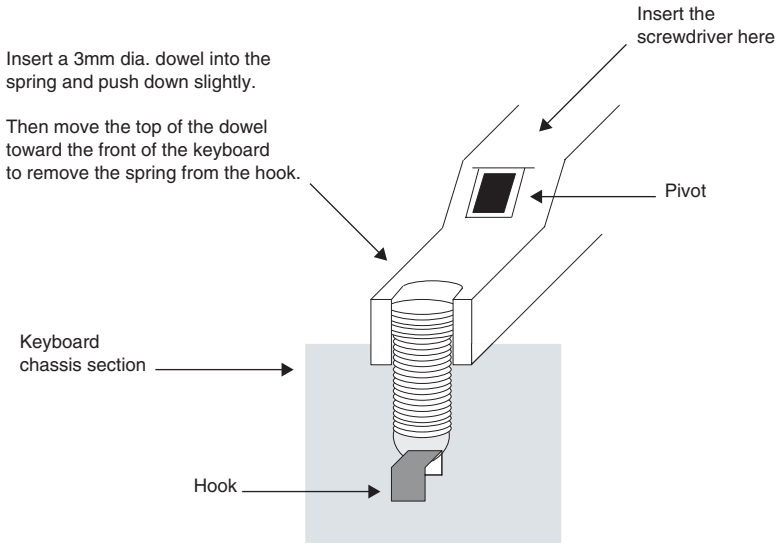


Figure 4-16 Key spring

2. Unlock the key from the pivot anchoring the key to the keyboard chassis. To do this, insert a small flat screwdriver at the back end of the pivot and press toward the front edge of the keyboard. While doing so, lift the back end of the key (where the spring was positioned).
3. The key should now be free of the pivot. Remove the screwdriver.
4. Lift the key up slightly, then forward. You should be able to feel when the key is free of the pivot. The front edge of each key hooks under the keyboard chassis. Be sure the key is not hooked under the keyboard chassis prior to lifting the key off.

Sharp/Black Keys

1. To remove a sharp key, first remove the adjacent natural keys, as described in the previous procedure.
2. Remove the gold key spring located at the rear of the sharp key. You will notice that the bottom of the spring is secured to the keyboard chassis by a hook.

   Refer to Figure 4-16. You can remove the spring by inserting a dowel (3mm diameter) into the spring, and pushing down on it slightly. Then pull the top of the dowel toward the front of the keyboard. This will unhook the spring from the keyboard chassis.
3. Unlock the key from the pivot anchoring the key to the keyboard chassis. To do this, insert a small flat screwdriver at the bottom of the pivot and press toward the front edge of the keyboard. While doing so, lift the back end of the key (where the spring was positioned).
4. The key should now be free of the pivot. Remove the screwdriver.
5. Lift the key up slightly, then forward. You should be able to feel when the key is free of the pivot. The front edge of each key hooks under the keyboard chassis. Be sure the key is not hooked under the keyboard chassis prior to lifting the key completely off.

Replacing a Key

1. The following instructions apply to both natural and sharp keys.

Note: Always replace a sharp key before replacing the adjacent natural keys.

2. Hook the front end of the key under the keyboard chassis.
3. Check that the mounting peg is correctly positioned.
4. Lower the key into position. Align the pivot with the hole at the rear of the key.
5. Push down on the key. It should snap into position onto the pivot.
6. Install the spring.

Servicing the Keyboard Contact Boards

1. Place the keyboard upside down on a flat soft surface. Be sure that the keys are resting on a soft surface to avoid scratching or other damage. The Treble and Bass Contact Boards are now visible.

Removing the Treble Contact Board

1. Disconnect the small ribbon cable that connects the Treble and Bass Contact Boards.
2. Remove the 26 screws that secure the Treble Contact Board to the keyboard chassis, and remove the Treble Contact Board.

Replacing the Treble Contact Board

1. Position the Treble Contact Board on the keyboard chassis. Be sure that the rubber key contacts line up properly through the holes in the keyboard chassis.
2. Install the 26 screws that secure the board to the keyboard chassis.
3. Connect the small ribbon cable that connects the Treble to the Bass Contact Board.

Removing the Bass Contact Board

1. Disconnect the small ribbon cable that connects the Bass and Treble Contact Boards.
2. Remove the 22 screws that secure the board to the keyboard chassis, and remove the Bass Contact Board.

Replacing the Bass Contact Board

1. Position the Bass Contact Board on the keyboard chassis. Be sure that the rubber key contacts line up properly through the holes in the keyboard chassis.
2. Install the 22 screws that secure the board to the keyboard chassis.
3. Connect the small ribbon cable that connects the Bass to the Treble Contact Board.

Removing the Keyboard Contact Strips

1. Place the keyboard upside down on a flat soft surface. Be sure that the keys are resting on a soft surface to avoid scratching or other damage.
2. Follow the procedure for removing the Bass and Treble Keyboard Contact Boards.
3. Examine the keyboard contact strips and look at the design of an individual contact. The top portion of the contact has two indentations. One indentation is deeper than the other. When replacing the keyboard contact strips, the deeper indentation is always positioned toward the rear of the key.
4. The keyboard contact strips have mounting pegs that secure the contact strips to the keyboard contact boards.
5. To remove a keyboard contact strip, gently lift and free the strip from its position. Be careful not to rip or damage any contact in the process.

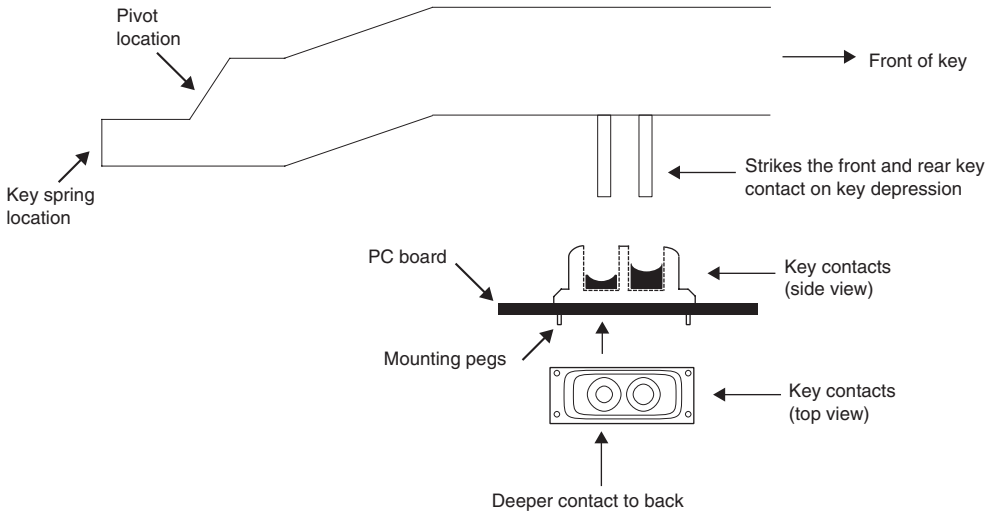


Figure 4-17 Rear view of natural/white key, 88-note keyboard

Replacing the Keyboard Contact Strips

1. Position the contact strip on the Keyboard Contact Board that you are servicing.

Note: Be sure that the deeper indentation is positioned toward the rear of the key.

2. Line up the contact strip mounting pegs with their respective mounting holes on the keyboard contact board.
3. Using a small blunt-end tool (Q-Tip, toothpick, etc.), gently push the mounting pegs through the holes. Do not use too much force or use a tool that can poke a hole through the mounting pegs. However, be sure that the mounting pegs are installed through the holes.

Removing a Key Weight

1. The main components of the weighted-key action consist of the following: the 88 keys, two rods, 88 key weights, and support brackets for the key weights and rods. There are seven 12-position brackets and one 4-position bracket.

Note: Key weights are attached to one of the two rods that span the length of the keyboard. The first rod is referred to as the bass rod and the second rod is referred to as the treble rod. The first rod (the bass rod) begins at low A and extends to G# above Middle C. The second rod (the treble rod) begins at A above Middle C and extends to High C.

2. To replace a key weight, identify the section with the broken key weight and remove all the keys from that section. The key weights, rods, and support brackets are now visible.
3. There is a locking clip at each end of the keyboard. To remove the locking clips, use a standard screwdriver to pry the locking clips off.
4. Pry the rod up from the support bracket. The key weights remain attached to the rod.
5. To remove the key weights from the rod, move the key weight side to side and pull it away from the rod. The key weight should easily pop off the rod.

Note: The natural and sharp key weights are physically different. The sharp key weights are smaller. When you remove multiple key weights, do so in a way that you will be able to place the new natural and sharp key weights in their correct positions.

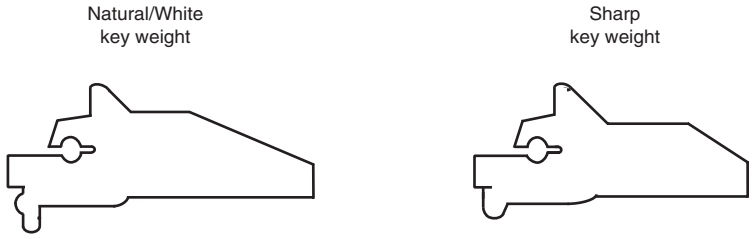


Figure 4-18 Natural/White and Sharp/Black key weights

6. Remove the broken key weight(s) and inspect the other key weights for reliability.

Replacing a Key Weight

1. Each key weight has a strip of red felt attached with pliable adhesive. Be sure the red felt extends onto the upper surface of the top of the key weight.
2. Place the key weight in position against the rod and snap it onto the rod with slight pressure.

Note: Be sure to place the sharp key weights in the correct positions.

3. Place the rod and key weights into position over the support brackets and snap the rod into the support brackets. Be certain that the rod is pressed securely into the support brackets.
4. Prior to replacing the keys, check that each key weight moves freely. To do this, position a screwdriver at the back end of the key weight (on the red felt), press down and remove the screwdriver. The key weight should move up and down freely.
5. Install the keys and key springs.

Chapter 5
Troubleshooting

Introduction

Before opening the unit, verify the customer's complaint. If possible, save any customer data stored in RAM. Perform a Hard Reset to return the unit to factory defaults thereby eliminating any chance of operator error. Reinstall the operating system and objects files. Always check for recently installed options and verify the installation.

Surface-Mount Devices

The removal and replacement of surface-mount devices requires training and the proper equipment. If you do not have the training or equipment to remove or replace surface-mount devices, contact the service department to order a board replacement. International service technicians should contact their appropriate Young Chang Distributor.

Cables, Connectors

All cable connectors are keyed, and therefore cannot be reversed. Flat ribbon cables have locking cable clips. Be sure to reapply the clips when connecting cables.

In some cases, tape secures cable connections or fastens cables to the bottom enclosure. Always peel back the tape from one side when disconnecting cables so that the tape remains properly positioned.

Using the Disk Drive

Formatting Floppy Disks

1. Insert a blank disk into the disk drive and press the **Disk** button to enter the Disk Mode page.

Warning: So that you don't accidentally format a connected SCSI device, be sure that the LCD shows `Floppy` highlighted as the current disk.

2. The **Format** command is on the second Disk Mode page. Press the **more>** soft button to advance the page. Press the soft button below **Format**. The display prompt changes to: `Format this floppy disk?` Press the **Yes** soft button.

3. The LCD displays three soft buttons. Two soft buttons to select either **720K** or **1.4M** for the disk format, and one soft button, **Cancel**, to exit. Select **720K** for double-density or **1.4M** for high-density disks. If you insert a disk and select the wrong format, the format process will fail.

4. The LCD displays a warning that continuing will erase everything, press the **Yes** soft button to continue. The LCD displays a second warning. Press the **Yes** soft button to continue.

5. After the disk is formatted and verified, the LCD displays the message: `Format another floppy disk?` Press the **Yes** soft button and repeat the process or press the **No** soft button to return to the Disk Mode page.

Saving User Data

Prior to beginning service, maintenance or adding options and updates, it is always a good practice, if possible, to save the customer's data so that it can be restored after service.

1. Insert a blank formatted floppy disk into the disk drive and press the **Disk** button to enter the Disk Mode page.

Note: Be sure to have additional formatted disks ready. Depending on the amount of data stored in RAM, you may need more than one disk to save everything.

2. Press the **Save** soft button.

3. Use the Alpha Wheel or the **Up** and **Down** cursor buttons to scroll to `Everything`. Press the **OK** soft button.

4. Use the alphanumeric keypad, cursor buttons and the Alpha Wheel to name the file. After naming the file, press the **OK** soft button.

5. Press the **OK** soft button to save the file to the current directory.

6. When the writing is completed, the display returns to the Disk Mode page.

Loading Saved Data

The following procedure assumes that any data stored in RAM has been erased. If you have not done so already, perform a Hard Reset.

1. Insert the disk with the customer's saved data into the disk drive and press the **Disk** button to enter the Disk Mode page.

2. The LCD should show `floppy` highlighted as the current disk. Press the **Load** soft button.

3. The LCD displays the message `File to load:` and the name of the file containing the customer's data. Press the **OK** soft button.

4. Use the Alpha Wheel or the **Up** and **Down** cursor buttons to scroll to `Everything`. Press the **OK** soft button.

5. The LCD displays six soft buttons. Five buttons to select how the file is loaded and one soft button to **Cancel**.

6. Select the **Fill** soft button.

7. After the file is loaded, the unit returns to the Disk Mode page. Press the **Exit** button to return to normal operation.

Boot Loader

Use the K2600's Boot Loader to enter Diagnostics or perform a Hard Reset to the unit. You can also install operating system updates and ROM objects into flash ROM.

Entering the Boot Loader

Apply power to the unit. When the `Please wait...` message appears in the LCD, quickly press and release the **Exit** button. The LCD displays the following:

Caution: Be sure that you have saved the user's data!

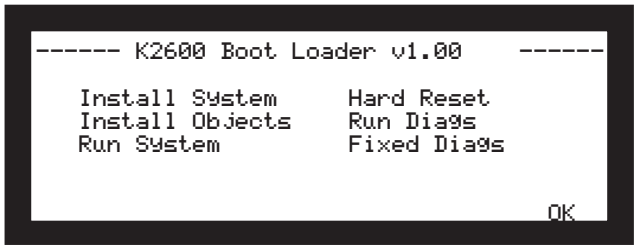


Figure 5-1 LCD example, Boot Loader

Use the cursor buttons or turn the Alpha Wheel to select a menu item. Press the soft button below **OK** to select the highlighted menu item.

There are six menu options available in the K2600 boot loader. A brief description of the available menu options follows.

- **Install System**, select to install operating system software either from a floppy disk or SCSI device.
- **Install Objects**, select to install objects either from a floppy disk or SCSI device.
- **Run System**, returns you to normal operation when you have completed any of the other available boot block menu options except the two diagnostic selections. If you were running either Run Diags or Fixed Diags, you must remove power and reapply power to the unit to return to normal operation.
- **Hard Reset**, returns the unit to factory settings. This erases anything stored in user RAM.
- **Run Diags**, to enter the system's diagnostic test menu. See Chapter 2, *Diagnostics*.
- **Fixed Diags**, to enter the diagnostic tests stored in the boot block.

Hard Reset

There are two ways to perform a Hard Reset to the K2600.

1. Press the **Master** button to enter Master Mode. Select the soft button below **MAST2**. Press the soft button below **Reset**. The LCD displays a warning indicating that everything will be deleted. Press the soft button below **Yes** to continue or **No** to exit.

2. Enter the Boot Loader and select Hard Reset. Press the **OK** soft button. Simultaneously press the **Up** and **Down** cursor buttons to erase everything stored in user RAM.

Soft Reset

The Soft Reset does not erase user RAM and is equivalent to turning the power off and on. To perform a Soft Reset, simultaneously press the **+/-**, **0** and **Clr** buttons.

Installing the Operating System

1. Follow the instructions to enter the Boot Loader.
2. As the first menu item available in the Boot Loader, `Install System` is highlighted.
3. Insert the operating system disk into the disk drive and press the **OK** soft button.
4. At the `Device to install from:` prompt, highlight `floppy` and press the **OK** soft button.
5. Highlight the file to install and press the **OK** soft button.
6. To begin installing the software, press the **OK** soft button.

Note: The operating system includes more than one disk. If you are loading a new operating system, be sure to load all disks.

7. The unit returns to the Boot Loader main menu after the software installation.

Installing Objects

1. Follow the instructions to enter the Boot Loader.
2. Use the cursor buttons or turn the Alpha Wheel to highlight `Install Objects`.
3. Insert the objects disk into the disk drive and press the **OK** soft button.
4. At the `Device to install from:` prompt, highlight `floppy` and press the **OK** soft button.
5. Highlight the file to install and press the **OK** soft button.
6. To begin installing the software, press the **OK** soft button.
7. The unit returns to the `Device to install from:` prompt. Press the **OK** soft button to repeat the process and install additional objects or press the **Done** soft button to finish the installation.
8. The unit returns to the Boot Loader main menu after the installation.

Replacing the Battery

The K2600 uses a flat three volt Lithium coincell battery. When the battery voltage runs low, the K2600 boots up with a low battery message. The LEDs flashing three times on power up is also an indicator that the battery is low.

Note: The battery voltage can be checked at anytime using the Scanner Diagnostics. See page 5-6 for more information.

Removing the Battery

The K2600 battery (CR2032) is mounted into a horizontal holder and is accessible when the access panel is removed.

1. Remove the six screws that secure the access panel and set it safely aside.
2. If a P/RAM SIMM is installed at J803, remove it to provide accessibility.
3. Insert a flat plastic tool (plastic knife, pen cap, etc.) into one of the openings between the battery and the front of the holder (toward the front panel) to lift the battery.

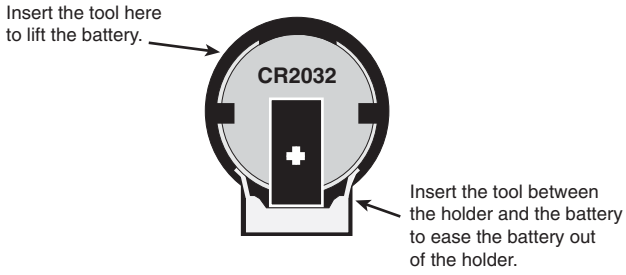


Figure 5-2 Battery and holder

Caution: Be sure no damage occurs to the electrolytic capacitor (C37) located next to the battery.

4. Ease the battery out of the holder. If necessary, insert the plastic tool at the back of the holder (close to rear panel) to remove the battery.

Installing a Battery

1. Position the battery over the holder so that the positive terminal is pointing to the rear panel.
2. Slide the battery into the holder and apply slight pressure until it snaps into place.
3. Replace the P/RAM SIMM at J803.
4. Install the six screws to secure the access panel.

Scanner Diagnostics

The Scanner Diagnostics include separate tests to verify the operation of the front panel buttons, LEDs, and the Alpha Wheel. For the K2600 keyboard models, the Scanner Diagnostics also include tests for the keyboard, sliders, wheels, ribbons, and pedals.

Note: The Volume potentiometer is not tested using the Scanner Diagnostics.

K2600R Rack Models

To enter the Scanner Tests, first turn on the K2600R. Once the unit is on and in program mode, simultaneously hold down the **4, 5**, and **6** buttons located in the Data Entry section. All front panel LEDs will light in a sequence, then simultaneously, and the LCD will display the following:

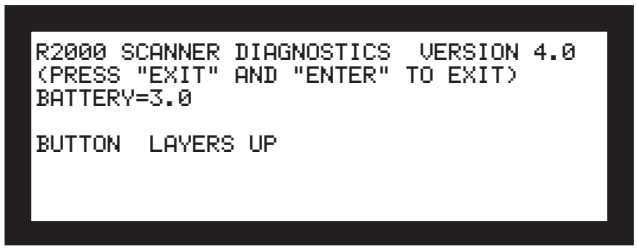


Figure 5-3 LCD example, K2600R Scanner Diagnostics

The first line of the display shows the scanner software version. The second line displays the procedure to exit the diagnostics. The third line displays the battery voltage. The fifth line shows the results of the current test. Figure 5-3 shows the result of a front panel button test.

Front Panel Buttons

To test the buttons and LEDs, press any front panel button. An example of the expected test result for the **Program** button follows:

```
BUTTON  PROGRAM
```

Alpha Wheel

To test the Alpha Wheel, turn it to increase or decrease the value by one. The expected test result when the Alpha Wheel is turned is one of four values–0, 1, 2, or 3.

An example of an expected test result follows:

```
SPINKNOB = 3
```

K2600 Keyboard Models

To enter the Scanner Tests, first turn on the K2600. Once the unit is on and in program mode, simultaneously hold down the **4, 5**, and **6** buttons located in the Data Entry section. All front panel LEDs will light in a sequence, then simultaneously, and the LCD will display the following:

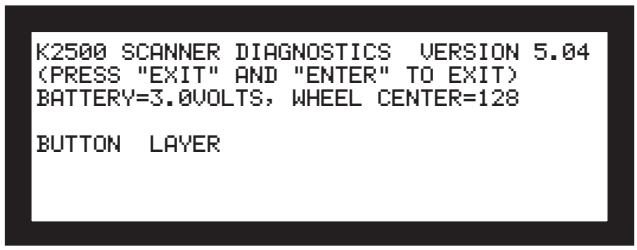


Figure 5-4 LCD example, K2600 Scanner Diagnostics

The first line of the display shows the scanner software version. The second line displays the procedure to exit the diagnostics. The battery voltage and the pitch wheel center position is displayed on the third line. The fifth line displays the results of the current test. Figure 5-4 shows the result of a front panel button test.

Note: The Scanner Diagnostics for the *Front Panel Buttons* and the *Alpha Wheel* are the same for the rack and keyboard models. Refer to page 5-6 for the description and expected test results for the buttons and wheels.

Front Panel Sliders

To test the front panel sliders, move a slider to check its value at the bottom, center, and top. An example of the normal test results for the **A** slider follows (your results may vary slightly):

At bottom: `SLIDER 1 = 0`

At center: `SLIDER 1 = 128`

At top: `SLIDER 1 = 255`

Wheels

To test the pitch and mod wheels, move a wheel up and down. An example of the expected test results for the Pitch Wheel follows (your results may vary slightly):

At bottom: `PITCH WHEEL = 0`

At center: `PITCH WHEEL = 128`

At top: `PITCH WHEEL = 255`

Small Ribbon

To test the small ribbon, move your finger up and down the ribbon. This test includes the position and pressure of the small ribbon. An example of the expected test result follows:

At center, full pressure: `SHORT POS. = 128  PRESS. = 255`

Large Ribbon

To test the large ribbon, move your finger up and down the ribbon. The large ribbon is divided into three sections. Blue arrows positioned above the large ribbon indicate the divisions.

Starting at the lowest point (bass end of the keyboard), the range of section one is zero to 255, 255 to zero for section two, and zero to 255 for section three.

An example of the normal test results for section one follows (individual results can vary slightly):

At bottom: `LONG SEC. 1 = 0`

At center: `LONG SEC. 1 = 128`

At top (section one and two division): `LONG SEC. 1 = 255  2 = 0`

Keyboard

To test the keyboard, press any key. The key name and number will be displayed twice in the LCD. The first name and number set is the test result for the front key contact switch and the second is for the rear switch. An example of the expected test result for the Middle C key follows:

```
KEY C4  60  C4  60
```

Pressing harder causes the display to change and show the pressure value. An example follows:

```
PRESSURE  =  255
```

Switch Pedals 1, 2, 3, and 4

To test the switch pedals, insert a pedal into one of the four jacks and press the pedal. An example of the expected test result for the Pedal 2 follows:

Full depression: `PEDAL 2`

CC Pedals 1 and 2

To test the continuous control pedal, press the pedal. An example of the expected test result for CC Pedal 1 follows:

No depression: `CTRL PEDAL 1 = 255`

Full depression: `CTRL PEDAL 1 = 0`

Power Up Problems

Dead, No Power

1. Before opening the unit, verify the following:
   - The AC cord is good and properly connected to the unit.
   - The AC outlet is supplying power.
   - Check the fuse located in the AC entry module. If the fuse is blown, replace it. (Refer to Chapter 6, *Parts Lists* to verify the correct value of the fuse for the unit you are servicing.
2. Refer to the Power Supply Board schematic. Check all supply voltages.
3. Refer to the Interconnect Diagram. See page 5-14 for keyboard models or page 5-15 for rack models. Check all related connections.

Blue Screen

1. Check the LCD Contrast pot in the scanner circuitry.
2. Check the stranded wire cable at J108 on the Power Supply Board. This cable connects to the scanner circuitry. Its destination depends on the K2600 model you are servicing, refer to the following note.

Note: If you are servicing a K2600R rack unit, this cable connects to J701 on the Front Panel/Scanner Board. If you are servicing a K2600 keyboard, this cable connects to J709 on the Scanner Board.

3. Check the flat ribbon cable from the LCD Board to J804 on the Engine Board.
4. Disconnect and reseat the cables.
5. Check the solder connections.
6. On the Engine Board, check the signal paths and supplies for the components at the following locations:
   - Check U10 (74HC245).
   - Check the supplies and crystal signals for U1 and the Flash ROMs, U4 and U5.
   - If the unit does not have a Digital I/O option installed, remove the jumper pin on JP803.
   - Check the continuity between J814, Pin 8 and R149 (opposite side of designator silkscreen). R149 is a small surface-mount resistor located on the component side near the DAC connector.
   - Check Y1 crystal.
   - Check buffers U8, U12, U34 through U39. These buffers are connected to U3, microprocessor.

Locks Up, Freezes

'Running System…' or Fails VLSI/ZRAM test in diagnostics:

1. On the DSP Board, check the signal paths and supplies for the components at the following locations:
   - Check Y1 crystal and verify that this signal is reaching the appropriate ICs.
   - Verify that U1, U7, and U34 are labeled 7z04.
2. On the Engine Board, check buffers U8, U12, U34 through U39. These buffers are connected to U3, microprocessor. (These buffers often will display a 'Bus Error' code when running the VLSI/ZRAM test in diagnostics.

'Waking up Scanner'

1. On the Scanner Board, check the signal paths and supplies for U3, U4, and Y1.

'V.A.S.T.' Sign Wave on boot-up or Fails Sound ROM, Sound RAM or VLSI diagnostic tests

1. On the Engine Board, check the clock signals to the components at the following locations:
   - Janis ICs, U17 and U18
   - ICs U21 through U24, and U28.
   - Sound ROMs, U32 and U33.

"Please Wait…" when trying to load from floppy disk:

1. On the Engine Board, check C41, C43, and U9 (Floppy Controller).

"Please Wait…" when trying to load from SCSI:

1. On the Engine Board, check the signal paths and supplies for the components at the following locations:
   - Check U13 and U14 (SCSI controller).
   - Check U15 (SCSI terminator).

Fails Sound RAM Diagnostic test

On the Engine Board, check the 'Power Jumper' voltage setting.

Front Panel Problems

Boots up with three Flashes

1. This indicates that the battery is low. Refer to *Replacing the Battery* on page 5-5.
2. Verify that U1 in the scanner circuitry is v5.04.

Note: If you are servicing a K2600R rack unit, U1 (M37451) is located on the Front Panel/Scanner Board. If you are servicing a K2600 keyboard, U1 (M37451) is located on the Scanner Board.

LCD not lit

1. Check the stranded wire cable at J1 on the Backlight Board and J104 on the Power Supply Board.
2. Check the stranded wire cable at J2 on the Backlight Board.
3. Disconnect and reseat the cables.
4. Check the solder connections on the Power Supply, Backlight and LCD boards.

Buttons, Sliders or Controllers Not Working

1. Refer to the Interconnect Diagram. See page 5-14 for keyboard models or page 5-15 for rack models.
2. Check all related interconnect cables.
3. Disconnect and reseat the cables.
4. Run the Scanner Tests.
5. Refer to the schematic diagrams and check signal path for the section not working.
6. Find and replace bad component(s).

Audio Problems

Note: If you are diagnosing a K2600R rack unit, you can check for audio without having a controller connected. Connect a pair of headphones, turn the power on, and press the **Cancel** button. While pressing the **Cancel** button, press a few of the alphanumeric buttons. If the audio portion of the K2600R is functioning properly, you should hear notes.

Intermittent or No Audio

1. Check the flat ribbon cable at location J808 on the CPU Board to J601 on the Audio Board. Disconnect and reseat the cable.
2. Check solder connections.
3. On the DSP Board, make sure that U1, U7, and U34 are labeled 7z04.

No Audio, Distortion, or Noisey Outputs

Right Channel

1. On the Audio Board, check the DACs (AD1865R) at locations U2 and U3 input pins 2 and 3 and output pins 12 and 13.

Left Channel

1. On the Audio Board, check the DACs (AD1865R) at locations U12 and U13 input pins 2 and 3 and output pins 12 and 13.

Full volume static distortion after 10-15 minutes of warm-up then locks-up:

1. On the DSP Board, check U2, U3, U5 and U6 (Hobbes ICs). May be heat sensitive.

Different clicks and pops on each effect or consistent 'thumping' noise in all outputs:

1. Clean contacts and reflow solder on Audio Board to Engine Board cable connectors.
2. On the DSP Board, check the signal lines for the components at the following locations:
   - Check U25 through U28 (effects RAM).
   - Check U8, U10, U11, and U13 (LISA ICs).

Boots up normally but has no sound,

1. On the Engine Board, check the clock signals to the components at the following locations:
   - Janis ICs, U17 and U18
   - ICs U21 through U24, and U28.
   - Sound ROMs, U32 and U33.

Keyboard Problems

Keyboard velocity problems

1. Perform a Hard Reset to eliminate programming problems.
2. Refer to the Scanner Board schematics.
3. On the Scanner Board, check J703 for the proper jumper setting.
4. Check the signals at U5 and U6 on Scanner Board.

Dead Keyboard

1. Check the flat ribbon cable connecting the keyboard Bass and Treble Contact Boards to the Scanner Board, location J704. Be certain that the cable is not loose or damaged.
2. Disconnect and reseat the cables.
3. Refer to the Scanner Board schematics.
4. Check the signal activity at U1 (M37451) on the Scanner Board.
5. Trace signal path.
6. Find and replace bad component(s) or order an Scanner Board replacement.

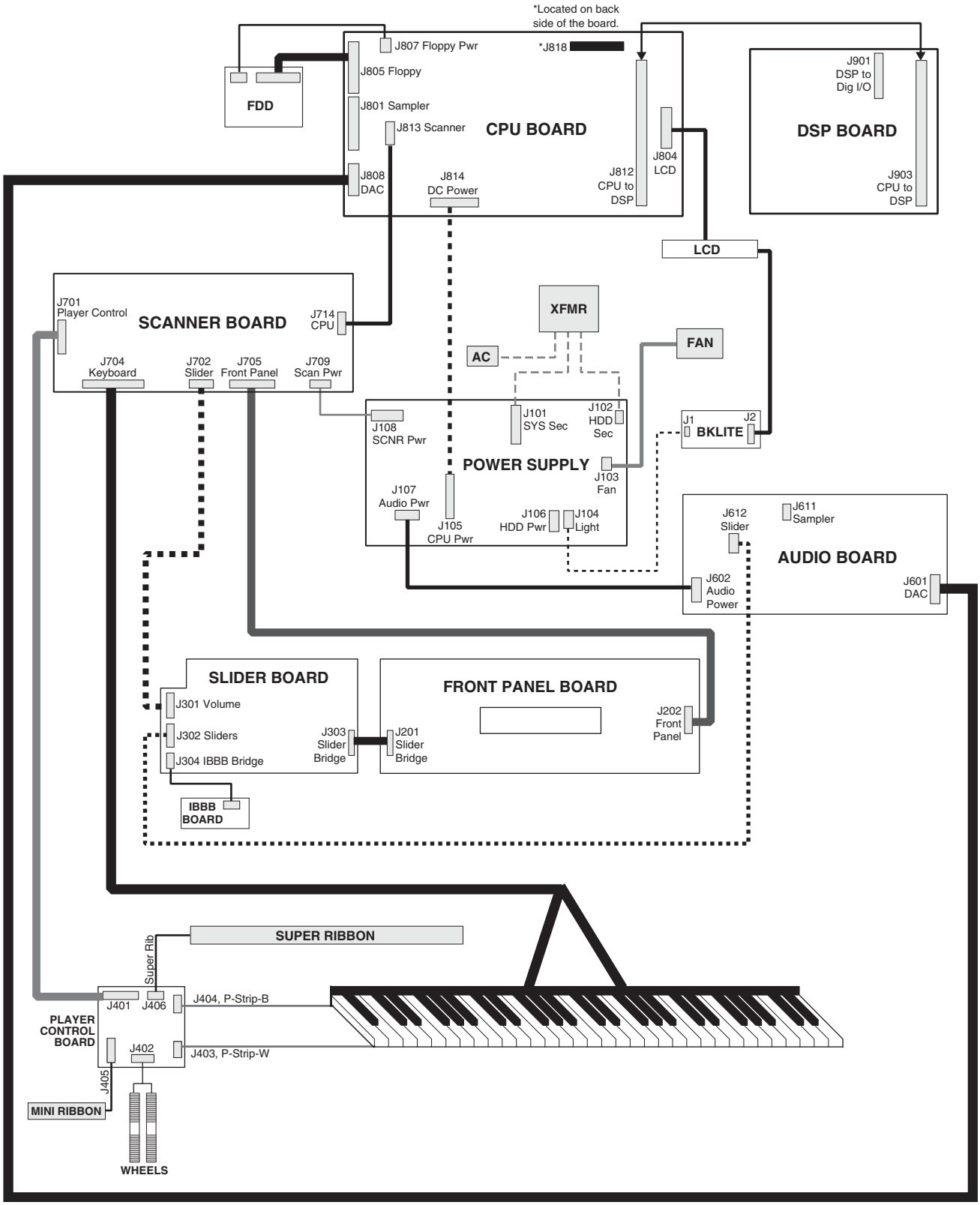
Dead Note(s), One or More in a Section

1. Remove related contact board.
2. Check contact strip for dirt, damage or wearing. Clean dirty contacts with denatured alcohol. Replace damaged or worn contact strip.
3. Install contact strip.
4. If section is still dead, remove strip and check contact board for shorts, cold solder joints or open diodes.
5. Find and replace bad component(s) or order replacement board.

Mechanical Noise

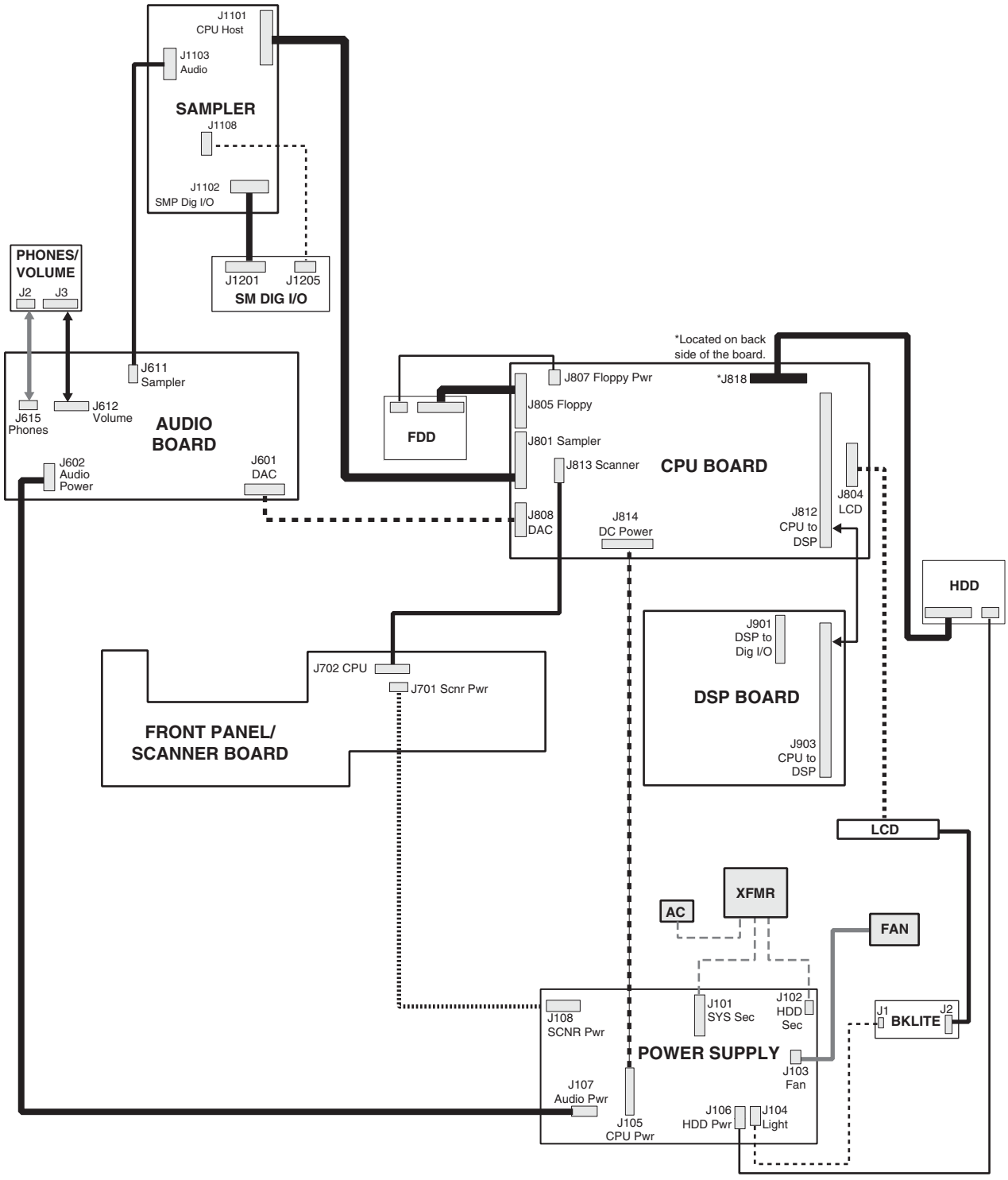
1. Check keyboard for broken key weights, support brackets, or ripped contacts.

K2600/K2600X Interconnect Diagram



K2600R Interconnect Diagram

The K2600R Interconnect Diagram includes the connections to the Hard Drive, Sampling and Small Digital I/O Boards.



K2600R Interconnect Diagram

Chapter 6
Parts Lists

Introduction

The parts lists included in this chapter cover all models of the K2600 Series. Some printed circuit boards and assemblies are used in more than one model. Therefore, the parts lists on the following pages are listed under these headings:

K2600 Series	All Models
K2600R/K2600RS	Rack Models
K2600 Series Keyboard Models	All Keyboard Models
K2600/K2600S	All 76-Note Keyboard Models
K2600/K2600X/K2600 AES	All 88-Note Keyboard Models

The following two tables list the printed circuit boards and assemblies by model.

Note: The K2600/K2600S/K2600X/K2600XS/K2600 AES have been combined as these models share most printed circuit boards and assemblies in common. The exceptions are the parts lists for the LCD Board and the Final and Keyboard Assemblies.

K2600R, K2600RS

Part No.	Description	Page
N012000134	Final Assembly	page 6-11
N012103796	LCD Board	page 6-7
N012104121	AC Entry Module Assembly	page 6-8
N012104325	Backlight Inverter Board	page 6-7
N012104665	Floppy Disk Drive Assembly	page 6-7
N012304340	Power Supply Board	page 6-8
N012305411	CPU Board	page 6-3
N012305413	DSP Board	page 6-5
N012305417	Front Panel/Scanner Board	page 6-10
N012305605	Audio Board	page 6-6
N012401127	Phone & Volume Assembly	page 6-8

K2600, K2600S, K2600X, K2600XS, K2600 AES

K2600 Series

CPU Board, N012305411

Part No.	Description	Qty.	Reference Designation
N013041101	CABLE SAMPLE RAM POWER JUMPER K2600	1	@J819 PIN 2 & 3
N033120600	PCB FAB CPU BOARD (REV. D) K2600	1	PCB1
N035040105	BATTERY COINCELL 3V 195mah CR2032	1	B1
N035040202	BATTERY HOLDER TOSHIBA BH32	1	@B1
N041025206	HEADER .1" SP 6P (DUAL 3P)	1	J821
N041025303	HEADER .156" SP 3P (09-65-2038)	1	J819
N041025308	HEADER .156" SP 8P (09-65-2088)	1	J814
N041030111	CONN SOCKET .079" SPGLD 50P SQW-125-01-L-D	2	J812
N041030310	CONN MIDI JACK 3-GANG YKF 51-5041(JALCO)	1	J815
N041031210	CONN .1" SP DUAL ROW 14P (057-014-153)	1	J813
N041031216	HEADER .1" SP DUAL ROW 16P (057-016-153)	1	J808
N041031220	HEADER .1" SP DUAL ROW 20P (057-020-153)	1	J804
N041031234	HEADER .1" SP DUAL ROW 34P (057-034-153)	2	J801, 805
N041031250	CONN .1" SP DUAL ROW 50P (057-050-153)	1	J818
N041031268	CONN HIGH DEN 68P MALE FX2CA-68P-1.27DSA	1	J809
N041031279	CONN HDR DIP .079" SQR 8P 87089-0816	2	J802, JP803
N041032425	CONN DB PLST SHRT RAPC 25P 747846-3(-4)	2	J816, 817
N041033373	SOCKET SIMM 40 72P 15-82-0627	3	J803, 810, 811
N041034004	HEADER .098" SP 4P (22-03-5045)	1	J807
N043002141	POLYSWITCH 15V 2.0A .125Ω SMD	1	R162
N043010201	SW TACK 6mmX3.5mm 160GF ALPS SKHLAC	1	S3
N043010510	SW SLIDER R/A SPDT (ASC MHSS1105)	2	S1, 2
N051001007	RES NET ISO 10KX4 5% 1/10W 5.08mmX2.2mm	4	RP1-4
N051001014	RES NET ISO 51X4 5% 1/10W 5.08mmX2.2mm	6	RP5-10
N051064005	RES TF 56Ω 5% 1/16W 0603	19	R1, 3-8, 10-12, 14-17, 31, 64, 69, 70, 73
N051064010	RES TF 100Ω 5% 1/16W 0603	20	R9, 28-30, 88, 102-117
N051064012	RES TF 120Ω 5% 1/16W 0603	19	R128-146
N051064075	RES TF 75Ω 5% 1/8W 0603	1	R2
N051064110	RES TF 10Ω 5% 1/16W 0603	39	R19-27, 33-41, 77-81, 84, 89-91, 94, 97, 120-127, 149, 160
N051101287	RES TF 1.87KΩ 1% 1/8W 1206	1	R86
N051101293	RES CF 392Ω 1% 1/8W 1206	1	R147
N051101651	RES CF 150Ω 5% 1/8W 1206	1	R151
N051101700	RES CF 0Ω 5% 1/8W 1206	1	R164
N051101714	RES TF 110Ω 5% 1/8W 1206	11	R58, 60, 65-68, 71, 72, 74-76
N051101718	RES CF 220Ω 5% 1/8W 1206	4	R82, 92, 99, 118
N051101720	RES TF 330Ω 5% 1/8W 1206	4	R83, 93, 100, 119
N051101730	RES CF 1.0KΩ 5% 1/8W 1206	15	R18, 44-46, 53, 95, 96, 98, 101, 153, 156, 157, 159, 191, 192
N051101738	RES CF 2.2KΩ 5% 1/8W 1206	8	R47, 49, 55, 57, 59, 61, 63, 158
N051101741	RES TF 3KΩ 5% 1/8W 1206	3	R62, 165, 166
N051101745	RES CF 4.7KΩ 5% 1/8W 1206	5	R48, 50, 51, 56, 150
N051101747	RES TF 4.7MΩ 5% 1/8W 1206	1	R52

Part No.	Description	Qty.	Reference Designation
N051101748	RES TF 6.2KΩ 5% 1/8W 1206	1	R161
N051101780	RES CF 100KΩ 5% 1/8W 1206	1	R152
N051101785	RES CF 330KΩ 5% 1/8W 1206	1	R43
N051101790	RES CF 1.0MΩ 5% 1/8W 1206	1	R54
N051101799	RES CF 20MΩ 5% 1/8W 1206	1	R42
N052002420	CAP POLY .1UF 50V	1	C9
N052002422	CAP ELECT 470UF 6.3V 3.5mm SP.11mm	1	C98
N052003002	CAP ELECT 1000UF 10V 10MM	1	C37
N052004201	CAP ELECT 10UF 35V 20% .08SP	1	C100
N052004205	CAP ELECT 4.7UF 35V	1	C53
N052005105	CAP ELECT 100UF 10V RAD	1	C99
N052007001	CAP CER 15PF 50V NPO 1206	1	C41
N052007003	CAP CER 47PF 100V 5% NPO 1206	2	C43, 111
N052007004	CAP CER 1000PF 100V NPO 1206	10	C40, 44-52
N052007007	CAP CER 20PF 5% NPO 1206	2	C21, 22
N052007501	CAP CER 0.01UF 50V 10% X7R 1206	9	C74, 90, 93, 110, 115-119
N052007503	CAP CER X7R 0.1UF 50V 10% 1206	86	C1-8, 10-20, 23-36, 38-39, 42, 56-73, 75-89, 91-92, 94-97, 101-109, 112-113
N052901022	CAP TAN CHP 22UF 6.3V 20% SZB SMT	1	C114
N052901047	CAP TAN CHP 4.7UF 6.3V 20% SZA SMT	2	C54, 55
N053000703	DIODE RECT GP SMT 1A S1A SMA 1N4001 1206	7	D4, 6-8, 10-12
N053000704	DIODE RECT GP SMT 1A S1J 600V SMA	1	D3
N053000802	DIODE SWITCH 1N4148 SMT DL-35	2	D5, 9
N053010503	DIODE 70V SCHOTTKY BAR SMD BAS70DICT	2	D1, 2
N054000102	TRANS KST3904 SOT-23	2	Q1, 2
N054000802	TRANS MMBT2222L SOT-23	3	Q3, 8, 9
N054002906	TRANS MMBT2907L SOT-23	2	Q4, 5
N054010101	TRANS PNP KSA931	1	Q6
N054010301	TRANS NPN KSC2331-Y	1	Q7
N055001508	IND FE BD SMT 1500mA 120Ω MI1812K121R 1812	4	L1, 4-6
N055004301	EMI FILTER DUAL EXC-EMT470BT	1	L2
N059010051	XTL 16.0000MHz +/- 50PPM FND PAR 18PF SMT	1	Y2
N059010071	XTL 32.7680KHZ +/-20PPM FND PA 12.5PF SMT	1	Y1
N061000913	IC TINY LOGIC NC7SZ04 SOT23-5	2	U16, 20
N061007245	IC LOGIC 74VHC245 SOP20	9	U8, 12, 28, 29, 34, 35, 37-39
N061007574	IC LOGIC 74VHC574 SOP20	3	U22-24
N061010302	IC LOGIC 74HCU04 SOP14	2	U36, 42
N061011004	IC LOGIC 74HC04 SOP14-150	1	U13
N061011245	IC LOGIC 74HC245 SOP20	1	U10
N062005512	IC MEM SRAM 512KX8 70nS SOP32-440 LOS	2	U6, 7
N062005525	IC MEM FLSH ROM 1MX16 70nS SSOP56-525 5V	2	U4, 5
N062006103	IC PLD GAL 22V10 ISP 15NS LO-P PLCC28	1	U2
N062006536	IC PLD XC9536 15nS PLCC-44	3	U1, 19, 21
N063002302	IC OPT COUPLER PC410	1	U11
N063010402	IC FLOPPY DRIVE GM82C765B PLCC44	1	U9

Part No.	Description	Qty.	Reference Designation
N083015701	IC MASKROM K2501 BASE ROM 64M 830157-001	1	U32
N083015801	IC MASKROM K2600 PIANO 32M 830158-001	1	U33
N261000244	IC DIG 74LCX244 OC BUS XCEIVER 3-ST	1	U26
N261008245	IC DIG 74LCX245 OC BUS XCEIVER 3-ST	4	U25, 27, 30, 31
N262001300	IC MICROCONTROLLER 68340FE-25B, 25MHz	1	U3
N263010201	IC SCSI BUS CONTROLLER L53C80JC2 PLCC44	1	U14
N263010210	IC SCSI TERMINATOR 18-LINE UC5608QP	1	U15
N266000702	IC JAINS B VY06688	2	U17, 18

DSP Board, N012305413

Part No.	Description	Qty.	Reference Designation
N041031240	CONN .1" SP DUAL ROW 40P (057-040-153)	1	J901
N041031280	CONN 0.079" SQR .157 GLD 50P MOLEX	2	J903
N041033374	SOCKET IC PLCC SMT 84POS 822281-1	1	@U14
N042005405	JUMPER WIRE 5MM	1	J902 (PIN 1 & 2)
N051001014	RES NET ISO 51X4 5% 1/10W 5.08mmX2.2mm	19	RP1-19
N051101718	RES CF 220Ω 5% 1/8W 1206	4	R1, 2, 6, 10
N051101720	RES TF 330Ω 5% 1/8W 1206	4	R3, 4, 7, 11
N051101730	RES CF 1.0KΩ 5% 1/8W 1206	18	R5, 12-17, 71, 72, 113-120, 122
N051101790	RES CF 1.0MΩ 5% 1/8W 1206	2	R8, 121
N052002422	CAP ELECT 470UF 6.3V 3.5mm SP.11mm	1	C115
N052005105	CAP ELECT 100UF 10V RAD	1	C116
N052007005	CAP CER NPO 27PF 50V 5% 1206	2	C117, 122
N052007006	CAP CER NPO 6.8PF 50V 5% 1206	1	C121
N052007503	CAP CER X7R 0.1UF 50V 10% 1206	86	C1-27, 32-37, 40-57, 59-64, 74-77, 99-114, 118-120, 123-128
N055004301	EMI FILTER DUAL EXC-EMT470BT	1	L7
N059010012	XTL 19.9680MHZ +/- 50PPM FND PAR 32PF SMT	1	Y1
N061000901	IC DIG NC7S04 TINY INV SOT23-5	1	U41
N061000910	IC DIG NC7SU04 TINY UNBUF INV SOT23-5	1	U33
N061000913	IC TINY LOGIC NC7SZ04 SOT23-5	3	U1, 7, 34
N061007138	IC LOGIC 74VHC138 SOP16/16W	2	U39, 40
N061007245	IC LOGIC 74VHC245 SOP20	4	U35-38
N061011008	IC LOGIC 74AC08 SOP14-150	1	U4
N062100416	IC MEMORY DRAM 1MX16 70nS(max) SOJ42	4	U25-28
N266000302	IC HOBBES VY05293	4	U2, 3, 5, 6
N266000801	IC LISA VY06514 PLCC84	4	U8, 10, 11, 13

K2600R/K2600RS

Audio Board, N012305605

Part No.	Description	Qty.	Reference Designation
N032055802	BRACKET SUPPORT AUDIO PCB K2600R	1	
N041025305	HEADER .156" SP 5P (09-65-2058)	1	J602
N041031216	HEADER .1" SP DUAL ROW 16P (057-016-153)	1	J601
N041034003	HEADER .098" SP 3P (22-03-5035)	1	J615
N041034005	HEADER .098" SP 5P (22-03-5055)	1	J611
N041034006	HEADER .098" SP 6P (22-03-5065)	1	J612
N041034501	PHONE JACK STEREO 1/4" RA49C-14B	10	J603-610, 613, 614
N051080401	RES TF 1.0KΩ 5% 1/10W 0805	1	R215
N051080410	RES TF 100Ω 5% 1/10W 0805	2	R235, 236
N051080411	RES TF 10KΩ 5% 1/10W 0805	1	R205
N051080412	RES TF 4.12KΩ 1% 1/10W 0805	8	R65-68, 133-136
N051080447	RES TF 470Ω 5% 1/10W 0805	2	R211, 214
N051080464	RES TF 4.64KΩ 1% 1/10W 0805	16	R25-28, 45-48, 93-96, 113-116
N051080576	RES TF 57.6KΩ 1% 1/10W 0805	8	R21-24, 89-92
N051080604	RES TF 6.04KΩ 1% 1/10W 0805	8	R5-8, 73-76
N051080610	RES TF 10.0KΩ 1% 1/10W 0805	26	R193-204, 206, 207, 209, 213, 216-219, 222, 223, 231-234
N051080617	RES TF 1.78KΩ 1% 1/10W 0805	8	R140-142, 161-163, 181, 182
N051080628	RES TF 6.98KΩ 1% 1/10W 0805	16	R49, 51, 53, 55, 57-60, 117, 119, 121, 123, 125-128
N051080630	RES TF 30.1KΩ 1% 1/10W 0805	20	R146-151, 167-172, 185-188, 221, 224, 227, 228
N051080632	RES TF 8.45KΩ 1% 1/10W 0805	16	R9, 11, 13, 15, 17-20, 77, 79, 81, 83, 85-88
N051080633	RES TF 15.0KΩ 1% 1/10W 0805	16	R29, 31, 33, 35, 37-40, 97, 99, 101, 103, 105-108
N051080635	RES TF 3.57KΩ 1% 1/10W 0805	24	R1-4, 69-72, 137-139, 143-145, 158-160, 164-166, 179, 180, 183, 184
N051080636	RES TF 22.6KΩ 1% 1/10W 0805	8	R61-64, 129-132
N051080639	RES TF 31.6KΩ 1% 1/10W 0805	8	R10, 12, 14, 16, 78, 80, 82, 84
N051080646	RES TF 53.6KΩ 1% 1/10W 0805	8	R50, 52, 54, 56, 118, 120, 122, 124
N051080649	RES TF 4.99KΩ 1% 1/10W 0805	4	R208, 212, 237, 238
N051080675	RES TF 76.8KΩ 1% 1/10W 0805	8	R30, 32, 34, 36, 98, 100, 102, 104
N051080686	RES TF 226KΩ 1% 1/10W 0805	8	R41-44, 109-112
N051102103	RELAY 5V DPDT (G6H-2-DC5)	11	RY1-11
N051125201	RES TF 200Ω 1% 1/4W 1210	20	R152-157, 173-178, 189-192, 225, 226, 229, 230
N051204010	RES TF 10Ω 5% 1/2W 2010	1	R220
N051204047	RES TF 47Ω 5% 1/2W 2010	2	R239, 240
N052001711	CAP ELECT 100UF 25V 20% RAD	4	C5, 6, 17, 18
N052002405	CAP ELECT 22UF 16V 20% .08 SP	1	C129
N052004203	CAP ELECT 47UF 35V 20% SHL	16	C20, 22, 24, 26, 82, 84, 86, 88, 190, 191-197
N052005105	CAP ELECT 100UF 10V RAD	1	C188
N052007503	CAP CER X7R 0.1UF 50V 10% 1206	75	C1, 3, 7-10, 14, 15, 27, 28, 69, 71, 73, 74, 78, 79, 130-187, 189
N052080012	CAP CER NPO 68PF 50V 2% 0805	8	C45-48, 105-108
N052080015	CAP CER NPO 150PF 50V 2% 0805	8	C57-60, 117-120
N052080022	CAP CER NPO 220PF 50V 5% 0805	8	C11-13, 16, 75-77, 80
N052080023	CAP CER NPO 180PF 50V 2% 0805	8	C33-36, 93-96

Part No.	Description	Qty.	Reference Designation
N052080027	CAP CER NPO 270PF 50V 2% 0805	8	C37-40, 97-100
N052080039	CAP CER NPO 1000PF 50V 2% 0805	8	C61-64, 121-124
N052080047	CAP CER NPO 2200PF 50V 1% 0805	32	C29-32, 41-44, 53-56, 65-68, 89-92, 101-104, 113-116, 125-128
N052080056	CAP CER NPO 47PF 50V 2% 0805	8	C49-52, 109-112
N053000703	DIODE RECT GP SMT 1A SMA 1N4001 1206	1	D3
N053000802	DIODE SWITCH 1N4148 SMT DL-35	2	D1, 2
N054000802	TRANS MMBT2222L SOT-23	1	Q1
N054010101	TRANS PNP KSA931	4	Q2, 3, 5, 7
N054010301	TRANS NPN KSC2331-Y	2	Q4, 6
N061016302	IC LOGIC 74HC139 SOP16/16W	1	U1
N064001502	IC LINEAR +5V LM7805 TO-220	1	VR1
N064001503	IC LINEAR -5 7905 TO-220	1	VR2
N064003508	IC ANA OPAMP DL BIP NE5532A SOP8-160	29	U4-11, 14-34
N263010310	IC AD1865R SOP24	4	U2, 3, 12, 13

Backlight Board, N012104325

Part No.	Description	Qty.	Reference Designation
N041032104	HEADER .2SP 4P (10-32-1041)	1	J2
N041034102	HEADER .098" SP 2P R/A (22-05-7025)	1	J1
N042005406	JUMPER 6MM	1	U2 (1 & 3)
N055000010	INVERTER (CXA-L10L)	1	U1

FLoppy Disk Drive Assembly, N012104665

Part No.	Description	Qty.	Reference Designation
N013027704	CABLE FDD POWER 260MM K2600R	1	
N013030901	CABLE 2000-R DATA FDD 34P 320MM	1	
N015000602	FLOPPY DISK DRIVE 3.5" OF SAMSUNG	1	
N025323306	MACHINE SCREW BH 3X6 BLK	4	
N032028031	FDD/HDD MOUNTING BRACKET	1	

LCD Board, N012103796

Part No.	Description	Qty.	Reference Designation
N013040202	CABLE ASSY LCD DATA 430MM K2600R	1	
N045010304	LCD UNIT DMF5010NBU-FW	1	

Phone & Volume Assembly, N012401127

Part No.	Description	Qty.	Reference Designation
N013040301	CABLE ASSY VOLUME TO AUDIO 380MM K2600R	1	
N041034501	PHONE JACK STEREO 1/4" RA49C-14B	1	
N051101605	POT ROTARY VOLUME 10K CPSG-1604	1	
N052005300	CAP CER MONO 470PF 200V 5% NPO AX	2	
N055002201	CHOKE COIL TRIPLE TORROID DLF3000	1	

AC Entry Module Assembly, N012104121

Part No.	Description	Qty.	Reference Designation
N013026902	CABLE AC ENTRY POWER 260MM K2600R	1	
N013040601	CABLE AC ENTRY GROUNDING K2600R	1	
N013040701	CABLE POWER SWITCH K2600R	1	
N025693321	HEX SPACER 5MM	2	
N043010604	FUSE SLOW-BLOW 250V 1.25A 5X30MM	1	
N043010605	FUSE TIME-LAG 250V 0.63A 5X20MM (EUROPE)	2	
N043020101	POWER SWITCH 2000R	1	
N051101114	RES CF 56Ω 5% 1W METAL OXIDE	1	
N052003529	CAP METALIZED FILM 0.47UF 250V	1	
N241033801	POWER MODULE 5EFM4 K2600R	1	

Power Supply Board, N012304340

Part No.	Description	Qty.	Reference Designation
N013039203	CABLE ADD POWER SUPPLY K2600/S/X/XS/R/RS	1	
N025224508	TAPPING SCREW 2 BH 3.5X8 WHITE W/WASHER	12	
N025323408	MACHINE SCREW BH M4X8 BLK	2	
N032020435	CLAMP COMP-HEAT SINK 3-GANG TO220-TO180	1	@D3, Q2, 3
N032020436	CLAMP COMP-HEAT SINK 2-GANG TO220-TO218	2	@VR1, 2, 5, 6
N032031001	RG-X HEATSINK SUPPORT BRACKET	2	
N032055401	HEATSINK K2600R/RS	1	
N041025302	HEADER .156" SP 2P (09-65-2028)	1	J102
N041025305	HEADER .156" SP 5P (09-65-2058)	1	J107
N041025306	HEADER .156" SP 6P (09-65-2068)	1	J101
N041025308	HEADER .156" SP 8P (09-65-2088)	1	J105
N041034002	HEADER .098" SP 2P (22-03-5025)	1	J103
N041034003	HEADER .098" SP 3P (22-03-5035)	1	J104
N041034004	HEADER .098" SP 4P (22-03-5045)	1	J106
N041034005	HEADER .098" SP 5P (22-03-5055)	1	J108
N049010102	INSULATION PAD 15X20MM W/O HOLE	3	@VR5, VR1, VR2
N049010110	INSULATION PAD (MICA PAD)	4	@D3, Q2, Q3, VR6
N051100103	RES CF 10Ω 5% 1/8W	5	R31, 36, 38, 39, 40

Part No.	Description	Qty.	Reference Designation
N051100113	RES CF 100Ω 5% 1/8W	2	R17, 28
N051100115	RES CF 150Ω 5% 1/8W	1	R27
N051100117	RES CF 200Ω 5% 1/8W	2	R33, 37
N051100120	RES CF 330Ω 5% 1/8W	1	R32
N051100123	RES CF 510Ω 5% 1/8W	1	R34
N051100132	RES CF 1KΩ 5% 1/8W	5	R5-7, 18, 35
N051100137	RES CF 2KΩ 5% 1/8W	2	R10, 42
N051100141	RES CF 3KΩ 5% 1/8W	2	R24, 41
N051100145	RES CF 4.7Ω 5% 1/8W	4	R8, 13, 14, 23
N051100160	RES CF 15KΩ 5% 1/8W	3	R20, 21, 30
N051100256	RES MF 165KΩ 1% 1/8W	1	R25
N051100354	RES MF 10.0Ω 1% 1/8W	9	R1-4, 11, 12, 15, 16, 22
N051100359	RES MF 84.5KΩ 1% 1/8W	1	R19
N051100399	RES MF 499Ω 1% 1/8W	1	R29
N051100457	RES MF 357Ω 1% 1/8W	1	R26
N051101401	RES POT 100K 3/4 TURN	1	R9
N052001204	CAP CER MONO Z5U .1UF 50V 20% .3AX	13	C1-5, 7-8, 14, 15, 18, 19, 22, 28
N052001711	CAP ELECT 100UF 25V 20% RAD	2	C16, 17
N052001713	CAP ELECT 4700UF 25V	1	C9
N052002401	CAP ELECT 100UF 16V 20% .138 SP	5	C20, 21, 26, 27, 30
N052002414	CAP ELECT 220UF 16V	2	C6, 23
N052004204	CAP ELECT 2200UF 35V 20% RAD	2	C11, 12
N052005105	CAP ELECT 100UF 10V RAD	1	C29
N052005108	CAP ELECT 220UF 6.3V RAD	1	C24
N052005203	CAP ELECT 33000UF 16V	1	C10
N052005300	CAP CER MONO 470PF 200V 5% NPO AX	2	C13, 25
N053000701	DIODE 1N4001 DO-41	3	D2, 9, 11
N053000901	DIODE ZENER 5.1V 1N5231B	1	D10
N053001001	DIODE ZENER 6.1V 1N5234	1	D8
N053002201	DIODE MBR1535	1	D3
N053010001	DIODE KBU8B (8.0AMP)	1	D1
N053020101	DIODE AMP 1N4002(1A)	4	D4-7
N054000004	TRN PWR MOSFET IRFZ34N55V 0.04Ω 29A TO-220	2	Q2, 4
N054000602	TRANS PN2907 TO-92	1	Q1
N054000801	TRANS PN2222 TO-92	3	Q3, 5, 6
N064001502	IC LINEAR +5V LM7805 TO-220	2	VR5, 7
N064010001	IC LINEAR TL074CP DIP14	1	U1
N064010206	IC LINEAR KA78T12AC	1	VR6
N064010301	IC LINEAR VOLT REG +15 LM7815 (TO-220)	1	VR1
N064010401	IC LINEAR VOLT REG -15 LM7915 (TO-220)	1	VR2
N064010801	IC LINEAR +12V 7812 TO-220	1	VR3
N064010901	IC LINEAR -12V LM7912 TO-220	1	VR4

Front Panel/Scanner Board, N012305417

Part No.	Description	Qty.	Reference Designation
N035021121	KEYTOP BLACK	18	
N038000316	KEYTOP (+/-) K2600R	1	
N038000341	KEYTOP (1) BLACK K2600R	1	
N038000342	KEYTOP (2) BLACK K2600R	1	
N038000343	KEYTOP (3) BLACK K2600R	1	
N038000344	KEYTOP (4) BLACK K2600R	1	
N038000345	KEYTOP (5) BLACK K2600R	1	
N038000346	KEYTOP (6) BLACK K2600R	1	
N038000347	KEYTOP (7) BLACK K2600R	1	
N038000348	KEYTOP (8) BLACK K2600R	1	
N038000349	KEYTOP (9) BLACK K2600R	1	
N038000350	KEYTOP (0) BLACK K2600R	1	
N038000351	KEYTOP (CANCEL) K2600R	1	
N038000352	KEYTOP (ENTER) K2600R	1	
N038000353	KEYTOP (CLR) BLACK K2600R	1	
N038000354	LARGE BUTTON W/LED (1) <_> K2600R	1	
N038000355	LARGE BUTTON W/LED (1) <_> K2600R	1	
N038000356	LARGE BUTTON W/LED (1) <_> K2600R	2	
N038000357	LARGE BUTTON W/LED (1) <_> K2600R	2	
N041031210	CONN .1" SP DUAL ROW 14P (057-014-153)	1	J702
N041034005	HEADER .098" SP 5P (22-03-5055)	1	J701
N042005422	JUMPER WIRE 2.5MM	2	GJ1, GJ2
N043010401	TACT SWITCH ALPS418A SKHCAA	38	S1-38
N044010501	ENCODER 36STEP 2BIT (AFTER PROCESSING)	1	SP1
N045010101	LED T1 RED GaAsP 60 .16 MCD @20MA	1	D9
N045010501	LED T1-3/4 RED GaAsP/GaP 30 24MCD @20M	8	D1-8
N051101415	POT 10KΩ 5% NOBLE UK9-B10K	1	R5
N051101713	RES CF 100Ω 5% 1/8W 1206	4	R3, 11, 12, 18
N051101738	RES CF 2.2KΩ 5% 1/8W 1206	1	R13
N051101745	RES CF 4.7KΩ 5% 1/8W 1206	1	R20
N051101757	RES CF 10KΩ 5% 1/8W 1206	10	R1, 4, 8-10, 14-17, 21
N051101760	RES CF 20KΩ 5% 1/8W 1206	1	R19
N051101790	RES CF 1.0MΩ 5% 1/8W 1206	1	R2
N051103097	RES CF 49.9KΩ 1% 1/8W 1206	1	R6
N051125120	RES MF 2.0KΩ 1% 1/8W 1206	1	R7
N052007503	CAP CER X7R 0.1UF 50V 10% 1206	5	C1, 4-7
N052900647	CAP ELECT 47UF 6.3V SZC SMT	1	C2

Part No.	Description	Qty.	Reference Designation
N052901610	CAP ELECT GP 10UF 16V 20% SZB SMT	1	C3
N053000802	DIODE SWITCH 1N4148 SMT DL-35	1	D10
N054000802	TRANS MMBT2222L SOT-23	2	Q1, 3
N054002906	TRANS MMBT2907L SOT-23	2	Q2, 4
N061000302	IC LOGIC 74LS145 SOP16	1	U3
N061020203	IC 74HC74A DUAL D-FLOP SOIC14	1	U2
N235023601	LED SPACER LH-3-6	1	@D9
N262100607	IC MICROCONTROLLER M37451M8-727FP	1	U1

Final Assembly, N012000134

Part No.	Description	Qty.	Reference Designation
N013030951	CABLE TIE	8	
N013039102	CABLE POWER SUPPLY TO ENGINE 200MM	1	
N013039202	CABLE POWER SUPPLY AUDIO 200MM K2600R	1	
N013039402	CABLE POWER SUPPLY TO INVERTER 170MM	1	
N013039602	CABLE SCAN TO POWER SUPPLY 330MM	1	
N013039801	CABLE FAN POWER 260MM K2600/X/R	1	
N013040002	CABLE ENGINE TO AUDIO 300MM K2600R	1	
N013040103	CABLE ENGINE TO SCAN 330MM K2600R	1	
N015000123	TRANSFORMER ASSY K2600R	1	
N022002701	EDGE-HOLDING SUPPORT 7.9mm	5	
N022002702	BUTTON SUPPORT DONG-A DABS12R	3	
N022002703	SPACER PUSH LOCKING 8.0MM TALL	2	
N022003714	CABLE CLAMP 14P	2	
N022003716	CABLE CLAMP 16P	2	
N022003720	CABLE CLAMP 20P	1	
N022003734	CABLE CLAMP 34P	2	
N025223408	TAPPING SCREW-2 BH M3X8 BLK (SMALL)	1	
N025313307	MACHINE SCREW FH M3X6 BLK	6	
N025323306	MACHINE SCREW BH 3X6 BLK	46	
N025323308	MACHINE SCREW BH M3X8 BLK	1	
N025323310	MACHINE SCREW BH M3X10 BLK	2	
N025323408	MACHINE SCREW BH M4X8 BLK	9	
N025353306	MACHINE SCREW TH M3X6 BLK	2	
N025353335	MACHINE SCREW TH M3X35 BLK	4	
N025353404	MACHINE SCREW TH 4X4 BLK	2	
N025353408	MACHINE SCREW TH M4X8 BLK	6	
N025683316	SET SCREW 3X16 BLK	1	
N025693320	HEX SPACER BH M3X20BLK	6	
N025693322	SCSI BOLT (WHITE)	8	
N025874302	NUT M3 DIN934	6	
N025874303	NUT M4	4	
N027112100	FLAT WASHER 3.3X6.5X0.5	4	
N027113160	FLAT WASHER 4.5X10X0.5AN	4	

Part No.	Description	Qty.	Reference Designation
N027211140	SPLIT LOCK WASHER 3.1X5.7X0.7BLK	10	
N027213160	SPLIT LOCK WASHER 4.2X7.3X1 AN	4	
N027415140	STAR WASHER M4	2	
N032027454	FRONT PANEL K2600R	1	
N032028142	BOTTOM K2600R	1	
N032028232	TOP K2600R	1	
N032028334	KNOB P/N BPLG-10T	1	
N032028741	FAN	1	
N032035211	FRONT PANEL PCB MOUNTING BRACKET	1	
N032035411	POWER INVERTOR PCB SHIELD	1	
N032037012	DIGITAL I/O OPTICAL OUT COVER K2600/X/R	1	
N032037112	SAMPLING OPTION INPUT COVER PLATE	1	
N032039316	BRACKET ROM RACK ASSY K2600RS	1	
N032055901	PLATE COVER KDS I/O K2600/X	1	
N032059001	PLATE COVER PCB K2600R	1	
N033247001	PCB FAB P/RAM FAKE	1	
N035020621	LCD WINDOW K2000R	1	
N035040200	POWER S/W KNOB K2000R/2500R	1	
N039017801	FOAM HOLDING ROM OPTION 6X10X35	1	
N039040005	BUMPON 3M SJ-5518 BLK	4	
N092000504	LCD PROTECT SHEET 0.05X100X200	0.01	
N125223410	TAPPING SCREW-2 BH 3X10 AN (PLASTIC)	2	
N032028333	SPIN KNOB	1	
N032022015	RACK EARS-RS044 PURPLE	2	
N015000311	POWER CABLE 240V (EUROPE)	1	
N052001002	ADAPTER 120V	1	

K2600 Series Keyboard Models

Audio Board, N012305611

Part No.	Description	Qty.	Reference Designation
N032055801	BRACKET SUPPORT AUDIO PCB ASSY K2600X	1	BRACKET
N041025305	HEADER .156" SP 5P (09-65-2058	1	J602
N041031216	HEADER .1" SP DUAL ROW 16P (057-016-153)	1	J601
N041031217	CONN 1/4" PHONE STEREO STRT UNSWITCHED	11	J603-610, 614, 615
N041031218	CONN 1/4" PHONE STEREO STRT SWITCHED	1	J613
N041034005	HEADER .098" SP 5P (22-03-5055)	1	J611
N041034006	HEADER .098" SP 6P (22-03-5065)	1	J612
N051102103	RELAY 5V DPDT (G6H-2-DC5)	11	RY1-11
N052001711	CAP ELECT 100UF 25V 20% RAD	4	C5-6, 17, 18
N052002405	CAP ELECT 22UF 16V 20% .08 SP	1	C129
N052004203	CAP ELECT 47UF 35V 20% SHL	16	C20, 22, 24, 26, 82, 84, 86, 88, 190-197
N052005105	CAP ELECT 100UF 10V RADIAL	1	C188
N054010101	TRANSISTOR PNP KSA931	4	Q2-3, 5, 7
N054010301	TRANSISTOR NPN KSC2331-Y	2	Q4, 6
N064001502	IC LINEAR +5V LM7805 TO-220	1	VR1
N064001503	IC LINEAR -5 7905 TO-220	1	VR2
N051080401	RES TF 1.0KΩ 5% 1/10W 0805	1	R215
N051080404	RES TF 4.7KΩ 5% 1/10W 0805	1	R210
N051080410	RES TF 100Ω 5% 1/10W 0805	2	R235, 236
N051080411	RES TF 10KΩ 5% 1/10W 0805	1	R205
N051080412	RES TF 4.12KΩ 1% 1/10W 0805	8	R65-68, 133-136
N051080447	RES TF 470Ω 5% 1/10W 0805	2	R211, 214
N051080464	RES TF 4.64KΩ 1% 1/10W 0805	16	R25-28, 45-48, 93-96, 113-116
N051080576	RES TF 57.6KΩ 1% 1/10W 0805	8	R21-24, 89-92
N051080604	RES TF 6.04KΩ 1% 1/10W 0805	8	R5-8, 73-76
N051080610	RES TF 10.0KΩ 1% 1/10W 0805	26	R193-204, 206, 207, 209, 213, 216-219, 222, 223, 231-234
N051080617	RES TF 1.78KΩ 1% 1/10W 0805	8	R140-142, 161-163, 181-182
N051080628	RES TF 6.98KΩ 1% 1/10W 0805	16	R49, 51, 53, 55, 57-60, 117, 119, 121, 123, 125-128
N051080630	RES TF 30.1KΩ 1% 1/10W 0805	20	R146-151, 167-172, 185-188, 221, 224, 227, 228
N051080632	RES TF 8.45KΩ 1% 1/10W 0805	16	R9, 11, 13, 15, 17-20, 77, 79, 81, 83, 85-88
N051080633	RES TF 15.0KΩ 1% 1/10W 0805	16	R29, 31, 33, 35, 37-40, 97, 99, 101, 103, 105-108
N051080635	RES TF 3.57KΩ 1% 1/10W 0805	24	R1-4, 69-72, 137-139, 143-145, 158-160, 164-166, 179, 180, 183, 184
N051080636	RES TF 22.6KΩ 1% 1/10W 0805	8	R61-64, 129-132
N051080639	RES TF 31.6KΩ 1% 1/10W 0805	8	R10, 12, 14, 16, 78, 80, 82, 84
N051080646	RES TF 53.6KΩ 1% 1/10W 0805	8	R50, 52, 54, 56, 118, 120, 122, 124
N051080649	RES TF 4.99KΩ 1% 1/10W 0805	4	R208, 212, 237, 238
N051080675	RES TF 76.8KΩ 1% 1/10W 0805	8	R30, 32, 34, 36, 98, 100, 102, 104
N051080686	RES TF 226KΩ 1% 1/10W 0805	8	R41-44, 1 09-112
N051125201	RES TF 200Ω 1% 1/4W 1210	20	R152-157, 173-178, 189-192, 225, 226, 229, 230
N051204010	RES TF 10Ω 5% 1/2W 2010	1	R220
N051204047	RES TF 47Ω 5% 1/2W 2010	2	R239, 240

Part No.	Description	Qty.	Reference Designation
N052007503	CAP CER X7R 0.1UF 50V 10% 1206	75	C1, 3, 7-10, 14, 15, 27, 28, 69, 71, 73, 74, 78, 79, 130-187, 189
N052080012	CAP CER NPO 68PF 50V 2% 0805	8	C45-48, 105-108
N052080015	CAP CER NPO 150PF 50V 2% 0805	8	C57-60, 117-120
N052080022	CAP CER NPO 220PF 50V 5% 0805	8	C11-13, 16, 75-77, 80
N052080023	CAP CER NPO 180PF 50V 2% 0805	8	C33-36, 93-96
N052080027	CAP CER NPO 270PF 50V 2% 0805	8	C37-40, 97-100
N052080039	CAP CER NPO 1000PF 50V 2% 0805	8	C61-64, 121-124
N052080047	CAP CER NPO 2200PF 50V 1% 0805	32	C29-32, 41-44, 53-56, 65-68, 89-92, 101-104, 113-116, 125-128
N052080056	CAP CER NPO 47PF 50V 2% 0805	8	C49-52, 109-112
N053000703	DIODE RECT GP SMT 1A S1A SMA 1N4001 1206	1	D3
N053000802	DIODE SWITCH 1N4148 SMT DL-35	2	D1, 2
N054000802	TRANS MMBT2222L SOT-23	1	Q1
N061016302	IC LOGIC 74HC139 SOP16/16W	1	U1
N064003508	IC ANA OPAMP DL BIP LO-NOIS NE5532A	29	U4-11, 14-34
N263010310	IC AD1865R SOP24	4	U2, 3, 12, 13

Button Board, N012304344

Part No.	Description	Qty.	Reference Designation
N013027902	CABLE BUTTON BOARD 640M/M K2600	1	
N043010201	SWITCH TACK 6mmX3.5mm 160GF ALPS SKHLAC	2	
N045010111	LED T1 RED HI EFF DIFFUSED LTL-4221	2	
N035026139	LARGE BUTTON W/LED (9) K2600	1	
N035026140	LARGE BUTTON W/LED (10) K2600	1	

Control Panel Board, N012104341

Part No.	Description	Qty.	Reference Designation
N013025103	CABLE FRONT PANEL 880MM K2600X	1	
N013025903	CABLE ASSY CONTROL/SLIDER 51M/M K2500/X	1	
N035026101	LARGE BUTTON W/LED PC-88	10	
N035026217	LARGE BUTTON NO LED PC-88	11	
N035026244	LARGE BUTTON W/LED (3) (1,2,3) K2600	1	
N035026245	LARGE BUTTON W/LED (3) (4,5,6) K2600	1	
N035026246	LARGE BUTTON W/LED (3) (7,8,9) K2600	1	
N035026247	LARGE BUTTON W/LED (3) (+/-, 0, CLEAR) K2600	1	
N035026248	LARGE W/LED (1) (CANCEL) K2600	1	
N035026249	LARGE BUTTON W/LED (1) (ENTER) K2600	1	
N035026250	LARGE BUTTON W/LED (1) (<_>) K2600	1	
N035026251	LARGE BUTTON W/LED (1) (<_>) K2600	1	
N035026252	LARGE BUTTON W/LED (1) (<_>) K2600	2	
N035026253	LARGE BUTTON W/LED (1) (<_>) K2600	2	
N035026711	SPIN KNOB BEZEL PC-88	1	

Part No.	Description	Qty.	Reference Designation
N035028011	LCD LOCATING SUPPORT BEZEL K2500	1	
N042005401	JUMPER WIRE 13MMX4MM	67	
N043010201	SWITCH TACK 6mmX3.5mm 160GF ALPS SKHLAC	41	S1, 2, 4-10, 12-16, 19-24, 26-32, 35-48
N044010501	ENCODER 36STEP 2BIT	1	SP1
N045010111	LED T1 RED HI EFF DIFFUSED LTL-4221	8	D3-6, 9-12
N045010610	LED MINI RED/GREEN DIFUSSED T1 DKL-30RGM	2	D7, 13
N051000906	RES 10KX9 10P	1	RP1
N051005010	RES CF 1Ω 5% 1/8W	1	R3
N051100102	RES CF 15Ω 5% 1/8W	8	R1, 2, 4, 9
N051100138	RES CF 2.2KΩ 5% 1/8W	1	R10
N052001204	CAP CER MONO Z5U .1UF 50V 20% .3AX	5	C2-5, 7
N053000801	DIODE 1N4148 DO-35	12	D101-112
N054000801	TRANSISTOR PN2222 TO-92	9	Q1-8, 16
N054001201	TRANSISTOR PNP KTA1271 (KSA643CY) TO-92	6	Q9-12, 14, 15
N061013601	IC LOGIC 74HC138 DIP16	1	U2
N061014001	IC LOGIC 74HC541 DIP20	1	U1
N061020501	IC LOGIC 74HC373 DIP20	1	U3
N252003102	CAP ELECT ECE-BOJU471 470UF 6.3V VERT AX	2	C1, 6

Floppy Disk Drive Assembly, N012104666

Part No.	Description	Qty.	Reference Designation
N015000602	FLOPPY DISK DRIVE 3.5" OF SAMSUNG	1	
N025313307	MACHINE SCREW FH M3X6 BLK	2	
N025323306	MACHINE SCREW BH 3X6 BLK	4	
N027112100	FLAT WASHER 3.3X6.5X0.5	2	
N032037211	BRACKET FDD MOUNTING K2500	1	
N035028214	FDD BEZEL K2600	1	

Backlight Board, N012104311

Part No.	Description	Qty.	Reference Designation
N025223408	TAPPING SCREW-2 BH M3X8 BLK (SMALL)	4	
N032025761	BRACKET MOUNTING PCB LCD INVRT K2600/X	1	
N032035411	POWER INVERTOR PCB SHIELD	1	
N041032104	HEADER 0.2" SP 4P MOLEX (10-32-1041)	1	J2
N041034102	HEADER .098" SP 2P R/A (22-05-7025)	1	J1
N042005405	JUMPER WIRE 5MM	1	U2 (1 & 3)
N055000010	INVERTER (CXA-L10L)	1	U1

Super Ribbon Assembly, N044011513

Part No.	Description	Qty.	Reference Designation
N041021551	CONNECTOR FFC/FPC GVERSION (15-38-8050)	1	
N044011511	SUPER RIBBON CONTROLLER K2500	1	

Pitch & Mod Wheel Assembly, N012304338

Part No.	Description	Qty.	Reference Designation
N013025904	CABLE PITCH & MOD WHEEL K2500/X	1	
N051102301	POT ROTARY 10K (K2000)	2	
N032021811	BUSHING 8.0X26K2000	1	
N032021911	SPRING TORSION MUSIC WIRE	1	
N032037311	BRACKET PITCH & MOD WHEEL MOUNTING	1	
N035020311	PITCH & MOD WHEEL	1	
N044011411	CHEEK BLOCK RIBBON CONTROLLER K2500	1	
N035028114	CHEEK BLOCK K2600	1	
N035028113	CHEEK BLOCK (WD GR) BF K2500AES		

Player Control Board, N012104337

Part No.	Description	Qty.	Reference Designation
N025323304	MACHINE SCREW BH M3X4 BLK	4	SCREW
N032037511	BRACKET PLAYER CONTROL PCB MOUNTING	1	BRACKET
N041030004	HEADER .1" SP 4P (22-27-2041)	1	J404
N041033104	HEADER .1" SP WHITE R/A 4P	1	J403
N041034005	HEADER .098" SP 5P (22-03-5055)	1	J406
N041034006	HEADER .098" SP 6P (22-03-5065)	1	J402
N041034010	HEADER .098" SP 10P (22-03-5105)	1	J401
N041034120	FCC/FPC ZIF CONN 0.1" SP 5P MOLEX	1	J405
N051100103	RES CF 10Ω 5% 1/8W	1	R11
N051100110	RES CF 91Ω 5% 1/8W	1	R10
N051100115	RES CF 150Ω 5% 1/8W	2	R33, 34
N051100132	RES CF 1KΩ 5% 1/8W	1	R6
N051100134	RES 1.5KΩ 1/8W 5%	1	R32
N051100138	RES CF 2.2KΩ 5% 1/8W	2	R9, 31
N051100145	RES CF 4.7Ω 5% 1/8W	1	R36
N051100157	RES CF 10Ω 5% 1/8W	4	R16, 20, 29, 30
N051100161	RES CF 20KΩ 1/8W 5%	1	R35
N051100179	RES CF 100Ω 5% 1/8W	9	R1-4, 7, 8, 12, 14, 18
N051100182	RES CF 200KZ 5% 1/8W	1	R19
N051100183	RES CF 150K 1/8W 5%	1	R5
N051100191	RES CF 240KΩ 5% 1/8W	4	R22, 23, 26, 27
N051100208	RES CF 390KΩ 5% 1/8W	2	R24, 28

Part No.	Description	Qty.	Reference Designation
N051101411	POT 50K 3/4 TURN TOP/BOT EVN-D8AA03B54	3	R13, 15, 17
N051101412	POT 100K 3/4 TURN TOP/BOT EVN-P8AA03B15	2	R21, 25
N052001204	CAP CER MONO Z5U .1UF 50V 20% .3AX	5	C1-4, 7
N052001210	CAP CER MONO 0.022UF 50V Z5U	2	C5, 6
N053000401	DIODE 1N270	2	D1, 2
N053000701	DIODE 1N4001 DO-41	1	D7
N053000801	DIODE 1N4148 DO-35	8	D3-6, 8-11
N054000101	TRANSISTOR GP NPN 2N3904 TO-92	1	Q2
N054000201	TRANSISTOR 2N3906	1	Q3
N054001201	TRANSISTOR PNP KTA1271 (KSA643CY) TO-92	1	Q1
N061008110	IC 74HC4051 DUAL MUX DIP16	1	U2
N064001903	IC LINEAR OPAMP TLC2272CP DIP8	3	U3-5
N064010030	IC LM339 QUAD COMP DIP14	1	U1

AC Entry Module, N012104111

Part No.	Description	Qty.	Reference Designation
N013026090	CABLE ASSY AC ENTRY POWER 190M/M K2500/X	1	
N013026091	CABLE ASSY AC ENTRY GROUND 300M/M K2500/X	1	
N051101114	RES CF 56Ω 5% 1W METAL OXIDE	1	
N052003529	CAP METALIZED FILM 0.47UF 250V	1	
N241033601	POWER MODULE 5EFM4S	1	
N043010604	FUSE SLOW-BLOW 250V 1.25A 5X30MM	1	
N043010605	FUSE TIME-LAG 250V 0.63A 5X20MM (EUROPE)	2	

Power Supply Board, N012304339

Part No.	Description	Qty.	Reference Designation
N013039203	CABLE ADD POWER SUPPLY K2600/S/X/XS/R/RS	1	
N025224508	TAPPING SCREW-2 BH 3.5X8 WHITE W/WASHER	10	
N025323408	MACHINE SCREW BH M4X8 BLK	2	
N032020435	CLAMP COMP-HEAT SINK 3-GANG TO220-TO180	1	@D3, Q2, 3
N032020436	CLAMP COMP-HEATSINK 2-GANG TO220-TO218	2	@VR1, 2, 5, 6
N032031001	RG-X HEATSINK SUPPORT BRACKET	2	
N032055402	HEATSINK K2600/X	1	
N032059601	BRACKET GROUNDING HEAT SINK K2600/X	2	
N041025302	HEADER .156SP 2P (09-65-2028)	1	J102
N041025305	HEADER .156" SP 5P (09-65-2058)	1	J107
N041025306	HEADER .156" SP 6P (09-65-2068)	1	J101
N041025308	HEADER .156" SP 8P (09-65-2088)	1	J105
N041034002	HEADER .098" SP 2P (22-03-5025)	1	J103
N041034003	HEADER .098" SP 3P (22-03-5035)	1	J104
N041034004	HEADER .098" SP 4P (22-03-5045)	1	J106

Part No.	Description	Qty.	Reference Designation
N041034005	HEADER .098" SP 5P (22-03-5055)	1	J108
N049010102	INSULATION PAD 15X20MM W/O HOLE	3	@VR5, VR1, VR2
N049010110	INSULATION PAD (MICA PAD)	4	@D3, Q2, Q3, VR6
N051100103	RES CF 10Ω 5% 1/8W	5	R31, 36, 38, 39, 40
N051100113	RES CF 100Ω 5% 1/8W	2	R17, 28
N051100115	RES CF 150Ω 5% 1/8W	1	R27
N051100117	RES CF 200Ω 5% 1/8W	2	R33, 37
N051100120	RES CF 330Ω 5% 1/8W	1	R32
N051100123	RES CF 510Ω 5% 1/8W	1	R34
N051100132	RES CF 1KΩ 5% 1/8W	5	R5-7, 18, 35
N051100137	RES CF 2KΩ 5% 1/8W	2	R10, 42
N051100141	RES CF 3KΩ 5% 1/8W	2	R24, 41
N051100145	RES CF 4.7Ω 5% 1/8W	4	R8, 13, 14, 23
N051100160	RES CF 15KΩ 5% 1/8W	3	R20, 21, 30
N051100256	RES MF 165KΩ 1% 1/8W	1	R25
N051100354	RES MF 10.0Ω 1% 1/8W	9	R1-4, 11, 12, 15, 16, 22
N051100359	RES MF 84.5KΩ 1% 1/8W	1	R19
N051100399	RES MF 499Ω 1% 1/8W	1	R29
N051100457	RES MF 357Ω 1% 1/8W	1	R26
N051101401	RES POT 100K 3/4 TURN	1	R9
N052001204	CAP CER MONO Z5U .1UF 50V 20% .3AX	13	C1-5, 7, 8, 14, 15, 18, 19, 22, 28
N052001711	CAP ELECT 100UF 25V 20% RAD	2	C16, 17
N052001713	CAP ELECT 4700UF 25V	1	C9
N052002401	CAP ELECT 100UF 16V 20% .138 SP	5	C20, 21, 26, 27, 30
N052002414	CAP ELECT 220UF 16V	2	C6, 23
N052004204	CAP ELECT 2200UF 35V 20% RAD	2	C11, 12
N052005105	CAP ELECT 100UF 10V RADIAL	1	C29
N052005108	CAP ELECT 220UF 6.3V RADIAL	1	C24
N052005203	CAP ELECT 33000UF 16V	1	C10
N052005300	CAP CER MONO 470PF 200V 5% NPO AX	2	C13, 25
N053000701	DIODE 1N4001 DO-41	3	D2, 9, 11
N053000901	DIODE ZENER 5.1V 1N5231B	1	D10
N053001001	DIODE ZENER 6.1V 1N5234	1	D8
N053002201	DIODE MBR1535	1	D3
N053010001	DIODE KBU8B (8.0AMP)	1	D1
N053020101	DIODE AMP 1N4002 (1A)	4	D4-7
N054000004	TRN PWR MOSFET IRFZ34N55V 0.04Ω 29A TO-220	2	Q2, 4
N054000602	TRANSISTOR PN2907 TO-92	1	Q1
N054000801	TRANSISTOR PN2222 TO-92	3	Q3, 5, 6
N064001502	IC LINEAR +5V LM7805 TO-220	2	VR5, 7
N064010001	IC LINEAR TL074CP DIP14	1	U1
N064010206	IC LINEAR KA78T12AC	1	VR6
N064010301	IC LINEAR VOLT REG +15 LM7815 (TO-220)	1	VR1
N064010401	IC LINEAR VOLT REG -15 LM7915 (TO-220)	1	VR2
N064010801	IC LINEAR +12V 7812 TO-220	1	VR3
N064010901	IC LINEAR -12V LM7912 TO-220	1	VR4

Keyboard Scanner Board, N012305415

Part No.	Description	Qty.	Reference Designation
N041010302	JUMPER .1" SP 2POS JUMPER	1	@J703 PINS 1& 2
N041021128	IC SOCKET .6W 28P	1	@U4
N041030003	HEADER .1" SP 3P (22-03-2031)	2	J703
N041030511	HEADER .098" SP 7P (22-03-5075)	1	J702
N041031210	CONN .1" SP DUAL ROW 14P (057-014-153)	1	J714
N041031220	HEADER .1" SP DUAL ROW 20P (057-020-153)	1	J705
N041031240	CONN .1" SP DUAL ROW 40P (057-040-153)	1	J704
N041034005	HEADER .098" SP 5P (22-03-5055)	1	J709
N041034010	HEADER .098" SP 10P (22-03-5105)	1	J701
N041034411	CONN STEREO 1/8" W/SWITCH UNITOP	1	J708
N041034501	PHONE JACK STEREO 1/4" RA49C-14B	6	J706, 707, 710-713
N051102302	POT R/A 10K 12RV03 (JUNG POONG)	1	R89
N052002401	CAP ELECT 100UF 16V 20% .138 SP	2	C15, 17
N052002405	CAP ELECT 22UF 16V 20% .08 SP	1	C9
N052004201	CAP ELECT 10UF 35V 20% .08SP	1	C22
N052005105	CAP ELECT 100UF 10V RADIAL	2	C10, 18
N051064010	RES TF 100Ω 5% 1/16W 0603	28	R26-41, 43-54
N051064110	RES TF 10Ω 5% 1/16W 0603	33	R11-19, 21, 22, 55-72, 75, 79, 80, 87
N051100392	RES MF 1MΩ 1% 1/8W 1206	1	R76
N051100393	RES TF 1.10MΩ 1% 1/8W 1206	1	R82
N051101279	RES TF 4.32KΩ 1% 1/8W 1206	1	R90
N051101700	RES CF 0Ω 5% 1/8W 1206	3	R4, 23, 42
N051101704	RES CF 10Ω 5% 1/8W 1206	1	R2
N051101713	RES CF 100Ω 5% 1/8W 1206	4	R24, 77, 91, 101
N051101730	RES CF 1.0KΩ 5% 1/8W 1206	10	R3, 6-10, 92-95
N051101745	RES CF 4.7KΩ 5% 1/8W 1206	2	R73, 103
N051101757	RES CF 10KΩ 5% 1/8W 1206	5	R96-99, 104
N051101760	RES CF 20KΩ 5% 1/8W 1206	1	R102
N051101790	RES CF 1.0MΩ 5% 1/8W 1206	2	R1, 5
N051101794	RES CF 1.5MΩ 5% 1/8W 1206	1	R85
N051103020	RES CF 2.21KΩ 1% 1/8W 1206	1	R100
N051103059	RES MF 20KΩ 1% 1/8W 1206	1	R81
N051103061	RES TF 34.8KΩ 1% 1/8W 1206	1	R88
N051103070	RES MF 100KΩ 1% 1/8W 1206	2	R83, 86
N051103073	RES CF 165KΩ 1% 1/8W 1206	1	R84
N051103097	RES CF 49.9KΩ 1% 1/8W 1206	1	R78
N052007033	CAP CER 33PF 50V 5% NPO 1206	2	C1, 3
N052007402	CAP CER 1000PF X7R 1206	8	C11, 13, 16, 20, 23-26
N052007503	CAP CER X7R 0.1UF 50V 10% 1206	20	C2, 4-8, 12, 14, 19, 21, 27-36
N053000802	DIODE SWITCH 1N4148 SMT DL-35	15	D1-6, 10-18
N053010502	DIODE SHOTTKY 1A 20V 5817(SS12) SMT	3	D7-9
N054000802	TRANSISTOR MMBT2222L SOT-23	1	Q3
N054002906	TRANSISTOR MMBT2907L SOT-23	3	Q1, 2, 4
N059010050	XTL 12.0000MHz +/-50PPM FND PAR 18PF SMT	1	Y1

Part No.	Description	Qty.	Reference Designation
N061013851	IC LOGIC 74HC164 SOP14	2	U5, 6
N061013902	IC LOGIC 74HC273A SOP20	1	U8
N061014003	IC LOGIC MC74HC541DW SOP-20	1	U2
N062005704	IC GAL 16V8A-15QJ SMT PLCC20	1	U3
N062100101	IC SRAM 32KX8 70nS SOP28 GM76C256A70	1	U7
N064001302	IC LINEAR +5V 100MA 5% 78L05ACM SOP-8	1	VR1
N064001602	IC LINEAR OPAMP TL072 SOP8-160	1	U9
N262001602	IC M37451M8-283FP	1	U1
N062200406	IC EP-ROM OTP AT27C 256R-12PC	1	

Slider Board, N012104345

Part No.	Description	Qty.	Reference Designation
N035026101	LARGE BUTTON W/LED PC-88	3	BUTTON
N035026128	LARGE BUTTON W/LED (1) K2600	1	BUTTON
N035026129	LARGE BUTTON W/LED (2) K2600	1	BUTTON
N035026130	LARGE BUTTON W/LED (3) K2600	1	BUTTON
N035026131	LARGE BUTTON W/LED (4) K2600	1	BUTTON
N035026132	LARGE BUTTON W/LED (5) K2600	1	BUTTON
N035026133	LARGE BUTTON W/LED (6) K2600	1	BUTTON
N035026134	LARGE BUTTON W/LED (7) K2600	1	BUTTON
N035026135	LARGE BUTTON W/LED (8) K2600	1	BUTTON
N035026321	SLIDER KNOB PC-88	9	KNOB
N035026411	SLIDER BEZEL PC-88	9	BEZEL
N039000701	SLIDE VOLUME FELT 0.3TX12X70	9	FELT
N041030020	HEADER SIP .098" SP 4P R/A (22-02-7045)	1	J304
N041030021	HEADER SIP .098" SP 6P R/A (22-02-7065)	1	J301
N041030030	HEADER DUAL ROW 1" SP 16P R/A	1	J303
N041034107	CONN RIGHT .098 SP 7P (22-05-7075)	1	J302
N043010201	SWITCH TACK 6mmX3.5mm 160GF ALPS SKHLAC	11	S1-11
N045010610	LED MINI RED/GREEN DIFUSSED T1 DKL-30RGM	11	D1-11
N051101502	SLIDER VOLUME SINGLE 10KB-LIN 45mm	8	R1-8
N051101610	SLIDER VOLUME 10KAX2 45MM GOLDSTAR ALPS	1	R9
N052001204	CAP CER MONO Z5U .1UF 50V 20% .3AX	1	C1
N061008110	IC 74HC4051 DUAL MUX DIP16	1	U1

K2600/K2600S

LCD Board, N012103794

Part No.	Description	Qty.	Reference Designation
N013040200	CABLE ASSY LCD DATA 350M/M K2600	1	
N245010315	LCD DISPLAY 240X64 TIANMA (TM24064KFG)	1	

Final Assembly, N012002131

Part No.	Description	Qty.	Reference Designation
N013027304	CABLE SUPER RIBBON EXTENSION K2600X	1	
N013027703	CABLE FLOPPY POWER 635MM K2600/X	1	
N013030951	CABLE TIE	20	
N013039101	CABLE POWER SUPPLY TO ENGINE 460M/M	1	
N013039201	CABLE POWER SUPPLY TO AUDIO 1100M/M	1	
N013039302	CABLE SLIDER TO AUDIO 260MM K2600X	1	
N013039401	CABLE PWR SUP TO INVERTER 260MM K2600/X	1	
N013039501	CABLE SCANNER TO SLIDER 380MM K2600/X	1	
N013039601	CABLE SCANNER TO PWR SUP 630MM K2600/X	1	
N013039701	CABLE PLAYER CONTROL TO SCANNER 400MM	1	
N013039801	CABLE FAN POWER 260MM K2600/X/R	1	
N013039901	CABLE FLOPPY DATA 610MM K2600/X	1	
N013040000	CABLE ENGINE TO AUDIO 365MM K2600/X	1	
N013040101	CABLE ENGINE TO SCANNER 120MM K2600/X	1	
N013040501	CABLE KEYBOAD K2600	1	
N015000121	TRANSFORMER ASSY K2600	1	
N015047014	FELT (W/ONE SIDE ADHESIVE) 1TX10X1000 BLK	2	
N015048232	FELT 2TX20X1200 BLK KEYBOARD K2500/S	1	
N022002701	EDGE HOLDING SUPPORT RICHCO EHCBS-5-01	5	
N022002702	BUTTON SUPPORT DONG-A DABS12R	3	
N022002703	SPACER PUSH LOCKING 8.0MM TALL	2	
N022003714	CABLE CLAMP 14P	2	
N022003716	CABLE CLAMP 16P	2	
N022003720	CABLE CLAMP 20P	2	
N022003734	CABLE CLAMP 34P	3	
N022003740	CABLE CLAMP 40P	3	
N022003750	CABLE CLAMP 50P	2	
N022003801	FLAT CABLE CLAMP (DAFCC 2519)	1	
N024020003	CUSHION 14X8T(YDP)	1	
N025153512	TAPPING SCREW-1 TH 3.5X12 BLK	8	
N025153520	TAPPING SCREW-1 TH 3.5X20 BLK	16	
N025223408	TAPPING SCREW-2 BH M3X8 BLK (SMALL)	1	
N025224508	TAPPING SCREW-2 BH 3.5X8 WHITE W/WASHER	31	
N025323306	MACHINE SCREW BH 3X6 BLK	12	

Part No.	Description	Qty.	Reference Designation
N025323308	MACHINE SCREW BH M3X8 BLK	1	
N025323310	MACHINE SCREW BH M3X10 BLK	8	
N025323408	MACHINE SCREW BH M4X8 BLK	39	
N025328310	MACHINE SCREW BH 3X10 BLK W/WASHER	4	
N025328328	MACHINE SCREW BH 3X28 W/SF WASHER	4	
N025693322	SCSI BOLT (WHITE)	8	
N025723510	TAPPING SCREW-2 BH 3.5X10 BLK W/SF	8	
N027415140	STAR WASHER M4	2	
N032027001	PLATE COVER ACCESS PCB K2600	1	
N032028741	FAN	1	
N032033913	BRACKET TOP CLAMPING (LEFT) K2600/S/X/XS	2	
N032036412	ENCLOSURE BOTTOM 76 K2600	1	
N032037012	DIGITAL I/O OPTICAL OUT COVER K2600/X/R	1	
N032037112	SAMPLING OPTION INPUT COVER PLATE	1	
N032038911	BRACKET SUPPORT ROM CONNECTOR KEYBD	1	
N032055901	PLATE COVER KDS I/O K2600/X	1	
N032059301	BRACKET LOCKING ENDCAP K2600/X	2	
N033247001	PCB FAB P/RAM FAKE	1	
N035020711	KNOB ENCODER 52	1	
N035027911	LCD WINDOW K2500	1	
N035028314	SUPER RIBBON CONTROLLER K2600 ENDCAP	2	
N039000141	PROTECTIVE SEET K2500/X	1	
N039004322	CABLE MOUNT BASE (DAMD-10)	5	
N039017801	FOAM HOLDING ROM OPTION 6X10X35	1	
N125223408	TAPPING SCREW-2 BH 3X8 BLK (PLASTIC)	4	
N125223410	TAPPING SCREW-2 BH 3X10 AN (PLASTIC)	2	
N215040310	KYBD TP-8P W/AFTERTOUCH STRIP 76-Note	1	
N032027713	ENDCAP LEFT	1	
N032027813	ENDCAP RIGHT	1	
N032036812	SUPPORT WALL EXTRUSION 76-Note	1	
N032035715	ENCLOSURE TOP	1	
N039040004	BUMPON 3M SJ-5514 BLACK	4	
N015000302	POWER CABLE AC SJT 110V	1	
N015000311	POWER CABLE 240V (EUROPE)	1	
N052001002	ADAPTER 120V	1	
N125223408	TAPPING SCREW-2 BH 3X8 BLACK (PLASTIC)	16	

Keyboard Assembly, N215040311

Part No.	Description	Qty.	Reference Designation
	PCB KEY CONTACT LOW		
	PCB KEY CONTACT HIGH		
	KEY CONTACT STRIP (12 NOTE)		
	BRACKET ROD/KEY WEIGHT SUPPORT 12 PO		
	KEY PIVOT		
	BRACKET ROD/KEY WEIGHT SUPPORT 4 POS		
	KEY NATURAL A		
	KEY NATURAL B		
	KEY NATURAL C		
	KEY NATURAL D		
	KEY NATURAL E		
	KEY NATURAL F		
	KEY NATURAL G		
	KEY NATURAL LOW A		
	KEY NATURAL HIGH C		
	KEY SHARP		
	KEY WEIGHT NATURAL		
	KEY WEIGHT SHARP		
	FELT RED		
	AFTER TOUCH STRIP		

K2600X/K2600XS/K2600 AES

LCD Board, N012103798

Part No.	Description	Qty.	Reference Designation
N013040200	CABLE ASSY LCD DATA 350M/M K2600	1	
N245010315	LCD DISPLAY 240X64 TIANMA (TM24064KFG)	1	

Final Assembly, N012000133

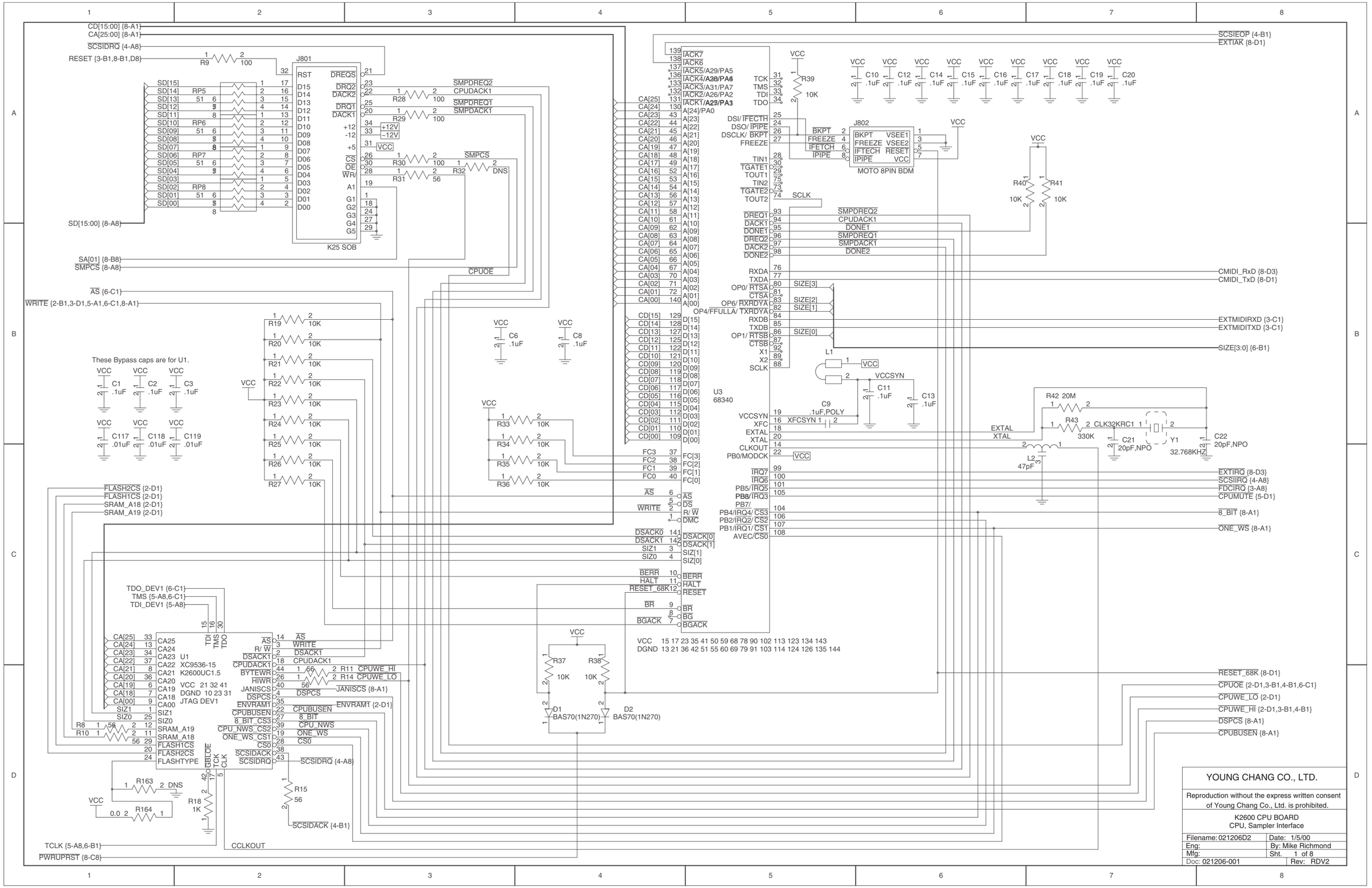
Part No.	Description	Qty.	Reference Designation
N013027304	CABLE SUPER RIBBON EXTENSION 860MM	1	
N013027703	CABLE FLOPPY POWER 635MM	1	
N013030951	CABLE TIE	20	
N013039101	CABLE POWER SUPPLY TO ENGINE 460M/M	1	
N013039201	CABLE POWER SUPPLY TO AUDIO 1100M/M	1	
N013039302	CABLE SLIDER TO AUDIO 260MM K2600X	1	
N013039401	CABLE POWER SUPPLY TO INVERTER 260MM	1	
N013039501	CABLE SCANNER TO SLIDER 380MM K2600/X	1	
N013039601	CABLE SCANNER TO POWER SUPPLY 630MM	1	
N013039701	CABLE PLAYER CONTROL TO SCANNER 400MM	1	
N013039801	CABLE FAN POWER 260MM K2600/X/R	1	
N013039901	CABLE FLOPPY DATA 610MM K2600/X	1	
N013040000	CABLE ENGINE TO AUDIO 365MM K2600/X	1	
N013040101	CABLE ENGINE TO SCANNER 120MM K2600/X	1	
N013040801	CABLE KEYBOARD K2600X	1	
N015000122	TRANSFORMER ASSY K2600X	1	
N015047014	FELT (W/ ONE SIDE ADHESIVE) 1TX10X1000 BLK	2	
N015048236	FELT 2TX17X1300 BLK KRYBOARD	1	
N022002701	EDGE HOLDING SUPPORT RICHCO EHCBS-5-01	5	
N022002702	BUTTON SUPPORT DONG-A DABS12R	3	
N022002703	SPACER PUSH LOCKING 8.0MM TALL	2	
N022003714	CABLE CLAMP 14P	2	
N022003716	CABLE CLAMP 16P	2	
N022003720	CABLE CLAMP 20P	2	
N022003734	CABLE CLAMP 34P	2	
N022003740	CABLE CLAMP 40P	3	
N022003750	CABLE CLAMP 50P	2	
N022003801	FLAT CABLE CLAMP (DAFCC 2519)	2	
N024020003	CUSHION 14X8T(YDP)	1	
N025223408	TAPPING SCREW-2 BH M3X8 BLK (SMALL)	1	
N025224508	TAPPING SCREW-2 BH 3.5X8 WHITE W/WASHER	33	
N025323306	MACHINE SCREW BH 3X6 BLK	12	
N025323308	MACHINE SCREW BH M3X8 BLK	3	
N025323310	MACHINE SCREW BH M3X10 BLK	8	

Part No.	Description	Qty.	Reference Designation
N025323408	MACHINE SCREW BH M4X8 BLK	39	
N025328310	MACHINE SCREW BH 3X10 BLK W/WASHER	4	
N025328328	MACHINE SCREW BH 3X28 W/SF WASHER	4	
N025328610	MACHINE SCREW BH 4X10 W/SF WASHER BLK	10	
N025693322	SCSI BOLT (WHITE)	8	
N025723510	TAPPING SCREW-2 BH 3.5X10 BLK W/SF	8	
N027112100	FLAT WASHER 3.3X6.5X0.5	3	
N027415140	STAR WASHER M4	4	
N032027001	PLATE COVER ACCESS PCB K2600	1	
N032028741	FAN	1	
N032033913	BRACKET TOP CLAMPING (LEFT) K2600/S/X/XS	2	
N032036413	ENCLOSURE BOTTOM 88 K2600X	1	
N032037012	DIGITAL I/O OPTICAL OUT COVER K2600/X/R	1	
N032037112	SAMPLING OPTION INPUT COVER PLATE	1	
N032037605	OPTION HOLE COVER PLATE-01 (EO39-2054)	1	
N032038911	BRACKET SUPPORT ROM CONNECTOR KYBD	1	
N032055901	PLATE COVER KDS I/O K2600/X	1	
N032059301	BRACKET LOCKING ENDCAP K2600/X	2	
N033247001	PCB FAB P/RAM FAKE K2600/S/X/XS/R/RS	1	
N035020711	KNOB ENCODER 52	1	
N035027911	LCD WINDOW K2500	1	
N035028314	SUPER RIBBON CONTROLLER K2600 ENDCAP	2	
N039000141	PROTECTIVE SEET K2500/X	1	
N039004322	CABLE MOUNT BASE (DAMD-10)	3	
N039017801	FOAM HOLDING ROM OPTION 6X10X35	1	
N125223408	TAPPING SCREW-2 BH 3X8 BLK (PLASTIC)	4	
N125223410	TAPPING SCREW-2 BH 3X10 AN (PLASTIC)	2	
N215040413	KEYBOARD TP 10MDF+AFT (ABS)	1	
N032036317	ENCLOSURE TOP 88-Note	1	
N032037412	SUPPORT WALL EXTRUSION 88-Note	1	
N039040004	BUMPON 3M SJ-5514 BLACK	4	
N015000302	POWER CABLE AC SJT 110V	1	
N015000311	POWER CABLE 240V (EUROPE)	1	
N052001002	ADAPTER 120V	1	
N032027713	ENDCAP LEFT	1	
N032027813	ENDCAP RIGHT	1	
N125223408	TAPPING SCREW-2 BH 3X8 BLACK (PLASTIC)	16	FOR ENDCAPS

Keyboard Assembly, N215040413

Part No.	Description	Qty.	Reference Designation
	PCB KEY CONTACT LOW		
	PCB KEY CONTACT HIGH		
	KEY CONTACT STRIP (12 NOTE)		
	BRACKET ROD/KEY WEIGHT SUPPORT 12 PO		
	KEY PIVOT		
	BRACKET ROD/KEY WEIGHT SUPPORT 4 POS		
	KEY NATURAL A		
	KEY NATURAL B		
	KEY NATURAL C		
	KEY NATURAL D		
	KEY NATURAL E		
	KEY NATURAL F		
	KEY NATURAL G		
	KEY NATURAL LOW A		
	KEY NATURAL HIGH C		
	KEY SHARP		
	KEY WEIGHT NATURAL		
	KEY WEIGHT SHARP		
	FELT RED		
	AFTER TOUCH STRIP		

Chapter 7
Schematics



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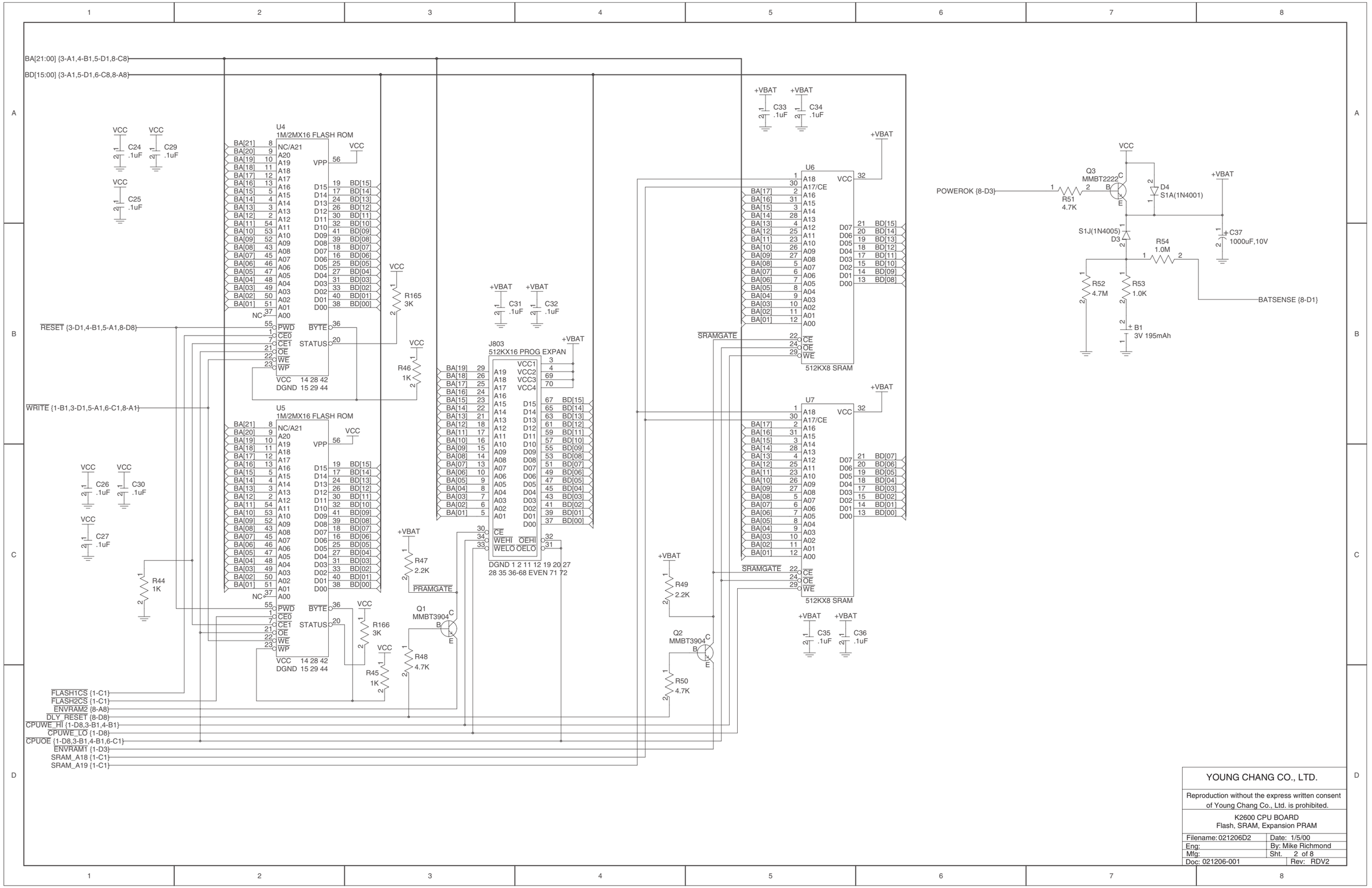
K2600 CPU BOARD CPU, Sampler Interface	
Filename: 021206D2	Date: 1/5/00
Eng:	By: Mike Richmond
Mfg:	Sht. 1 of 8
Doc: 021206-001	Rev: RDV2



YOUNG CHANG CO., LTD.	
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K2600 CPU BOARD Flash, SRAM, Expansion PRAM	
Filename: 021206D2	Date: 1/5/00
Eng:	By: Mike Richmond
Mfg:	Sht. 2 of 8
Doc: 021206-001	Rev: RDV2

BD[15:00] {2-A1,5-D1,6-C8,8-A8}
BA[21:00] {2-A1,4-B1,5-D1,8-C8}

U9
82C765
16 MHz
CLK16
C38 .1uF
C39 .1uF
C41 15pF
Y2 16.000MHz
C43 47pF
R55 2.2K
R57 2.2K
R59 2.2K
R61 2.2K
R63 2.2K
J805
FDD DATA
J820
FDD CTL DEV.
U13 74HC04
FDCIRQ {1-C8}
L5
C46 1000pF,X7R
J807
FDD POWER
FDCOUTCS {8-A8}
FDCCTRLCS {8-A8}
FDCCS {8-A8}
CPUOE {1-D8,2-D1,4-B1,6-C1}
CPUWE_HI {1-D8,2-D1,4-B1}
RESET {1-A1,8-B1,D8}
J815
MIDI
EXTMIDIRXD {1-B8}
EXTMIDITXD {1-B8}
R70 56
R69 56
R73 56
R64 56
C49 1000pF,X7R
C47 1000pF,X7R
C48 1000pF,X7R
R62 3K
U11 PC410
U43 PC910
LLN4148 D5
EXTMIDIRXDLO
R66 110
R68 110
C45 1000pF,X7R
C40 1000pF,X7R
L4
J804
240X64 LCD
LCDCONT {8-D3}
U13 74HC04
U13 74HC04
U10 74HC245
C42 .1uF
C/D {8-B8}
RESET {2-B1,4-B1,5-A1,8-D8}
WRITE {1-B1,2-B1,5-A1,6-C1,8-A1}
LCDCS {8-A8}
R60 110
Q5 MMBT2907
R74 110
S1
R71 110
EXTMIDITHRUO
C50 1000pF,X7R
R75 110
R58 110
Q4 MMBT2907
R76 110
R72 110
EXTMIDITXDO
C51 1000pF,X7R
R65 110
R67 110
C44 1000pF,X7R

YOUNG CHANG CO., LTD.	
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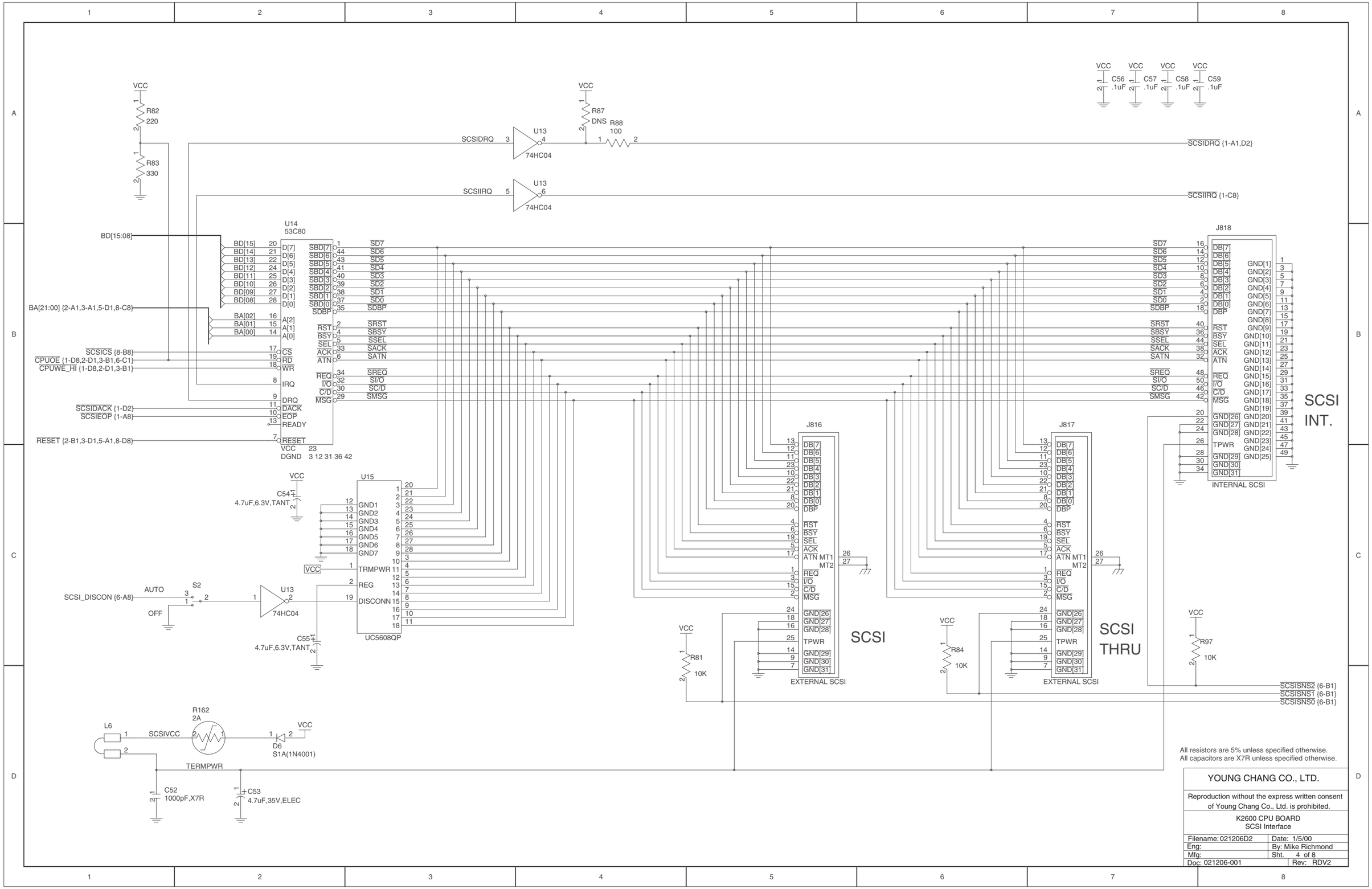
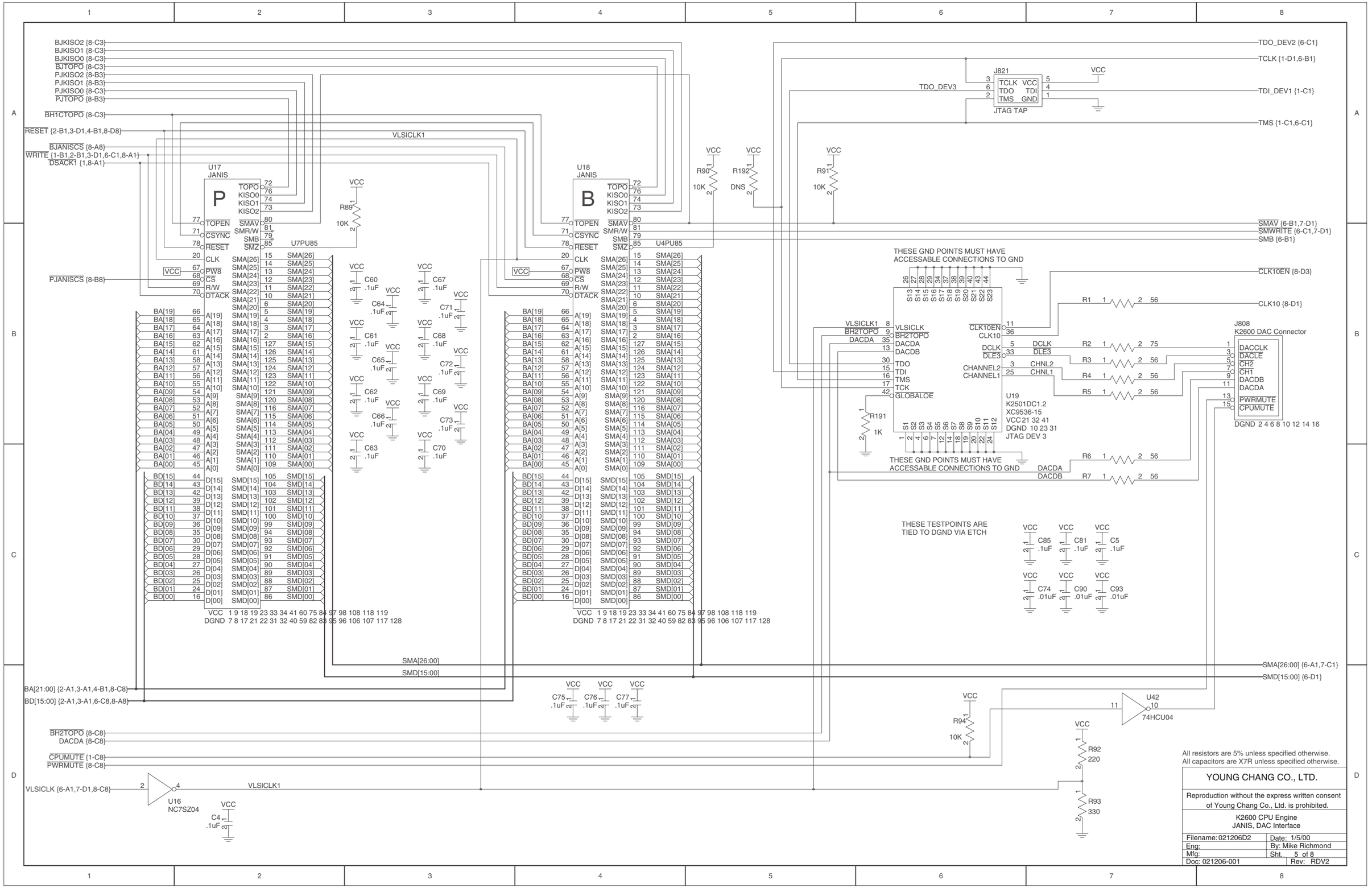
K2600 CPU BOARD FDD, LCD, MIDI Interface	
Filename: 021206D2	Date: 1/5/00
Eng:	By: Mike Richmond
Mfg:	Sht. 3 of 8
Doc: 021206-001	Rev: RDV2


SCSI INT.
SCSI
SCSI THRU
INTERNAL SCSI
EXTERNAL SCSI
EXTERNAL SCSI
U14 53C80
U15 UC5608QP
J818
J816
J817
VCC
R82 220
R83 330
R87 DNS
R88 100
C56 .1uF
C57 .1uF
C58 .1uF
C59 .1uF
U13 74HC04
SCSIDRQ
SCSIIRQ
SCSIDRQ {1-A1,D2}
SCSIIRQ {1-C8}
BD[15:08]
BA[21:00] {2-A1,3-A1,5-D1,8-C8}
SCSICS {8-B8}
CPUOE {1-D8,2-D1,3-B1,6-C1}
CPUWE_HI {1-D8,2-D1,3-B1}
SCSIDACK {1-D2}
SCSIEOP {1-A8}
RESET {2-B1,3-D1,5-A1,8-D8}
VCC 23
DGND 3 12 31 36 42
C54 4.7uF,6.3V,TANT
C55 4.7uF,6.3V,TANT
SCSI_DISCON {6-A8}
AUTO
OFF
S2
R81 10K
R84 10K
R97 10K
SCSISNS2 {6-B1}
SCSISNS1 {6-B1}
SCSISNS0 {6-B1}
L6
SCSIVCC
R162 2A
D6 S1A(1N4001)
TERMPWR
C52 1000pF,X7R
C53 4.7uF,35V,ELEC
All resistors are 5% unless specified otherwise.
All capacitors are X7R unless specified otherwise.
YOUNG CHANG CO., LTD.
Reproduction without the express written consent of Young Chang Co., Ltd. is prohibited.
K2600 CPU BOARD
SCSI Interface
Filename: 021206D2
Date: 1/5/00
Eng:
By: Mike Richmond
Mfg:
Sht. 4 of 8
Doc: 021206-001
Rev: RDV2


BJKISO2 {8-C3}
BJKISO1 {8-C3}
BJKISO0 {8-C3}
BJTOPO {8-C3}
PJKISO2 {8-B3}
PJKISO1 {8-B3}
PJKISO0 {8-C3}
PJTOPO {8-B3}
BH1CTOPO {8-C3}
RESET {2-B1,3-D1,4-B1,8-D8}
BJANISCS {8-A8}
WRITE {1-B1,2-B1,3-D1,6-C1,8-A1}
DSACK1 {1,8-A1}
PJANISCS {8-B8}
VLSICLK1
U17
JANIS
P
U18
B
TOPO
KISO0
KISO1
KISO2
TOPEN
CSYNC
RESET
SMAV
SMR/W
SMB
SMZ
U7PU85
U4PU85
CLK
PW8
CS
R/W
DTACK
SMA[26]
SMA[25]
SMA[24]
SMA[23]
SMA[22]
SMA[21]
SMA[20]
SMA[19]
SMA[18]
SMA[17]
SMA[16]
SMA[15]
SMA[14]
SMA[13]
SMA[12]
SMA[11]
SMA[10]
SMA[9]
SMA[8]
SMA[7]
SMA[6]
SMA[5]
SMA[4]
SMA[3]
SMA[2]
SMA[1]
SMA[0]
BA[19]
BA[18]
BA[17]
BA[16]
BA[15]
BA[14]
BA[13]
BA[12]
BA[11]
BA[10]
BA[09]
BA[08]
BA[07]
BA[06]
BA[05]
BA[04]
BA[03]
BA[02]
BA[01]
BA[00]
A[19]
A[18]
A[17]
A[16]
A[15]
A[14]
A[13]
A[12]
A[11]
A[10]
A[9]
A[8]
A[7]
A[6]
A[5]
A[4]
A[3]
A[2]
A[1]
A[0]
BD[15]
BD[14]
BD[13]
BD[12]
BD[11]
BD[10]
BD[09]
BD[08]
BD[07]
BD[06]
BD[05]
BD[04]
BD[03]
BD[02]
BD[01]
BD[00]
D[15]
D[14]
D[13]
D[12]
D[11]
D[10]
D[09]
D[08]
D[07]
D[06]
D[05]
D[04]
D[03]
D[02]
D[01]
D[00]
SMD[15]
SMD[14]
SMD[13]
SMD[12]
SMD[11]
SMD[10]
SMD[09]
SMD[08]
SMD[07]
SMD[06]
SMD[05]
SMD[04]
SMD[03]
SMD[02]
SMD[01]
SMD[00]
VCC 1 9 18 19 23 33 34 41 60 75 84 97 98 108 118 119
DGND 7 8 17 21 22 31 32 40 59 82 83 95 96 106 107 117 128
R89 10K
R90 10K
R192 DNS
R91 10K
C60 .1uF
C61 .1uF
C62 .1uF
C63 .1uF
C64 .1uF
C65 .1uF
C66 .1uF
C67 .1uF
C68 .1uF
C69 .1uF
C70 .1uF
C71 .1uF
C72 .1uF
C73 .1uF
C75 .1uF
C76 .1uF
C77 .1uF
TDO_DEV2 {6-C1}
TCLK {1-D1,6-B1}
TDI_DEV1 {1-C1}
TMS {1-C1,6-C1}
TDO_DEV3
J821
TCLK VCC
TDO TDI
TMS GND
JTAG TAP
SMAV {6-B1,7-D1}
SMWRITE {6-C1,7-D1}
SMB {6-B1}
THESE GND POINTS MUST HAVE
ACCESSABLE CONNECTIONS TO GND
CLK10EN {8-D3}
CLK10 {8-D1}
R1 56
VLSICLK1
BH2TOPO
DACDA
DACDB
TDO
TDI
TMS
TCK
GLOBALOE
CLK10EN
CLK10
DCLK
DLE3
CHANNEL2
CHANNEL1
CHNL2
CHNL1
R2 75
R3 56
R4 56
R5 56
R191 1K
U19
K2501DC1.2
XC9536-15
VCC 21 32 41
DGND 10 23 31
JTAG DEV 3
J808
K2600 DAC Connector
DACCLK
DACLE
CH2
CH1
DACDB
DACDA
PWRMUTE
CPUMUTE
DGND 2 4 6 8 10 12 14 16
R6 56
R7 56
THESE TESTPOINTS ARE
TIED TO DGND VIA ETCH
C85 .1uF
C81 .1uF
C5 .1uF
C74 .01uF
C90 .01uF
C93 .01uF
SMA[26:00]
SMD[15:00]
SMA[26:00] {6-A1,7-C1}
SMD[15:00] {6-D1}
BA[21:00] {2-A1,3-A1,4-B1,8-C8}
BD[15:00] {2-A1,3-A1,6-C8,8-A8}
BH2TOPO {8-C8}
DACDA {8-C8}
CPUMUTE {1-C8}
PWRMUTE {8-C8}
VLSICLK {6-A1,7-D1,8-C8}
U16
NC7SZ04
C4 .1uF
R94 10K
U42
74HCU04
R92 220
R93 330
All resistors are 5% unless specified otherwise.
All capacitors are X7R unless specified otherwise.
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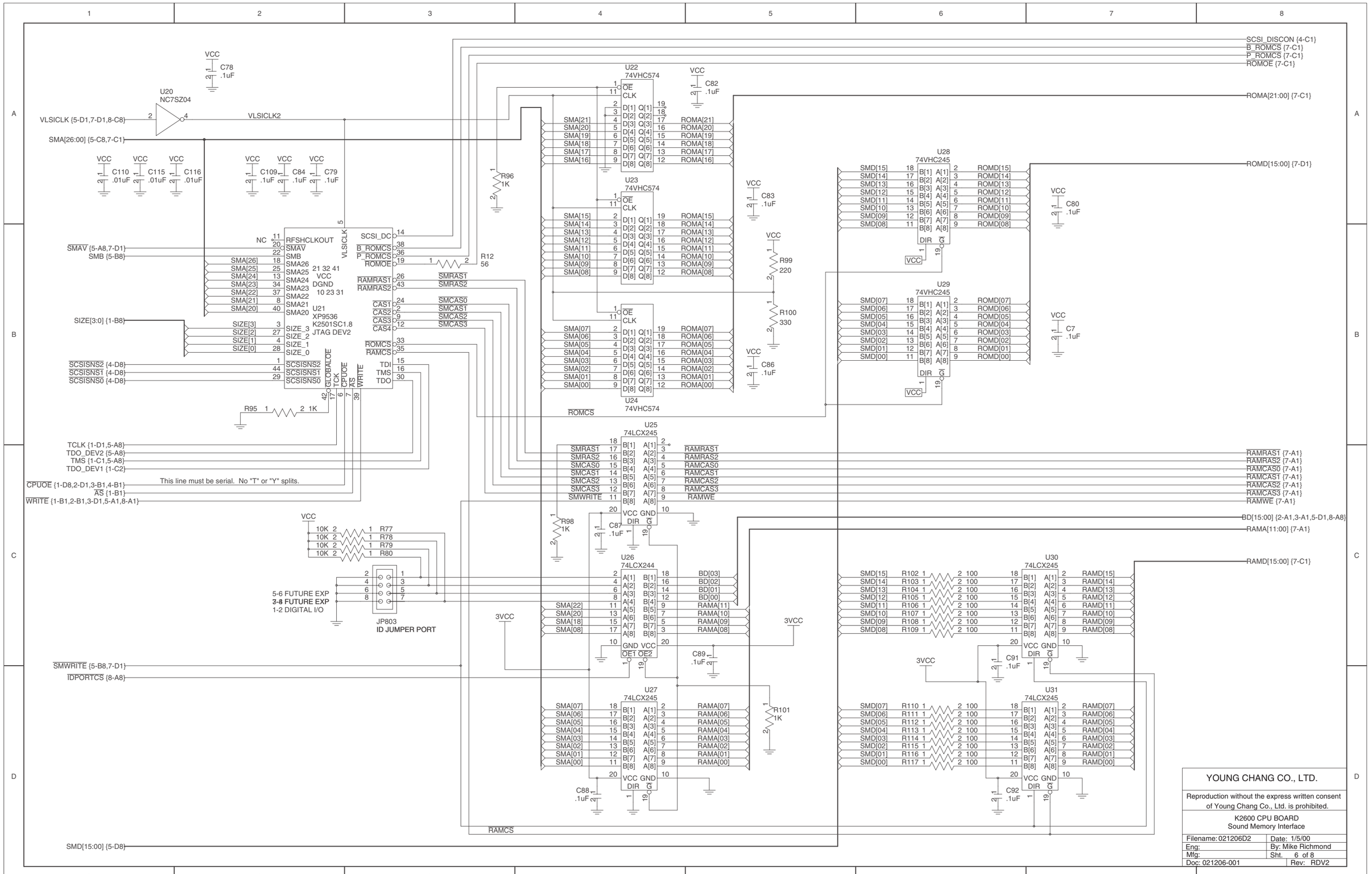
of Young Chang Co., Ltd. is prohibited.
K2600 CPU Engine
JANIS, DAC Interface
Filename: 021206D2
Date: 1/5/00
Eng:
By: Mike Richmond
Mfg:
Sht. 5 of 8
Doc: 021206-001
Rev: RDV2


VCC
C78 .1uF
U20 NC7SZ04
VLSICLK {5-D1,7-D1,8-C8}
VLSICLK2
SMA[26:00] {5-C8,7-C1}
C110 .01uF
C115 .01uF
C116 .01uF
C109 .1uF
C84 .1uF
C79 .1uF
R96 1K
U21 XP9536 K2501SC1.8 JTAG DEV2
SMAV {5-A8,7-D1}
SMB {5-B8}
SIZE[3:0] {1-B8}
SCSISNS2 {4-D8}
SCSISNS1 {4-D8}
SCSISNS0 {4-D8}
R95 1K
TCLK {1-D1,5-A8}
TDO_DEV2 {5-A8}
TMS {1-C1,5-A8}
TDO_DEV1 {1-C2}
CPUOE {1-D8,2-D1,3-B1,4-B1}
AS {1-B1}
WRITE {1-B1,2-B1,3-D1,5-A1,8-A1}
This line must be serial. No "T" or "Y" splits.
R12 56
SCSI_DISCON {4-C1}
B_ROMCS {7-C1}
P_ROMCS {7-C1}
ROMOE {7-C1}
ROMA[21:00] {7-C1}
ROMD[15:00] {7-D1}
U22 74VHC574
U23 74VHC574
U24 74VHC574
C82 .1uF
C83 .1uF
C86 .1uF
R99 220
R100 330
U28 74VHC245
U29 74VHC245
C80 .1uF
C7 .1uF
ROMCS
U25 74LCX245
SMRAS1
SMRAS2
SMCAS0
SMCAS1
SMCAS2
SMCAS3
SMWRITE
RAMRAS1
RAMRAS2
RAMCAS0
RAMCAS1
RAMCAS2
RAMCAS3
RAMWE
R98 1K
C87 .1uF
RAMRAS1 {7-A1}
RAMRAS2 {7-A1}
RAMCAS0 {7-A1}
RAMCAS1 {7-A1}
RAMCAS2 {7-A1}
RAMCAS3 {7-A1}
RAMWE {7-A1}
BD[15:00] {2-A1,3-A1,5-D1,8-A8}
RAMA[11:00] {7-A1}
RAMD[15:00] {7-C1}
R77 10K
R78 10K
R79 10K
R80 10K
5-6 FUTURE EXP
3-8 FUTURE EXP
1-2 DIGITAL I/O
JP803
ID JUMPER PORT
U26 74LCX244
U27 74LCX245
U30 74LCX245
U31 74LCX245
3VCC
C89 .1uF
C88 .1uF
C91 .1uF
C92 .1uF
R101 1K
SMWRITE {5-B8,7-D1}
IDPORTCS {8-A8}
RAMCS
SMD[15:00] {5-D8}
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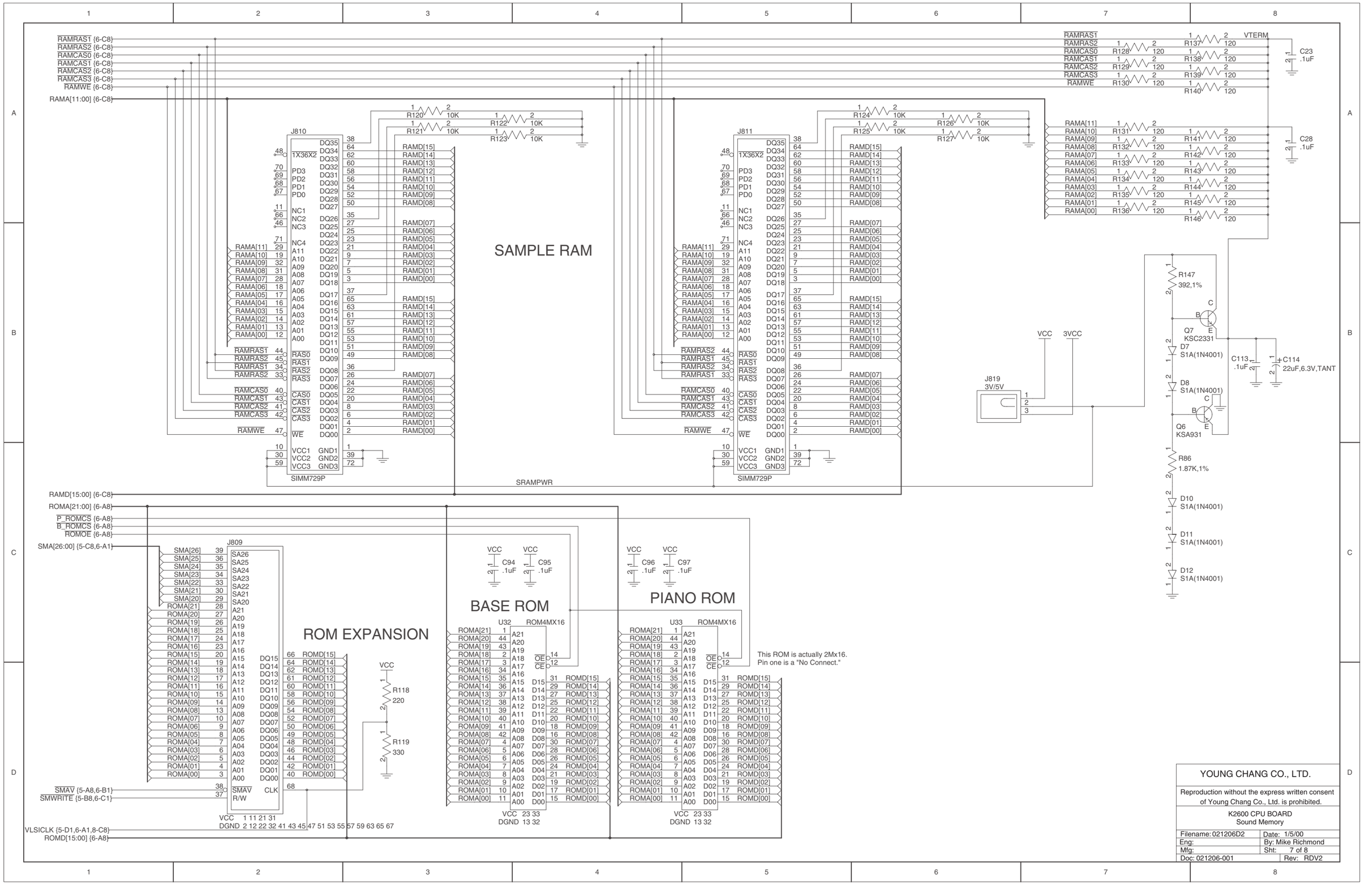
K2600 CPU BOARD
Sound Memory Interface
Filename: 021206D2
Date: 1/5/00
Eng:
By: Mike Richmond
Mfg:
Sht. 6 of 8
Doc: 021206-001
Rev: RDV2


SAMPLE RAM
ROM EXPANSION
BASE ROM
PIANO ROM
SIMM729P
J810
J811
J809
J819
U32 ROM4MX16
U33 ROM4MX16
SRAMPWR
VCC
3VCC
VTERM
This ROM is actually 2Mx16.
Pin one is a "No Connect."
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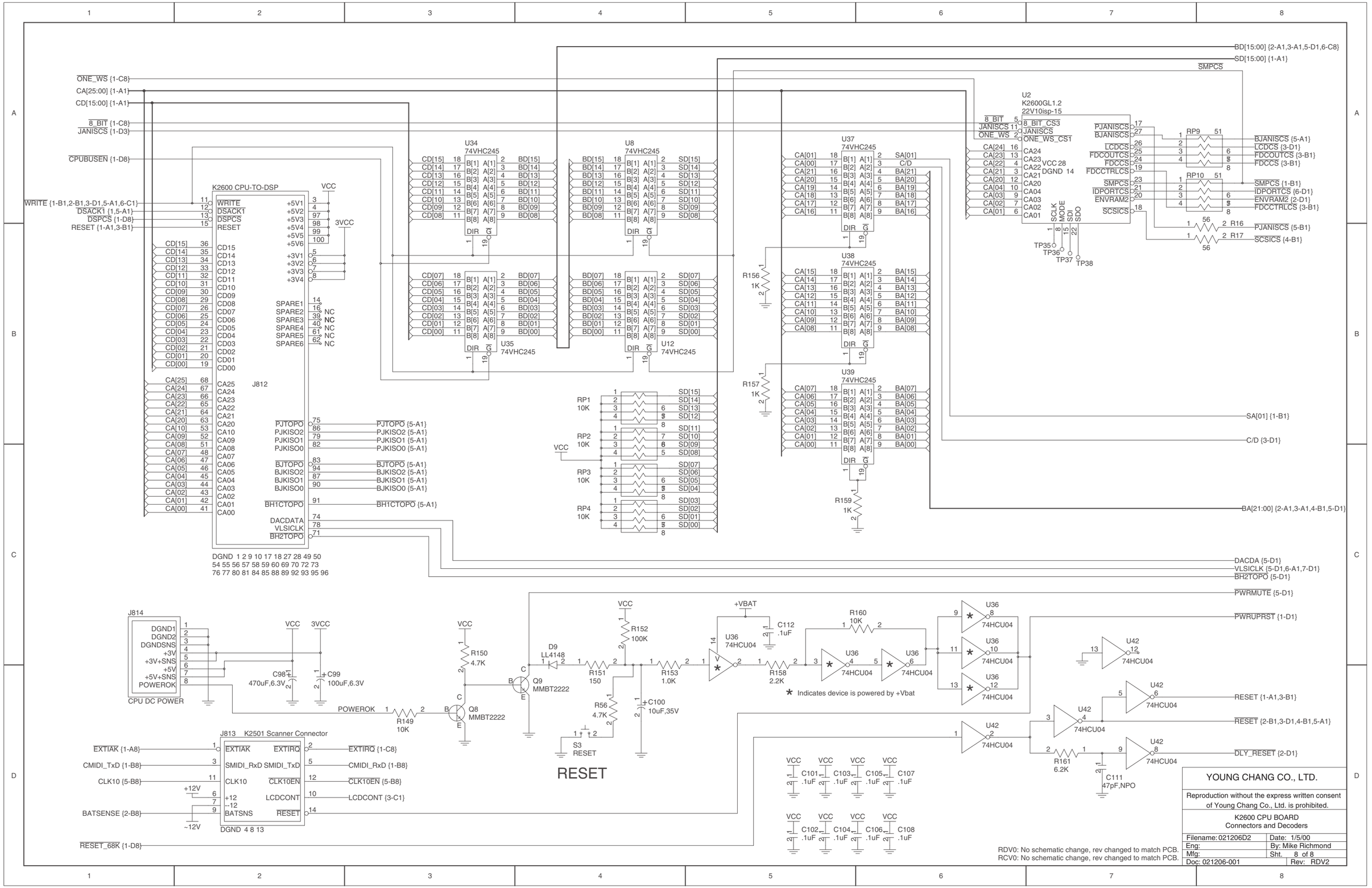
K2600 CPU BOARD
Sound Memory
Filename: 021206D2
Date: 1/5/00
Eng:
By: Mike Richmond
Mfg:
Sht: 7 of 8
Doc: 021206-001
Rev: RDV2


ONE_WS {1-C8}
CA[25:00] {1-A1}
CD[15:00] {1-A1}
8_BIT {1-C8}
JANISCS {1-D3}
CPUBUSEN {1-D8}
WRITE {1-B1,2-B1,3-D1,5-A1,6-C1}
DSACK1 {1,5-A1}
DSPCS {1-D8}
RESET {1-A1,3-B1}
K2600 CPU-TO-DSP
J812
DGND 1 2 9 10 17 18 27 28 49 50
54 55 56 57 58 59 60 69 70 72 73
76 77 80 81 84 85 88 89 92 93 95 96
VCC
3VCC
U34
74VHC245
U8
74VHC245
U35
74VHC245
U12
74VHC245
BD[15:00] {2-A1,3-A1,5-D1,6-C8}
SD[15:00] {1-A1}
SMPCS
U2
K2600GL1.2
22V10isp-15
BJANISCS {5-A1}
LCDCS {3-D1}
FDCOUTCS {3-B1}
FDCCS {3-B1}
SMPCS {1-B1}
IDPORTCS {6-D1}
ENVRAM2 {2-D1}
FDCCTRLCS {3-B1}
PJANISCS {5-B1}
SCSICS {4-B1}
TP35
TP36
TP37
TP38
U37
74VHC245
U38
74VHC245
U39
74VHC245
SA[01] {1-B1}
C/D {3-D1}
BA[21:00] {2-A1,3-A1,4-B1,5-D1}
RP1
10K
RP2
10K
RP3
10K
RP4
10K
R156
1K
R157
1K
R159
1K
DACDATA {5-D1}
VLSICLK {5-D1,6-A1,7-D1}
BH2TOPO {5-D1}
PWRMUTE {5-D1}
PWRUPRST {1-D1}
RESET {1-A1,3-B1}
RESET {2-B1,3-D1,4-B1,5-A1}
DLY_RESET {2-D1}
J814
CPU DC POWER
POWEROK
C98
470uF,6.3V
C99
100uF,6.3V
R149
10K
Q8
MMBT2222
R150
4.7K
D9
LL4148
Q9
MMBT2222
R151
150
R152
100K
R153
1.0K
R56
4.7K
C100
10uF,35V
S3
RESET
+VBAT
C112
.1uF
R160
10K
R158
2.2K
* Indicates device is powered by +Vbat
U36
74HCU04
U42
74HCU04
R161
6.2K
C111
47pF,NPO
J813 K2501 Scanner Connector
EXTIAK {1-A8}
CMIDI_TxD {1-B8}
CLK10 {5-B8}
BATSENSE {2-B8}
EXTIRQ {1-C8}
CMIDI_RxD {1-B8}
CLK10EN {5-B8}
LCDCONT {3-C1}
RESET_68K {1-D8}
C101 C103 C105 C107
C102 C104 C106 C108
.1uF
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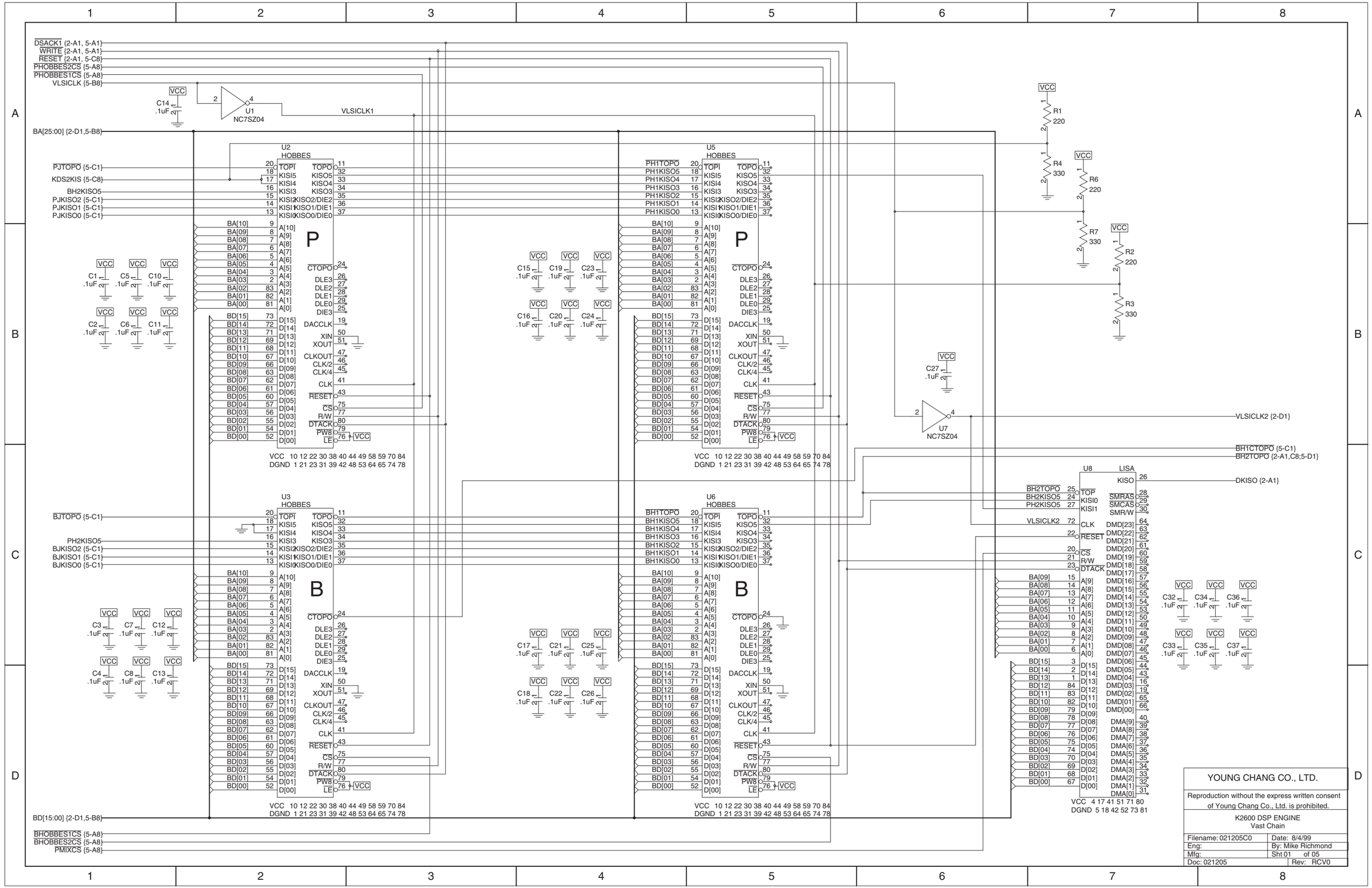
K2600 CPU BOARD
Connectors and Decoders
Filename: 021206D2
Date: 1/5/00
Eng:
By: Mike Richmond
Mfg:
Sht. 8 of 8
Doc: 021206-001
Rev: RDV2
RDV0: No schematic change, rev changed to match PCB.
RCV0: No schematic change, rev changed to match PCB.



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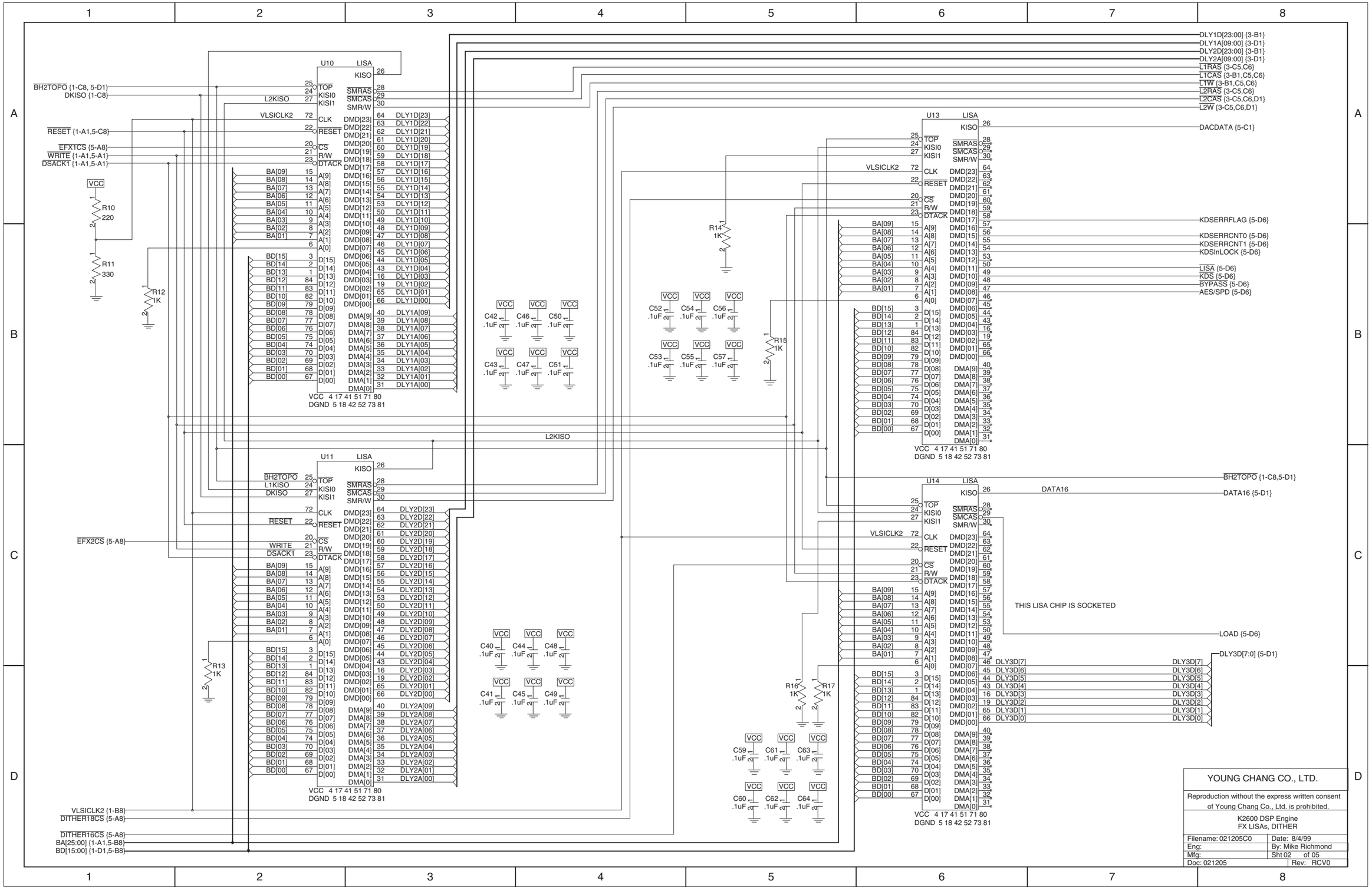
K2600 DSP ENGINE Vast Chain	
Filename: 021205C0	Date: 8/4/99
Eng:	By: Mike Richmond
Mfg:	Sht 01 of 05
Doc: 021205	Rev: RCV0


U10 LISA
U11 LISA
U13 LISA
U14 LISA
BH2TOPO {1-C8, 5-D1}
DKISO {1-C8}
L2KISO
VLSICLK2
RESET {1-A1,5-C8}
EFX1CS {5-A8}
WRITE {1-A1,5-A1}
DSACKT {1-A1,5-A1}
EFX2CS {5-A8}
L1KISO
DSACK1
VLSICLK2 {1-B8}
DITHER18CS {5-A8}
DITHER16CS {5-A8}
BA[25:00] {1-A1,5-B8}
BD[15:00] {1-D1,5-B8}
VCC 4 17 41 51 71 80
DGND 5 18 42 52 73 81
DLY1D[23:00] {3-B1}
DLY1A[09:00] {3-D1}
DLY2D[23:00] {3-B1}
DLY2A[09:00] {3-D1}
L1RAS {3-C5,C6}
L1CAS {3-B1,C5,C6}
L1W {3-B1,C5,C6}
L2RAS {3-C5,C6}
L2CAS {3-C5,C6,D1}
L2W {3-C5,C6,D1}
DACDATA {5-C1}
KDSERRFLAG {5-D6}
KDSERRCNT0 {5-D6}
KDSERRCNT1 {5-D6}
KDSInLOCK {5-D6}
LISA {5-D6}
KDS {5-D6}
BYPASS {5-D6}
AES/SPD {5-D6}
BH2TOPO {1-C8,5-D1}
DATA16
DATA16 {5-D1}
THIS LISA CHIP IS SOCKETED
LOAD {5-D6}
DLY3D[7:0] {5-D1}
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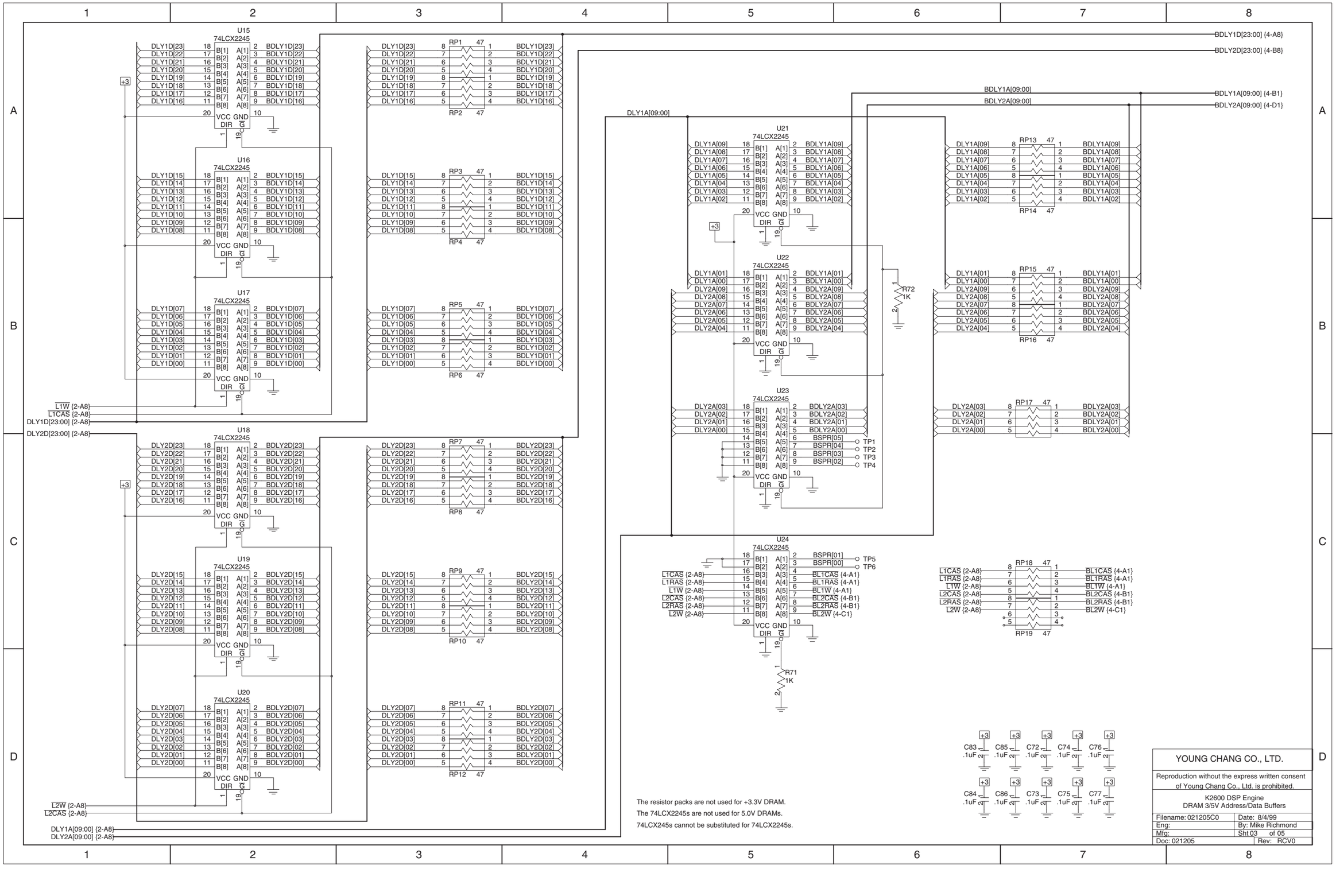
K2600 DSP Engine
FX LISAs, DITHER
Filename: 021205C0
Date: 8/4/99
Eng:
By: Mike Richmond
Mfg:
Sht 02 of 05
Doc: 021205
Rev: RCV0


U15
74LCX2245
DLY1D[23] DLY1D[22] DLY1D[21] DLY1D[20] DLY1D[19] DLY1D[18] DLY1D[17] DLY1D[16]
B[1] B[2] B[3] B[4] B[5] B[6] B[7] B[8]
A[1] A[2] A[3] A[4] A[5] A[6] A[7] A[8]
BDLY1D[23] BDLY1D[22] BDLY1D[21] BDLY1D[20] BDLY1D[19] BDLY1D[18] BDLY1D[17] BDLY1D[16]
VCC GND DIR G
+3
U16
74LCX2245
DLY1D[15] DLY1D[14] DLY1D[13] DLY1D[12] DLY1D[11] DLY1D[10] DLY1D[09] DLY1D[08]
BDLY1D[15] BDLY1D[14] BDLY1D[13] BDLY1D[12] BDLY1D[11] BDLY1D[10] BDLY1D[09] BDLY1D[08]
U17
74LCX2245
DLY1D[07] DLY1D[06] DLY1D[05] DLY1D[04] DLY1D[03] DLY1D[02] DLY1D[01] DLY1D[00]
BDLY1D[07] BDLY1D[06] BDLY1D[05] BDLY1D[04] BDLY1D[03] BDLY1D[02] BDLY1D[01] BDLY1D[00]
RP1 47
RP2 47
RP3 47
RP4 47
RP5 47
RP6 47
L1W {2-A8}
L1CAS {2-A8}
DLY1D[23:00] {2-A8}
DLY2D[23:00] {2-A8}
U18
74LCX2245
DLY2D[23] DLY2D[22] DLY2D[21] DLY2D[20] DLY2D[19] DLY2D[18] DLY2D[17] DLY2D[16]
BDLY2D[23] BDLY2D[22] BDLY2D[21] BDLY2D[20] BDLY2D[19] BDLY2D[18] BDLY2D[17] BDLY2D[16]
U19
74LCX2245
DLY2D[15] DLY2D[14] DLY2D[13] DLY2D[12] DLY2D[11] DLY2D[10] DLY2D[09] DLY2D[08]
BDLY2D[15] BDLY2D[14] BDLY2D[13] BDLY2D[12] BDLY2D[11] BDLY2D[10] BDLY2D[09] BDLY2D[08]
U20
74LCX2245
DLY2D[07] DLY2D[06] DLY2D[05] DLY2D[04] DLY2D[03] DLY2D[02] DLY2D[01] DLY2D[00]
BDLY2D[07] BDLY2D[06] BDLY2D[05] BDLY2D[04] BDLY2D[03] BDLY2D[02] BDLY2D[01] BDLY2D[00]
RP7 47
RP8 47
RP9 47
RP10 47
RP11 47
RP12 47
L2W {2-A8}
L2CAS {2-A8}
DLY1A[09:00] {2-A8}
DLY2A[09:00] {2-A8}
BDLY1D[23:00] {4-A8}
BDLY2D[23:00] {4-B8}
BDLY1A[09:00]
BDLY2A[09:00]
DLY1A[09:00]
U21
74LCX2245
DLY1A[09] DLY1A[08] DLY1A[07] DLY1A[06] DLY1A[05] DLY1A[04] DLY1A[03] DLY1A[02]
BDLY1A[09] BDLY1A[08] BDLY1A[07] BDLY1A[06] BDLY1A[05] BDLY1A[04] BDLY1A[03] BDLY1A[02]
U22
74LCX2245
DLY1A[01] DLY1A[00] DLY2A[09] DLY2A[08] DLY2A[07] DLY2A[06] DLY2A[05] DLY2A[04]
BDLY1A[01] BDLY1A[00] BDLY2A[09] BDLY2A[08] BDLY2A[07] BDLY2A[06] BDLY2A[05] BDLY2A[04]
U23
74LCX2245
DLY2A[03] DLY2A[02] DLY2A[01] DLY2A[00]
BDLY2A[03] BDLY2A[02] BDLY2A[01] BDLY2A[00]
BSPR[05] BSPR[04] BSPR[03] BSPR[02]
TP1 TP2 TP3 TP4
U24
74LCX2245
BSPR[01] BSPR[00]
TP5 TP6
L1CAS {2-A8} L1RAS {2-A8} L1W {2-A8} L2CAS {2-A8} L2RAS {2-A8} L2W {2-A8}
BL1CAS {4-A1} BL1RAS {4-A1} BL1W {4-A1} BL2CAS {4-B1} BL2RAS {4-B1} BL2W {4-C1}
R72 1K
R71 1K
RP13 47
RP14 47
RP15 47
RP16 47
RP17 47
RP18 47
RP19 47
BDLY1A[09:00] {4-B1}
BDLY2A[09:00] {4-D1}
C83 C85 C72 C74 C76
C84 C86 C73 C75 C77
.1uF
The resistor packs are not used for +3.3V DRAM.
The 74LCX2245s are not used for 5.0V DRAMs.
74LCX245s cannot be substituted for 74LCX2245s.
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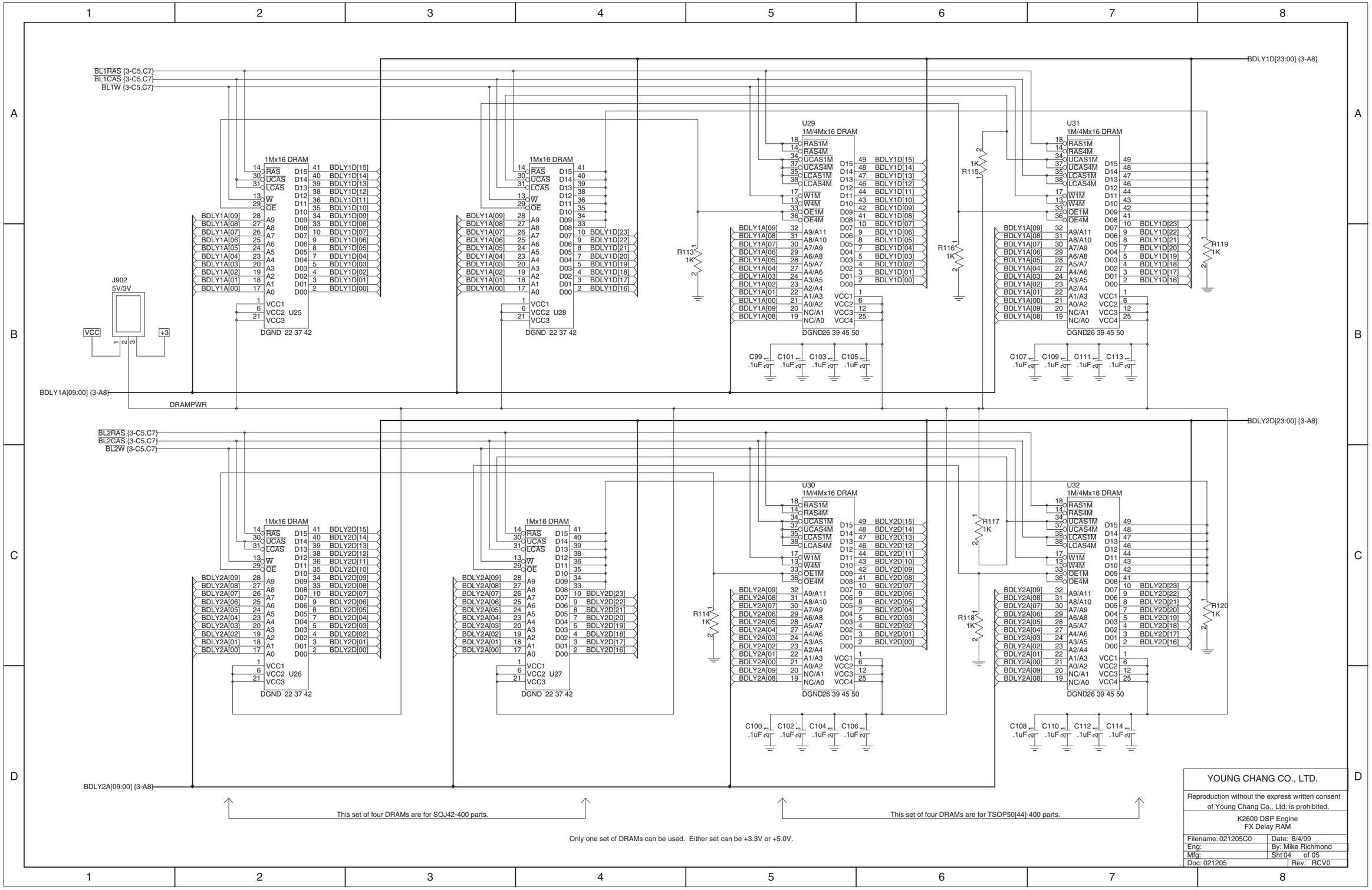
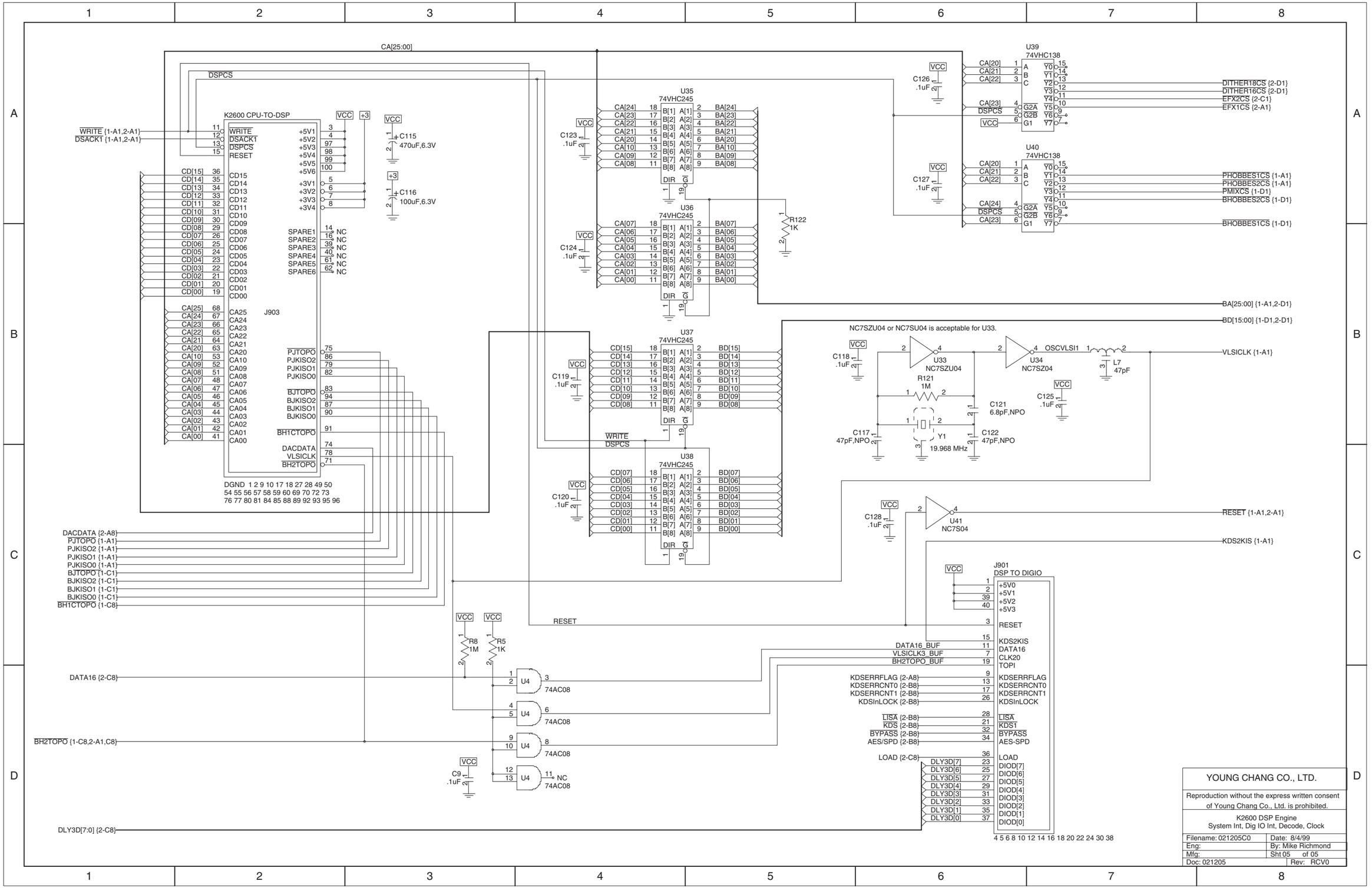
K2600 DSP Engine
DRAM 3/5V Address/Data Buffers
Filename: 021205C0
Date: 8/4/99
Eng:
By: Mike Richmond
Mfg:
Sht 03 of 05
Doc: 021205
Rev: RCV0



K2600 DSP Engine
FX Delay RAM

Filename: 021205C0	Date: 8/4/99
Eng:	By: Mike Richmond
Mfg:	Sht 04 of 05
Doc: 021205	Rev: RCV0


CA[25:00]
DSPCS
K2600 CPU-TO-DSP
WRITE {1-A1,2-A1}
DSACK1 {1-A1,2-A1}
WRITE
DSACK1
DSPCS
RESET
CD[15:00]
CA[25:00]
J903
SPARE1
SPARE2
SPARE3
SPARE4
SPARE5
SPARE6
PJTOPO
PJKISO2
PJKISO1
PJKISO0
BJTOPO
BJKISO2
BJKISO1
BJKISO0
BH1CTOPO
DACDATA
VLSICLK
BH2TOPO
DGND 1 2 9 10 17 18 27 28 49 50
54 55 56 57 58 59 60 69 70 72 73
76 77 80 81 84 85 88 89 92 93 95 96
VCC
+3
C115
470uF,6.3V
C116
100uF,6.3V
U35
74VHC245
U36
74VHC245
U37
74VHC245
U38
74VHC245
C123 .1uF
C124 .1uF
C119 .1uF
C120 .1uF
R122
1K
U39
74VHC138
U40
74VHC138
C126 .1uF
C127 .1uF
DITHER18CS {2-D1}
DITHER16CS {2-D1}
EFX2CS {2-C1}
EFX1CS {2-A1}
PHOBBES1CS {1-A1}
PHOBBES2CS {1-A1}
PMIXCS {1-D1}
BHOBBES2CS {1-D1}
BHOBBES1CS {1-D1}
BA[25:00] {1-A1,2-D1}
BD[15:00] {1-D1,2-D1}
NC7SZU04 or NC7SU04 is acceptable for U33.
U33
NC7SZU04
U34
NC7SZU04
OSCVLSI1
L7
47pF
R121
1M
C121
6.8pF,NPO
C122
47pF,NPO
C117
47pF,NPO
Y1
19.968 MHz
C125 .1uF
C118 .1uF
VLSICLK {1-A1}
RESET {1-A1,2-A1}
KDS2KIS {1-A1}
U41
NC7S04
C128 .1uF
DACDATA {2-A8}
PJTOPO {1-A1}
PJKISO2 {1-A1}
PJKISO1 {1-A1}
PJKISO0 {1-A1}
BJTOPO {1-C1}
BJKISO2 {1-C1}
BJKISO1 {1-C1}
BJKISO0 {1-C1}
BH1CTOPO {1-C8}
DATA16 {2-C8}
BH2TOPO {1-C8,2-A1,C8}
DLY3D[7:0] {2-C8}
R8
1M
R5
1K
U4
74AC08
C9 .1uF
NC
RESET
J901
DSP TO DIGIO
+5V0
+5V1
+5V2
+5V3
RESET
KDS2KIS
DATA16
CLK20
TOPI
KDSERRFLAG
KDSERRCNT0
KDSERRCNT1
KDSInLOCK
LISA
KDS1
BYPASS
AES-SPD
LOAD
DIOD[7]
DIOD[6]
DIOD[5]
DIOD[4]
DIOD[3]
DIOD[2]
DIOD[1]
DIOD[0]
DATA16_BUF
VLSICLK3_BUF
BH2TOPO_BUF
KDSERRFLAG {2-A8}
KDSERRCNT0 {2-B8}
KDSERRCNT1 {2-B8}
KDSInLOCK {2-B8}
LISA {2-B8}
KDS {2-B8}
BYPASS {2-B8}
AES/SPD {2-B8}
LOAD {2-C8}
4 5 6 8 10 12 14 16 18 20 22 24 30 38
YOUNG CHANG CO., LTD.
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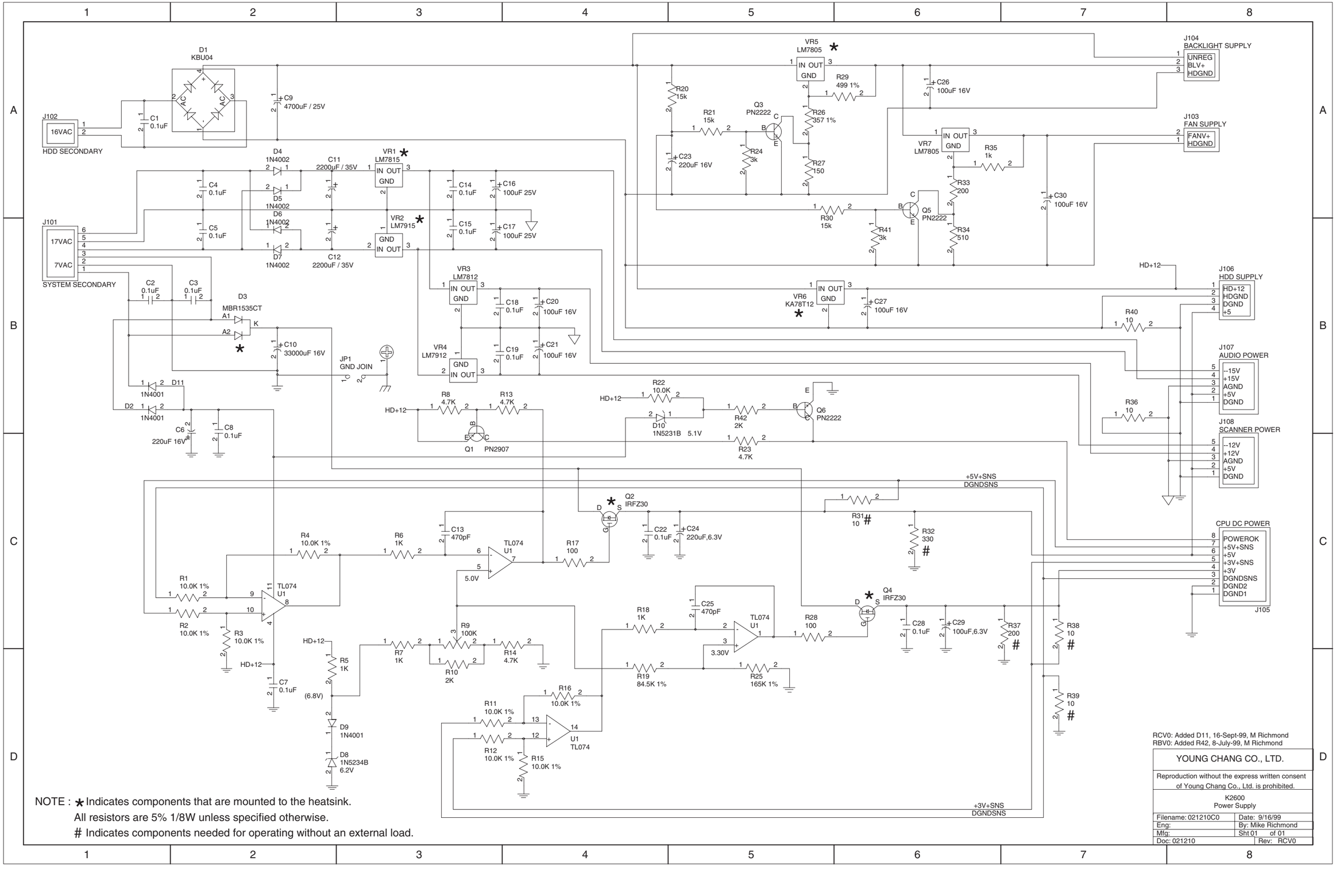
K2600 DSP Engine
System Int, Dig IO Int, Decode, Clock
Filename: 021205C0
Date: 8/4/99
Eng:
By: Mike Richmond
Mfg:
Sht 05 of 05
Doc: 021205
Rev: RCV0



NOTE : * Indicates components that are mounted to the heatsink.
All resistors are 5% 1/8W unless specified otherwise.
# Indicates components needed for operating without an external load.

RCV0: Added D11, 16-Sept-99, M Richmond
RBV0: Added R42, 8-July-99, M Richmond

YOUNG CHANG CO., LTD.	
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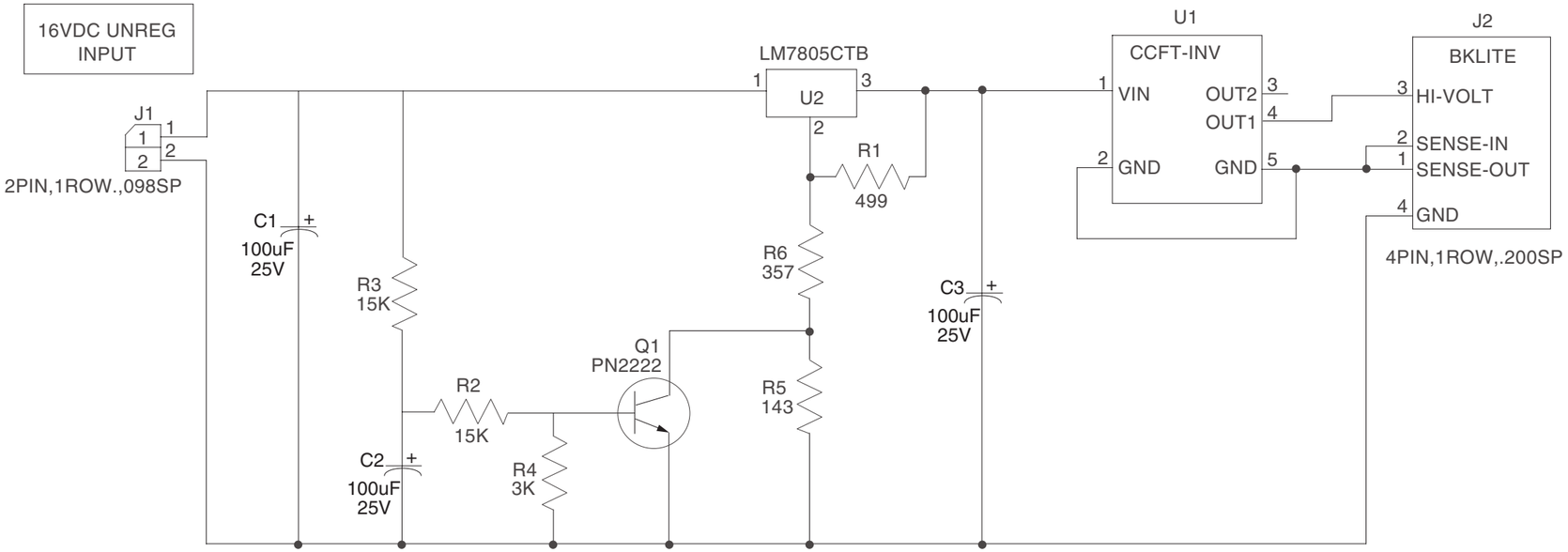
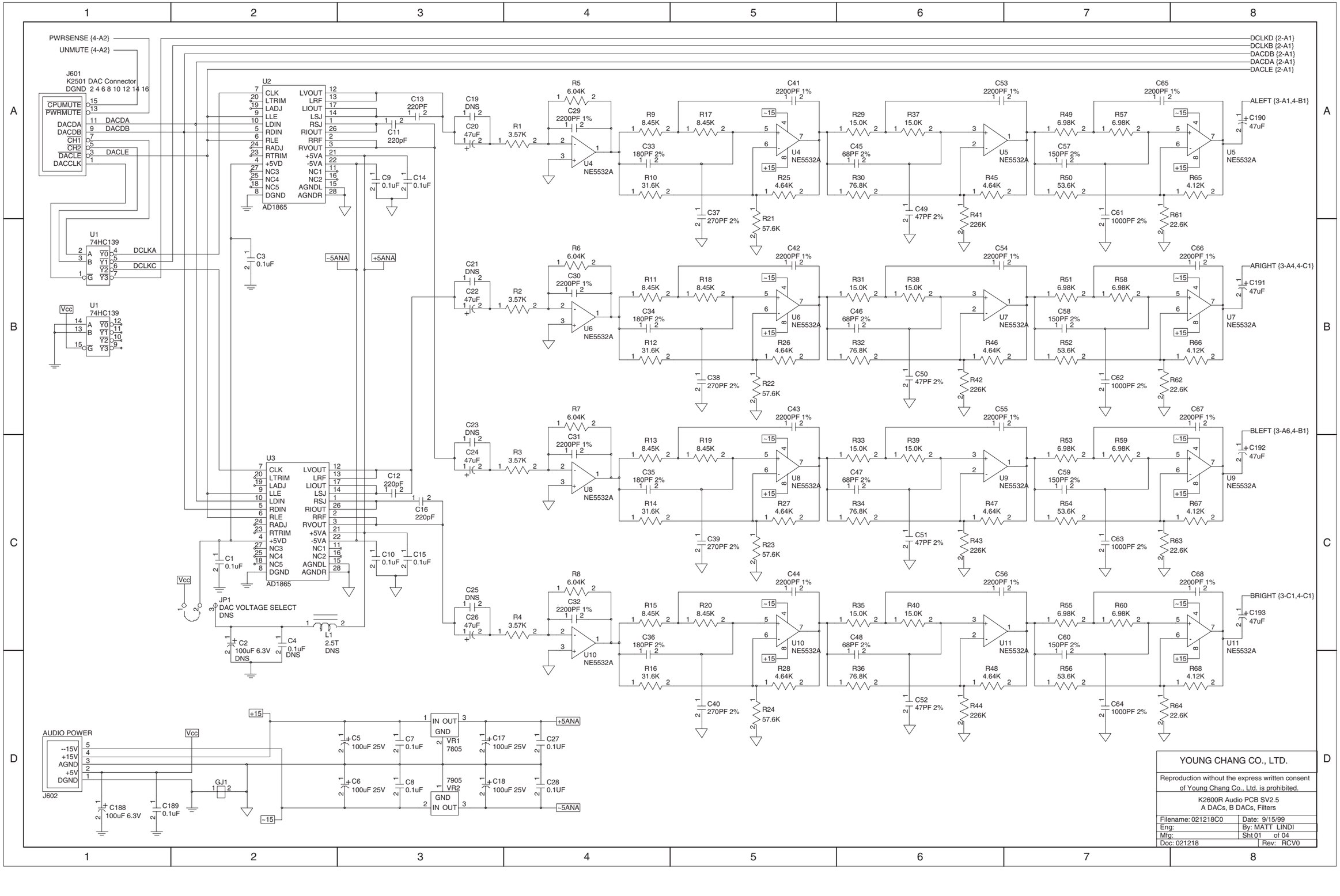
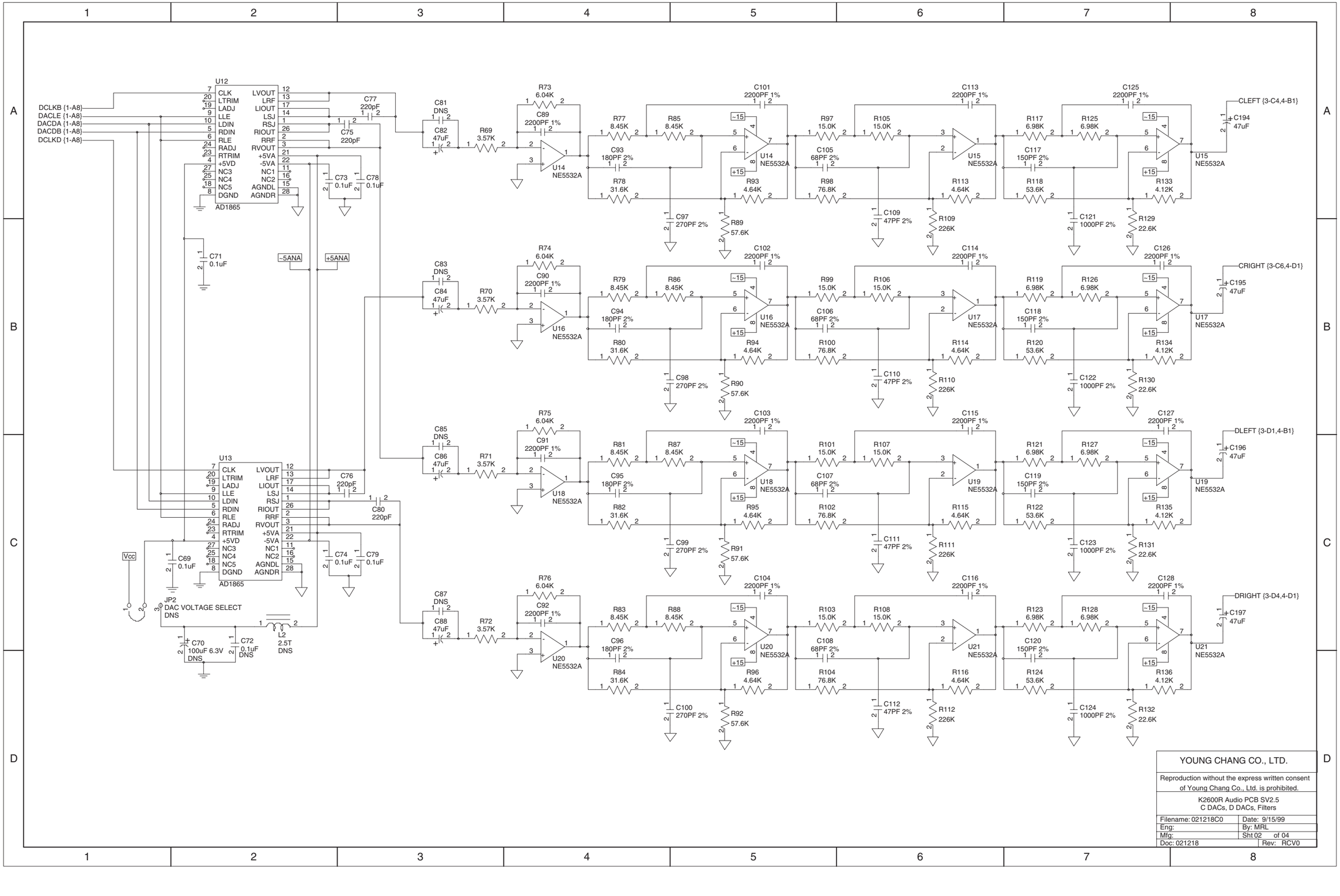
K2600 Power Supply	
Filename: 021210C0	Date: 9/16/99
Eng:	By: Mike Richmond
Mfg:	Sht 01 of 01
Doc: 021210	Rev: RCV0

K2500R BACKLIGHT POWER SUPPLY



YOUNG CHANG CO., LTD. **Young Chang R&D Inst. - Waltham, MA, USA**	
Duplication without the express written consent of Young Chang Co., Ltd. is prohibited.	
K2500R BACKLIGHT INVERTER	
Filename: 021082C1.DS3	Date: 10/4/95
Eng:	By: H. Chamberlin
Mfg:	Sht.: 1 of 1
Doc#: 021082	Rev: C VER 1


PWRSENSE {4-A2}
UNMUTE {4-A2}
J601
K2501 DAC Connector
DGND 2 4 6 8 10 12 14 16
CPUMUTE
PWRMUTE
DACDA
DACDB
CH1
CH2
DACLE
DACCLK
U2
AD1865
U3
AD1865
U1
74HC139
DCLKA
DCLKC
Vcc
JP1
DAC VOLTAGE SELECT
DNS
L1
2.5T
DNS
~5ANA
+5ANA
DCLKD {2-A1}
DCLKB {2-A1}
DACDB {2-A1}
DACDA {2-A1}
DACLE {2-A1}
ALEFT {3-A1,4-B1}
ARIGHT {3-A4,4-C1}
BLEFT {3-A6,4-B1}
BRIGHT {3-C1,4-C1}
U4 NE5532A
U5 NE5532A
U6 NE5532A
U7 NE5532A
U8 NE5532A
U9 NE5532A
U10 NE5532A
U11 NE5532A
AUDIO POWER
--15V
+15V
AGND
+5V
DGND
J602
VR1 7805
VR2 7905
YOUNG CHANG CO., LTD.
Reproduction without the express written consent of Young Chang Co., Ltd. is prohibited.
K2600R Audio PCB SV2.5
A DACs, B DACs, Filters
Filename: 021218C0
Date: 9/15/99
Eng:
By: MATT LINDI
Mfg:
Sht 01 of 04
Doc: 021218
Rev: RCV0


U12
AD1865
DCLKB {1-A8}
DACLE {1-A8}
DACDA {1-A8}
DACDB {1-A8}
DCLKD {1-A8}
CLK
LTRIM
LADJ
LLE
LDIN
RDIN
RLE
RADJ
RTRIM
+5VD
NC3
NC4
NC5
DGND
LVOUT
LRF
LIOUT
LSJ
RSJ
RIOUT
RRF
RVOUT
+5VA
-5VA
NC1
NC2
AGNDL
AGNDR
C77 220pF
C75 220pF
C73 0.1uF
C78 0.1uF
C71 0.1uF
-5ANA
+5ANA
U13
AD1865
C76 220pF
C80 220pF
C69 0.1uF
C74 0.1uF
C79 0.1uF
Vcc
JP2
DAC VOLTAGE SELECT
DNS
C70 100uF 6.3V DNS
C72 0.1uF DNS
L2 2.5T DNS
C81 DNS
C82 47uF
R69 3.57K
R73 6.04K
C89 2200PF 1%
R77 8.45K
R85 8.45K
C93 180PF 2%
R78 31.6K
C97 270PF 2%
R89 57.6K
C101 2200PF 1%
R97 15.0K
R105 15.0K
C105 68PF 2%
R98 76.8K
C109 47PF 2%
R109 226K
C113 2200PF 1%
R117 6.98K
R125 6.98K
C117 150PF 2%
R118 53.6K
C121 1000PF 2%
R129 22.6K
C125 2200PF 1%
R133 4.12K
CLEFT {3-C4,4-B1}
C194 47uF
U14 NE5532A
U15 NE5532A
C83 DNS
C84 47uF
R70 3.57K
R74 6.04K
C90 2200PF 1%
R79 8.45K
R86 8.45K
C94 180PF 2%
R80 31.6K
C98 270PF 2%
R90 57.6K
C102 2200PF 1%
R99 15.0K
R106 15.0K
C106 68PF 2%
R100 76.8K
C110 47PF 2%
R110 226K
C114 2200PF 1%
R119 6.98K
R126 6.98K
C118 150PF 2%
R120 53.6K
C122 1000PF 2%
R130 22.6K
C126 2200PF 1%
R134 4.12K
CRIGHT {3-C6,4-D1}
C195 47uF
U16 NE5532A
U17 NE5532A
C85 DNS
C86 47uF
R71 3.57K
R75 6.04K
C91 2200PF 1%
R81 8.45K
R87 8.45K
C95 180PF 2%
R82 31.6K
C99 270PF 2%
R91 57.6K
C103 2200PF 1%
R101 15.0K
R107 15.0K
C107 68PF 2%
R102 76.8K
C111 47PF 2%
R111 226K
C115 2200PF 1%
R121 6.98K
R127 6.98K
C119 150PF 2%
R122 53.6K
C123 1000PF 2%
R131 22.6K
C127 2200PF 1%
R135 4.12K
DLEFT {3-D1,4-B1}
C196 47uF
U18 NE5532A
U19 NE5532A
C87 DNS
C88 47uF
R72 3.57K
R76 6.04K
C92 2200PF 1%
R83 8.45K
R88 8.45K
C96 180PF 2%
R84 31.6K
C100 270PF 2%
R92 57.6K
C104 2200PF 1%
R103 15.0K
R108 15.0K
C108 68PF 2%
R104 76.8K
C112 47PF 2%
R112 226K
C116 2200PF 1%
R123 6.98K
R128 6.98K
C120 150PF 2%
R124 53.6K
C124 1000PF 2%
R132 22.6K
C128 2200PF 1%
R136 4.12K
DRIGHT {3-D4,4-D1}
C197 47uF
U20 NE5532A
U21 NE5532A
-15
+15
YOUNG CHANG CO., LTD.
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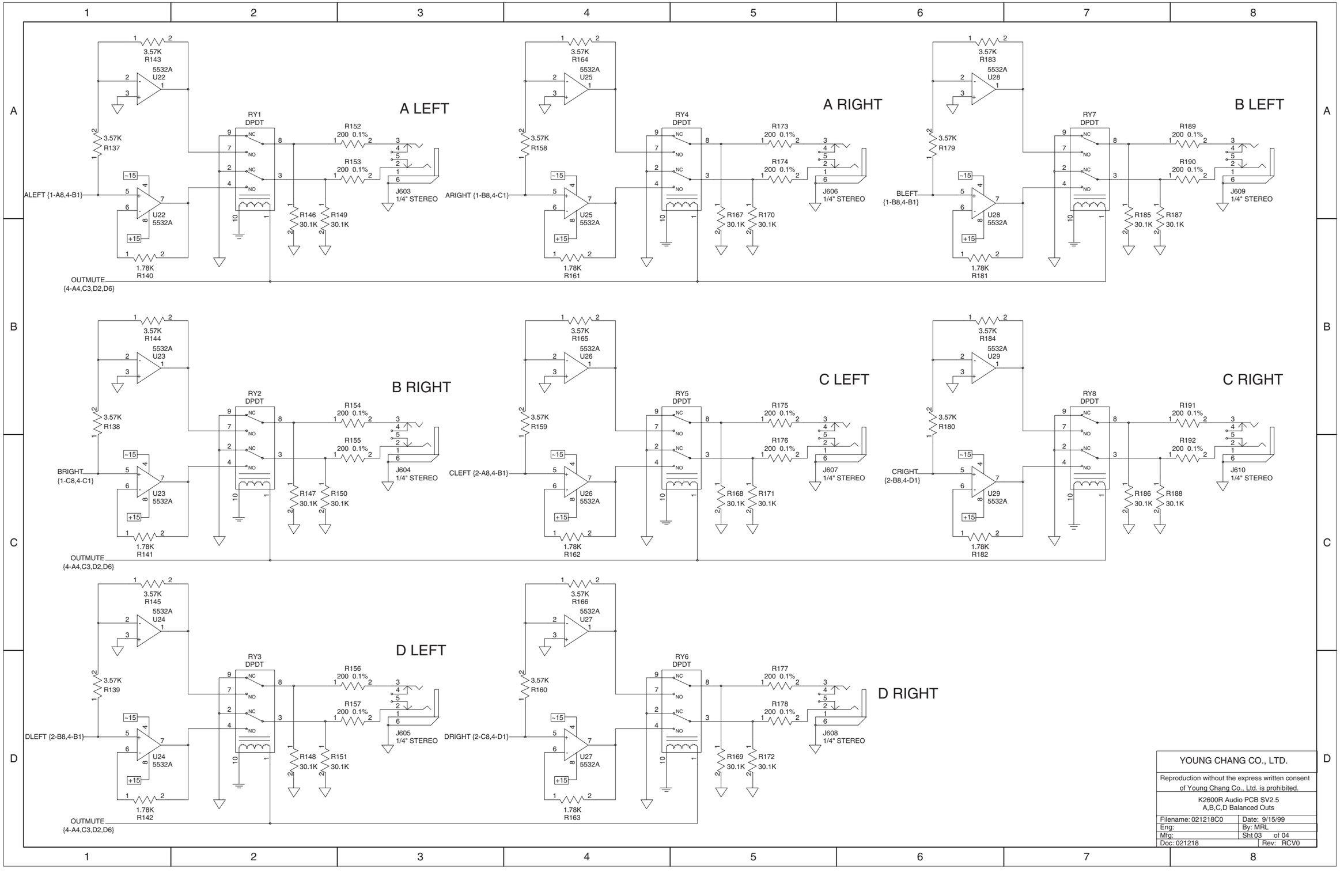
K2600R Audio PCB SV2.5
C DACs, D DACs, Filters
Filename: 021218C0
Date: 9/15/99
Eng:
By: MRL
Mfg:
Sht 02 of 04
Doc: 021218
Rev: RCV0


A LEFT
A RIGHT
B LEFT
B RIGHT
C LEFT
C RIGHT
D LEFT
D RIGHT
3.57K R143
5532A U22
3.57K R137
1.78K R140
RY1 DPDT
R152 200 0.1%
R153 200 0.1%
R146 30.1K
R149 30.1K
J603 1/4" STEREO
ALEFT {1-A8,4-B1}
OUTMUTE {4-A4,C3,D2,D6}
3.57K R164
5532A U25
3.57K R158
1.78K R161
RY4 DPDT
R173 200 0.1%
R174 200 0.1%
R167 30.1K
R170 30.1K
J606 1/4" STEREO
ARIGHT {1-B8,4-C1}
3.57K R183
5532A U28
3.57K R179
1.78K R181
RY7 DPDT
R189 200 0.1%
R190 200 0.1%
R185 30.1K
R187 30.1K
J609 1/4" STEREO
BLEFT {1-B8,4-B1}
3.57K R144
5532A U23
3.57K R138
1.78K R141
RY2 DPDT
R154 200 0.1%
R155 200 0.1%
R147 30.1K
R150 30.1K
J604 1/4" STEREO
BRIGHT {1-C8,4-C1}
OUTMUTE {4-A4,C3,D2,D6}
3.57K R165
5532A U26
3.57K R159
1.78K R162
RY5 DPDT
R175 200 0.1%
R176 200 0.1%
R168 30.1K
R171 30.1K
J607 1/4" STEREO
CLEFT {2-A8,4-B1}
3.57K R184
5532A U29
3.57K R180
1.78K R182
RY8 DPDT
R191 200 0.1%
R192 200 0.1%
R186 30.1K
R188 30.1K
J610 1/4" STEREO
CRIGHT {2-B8,4-D1}
3.57K R145
5532A U24
3.57K R139
1.78K R142
RY3 DPDT
R156 200 0.1%
R157 200 0.1%
R148 30.1K
R151 30.1K
J605 1/4" STEREO
DLEFT {2-B8,4-B1}
OUTMUTE {4-A4,C3,D2,D6}
3.57K R166
5532A U27
3.57K R160
1.78K R163
RY6 DPDT
R177 200 0.1%
R178 200 0.1%
R169 30.1K
R172 30.1K
J608 1/4" STEREO
DRIGHT {2-C8,4-D1}
YOUNG CHANG CO., LTD.
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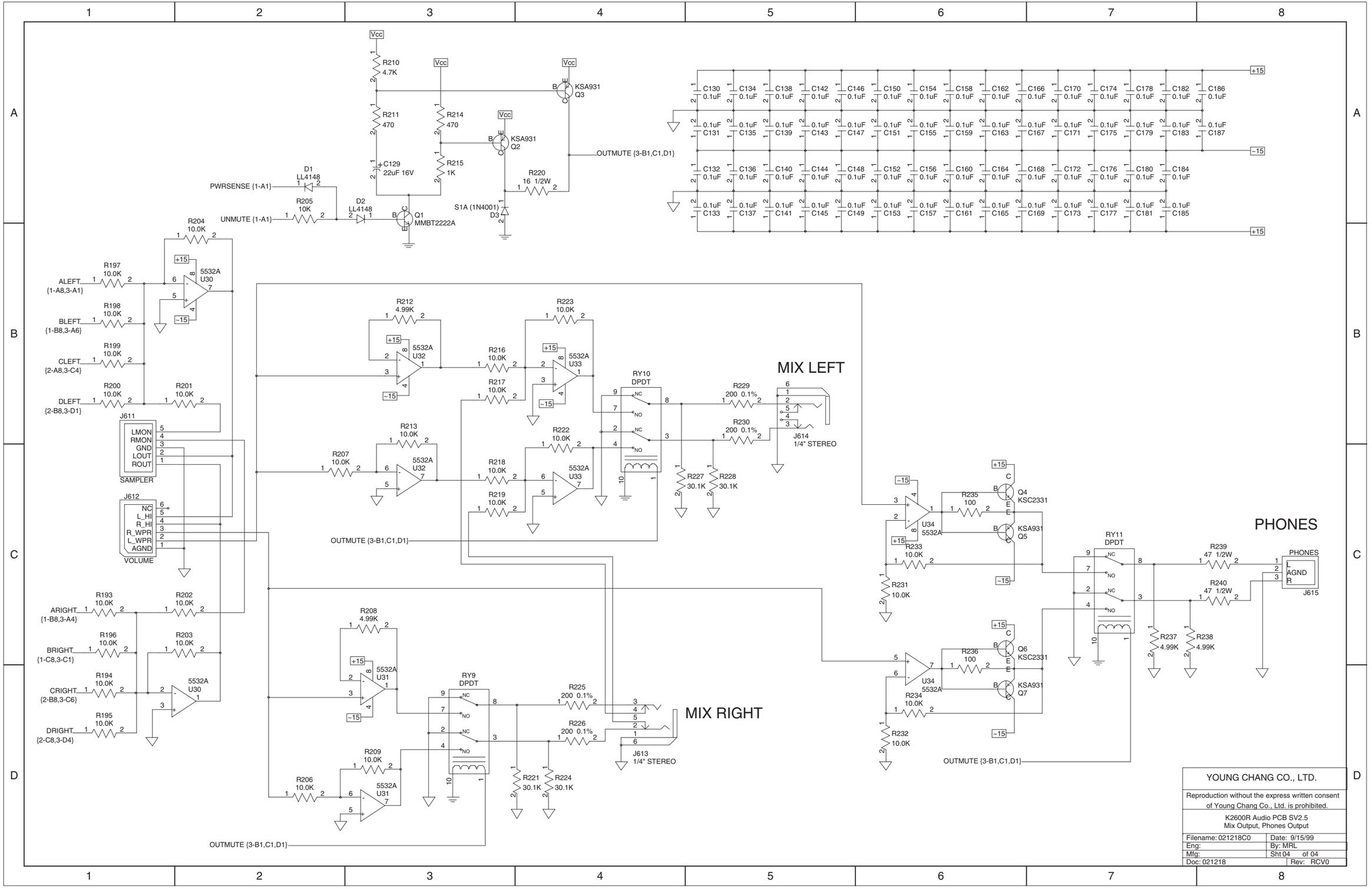
K2600R Audio PCB SV2.5
A,B,C,D Balanced Outs
Filename: 021218C0
Date: 9/15/99
Eng:
By: MRL
Mfg:
Sht 03 of 04
Doc: 021218
Rev: RCV0



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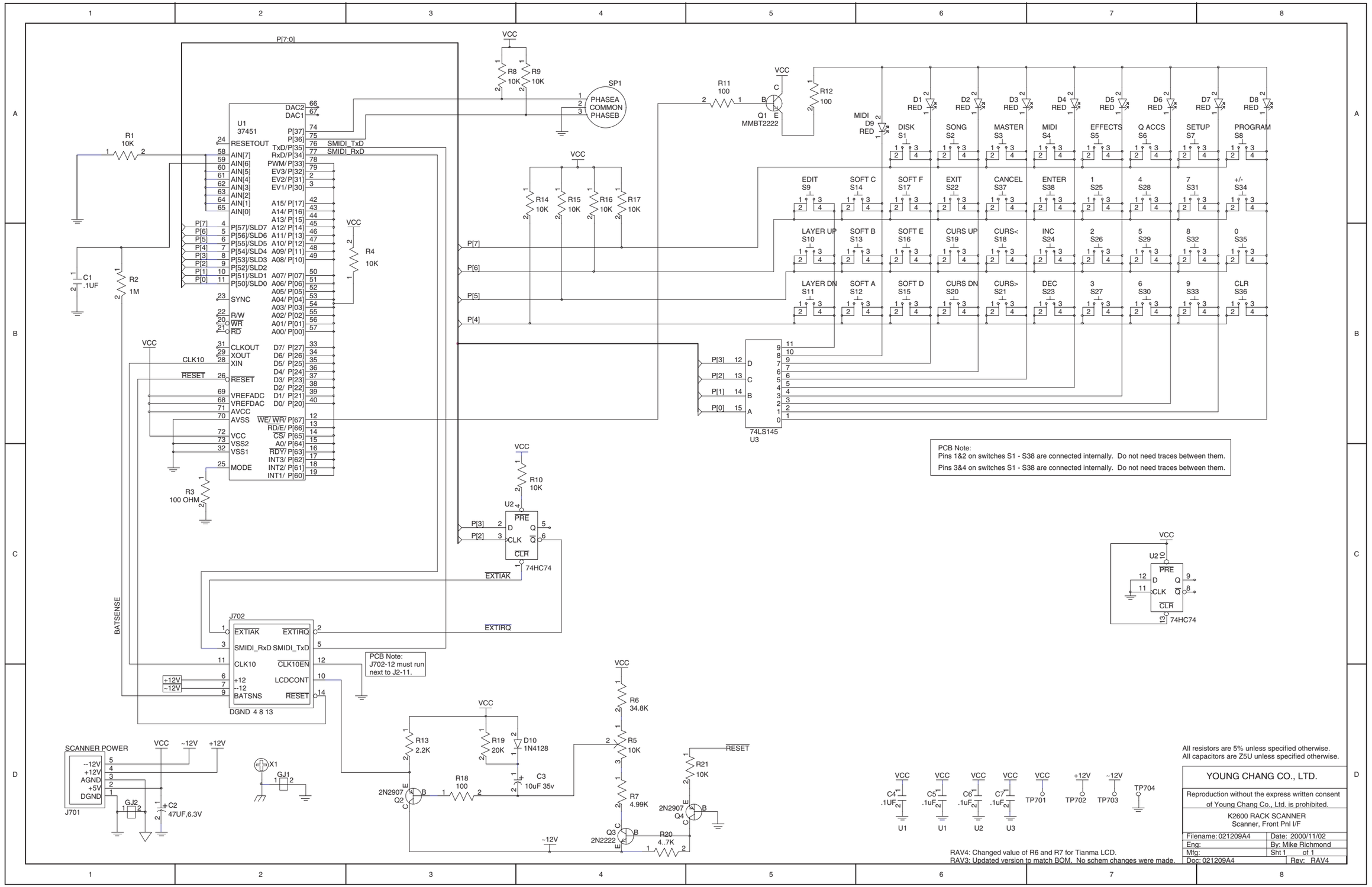
Reproduction without the express written consent of Young Chang Co., Ltd. is prohibited.	
K2600R Audio PCB SV2.5 Mix Output, Phones Output	
Filename: 021218C0	Date: 9/15/99
Eng:	By: MRL
Mfg:	Sht 04 of 04
Doc: 021218	Rev: RCV0


P[7:0]
VCC
R8 10K
R9 10K
SP1
PHASEA
COMMON
PHASEB
R11 100
R12 100
Q1 MMBT2222
MIDI D9 RED
D1 RED
D2 RED
D3 RED
D4 RED
D5 RED
D6 RED
D7 RED
D8 RED
DISK S1
SONG S2
MASTER S3
MIDI S4
EFFECTS S5
Q ACCS S6
SETUP S7
PROGRAM S8
EDIT S9
SOFT C S14
SOFT F S17
EXIT S22
CANCEL S37
ENTER S38
1 S25
4 S28
7 S31
+/- S34
LAYER UP S10
SOFT B S13
SOFT E S16
CURS UP S19
CURS< S18
INC S24
2 S26
5 S29
8 S32
0 S35
LAYER DN S11
SOFT A S12
SOFT D S15
CURS DN S20
CURS> S21
DEC S23
3 S27
6 S30
9 S33
CLR S36
U1 37451
RESETOUT
SYNC
R/W
WR
RD
CLKOUT
XOUT
XIN
RESET
VREFADC
VREFDAC
AVCC
AVSS
VCC
VSS2
VSS1
MODE
SMIDI_TxD
SMIDI_RxD
R1 10K
C1 .1UF
R2 1M
R3 100 OHM
R4 10K
R14 10K
R15 10K
R16 10K
R17 10K
74LS145 U3
R10 10K
U2 74HC74
EXTIAK
EXTIRQ
J702
SMIDI_RxD
SMIDI_TxD
CLK10
CLK10EN
+12
-12
BATSNS
LCDCONT
RESET
DGND 4 8 13
BATSENSE
+12V
-12V
PCB Note:
J702-12 must run next to J2-11.
SCANNER POWER
J701
--12V
+12V
AGND
+5V
DGND
GJ1
GJ2
C2 47UF,6.3V
X1
R13 2.2K
R19 20K
D10 1N4128
C3 10uF 35v
R18 100
2N2907 Q2
R6 34.8K
R5 10K
R7 4.99K
R21 10K
2N2907 Q4
Q3 2N2222
R20 4..7K
~12V
PCB Note:
Pins 1&2 on switches S1 - S38 are connected internally. Do not need traces between them.
Pins 3&4 on switches S1 - S38 are connected internally. Do not need traces between them.
C4 .1UF
C5 .1uF
C6 .1uF
C7 .1uF
TP701
TP702
TP703
TP704
All resistors are 5% unless specified otherwise.
All capacitors are Z5U unless specified otherwise.
RAV4: Changed value of R6 and R7 for Tianma LCD.
RAV3: Updated version to match BOM. No schem changes were made.
YOUNG CHANG CO., LTD.
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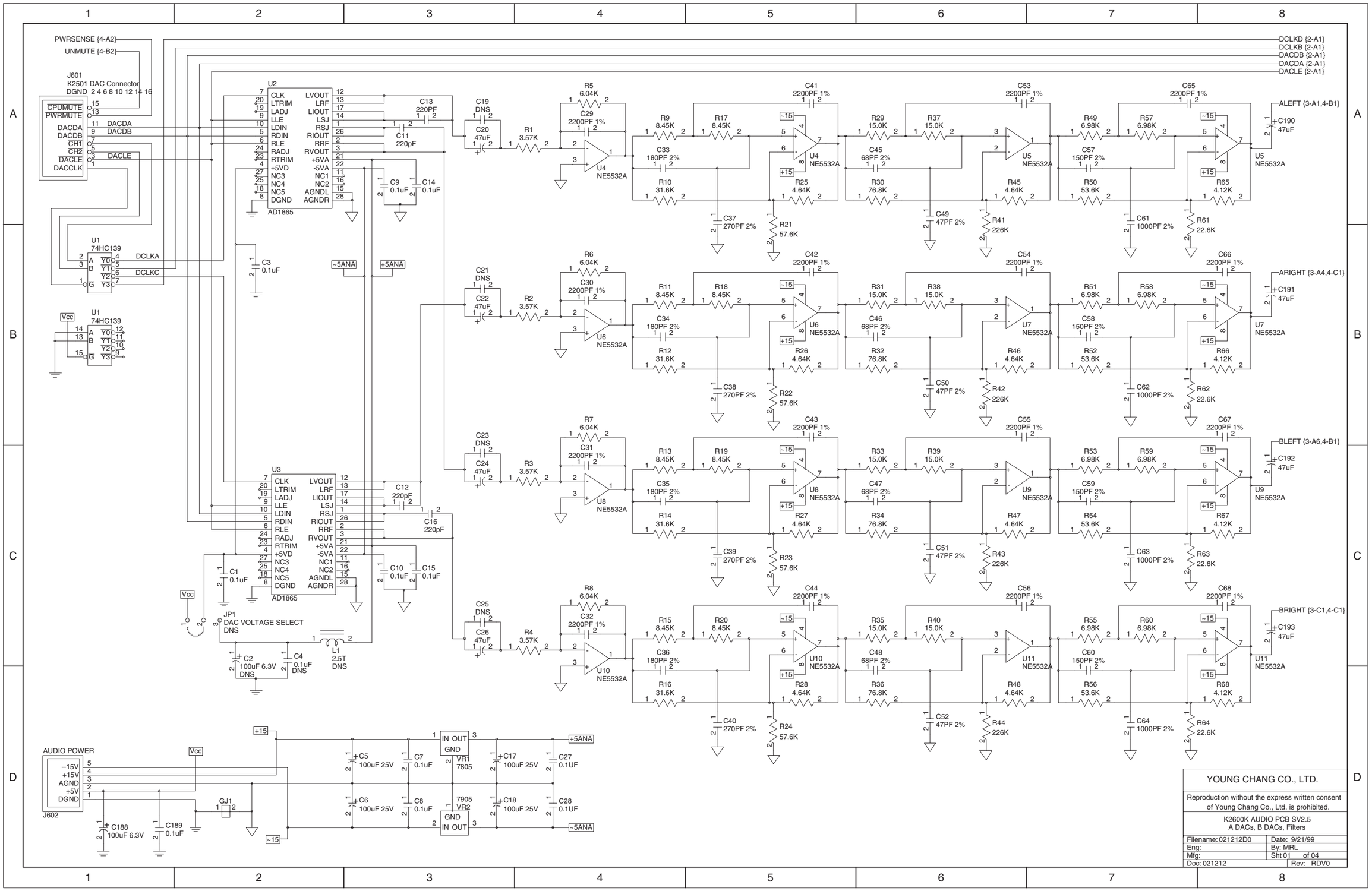
K2600 RACK SCANNER
Scanner, Front Pnl I/F
Filename: 021209A4
Date: 2000/11/02
Eng:
By: Mike Richmond
Mfg:
Sht 1 of 1
Doc: 021209A4
Rev: RAV4


PWRSENSE {4-A2}
UNMUTE {4-B2}
J601
K2501 DAC Connector
DGND 2 4 6 8 10 12 14 16
CPUMUTE
PWRMUTE
DACDA
DACDB
CH1
CH2
DACLE
DACCLK
DCLKD {2-A1}
DCLKB {2-A1}
DACDB {2-A1}
DACDA {2-A1}
DACLE {2-A1}
U2
AD1865
CLK
LTRIM
LADJ
LLE
LDIN
RDIN
RLE
RADJ
RTRIM
+5VD
NC3
NC4
NC5
DGND
LVOUT
LRF
LIOUT
LSJ
RSJ
RIOUT
RRF
RVOUT
+5VA
-5VA
NC1
NC2
AGNDL
AGNDR
U1
74HC139
DCLKA
DCLKC
Vcc
U3
JP1
DAC VOLTAGE SELECT
DNS
L1
2.5T
DNS
~5ANA
+5ANA
ALEFT {3-A1,4-B1}
ARIGHT {3-A4,4-C1}
BLEFT {3-A6,4-B1}
BRIGHT {3-C1,4-C1}
NE5532A
AUDIO POWER
--15V
+15V
AGND
+5V
DGND
J602
GJ1
VR1
7805
VR2
7905
YOUNG CHANG CO., LTD.
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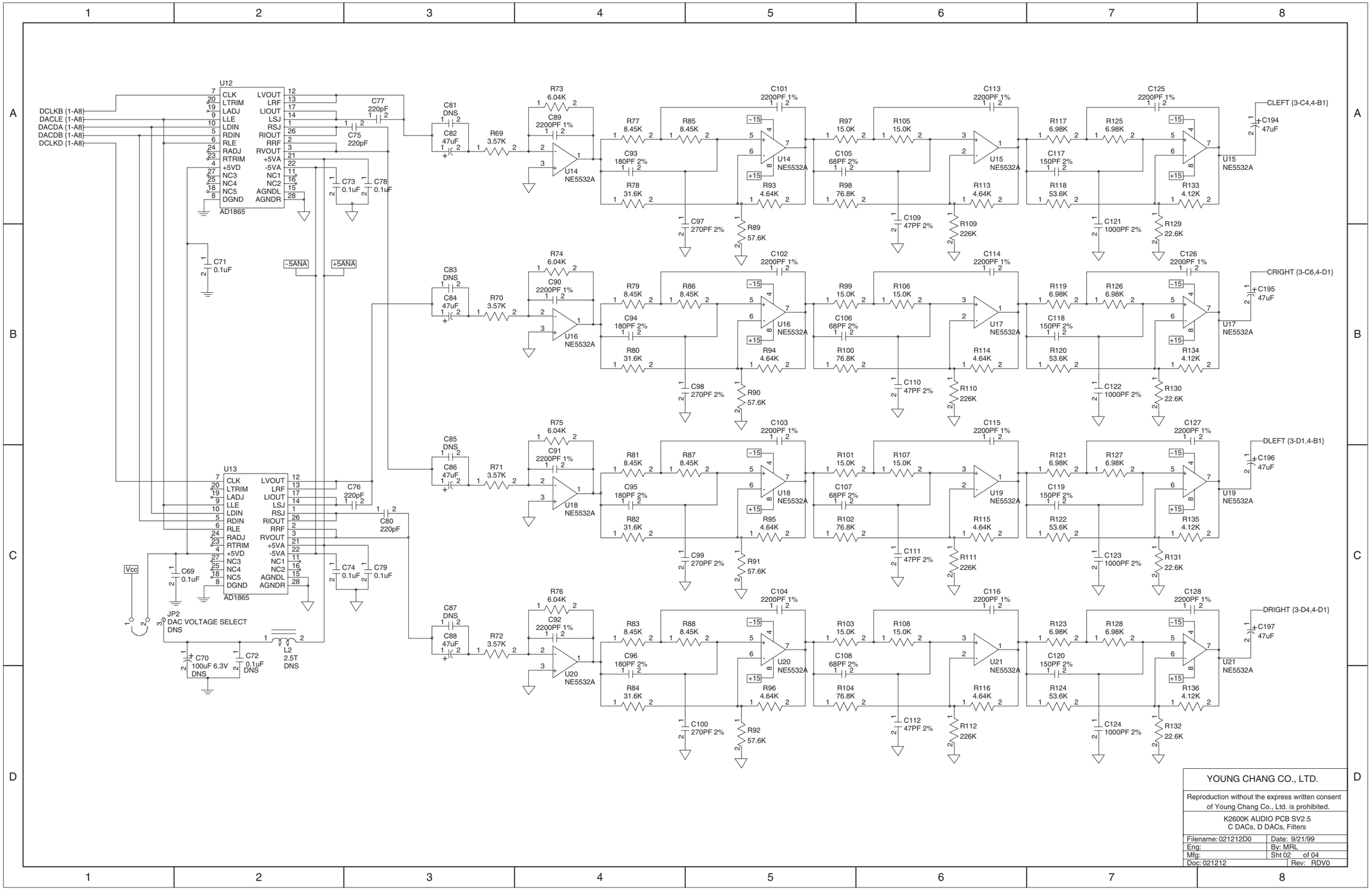
K2600K AUDIO PCB SV2.5
A DACs, B DACs, Filters
Filename: 021212D0
Date: 9/21/99
Eng:
By: MRL
Mfg:
Sht 01 of 04
Doc: 021212
Rev: RDV0


1
2
3
4
5
6
7
8
A
B
C
D
U12
AD1865
U13
AD1865
DCLKB {1-A8}
DACLE {1-A8}
DACDA {1-A8}
DACDB {1-A8}
DCLKD {1-A8}
CLK
LTRIM
LADJ
LLE
LDIN
RDIN
RLE
RADJ
RTRIM
+5VD
NC3
NC4
NC5
DGND
LVOUT
LRF
LIOUT
LSJ
RSJ
RIOUT
RRF
RVOUT
+5VA
-5VA
NC1
NC2
AGNDL
AGNDR
C71 0.1uF
C73 0.1uF
C78 0.1uF
C74 0.1uF
C79 0.1uF
C69 0.1uF
C70 100uF 6.3V DNS
C72 0.1uF DNS
JP2 DAC VOLTAGE SELECT DNS
L2 2.5T DNS
Vcc
-5ANA
+5ANA
C75 220pF
C76 220pF
C77 220pF
C80 220pF
C81 DNS
C82 47uF
C83 DNS
C84 47uF
C85 DNS
C86 47uF
C87 DNS
C88 47uF
R69 3.57K
R70 3.57K
R71 3.57K
R72 3.57K
R73 6.04K
R74 6.04K
R75 6.04K
R76 6.04K
C89 2200PF 1%
C90 2200PF 1%
C91 2200PF 1%
C92 2200PF 1%
U14 NE5532A
U16 NE5532A
U18 NE5532A
U20 NE5532A
~15
+15
R77 8.45K
R85 8.45K
R78 31.6K
R93 4.64K
C93 180PF 2%
C97 270PF 2%
R89 57.6K
C101 2200PF 1%
R97 15.0K
R105 15.0K
C105 68PF 2%
R98 76.8K
C109 47PF 2%
R109 226K
C113 2200PF 1%
R117 6.98K
R125 6.98K
C117 150PF 2%
R118 53.6K
C121 1000PF 2%
R129 22.6K
C125 2200PF 1%
R133 4.12K
U15 NE5532A
C194 47uF
CLEFT {3-C4,4-B1}
R79 8.45K
R86 8.45K
R80 31.6K
R94 4.64K
C94 180PF 2%
C98 270PF 2%
R90 57.6K
C102 2200PF 1%
R99 15.0K
R106 15.0K
C106 68PF 2%
R100 76.8K
C110 47PF 2%
R110 226K
C114 2200PF 1%
R119 6.98K
R126 6.98K
C118 150PF 2%
R120 53.6K
C122 1000PF 2%
R130 22.6K
C126 2200PF 1%
R134 4.12K
U17 NE5532A
C195 47uF
CRIGHT {3-C6,4-D1}
R81 8.45K
R87 8.45K
R82 31.6K
R95 4.64K
C95 180PF 2%
C99 270PF 2%
R91 57.6K
C103 2200PF 1%
R101 15.0K
R107 15.0K
C107 68PF 2%
R102 76.8K
C111 47PF 2%
R111 226K
C115 2200PF 1%
R121 6.98K
R127 6.98K
C119 150PF 2%
R122 53.6K
C123 1000PF 2%
R131 22.6K
C127 2200PF 1%
R135 4.12K
U19 NE5532A
C196 47uF
DLEFT {3-D1,4-B1}
R83 8.45K
R88 8.45K
R84 31.6K
R96 4.64K
C96 180PF 2%
C100 270PF 2%
R92 57.6K
C104 2200PF 1%
R103 15.0K
R108 15.0K
C108 68PF 2%
R104 76.8K
C112 47PF 2%
R112 226K
C116 2200PF 1%
R123 6.98K
R128 6.98K
C120 150PF 2%
R124 53.6K
C124 1000PF 2%
R132 22.6K
C128 2200PF 1%
R136 4.12K
U21 NE5532A
C197 47uF
DRIGHT {3-D4,4-D1}
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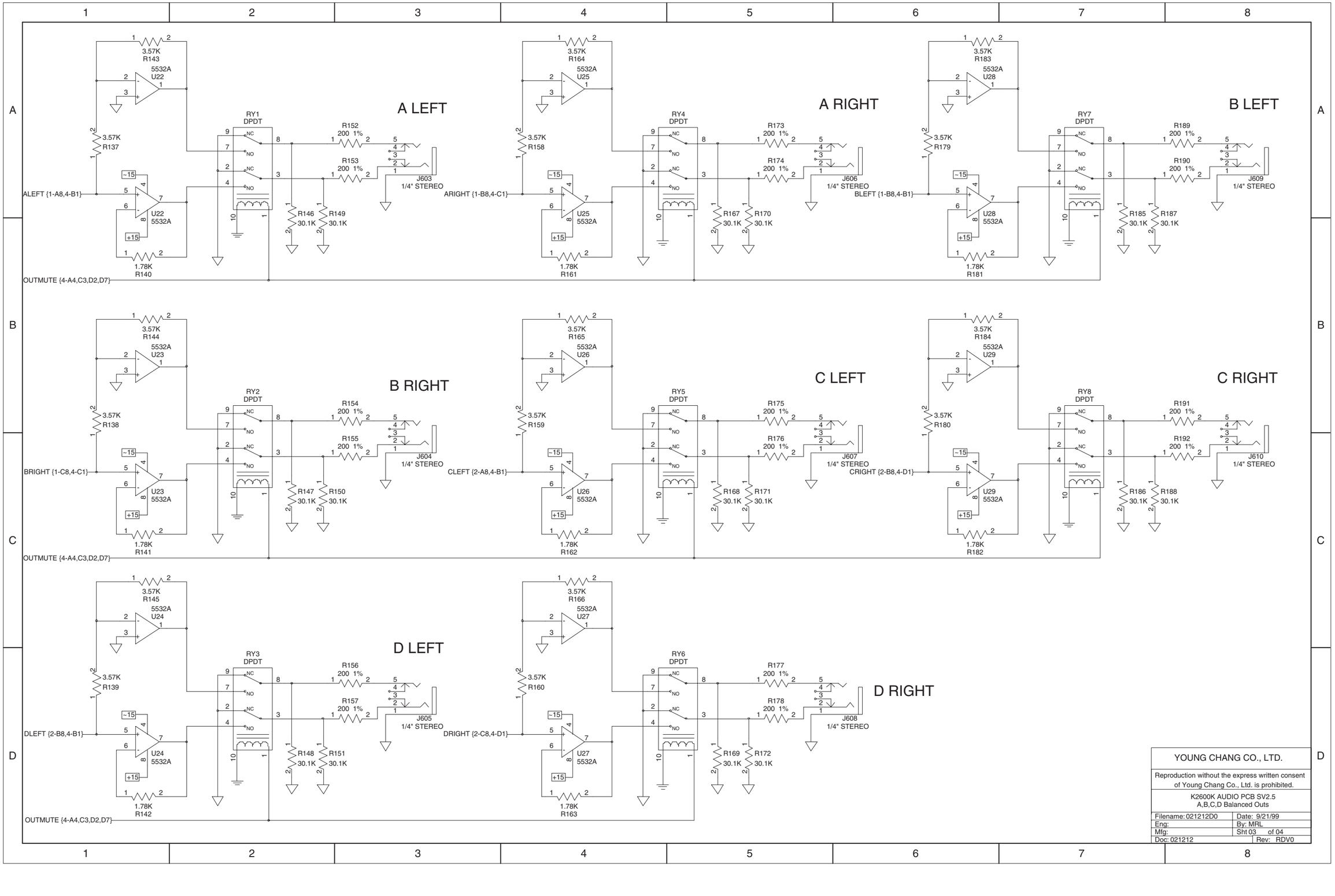
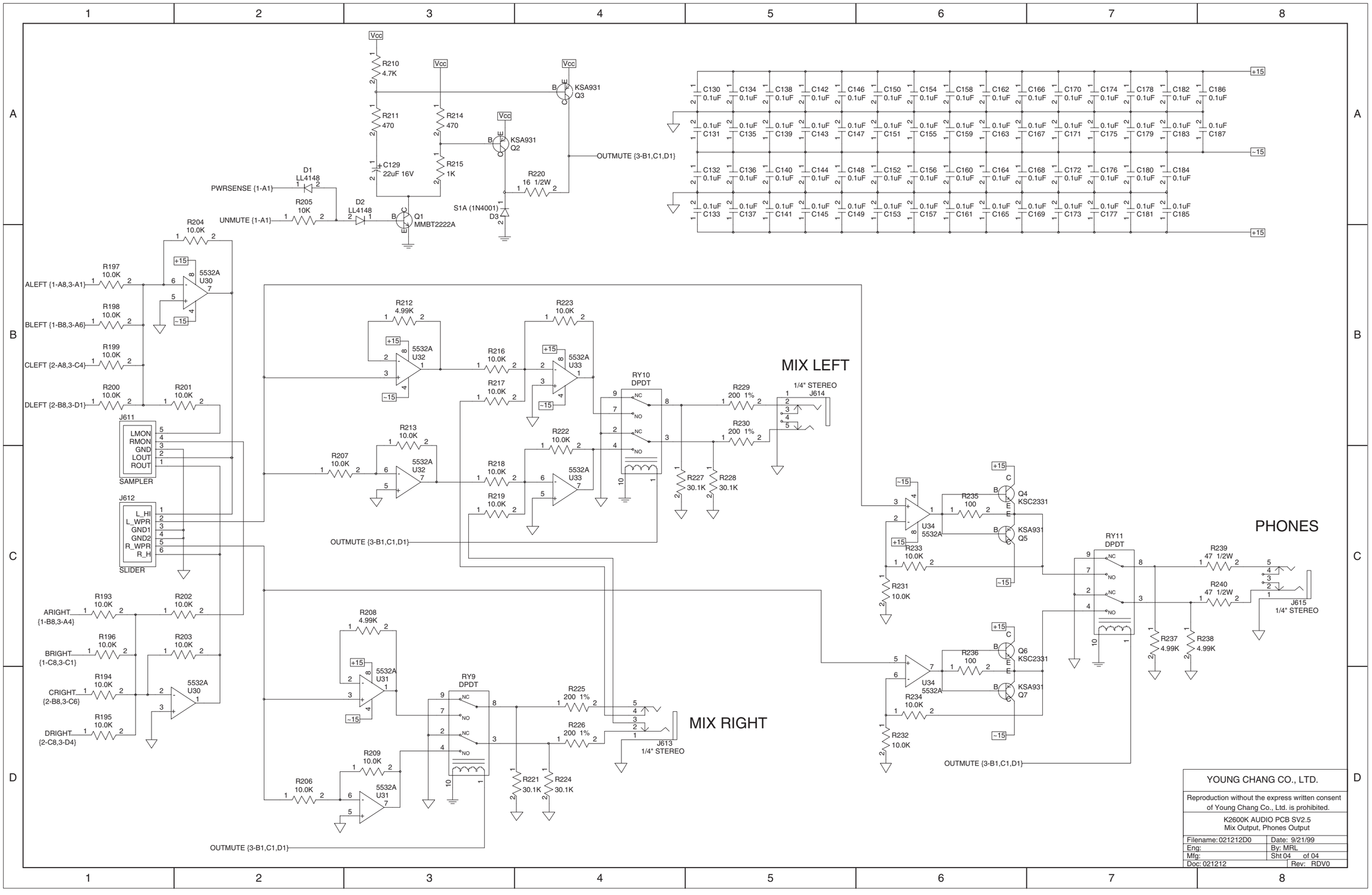
K2600K AUDIO PCB SV2.5
C DACs, D DACs, Filters
Filename: 021212D0
Date: 9/21/99
Eng:
By: MRL
Mfg:
Sht 02 of 04
Doc: 021212
Rev: RDV0



YOUNG CHANG CO., LTD.	
Reproduction without the express written consent of Young Chang Co., Ltd. is prohibited.	
K2600K AUDIO PCB SV2.5 A,B,C,D Balanced Outs	
Filename: 021212D0	Date: 9/21/99
Eng:	By: MRL
Mfg:	Sht 03 of 04
Doc: 021212	Rev: RDV0


MIX LEFT
MIX RIGHT
PHONES
R210 4.7K
R211 470
R214 470
R215 1K
C129 22uF 16V
KSA931 Q3
KSA931 Q2
Q1 MMBT2222A
D1 LL4148
D2 LL4148
D3
R205 10K
R220 16 1/2W
S1A (1N4001)
PWRSENSE {1-A1}
UNMUTE {1-A1}
OUTMUTE {3-B1,C1,D1}
R204 10.0K
R197 10.0K
R198 10.0K
R199 10.0K
R200 10.0K
R201 10.0K
ALEFT {1-A8,3-A1}
BLEFT {1-B8,3-A6}
CLEFT {2-A8,3-C4}
DLEFT {2-B8,3-D1}
5532A U30
J611
LMON
RMON
GND
LOUT
ROUT
SAMPLER
J612
L_HI
L_WPR
GND1
GND2
R_WPR
R_H
SLIDER
R212 4.99K
R223 10.0K
R216 10.0K
R217 10.0K
R213 10.0K
R207 10.0K
R222 10.0K
R218 10.0K
R219 10.0K
5532A U32
5532A U33
RY10 DPDT
R227 30.1K
R228 30.1K
R229 200 1%
R230 200 1%
1/4" STEREO J614
R193 10.0K
R202 10.0K
R196 10.0K
R203 10.0K
R194 10.0K
R195 10.0K
ARIGHT {1-B8,3-A4}
BRIGHT {1-C8,3-C1}
CRIGHT {2-B8,3-C6}
DRIGHT {2-C8,3-D4}
5532A U30
R208 4.99K
R209 10.0K
R206 10.0K
5532A U31
RY9 DPDT
R221 30.1K
R224 30.1K
R225 200 1%
R226 200 1%
J613 1/4" STEREO
U34 5532A
Q4 KSC2331
Q5 KSA931
Q6 KSC2331
Q7 KSA931
R235 100
R236 100
R231 10.0K
R232 10.0K
R233 10.0K
R234 10.0K
RY11 DPDT
R239 47 1/2W
R240 47 1/2W
R237 4.99K
R238 4.99K
J615 1/4" STEREO
C130 C134 C138 C142 C146 C150 C154 C158 C162 C166 C170 C174 C178 C182 C186 0.1uF
C131 C135 C139 C143 C147 C151 C155 C159 C163 C167 C171 C175 C179 C183 C187 0.1uF
C132 C136 C140 C144 C148 C152 C156 C160 C164 C168 C172 C176 C180 C184 0.1uF
C133 C137 C141 C145 C149 C153 C157 C161 C165 C169 C173 C177 C181 C185 0.1uF
+15
~15
Vcc
NC
NO
YOUNG CHANG CO., LTD.
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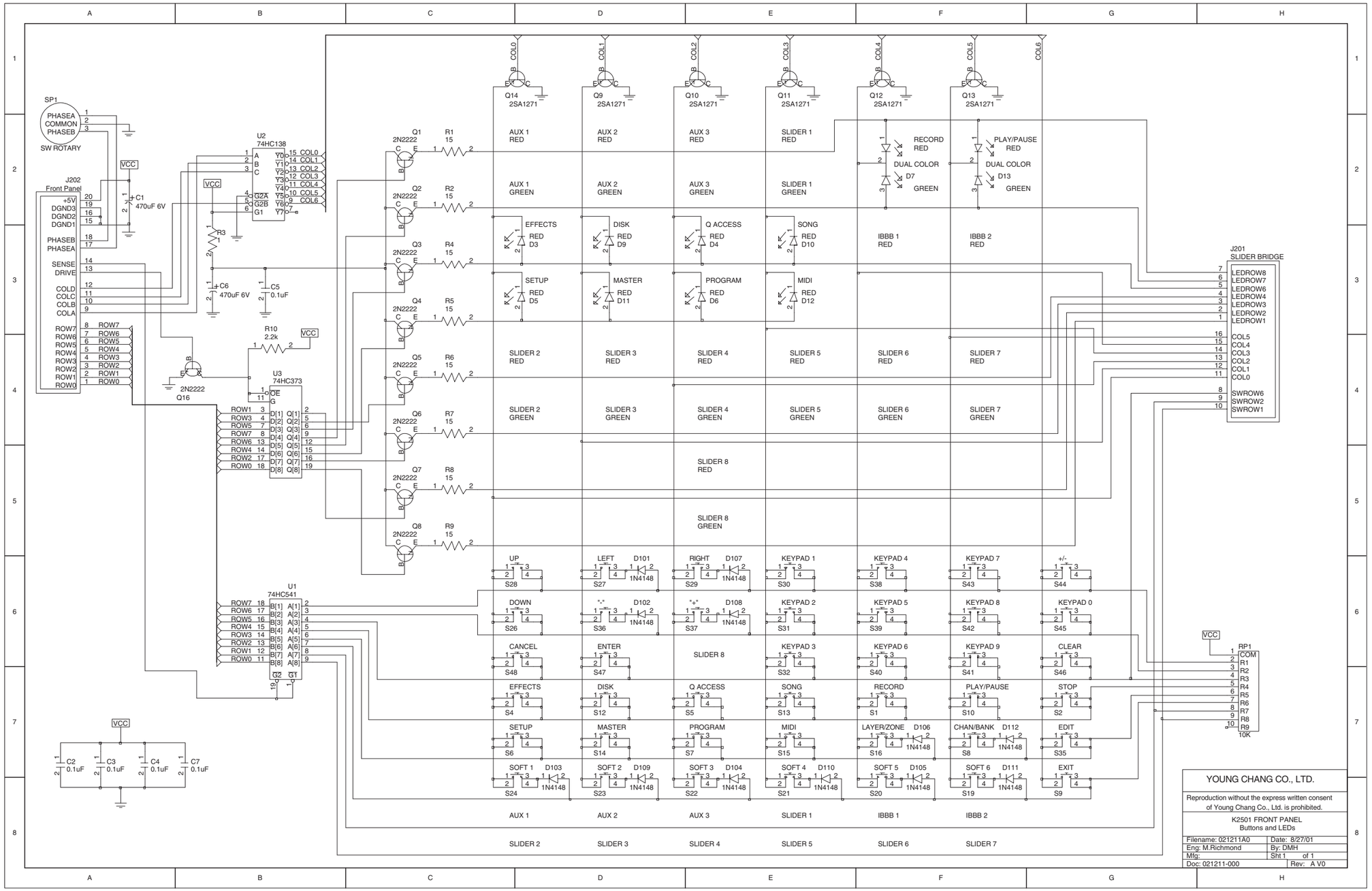
K2600K AUDIO PCB SV2.5
Mix Output, Phones Output
Filename: 021212D0
Date: 9/21/99
Eng:
By: MRL
Mfg:
Sht 04 of 04
Doc: 021212
Rev: RDV0


SP1
PHASEA
COMMON
PHASEB
SW ROTARY
J202
Front Panel
+5V
DGND3
DGND2
DGND1
PHASEB
PHASEA
SENSE
DRIVE
COLD
COLC
COLB
COLA
ROW7
ROW6
ROW5
ROW4
ROW3
ROW2
ROW1
ROW0
VCC
C1
470uF 6V
C6
470uF 6V
C5
0.1uF
R3
U2
74HC138
A
B
C
G2A
G2B
G1
Y0
Y1
Y2
Y3
Y4
Y5
Y6
Y7
COL0
COL1
COL2
COL3
COL4
COL5
COL6
R10
2.2k
2N2222
Q16
U3
74HC373
OE
G
D[1] Q[1]
D[2] Q[2]
D[3] Q[3]
D[4] Q[4]
D[5] Q[5]
D[6] Q[6]
D[7] Q[7]
D[8] Q[8]
U1
74HC541
B[1] A[1]
B[2] A[2]
B[3] A[3]
B[4] A[4]
B[5] A[5]
B[6] A[6]
B[7] A[7]
B[8] A[8]
G2
G1
C2
0.1uF
C3
0.1uF
C4
0.1uF
C7
0.1uF
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
2N2222
R1
R2
R3
R4
R5
R6
R7
R8
R9
15
Q14
Q9
Q10
Q11
Q12
Q13
2SA1271
AUX 1 RED
AUX 2 RED
AUX 3 RED
SLIDER 1 RED
RECORD RED
DUAL COLOR
D7
GREEN
PLAY/PAUSE RED
DUAL COLOR
D13
GREEN
AUX 1 GREEN
AUX 2 GREEN
AUX 3 GREEN
SLIDER 1 GREEN
EFFECTS RED D3
DISK RED D9
Q ACCESS RED D4
SONG RED D10
IBBB 1 RED
IBBB 2 RED
SETUP RED D5
MASTER RED D11
PROGRAM RED D6
MIDI RED D12
SLIDER 2 RED
SLIDER 3 RED
SLIDER 4 RED
SLIDER 5 RED
SLIDER 6 RED
SLIDER 7 RED
SLIDER 2 GREEN
SLIDER 3 GREEN
SLIDER 4 GREEN
SLIDER 5 GREEN
SLIDER 6 GREEN
SLIDER 7 GREEN
SLIDER 8 RED
SLIDER 8 GREEN
J201
SLIDER BRIDGE
LEDROW8
LEDROW7
LEDROW6
LEDROW5
LEDROW4
LEDROW3
LEDROW2
LEDROW1
COL5
COL4
COL3
COL2
COL1
COL0
SWROW6
SWROW2
SWROW1
RP1
COM
R1
R2
R3
R4
R5
R6
R7
R8
R9
10K
UP S28
LEFT D101 1N4148 S27
RIGHT D107 1N4148 S29
KEYPAD 1 S30
KEYPAD 4 S38
KEYPAD 7 S43
+/- S44
DOWN S26
"-" D102 1N4148 S36
"+" D108 1N4148 S37
KEYPAD 2 S31
KEYPAD 5 S39
KEYPAD 8 S42
KEYPAD 0 S45
CANCEL S48
ENTER S47
SLIDER 8
KEYPAD 3 S32
KEYPAD 6 S40
KEYPAD 9 S41
CLEAR S46
EFFECTS S4
DISK S12
Q ACCESS S5
SONG S13
RECORD S1
PLAY/PAUSE S10
STOP S2
SETUP S6
MASTER S14
PROGRAM S7
MIDI S15
LAYER/ZONE D106 1N4148 S16
CHAN/BANK D112 1N4148 S8
EDIT S35
SOFT 1 D103 1N4148 S24
SOFT 2 D109 1N4148 S23
SOFT 3 D104 1N4148 S22
SOFT 4 D110 1N4148 S21
SOFT 5 D105 1N4148 S20
SOFT 6 D111 1N4148 S19
EXIT S9
AUX 1
AUX 2
AUX 3
SLIDER 1
IBBB 1
IBBB 2
SLIDER 2
SLIDER 3
SLIDER 4
SLIDER 5
SLIDER 6
SLIDER 7
YOUNG CHANG CO., LTD.
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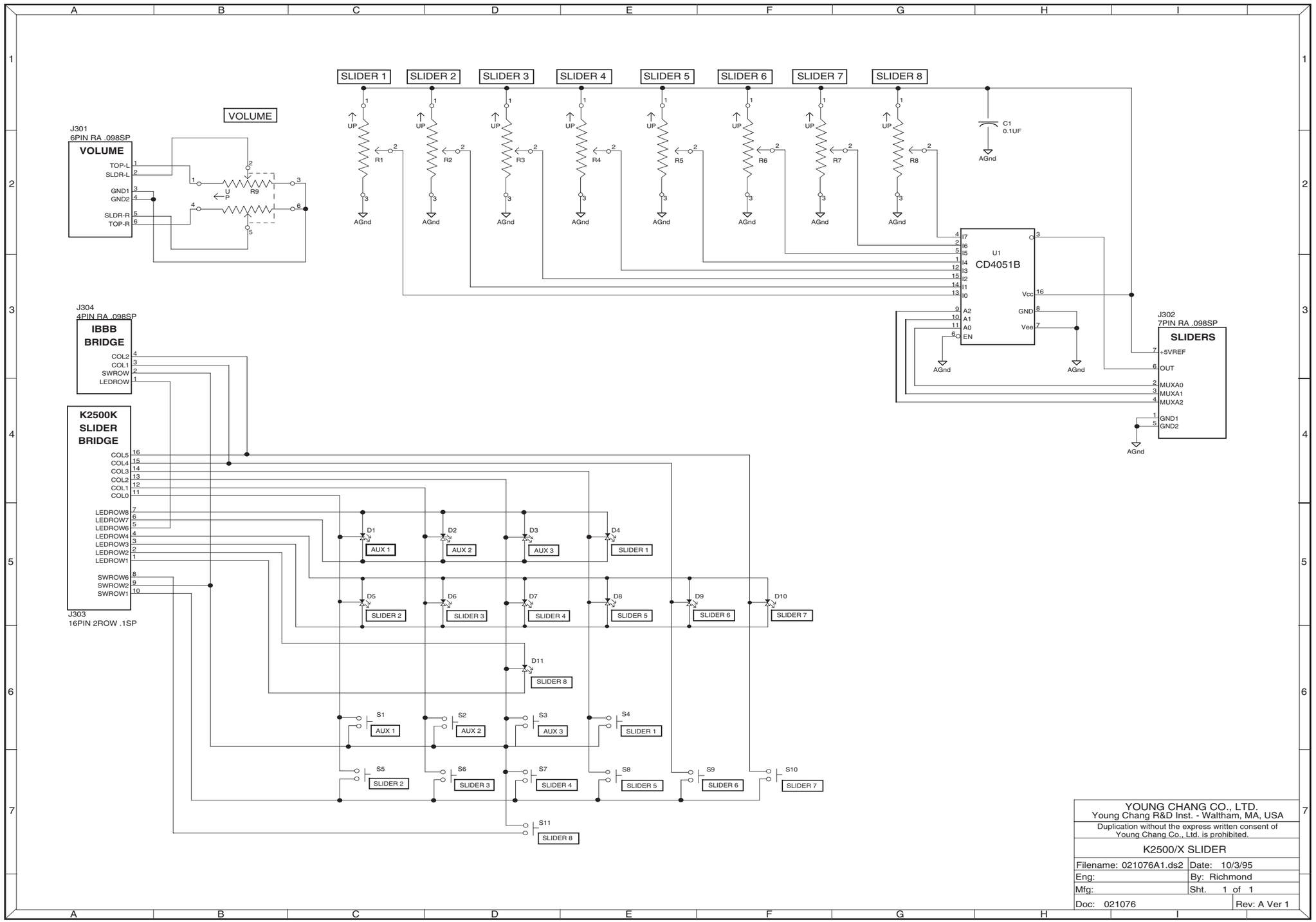
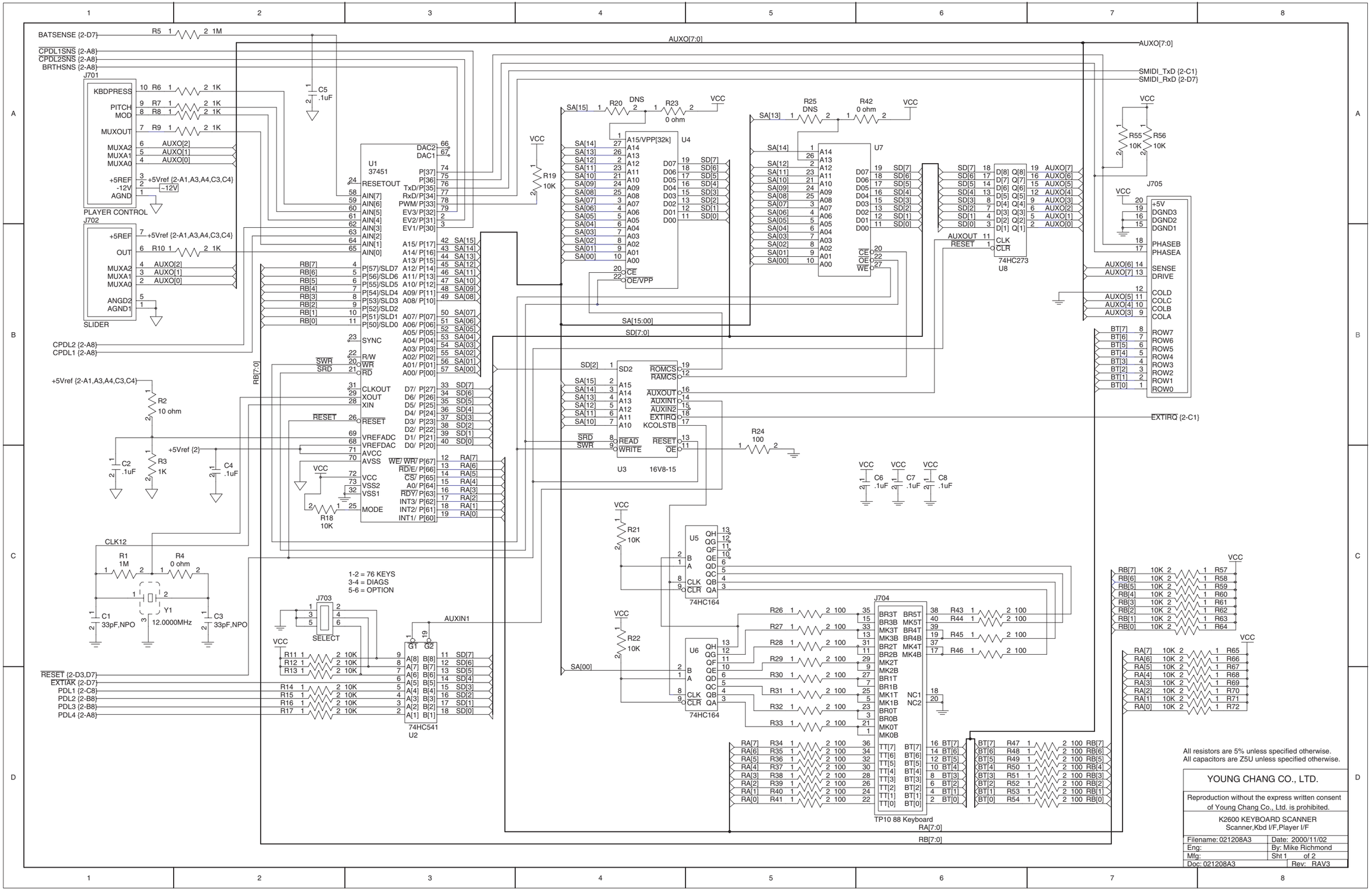
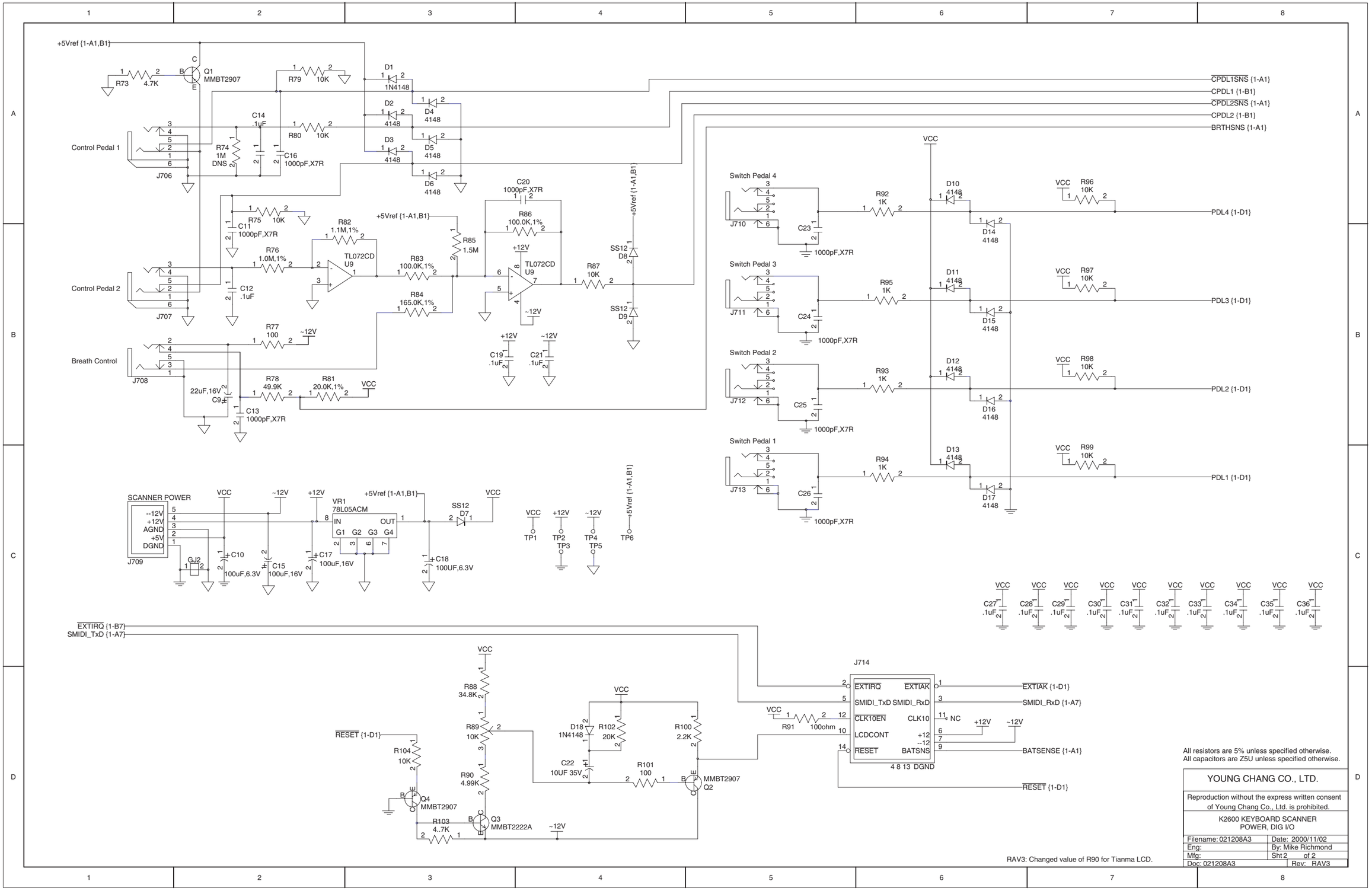
K2501 FRONT PANEL
Buttons and LEDs
Filename: 021211A0
Date: 8/27/01
Eng: M.Richmond
By: DMH
Mfg:
Sht 1 of 1
Doc: 021211-000
Rev: A V0



YOUNG CHANG CO., LTD. Young Chang R&D Inst. - Waltham, MA, USA	
Duplication without the express written consent of Young Chang Co., Ltd. is prohibited.	
K2500/X SLIDER	
Filename: 021076A1.ds2	Date: 10/3/95
Eng:	By: Richmond
Mfg:	Sht. 1 of 1
Doc: 021076	Rev: A Ver 1


BATSENSE {2-D7}
CPDL1SNS {2-A8}
CPDL2SNS {2-A8}
BRTHSNS {2-A8}
J701
KBDPRESS
PITCH
MOD
MUXOUT
MUXA2
MUXA1
MUXA0
+5REF
-12V
AGND
PLAYER CONTROL
J702
SLIDER
AUXO[7:0]
SMIDI_TxD {2-C1}
SMIDI_RxD {2-D7}
U1
37451
RESETOUT
SYNC
R/W
CLKOUT
XOUT
XIN
VREFADC
VREFDAC
AVCC
AVSS
VCC
VSS2
VSS1
MODE
SA[15:00]
SD[7:0]
U4
A15/VPP[32k]
OE/VPP
U7
74HC273
U8
J705
PHASEB
PHASEA
SENSE
DRIVE
COLD
COLC
COLB
COLA
ROW7
ROW6
ROW5
ROW4
ROW3
ROW2
ROW1
ROW0
EXTIRQ {2-C1}
U3
16V8-15
SD2
ROMCS
RAMCS
AUXOUT
AUXINT
AUXIN2
EXTIRQ
KCOLSTB
READ
WRITE
RESET
OE
+5Vref {2-A1,A3,A4,C3,C4}
+5Vref {2}
CLK12
Y1
12.0000MHz
1-2 = 76 KEYS
3-4 = DIAGS
5-6 = OPTION
J703
SELECT
AUXIN1
74HC541
U2
RESET {2-D3,D7}
EXTIAR {2-D7}
PDL1 {2-C8}
PDL2 {2-B8}
PDL3 {2-B8}
PDL4 {2-A8}
CPDL2 {2-A8}
CPDL1 {2-A8}
U5
U6
74HC164
J704
TP10 88 Keyboard
RA[7:0]
RB[7:0]
All resistors are 5% unless specified otherwise.
All capacitors are Z5U unless specified otherwise.
YOUNG CHANG CO., LTD.
Reproduction without the express written consent of Young Chang Co., Ltd. is prohibited.
K2600 KEYBOARD SCANNER
Scanner,Kbd I/F,Player I/F
Filename: 021208A3
Date: 2000/11/02
Eng:
By: Mike Richmond
Mfg:
Sht 1 of 2
Doc: 021208A3
Rev: RAV3



RAV3: Changed value of R90 for Tianma LCD.

All resistors are 5% unless specified otherwise.
All capacitors are Z5U unless specified otherwise.

YOUNG CHANG CO., LTD.	
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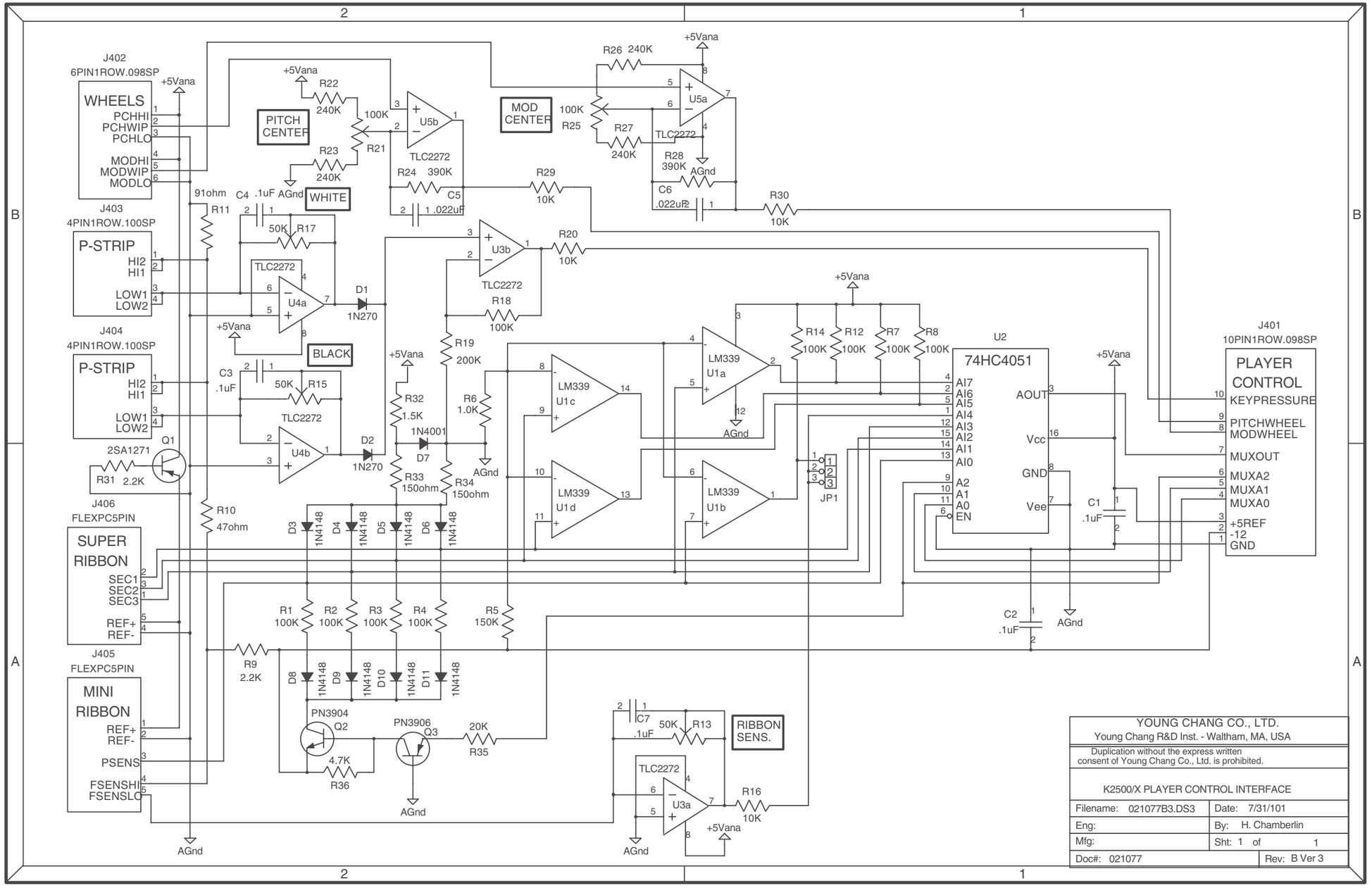
K2600 KEYBOARD SCANNER POWER, DIG I/O	
Filename: 021208A3	Date: 2000/11/02
Eng:	By: Mike Richmond
Mfg:	Sht 2 of 2
Doc: 021208A3	Rev: RAV3


J402
6PIN1ROW.098SP
WHEELS
PCHHI
PCHWIP
PCHLO
MODHI
MODWIP
MODLO
+5Vana
PITCH CENTER
R22 240K
R23 240K
R21 100K
U5b
TLC2272
MOD CENTER
R26 240K
R25 100K
R27 240K
U5a
R28 390K
R24 390K
C5 .022uF
C6 .022uF
AGnd
R29 10K
R30 10K
WHITE
91ohm
R11
C4 .1uF
R17 50K
J403
4PIN1ROW.100SP
P-STRIP
HI2
HI1
LOW1
LOW2
U4a
D1 1N270
U3b
R20 10K
R18 100K
BLACK
C3 .1uF
R15 50K
J404
4PIN1ROW.100SP
U4b
D2 1N270
R19 200K
R32 1.5K
D7 1N4001
R33 150ohm
R34 150ohm
R6 1.0K
LM339
U1c
U1a
U1d
U1b
R14 100K
R12 100K
R7 100K
R8 100K
U2
74HC4051
AI7
AI6
AI5
AI4
AI3
AI2
AI1
AI0
A2
A1
A0
EN
AOUT
Vcc
GND
Vee
C1 .1uF
C2 .1uF
JP1
J401
10PIN1ROW.098SP
PLAYER CONTROL
KEYPRESSURE
PITCHWHEEL
MODWHEEL
MUXOUT
MUXA2
MUXA1
MUXA0
+5REF
-12
GND
Q1
2SA1271
R31 2.2K
R10 47ohm
D3 1N4148
D4 1N4148
D5 1N4148
D6 1N4148
SUPER RIBBON
SEC1
SEC2
SEC3
REF+
REF-
J406
FLEXPC5PIN
J405
FLEXPC5PIN
MINI RIBBON
PSENS
FSENSHI
FSENSLO
R1 100K
R2 100K
R3 100K
R4 100K
R5 150K
R9 2.2K
D8 1N4148
D9 1N4148
D10 1N4148
D11 1N4148
PN3904
Q2
PN3906
Q3
4.7K R36
20K R35
C7 .1uF
R13 50K
RIBBON SENS.
TLC2272
U3a
R16 10K
YOUNG CHANG CO., LTD.
Young Chang R&D Inst. - Waltham, MA, USA
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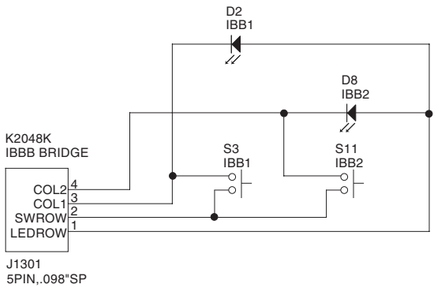
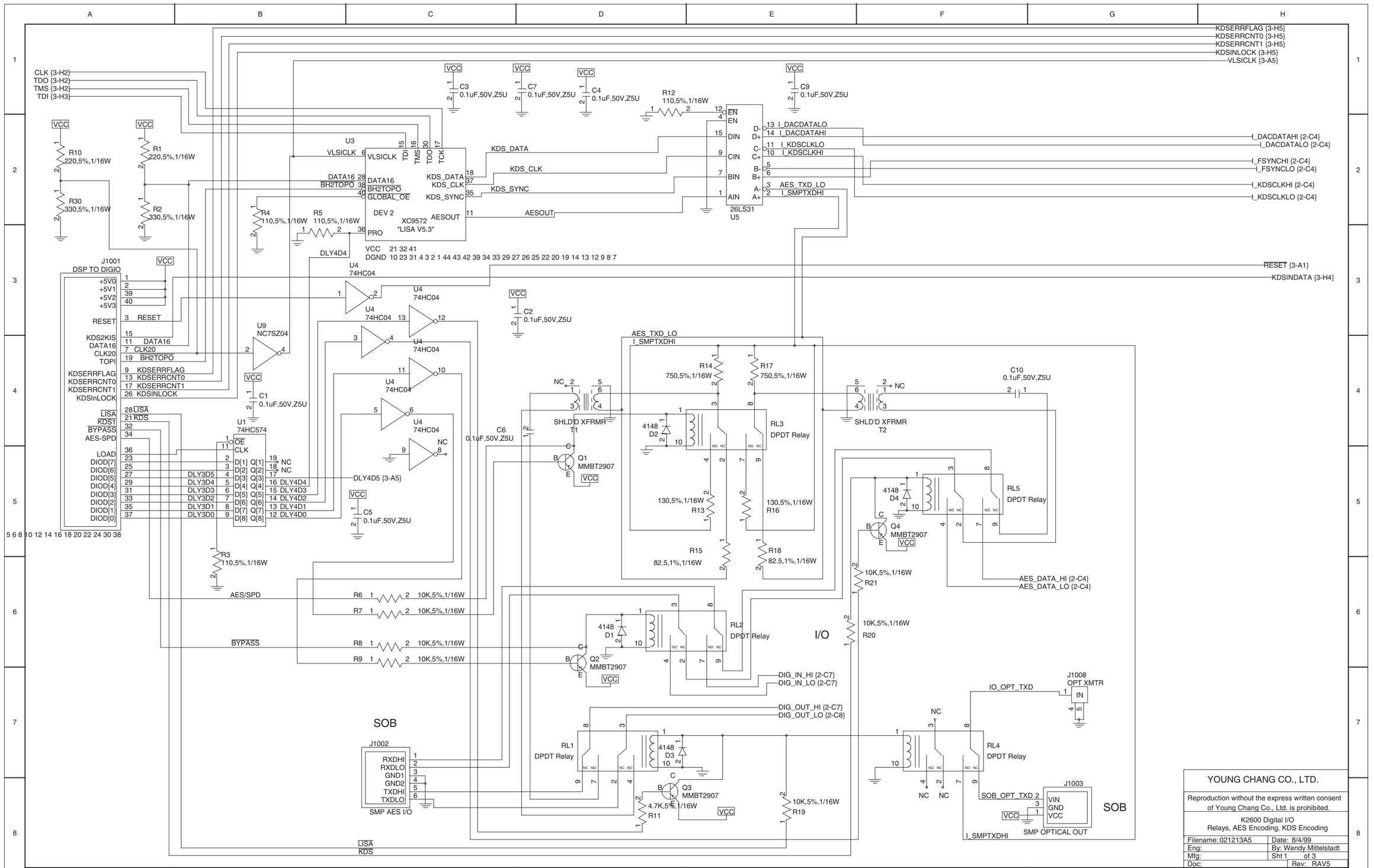
K2500/X PLAYER CONTROL INTERFACE
Filename: 021077B3.DS3
Date: 7/31/101
Eng:
By: H. Chamberlin
Mfg:
Sht: 1 of 1
Doc#: 021077
Rev: B Ver 3



YOUNG CHANG CO., LTD. Young Chang R&D Inst. - Waltham, MA, USA	
Duplication without the express written consent of Young Chang Co., Ltd. is prohibited.	
K2500K ITTY BITTY BUTTON BOARD	
Filename: 021070a1.ds2	Date: 9/2 2/95
Eng:	By: H. Chamberlin
Mfg:	Sht.: 1 of 1
Doc#: 021070	Rev: RAV1



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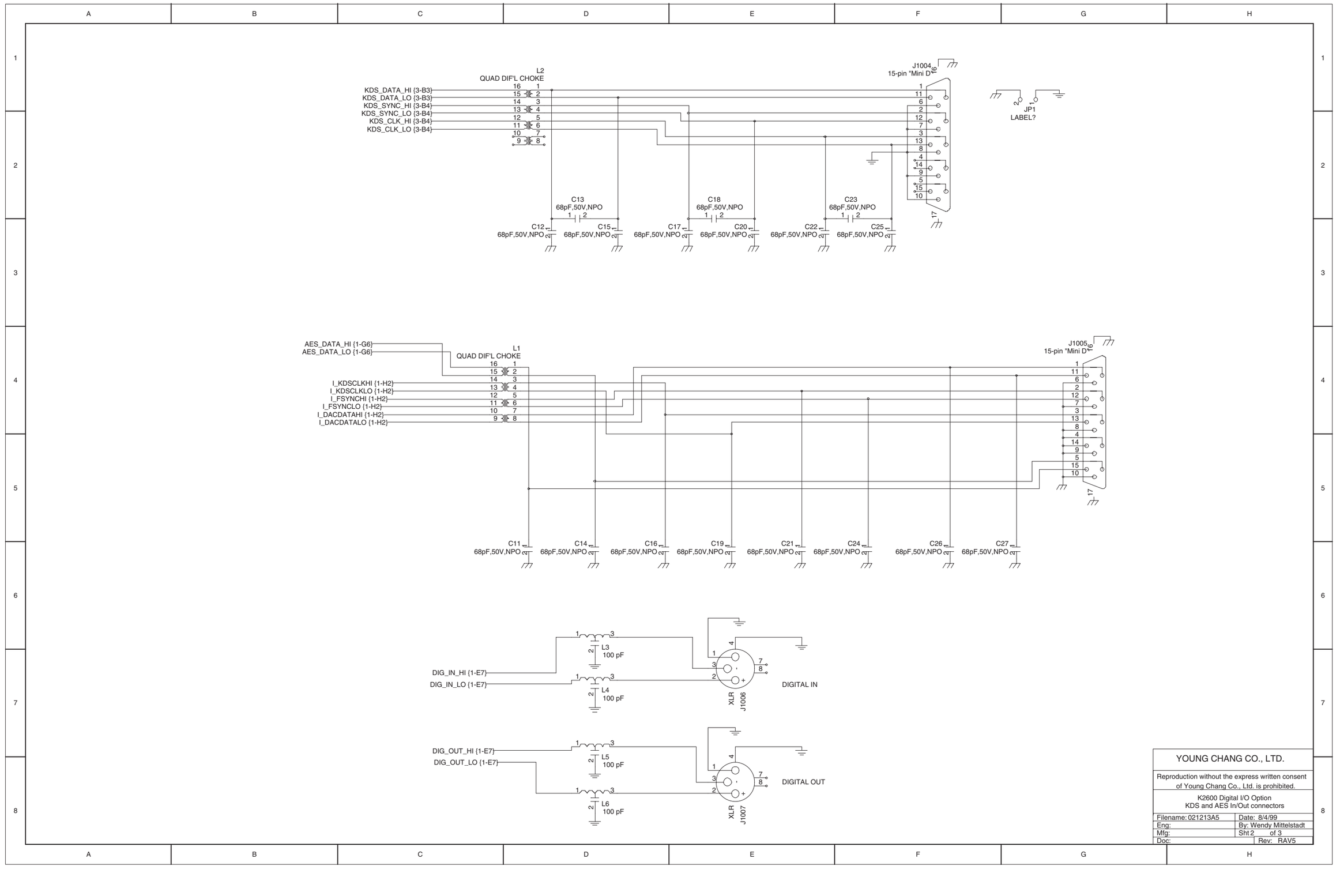
K2600 Digital I/O Relays, AES Encoding, KDS Encoding	
Filename: 021213A5	Date: 8/4/99
Eng:	By: Wendy Mittelstadt
Mfg:	Sht 1 of 3
Doc:	Rev: RAV5


L2
QUAD DIF'L CHOKE
KDS_DATA_HI {3-B3}
KDS_DATA_LO {3-B3}
KDS_SYNC_HI {3-B4}
KDS_SYNC_LO {3-B4}
KDS_CLK_HI {3-B4}
KDS_CLK_LO {3-B4}
J1004
15-pin "Mini D"
JP1
LABEL?
C13 68pF,50V,NPO
C18 68pF,50V,NPO
C23 68pF,50V,NPO
C12 68pF,50V,NPO
C15 68pF,50V,NPO
C17 68pF,50V,NPO
C20 68pF,50V,NPO
C22 68pF,50V,NPO
C25 68pF,50V,NPO
AES_DATA_HI {1-G6}
AES_DATA_LO {1-G6}
L1
QUAD DIF'L CHOKE
I_KDSCLKHI {1-H2}
I_KDSCLKLO {1-H2}
I_FSYNCHI {1-H2}
I_FSYNCLO {1-H2}
I_DACDATAHI {1-H2}
I_DACDATALO {1-H2}
J1005
15-pin "Mini D"
C11 68pF,50V,NPO
C14 68pF,50V,NPO
C16 68pF,50V,NPO
C19 68pF,50V,NPO
C21 68pF,50V,NPO
C24 68pF,50V,NPO
C26 68pF,50V,NPO
C27 68pF,50V,NPO
DIG_IN_HI {1-E7}
DIG_IN_LO {1-E7}
L3 100 pF
L4 100 pF
XLR J1006
DIGITAL IN
DIG_OUT_HI {1-E7}
DIG_OUT_LO {1-E7}
L5 100 pF
L6 100 pF
XLR J1007
DIGITAL OUT
YOUNG CHANG CO., LTD.
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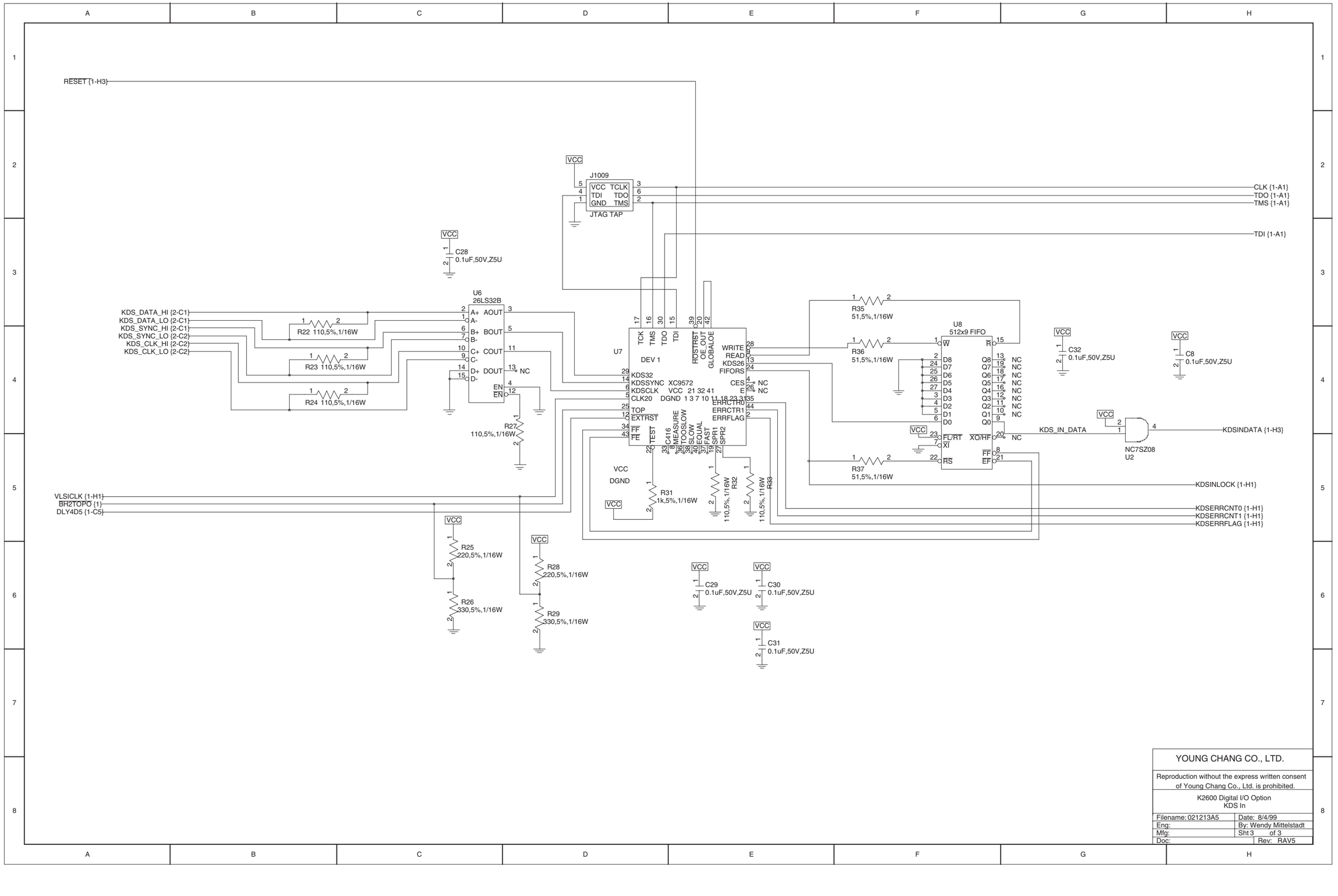
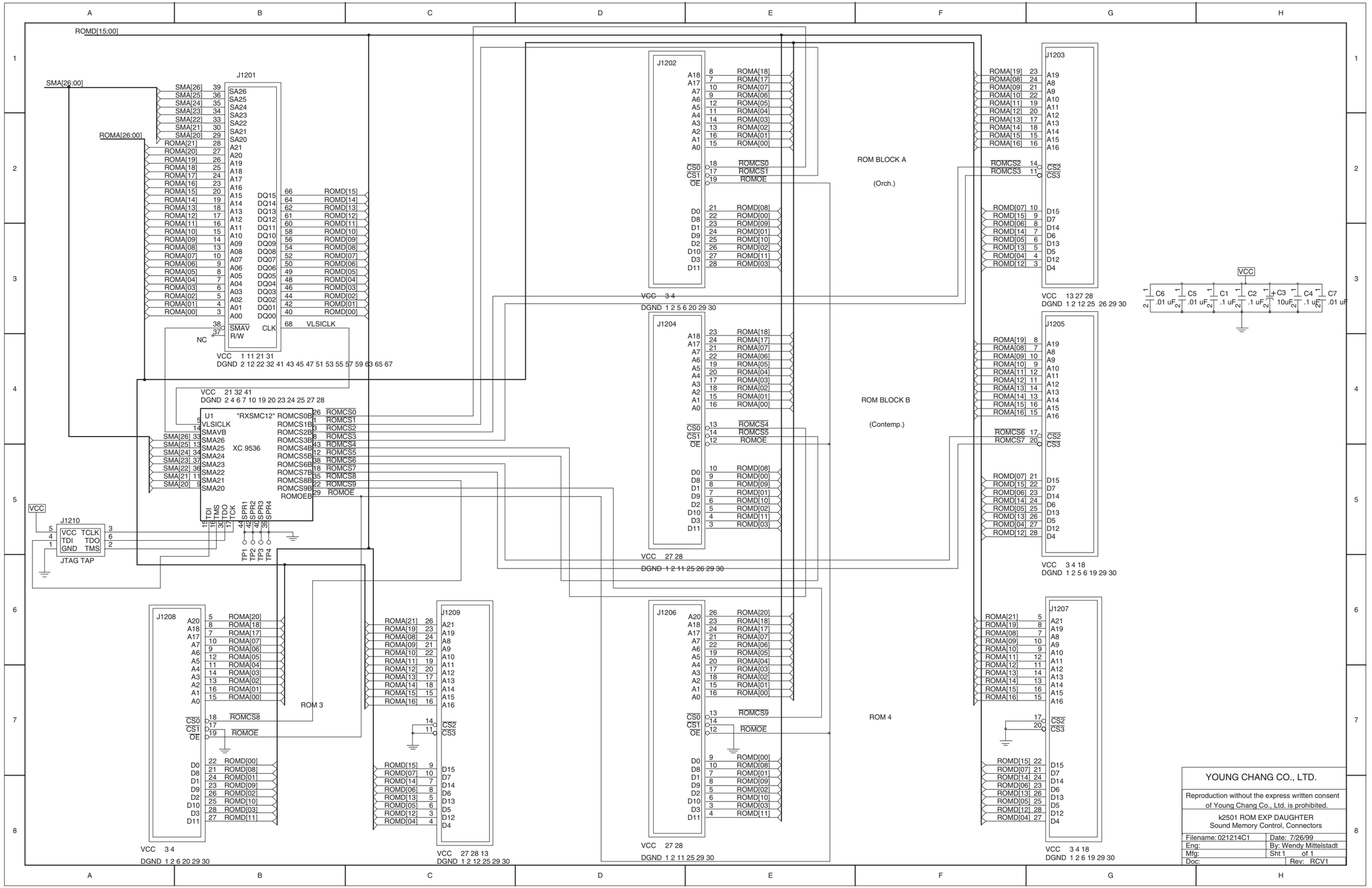
K2600 Digital I/O Option
KDS and AES In/Out connectors
Filename: 021213A5
Date: 8/4/99
Eng:
By: Wendy Mittelstadt
Mfg:
Sht 2 of 3
Doc:
Rev: RAV5



YOUNG CHANG CO., LTD.

K2600 Digital I/O Option
KDS In

Filename: 021213A5	Date: 8/4/99
Eng:	By: Wendy Mittelstadt
Mfg:	Sht 3 of 3
Doc:	Rev: RAV5


ROMD[15:00]
SMA[26:00]
ROMA[26:00]
J1201
J1202
J1203
J1204
J1205
J1206
J1207
J1208
J1209
J1210
JTAG TAP
U1 "RXSMC12" XC 9536
ROM BLOCK A
(Orch.)
ROM BLOCK B
(Contemp.)
ROM 3
ROM 4
VLSICLK
VCC
DGND
NC
YOUNG CHANG CO., LTD.
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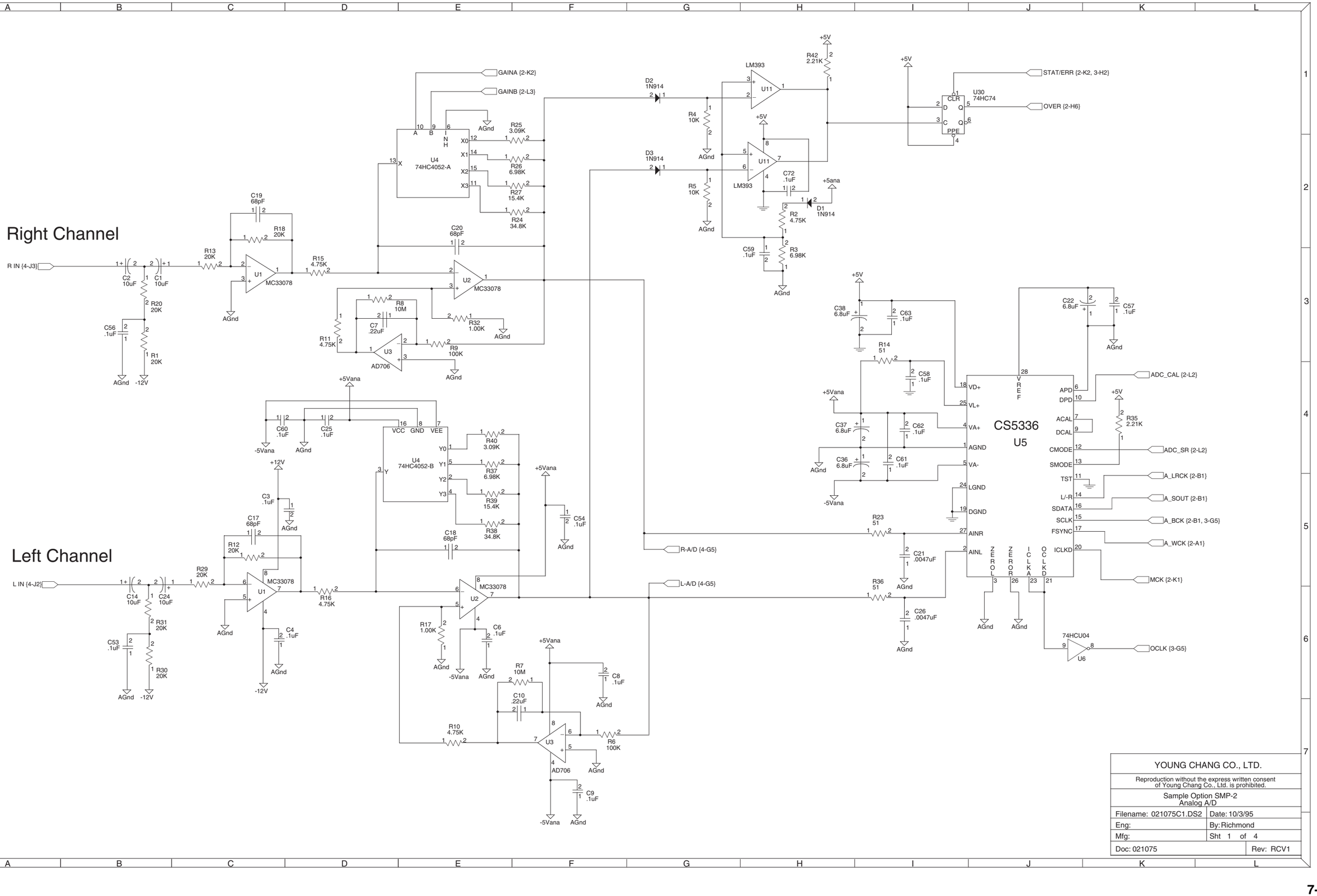
k2501 ROM EXP DAUGHTER
Sound Memory Control, Connectors
Filename: 021214C1
Date: 7/26/99
Eng:
By: Wendy Mittelstadt
Mfg:
Sht 1 of 1
Doc:
Rev: RCV1



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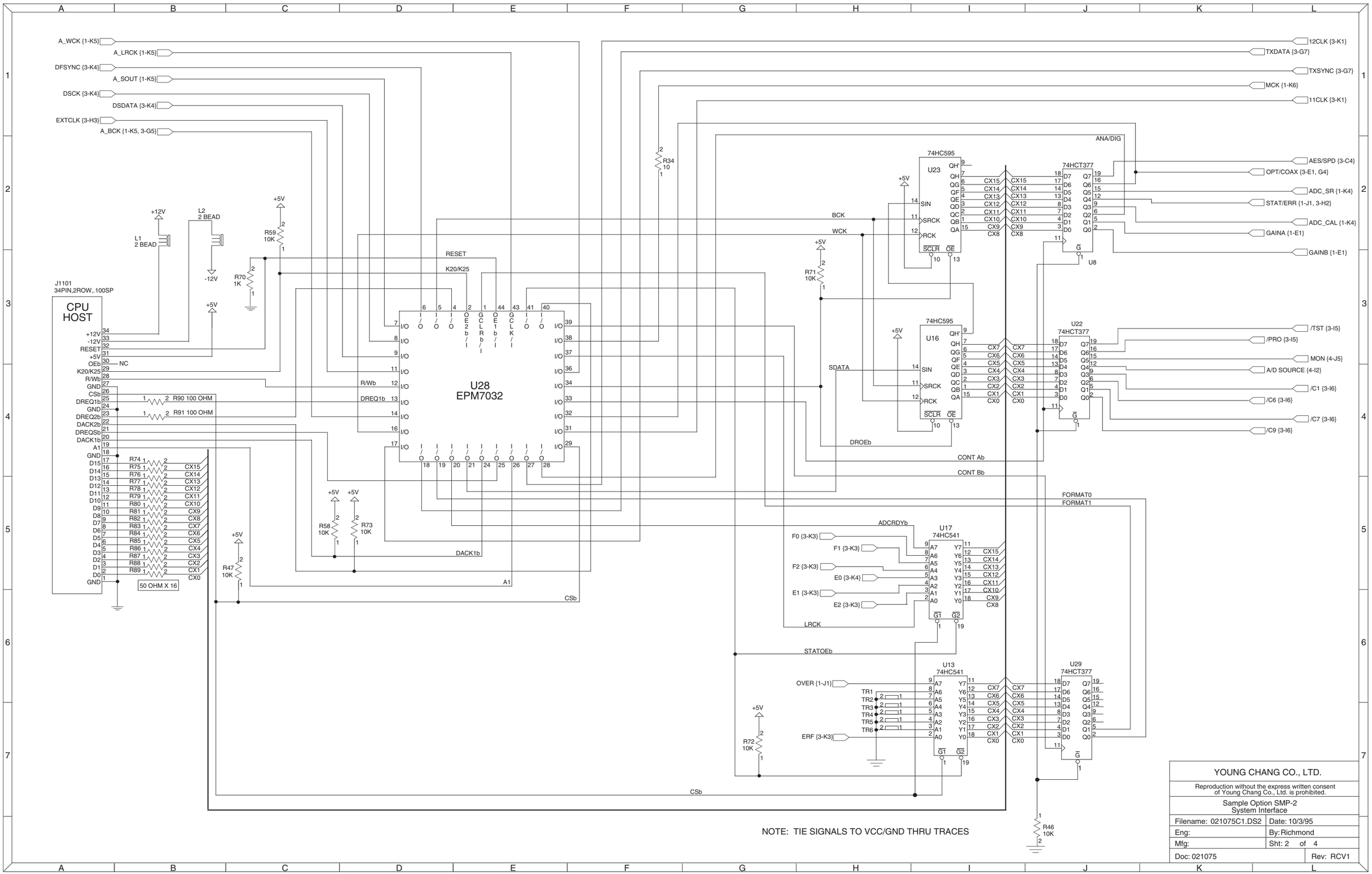
Sample Option SMP-2 Analog A/D	
Filename: 021075C1.DS2	Date: 10/3/95
Eng:	By: Richmond
Mfg:	Sht 1 of 4
Doc: 021075	Rev: RCV1



NOTE: TIE SIGNALS TO VCC/GND THRU TRACES

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Sample Option SMP-2 System Interface	
Filename: 021075C1.DS2	Date: 10/3/95
Eng:	By: Richmond
Mfg:	Sht: 2 of 4
Doc: 021075	Rev: RCV1

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Sample Option SMP-2 Digital Interface	
Filename: 021075C1.DS2	Date: 10/3/95
Eng:	By: Richmond
Mfg:	Sht: 3 of 4
Doc: 021075	Rev: RCV1

Keep R68 & R69 close to J1107

J1107
R69 110
R68 110
FGnd

J1104 XLR FEMALE RIGHT
J1105 XLR FEMALE LEFT

L5 100pF P1
L6 100pF P1
L7 100pF P1
L8 100pF P1

R60 1.21K
R61 806
R62 402
R63 604
R64 1.21K
R65 806
R66 402
R67 604

U27 MC33078

+12V
L9 FE Bead
C80 .1uF
C81 .1uF
L10 FE Bead
-12V
AGnd

L4
C74 68pF
C73 68pF
C75 68pF

RL2
NC
D5 1N914
LIN {1-A6}
A/D SOURCE {2-K4}
R IN {1-A3}

J1103
K2048 AUDIO
->RMIX
->LMIX
<-RMON
<-LMON
AGND

U26
74HC4053
CNO
CNC
BNO
BNC
ANO
ANC
V+
VSS
V-
CIN
CCTL
BIN
BCTL
AIN
ACTL
EN
R-A/D {1-G5}
L-A/D {1-G6}
MON {2-L3}
+5Vana
-5Vana

+5V
C39 .1uF
C43 .1uF
C51 .1uF
C48 .1uF
C64 .1uF
C42 .1uF
C46 .1uF
C45 .1uF
C68 .1uF
C49 .1uF
C50 .1uF
C44 .1uF

VR1 78L05
C11 6.8uF
C12 .1uF
C13 .1uF
C23 6.8uF
GJ2

VR2 79L05
C33 6.8uF
C35 .1uF
C34 .1uF
C40 6.8uF
GJ1

74HC08 U14

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Sample Option SMP-2 Analog Input/P.S.	
Filename: 021075C1.DS2	Date: 10/3/95
Eng:	By: Richmond
Mfg:	Sht: 4 of 4
Doc: 021075	Rev: RCV1

Numerics

A

B

C

D