
Service Manual

Model

VR800

VR800Z

Digital Multitrack Recorder

Fostex®



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH
WIDE BLADE OF PLUG TO WIDE SLOT,
FULLY INSERT.

ATTENTION:

POUR ÉVITER LES CHOCS ÉLECTRIQUES,
INTRODUIRE LA LAME LA PLUS LARGE DE
LA FICHE DANS LA BORNE CORRE-
SPONDANTE DE LA PRISE ET POUSSER
JUSQU' AU FOND.



The lightning flash with 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 appliance.

"WARNING"

"TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE."

SAFETY INSTRUCTIONS

1. Read instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain instructions - The safety and operating instructions should be retained for future reference.
3. Heed warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow instructions - All operating and use instructions should be followed.
5. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.
7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
14. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
15. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
16. Damage requiring Service - The appliance should be serviced by qualified service personnel when:
 - A. The power supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
17. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

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NOTES

* Service mode, error code list, exploded view, PCB assembly, parts list and circuit diagrams are given in this manual to assist the service technician in maintaining the Model VR800.


* The following accessories are supplied with VR800/VR800Z as the standard accessories.

Owner's manual, VR800	:	8288429000 (for export model)
	:	8288430000 (for domestic model)
Quick manual, VR800	:	8288442000 (for export model)
	:	8288443000 (for domestic model)
Manual, supplement, VR800Z	:	8288667000
Manual, supplement, Screw	:	8288668000

* Following is the packing material for the Model VR800.

CARTON, INNER, VR800	:	8228726000
PACKING, SIDE, L, VR800	:	8228450000
PACKING, SIDE, R, VR800	:	8228451000

CAUTION :

 Parts marked with this sign are safety critical components. They must always be replaced with identical components. Refer to the Fostex Parts List and ensure exact replacement.

1. SPECIFICATIONS

INPUT & OUTPUT

DATA IN

Connector

Square shape optical

Format

IEC consumer optical standard IEC 60958(S/P DIF)

ALESIS Proprietary Multi Channel Optical Digital Interface

DATA OUT

Connector

Square shape optical

Format

IEC consumer optical standard IEC 60958(S/P DIF)

ALESIS Proprietary Multi Channel Optical Digital Interface

MIDI IN

Connector

DIN 5-pin

Format

Comply to MIDI standard

MIDI OUT

Connector

DIN 5-pin

Format

Comply to MIDI standard

PUNCH IN / OUT

Connector

φ6 mm phone jack (CMOS level)

WORD OUT

Connector

BNC (TTL level)

SCSI

Connector

D-SUB 25-pin

Protocol

SCSI-2, unbalanced transfer method

Transfer type

Asynchronous

Number of device to be connected

2

SCSI ID: 0 ~ 5

Recording / reproducing

SCSI ID: 6

Data backup

RECORD & REPRODUCE

Recording Medium

Internal 3.5" E-IDE hard disk drive (VR800)

Internal ATAPI zip drive (VR800Z)

External fixed / removable hard disk drive (optional)

Standard

SCSI-2 or better

Sampling Frequency

44.1 kHz

Quantization

16-bit linear

Emphasis

Not available

Compression / Expansion Method

A.D.A.C. (Advanced Digital Audio Acoustic Coding)

Recording Time (mono track min.)

MASTERING mode

About 18 min. / 100 MB at maximum

NORMAL mode

About 72 min. / 100 MB at maximum

Recording time will be limited up to 24 hours.

Number of Tracks

24 tracks (8 + 16 additional tracks)

Number of recording tracks

8 (Depending on characteristics of recording medium)

Number of simultaneous recording tracks

8 (Depending on characteristics of recording medium)

Number of simultaneous playback tracks

8 (Depending on characteristics of recording medium)

RECORD & REPRODUCE (Continued)

Recording Format	FDMS-3
Recording Mode	NORMAL mode (A.D.A.C., 8 + 16 tracks, default) MASTERING mode (linear recording, 8 + 16 tracks)
Pitch Control	±6.0 %
Crossfade	10 msec

OPERATION

FFWD/REW Speed	±3, 32 times
Shuttle Speed (SHIFT + JOG)	±1, 2, 4, 8, 16, 32, 64 times
Digital Scrubbing (JOG)	0 ~ 1 times (Envelope can be displayed when selecting only one track.)
Locate Memory	6 (7 including [LOCATE] key temporary memory) + 99

LEVEL INDICATION

Type	LCD Bargraph
Number of Indicated Levels	10 dots (-∞, -30, -24, -18, -12, -9, -6, -3, 0, OVER)
Reference Level	-12dB

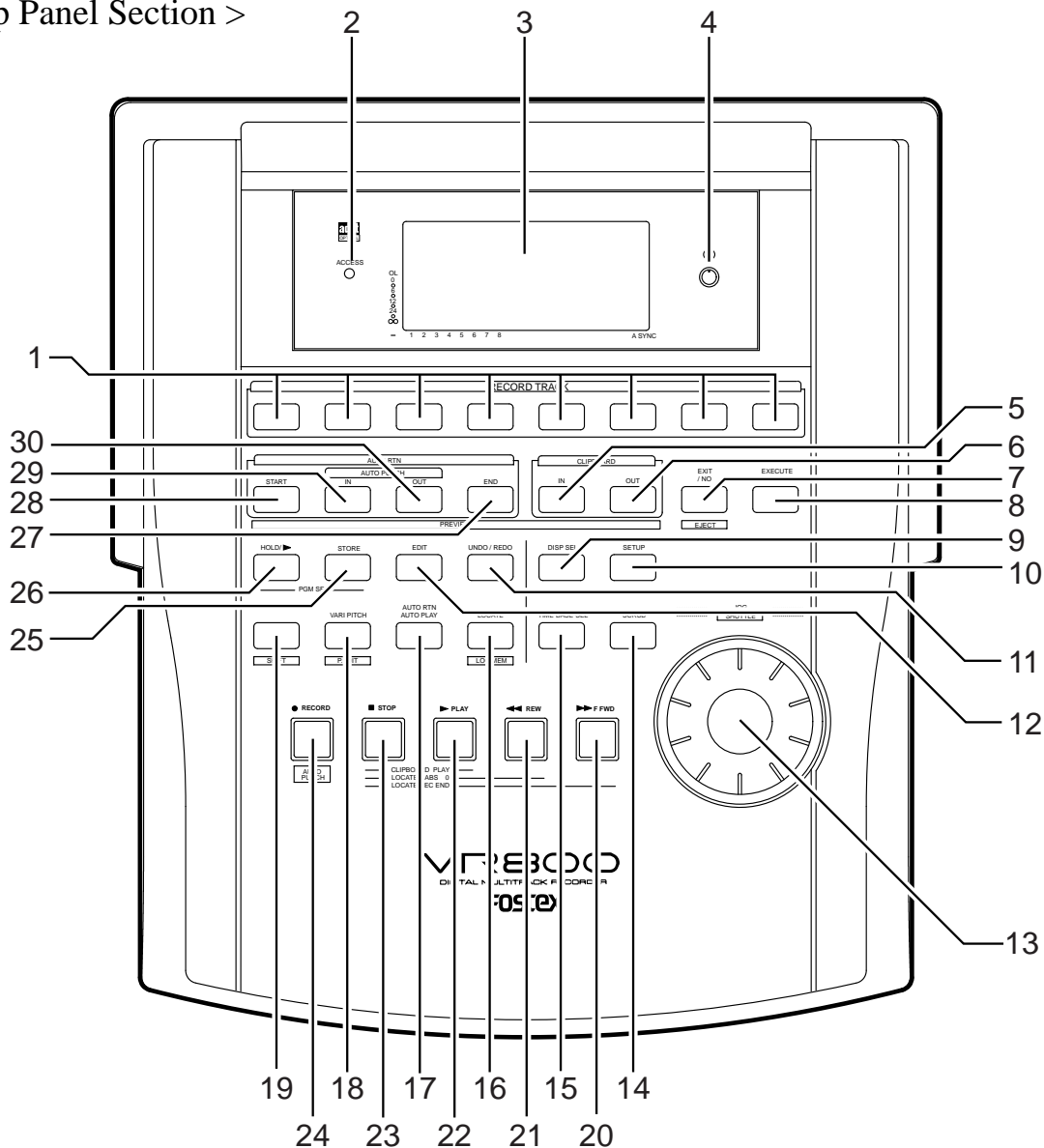
GENERAL

Dimensions	254 (W) x 285 (D) x 100 (H)
Weight	Approx. 2.0 kg
Power Requirement	
JPN	100V AC
USA / CND	120V AC
UK / EUR	230V AC
Power Consumption	15 W

*Specifications and appearance are subject to change without notice for product improvement.

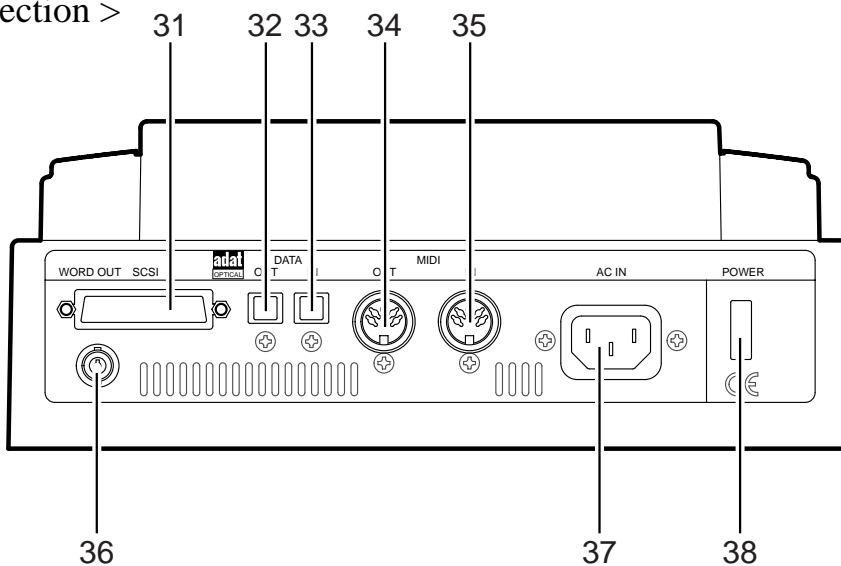
2. CONTROLS, INDICATORS AND CONNECTORS

< Top Panel Section >



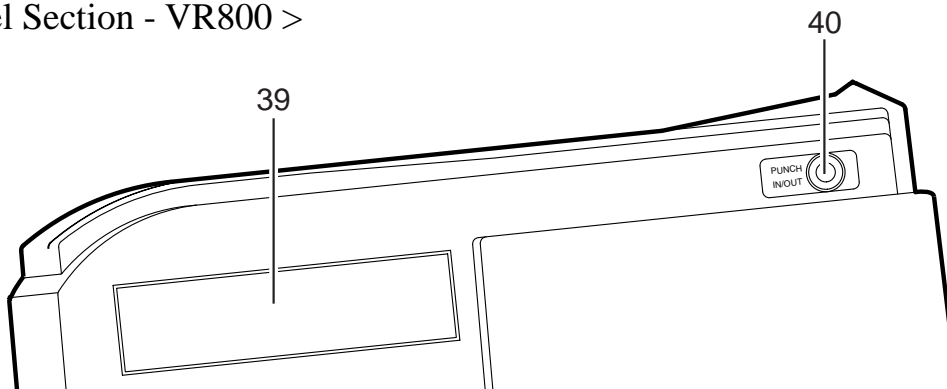
- | | |
|--|--|
| 1. Record track select keys [RECORD TRACK (1 - 8)] | 16. Locate key [LOCATE / LOC MEM] |
| 2. Access LED [ACCESS] | 17. Auto Return/Auto Play mode on/off key |
| 3. LCD | 18. Vari Pitch key [VARI PITCH / P.EDIT] |
| 4. Contrast adjustment knob | 19. Shift key [SHIFT] |
| 5. Clipboard In key [CLIPBOARD IN / PREVIEW] | 20. Fast forward button [F FWD] |
| 6. Clipboard Out key [CLIPBOARD OUT / PREVIEW] | 21. Rewind button [REWIND] |
| 7. Exit/No key [EXIT/NO / EJECT] | 22. Play button [PLAY] |
| 8. Execute/Yes key [EXECUTE / YES] | 23. Stop button [STOP] |
| 9. Display indication select key [DISP SEL] | 24. Record button [RECORD / AUTO PUNCH] |
| 10. Setup key [SETUP] | 25. Store key [STORE] |
| 11. Undo/Redo key [UNDO / REDO] | 26. Hold/> key [HOLD/>] |
| 12. Edit key [EDIT] | 27. Auto Return End key [AUTO RTN END / PREVIEW] |
| 13. JOG dial [JOG / SHUTTLE] | 28. Auto Return Start key [AUTO RTN START / PREVIEW] |
| 14. Scrub key [SCRUB] | 29. Auto Punch In key [AUTO PUNCH IN / PREVIEW] |
| 15. Time Base select key [TIME BASE SEL] | 30. Auto Punch Out key [AUTO PUNCH OUT / PREVIEW] |

< Rear Panel Section >

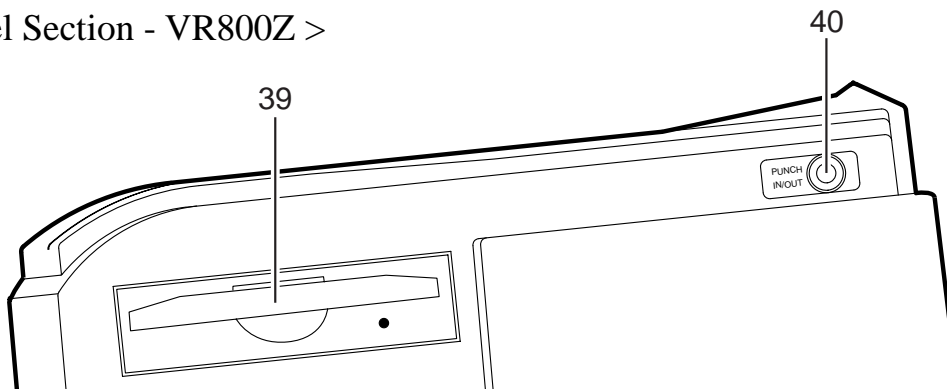


- 31. SCSI connector [SCSI] (Connector: D-SUB 25-pin)
- 32. Data output jack [DATA OUT] (Connector: OPTICAL)
- 33. Data input jack [DATA IN] (Connector: OPTICAL)
- 34. MIDI OUT jack [MIDI OUT] (Connector: DIN 5-pin)
- 35. MIDI IN jack [MIDI IN] (Connector: DIN 5-pin)
- 36. Word Out jack [WORD OUT] (Connector: BNC)
- 37. AC IN connector
- 38. Power switch [POWER]

< Side Panel Section - VR800 >



< Side Panel Section - VR800Z >



- 39. Blannk Panel (VR800)
Zip Drive (VR800Z)
- 40. Punch in/out jack [PUNCH IN/OUT]
(Connector: phone)

3. SOFTWARE UPDATE

The VR800 software can be updated through the SCSI port. This means that unscrewing and opening up the VR800 panel is not necessary to change the EPROMs. Please refer to the following explanation for correct software updating procedures.

3-1. Method of Sending Software from Fostex Japan

There are two ways of sending the VR800 updated software.

1. Updated software in a removable medium (e.g. floppy disk, zip disk, etc.) to be sent via airmail
2. Updated software as an attachment file to be sent via E-mail

3-2. Required Tools

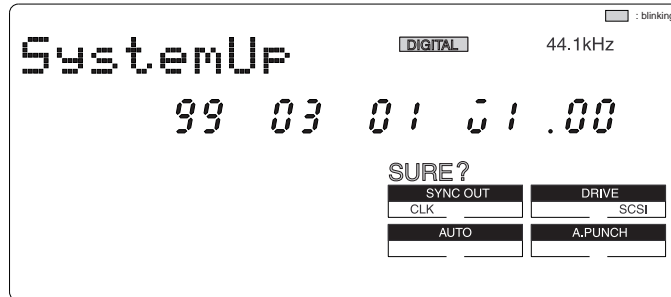
The following tools/equipment are required to update the VR800 software.

1. IBM PC/AT compatible computer with SCSI board
2. Removable type SCSI drive
3. Cable between the removable type SCSI drive and the SCSI board
4. Cable between the removable type SCSI drive and the VR800 (D-SUB 25-pin)

3-3. Software Updating Procedures

Presuming that the updated software is correctly sent and is copied into your computer.

1. Connect the removable type SCSI drive to the IBM PC/AT compatible computer SCSI port.
2. Insert the diskette to the removable type SCSI drive and format it by the computer on which Windows 95/98 is running.
3. Copy the updated software file to the removable type SCSI drive (diskette).
4. Set the removable type SCSI drive ID to 0 ~ 5 and connect to the VR800 SCSI port.
5. Turn on the power of removable drive and then VR800. The VR800 LCD display shows “No Disk”.
6. Insert the diskette with updated software file. The VR800 LCD display shows “No Disk”, “Initial..”, “name of drive (e.g. ZIP 100)” and “updated software file name” in order and comes to a standstill at the display below. Memorize the displayed ROM version and date before updating the software.



7. Pressing the [EXECUTE/YES] key would start updating the software. The display shows “Loading!”, “Writing!” and “Initial..” in order and automatically returns to the above condition again. Check the displayed ROM version and date if the software is correctly updated by the optional mode “4-2. Flash ROM & CPU Version” (page 10).
8. Eject the diskette with updated software file by the press of [STOP] button or [EXIT/NO] key and insert the diskette formatted by the VR800.

CAUTION:

1. The diskette in which the updated software file is copied must be formatted by IBM PC/AT computer, not by Macintosh.
2. If something wrong happens while updating the software (e.g. A blackout occurred while updating the software.), the VR800 might not be able to boot up the system software inside the Flash ROM. In such a case, please refer to the section “4-8. Flash ROM” (page 17).
3. The SCSI ID to be connected to the VR800 must be selected to 0 ~ 5. The SCSI ID “6” is used for backing up purpose exclusively. The SCSI ID “7” cannot be used by technical reasons.

4. SERVICE MODE

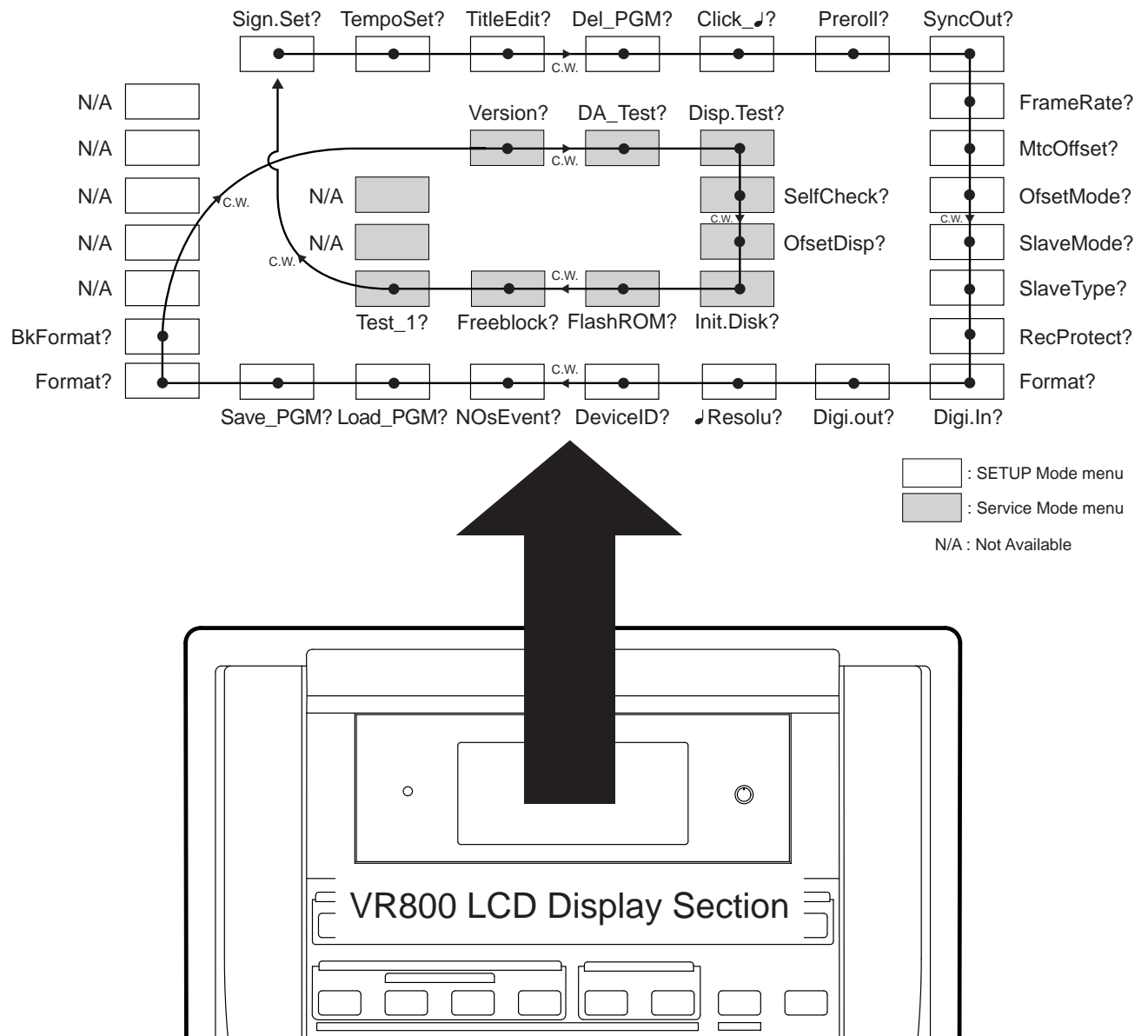
There are various optional modes available in the VR800 Service Mode. Please utilize them when servicing the unit.

4-1. Putting VR800 into Service Mode

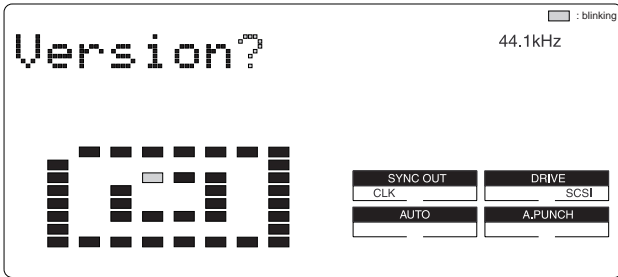
The way of putting the VR800 into Service Mode is as follow.

1. Connect a SCSI device, insert the diskette formatted by the VR800 and turn the power of SCSI device on.
2. After confirming that the access LED on the SCSI device is lit and then goes out, turn on the power of VR800.
3. While holding down the [STOP] button and [SHIFT] key, press the [SETUP] key.

As shown below, by rotating the jog dial C.W. or C.C.W., various optional modes will be displayed in addition to the general SETUP menus. In order to select a certain optional mode, press the [EXECUTE/YES] key while its menu is displayed.

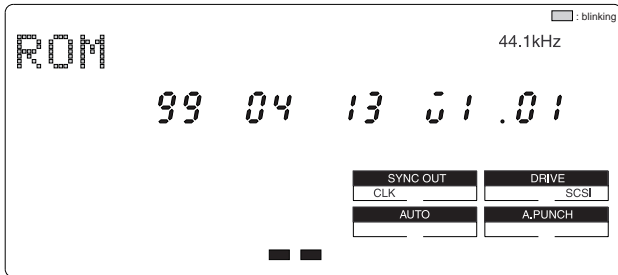


4-2. Flash ROM & CPU version



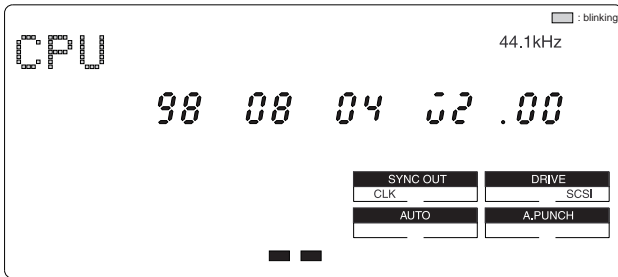
This mode is used to check the Flash ROM and CPU versions currently installed in the unit.

In order to check the version number, press the [EXECUTE/YES] key while “?” is blinking as shown in the left.



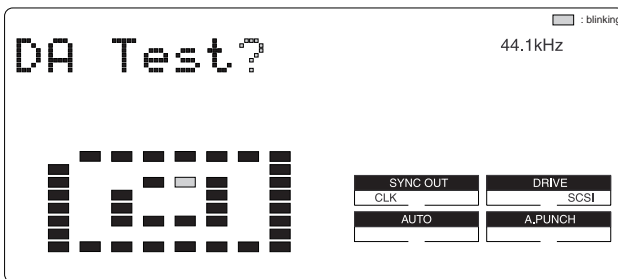
The example on the left indicates that the Flash ROM version is V1.01 and its programming date is April 13, 1999.

In this condition, by turning the jog dial C.W. or C.C. W., the CPU version can be checked.



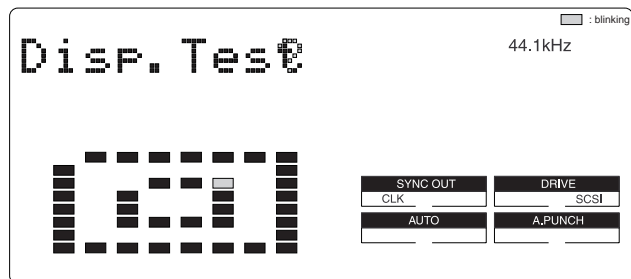
The example on the left indicates that the CPU version is V2.00 and its programming date is August 4, 1998.

4-3. DA Test



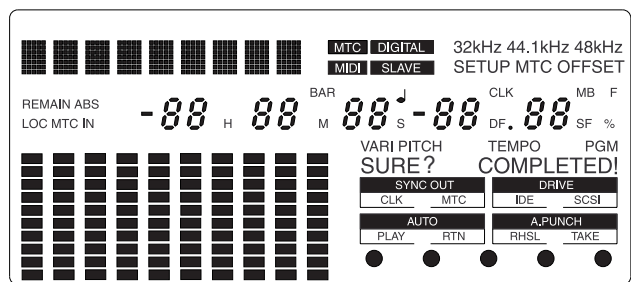
Since there are no A to D and D to A converters used on the VR800, this service mode does not function.

4-4. Display/Button Test



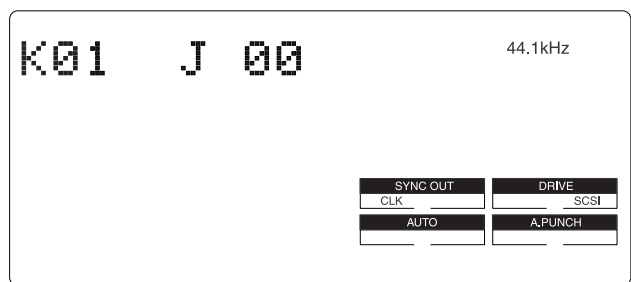
This mode tests if all the segments on the LCD display, LEDs and buttons (switches) on the VR800 top panel are correctly working or not.

To execute this test, press the [EXECUTE/YES] key while “?” is blinking.



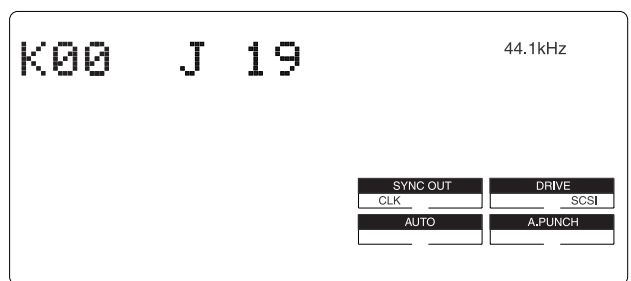
If the VR800 is in a normal condition, all the segments on the LCD display will be lit solid and all the LEDs on the top panel will start blinking.

If the VR800 is not in a normal condition, faulty segments on the LCD display and/or LEDs on the top panel will remain unlit.



In this condition, if the [EXECUTE/YES] key is pressed one more time, the Button Test can be executed.

The Button Test checks if each key/button and jog dial are working properly or not. The display on the left indicates that the [RECORD] button is pressed and held down. (“K” stands for the Key and “J” the Jog dial.)



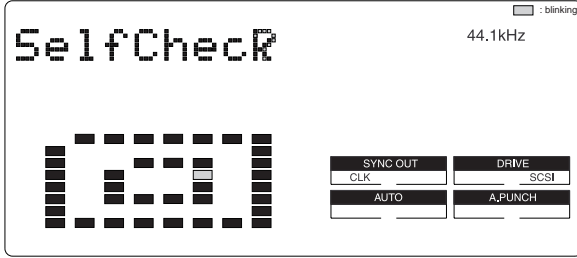
The display on the left indicates the condition when the jog dial is turned C.W.

The table below shows the relationship between the key/button/jog dial and the corresponding numbers appear on the LCD display.

In order to quit the Button Test, turn the jog dial C.W. or C.C.W. further after “J_20” or “J-19” is displayed respectively.

Key/Button/Jog Dial	No.	Key/Button/Jog Dial	No.	Key/Button/Jog Dial	No.
RECORD	K01	STORE	K13	EXECUTE / YES	K25
STOP	K02	EDIT	K14	RECORD TRACK 1	K26
PLAY	K03	UNDO / REDO	K15	RECORD TRACK 2	K27
REWIND	K04	DISP SEL	K16	RECORD TRACK 3	K28
F FWD	K05	SETUP	K17	RECORD TRACK 4	K29
SHIFT	K06	AUTO RTN START	K18	RECORD TRACK 5	K30
VARI PITCH / P.EDIT	K07	AUTO PUNCH IN	K19	RECORD TRACK 6	K31
AUTO RTN / PLAY	K08	AUTO PUNCH OUT	K20	RECORD TRACK 7	K32
LOCATE / LOC MEM	K09	AUTO RTN END	K21	RECORD TRACK 8	K33
TIME BASE SEL	K10	CLIPBOARD IN	K22		
SCRUB	K11	CLIPBOARD OUT	K23	JOG DIAL (C.W.)	J 00 ~ 20
HOLD	K12	EXIT / NO / EJECT	K24	JOG DIAL (C.C.W.)	J -00 ~ -19

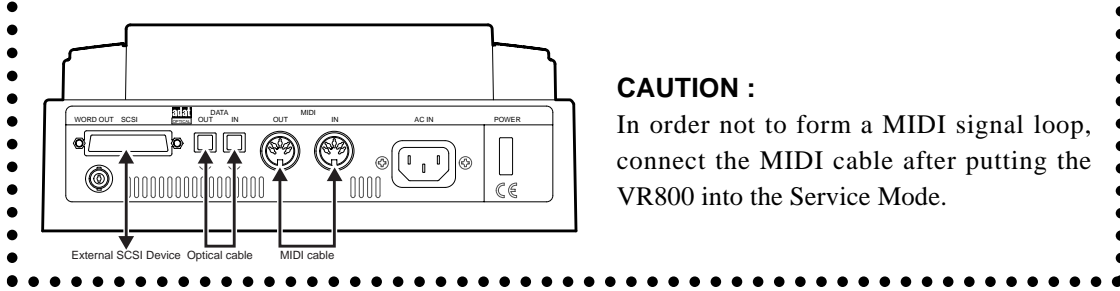
4-5. Self Check



This mode automatically tests the following points in order.

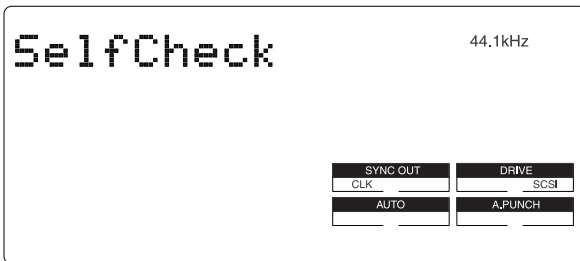
- SCSI port
- ATA (E-IDE) bus
- MIDI in/out circuit
- S/P DIF digital signal (44.1kHz)
- adat digital signal (44.1kHz)
- Vari-pitch circuit

<Cable Connection in " Self Check " Mode>

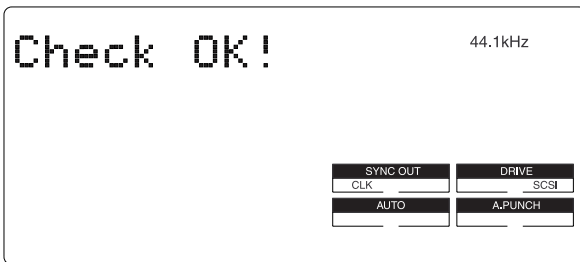


CAUTION :

In order not to form a MIDI signal loop, connect the MIDI cable after putting the VR800 into the Service Mode.



To start the Self Check mode, press the [EXECUTE/YES] key when "?" is blinking.



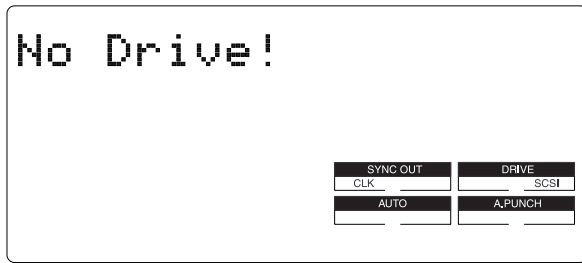
The VR800 automatically checks the before mentioned points. If the VR800 is working properly, the following appears on the display with REC LED blinking.

In order to go back to the normal display, press the [EXIT/NO] key or [STOP] button.

Fs, DIGITAL IN, DIGITAL OUT and SLAVE MODE settings on the disk to be used when the Self Check test is executed should be as follow.

- Fs : 44.1kHz
- DIGITAL IN : OFF (L: - R: -)
- DIGITAL OUT : ADAT
- SLAVE MODE : OFF

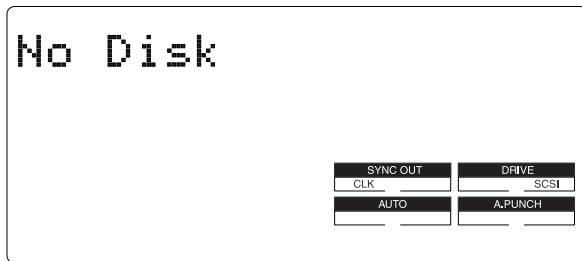
4-5-1. SCSI Port Check



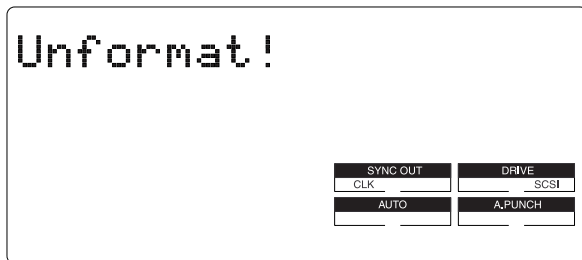
If the VR800 does not recognize a SCSI device connected to the VR800 SCSI port, the prompt below will be displayed.

The following is considered to be the cause of problem.

- Bad cable connection, bad cable contact and / or the power of SCSI device is being turned off.
- SCSI device ID is not set to 0 ~ 5.
- MAIN PCB is defective. (bad soldering of U7, U8, J6, etc.)



If a removable type SCSI drive is connected and in case a disk is not inserted into the drive, the following prompt will be displayed.



In the case that the inserted disk is not FDMS-3 formatted, the following prompt will be displayed.

Even if the before mentioned prompt is displayed, pressing the [EXECUTE/YES] key would reach the next test.

4-5-2. ATA (E-IDE) Bus Check



This test checks if data can be properly read out from the preformatted internal drive.

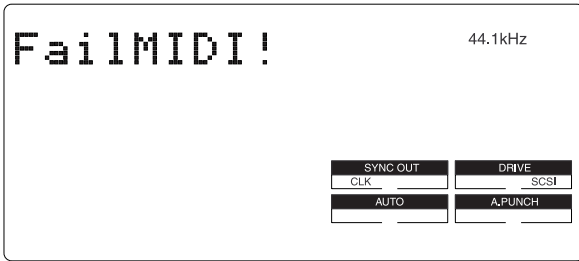
If the data (SYSTEM ID) written by formatting the disk cannot be read out correctly, the Self Check mode comes to a standstill at "AtaBusChk (check)" test.

The following is considered to be the cause of problem.

- The internal drive is not installed in the VR800.
- Breaking, shortage and / or bad contact of flat cable J12.
- Bad soldering of gate array U5 on the MAIN PCB.

Even if the before mentioned prompt is displayed, pressing the [EXECUTE/YES] key would reach the next test.

4-5-3. MIDI In/Out Check



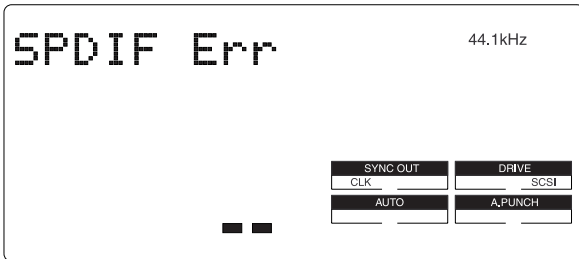
By connecting the MIDI IN and OUT ports, this test checks if the reply against the ID inquiry is correctly received. If not, the prompt below will be displayed.

The following is considered to be the cause of problem.

- Bad soldering of J2, U11 and surrounding circuit on the MAIN PCB

Even if the before mentioned prompt is displayed, pressing the [EXECUTE/YES] key would reach the next test.

4-5-4. S/P DIF In/Out Check



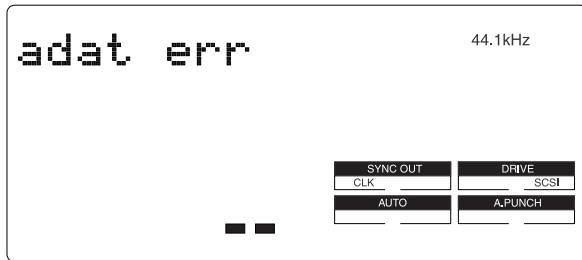
By connecting the DATA IN and OUT terminals, this tests checks if the S/P DIF signal output by itself is correctly received. If the PLL circuit is not in a “LOCKED” condition, the prompt below will be displayed.

The following is considered to be the cause of problem.

- Defect on DIGITAL OUT
 - No oscillation of resonator X1.
 - Connector J4, gate array U5, U20 and / or surrounding circuit are defective.
- Defect on DIGITAL IN
 - Connector J5, gate array U5, U20 and / or surrounding circuit are defective.
 - PLL circuit (U10 and surrounding circuit) are defective.
- The SETUP “DIGITAL IN” is set other than “L: - R: -”.

Even if the before mentioned prompt is displayed, pressing the [EXECUTE/YES] key would reach the next test.

4-5-5. Adat In/Out Check



By connecting the DATA IN and OUT terminals, this tests checks if the ADAT digital signal output by itself is correctly received. If the PLL circuit is not in a “LOCKED” condition, the prompt below will be displayed.

The following is considered to be the cause of problem.

- Defect on DIGITAL OUT
 - No oscillation of resonator X1.
 - Connector J4, gate array U5, U20 and / or surrounding circuit are defective.
- Defect on DIGITAL IN
 - Connector J5, gate array U5, U20 and / or surrounding circuit are defective.
 - PLL circuit (U22, 23, 35, 36, 37, 38, 39 and / or surrounding circuit) are defective.
- The SETUP “DIGITAL IN” is set other than “L: - R: -”.

Even if the before mentioned prompt is displayed, pressing the [EXECUTE/YES] key would reach the next test.

4-5-6. Vari-Pitch Circuit Check



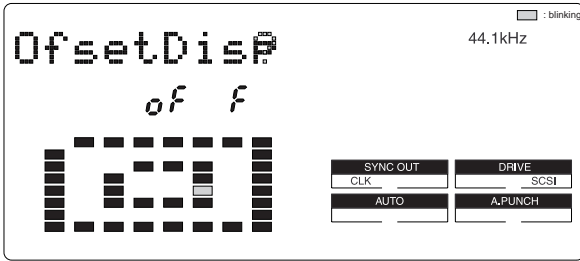
Using the master clock generated through the VR800 vari-pitch circuit on the MAIN PCB, the adat digital signal is output. This test checks if the adat digital signal output by itself is correctly received. If not, it means that the vari-pitch circuit does not work correctly. As a result, the prompt below will be displayed.

The following is considered to be the cause of problem.

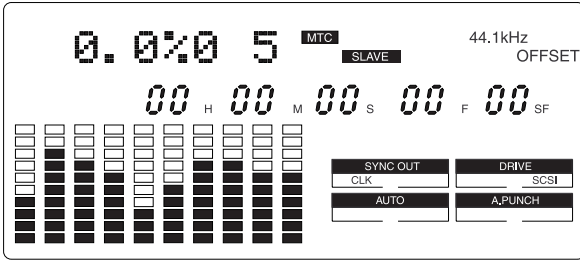
- Defects on the vari-pitch circuit (U3, U9), gate array (U5) and / or surrounding circuit.

Even if the before mentioned prompt is displayed, pressing the [EXECUTE/YES] key would reach the next test.

4-6. Offset Display



This mode determines if the offset value against a master machine should be displayed when the VR800 is working as a slave machine. If you would like to turn “ON” the offset display, press the [EXECUTE/YES] key while “?” is blinking. (The default setting is “off”.) Then, turn the jog dial C.W. to change the setting to “ON” and press the [EXECUTE/YES] key.

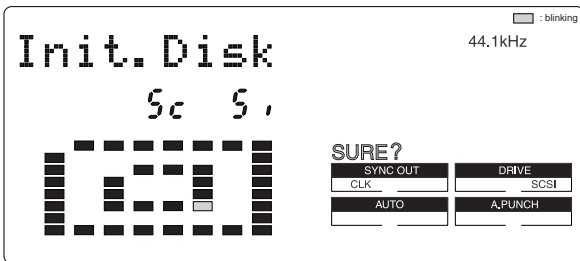


In order to check the offset value, select the “MTC” time base and the “REMAINING TIME” display. The display below is an example of offset display.

CAUTION:

There might be a case that the percentage value does not indicate “0.0%” exactly. This is caused by the difference of internal clocks between master and slave machines, which are running independently.

4-7. Initializing Disk



This mode initializes an external SCSI device connected to the SCSI port or an internally installed drive. The disk drive currently connected can be initialized.

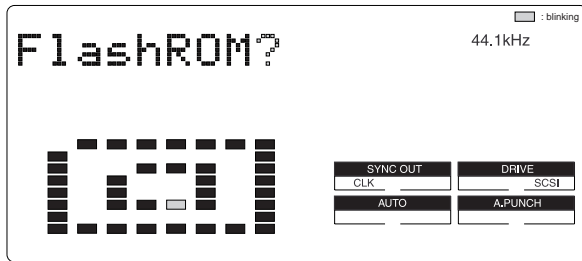
CAUTION:

1. If both the external SCSI drive and the internal drive are connected at the same time, the current drive will be initialized.
2. Up to 2 x SCSI drives can be connected to the VR800 at a time. One is for recording / reproducing (SCSI ID: 0 ~ 5) and the other for exclusive backing up (SCSI ID: 6). Initializing is possible on the SCSI drive (ID: 0 ~ 5) used for recording / reproducing only.



After pressing the [EXECUTE/YES] key, “SURE?” will start blinking in the FL display. In this condition, pressing the [EXECUTE/YES] key one more time would initialize the recognized disk drive. This mode puts the disk back to the condition originally formatted.

4-8. Flash ROM



This mode is used when copying the system software from ROM CARD PCB assy (P/N : 8274219000) to Flash ROM. As mentioned in the section “3. SOFTWARE UPDATE” (page 8), the VR800 software inside the Flash ROM can be updated through the SCSI port. However, if something wrong happens when updating the software (e.g. A blackout occurred while updating the software.), the VR800 might not be able to boot up by the system software inside the Flash ROM.

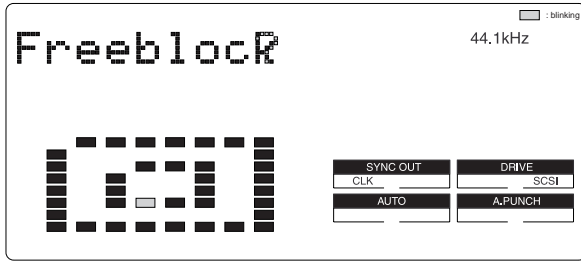
In this case, the following procedures must be taken.

1. Turn off the power of VR800 and turn the switch on the ROM CARD PCB assy to “EPROM” side.
2. Plug the EPROMs into the sockets on the ROM CARD PCB assy which will be supplied to you separately.
3. Connect the ROM CARD PCB assy to J10 (50-pin connector) on the MAIN PCB assy.
4. Turn on the power of VR800.

In this condition, the VR800 is booted up by the system software inside the EPROMs. The next procedures to take are as follows.

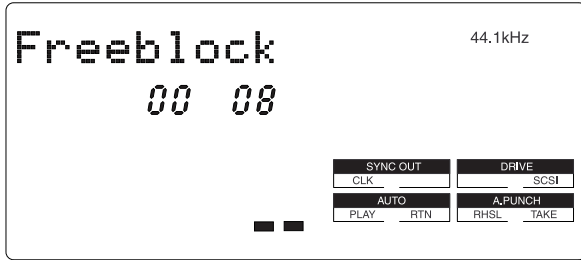
1. Put the VR800 into the Service Mode, select “FlashROM” and press [EXECUTE/YES] key. (“SURE?” is blinking.)
2. Press the [EXECUTE/YES] key one more time to copy the system software from EPROMs to Flash ROM.
3. After the completion, turn the switch on the ROM CARD PCB assy to “FLMEM” side.
4. In order to confirm that the VR800 is correctly booted up using the system software inside the Flash ROM, turn off the power, disconnect the cable connected to the J10 on the MAIN PCB assy and turn the power back on again.
5. After the confirmation, referring to the section “3. SOFTWARE UPDATE” (page 8), update the system software inside the Flash ROM through SCSI port again.

4-9. Free Block Check



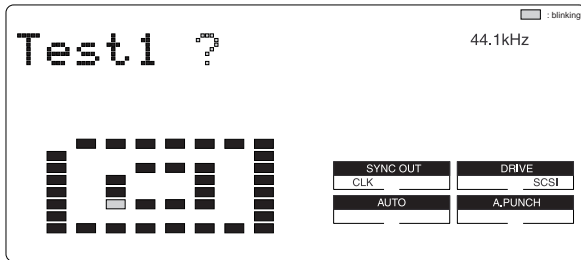
This mode is used to check the condition of the diskette inserted into an external SCSI drive connected to the VR800 or the internal drive. (As mentioned before, the SCSI drive has a priority unless the SCSI ID is set to “6”.)

Press the [EXECUTE/YES] key when “?” is blinking. The display indicates the free audio file numbers.



If the Free Block indicates a large number even after formatting and no signal is recorded or recorded signals are frequently skipped, the diskette / hard disk drive can be judged to be in a bad condition.

4-11. Test 1



This Service Mode is exclusively designed for software programming purpose. There is nothing to do with servicing / repairing the VR800.

5. ERROR CODE LIST

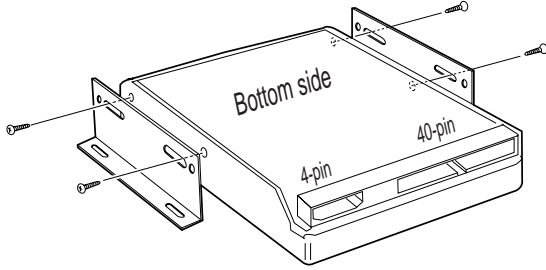
The chart below indicates the error code number and corresponding description. Since the error code list is basically designed for our engineers to improve the software, the description is quite technical. If you find the VR800 with one of the error codes displayed, we encourage you to update the software first. In case updating the software does not solve the problem, we would like you to inform us about details.

ERROR CODE LIST	
ERROR CODE	DESCRIPTION
1	The FD-8 tries to access the address which does not exist.
3	SCSI drive does not boot up correctly when in SCSI access operation.
9	When saving system region sector, its address is registered in Free_block File during Free block File checking procedure.
10	Link_pointer which links Audio File indicates smaller address (out of region) than Link_File address region in RAM.
11	Link_pointer indicates larger address (out of region) than Link_File address region in RAM.
12	"Pointer_adre" calculation of Link_Pointer is not correct.
14	Link_Pointer during recording/reproducing indicates smaller address (out of region) than actual Link_File address region.
15	Link_Pointer during recording/reproducing indicates larger address (out of region) than actual Link_File address region.
16	"Pointer_adre" calculation of Link_Pointer during recording/reproducing is not correct.
20	src_cash_load: Improper access of link address occurred while PASTE editing.
21	bak_cash_load: Program link during PASTE/MOVE editing is incorrect.
22	bak_cash_load: Imcompatibility problem occurred on program link during PASTE/MOVE editing.
30	Error when executing MOVE editing. Improper Link Pointer. Error in "bak_cash_load" function.
31	Error when executing MOVE editing. Improper Link Pointer. Error in "bak_cash_load" function.
32	Error when executing MOVE editing. Improper Link Pointer. Error in "bak_cash_load" function.
35	Backup_Save:Error occurred when saving data to SCSI device.
36	Backup_Load: Error occurred when loading data from SCSI device.
38	Displayed in Test Mode only. SCSI device cannot be recognized during initial test.
40	dis_cah_load: Improper access occurred when recording/reproducing.
41	dis_cah_load: Improper access occurred when recording/reproducing.
42	dis_cah_load: Improper access occurred when recording/reproducing.
45	get_non_des_block: Remaining disk capacity is insufficient.
52	non_des_cash_save_sub: Improper access occurred when recording/reproducing.
60	remake_free_block: There was improper access to program management region.
61	remake_free_block: There was improper access to program management region.
62	remake_free_block: Number of manageable events exceeds limit.
63	remake_free_block: There was improper access to program management region.
64	remake_free_block: There is an overlapping section in program management region.
96	There was improper access to program management region.
97	There was improper access to program management region when saving System File.
99	There was improper access when fading in/out.

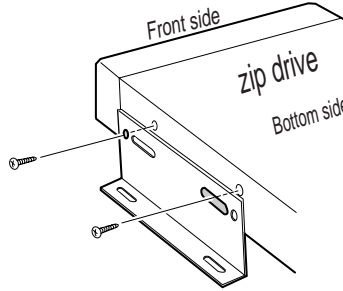
6. INSTALLING INTERNAL DRIVE

The 3.5" internal drive(E-IDE hard disk drive or ATAPI zip drive) installing procedures are explained below.

- Using 4 x inch screws, fix the bracket (P/N : 8221277000 : Bracket, RHD, VR800) to a 3.5" E-IDE HDD.



When installing the ATAPI zip drive (P/N: 8270587000) supplied from Fostex as a VR800 service part, fix it using the hole on the bracket indicated below, so that the VR800Z side panel would be even with the zip drive disk insertion surface.

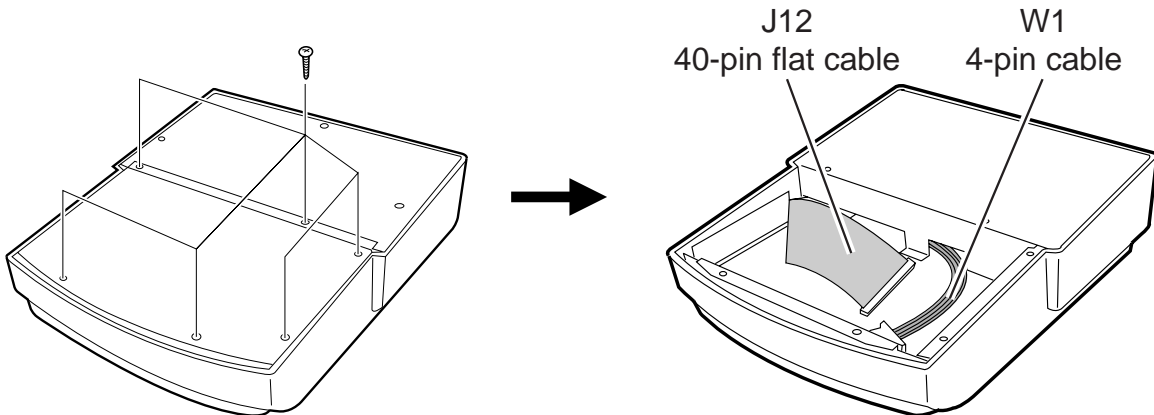


CAUTION :

- The internal drive must be set to "MASTER".
- There are 4x inch screws and 8x metric screws are included in the VR800 as well as the VR800Z. When fixing the HDD to the bracket, use the inch screws. On the other hand, use the metric screws when fixing the zip drive to the bracket.

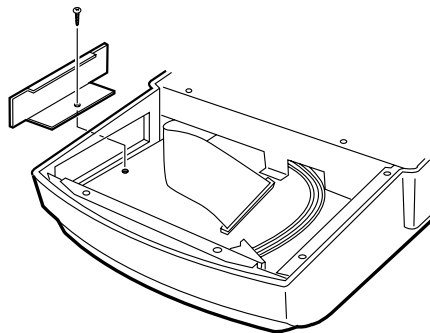
- Loosen 6 x screws (BBT 3 x 8 BZn) fixing the bottom panel of the VR800.

Two cables used to connect to the internal disk appear when you remove the bottom panel.

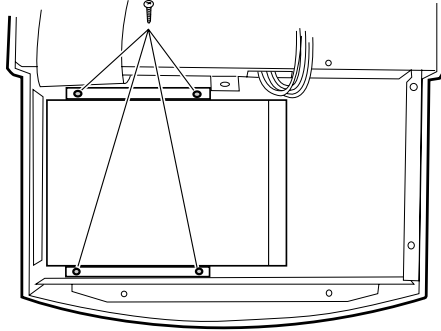


CAUTION :

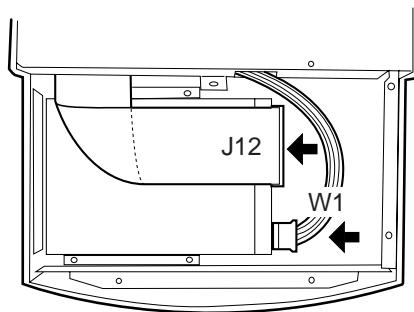
When installing the ATAPI zip drive, remove the side panel prior to the installation.



- 3) Using 4 x screws (B 3 x 5 BZn), fix the internal drive/bracket to the VR-800.
Adjust the tightening position of screws to the internal drive/bracket and to the VR-800 so that screws are not bothered from each other.



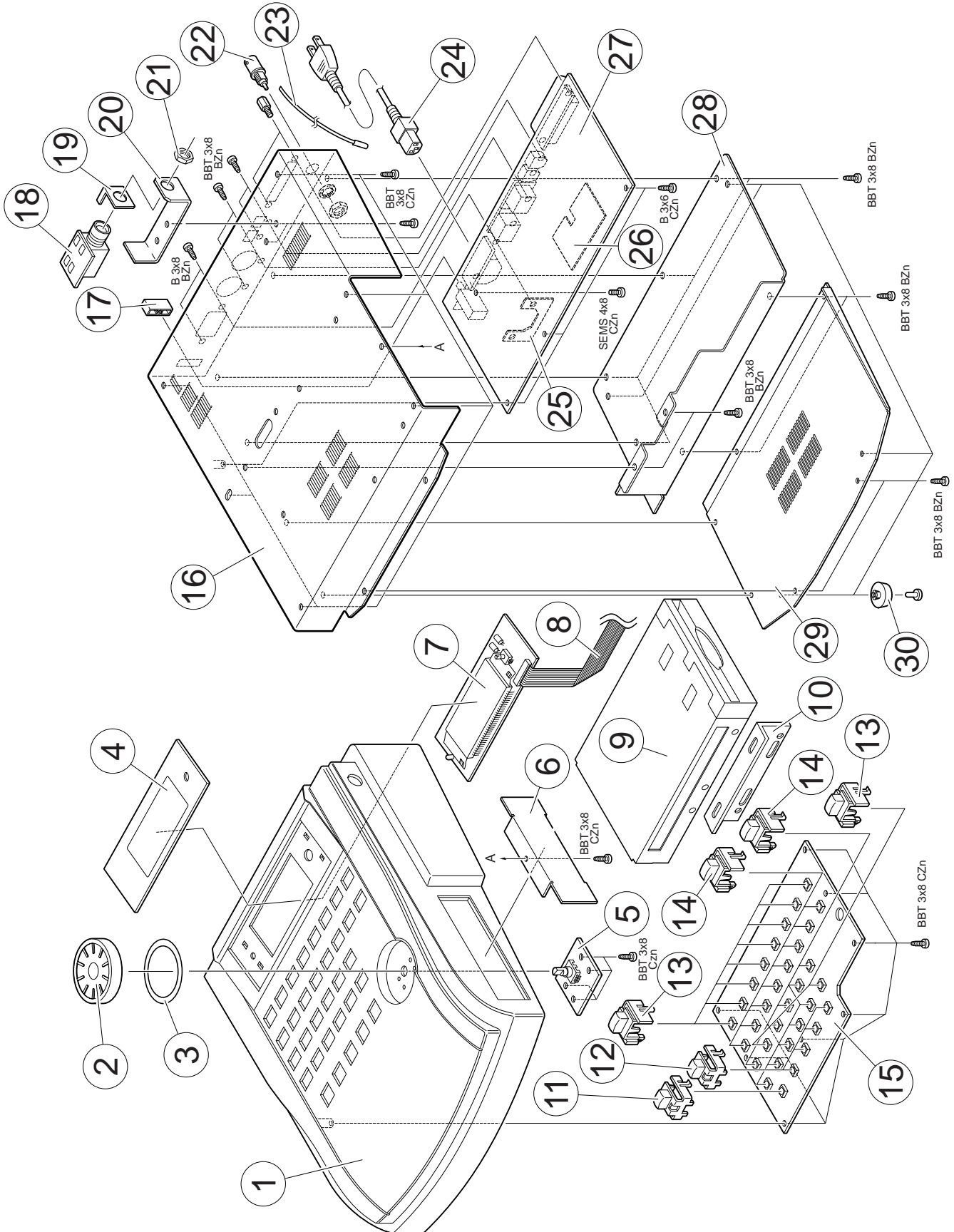
- 4) Connect the J12 (40-pin flat cable) and W1 (4-pin cable) from the MAIN PCB assy to the internal drive connectors
In order to connect pins straight, twist the cable as shown below.



- 4) Tighten 6 x screws (BBT 3 x 8 BZn) fixing the bottom panel of the VR800.

7. EXPLODED VIEW, PCB ASSEMBLY AND PARTS LIST

• EXPLODED VIEW



• EXPLODED VIEW Parts List

Ref. No.	Part No.	Description
1	8212656100	PANEL, TOP, VR-800
2	8226238000	KNOB, JOG, FD-4
3	8216704000	SHEET, JOG, VR800
4	8212657000	WINDOW, LCD, VR800
5	8274200000	PCB_ASSY, JOG, VR800
6	8221274000	PANEL, BLANK, VR800
7	8274197000	PCB_ASSY, LCD, VR800
8	8276839615	CABLE, FLAT, FFC, 17P, L150
9	8270857000	ZIP_100, ATAPI
10	8221277000	BRACKET, RHD, VR800
11	8226250002	BUTTON, 10X10, RED
12	8226250001	BUTTON, 10X10, LED
13	8226246001	BUTTON, 7X13, LED
14	8226246002	BUTTON, 7X13, N4.5
15	8274199000	PCB_ASSY, KEY, VR800
16	8221271000	CHASSIS, VR800
17	8226013003	BUTTON, PUSH, B, N
18	8274203000	PCB_ASSY, FOOT_SW, VR800
19	8216668000	SHIELD, PHONE, FD-4
20	8221278000	BRACKET, PUNCH, VR800
21	8245340000	NUT, PHONEJACK
22	8245166000	CONN, WI, JACK, BNC, 01K0312
23	8277446010	CABLE_ASSY, 1P, SMF/F-KINK, L10
△ 24	8276800000	CORD, POWER, DM, VM1292-1298
	8276801000	CORD, POWER, UL/CSA, VM0033-0089
	8276802100	CORD, POWER, CEE, 0309B-0310B
	8276917000	CORD, POWER, BS, 3C, KP610-KS31A
25	8221261000	BRACKET, AC-IN, D-108
26	8274198000	PCB_ASSY, ADAC, VR800
27	8274196000	PCB_ASSY, MAIN, VR800
28	8221272000	PANEL, BOTTOM, VR800
29	8221273000	PANEL, RHD, VR800
30	8207012000	FOOT, FF-822

• MAIN PCB ASSY Parts List

Ref. No.	Part No.	Description
	8274196000	PCB_ASSY, MAIN, VR800
B101	8251981101	PLAIN PCB, MAIN

ICs		
Ref. No.	Part No.	Description
U004	8236545000	ST, TSSOP, 74VHC00
U005	8236081800	QFP, DG, GATEARRAY, ASPI
U006	8236561004	ST, DG, 74HCU04
U007	8236082800	QFP, DG, SCSI, MB86604L
U008	8236082900	SOP, DG, SCSITERM, BH9595FP-Y
U009, 010	8236503400	ST, DG, VCO, TC9246F
U011	8234504700	OPT, T, PHOTO, PC410T
U012	8236545014	ST, TSSOP, 74VHC14
U013	8236502500	ST, AN, RESET, NJM2103M
U014	8236570101	ST, DG, DRIVER, DTC114EK
U015	8236083802	QFP, DG, CPU, MAIN, FD-8, MASK, SH7042, F28
U016	8236545139	ST, TSSOP, 74VHC139
U020	8236085000	QFP, DG, GATEARRAY, DIF
U022	8236503400	ST, DG, VCO, TC9246F
U023	8236545074	ST, TSSOP, 74VHC74
U024	8236545032	ST, TSSOP, 74VHC32
U029	8236545157	ST, TSSOP, 74VHC157
U030	8236084011	TSOP, DG, FROM, M29F400T-400, SGS
U033	8236083120	SOJ, DG, DRAM, TMS418160A-60A-60DZ
U035	8236545086	ST, TSSOP, 74VHC86
U036	8236560161	ST, DG, 74HC161A
U037, 038	8236545074	ST, TSSOP, 74VHC74
U039	8236545074	ST, TSSOP, 74VHC74
U040	8236570401	ST, DG, DRIVER, DTA114EK
U041	8236570101	ST, DG, DRIVER, DTC114EK
U042	8236560004	ST, DG, 74HC04
U101	8236541006	V, AN, POWER, MIP166
U102	8234108100	OPT, H, PHOTOCOUPLER, ON3171
U103	8236540900	VT, AN, REGULATOR, AN1431T
U104	8236085900	V, AN, DC-DC, PQ1CF1
U105	8236541300	ST, AN, DC-DC, NJM2360AM

DIODES		
Ref. No.	Part No.	Description
D001	8234105000	D, VF, SCHOTTKY, EK13
D003~007	8234502800	D, ST, DAN202K
D101	8234107700	D, STACK, 600VAC, 1.5A, D2SBA60
D102	8234107900	D, HT, 80V, 0.2A, MA171
D103	8234505200	D, V, 600V, 1.7A, S2V60-4002
D104	8234108000	D, V, 200V, 5.0A, MA649
D105, 106	8234108400	D, VT, SCHOTTKY, EK03W

RESISTORS

Ref. No.	Part No.	Description
R001~007	8230500101	ST, CARBON, 1/10W, 100, 5%
R008	8230500103	ST, CARBON, 1/10W, 10K, 5%
R009	8230500562	ST, CARBON, 1/10W, 5.6K, 5%
R010	8230500332	ST, CARBON, 1/10W, 3.3K, 5%
R011	8230500222	ST, CARBON, 1/10W, 2.2K, 5%
R012	8230500101	ST, CARBON, 1/10W, 100, 5%
R013	8230500331	ST, CARBON, 1/10W, 330, 5%
R014	8230500105	ST, CARBON, 1/10W, 1M, 5%
R015	8230500000	ST, CARBON, 1/10W, 0, 5%
R016	8230500101	ST, CARBON, 1/10W, 100, 5%
R017	8230500105	ST, CARBON, 1/10W, 1M, 5%
R019	8230500472	ST, CARBON, 1/10W, 4.7K, 5%
R021~025	8230500101	ST, CARBON, 1/10W, 100, 5%
R026, 027	8230500000	ST, CARBON, 1/10W, 0, 5%
R029	8230500472	ST, CARBON, 1/10W, 4.7K, 5%
R030	8230500152	ST, CARBON, 1/10W, 1.5K, 5%
R031	8230500101	ST, CARBON, 1/10W, 100, 5%
R032	8230500224	ST, CARBON, 1/10W, 220K, 5%
R033	8230500561	ST, CARBON, 1/10W, 560, 5%
R034	8230500471	ST, CARBON, 1/10W, 470, 5%
R035	8230500751	ST, CARBON, 1/10W, 750, 5%
R036	8230500822	ST, CARBON, 1/10W, 8.2K, 5%
R038	8230500331	ST, CARBON, 1/10W, 330, 5%
R039	8230500103	ST, CARBON, 1/10W, 10K, 5%
R040	8230500101	ST, CARBON, 1/10W, 100, 5%
R041	8230500561	ST, CARBON, 1/10W, 560, 5%
R042	8230500102	ST, CARBON, 1/10W, 1K, 5%
R045	8230500103	ST, CARBON, 1/10W, 10K, 5%
R047, 048	8230500103	ST, CARBON, 1/10W, 10K, 5%
R049	8230500331	ST, CARBON, 1/10W, 330, 5%
R050	8230500102	ST, CARBON, 1/10W, 1K, 5%
R051	8230500103	ST, CARBON, 1/10W, 10K, 5%
R052~056	8230500101	ST, CARBON, 1/10W, 100, 5%
R059	8230500331	ST, CARBON, 1/10W, 330, 5%
R060	8230500751	ST, CARBON, 1/10W, 750, 5%
R061	8230500472	ST, CARBON, 1/10W, 4.7K, 5%
R066	8230500152	ST, CARBON, 1/10W, 1.5K, 5%
R068	8230500331	ST, CARBON, 1/10W, 330, 5%
R069	8230500222	ST, CARBON, 1/10W, 2.2K, 5%
R070	8230500331	ST, CARBON, 1/10W, 330, 5%
R071	8230500103	ST, CARBON, 1/10W, 10K, 5%
R073	8230500000	ST, CARBON, 1/10W, 0, 5%
R074	8230500102	ST, CARBON, 1/10W, 1K, 5%
R076	8230500101	ST, CARBON, 1/10W, 100, 5%
R078	8230500101	ST, CARBON, 1/10W, 100, 5%
R079, 080	8230500103	ST, CARBON, 1/10W, 10K, 5%
R084	8230500101	ST, CARBON, 1/10W, 100, 5%
R089, 090	8230500103	ST, CARBON, 1/10W, 10K, 5%
R091	8230500101	ST, CARBON, 1/10W, 100, 5%
R093	8230500473	ST, CARBON, 1/10W, 47K, 5%
R095, 096	8230500102	ST, CARBON, 1/10W, 1K, 5%
R097	8230500105	ST, CARBON, 1/10W, 1M, 5%
R099	8230500331	ST, CARBON, 1/10W, 330, 5%
R101	8230125104	H, METAL, 2W, 100K, 5%, F20, RSS
R102	8230500569	ST, CARBON, 1/10W, 5.6, 5%

RESISTORS

Ref. No.	Part No.	Description
R103	8230500569	ST, CARBON, 1/10W, 5.6, 5%
R104	8230124330	HT, METAL, 1/2W, 33, 5%, RSS
R105	8230500331	ST, CARBON, 1/10W, 330, 5%
R106	8230500393	ST, CARBON, 1/10W, 39K, 5%
R107	8230500471	ST, CARBON, 1/10W, 470, 5%
R108	8230500103	ST, CARBON, 1/10W, 10K, 5%
R109	8230500103	ST, CARBON, 1/10W, 10K, 5%
R110	8230500302	ST, CARBON, 1/10W, 3K, 5%
R111	8230500102	ST, CARBON, 1/10W, 1K, 5%
R112	8230500472	ST, CARBON, 1/10W, 4.7K, 5%
R113	8230500152	ST, CARBON, 1/10W, 1.5K, 5%
R114	8234109500	D, V, THERMISTOR, NTH18D8ROL
R115	8230500159	ST, CARBON, 1/10W, 1.5, 5%
R913~915	8230500221	ST, CARBON, 1/10W, 220, 5%
R923	8230500102	ST, CARBON, 1/10W, 1K, 5%
R924, 925	8230500103	ST, CARBON, 1/10W, 10K, 5%
R926	8230500221	ST, CARBON, 1/10W, 220, 5%
R927	8230500332	ST, CARBON, 1/10W, 3.3K, 5%
R928	8230503100	ST, CARBON1/2W, 10, 5%
R929	8230500102	ST, CARBON, 1/10W, 1K, 5%
R930	8230500101	ST, CARBON, 1/10W, 100, 5%

CAPACITORS

ALU = Electrolytic type

CER = Ceramic type

PES = Mylar type

Ref. No.	Part No.	Description
C001	8232352104	PES, 250VAC, 0.1μF, 20%, ECQ-UMV
C002	8232349103	PES, 630V, 0.01μF, 10%, ECQ-EKF
C003, 004	8233502104	CER, 50V, 0.1μF, +80, CC20F
C005, 006	8232354222	CER, 250V, .0022μF, 20%, ECK-ZNS
C007	8232353391	CER, 500V, 390pF, 10%, ECK-ZHT
C008	8233502104	CER, 50V, 0.1μF, +80, CC20F
C009	8232324107	ALU, 400V, 100μF, 20%, SMH-VNSN, D2
C010	8232144476	ALU, 25V, 47μF, 20%, SME-VB
C011, 012	8232357477	ALU, 16V, 470μF, 20%, LXV.D10
C014	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C015	8233500150	CER, 50V, 15pF, 5%, CC20SL
C016	8233509474	CER, 25V, 0.47μF, 20%, KC30E
C019, 020	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C021	8232143106	ALU, 16V, 10μF, 20%, SME-VB
C022~025	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C026	8232143106	ALU, 16V, 10μF, 20%, SME-VB
C027	8233500471	CER, 50V, 470pF, 5%, CC20SL
C028	8233500101	CER, 50V, 100pF, 5%, CC20SL
C030	8233500471	CER, 50V, 470pF, 5%, CC20SL
C031	8233500220	CER, 50V, 22pF, 5%, CC20SL
C032	8233500220	CER, 50V, 22pF, 5%, CC20SL
C033, 034	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C037~040	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C046	8232143106	ALU, 16V, 10μF, 20%, SME-VB
C047	8233502104	CER, 50V, 0.1μF, +80, CC20F
C048	8232371187	ALU, 16V, 180μF, 20%, LXV, D6.3
C049~051	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C052	8233500150	CER, 50V, 15pF, 5%, CC20SL

CAPACITORS

ALU = Electrolytic type

CER = Ceramic type

PES = Mylar type

Ref. No.	Part No.	Description
C053~057	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C058	8233509474	CER, 25V, 0.47μF, 20%, KC30E
C059	8232371187	ALU, 16V, 180μF, 20%, LXV, D6.3
C060	8233502104	CER, 50V, 0.1μF, +80, CC20F
C061, 062	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C063	8232371187	ALU, 16V, 180μF, 20%, LXV, D6.3
C064	8233500150	CER, 50V, 15pF, 5%, CC20SL
C065	8233509474	CER, 25V, 0.47μF, 20%, KC30E
C066, 067	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C068~070	8233502104	CER, 50V, 0.1μF, +80, CC20F
C071	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C072	8232146105	ALU, 50V, 1μF, 20%, SME-VB
C073	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C074, 075	8233500330	CER, 50V, 33pF, 5%, CC20SL
C076	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C077	8233500101	CER, 50V, 100pF, 5%, CC20SL
C078	8233500471	CER, 50V, 470pF, 5%, CC20SL
C080	8232371187	ALU, 16V, 180μF, 20%, LXV, D6.3
C081	8233502104	CER, 50V, 0.1μF, +80, CC20F
C083~087	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C088	8233502104	CER, 50V, 0.1μF, +80, CC20F
C091	8232143106	ALU, 16V, 10μF, 20%, SME-VB
C093, 094	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C095~099	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C102, 103	8233502104	CER, 50V, 0.1μF, +80, CC20F
C104	8232357477	ALU, 16V, 470μF, 20%, LXV.D10
C106, 107	8233502104	CER, 50V, 0.1μF, +80, CC20F
C108	8232142107	ALU, 10V, 100μF, 20%, SME-VB
C109, 110	8232354222	CER, 250V, .0022μF, 20%, ECK-ZNS
C112	8232355477	ALU, 6.3V, 470μF, 20%, LXV.D10
C114	8232143107	ALU, 16V, 100μF, 20%, SME-VB
C115	8232143107	ALU, 16V, 100μF, 20%, SME-VB
C116	8233500222	CER, 50V, .0022μF, 5%, CC20SL
C909	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C911	8230500000	RES, ST, CARBON, 1/10W, 0, 5%
C912	8233500330	CER, 50V, 33pF, 5%, CC20SL
C919	8233500471	CER, 50V, 470pF, 5%, CC20SL
C922	8233500470	CER, 50V, 47pF, 5%, CC20SL
C923, 924	8233500101	CER, 50V, 100pF, 5%, CC20SL
C925~929	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C930	8233500101	CER, 50V, 100pF, 5%, CC20SL
C931	8233500471	CER, 50V, 470pF, 5%, CC20SL
C932	8233502104	CER, 50V, 0.1μF, +80, CC20F
C933	8233500471	CER, 50V, 470pF, 5%, CC20SL
C934	8233504103	CER, 25V, 0.01μF, 10%, CC20R

MISCELLANEOUS

Ref. No.	Part No.	Description
△F001	8239801008	FUSE, VI, SEMKO, TLAG, 0.8A, 250V, TR5-T
J001	8245321000	CONN, PL, JACK, ACINLET, 3P, 0714-FR7
J002	8245420000	CONN, PL, JACK, DIN5P(SHIELD), YKF51-5053
J004	8245552010	CONN, OPT, GPIF38T2
J005	8245553010	CONN, OPT, GPIF37R1
J006	8245312005	CONN, PL, JACK, D-SUB, 25P, 70057-025, EMIFIL
J007	8245171109	CONN, PI, JACK, 8283, 9P, WHT
J010	8245322050	CONN, PI, HEADER, 50P, P2.0, 9210B
J012	8277477122	CABLE_ASSY, FC, 40P, /B-/F, L220
J013	8245528001	CONN, PI, JACK, 1P, RT-01T-1.0B
L001	8242249102	FILTER, LINE, 1MH, 2.2AELFI5NO22A
L002	8242249193	FILTER, LINE, 19MH, 0.5A, ELFI5NOO5A
L003, 004	8242196223	COIL, PVT, 22UH, 5%, LF5.0S
L006	8242196223	COIL, PVT, 22UH, 5%, LF5.0S
L007~010	8242501121	FILTER, ST, EMI, 120, 25%, MMZ2012S
L014~019	8242501121	FILTER, ST, EMI, 120, 25%, MMZ2012S
L020, 021	8242186013	FILTER, T, EMI, LFW7B-M3R2T
L022, 023	8242501121	FILTER, ST, EMI, 120, 25%, MMZ2012S
L101, 102	8242134001	FILTER, EMI, 6HOLE
L103	8242250103	COIL, PV, 10UH, 2A, ELC
L104	8242264001	COIL, DC-DC, R17, 256UH
L105	8242196223	COIL, PVT, 22UH, 5%, LF5.0S
L106	8242502221	CORE, ST, CDRH104, 220UH
L107	8242502560	CORE, ST, CDRH104, 56UH
S001	8253461002	SW, P, PUSH, POWER, SDDL1-B1-F2
△T001	8242258000	TRANS, SW, POWER, ER2810, 12-18
W001	8277318420	CABLE_ASSY, 4P, 5395-CNC, L200
X001	8256170001	RESONATOR, ST, XTL, 22.579MHZ, FUP-FBB3A
X003	8256179001	RESONATOR, PT, CER, 7.00MHZ, F5, EFOEN
Y2901	8207001500	HEATSINK, OSH-1625-SP

• KEY PCB ASSY Parts List

Ref. No.	Part No.	Description
	8274199000	PCB_ASSY, KEY, VR800
B101	8251982101	PLAIN PCB, KEY, VR800

ICs

Ref. No.	Part No.	Description
U001	8236083502	QFP, DG, CPU, VR800-DISPLAY

DIODES

Ref. No.	Part No.	Description
D001~008	8234500700	D, HT, 1SS136
D009~016	8234500700	D, HT, 1SS136
D017~022	8234500700	D, HT, 1SS136
D025~031	8234500700	D, HT, 1SS136
D033~036	8234500700	D, HT, 1SS136
D041~048	8234504001	OPT, VT, LED, RED, LT3D31W
D049	8234504004	OPT, VT, LED, GRN, LT3E31W
D050	8234504001	OPT, VT, LED, RED, LT3D31W
D051	8234504003	OPT, VT, LED, YLW, LT3H31W
D051, 052	8234504004	OPT, VT, LED, GRN, LT3E31W
D052	8234504004	OPT, VT, LED, GRN, LT3E31W
D054, 055	8234504003	OPT, VT, LED, YLW, LT3H31W
D056	8234504004	OPT, VT, LED, GRN, LT3E31W

RESISTORS

Ref. No.	Part No.	Description
R002~007	8230138101	HT, CARBON, 1/4W, 100, 5%
R008	8230138105	HT, CARBON, 1/4W, 1M, 5%
R023~030	8230138223	HT, CARBON, 1/4W, 22K, 5%
R031~038	8230138111	HT, CARBON, 1/4W, 110, 5%
R039, 040	8230138102	HT, CARBON, 1/4W, 1K, 5%
R041	8230138103	HT, CARBON, 1/4W, 10K, 5%
R042	8230138103	HT, CARBON, 1/4W, 10K, 5%

CAPACITORS

ALU = Electrolytic type

CER = Ceramic type

Ref. No.	Part No.	Description
C001	8232157106	ALU, 16V, 10μF, 20%, SRA
C002	8232803103	CER, 50V, 0.01μF, +80-20%, YF
C003	8232157106	ALU, 16V, 10μF, 20%, SRA
C004	8232803103	CER, 50V, 0.01μF, +80-20%, YF
C007	8232801101	CER, 50V, 100pF, 5%, SL
C008	8232801101	CER, 50V, 100pF, 5%, SL
C009	8232801101	CER, 50V, 100pF, 5%, SL
C010, 011	8232806330	CER, 50V, 33pF, 5%, NPO
C012	8232803103	CER, 50V, 0.01μF, +80-20%, YF

MISCELLANEOUS

Ref. No.	Part No.	Description
J001	8245272117	CONN, PL, JACK, FPC, 17P
Q001, 002	8234100802	TR, VT, PNP, 2SA1150Y
S001~008	8253135002	SW, PT, TACT, SKQNAB
S009~016	8253135002	SW, PT, TACT, SKQNAB
S017~022	8253135002	SW, PT, TACT, SKQNAB
S025~031	8253135002	SW, PT, TACT, SKQNAB
S033~036	8253135002	SW, PT, TACT, SKQNAB
W001	8276779030	CABLE_ASSY, 9P, WHTMT/F-MT/ BS, L300
W002	8277003010	CABLE_ASSY, 4P, MT-MT, BLU, L100
X001	8256134003	RESONATOR, PF, CER, 8.00MHZ, F5, EFOEN

• LCD PCB ASSY Parts List

Ref. No.	Part No.	Description
	8274197000	PCB_ASSY, LCD, VR800
B101	8251981102	PLAIN PCB, LCD, VR800

ICs

Ref. No.	Part No.	Description
U201	8236083600	QFP, DG, LCDDRIVER, HD44780U
U202	8256176000	MODULE, DISPLAY, LCD, FD-4

DIODES

Ref. No.	Part No.	Description
D201	8234504004	OPT, VT, LED, GRN, LT3E31W

RESISTORS

Ref. No.	Part No.	Description
R201~205	8230500102	ST, CARBON, 1/10W, 1K, 5%
R206	8230500392	ST, CARBON, 1/10W, 3.9K, 5%
R207	8230500204	ST, CARBON, 1/10W, 200K, 5%
R208	8240151004	POT, PI, RT9, 5k Ω , L20, O4KNOB, RK09K113

CAPACITORS

ALU = Electrolytic type

CER = Ceramic type

Ref. No.	Part No.	Description
C201	8232143106	ALU, 16V, 10 μ F, 20%, SME-VB
C202	8233502104	CER, 50V, 0.1 μ F, +80, CC20F
C203	8232143106	ALU, 16V, 10 μ F, 20%, SME-VB
C204, 205	8233502104	CER, 50V, 0.1 μ F, +80, CC20F

MISCELLANEOUS

Ref. No.	Part No.	Description
J201	8245272117	CONN, PL, JACK, FPC, 17P
L201, 202	8239116000	LAMP, 5V, 75MA
W201	8276839615	CABLE, FLAT, FFC, 17P, L150
Y202	8212611000	PLATE, REFLECT, LCD, FD-4
Y203	8216705000	SHEET, LCD, A, VR800
Y204	8216706000	SHEET, LCD, B, VR800

• ADAC PCB ASSY Parts List

Ref. No.	Part No.	Description
	8274198000	PCB_ASSY, ADAC, VR800
B101	8251981103	PLAIN PCB, ADAC, VR800

ICs

Ref. No.	Part No.	Description
U001, 002	8236084300	QFP, DG, GATEARRAY, ADAC
U003	8236545904	ST, TSSOP, 74VHCU04

RESISTORS

Ref. No.	Part No.	Description
R001	8230500105	ST, CARBON, 1/10W, 1M, 5%
R002	8230500221	ST, CARBON, 1/10W, 220, 5%
R003	8230500105	ST, CARBON, 1/10W, 1M, 5%

CAPACITORS

ALU = Electrolytic type
CER = Ceramic type

Ref. No.	Part No.	Description
C001, 002	8233500471	CER, 50V, 470pF, 5%, CC20SL
C003, 004	8233500330	CER, 50V, 33pF, 5%, CC20SL
C005~012	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C013, 014	8233500509	CER, 50V, 5pF, 5%, CC20SL
C015	8233504103	CER, 25V, 0.01μF, 10%, CC20R
C016	8232143106	ALU, 16V, 10μF, 20%, SME-VB
C017	8233504103	CER, 25V, 0.01μF, 10%, CC20R

MISCELLANEOUS

Ref. No.	Part No.	Description
J001	8245323050	CONN, PI, SOCKET, 50P, P2.0, 9269S-B
X001	8256161003	RESONATOR, PF, CER, 26.00MHZ, CSA

• JOG PCB ASSY Parts List

Ref. No.	Part No.	Description
	8274200000	PCB_ASSY, JOG, VR800
B101	8251982002	PLAIN PCB, JOG, VR800

ICs

Ref. No.	Part No.	Description
U002	8253466000	SW, PI, ENCODER, EC12E24404

RESISTORS

Ref. No.	Part No.	Description
R017, 020	8230138104	HT, CARBON, 1/4W, 100K, 5%
R018, 021	8230138103	HT, CARBON, 1/4W, 10K, 5%
R019, 022	8230138103	HT, CARBON, 1/4W, 10K, 5%

CAPACITORS

CER = Ceramic type

Ref. No.	Part No.	Description
C015, 016	8232803103	CER, 50V, 0.01μF, +80-20%, YF

• FOOT_SW PCB ASSY Parts List

Ref. No.	Part No.	Description
	8274203000	PCB_ASSY, FOOT_SW, VR800
B101	8251982103	PLAIN PCB, FOOT_SW, VR800

DIODES

Ref. No.	Part No.	Description
D101, 102	8234500700	D, HT, 1SS136

RESISTORS

Ref. No.	Part No.	Description
R101	8230138152	HT, CARBON, 1/4W, 1.5K, 5%
R102	8230138103	HT, CARBON, 1/4W, 10K, 5%

CAPACITORS

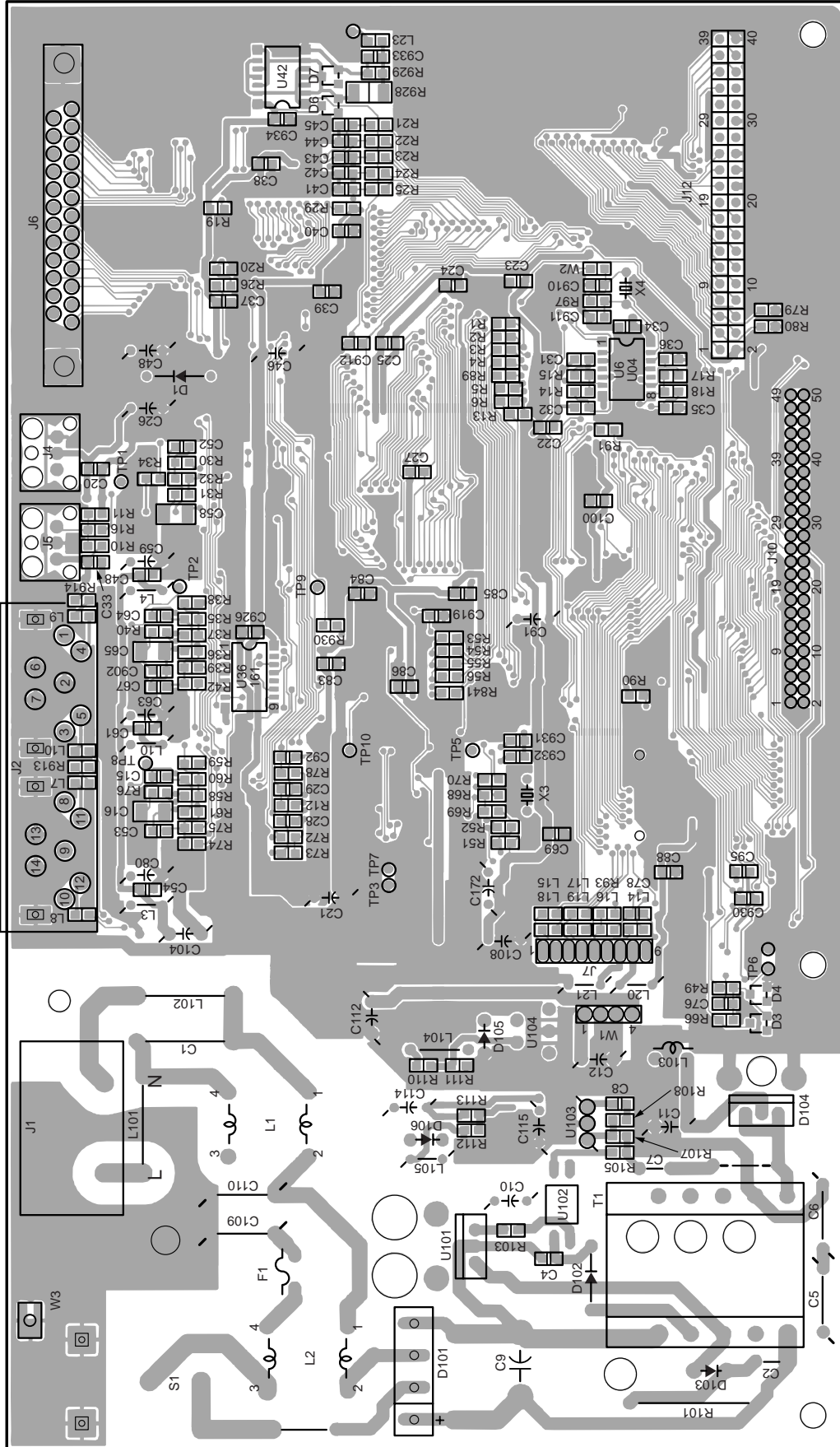
CER = Ceramic type

Ref. No.	Part No.	Description
C101	8232803103	CER, 50V, 0.01μF, +80-20%, YF

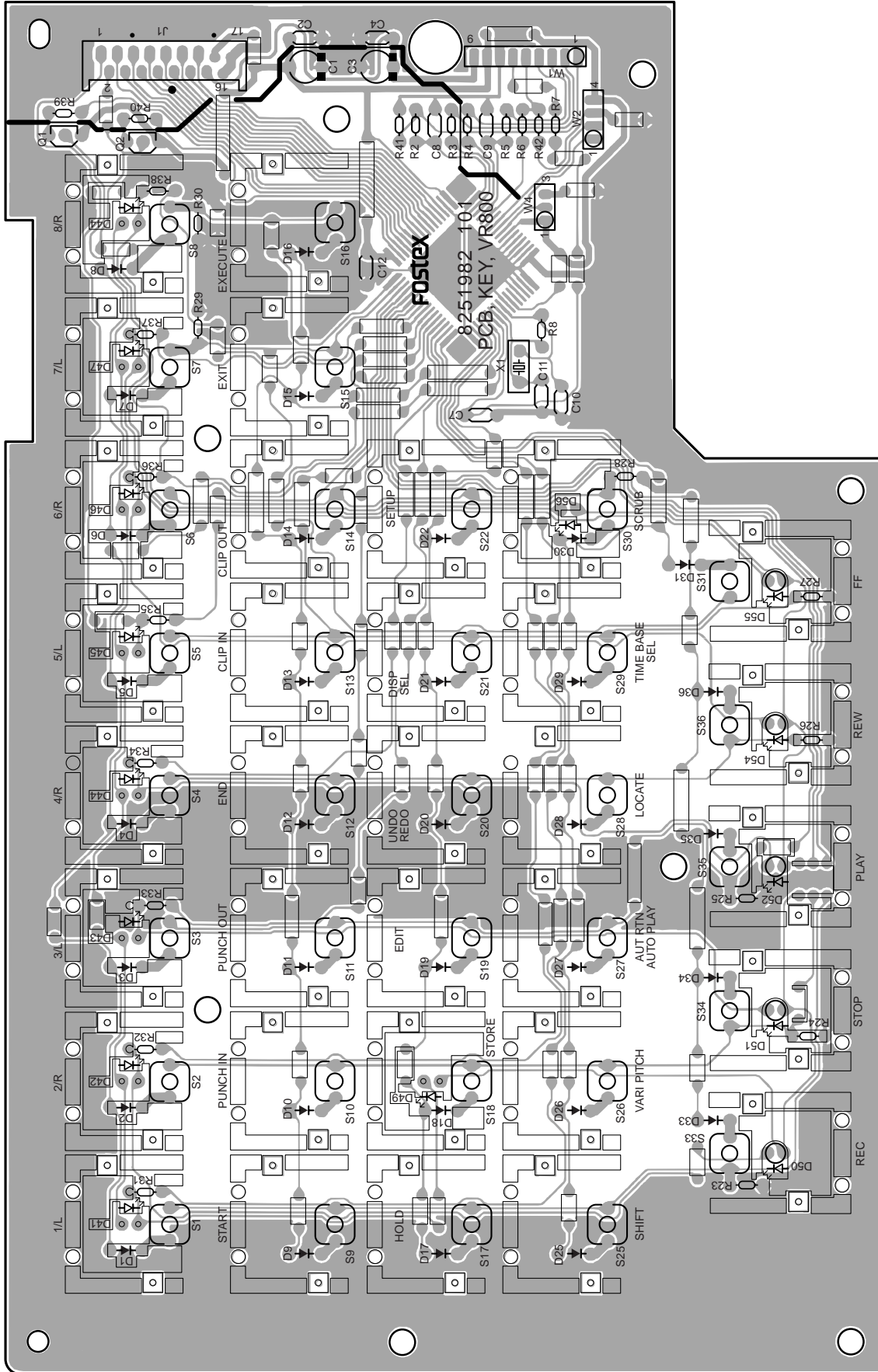
MISCELLANEOUS

Ref. No.	Part No.	Description
J101	8245339004	CONN, PL, JACK, PHONE, YKB21-5074
L101	8242186013	FILTER, T, EMI, LFW7B-M3R2T
W101	8277002015	CABLE_ASSY, 3P, MT-MT, BLU, L15
Y101	8216668000	SHIELD, PHONE, FD-4

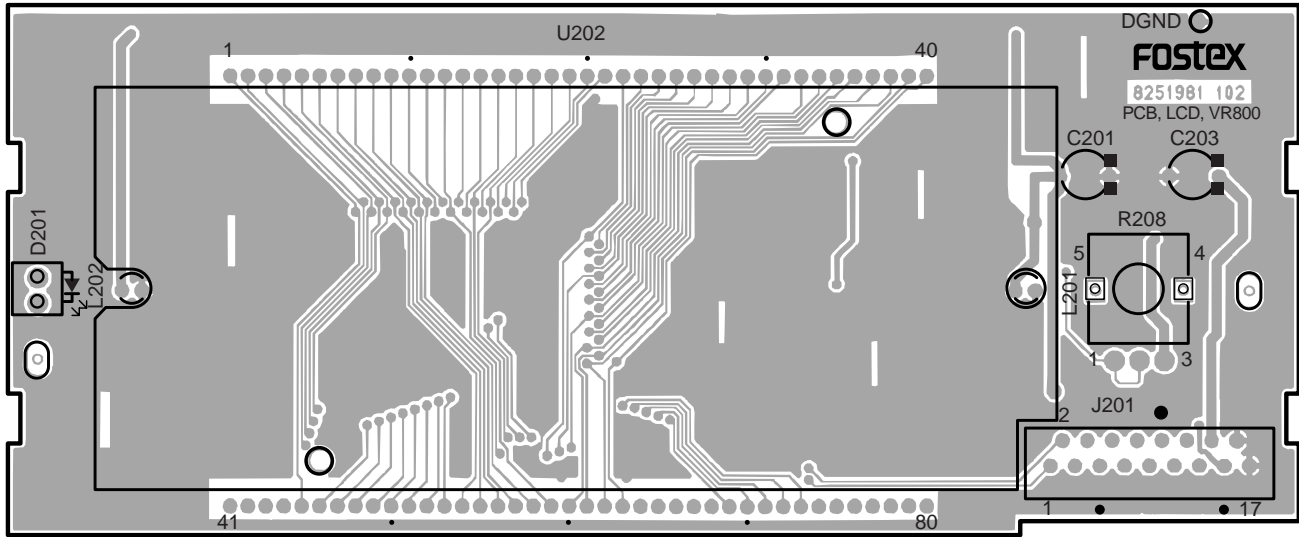
• MAIN PCB Pattern Drawing (Foil Side)



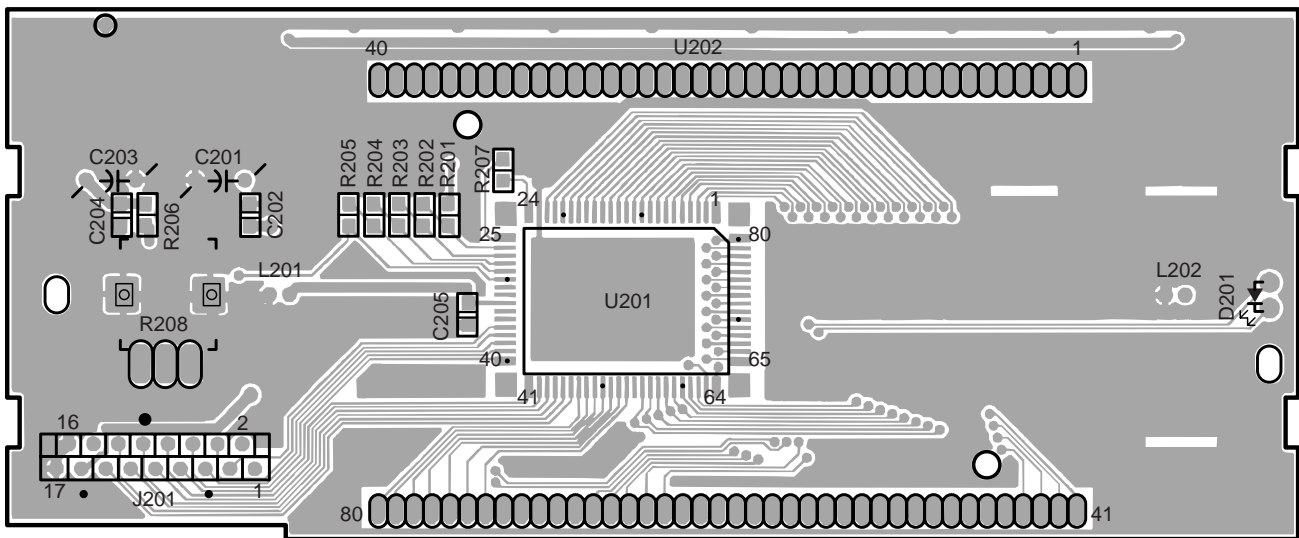
• KEY PCB Pattern Drawing (Parts Side)



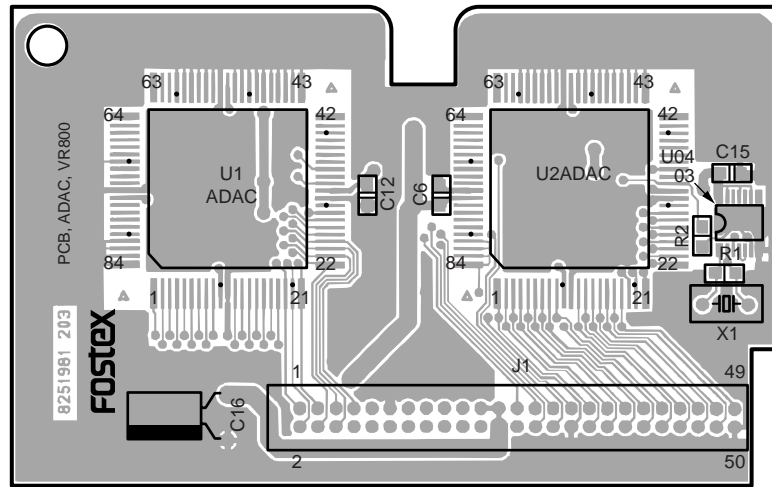
• LCD PCB Pattern Drawing (Parts Side)



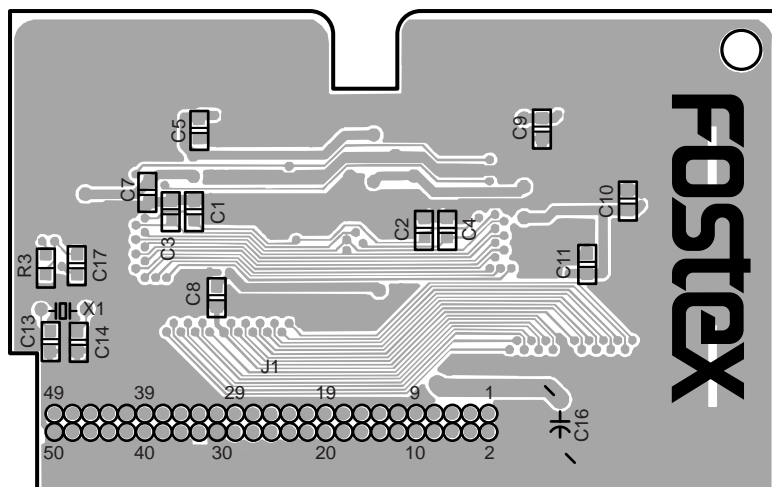
• LCD PCB Pattern Drawing (Foil Side)



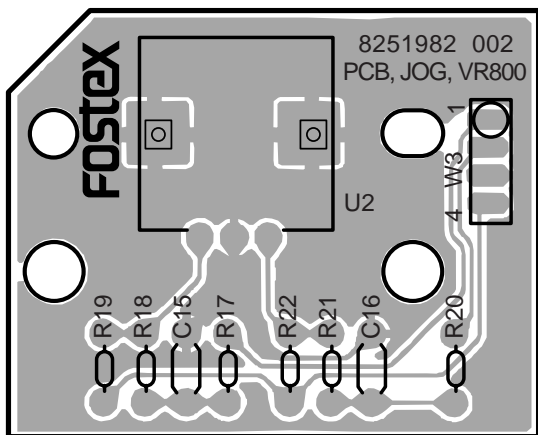
• ADAC PCB Pattern Drawing (Parts Side)



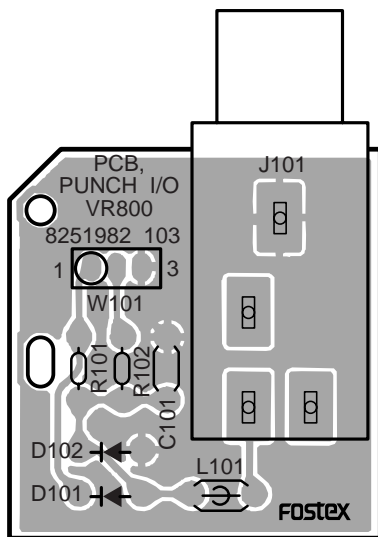
• ADAC PCB Pattern Drawing (Foil Side)



• JOG PCB Pattern Drawing (Parts Side)

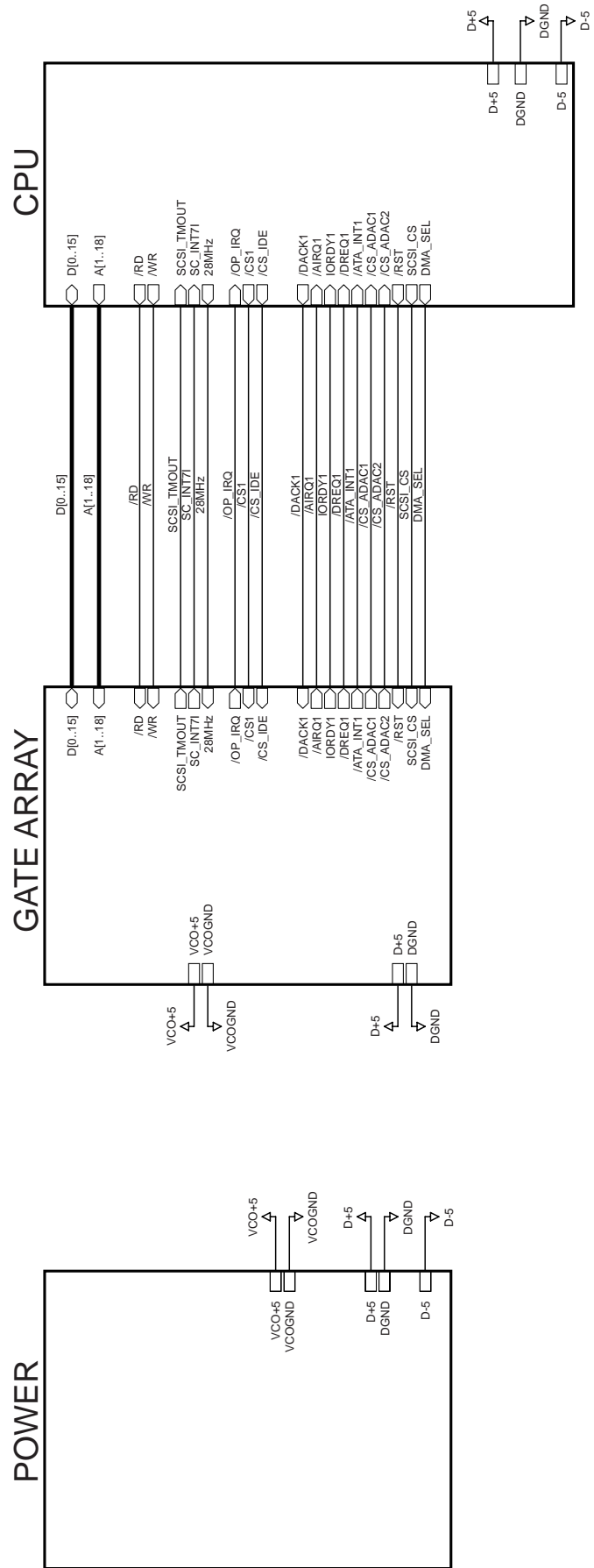


• FOOT_SW PCB Pattern Drawing (Parts Side)

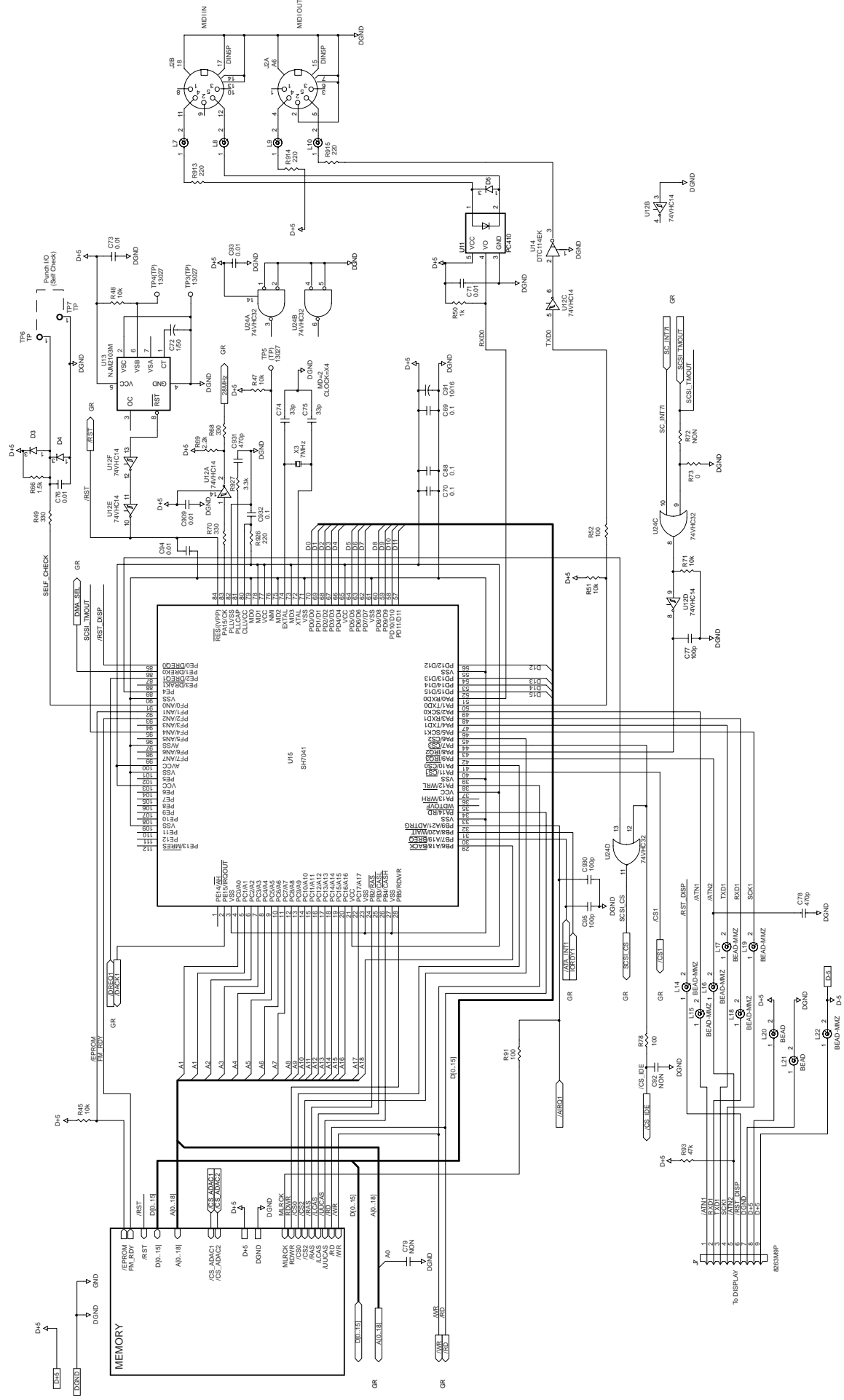


8. CIRCUIT DIAGRAMS

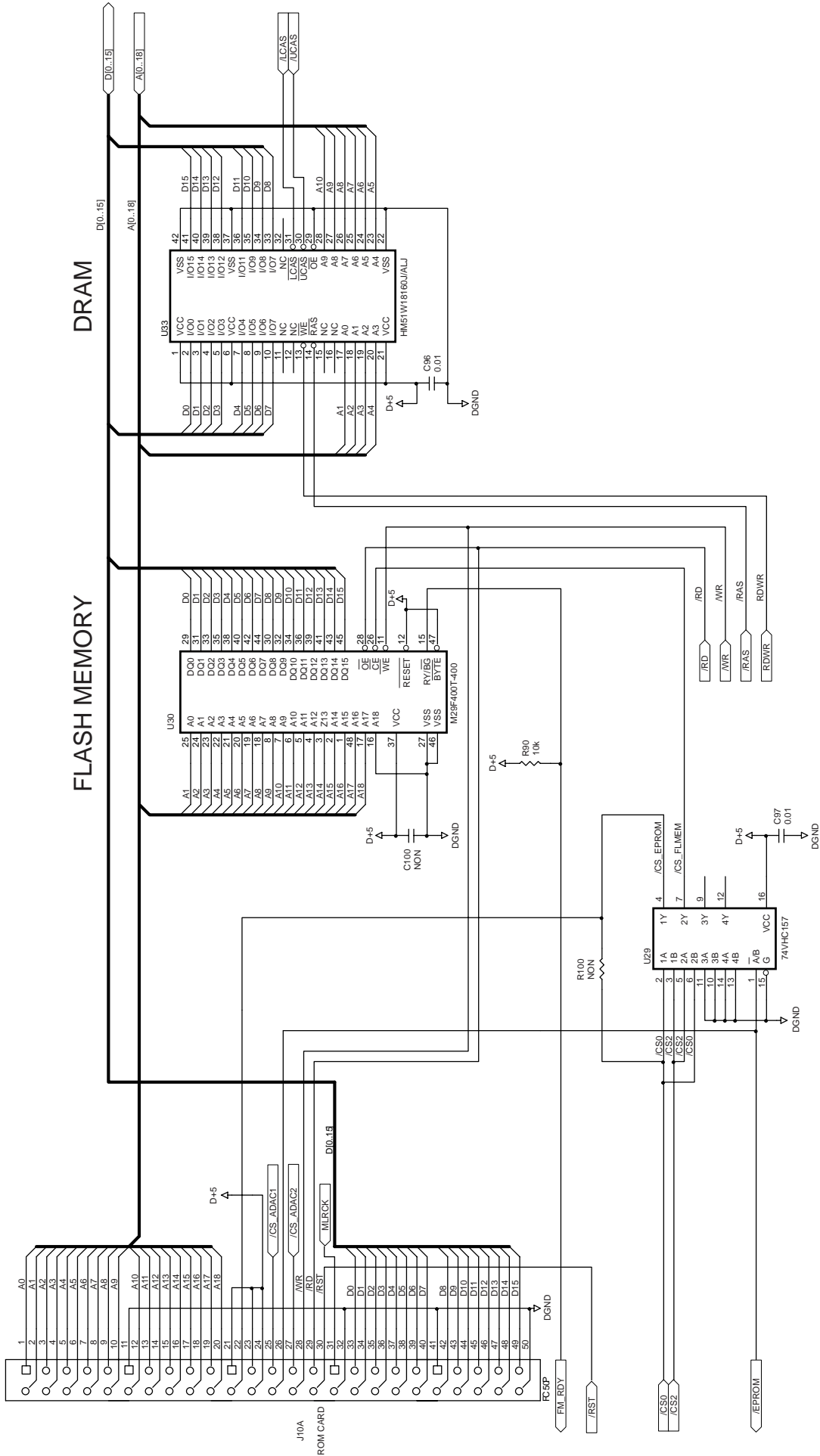
• MAIN, ROOT (1/8)



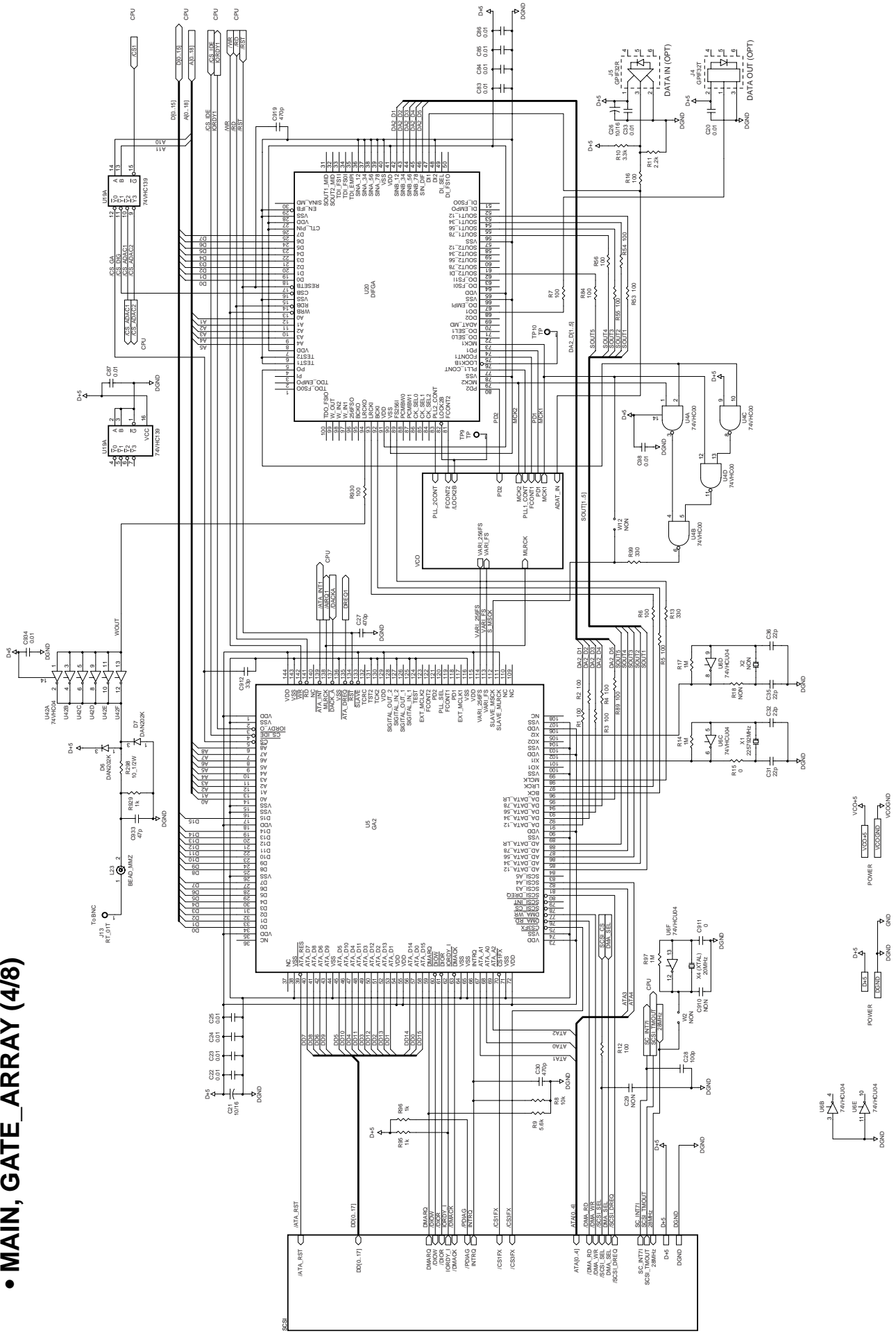
• MAIN, CPU (2/8)



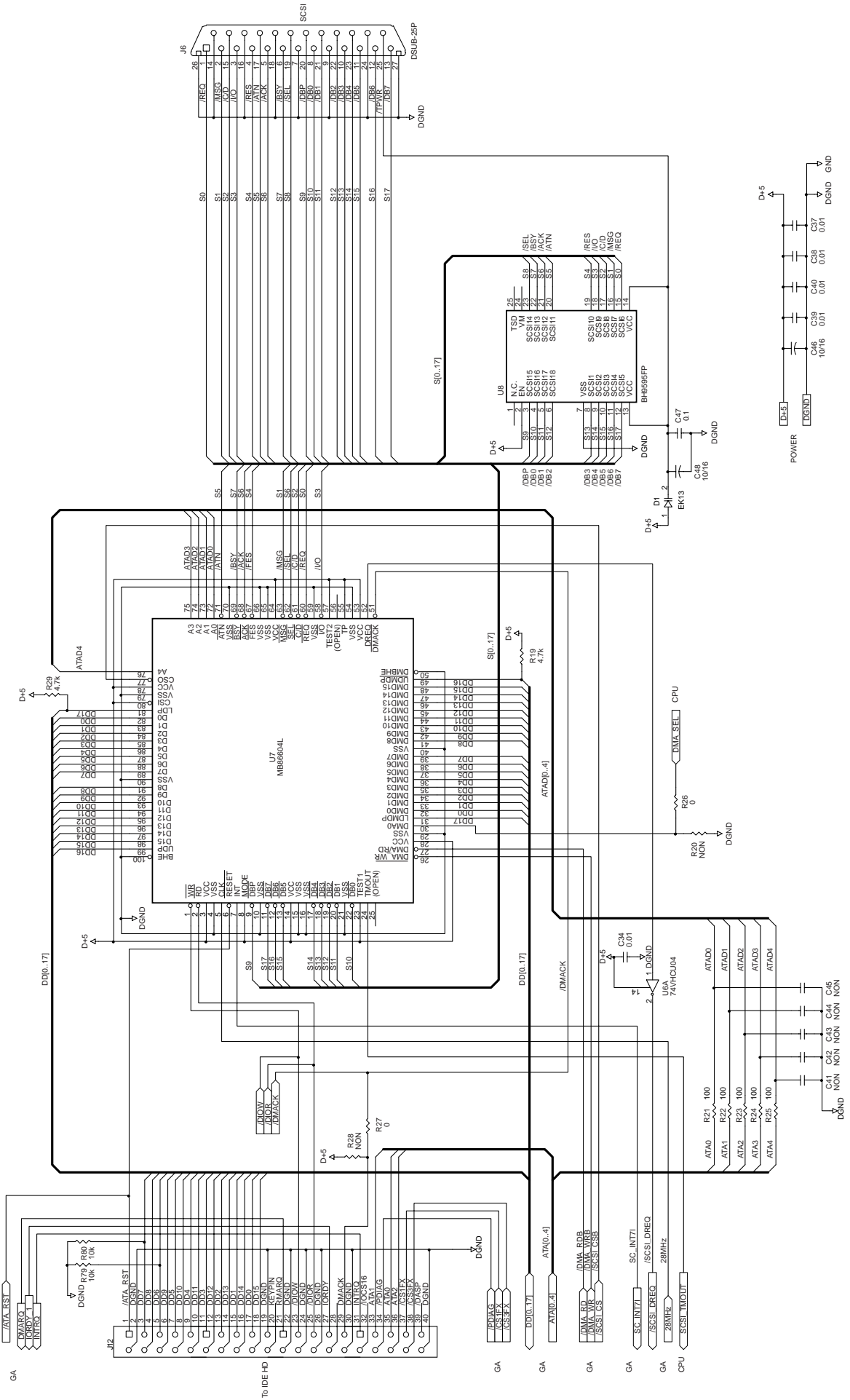
• MAIN, MEMORY (3/8)



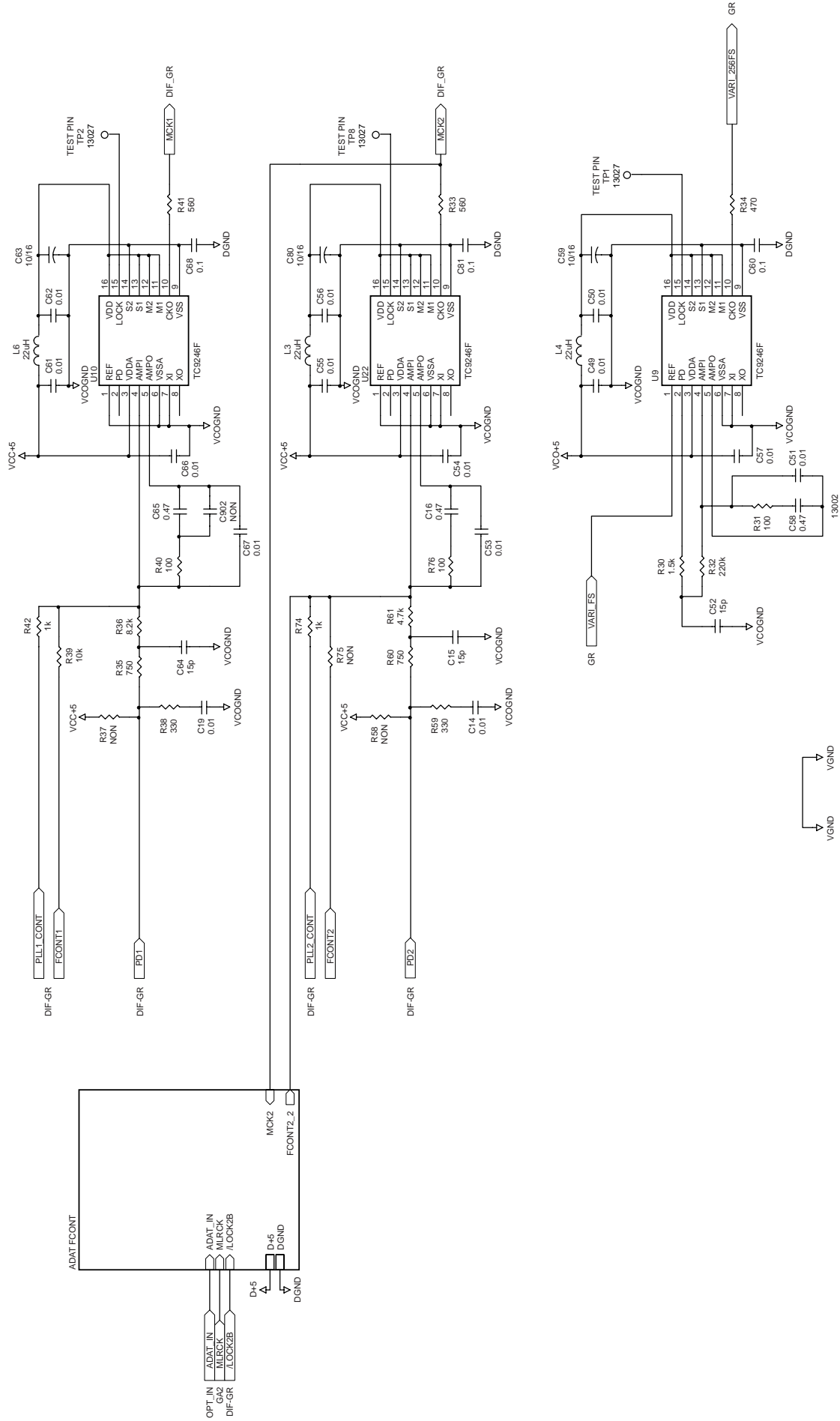
• MAIN, GATE_ARRAY (4/8)



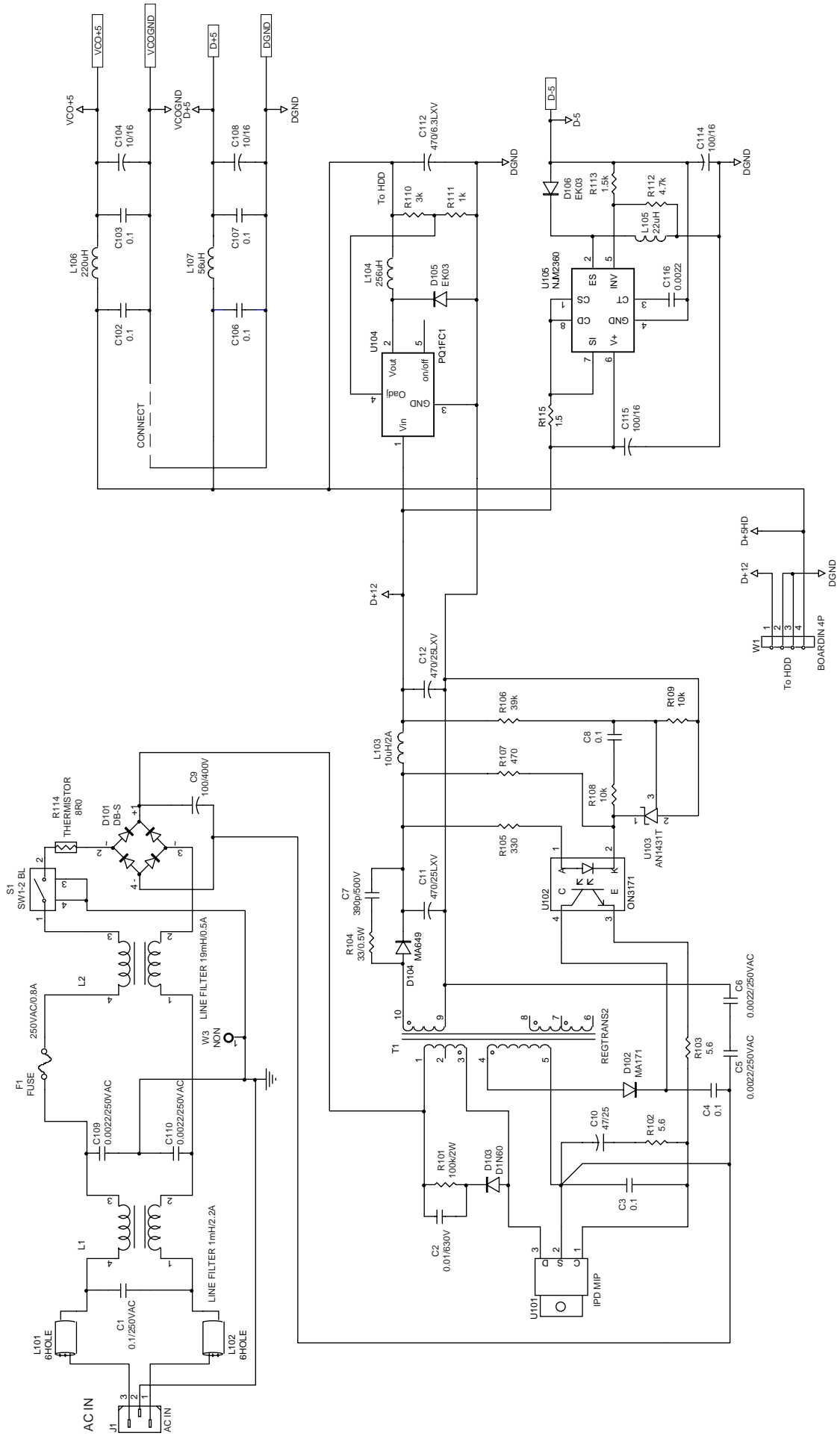
• MAIN, SCSI_I/F (5/8)



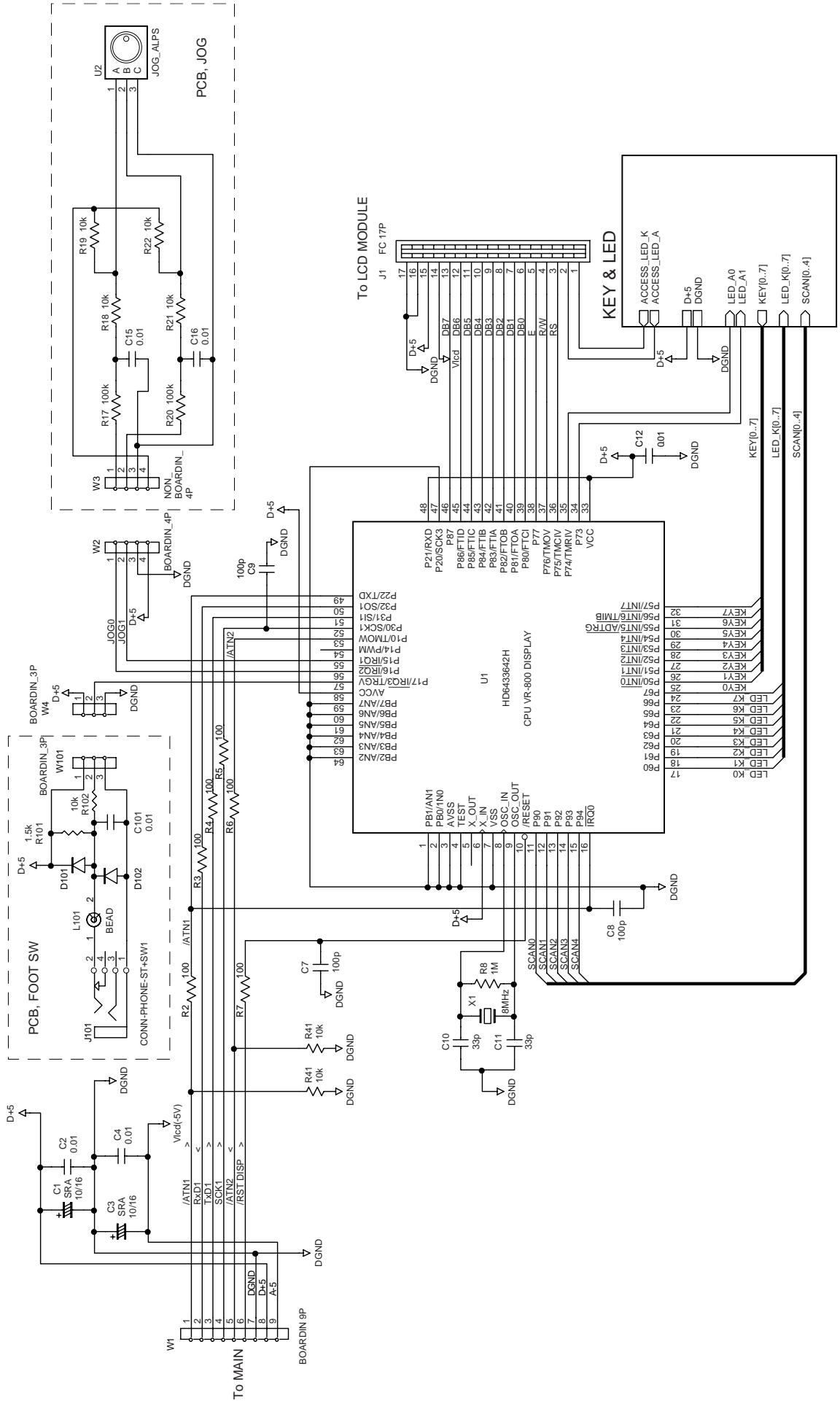
• MAIN, VCO (6/8)



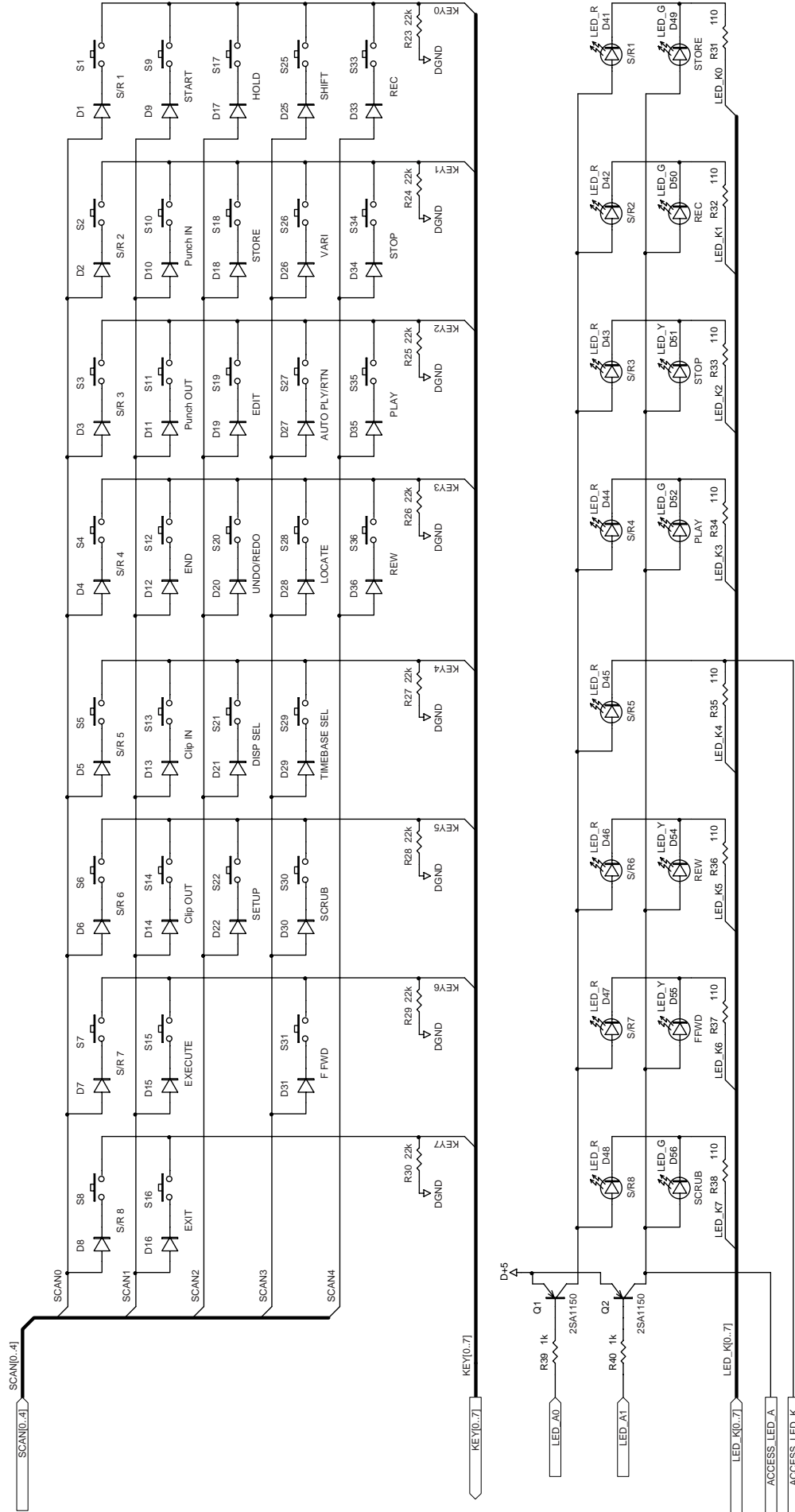
• MAIN, POWER (8/8)



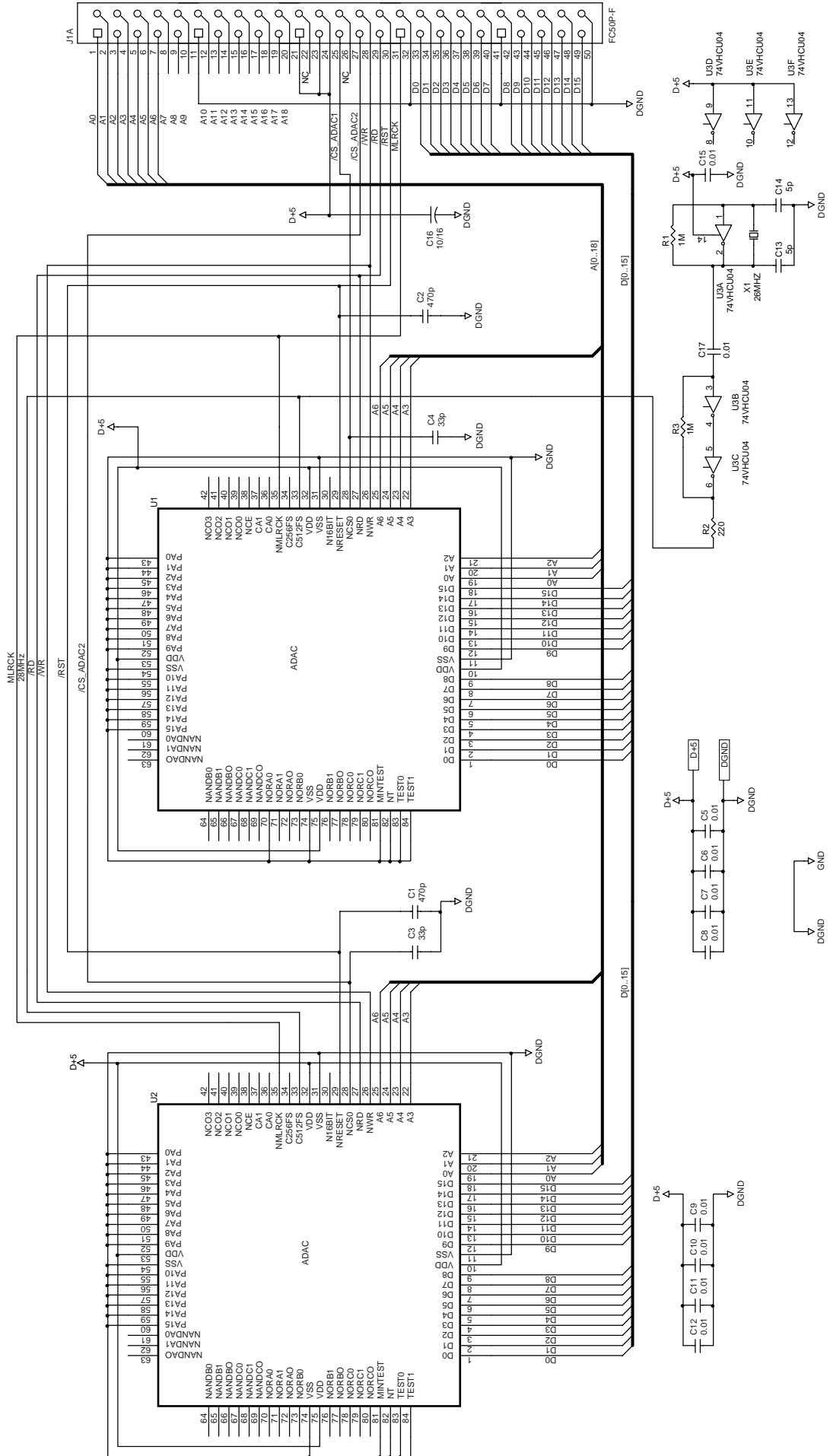
• KEY, ROOT (1/2) w/JOG & FOOT_SW



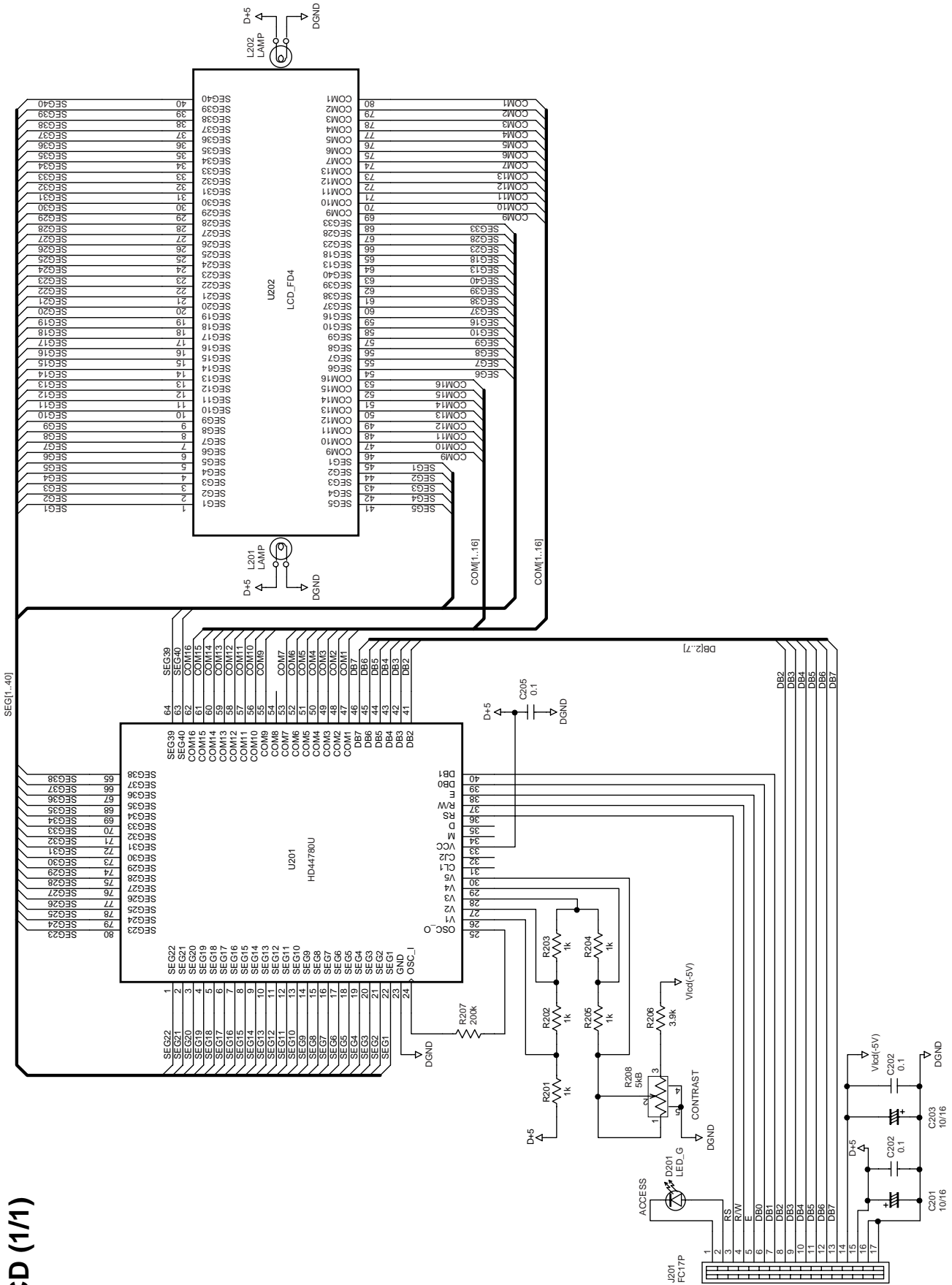
• KEY, KEY&LED (2/2)



• ADAC (1/1)



• LCD (1/1)



<NOTE>

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