SHARP SERVICE MANUAL

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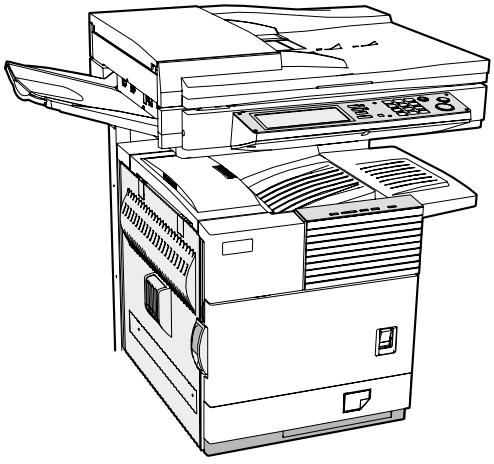


LASER PRINTER

AR-M350U/M450U
MODEL AR-M350N/M450N

OPTIONS AR-P14

[1] INTRODUCTION

The AR-M350U/M450U and AR-M350N/M450N are minor change models based on the AR-M350/M450.
This service manual only provides information on these minor changes.
In addition to this service manual, the documents listed below are required to properly maintain these machines.

•AR-M350/M450	Service Manual : 00ZARM350/A1E	Parts Guide : 00ZARM450/P1E	Circuit Diagram : 00ZARM350/C1/
•AR-P350/P450	Service Manual : 00ZARP350/A2E	Parts Guide : 00ZAR350LPP1/	Circuit Diagram : 00ZARP350/C1/
•AR-NC5J	Service Manual : 00ZARNC5J/A1E		

Note: Depending on the option, additional service documentation may be required.

[2] LIST OF DIFFERENCES FROM AR-M350/M450

A.Product composition

	Model Name	Printer Option Model	NIC Standard Model	Note
Base Engine		AR-M350U AR-M450U	AR-M350N AR-M450N	
Print Speed		35ppm 45ppm	35ppm 45ppm	
Multi Function Controller	AR-M11	Not Available	Standard	
Multi Function Controller(for U-Model)	Not Available	Standard	Not Available	Not registered as a product
Print Server Card	AR-NC5J	Option	Standard	
Printer Expansion Kit	AR-P14	Option	Not Available	*1

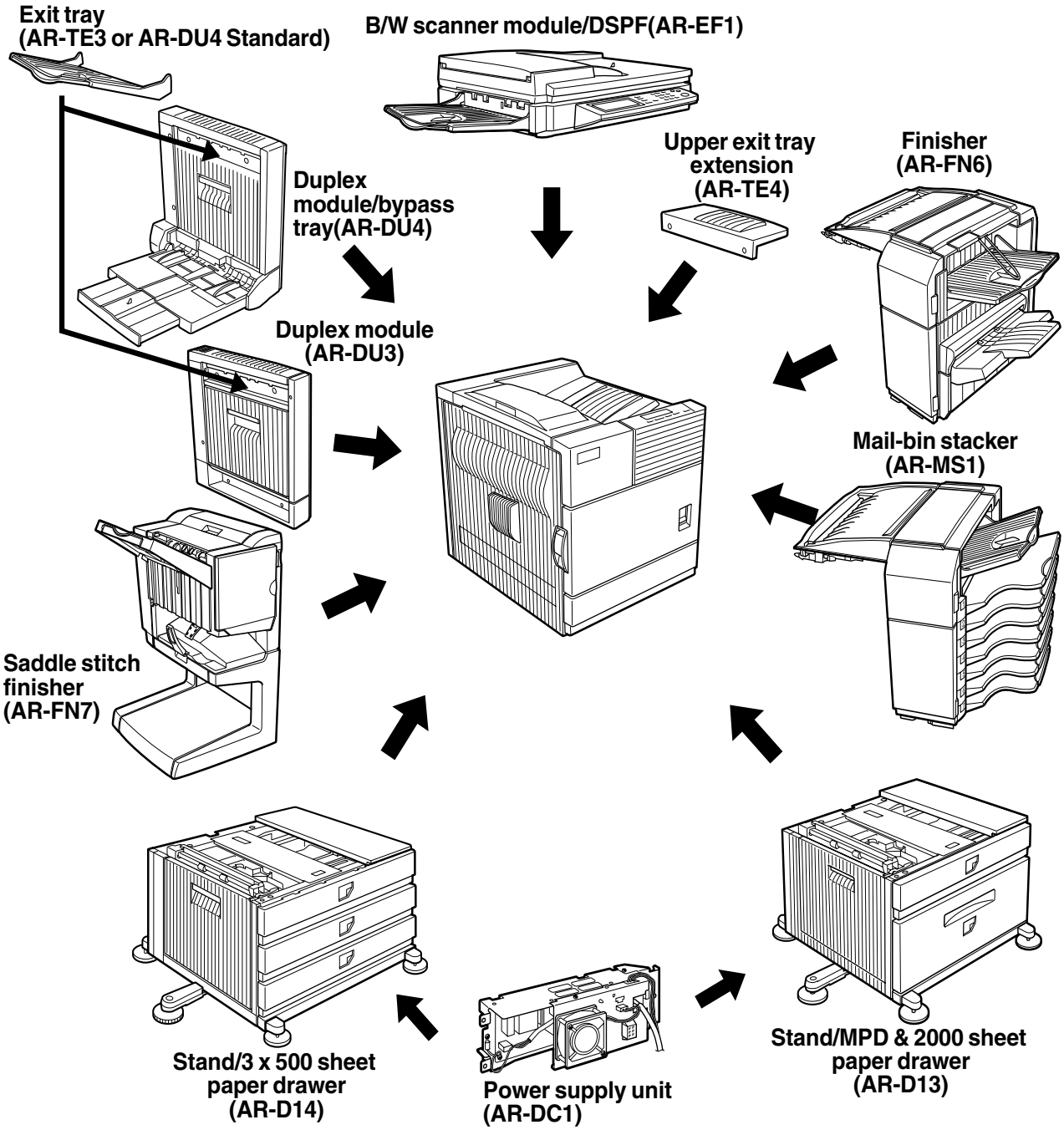
*1: Installation of the AR-P14 on the AR-M350U/M450U will provide similar functionality to that of the AR-M350/M450.

Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

[3] CONFIGURATION

1.System Configurations



2. Standard Equipment

Category	Model Name	Other options required for the installation/mounting. (Options must be ordered separately.)	Remarks
MFP model (35ppm)	AR-M350	• B/W Scanner module/DSPF (AR-EF1) • Scanner Rack(AR-RK1) • Stand/MPD&2000 sheet paper drawer (AR-D13) or Three paper drawer stand (AR-D14) • Power supply unit (AR-DC1)	
MFP model (45ppm)	AR-M450		
MFP model (35ppm)	AR-M350U		
MFP model (45ppm) (Without network printer function)	AR-M450U		
MFP model (35ppm) (With NIC card (standard))	AR-M350N		
MFP model (45ppm)	AR-M450N		

3. List of combination of peripheral devices

A.AR-M350U/M450U

As shown in the table below, some other peripheral devices (B) may be needed for installation of a peripheral device (A) and some peripheral devices cannot be installed together.

			B																					
			B/W scanner module/DSPF	Scanner rack	Stand/3 x 500 sheet paper drawer	Stand/MPD & 2000 sheet	Duplex module/bypass tray	Duplex module	Saddle stitch finisher	Finisher	Mail-bin stacker	Exit tray	Upper exit tray extension	Punch unit	Multi-function controller board	Print server card	PS3 expansion kit	Network scanner expansion kit	Facsimile expansion kit	Fax memory (8 MB)	Power supply unit	Hard disk drive	Printer Expansion kit
	Related for scanner feature																						
A	B/W scanner module/DSPF	AR-EF1	—	○	○*1										○						○		
A	Scanner rack	AR-RK1	○	—	○*1										○						○		
	Related for paper feed unit																						
A	Stand/3 x 500 sheet paper drawer	AR-D14			—	×															○		
A	Stand/MPD & 2000 sheet paper drawer	AR-D13			×	—															○		
A	Duplex module/bypass tray	AR-DU4			○*1		—		×					×							○*2		
A	Duplex module	AR-DU3			○*1			—													○*2		
	Output units																						
A	Saddle stitch finisher	AR-FN7			○*1		×	○	—	×		×	×								○		
A	Finisher	AR-FN6			○*1				×	—	×		×	×							○		
A	Mail-bin stacker	AR-MS1			○*1					×	—		×								○		
A	Exit tray *4	AR-TE3					○*1		×	×	×	—		×									
A	Upper exit tray extension	AR-TE4								×	×		—										
A	Punch unit	AR-PN1			○*1		×	○	○	×		×		—							○		
	Related for extension of functions and others																						
A	PS3 expansion kit	AR-PK1															—						
A	Network scanner expansion kit	AR-NS2	○	○	○*1											○		—					
A	Facsimile expansion kit	AR-FX5	○	○	○*1														—				
A	Fax memory (8 MB)	AR-MM9	○	○	○*1													○	—	—	○		
A	Power supply unit	AR-DC1			○*1																—		
A	Hard disk drive	AR-HD3																				—	
A	Multi-function controller board *5	AR-M11	○	○	○*1										—								×
A	Print server card *6	AR-NC5J														—		○*1					○*1
A	Printer Expansion kit	AR-P14														○							—

○ = Must be installed together.
○*1 = Any of the units must be installed together.
○*2 = Must be installed for installation of the stand/3 x 500 sheet paper drawer or the stand/MPD & 2000 sheet paper drawer.
× = Cannot be installed together.
*3 = Standard
*4 = AR-DU4 Standard
*5 = Attachment of the AR-P14 provides the similar functions.
*6 = Not Available

B.AR-M350N/M450N

As shown in the table below, some other peripheral devices (B) may be needed for installation of a peripheral device (A) and some peripheral devices cannot be installed together.

A			B: B/W scanner module/DSPF	Scanner rack	Stand/3 x 500 sheet paper drawer	Stand/MPD & 2000 sheet	Duplex module/bypass tray	Duplex module	Saddle stitch finisher	Finisher	Mail-bin stacker	Exit tray	Upper exit tray extension	Punch unit	Multi-function controller board	Print server card	PS3 expansion kit	Network scanner expansion kit	Facsimile expansion kit	Fax memory (8 MB)	Power supply unit	Hard disk drive	Printer Expansion kit
Related for scanner feature																							
B/W scanner module/DSPF	AR-EF1		—	○	○*1										○						○		
Scanner rack	AR-RK1		○	—	○*1										○						○		
Related for paper feed unit																							
Stand/3 x 500 sheet paper drawer	AR-D14				—	×															○		
Stand/MPD & 2000 sheet paper drawer	AR-D13				×	—															○		
Duplex module/bypass tray	AR-DU4				○*1		—		×					×							○*2		
Duplex module	AR-DU3				○*1			—													○*2		
Output units																							
Saddle stitch finisher	AR-FN7				○*1		×	○	—	×		×	×								○		
Finisher	AR-FN6				○*1				×	—	×		×	×							○		
Mail-bin stacker	AR-MS1				○*1					×	—		×								○		
Exit tray *4	AR-TE3						○*1		×	×	×	—		×									
Upper exit tray extension	AR-TE4									×	×		—										
Punch unit	AR-PN1				○*1		×	○	○	×		×		—							○		
Related for extension of functions and others																							
PS3 expansion kit	AR-PK1																—						
Network scanner expansion kit	AR-NS2		○	○	○*1											○		—					
Facsimile expansion kit	AR-FX5		○	○	○*1														—				
Fax memory (8 MB)	AR-MM9		○	○	○*1														○	—	○		
Power supply unit	AR-DC1				○*1																—		
Hard disk drive	AR-HD3																					—	
Multi-function controller board *3	AR-M11		○	○	○*1										—								
Print server card *3	AR-NC5J															—							
Printer Expansion kit *6	AR-P14																						—

○ = Must be installed together.
○*1 = Any of the units must be installed together.
○*2 = Must be installed for installation of the stand/3 x 500 sheet paper drawer or the stand/MPD & 2000 sheet paper drawer.
× = Cannot be installed together.
*3 = Standard
*4 = AR-DU4 Standard
*6 = Cannot be attached.

[4] SPECIFICATIONS

1. Basic Specification

A. Base Engine (AR-M350U/M350N/M450U/M450N)

(1) Form

AR-M350U/M350N/M450U/M450N	Console type

(2) Engine speed

Paper size	AR-M350U/N	AR-M450U/N
A4, 8.5" x 11"	35ppm	45ppm
A5R/5.5" x 8.5"R	35ppm	45ppm
B5	35ppm	45ppm
B4/8.5" x 14	20ppm	22ppm
A3/11" x 17"	17ppm	20ppm

(3) Engine composition

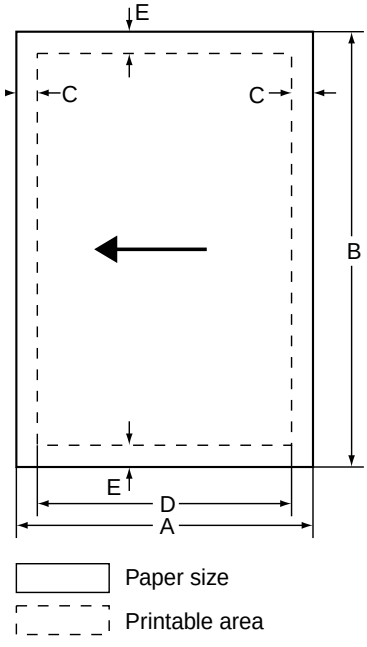
Photoconductor type	OPC (diameter of photoconductor : ø30mm)
Record method	Electrophotograph (laser)
Development method	Dry-type dual-component magnetic brush development
Charge method	Charged saw-tooth method
Transfer method	Transfer roller
Cleaning method	Counter blade
Fusing method	Heat roller
Used toner disposal	Toner recycling system

(4) Engine resolution

Resolution	Write :600dpi
Smoothing	Write :1200dpi equivalent
Gradation	Write :2 levels

(5) Printable area

The print area of this product is shown below.



If a printer driver for Windows or Macintosh is used for printing, the printable area will be smaller. The actual printable area depends on the printer driver to be used.

(in mm)

Paper size	A	B	C	D	E
A3	297	420	4	289	4
B4	257	364	4	242	4
A4	210	297	4	202	4
B5	182	257	4	168	4
A5	148	210	4	140	4
Japanese postcard	100	148	4	92	4
Ledger	279	432	4	271	4
Legal	216	356	4	208	4
Foolscap	216	330	4	208	4
Letter	216	279	4	208	4
Executive	184	267	4	183	4
Invoice	140	216	4	132	4
Com-10(envelope)	105	241	4	97	4
C5(envelope)	162	229	4	154	4
Monarch(envelope)	98	191	4	90	4
DL(envelope)	110	220	4	102	4
ISO B5(envelope)	176	250	4	168	4

(6) Warm-up

Warm-up time	less than 80 seconds
Pre-heat requirement	Required
Jam recovery time	Target: about 30 seconds (Under standard condition of 60 seconds left after side cover opening, polygon motor halt)

(7) Power source

Voltage	100V system	200V system
	100-127V	220-240V
Frequency	50/60Hz	50/60Hz

(8) Power consumption

	AR-M350U/N	AR-M450U/N
Max. Power consump.	1440W	1440W

(9) Energy Star benchmark

	AR-M350U/N	AR-M450U/N
Low power mode	40W	75W
Transition time to Low power mode	60min	60min

(10) Noise

	AR-M350U/N	AR-M450U/N
At working	less than 6.8B	less than 6.8B
At waiting mode	less than 5.0B	less than 5.0B

* Showing noise benchmark in each model as a whole system.

(11) Dimensions

External dimensions (WxDxH)	428x552x469 (Only main unit) (mm) 16.9"x21.7"x18.5"
Occupied space dimensions (WxD)	963x685 (mm) *1 25.7"x22.3"
Weight	AR-M350U/M450U:Approx.38.9kg (Only main unit) Approx.99kg *1 AR-M350N/M450N:Approx.39.9kg (Only main unit) Approx.100kg *1

*1: With B/W scanner module/DSPF, Scanner rack, Large capacity paper feed desk, Power supply unit and Upper exit tray extension

B. Document Feeding Equipment

(1) One-drawer tray (included in the base engine)

Paper feed method	One-drawer tray	
Sizes to be fed	A4, B5, 8.5" x 11"	
Paper capacity	500 sheets (at 80g/m²)	
Media available for paper feeding	Plain paper 60 - 105g/m², 16 - 28lbs	
Paper type	Plain, recycled, pre-printed, pre-punched, color, letter head	
Paper size switching	To be switched by user (paper size to be entered from the operation panel).	
Dehumidification heater	Not provided	
Balance detection	Provided (paper empty and 3 steps)	
Default size setting	100V system	200V system
	8.5" x 11"	A4
Mounting/demounting of the tray	Provided	

C. Output Equipment

(1) Face-down Exit Tray (included in the base engine)

Output position/ method	Face-down output at the upper side of main unit
Output paper capacity	400 sheets (80g/m² sheet)
Output paper size	A3, B4, A4, A4R, B5, B5R, A5R 11 " x 17", 8.5" x 14", 8.5" x 13", 8.5" x 11 ", 8.5" x 11 "R, 5.5" x 8.5"R Executive, postal card, Monarch (98 x 191) Com-10 (105 x 241), DL (110 x 220), C5 (162 x 229), ISO B5 (176 x 250)
Spec of media for paper output	Tracing paper : 52 ~ 59g/m² / 14 ~ 15lbs Plain paper : 60 ~ 128g/m² / 16 ~ 34lbs Index paper : 176g/m² / 47lbs Cover paper : 205g/m² / 54 ~ 55lbs Transparency firm
Remaining paper detection	Not provided
Exit tray full detection	Provided

2. Specific Function

A. Printer Function

(1) Platform

IBM PC/AT (Include compatible machine) Macintosh (680x0), Power Macintosh, iMac, G3Macintosh

* For Macintosh OS, the PS3 expansion kit and NIC card are required.

(2) Support OS

Custom PS	Windows 95/98/Me/XP
	Windows NT 4.0 Windows 2000
Custom PCL5e/6(XL) SPDL	Windows 95/98/Me/XP
	Windows NT 4.0 Windows 2000
PPD	Windows 95/98/Me/XP
	Windows NT 4.0 Windows 2000
	Mac OS 8.5.1 - Mac OS 9

* For Macintosh OS, the PS3 expansion kit and NIC card are required.

(3) PDL emulation

PCL6, PCL5e compatible, PostScript Level 2, PostScript 3 compatible (PS3 expansion kit is required.)

(4) Print Function

a. General

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Copies	1 - 999	1 - 999	1 - 999	1 - 999
Orientation	Yes	Yes	Yes	Yes
Duplex print	Yes	Yes	Yes	Yes
Saddle stitch	Yes	Yes	No	N/A
Binding edge	Left/top/ right	Left/top/ right	Long/short	Long/short
N-up	2/4/6/8	2/4/6/8	2/4*3*4	2/4/6/9/16
N-up direction	Fixed	Fixed	Fixed	Selectable
N-up border line	Yes	Yes	Yes(always)	Yes

b. Paper input

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Paper size	Yes	Yes	Yes	Yes
Custom paper size	1 size	1 size	3 sizes*3*5	N/A
Source selection	Yes	Yes	Yes	Yes
Different first page	Yes	Yes	N/A	Yes
Transparency inserts	Yes	Yes	N/A	Yes

c. Paper output

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Output tray selection	Yes	Yes	Yes	Yes
Mail bin	Yes	Yes	Yes	Yes
Staple	Yes	Yes	Yes	Yes
Offset	Yes	Yes	Yes	Yes
Punch	Yes	Yes	Yes	Yes

d. Graphic

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Resolution	600/300 dpi	600 dpi	600 dpi	600 dpi
Halftone	N/A	Yes	Yes	N/A
Graphic mode	Yes	N/A	N/A	N/A
Smoothing	Yes	Yes	Yes	Yes
Toner save	Yes	Yes	Yes	Yes
Photo enhancement	Yes*8	Yes	N/A	N/A
Negative image	N/A	Yes	Yes	Yes
Mirror image	N/A	Horizontal/ vertical	Horizontal	Yes
Zoom	N/A	N/A	Yes	Yes
Fit to page	Yes	Yes	N/A	N/A

e. Font

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Resident font	45 fonts	136 fonts	136 fonts*6	35 fonts
Download font	Bitmap TrueType, Graphic	Bitmap Type1 TrueType	Bitmap Type1 TrueType	N/A

f. Others

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Watermark*7	Yes	Yes	Yes	Yes
Overlay	Yes	Yes	N/A	N/A
Job retention*1	Yes	Yes	N/A	Yes
Account control	Yes	Yes	N/A	Yes
Custom settings	Yes	Yes	N/A	N/A
Automatic configuration*2	Yes	Yes	N/A	Yes
Job end notification	Yes	Yes	N/A	N/A

* 1 In the models without a hard disk drive, an optional hard disk drive must be installed .
* 2 Functions when peripheral devices are installed.
* 3 Not supported in the Windows NT 4.0 environment.
* 4 2/4/6/9/16 is supported in the Windows 2000 environment.
* 5 Only one size is supported in the Windows 2000 environment.
* 6 Only 35 fonts are supported in the Windows NT 4.0 environment.
* 7 This function is limited for PPD.
* 8 PCL6 only

(5) Compatibility

PCL 5e compatibility	Target for PCL5e is to be compatible with HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility. All the PJL commands are not necessarily included in the compatibility.
PCL6 compatibility	Target for PCL6 is to be compatible with HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility. All the PJL commands are not necessarily included in the compatibility.
PostScript Compatibility	Roman PostScript is targeted to be compatible with Adobe PostScript as performed in HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility.

B. Expanded RAM

Installation of an expanded RAM will avoid the following status.

1) Time out error reduction
2) Spool time reduction
3) Avoidance of VM error / memory full

Use commercially available RAM with the following specifications.
Note: If RAM used does not meet the follow specifications, the copier may not recognize the additional RAM or its capacity correctly.

<Spesification>

DIMM TYPE	168pin 3.3V Unbuffered SDRAM DIMM Non-ECC
DIMM capacity	64MByte, 128MByte, 256MByte
CAS LATENCY	CL=2
SDRAM CLOCK	For PC100, PC133
SPD	Supporting
Parity	Not support
ECC	Not support

<Operation-assured Memory> (As of March / 2001)

Manufacture	Capacity	Model name	RAM CHIP name	Note
Kingston Technology	128MB	KVR133X64C3/ 128	HYB39S64800BT -7.5	
	128MB	KVR133X64C3 -128	D456821G-A75 -9JF	
	256MB	KVR133X64C3 -256	HY57V28820AT-H	
Viking Compornents	64MB	VIK8641CL2	µPD456841G5 -A80-9JF	
	64MB	VIK8641CL2	D456841G5-A80 -9JF	
	128MB	VIK6642CL2	TC59SM708FT-80	
	128MB	VIK6642CL2	D4564841G5-A80 -9JF	
	256MB	VIK2642CL2	TC59SM708FT-80	
Memory Card Technology	64MB	DM864VS65804X -7G	GM72V66841XT75	
	128MB	DM1665VS65804 X-7G	HY57V64820HG	

C. Scanner function

*Scanner function, the NIC card and Network Scanner kit are required.

(1) Scanner function

Scanner mode	Scan to E-mail (Internet FAX) Scan to Server (Client PC)

(2) Support System

Embedded server	SMTP server FTP server
Protocol	TCP/IP

(3) Support Image

Format	TIFF, PDF, TIFF-F * Selectable for each page
Compression method	Uncompressed, G3(1-dimension) *1, G4 *2 *1 G3 (1-dimension) = MH (Modified Huffman) *2 G4 = MMR (Modified MR)

(4) Transmission Mode

DSPF/OC transmission switching	Available (Switching during the reading is not feasible)

(5) Image Process

Half tone reproduction	Equivalent to 256 levels
Exposure adjustment	Light / Auto / Dark
Quality selection	Half-tone ON/OFF
Resolution*	Normal (200x200dpi) Fine (300x300dpi) Super fine (400x400dpi) Ultra fine (600x600dpi) Varies with the file type/transmission method

(6) Original Memory

Standard	Commonly use ERDH area of memory.
Memory expansion	Special : As per ERDH memory

(7) Specified Destination

Specified destination	Specifying by one-touch or group
One-touch*	Max. 500 destinations (in conjunction with the one-touch dial of FAX) Max. 100 destinations can be registered for FTP and Desktop.
Group*	To be registered in one-touch
Program	Available

(8) Specified Multiple Destinations

Specified destination	Specifying by one-touch or group
No. of registration	Max. 300 items (in conjunction with those of FAX)
Sequential broadcasting	Available (E-mail only. It is not available for FTP/Desktop.)
Simultaneous FAX transmission	Available (Specifying multiple destinations of FAX, E-mail or FTP and broadcasting by a single scan)

O : Available

(9) Functions

Transmitting functions	Rotating transmission	Available (to be matched with FAX specification)
	Long length original transmission	Not Available
	Verification stamp function	Option
Report/list functions	Transmit/receive record	Available
	Transmit/receive result	Available
	Address/phone directory list	Available
	Group list	Available
	ID/sender list	Available
	Program list	Available

D. Copy function

(1) Copy Speed

	AR-M350U/N			AR-M450U/N		
	Actual	Reduction	Enlargement	Actual	Reduction	Enlargement
A4, 8.5"x11"	35	35	35	45	45	45
A4R, 8.5"x11"R	25	25	25	30	30	30
A5R, 5.5"x8.5"R, Invoice-R	35	35	35	45	45	45
B5	35	35	35	45	45	45
B5R, Exective-R	25	25	25	30	30	30
B4, 8.5"x14"	20	20	20	22	22	22
A3, 11"x17"	17	17	17	20	20	20
Extra, Envelope	17	17	17	20	20	20
Japan P/C	In case of printing on post card, engine speed can vary with system configuration, because next paper is fed after machine completely output previous page.					

* Figures in reduction/enlargement are represented by those at the ratio to show slowest speed

(2) First Copy Time

Conditions: A4 or 8.5"x11"P from front tray of PPC, without HDD and with polygon motor running.

	AR-M350U/N	AR-M450U/N
Document glass *1	Less than 5.3 seconds	Less than 4.6 seconds
DSPF	Less than 6.0 seconds	Less than 5.3 seconds

*1 During OC/high-speed mode

(3) Job Speed

	AR-M350U/N	AR-M450U/N
S → S *1	33 cpm (94%)	42 cpm (93%)
S → D *2	32 cpm (91%)	40 cpm (88%)
D → D *3	32 cpm (91%)	40 cpm (88%)

*1 S → S : A4 / 8.5" x 11"P original 5 sheets copy 5sets
*2 S → D : A4 / 8.5" x 11"P original 10 sheets copy 5sets
*3 D → D : A4 / 8.5" x 11"P original 5 sheets (10 pages) copy 5sets

Note: First copy time has been factored into calculation resulting in reduced CPM.

(4) Continuous Copy

Max. multiple number	999 pages

(5) Copy Ratio

Copy ratio	AB series : 25%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 400% Inch series : 25%, 64%, 77%, 100%, 121%, 129%, 400%
Zoom	25 - 400% 25 - 200% (Copy from DSPF)
Independent scaling	Not provided

(6) Exposure/Copy Quality Process

Exposure mode	Binary: Text(auto/manual), Text/photo, Photo 256 levels: Not provided
Manual steps	9 steps
Smoothing	Standard
Toner save mode	Standard

(7) Copy Function

Function	APS	Standard Function
	AMS	Standard Function
	Paper type select	Standard Function (By type setting)
	Auto tray switching	Standard Function
	Rotation copy	Standard Function
	Electronic sort	Standard Function
	Rotation sort	Not provided
	Reserved copy	Standard Function
	Prior tray setting	Not provided
	Recall/register of program	Standard Function
	Proof copy	Not provided
	Preheat function	Standard Function (To be set up by key operator)
	Auto power shut-off function	Standard Function (To be set up by the key operator program)
	Account control	Standard Function (100 accounts)
	Communication support (RIC)	Standard Function
	Card counter support	Only provided the connector
	Coin vendor support	Only provided the connector
Special function	Margin shift	Standard Function
	Edge erase / Center erase	Standard Function
	Dual page copying	Standard Function
	Covers	Not provided
	Transparency insert	Not provided
	Centering	Not provided
	Multi shot (N in 1)	Standard Function (2 in 1 / 4 in 1)
	Pamphlet copy	Standard Function
	2-sided copy orientation change	Standard Function
	Large capacity original mode	0 (Max. 140 pages)
	B/W reverse	Not provided
	Shading	Not provided
	Mirror image	Not provided
	Repeat	Not provided
	Date stamp	Not provided
	Stamp	Not provided
	Page stamp	Not provided
	Zaurus print	Not provided

[5] CONSUMABLE PARTS

1.Supply system table

Note: The consumable parts are the same as those of the AR-M350/M450 and the AR-P350/P450.

A.USA

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450NT (*1 AR-450NT-J)	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450ND	
3	Drum	Drum	x1	50K	AR-450DR	
4	50K maintenance kit	Cleaner blade	x1	50K	AR-450KC1	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K maintenance kit	Transfer roller	x1	100K	AR-450KA1	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	Upper heat roller kit	Upper heat roller	x1	200K	AR-450UH	
		Fusing separation pawl (Upper)	x4			
7	Lower heat roller kit	Lower heat roller	x1	200K	AR-450LH	
		Fusing separation pawl (Lower)	x2			
8	Cleaner blade	Cleaner blade	x10	50K(x10)	AR-450CB	AR-450CB=(AR-450BL)x10
9	Cleaning roller	Cleaning roller	x10	200K(x10)	AR-450CR	AR-450CR=(AR-450RC)x10
		Bearing	x20			
10	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
11	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

*1: For USA Government

Note1: Print on Master/individual carton:Toner/Developer in 2 languages (English/French), DR in 4 languages (English/French/German/Spanish).

Note2: Packed with machine: DR 50K/Developer UN/Process UN

Note3: The other maintenance parts which are not listed above are registered as service parts.

B.Europe

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450T	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450DV	
3	Drum	Drum	x1	50K	AR-450DM	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:4 languages (English/French/German/Spanish).

Note2: Packed with machine: DR 50K/Developer UN/Process UN

Note3: The other maintenance parts which are not listed above are registered as service parts.

2.Production number identification

A. Drum cartridge

The lot number, printed on the front side flange, is composed of 10 digits, each digit showing the following content:

1	2	3	4	5	6	7	8	9	10

1 Number
For this model, this digit is 2.
2 Alphabet
Indicates the model conformity code. T for this model.
3 Number
Indicates the end digit of the production year.
4 Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.
5/6 Number
Indicates the production day on the month.
7 Number or X, Y, Z
Indicates the month of packing.
X stands for October, Y November, and Z December.
8/9 Number
Indicates the day of the month of packing.
10 Alphabet
Indicates the production factory. "A" for Nara Plant.

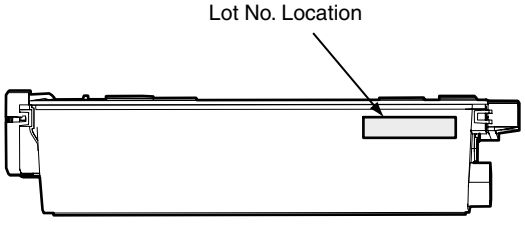
B. Toner cartridge

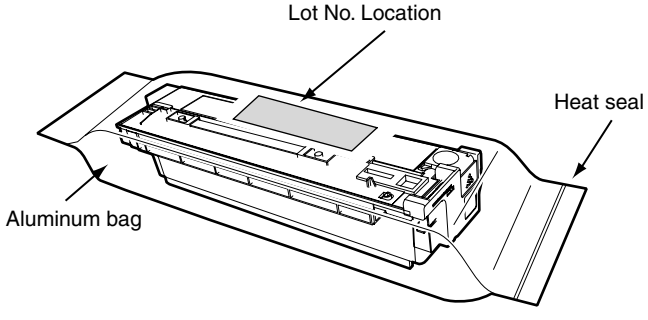
The lot number is composed of 7 digits, and each digit indicates the following.

The lot number shall is printed in the position shown below.

1	2	3	4	5	6	7

1 Version number (A - sequentially revised)
2 Numeral figure
Indicates the end digit of the production year.
3 Alphabet
Indicates the production factory. (B for SOCC)
4 Destination code
5,6 Numeral figures
Indicates the production day.
7 Numeral figure or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.





C. Developer

The lot number is composed of 8 digit, and each digit indicates as following.

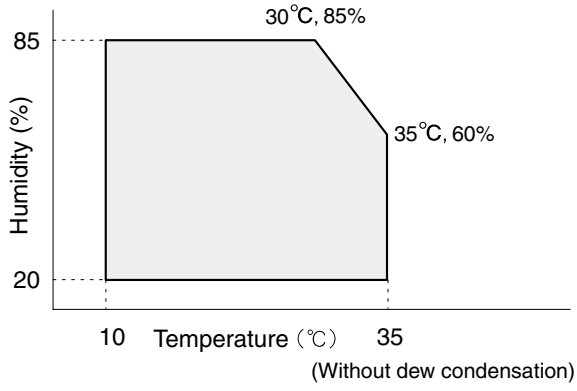
The lot number shall be printed on the bag.

1	2	3	4	5	6	7	8

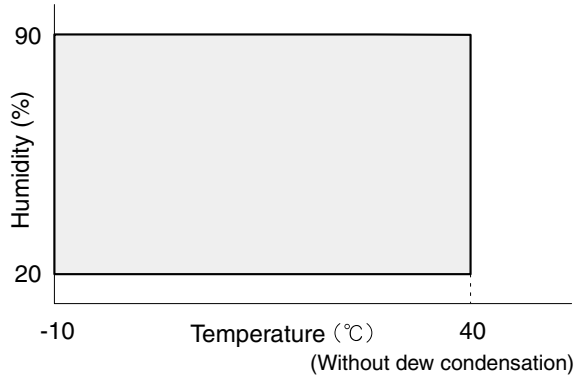
1 Alphabet
Indicates the production factory.
2 Figure
Indicates the production year.
3/4 Figure
Indicates the production month.
5/6 Figure
Indicates the production day.
7 Hyphenation
8 Figure
Indicates the production lot.

3. Environmental conditions

A. Operating conditions



B. Storage conditions

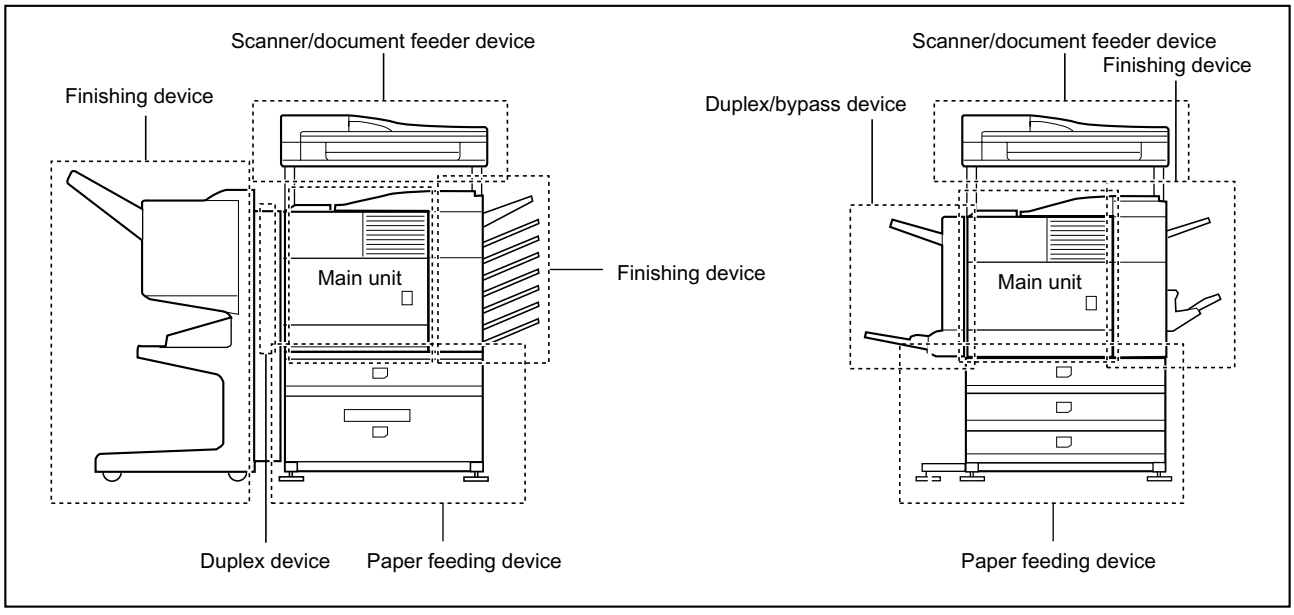


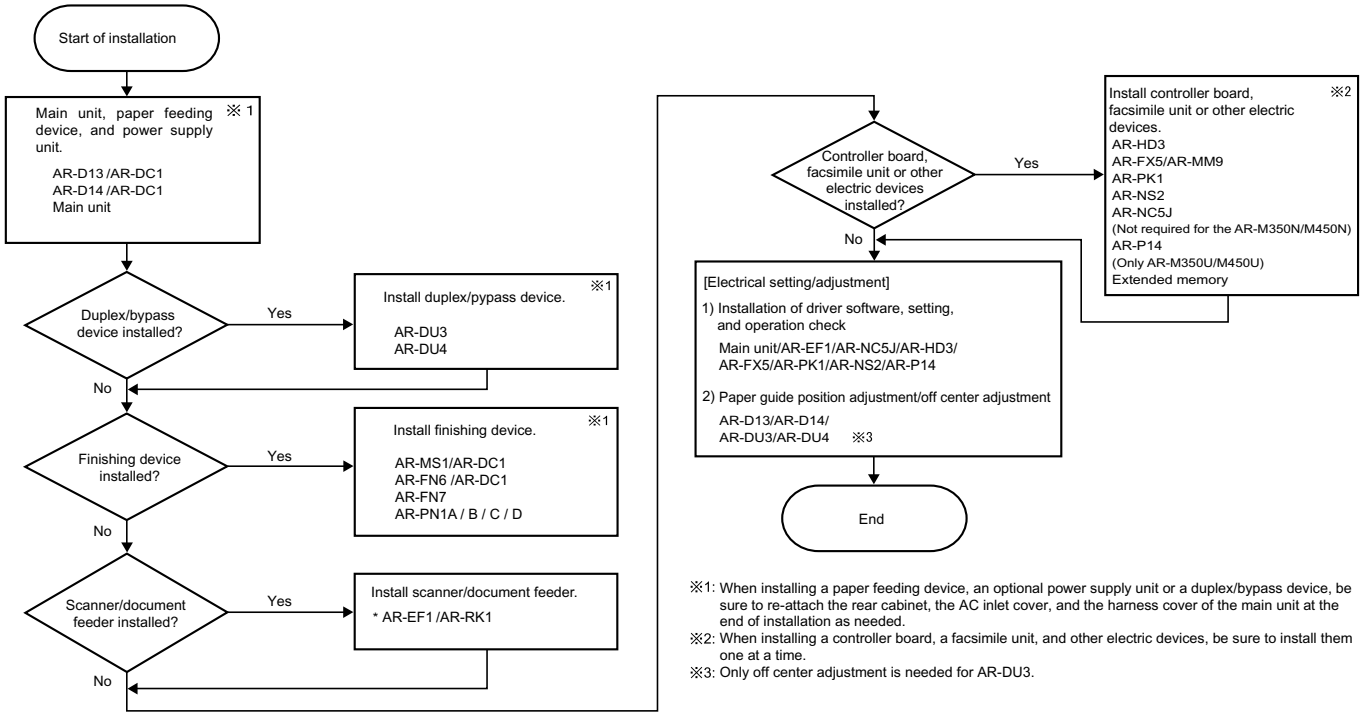
[6] UNPACKING AND INSTALLATION

1. Installing procedure flowchart

There are many combinations between this machine and option units. For installing option units, observe the following procedures for efficiency.

To install the devices efficiently, follow the procedure below.
Some peripheral devices may have been installed as standard devices depending on the main unit model.
Part of descriptions and illustrations may be different.





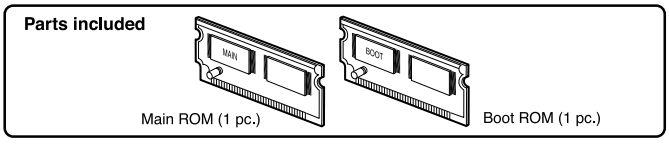
※1: When installing a paper feeding device, an optional power supply unit or a duplex/bypass device, be sure to re-attach the rear cabinet, the AC inlet cover, and the harness cover of the main unit at the end of installation as needed.
※2: When installing a controller board, a facsimile unit, and other electric devices, be sure to install them one at a time.
※3: Only off center adjustment is needed for AR-DU3.

* When installing an option, refer to the Service Manual for that option and or the AR-M350 / M450 Service Manual.

2. AR-P14 installing procedure

<Before installation>

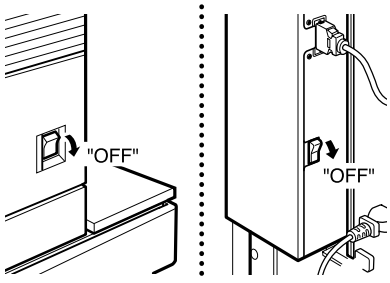
* This installation procedure is provided for use with the AR-M350U/ M450U series.
* To connect this machine to a network, a Print Server Card (NIC) AR-NC5J must be installed to the multi-function controller board in advance.



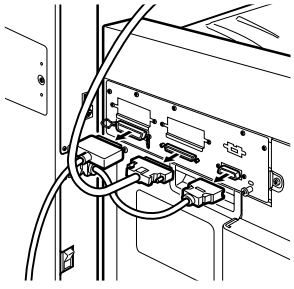
* To enable the printer expansion function, the product key must be acquired.

The application number, machine serial number, and product key number are important information.
Keep the above information for future reference.

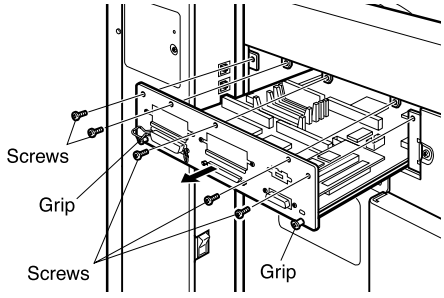
1) Mount the printer expantion kit ROMs to the control PWB.
<1>Turn off the main switch of the main unit of the printer
Turn the main switch located on the front side of the main unit to the "OFF" position.
If the machine is equipped with a facsimile unit, also turn off the FAX power switch.
Then remove the power plug from the outlet.
.



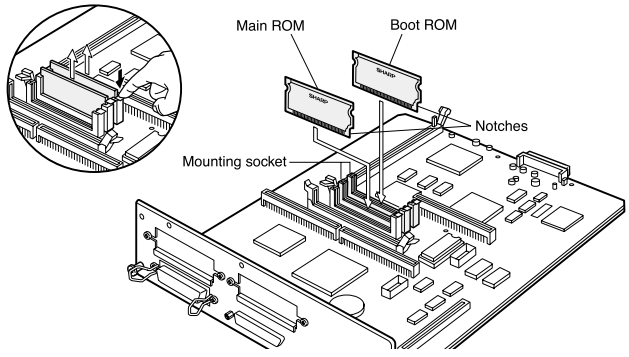
<2>Remove the cables connected to the control PWB unit.
Remove all the cables connected to the control PWB unit of the main unit of the printer.



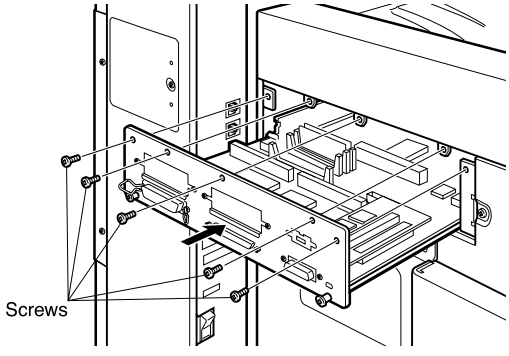
<3>Remove the control PWB unit.
Remove the five screws that fix the control PWB unit to the main unit of the printer.
Then, hold the two grips and pull out the control PWB unit to remove it from the main unit.



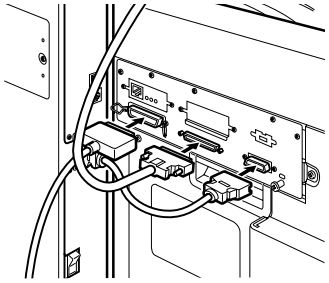
<4>Mount the printer expansion kit ROMs(2 pcs.)to the control PWB.
Remove the ROMs(main and boot ROMs)from the control PWB and replace them with the two ROMs(main and boot ROMs)of the printer expansion kit.
The main and boot ROMs are indicated with "MAIN" and "BOOT" on the labels on the ROMs respectively.
When mounting the printer expansion kit ROMs, insert them to the same positions in the same direction as those before replacement and ensure that the inserted printer expansion kit ROMs are locked with the fittings of the sockets.



<5>Re-attach the control PWB.
Attach the control PWB to the main unit of the printer and fix it using five screws.

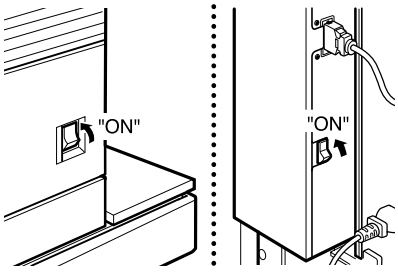


<6>Connect the cables to the control PWB.
Connect all the cables that have been removed in <2> to the original positions of the control PWB unit.



If another peripheral device must be installed, carry out the following steps at the end of the installation work.

2) Turn on the main switch of the main unit of the printer.
Insert the power plug of the main unit of the printer to the outlet.
Then, turn the main switch located on the front side of the main unit to the "ON" position.
If the machine is equipped with a facsimile unit, turn on the FAX power switch.



3) Prepare to enable the printer expansion function.
To enable the printer expansion function, use the keys on the operation panel to enter the product key.
For entry of the product key, see the key operator's guide of the operation manual for the main unit.

Carry out the network setting for the Print Server Card.
Use a key operator program to carry out the network setting for this machine. For this network setting, the customer's network environment must be checked. Consult the network administrator to carry out the setting.

In addition to the network setting for this machine, to use the machine in the network environment:
According to the customer's network environment, install the driver software from the CD-ROM supplied with this machine and use the utility software supplied with the Print Server Card to set the network printer for the server computer.
For installation in the server computer and network setting, see the operation manual supplied with the main unit.
This setting must be carried out by the network administrator or based on consultation with the network administrator.

4) To check the operation of the printer expansion function.
When the network settings and the driver settings are complete, perform a test print to check if printing can be performed successfully.
(When test printing is completed successfully, use the "list print" key operator program to print the network settings and keep the printout for future reference.)

Installation of AR-P14 is now complete.

[7] MAINTENANCE

1. Self print of set values

Use SIM 22-6 to print the set values (machine settings) and jam history.
These values must be printed before execution of maintenance or disassembly procedures.

2. Maintenance System Table

The maintenance system table is the same as that of the AR-M350/M450.

A. Scanner / DSPF

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate ☐ Move position

Unit name	Part name		When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
Optical section	Mirror/Lens/Reflector/Sensors		○	○	○	○	○	○	○	○	○	
	Table glass/OC		○	○	○	○	○	○	○	○	○	
	White reference glass		○	○	○	○	○	○	○	○	○	
	Rails			☆	☆	☆	☆	☆	☆	☆	☆	
	Drive belt/Drive wire/Pulley			×	×	×	×	×	×	×	×	
DSPF	Paper feed section	Take-up roller	○	○	▲	○	▲	○	▲	○	▲	Note 2
		Separation pad	○	○	▲	○	▲	○	▲	○	▲	Note 2
		Paper feed roller	○	○	▲	○	▲	○	▲	○	▲	Note 2
	Transport section	PS roller	○	○	○	○	○	○	○	○	○	
		Exposure section (Dust-proof glass)	○	○	○	○	○	○	○	○	○	
	Paper exit section	Paper feed roller SPF	○	○	○	○	○	○	○	○	○	
	Other	Sensors			○		○		○		○	For cleaning, blow air.
	Finish stamp section [Option] (Japan only)	Stamp solenoid									▲	
		Stamp individual part	×	×	×	×	×	×	×	×	×	User replacement at 10K or 1 year.

Note 2: Replacement reference: Same as above or 2 years.

B. Engine section

* For disassembly procedures, refer to the AR-P350/P450 Service Manual.

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate ☐ Move position

Unit name	Part name	When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
Drum peripheral	Drum		▲	▲	▲	▲	▲	▲	▲	▲	Installed when shipping
	Cleaner blade		▲	▲	▲	▲	▲	▲	▲	▲	
	Toner reception seal		▲	▲	▲	▲	▲	▲	▲	▲	
	Side molt		▲	▲	▲	▲	▲	▲	▲	▲	
	Transfer roller	×	×	▲	×	▲	×	▲	×	▲	
	Discharge plate	×	×	▲	×	▲	×	▲	×	▲	
	TR bearing (F/R)			×		×		×		▲	
	Transfer roller collar			×		×		×		▲	
	After-transfer star ring			×		×		×		×	
	TR gear	×	×	×	×	▲	×	×	×	▲	
	Screen grid	(○)×	▲	▲	▲	▲	▲	▲	▲	▲	
	Drum separation pawl UN		▲	▲	▲	▲	▲	▲	▲	▲	
	Charger case (M/C)		○	○	○	○	○	○	○	○	
	Charging plate (saw teeth)	(○)×	▲	▲	▲	▲	▲	▲	▲	▲	
Developing section	Developer		×	▲	×	▲	×	▲	×	▲	Supplied when installing
	DV blade		×	▲	×	▲	×	▲	×	▲	
	DSD collar		○	○	○	○	○	○	○	○	
	DV side seal F		×	▲	×	▲	×	▲	×	▲	
	DV side seal R		×	▲	×	▲	×	▲	×	▲	
	Toner cartridge										Attached when installing./ EX Japan: 814g, user replacement for every 27K.
Fusing section	Upper heat roller		○	○	○	▲	○	○	○	▲	
	Lower heat roller		○	○	○	▲	○	○	○	▲	
	Upper separation pawl		▲	▲	▲	▲	▲	▲	▲	▲	
	Lower separation pawl		▲	▲	▲	▲	▲	▲	▲	▲	
	Thermistor		○	×	○	×	○	×	○	×	Clean and remove paper dust.
	Upper heat roller gear		×	×	×	▲	×	×	×	▲	
	Paper guides	○	○	○	○	○	○	○	○	○	
	Gears		☆	☆	☆	☆	☆	☆	☆	☆	
	Cleaning roller		×	×	×	▲	×	×	×	▲	
	CL roller collar					▲				▲	
Filters	Ozone filter			▲		▲		▲		▲	
Paper feed section	Paper feed roller	○	○	×	○	×	○	×	○	×	Note 1
	Torque limiter	×		×		×		×		×	Note 1
Transport section Paper exit reverse section	PS follower roller	○	○	○	○	○	○	○	○	○	
	Transport rollers	○	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Paper dust remover		×	▲	×	▲	×	▲	×	▲	
Drive section	Specified position	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Belts							×			
Image quality		×	×	×	×	×	×	×	×	×	
Other	Sensors			×		×		×		×	

Note 1:Replacement reference: Use the counter value of each paper feed port as the replacement reference.
Paper feed roller/Torque limiter section: 80K or 2 years

C. Peripheral devices

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate ☐ Move position

Option name	Part name		When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
ADU + Manual feed	Paper feed separation section	Paper feed rollers	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Separation pad	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Torque limiter	(○) ×		×		×		×		×	Note 3
	Transport section	Transport rollers	○	○	○	○	○	○	○	○	○	
		Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
Desk (Multi stage LCC) Multi purpose	Paper feed separation section	Paper feed rollers	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Torque limiter	(○) ×		×		×		×		×	Note 3
	Transport section	Transport roller	○	○	○	○	○	○	○	○	○	
		Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
Finisher	Transport section	Transport rollers	○		○		○		○		○	
		De-curler roller	(○) ×	×	○	×	○	×	○	×	○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
	Staple un											Replace UN at 100K staple.
	Staple cartridge											User replacement for every 3000pcs.
Mail-bin stacker	Transport section	Transport roller	○		○		○		○		○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
Saddle finisher	Transport section	Transport roller	○		○		○		○		○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
	Staple UN											Replace UN at 100K staple (including the staple UN and the holder section).
	Staple cartridge											User replacement for every 5000 pcs.

Note 3: Replacement reference: Use the counter value of each paper feed port as the replacement reference.
Paper feed roller/Separation pad/Torque limiter section: 80K or 2 years

[8] SIMULATION

For the simulation, the following items have been changed.

22-10

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the system configuration (option, internal hardware).
Section	
Item	Spec
Operation/Procedure	The machine composition below is displayed.

```
SIMULATION 22-10
SYSTEM INFORMATION.
MACHINE: *******
SPF: *******  XXXXXXXXXXX
FINISHER : *******          MAIL BIN : *******          PUNCH : ******
DESK/LCC : *******          ADU: *******  XXXXXXXXXXXX
PROCESS TYPE : *
SYSTEM MEMORY: **MB                     HDD: ***MB  ICU F ******
NIC : *******  NSCN : ******             PS3 : ******
FAX: *******  FAX  MEMORY : **MB        HAND SET: *******
STAMP : *******
```

<List of display value>

MACHINE	Model codes
SPF	NONE/ (Model code)
FINISHER	NONE/ (Model code)
MAIL BIN	NONE/ (Model code)
PUNCH	NONE/ (Model code)
DESK/LCC	NONE/ (Model code)
ADU	NONE/ (Model code)
PROCESS TYPE	Process control spec (1, 2: AR machine 3: DM machine)
SYSTEM MEMORY	Memory capacity (MB)
HDD	Hard disk capacity (MB)
ICU	PRINTER/MFP
NIC	NONE/ (Model code)
NSCN	NONE/ (Network scanner)
PS3	NONE/ (PS3 expansion kit)
FAX	NONE/ (Model code)
FAX MEMORY	FAX expansion memory capacity (MB)
HAND SET	NONE/ (Model code)
STAMP	Finisher stamp NONE/ (Model code)

<List of machine model codes>

Item	Display	Content
MACHINE	AR-P350/350LP	
	AR-P450/450LP	
	AR-M350/350M	(Include the N model)
	AR-M450/450M	(Include the N model)
	AR-310M	
	AR-M350U	
	AR-M450U	
	AR-310S/310F	
	AR-350S/350F	
	AR-450S/450F	
SPF	-	Document feed unit not installed
	AR-EF2	Document feed unit (SPF) installed
	AR-EF1	Duplex document feed unit installed
FINISHER	-	After-work unit not installed
	AR-FN6	Built-in finisher installed
	AR-FN7	Console finisher installed
MAIL BIN	-	Mail bin not installed
	AR-MS1	Mail bin installed
Punch unit	-	Punch unit not installed
	AR-PN1A	Punch unit 2 holes
	AR-PN1B	Punch unit 3 holes
	AR-PN1C	Punch unit 4 holes
	AR-PN1D	Punch unit 4 holes wide hole
ADU	-	Duplex module not installed
	AR-DU3	Duplex module installed
	AR-DU4	Duplex module + manual feed unit installed
DESK	-	Paper feed desk not installed
	AR-MU1	Multi-purpose tray installed
	AR-D14/D15	Paper feed desk installed
	AR-D13	Tandem desk installed
ICU	PRINTER	Printer board
	AR-M11	MFP board
	AR-M12 *	MFP board (U model)
	AR-M13 *	MFP board (S model)
MEMORY	0MB	No expansion memory
	***MB	Expansion memory ***MB
HD	0MB	Hard disk not installed
	****MB	Hard disk installed (AR-HD3)
NIC	-	NIC not installed
	AR-NC5J	NIC installed
PS3 expansion kit	-	PS3 expansion kit not installed
	AR-PK1	PS3 expansion kit installed
FAX	-	FAX expansion kit installed
	AR-FX5	FAX expansion kit not installed
Network scanner	-	Network expansion kit not installed
	AR-NS2F	Network expansion kit installed
Expansion memory	-	Expansion memory for FAX not installed
	AR-MM9	Expansion memory for FAX 8MB (AR-MM9) installed
Handset	-	handset not installed
	AR-HN5	Handset installed
Finish stamp	-	Finish stamp unit not installed
	AR-SU1	Finish stamp unit installed

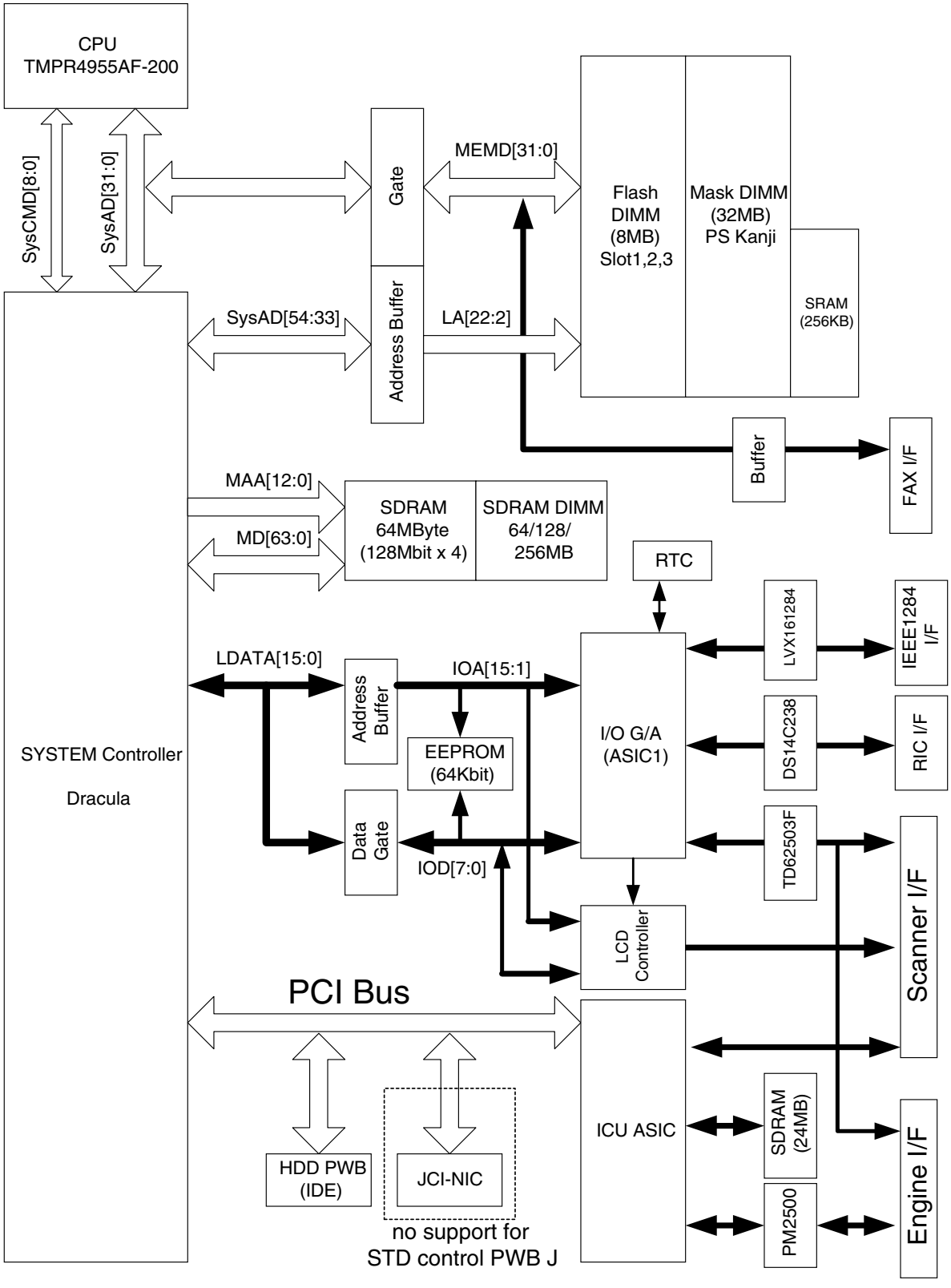
*: Not registered as a product.

[9] CIRCUIT DIAGRAM

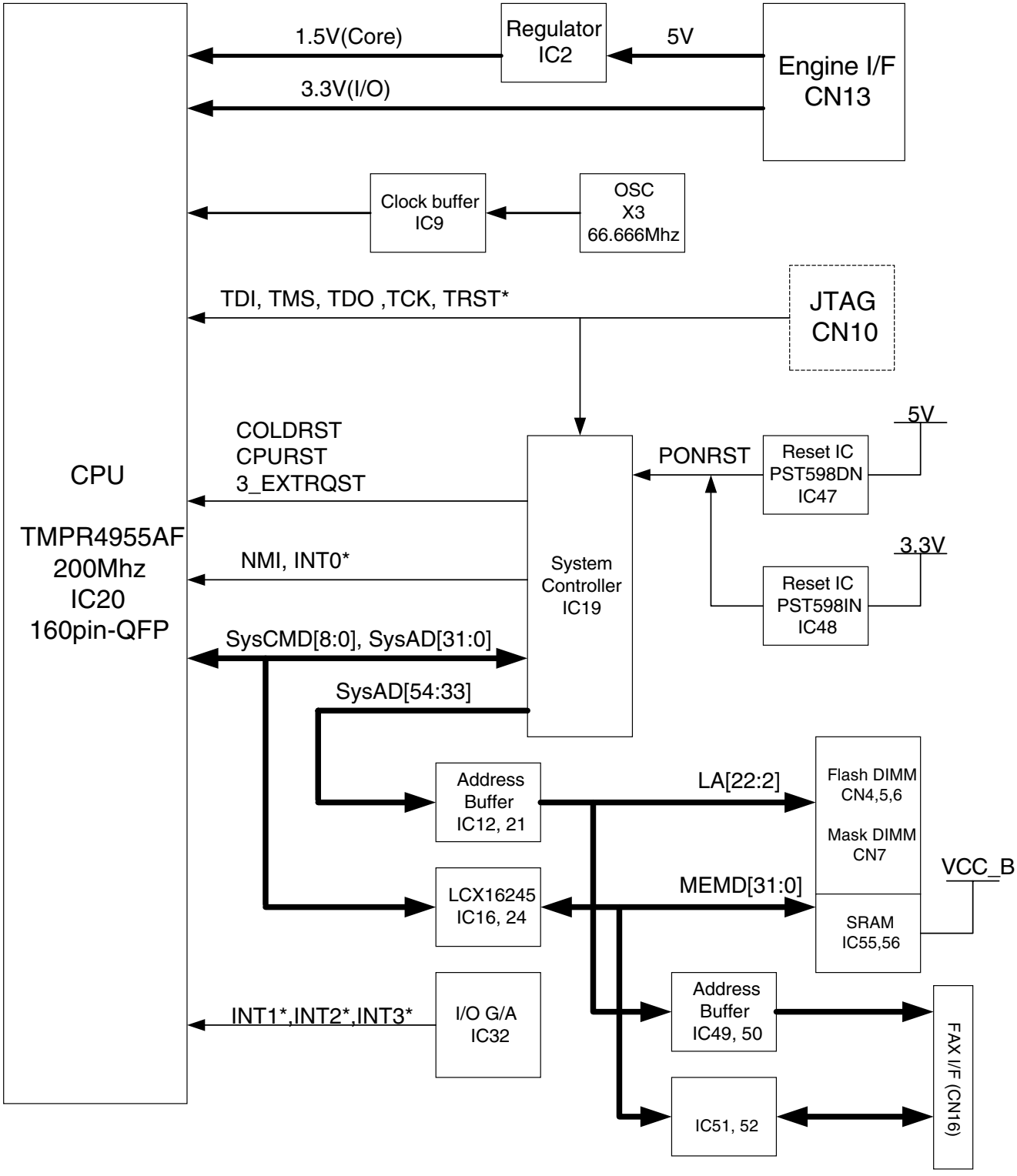
1. MFP Control PWB(for AR-M350U/M450U)

A.Block Diagrams

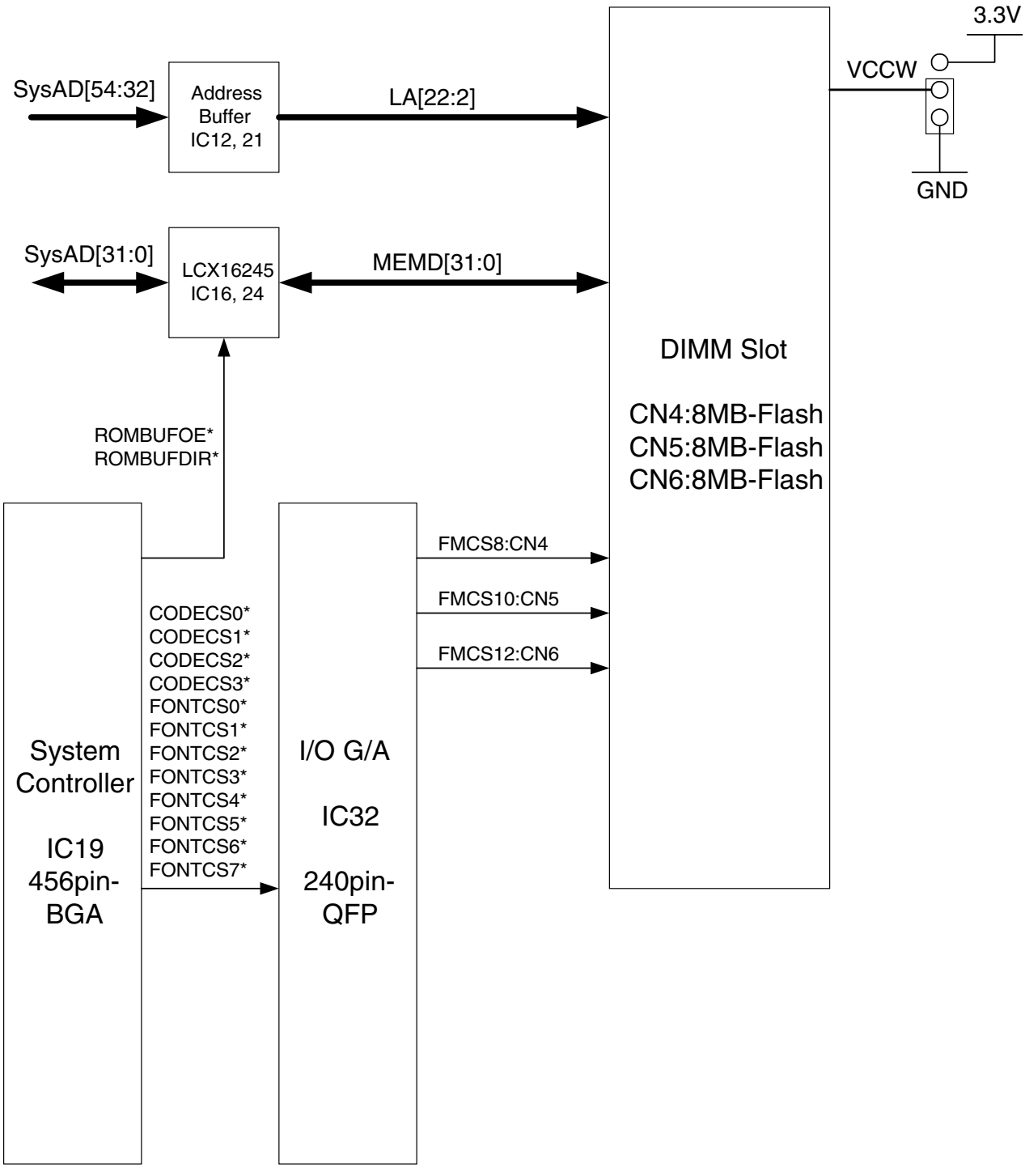
MFP Controller Block Diagram



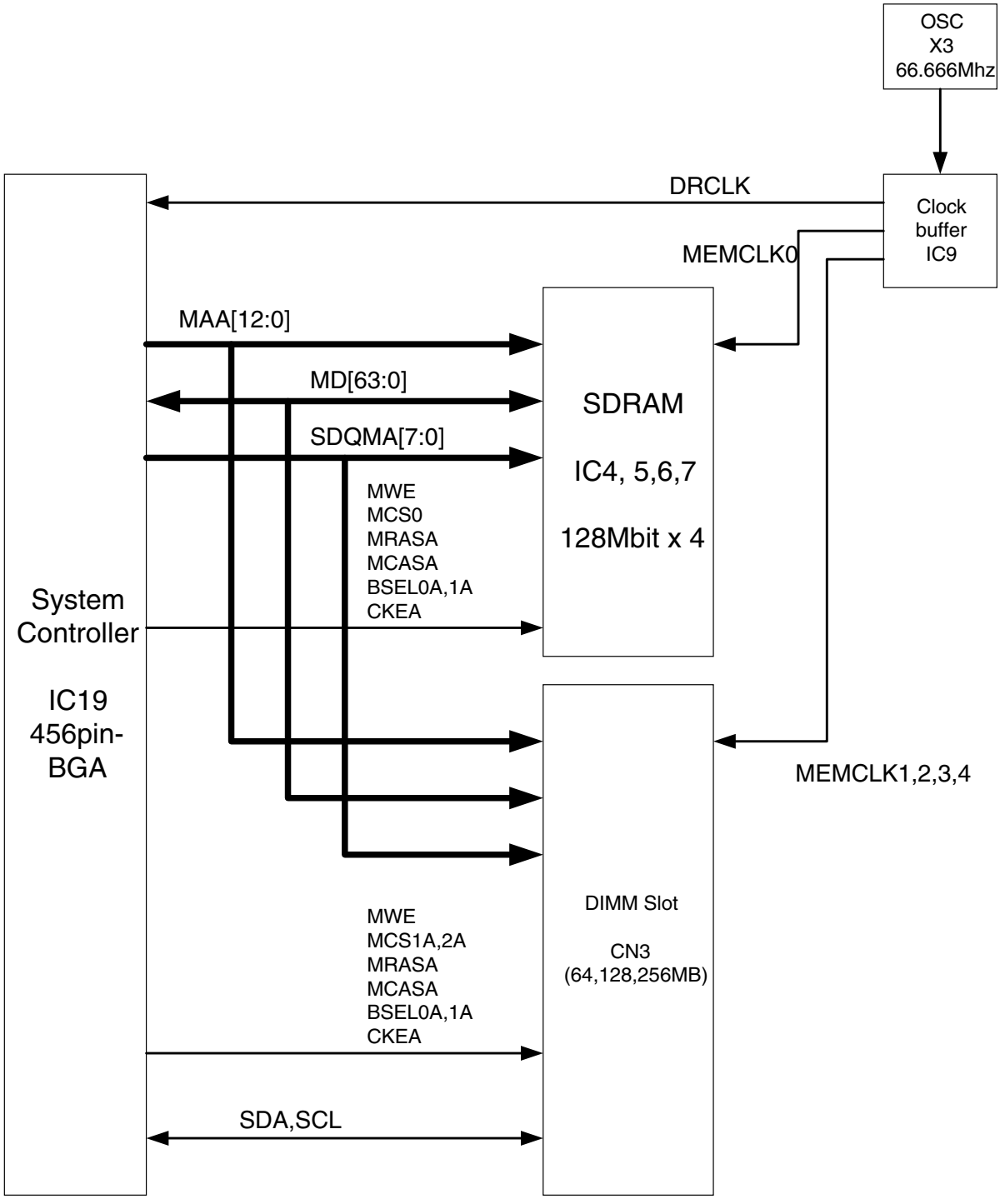
CPU Block Diagram



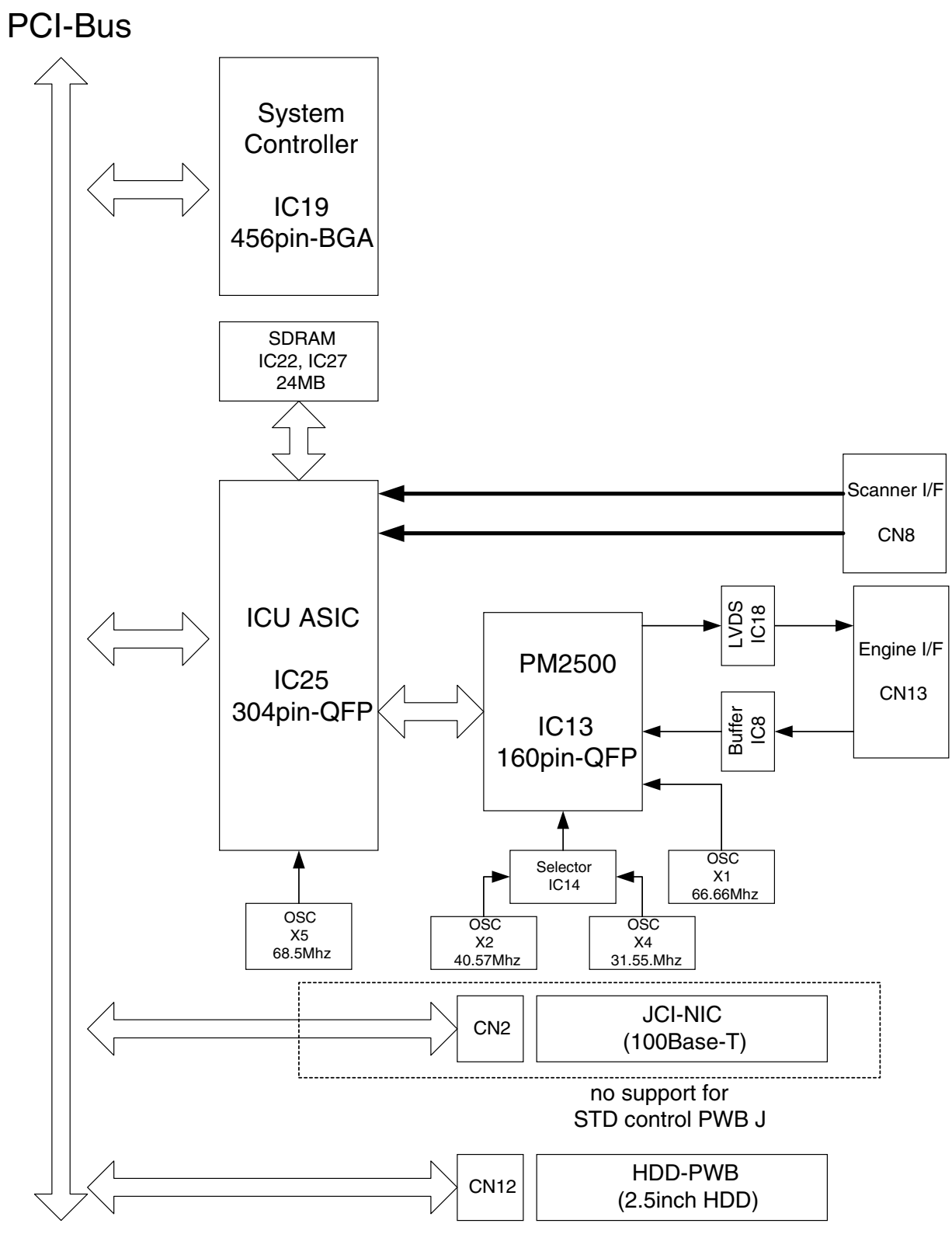
ROM Block Diagram (Flash & Mask)



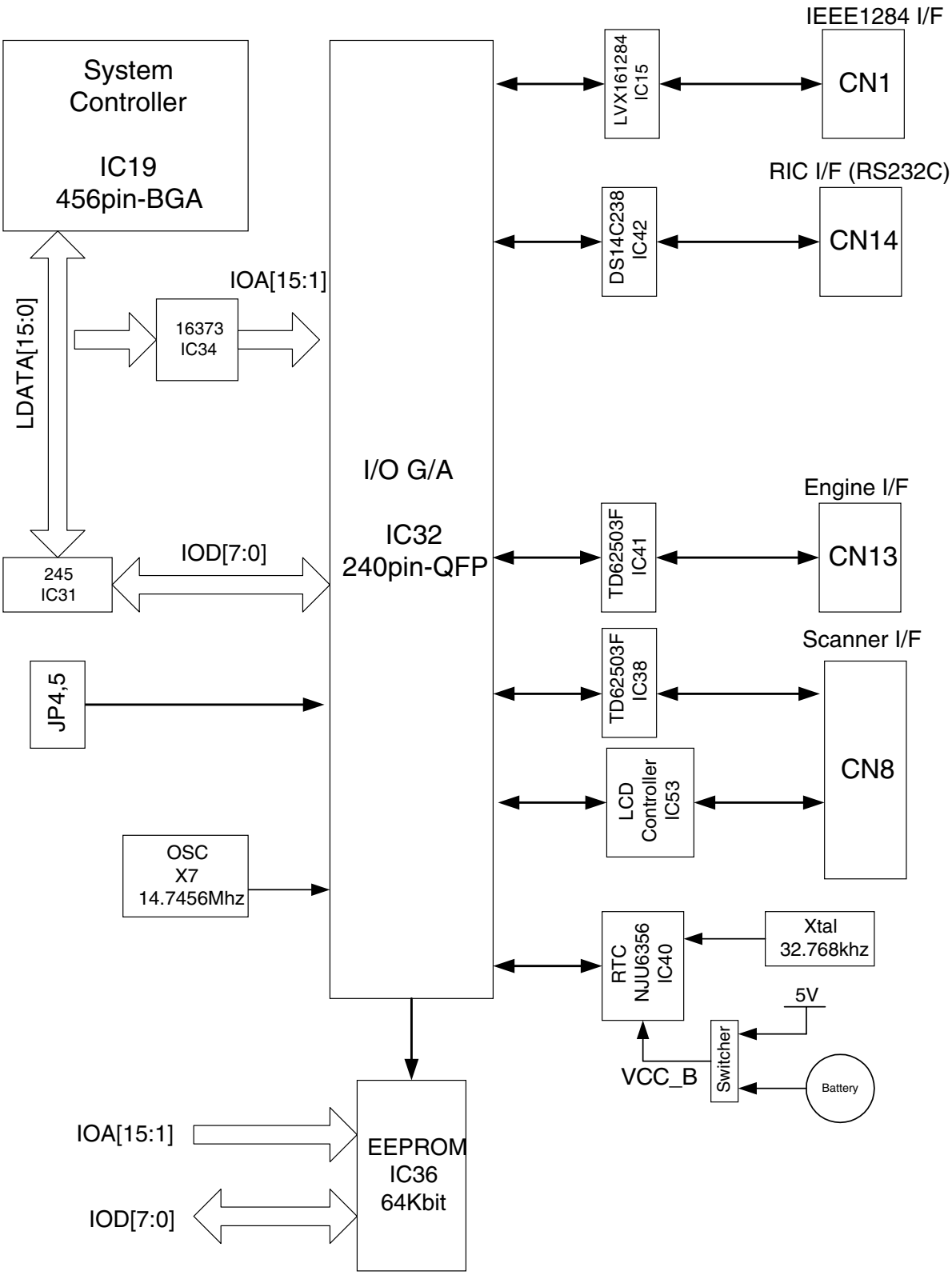
SDRAM Block Diagram (Standard & Option)



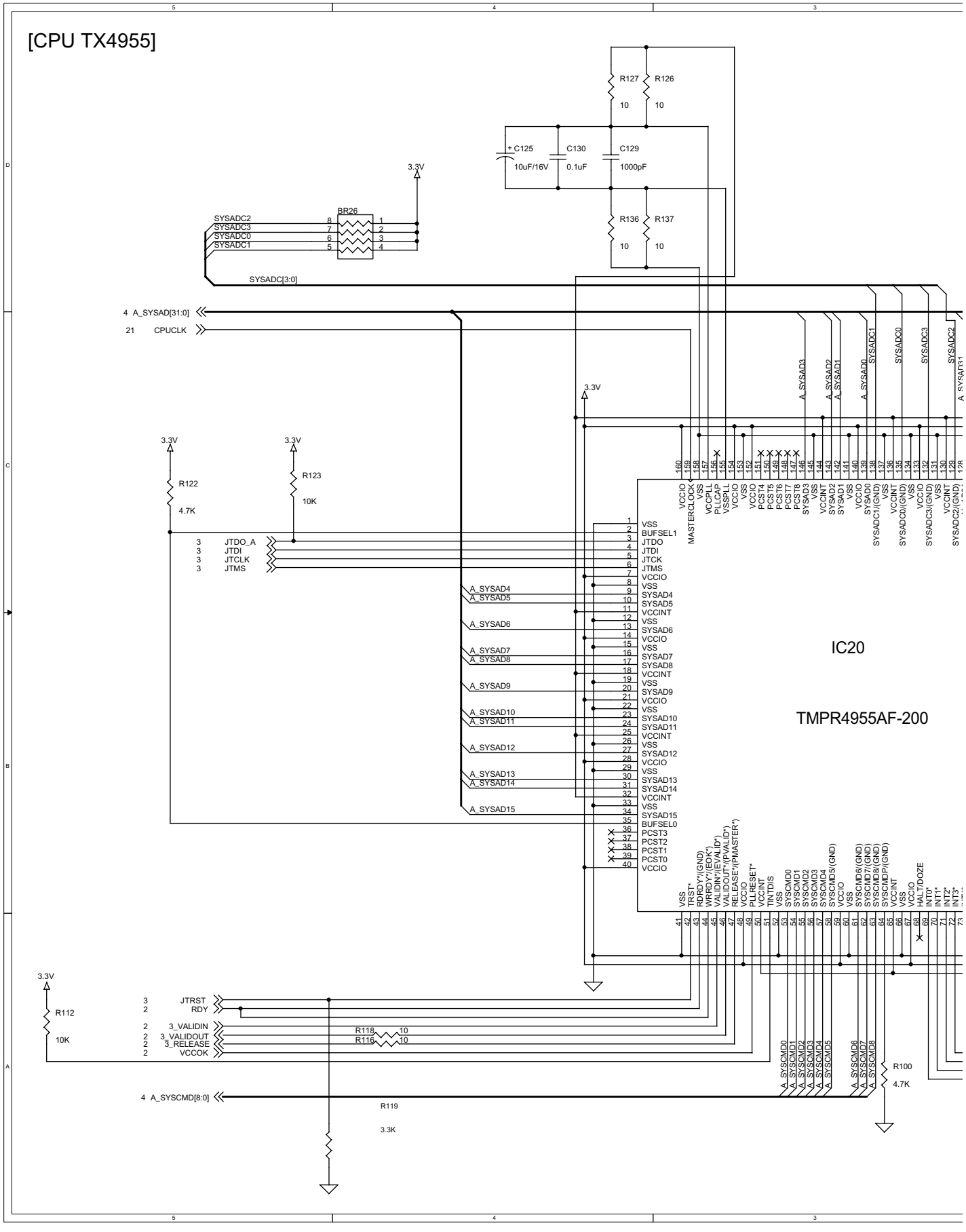
PCI Block Diagram (ICU & Option)

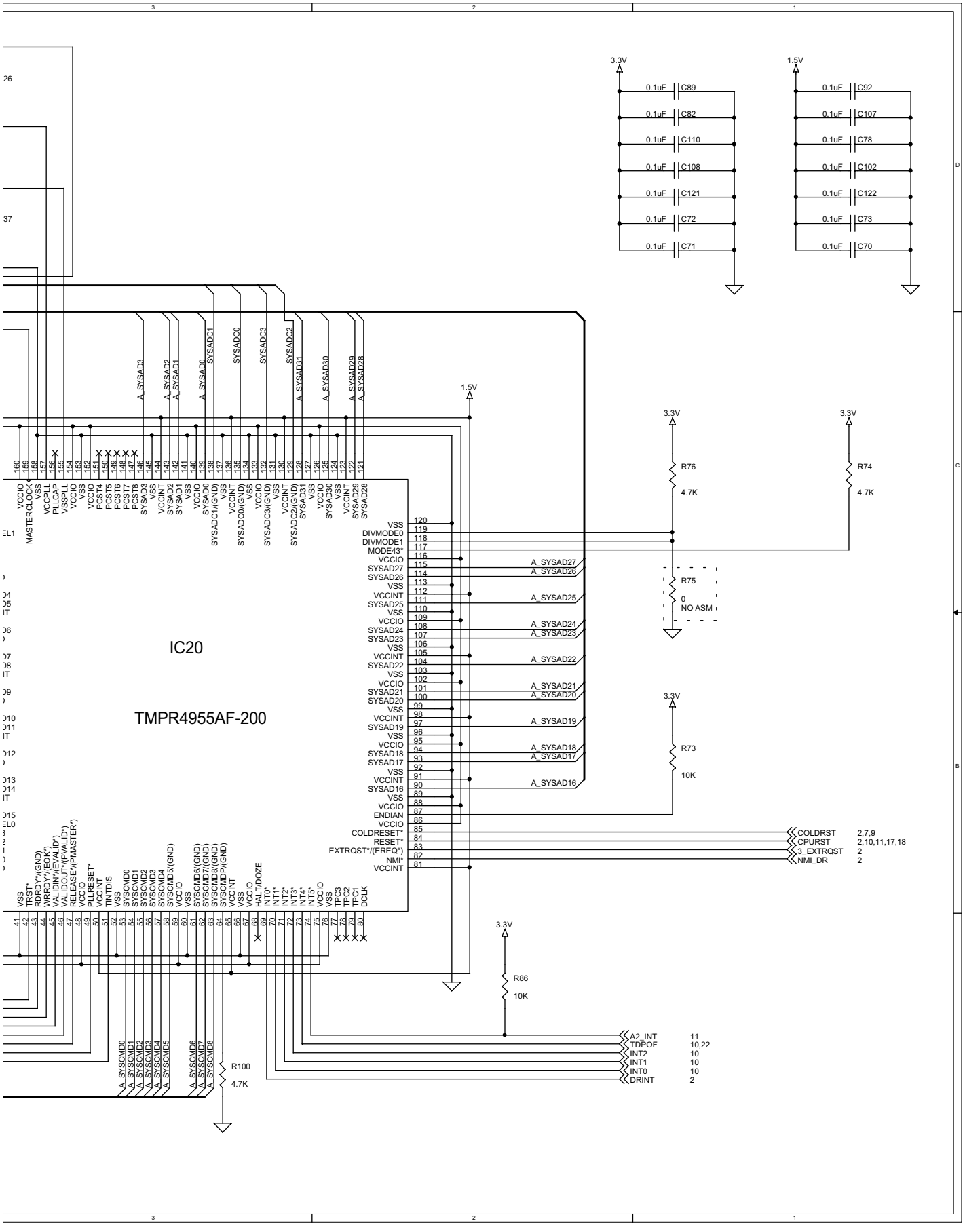


I/O Block Diagram (EEPROM & Misc I/O)

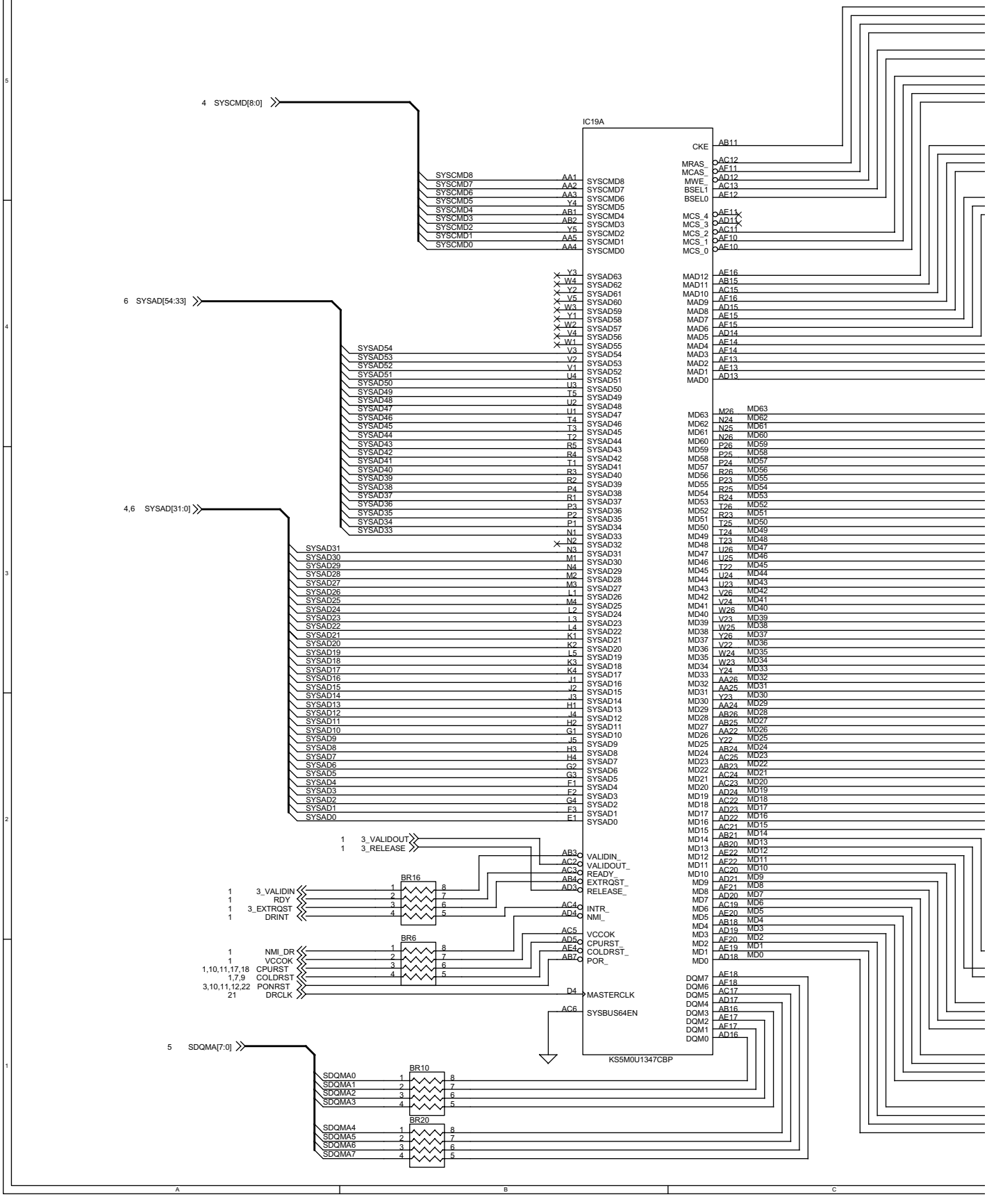


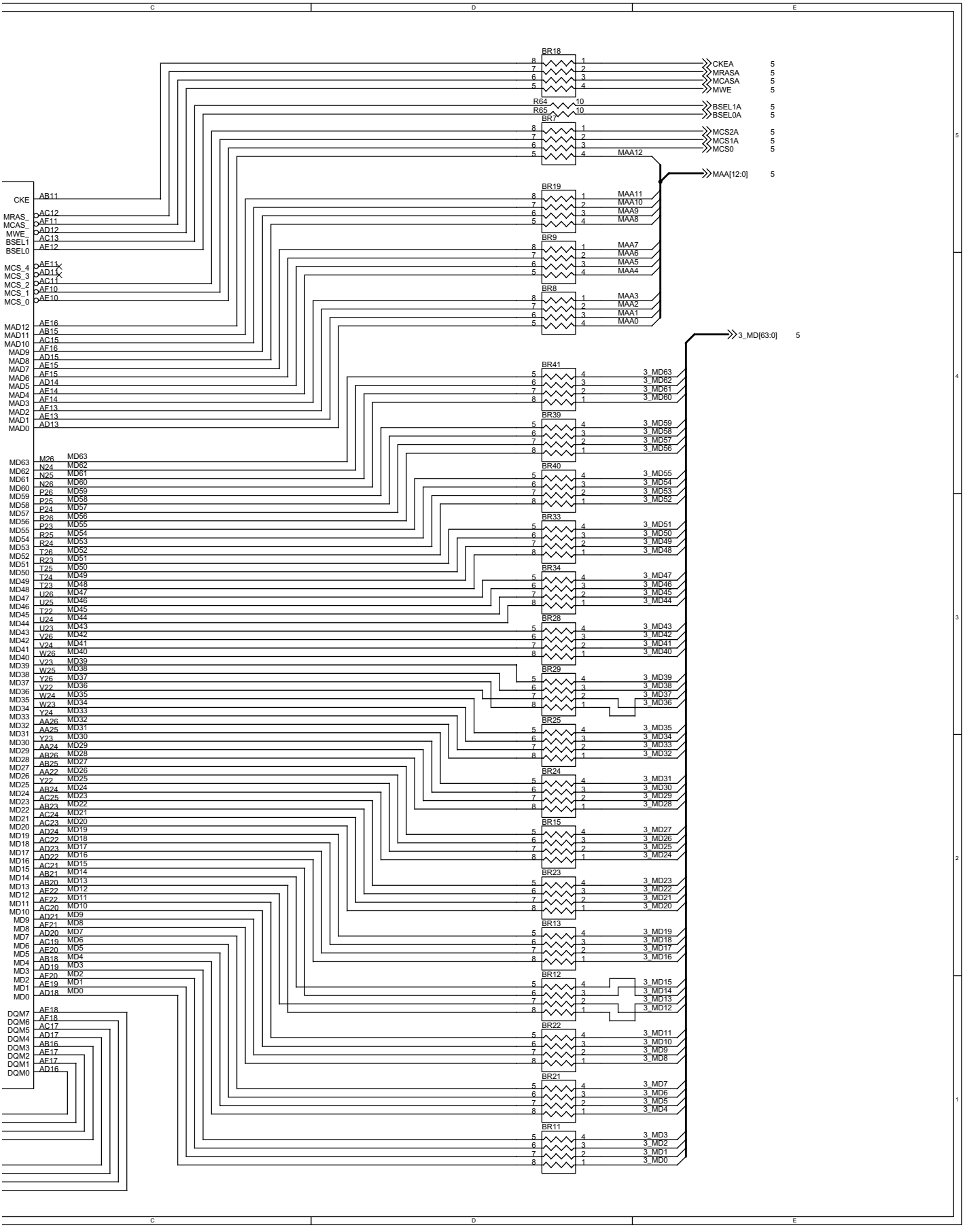
B. Circuit Diagram



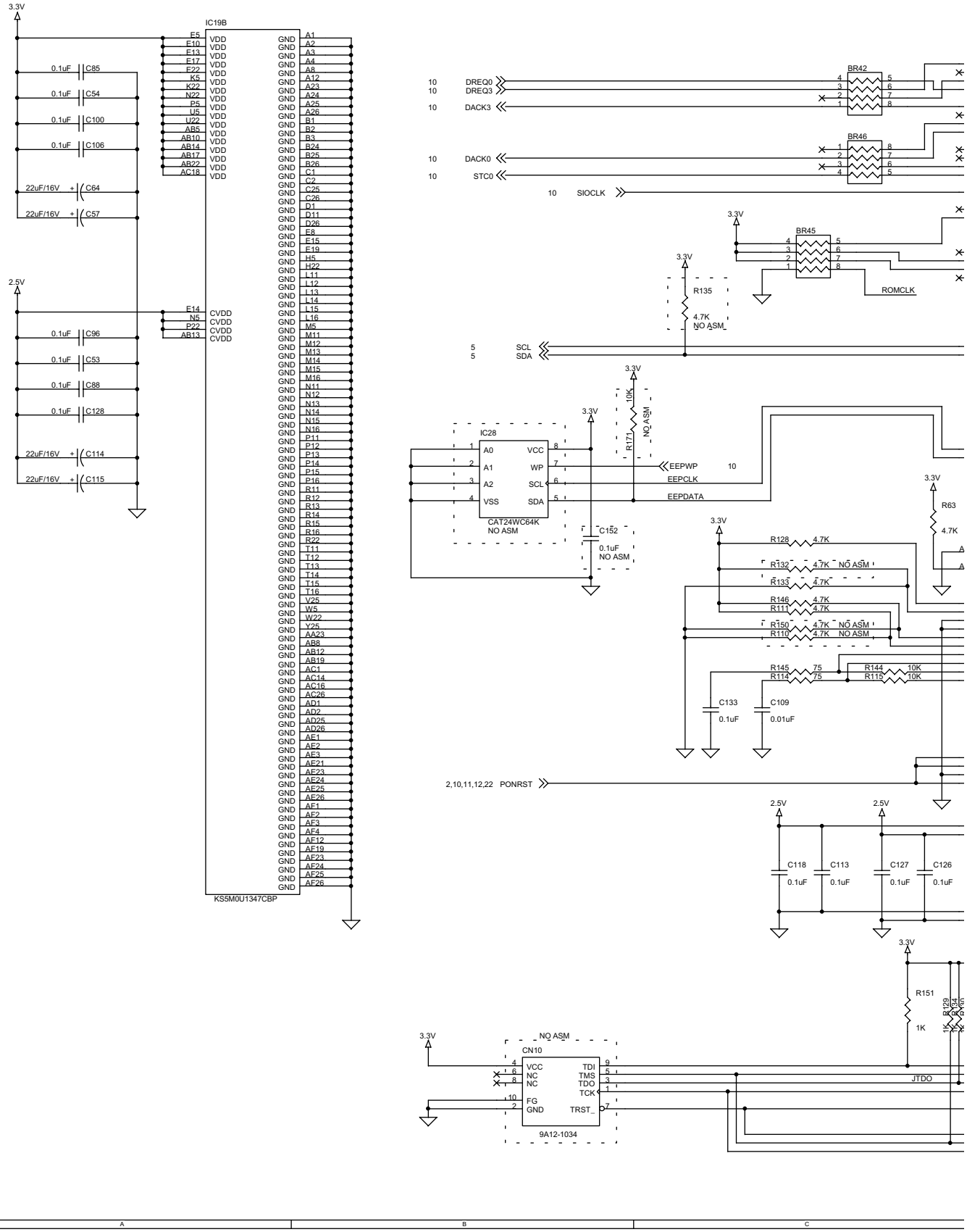


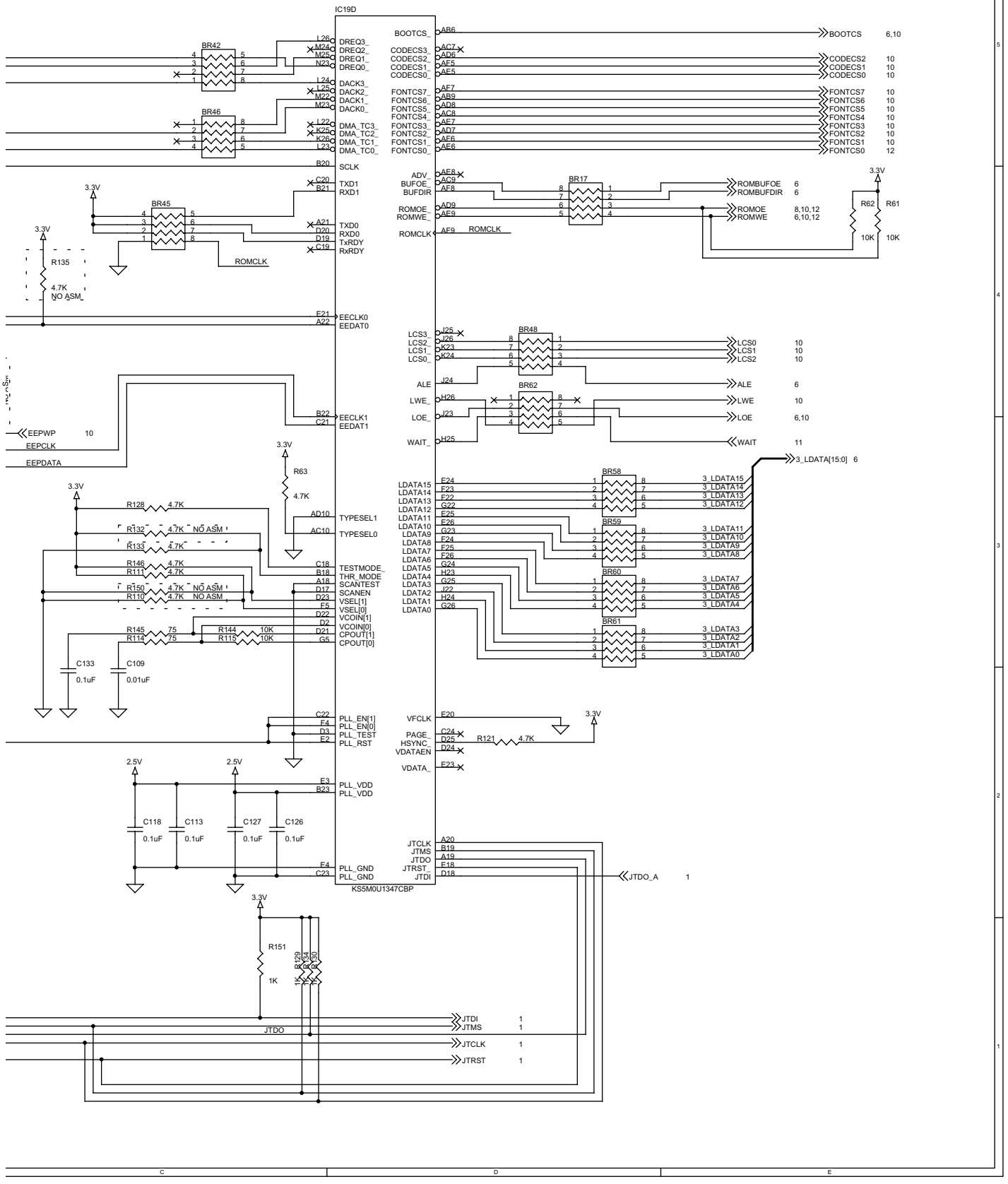
[Print Controller (for AR-M350U / M450U) (1/3)]



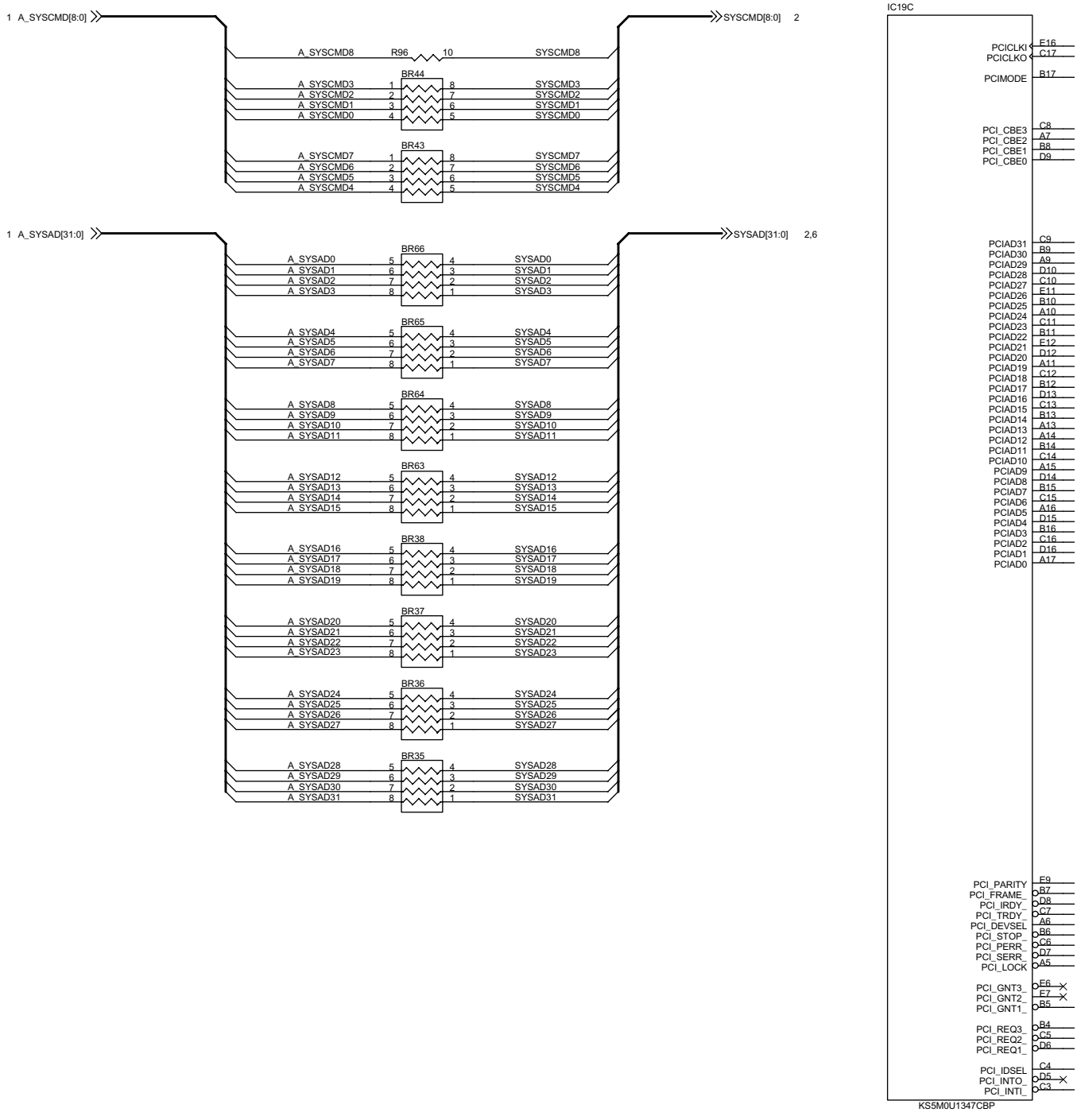


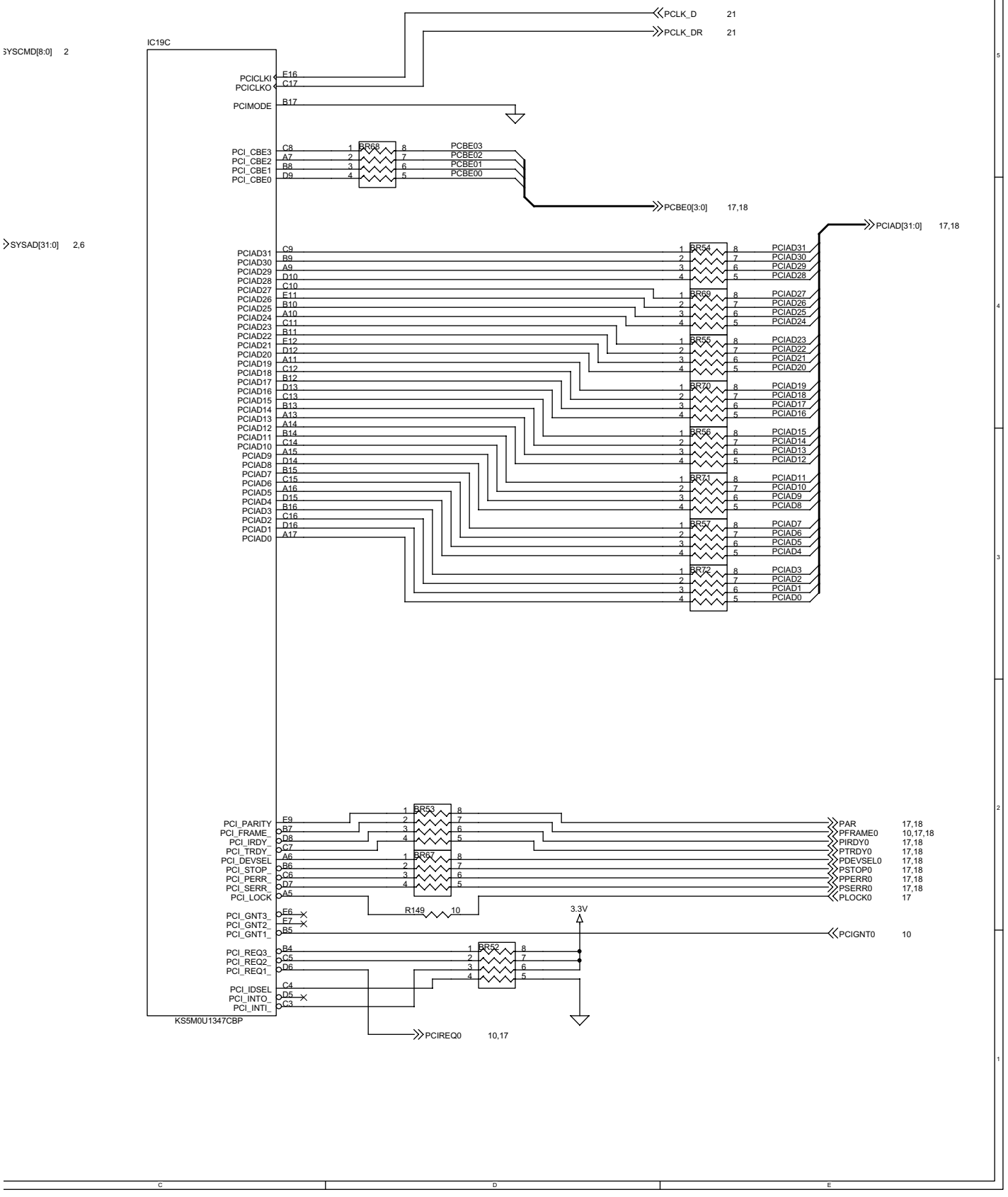
[Print Controller (for AR-M350U / M450U) (2/3)]



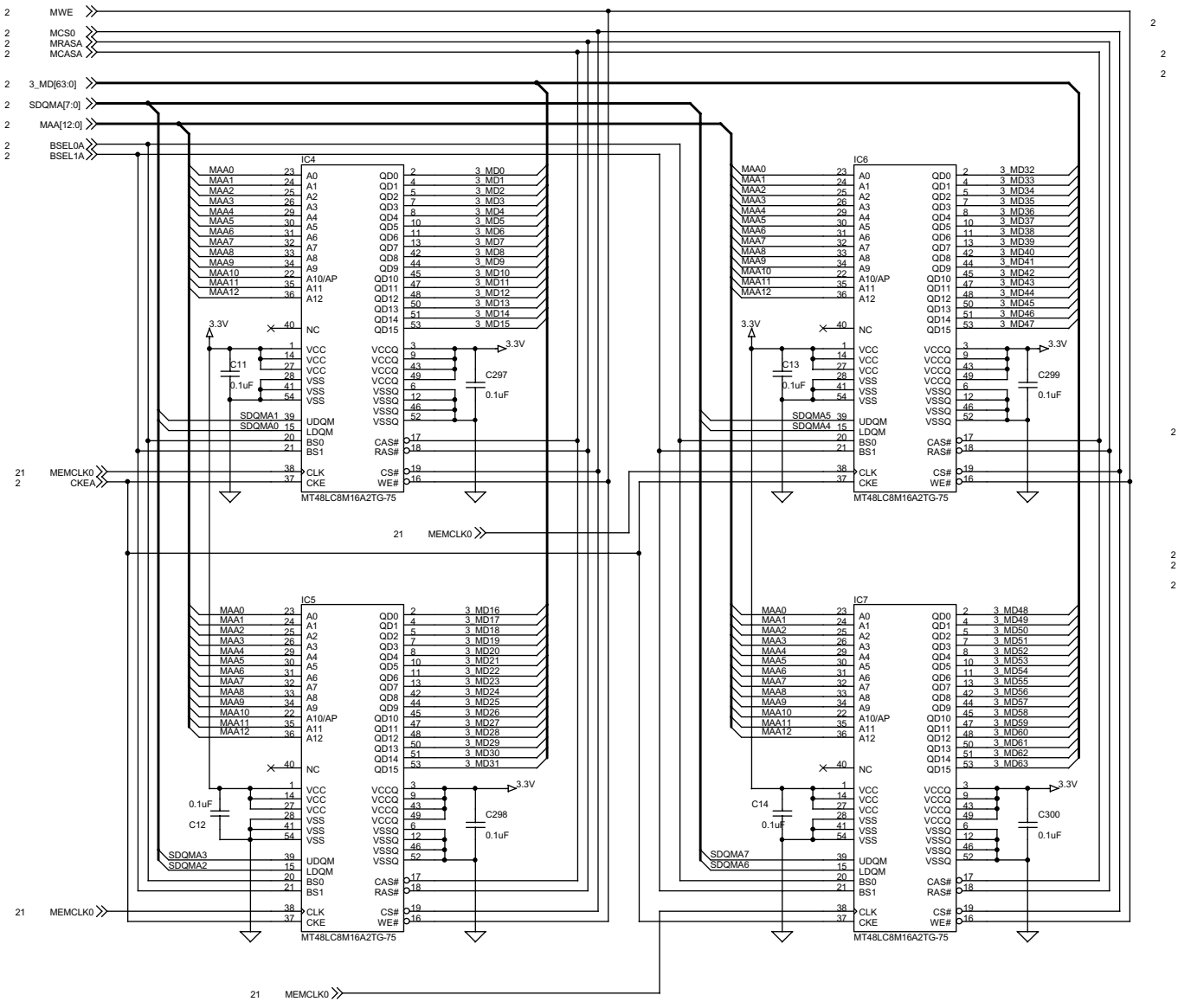


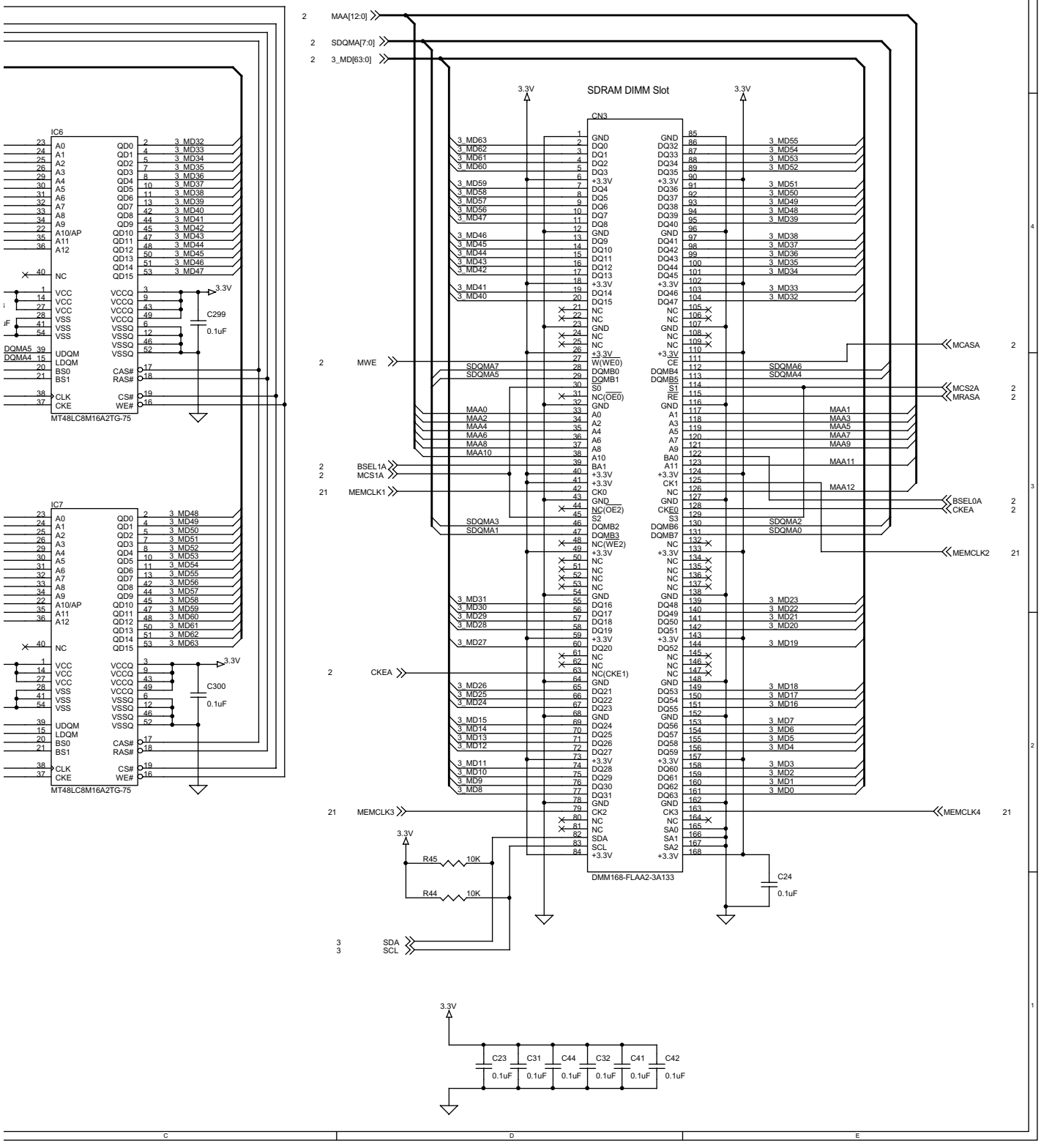
[Print Controller (for AR-M350U / M450U) (3/3)]



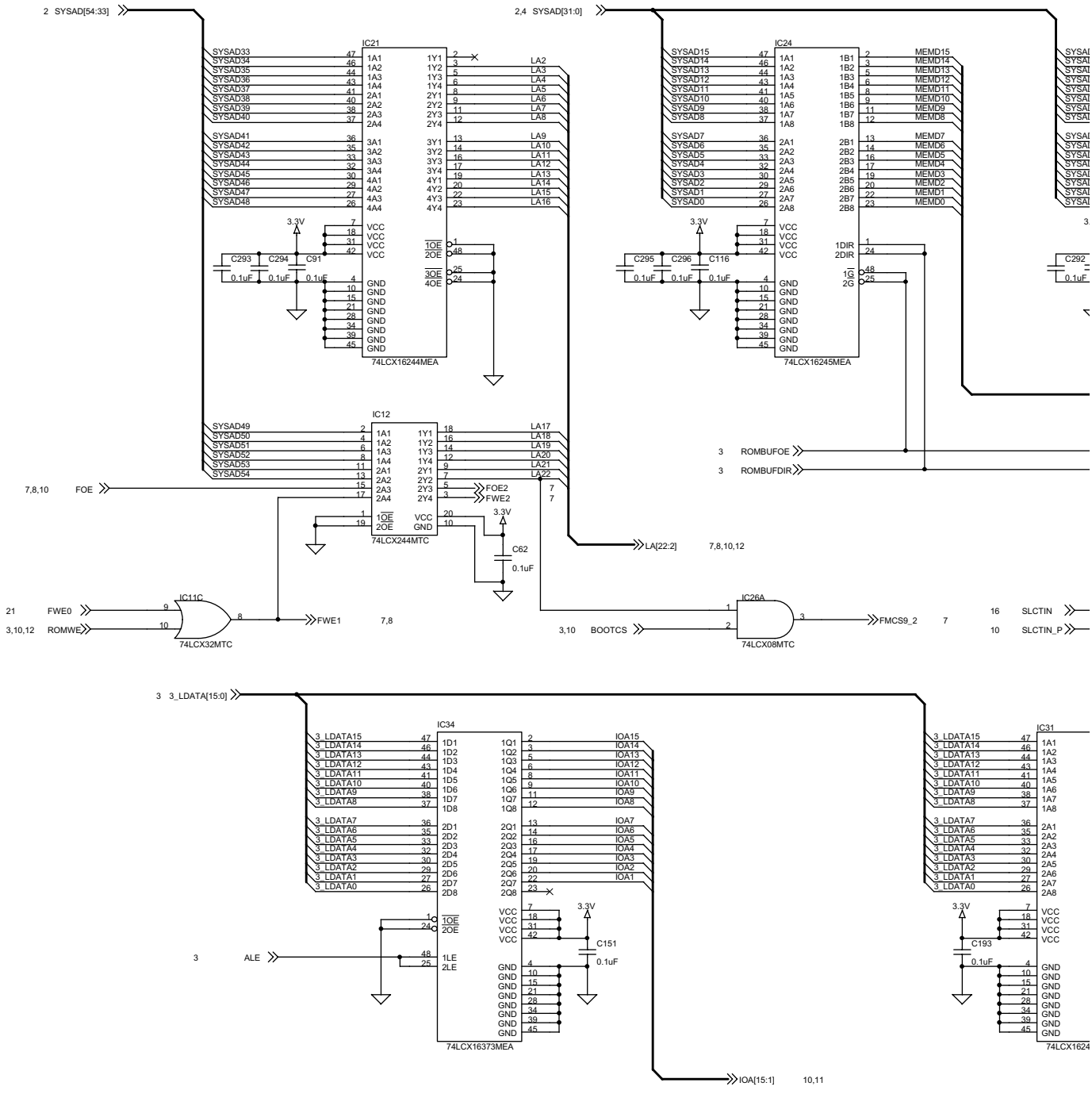


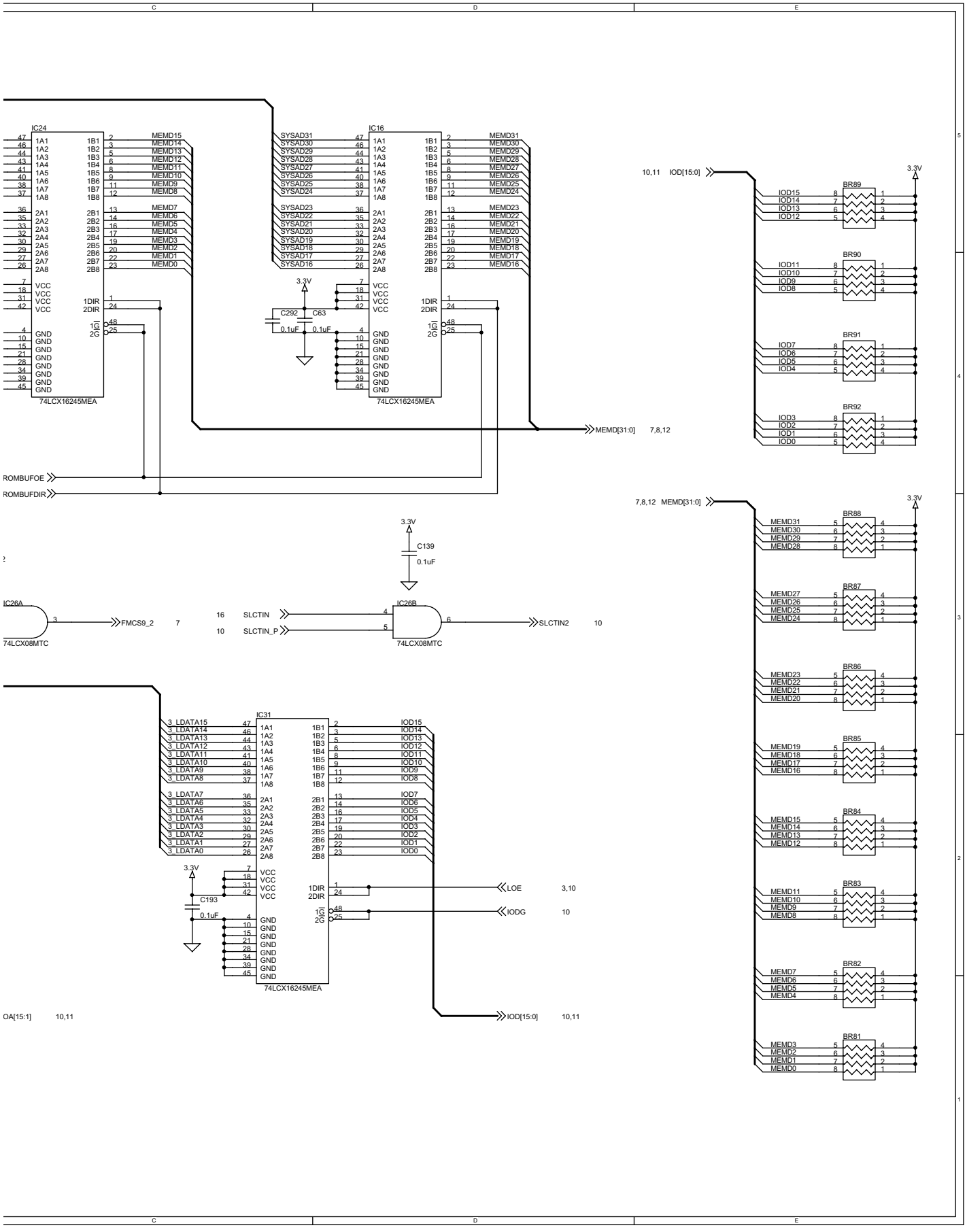
[SDRAM]



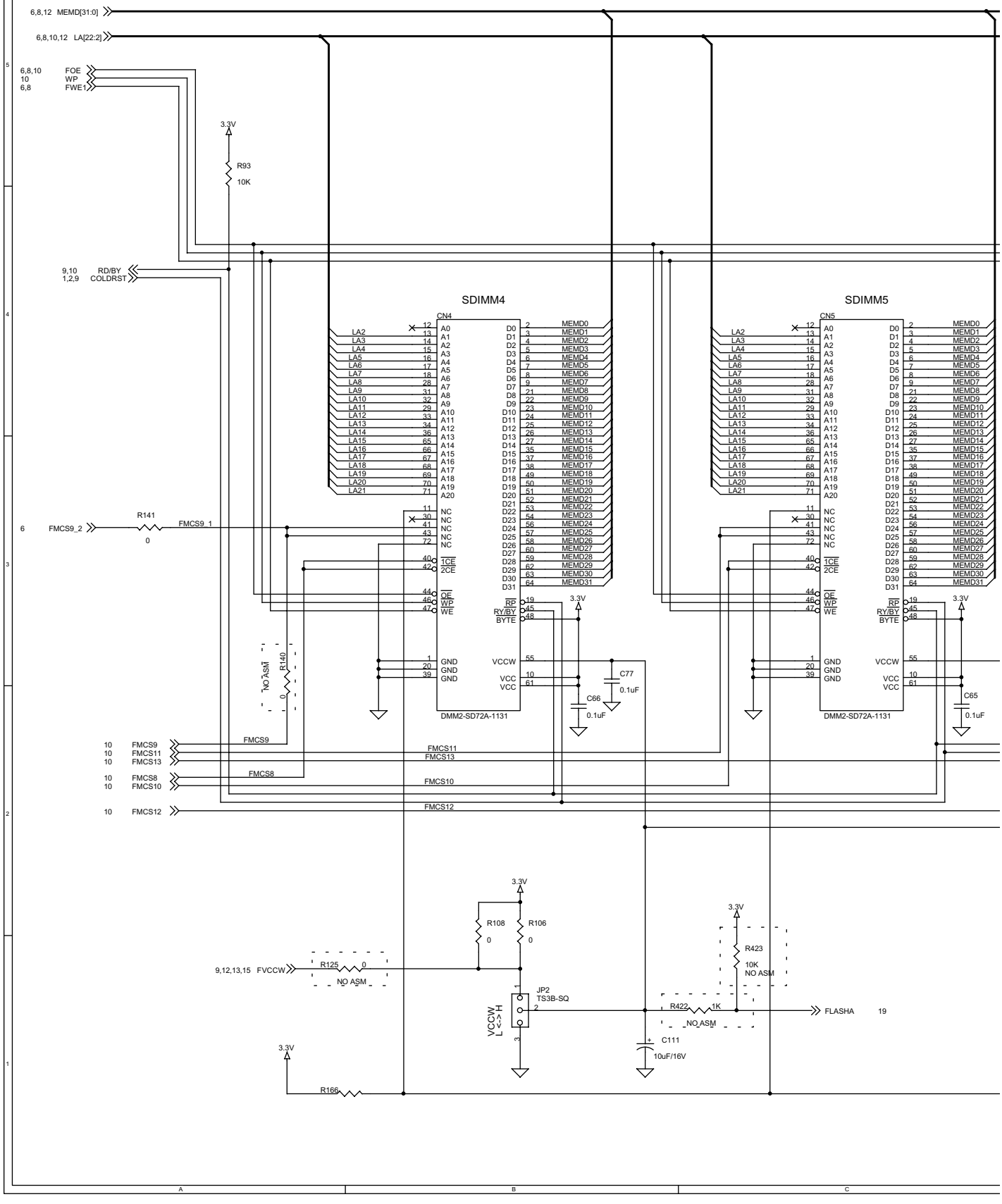


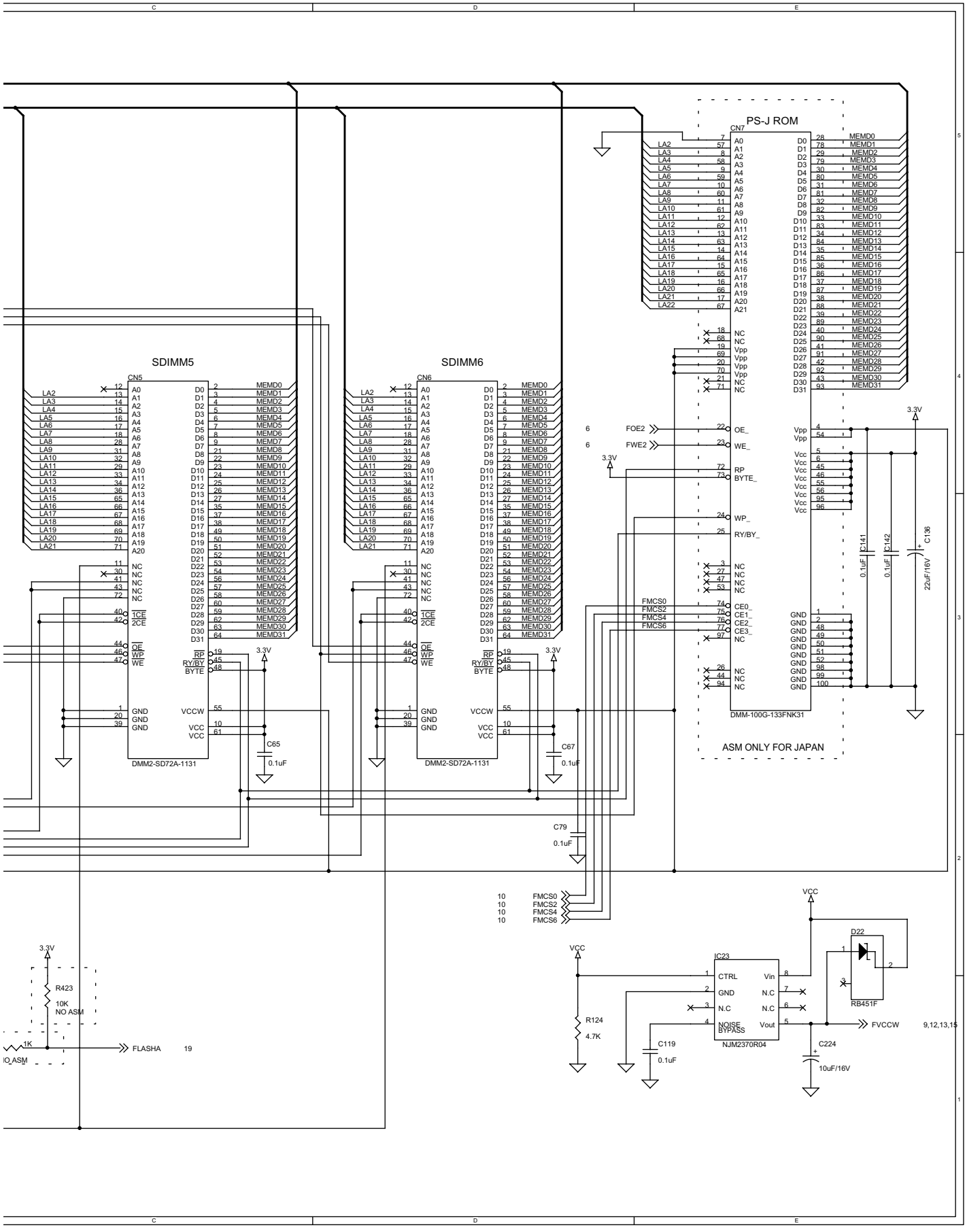
[BUFFER]



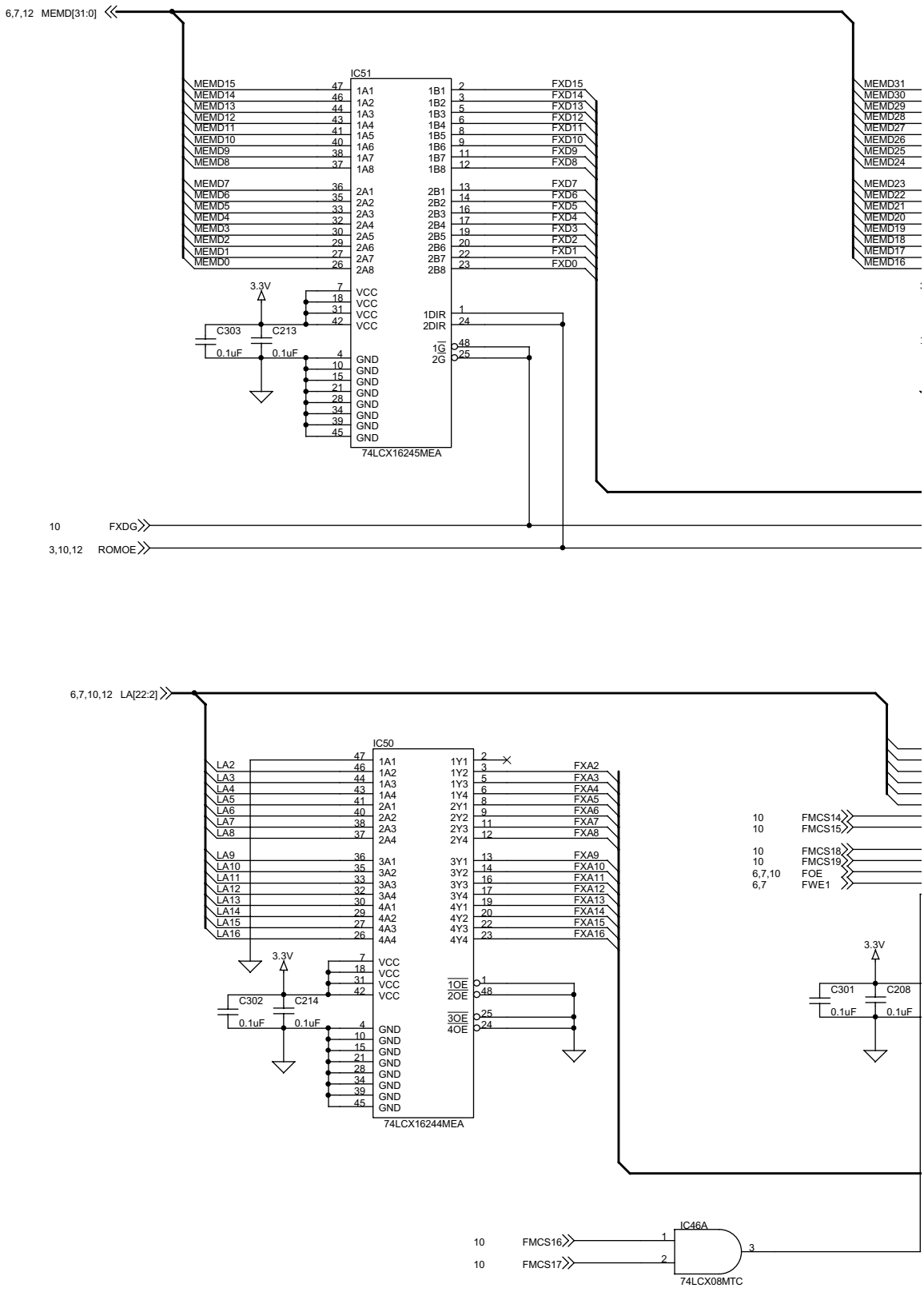


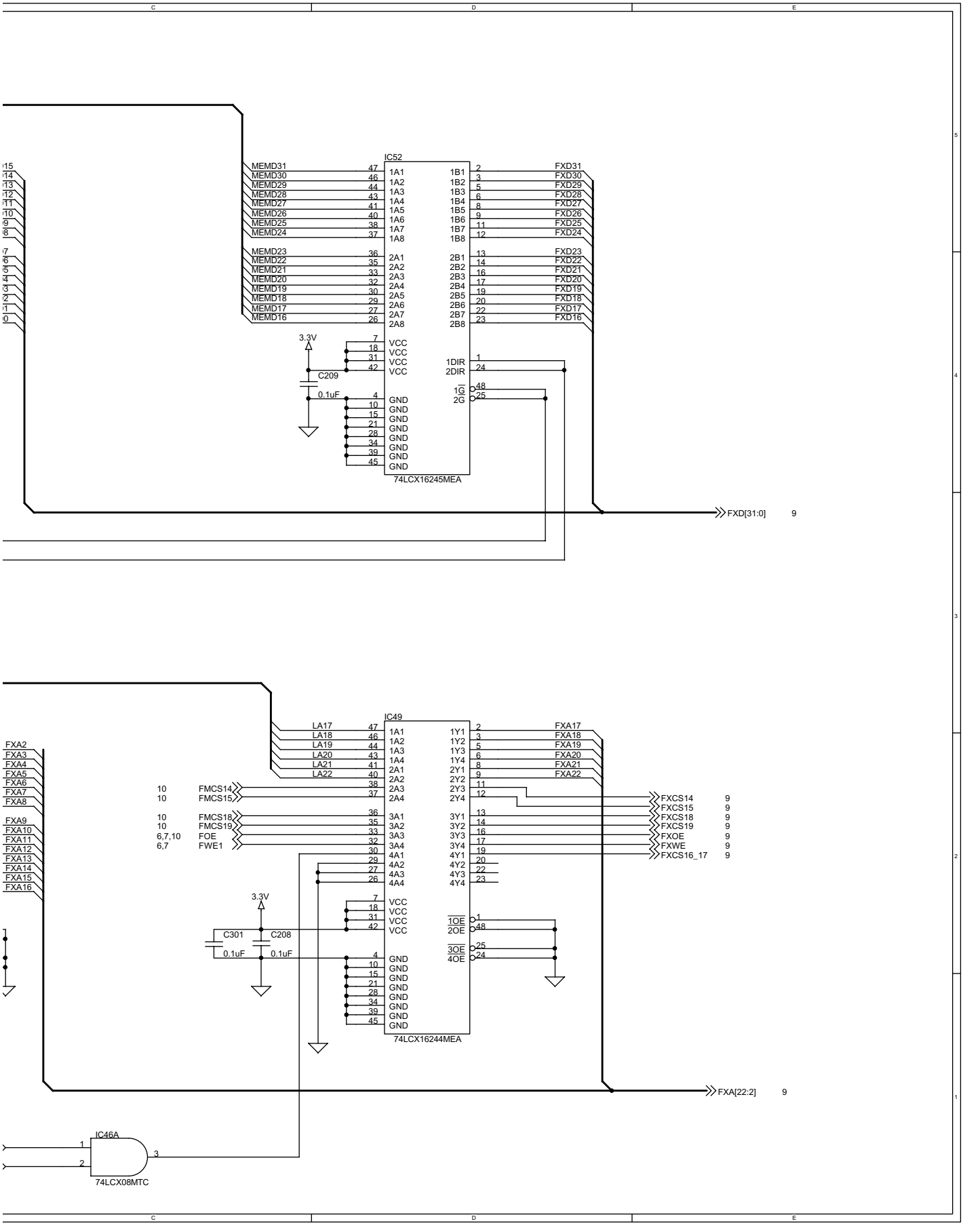
[FLASH SDIMM]



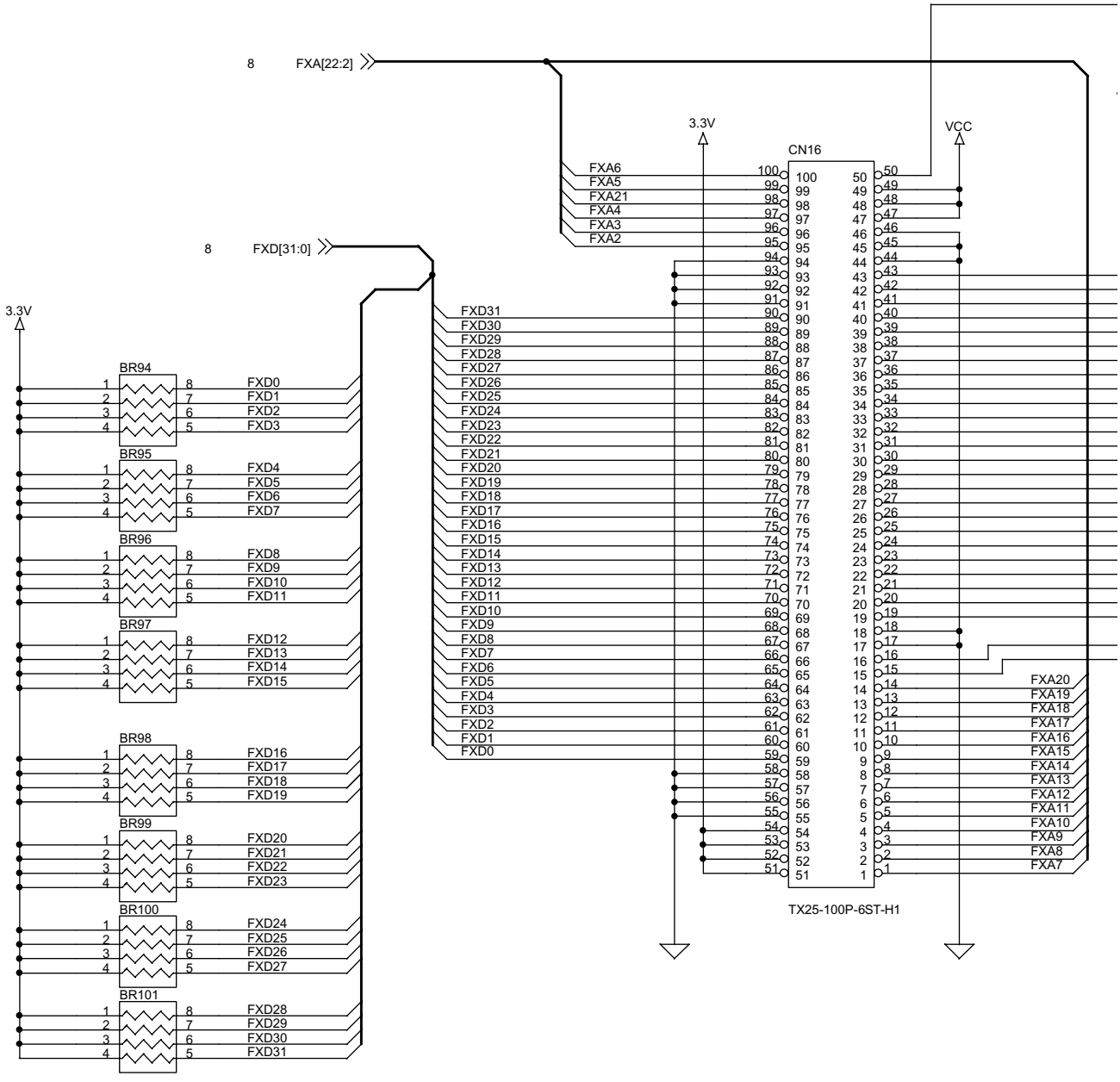


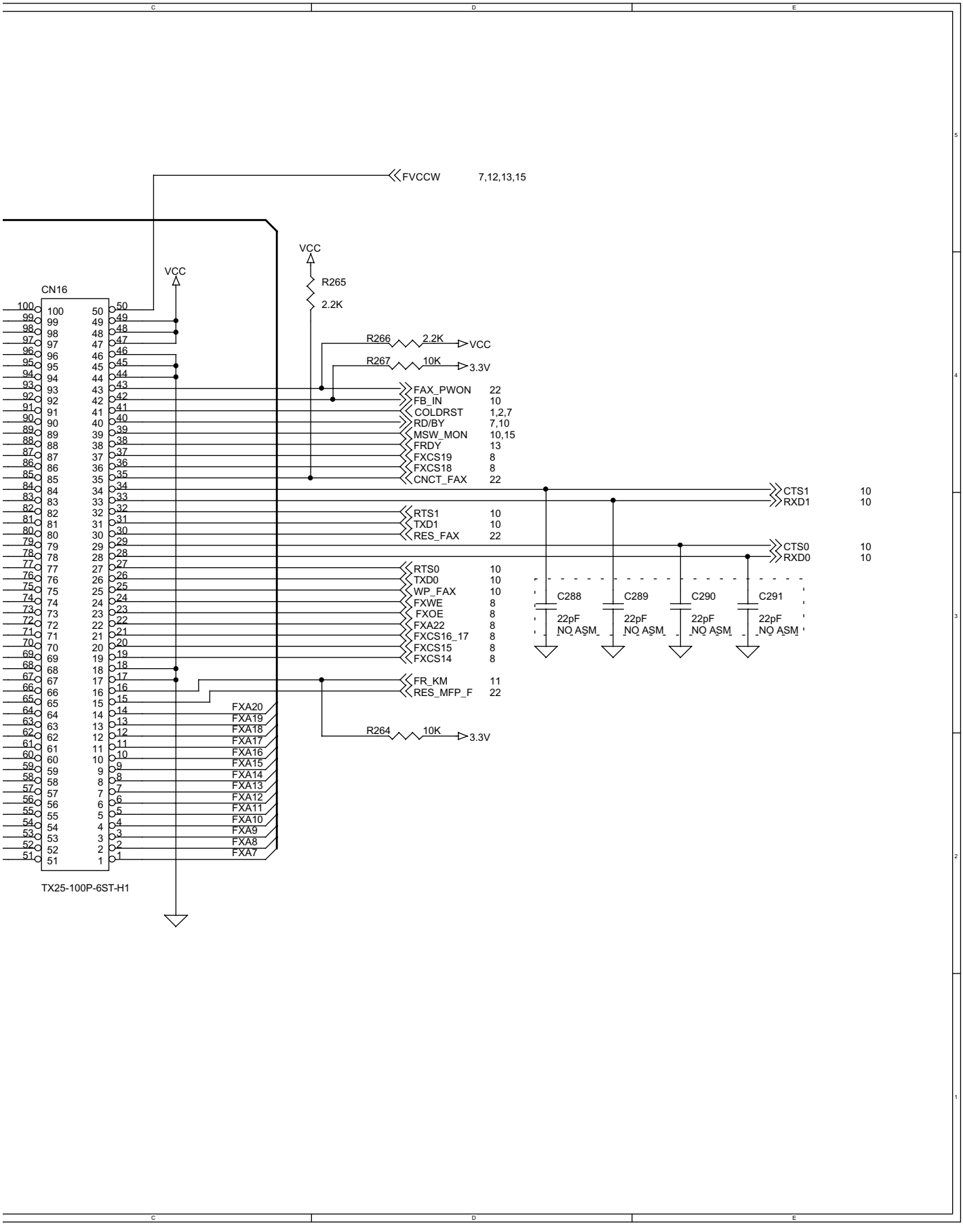
[FAX I/F BUF]

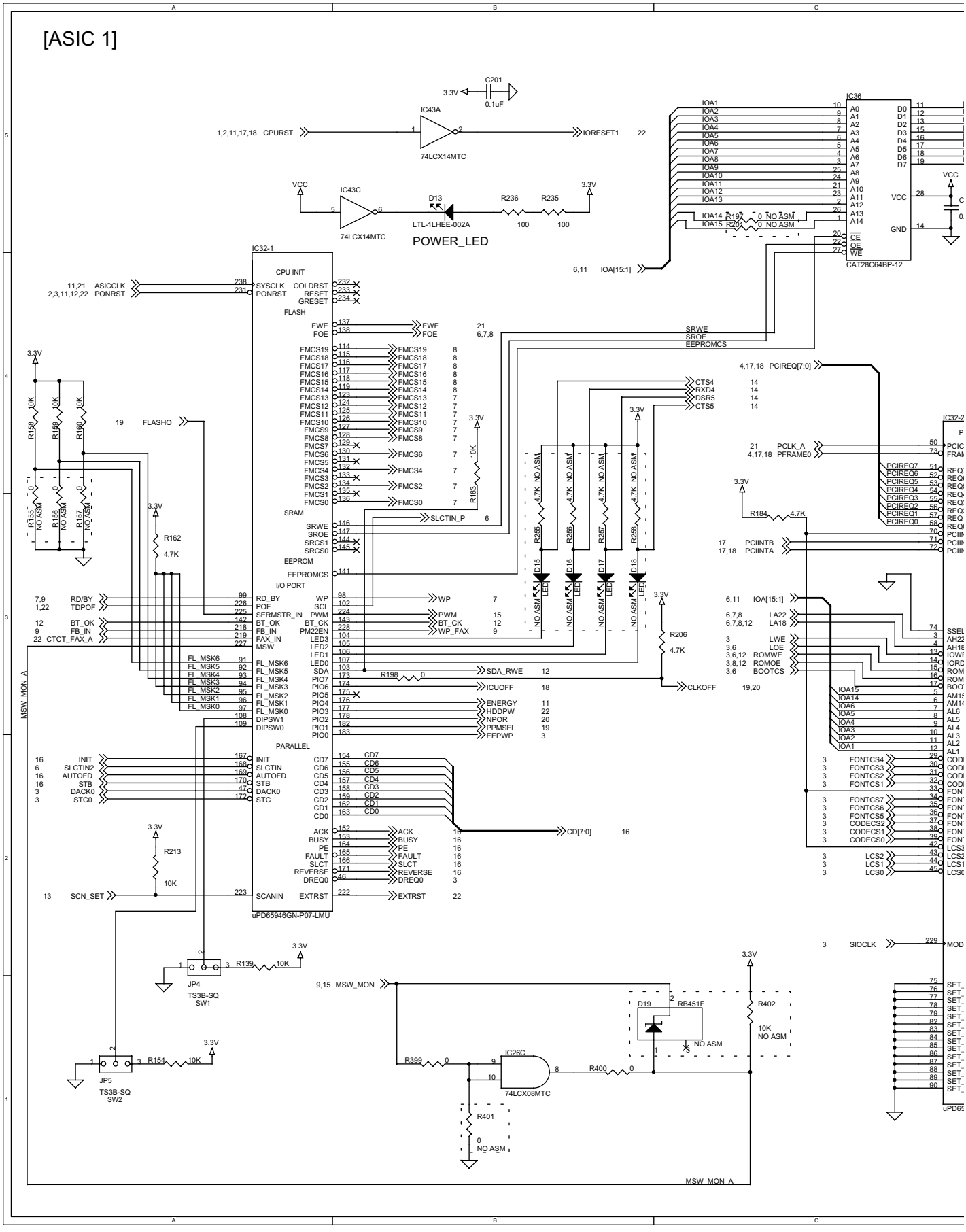


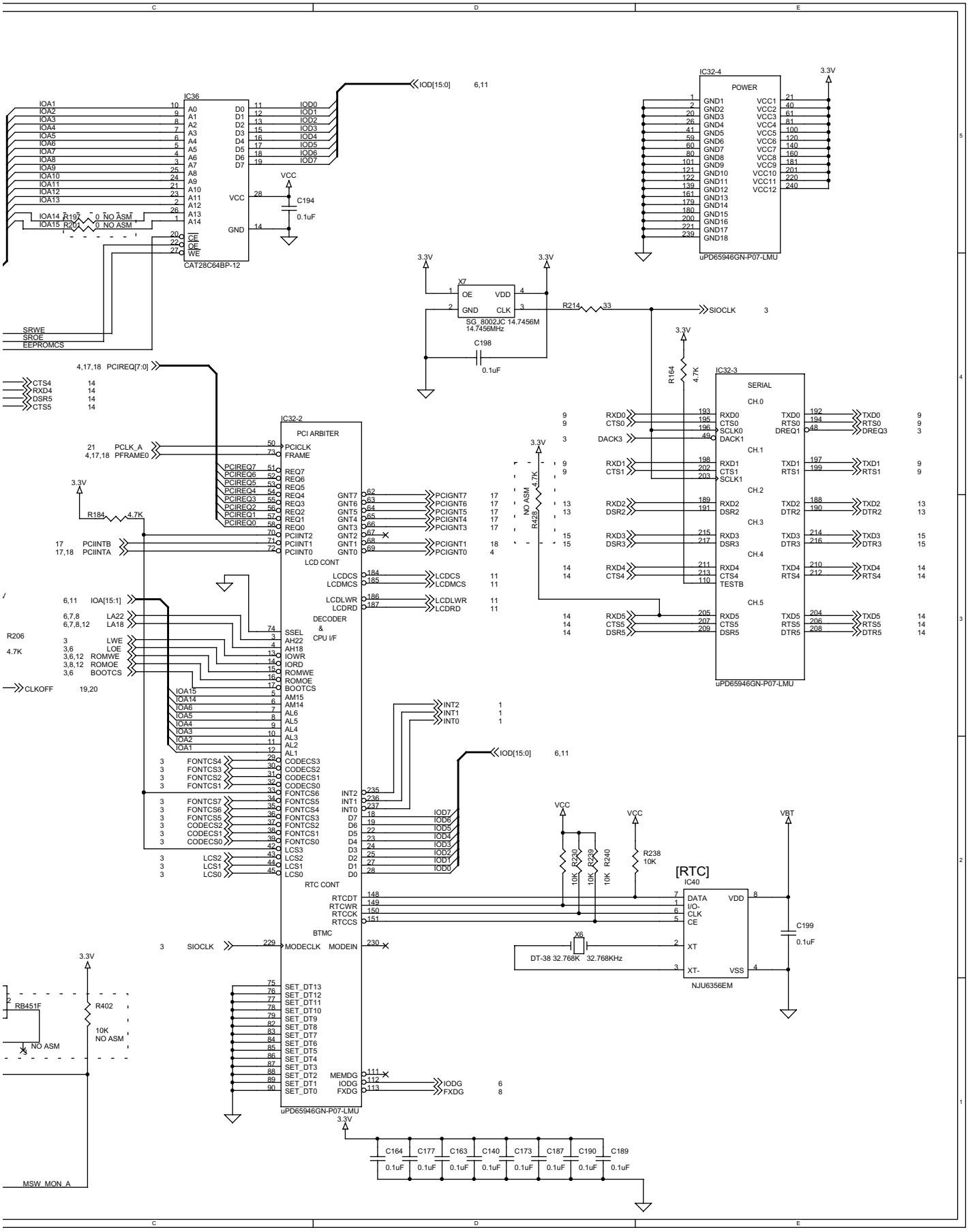


[FAX I/F CN]

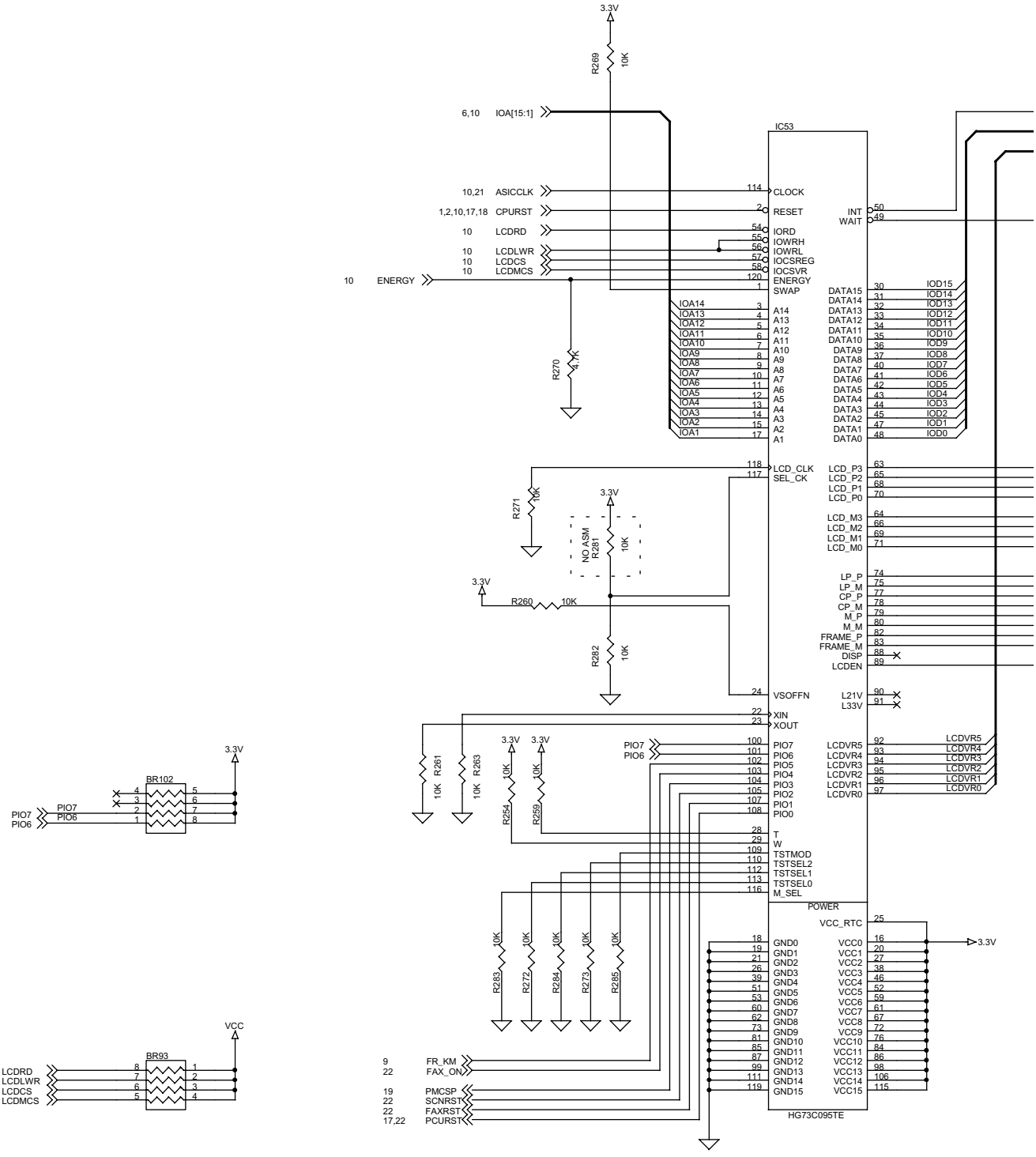


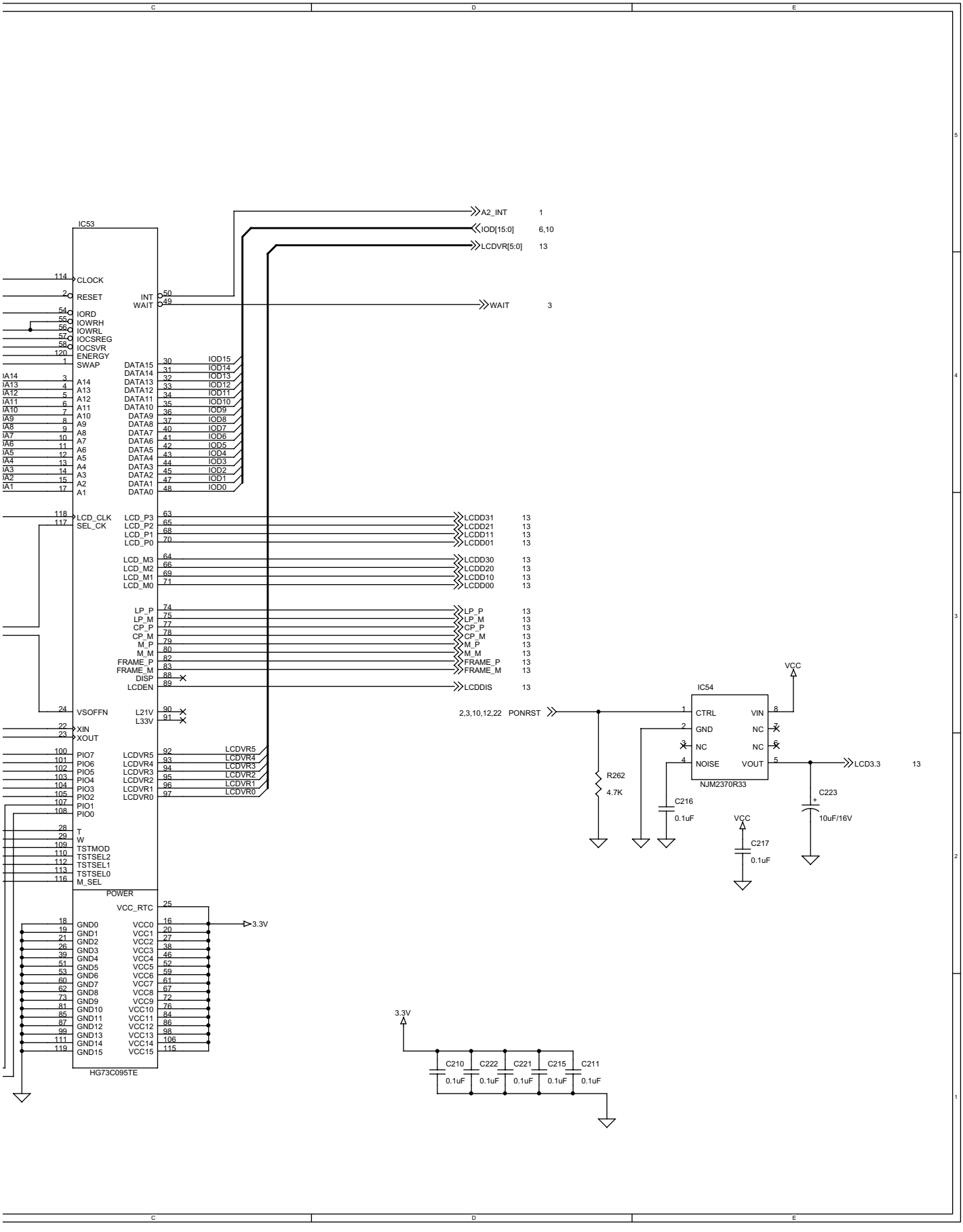




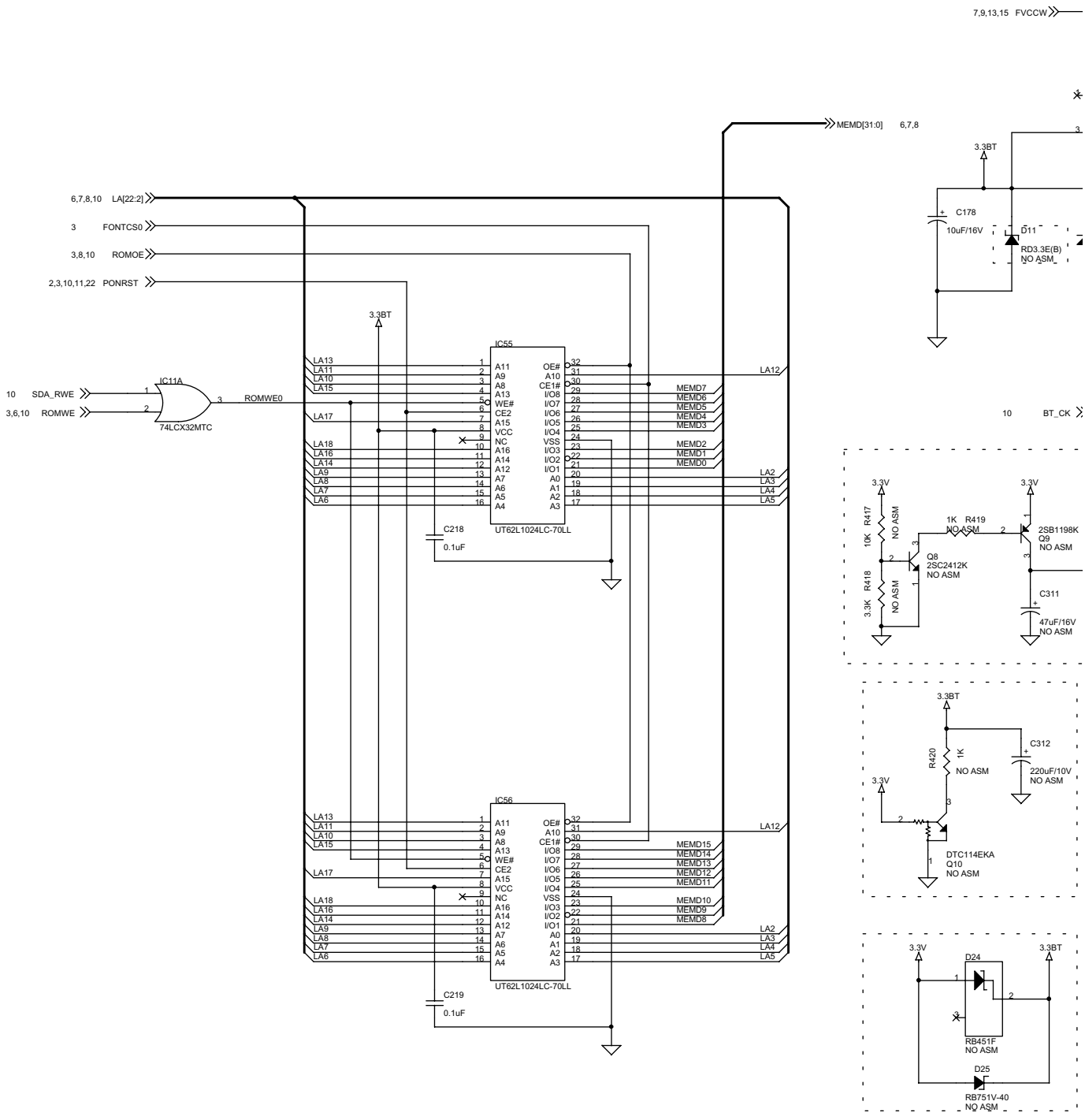


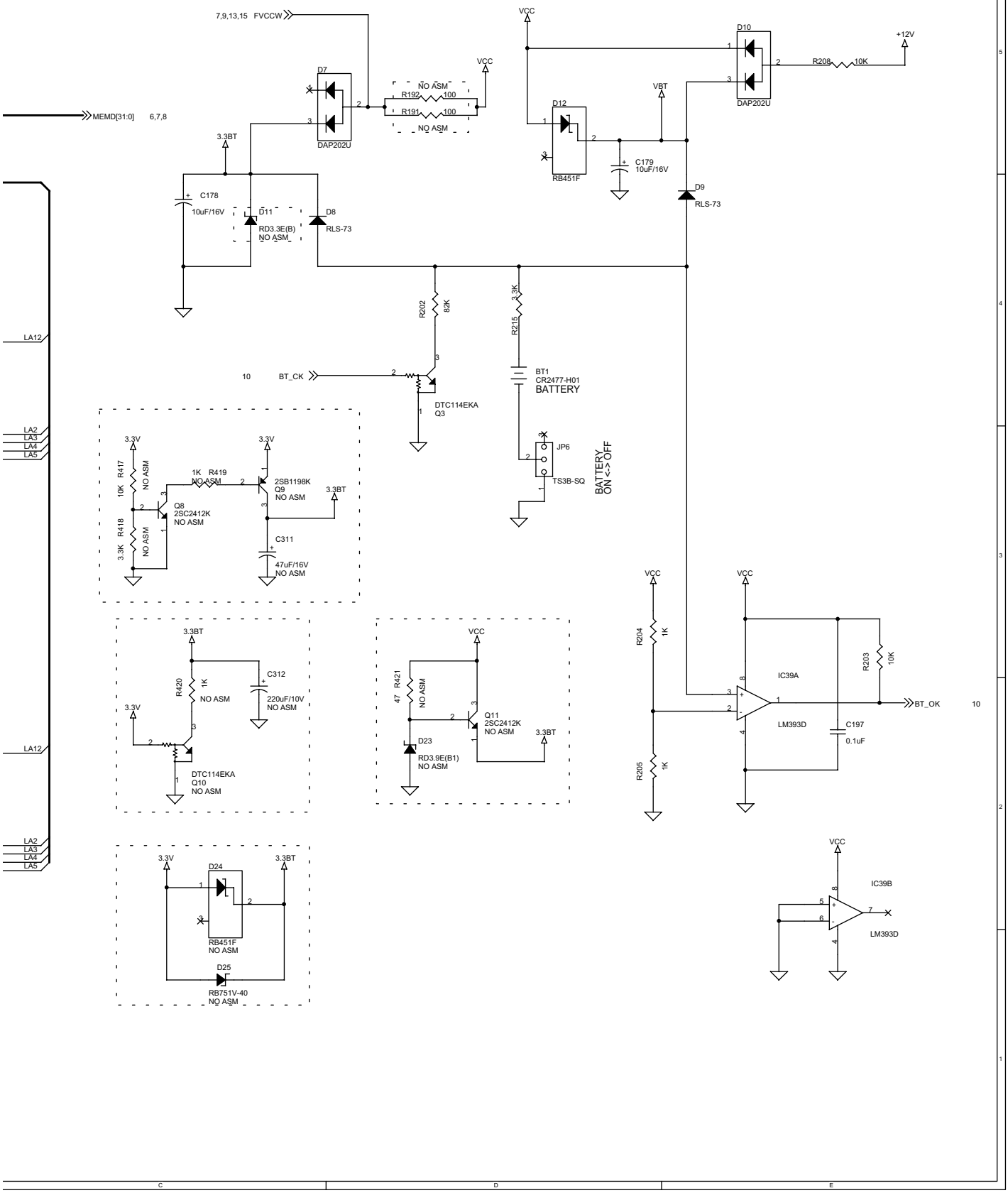
[ASIC 2]

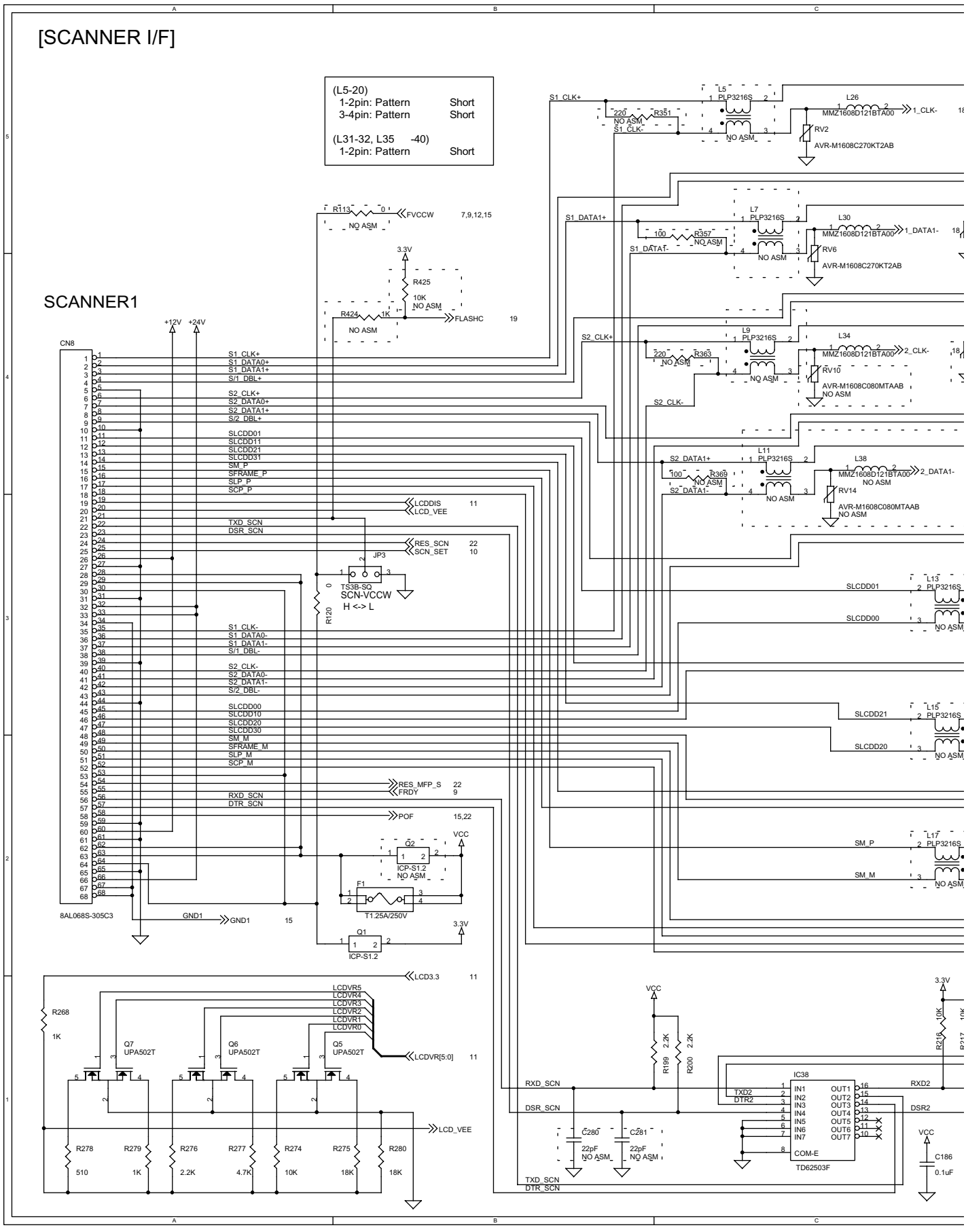


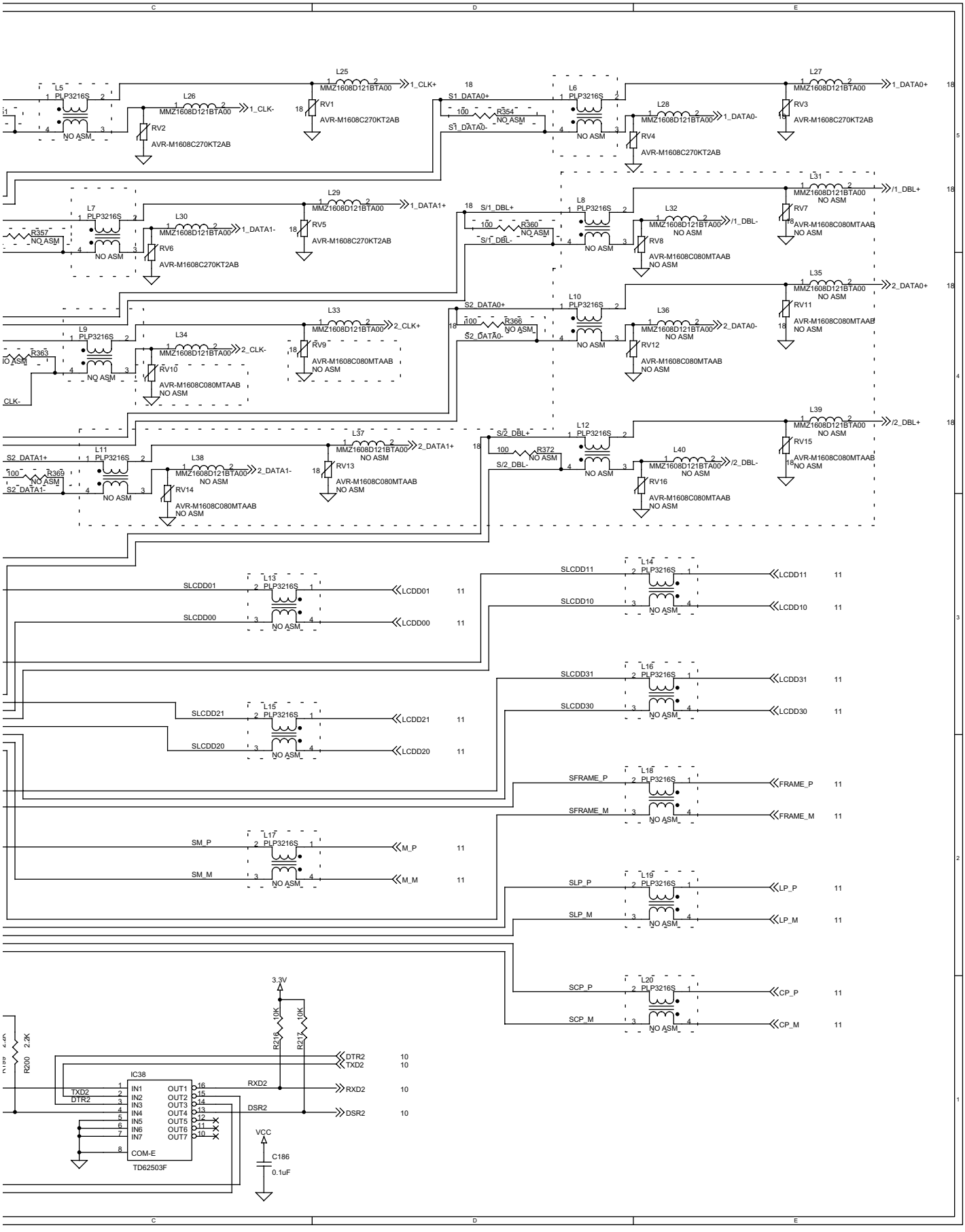


[SRAM / BATTERY]



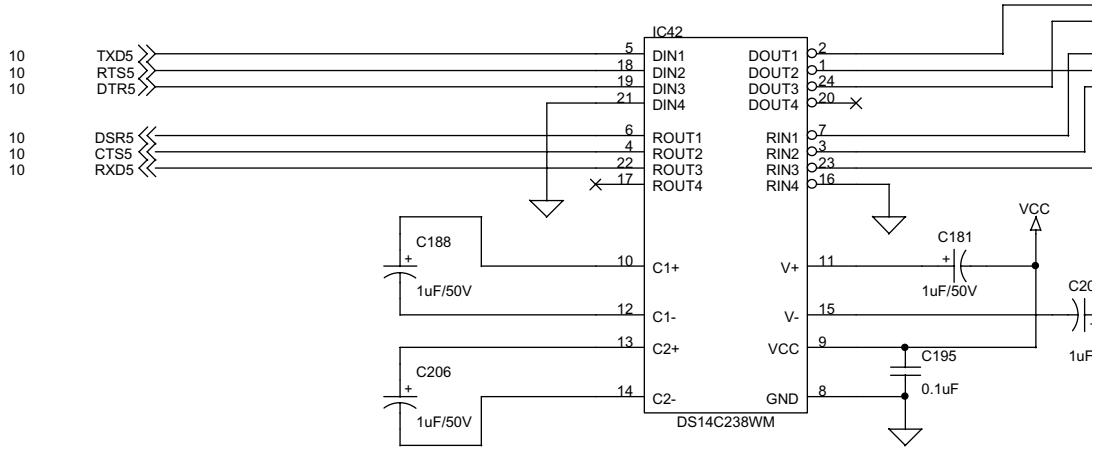




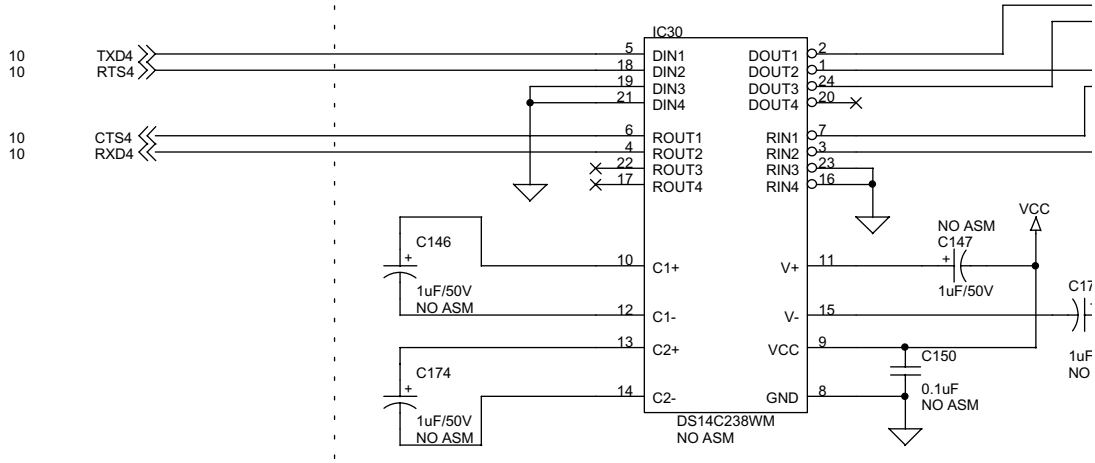


[SIO]

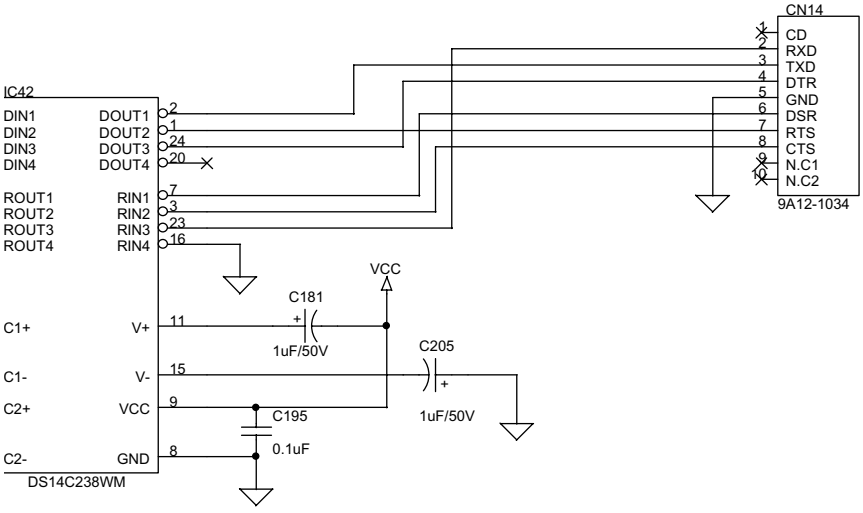
[RIC I/F (SIO #5)]



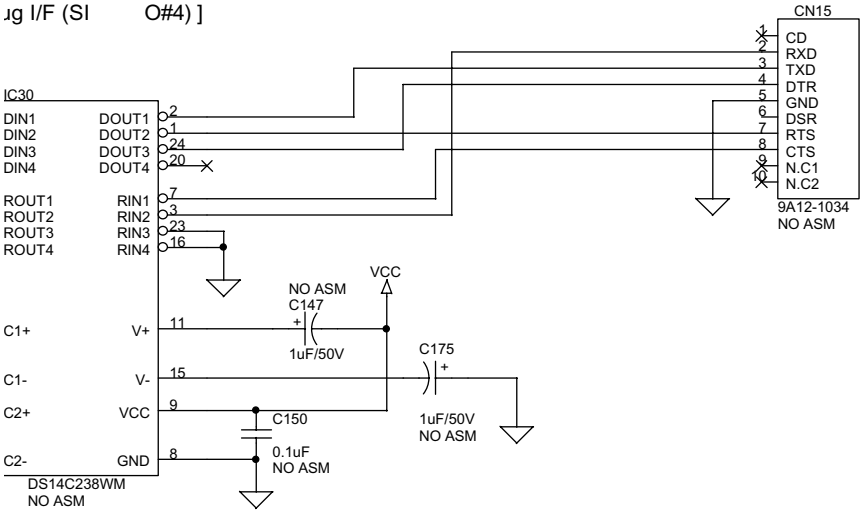
[Debug I/F (SI O#4)]



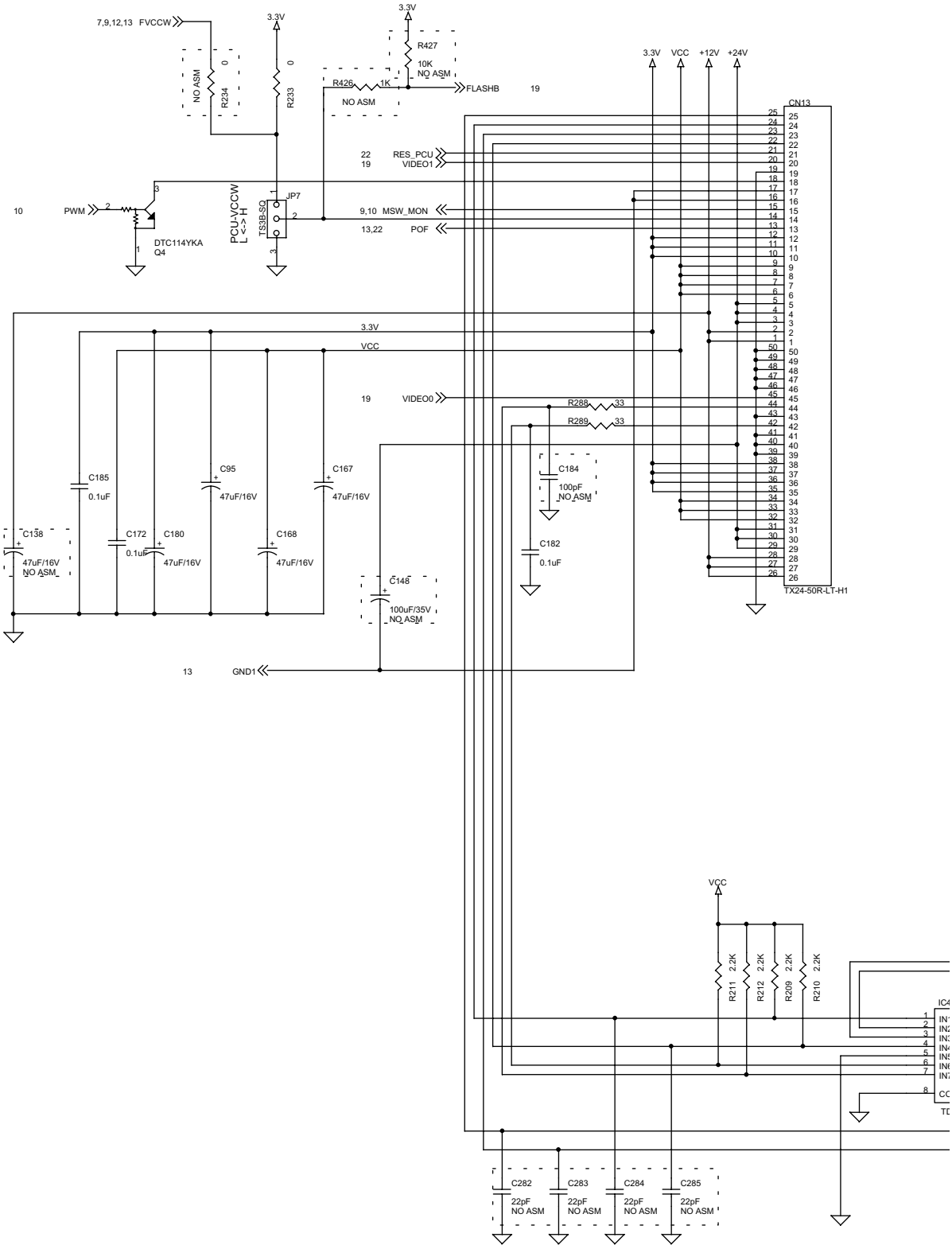
C I/F (SIO #5)]

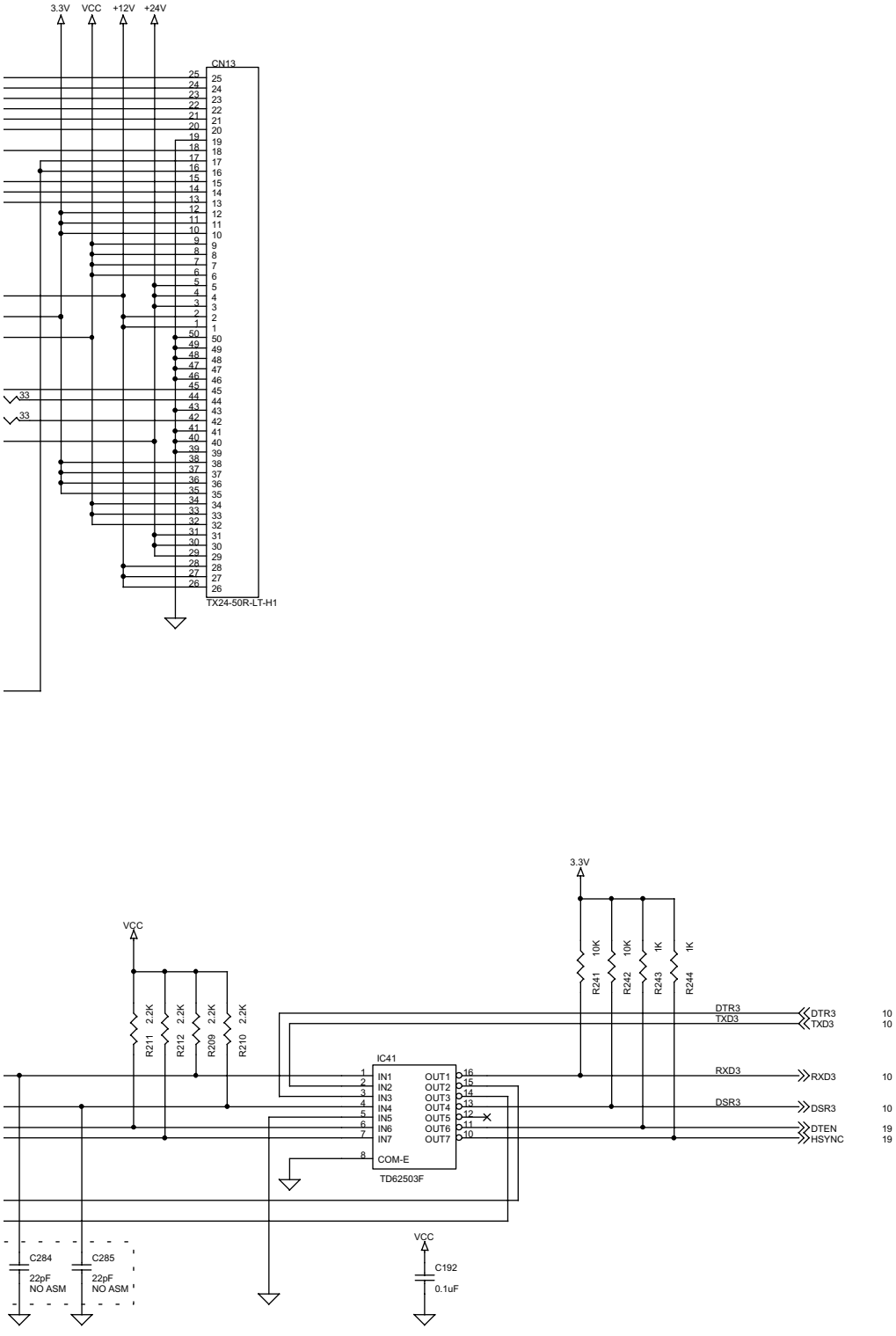


ug I/F (SI O#4)]

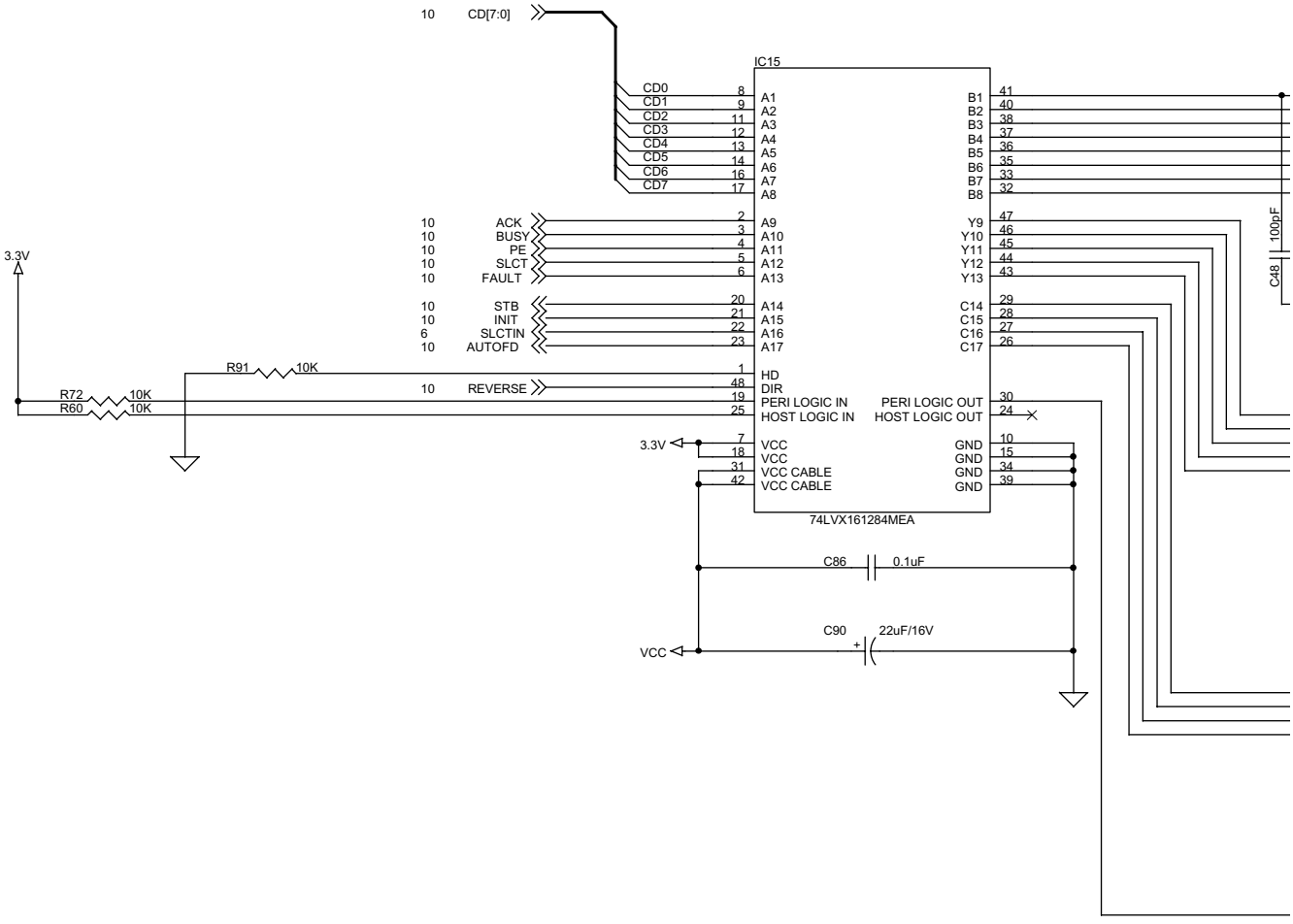


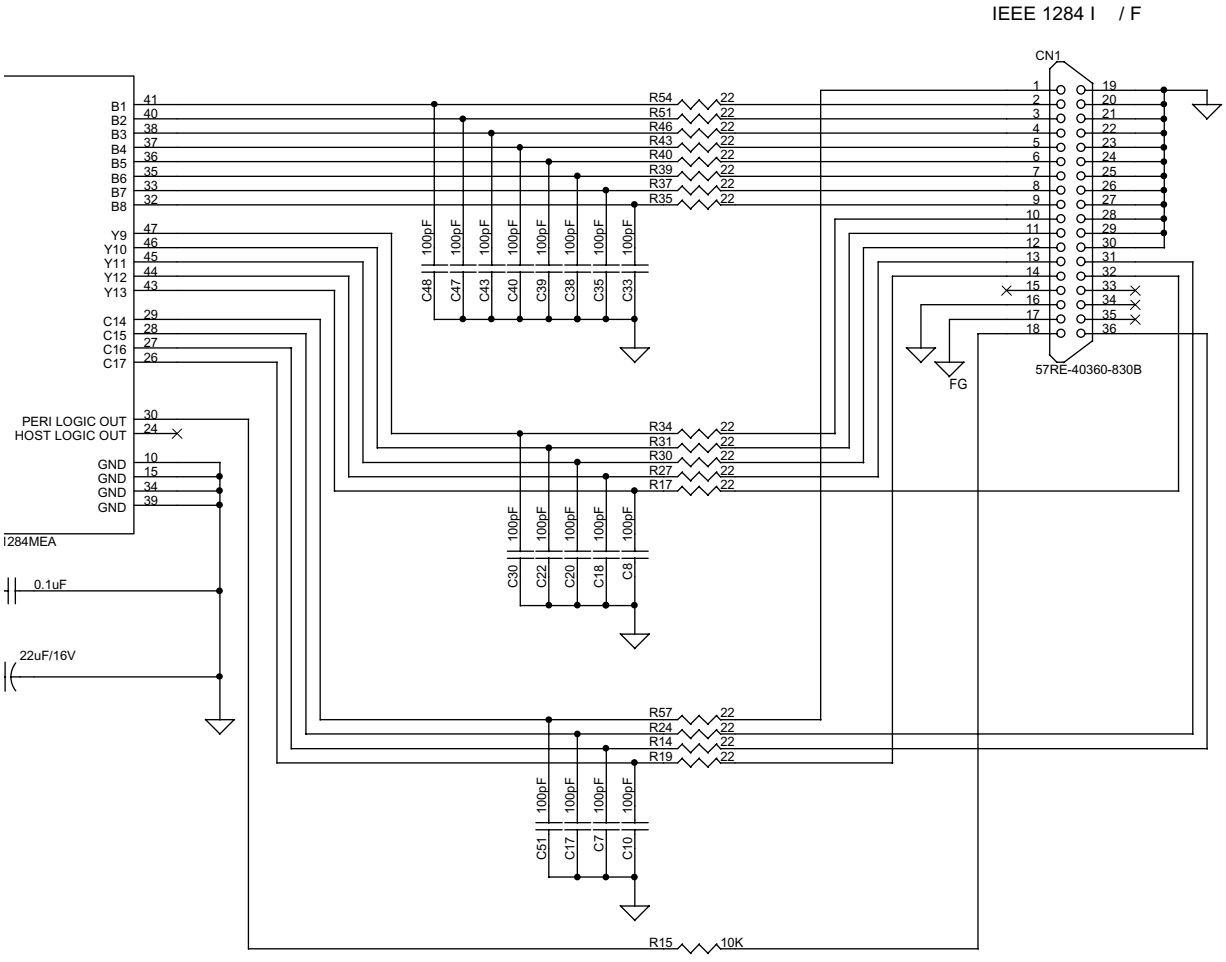
[ENGINE I/F CN]



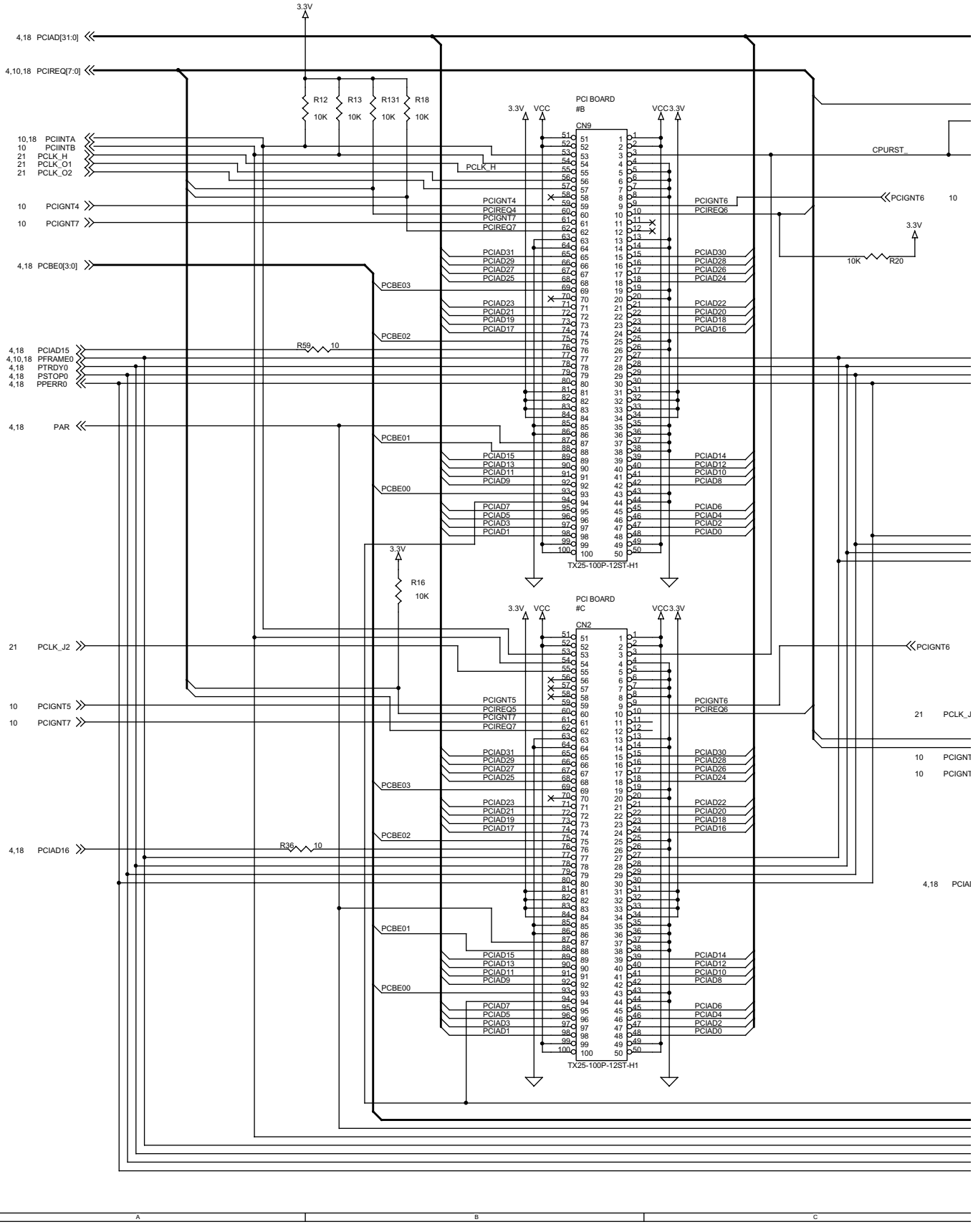


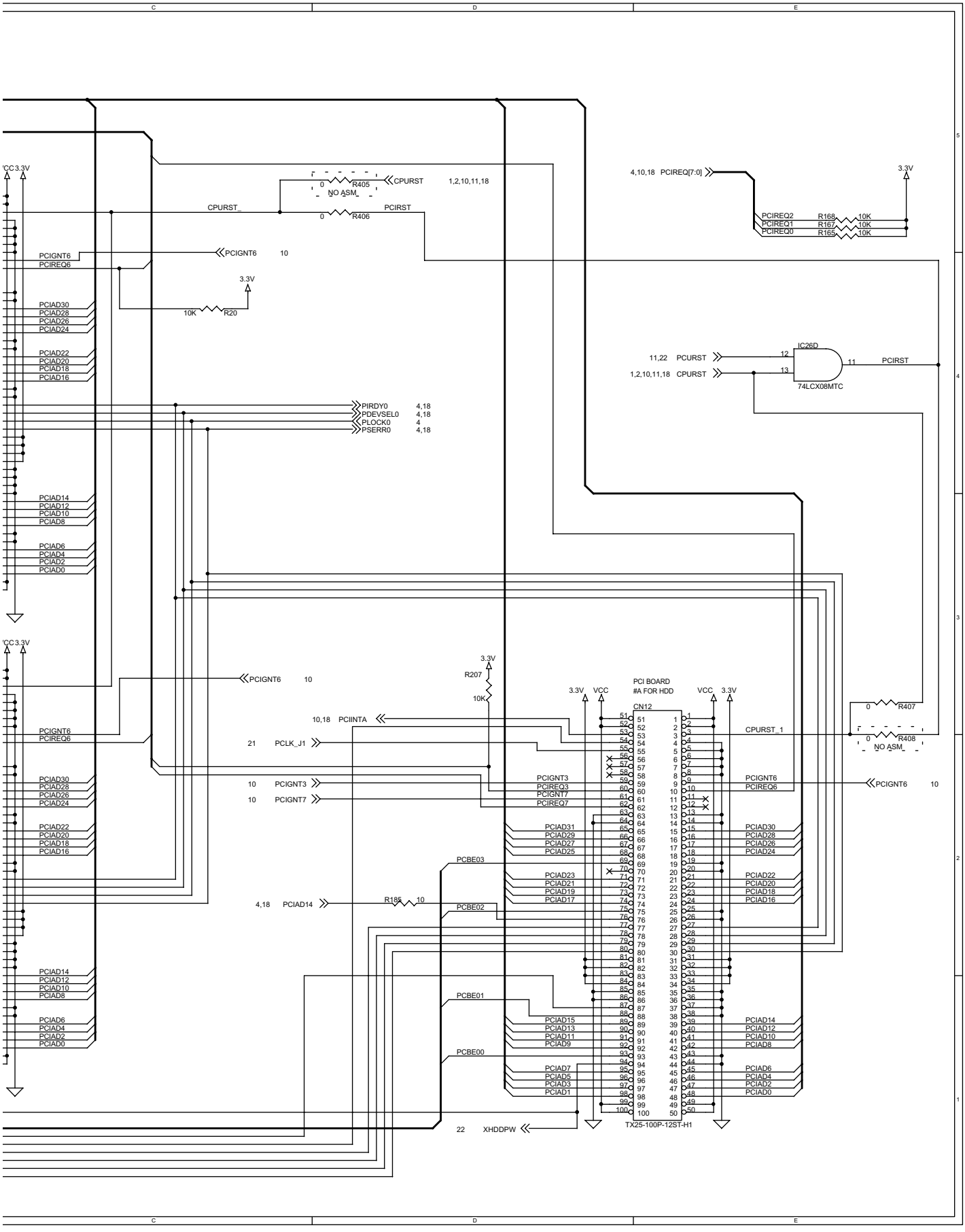
[IEEE1284 I/F]

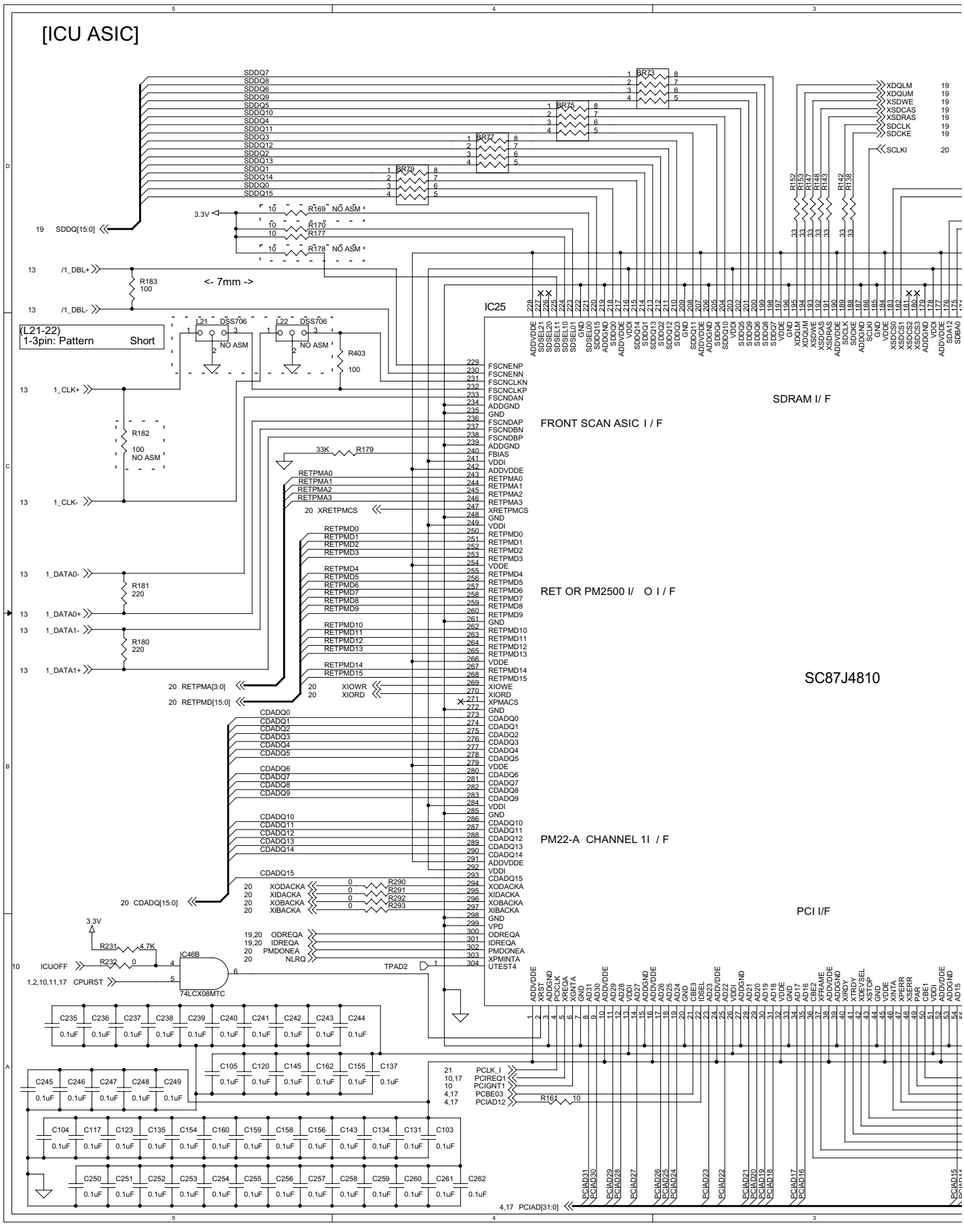


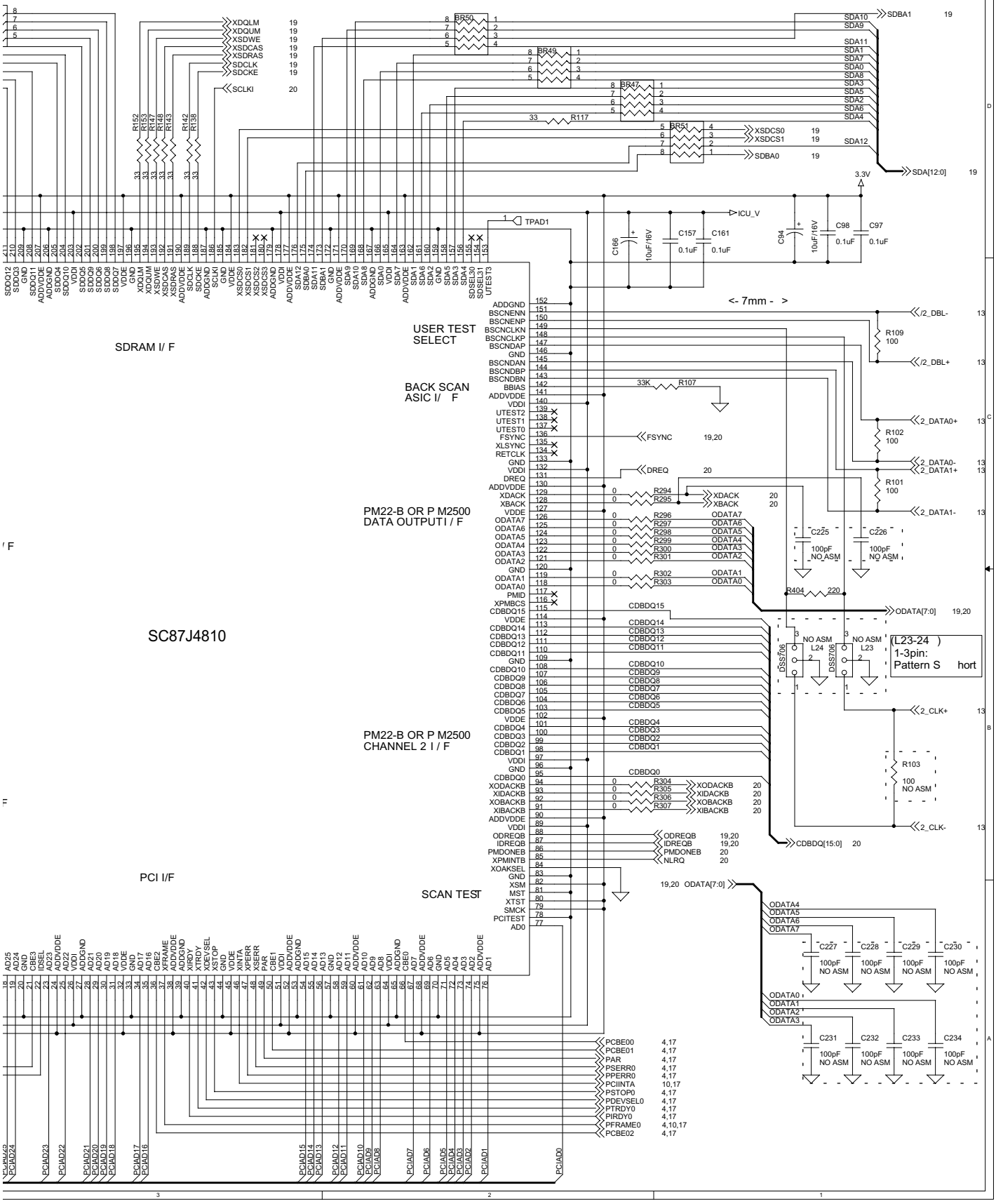


[PCI BOARD CONNECTOR]

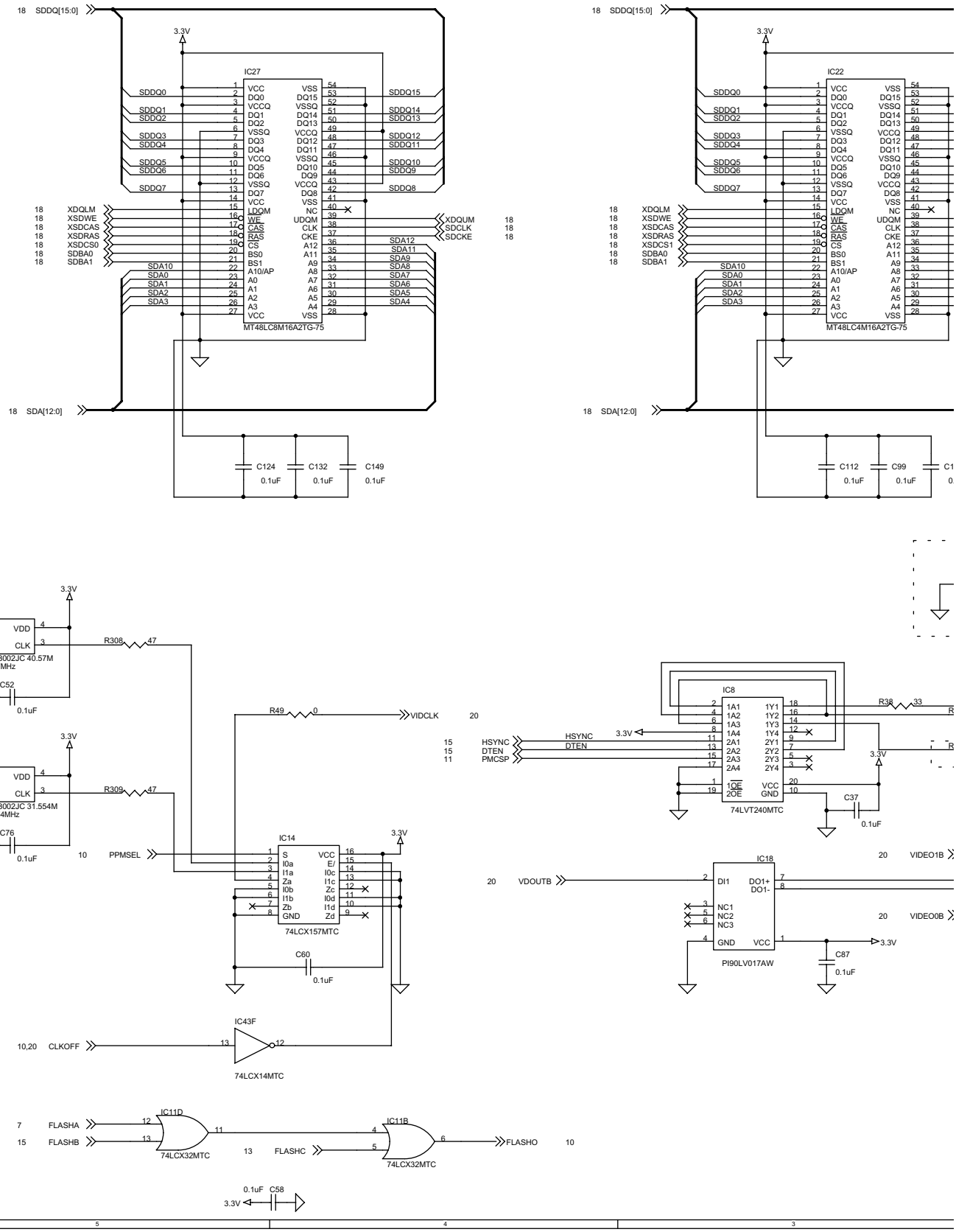


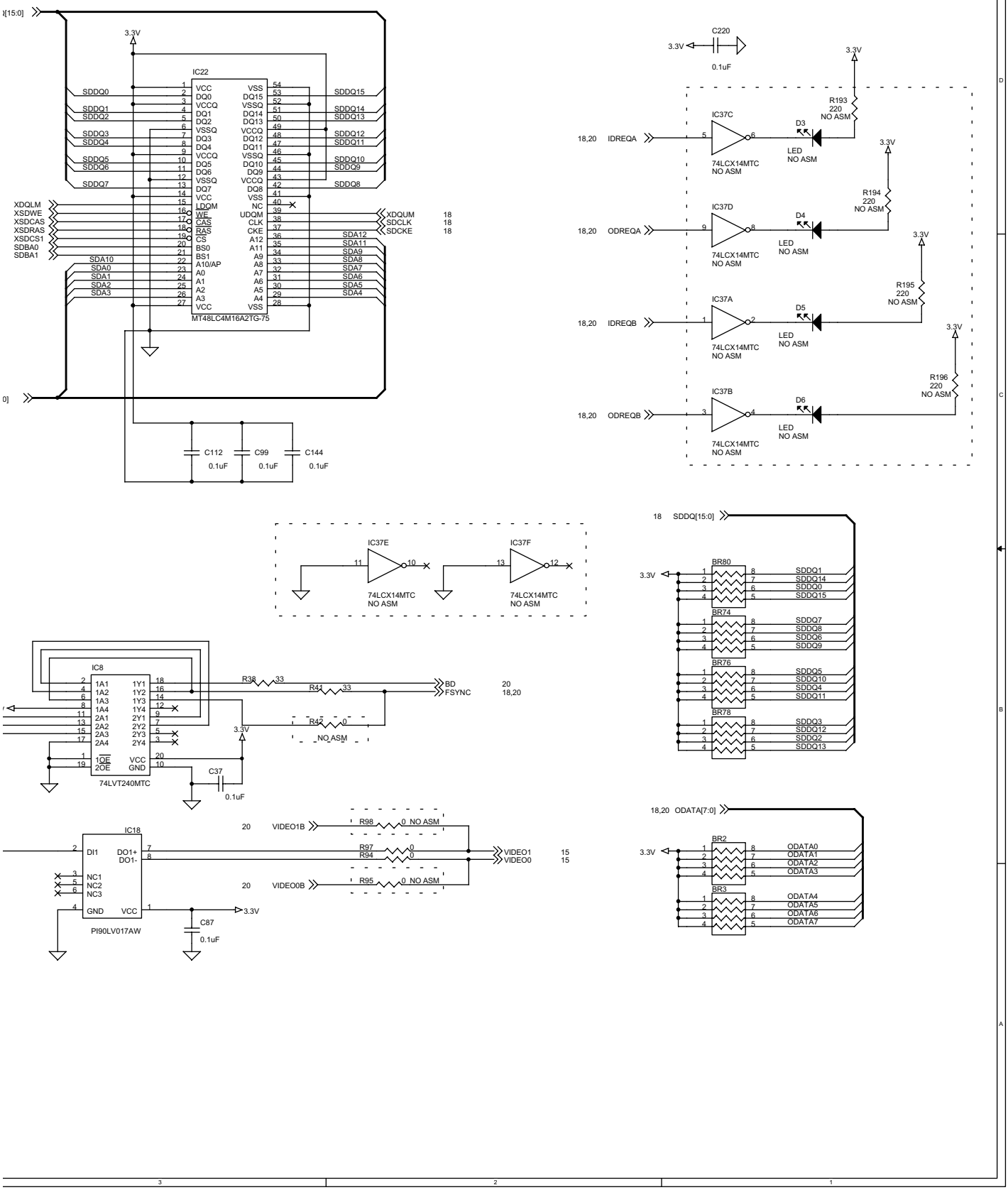


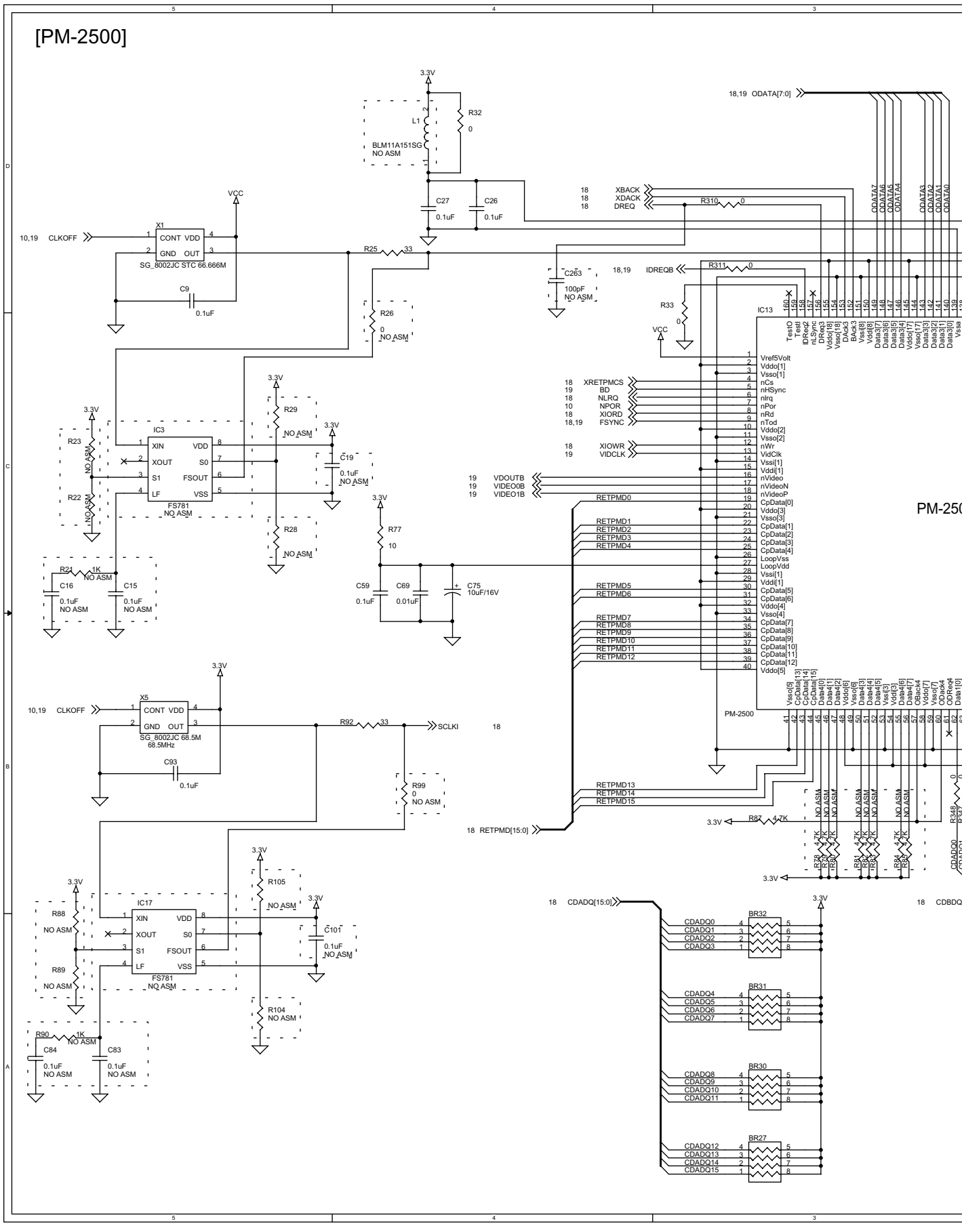


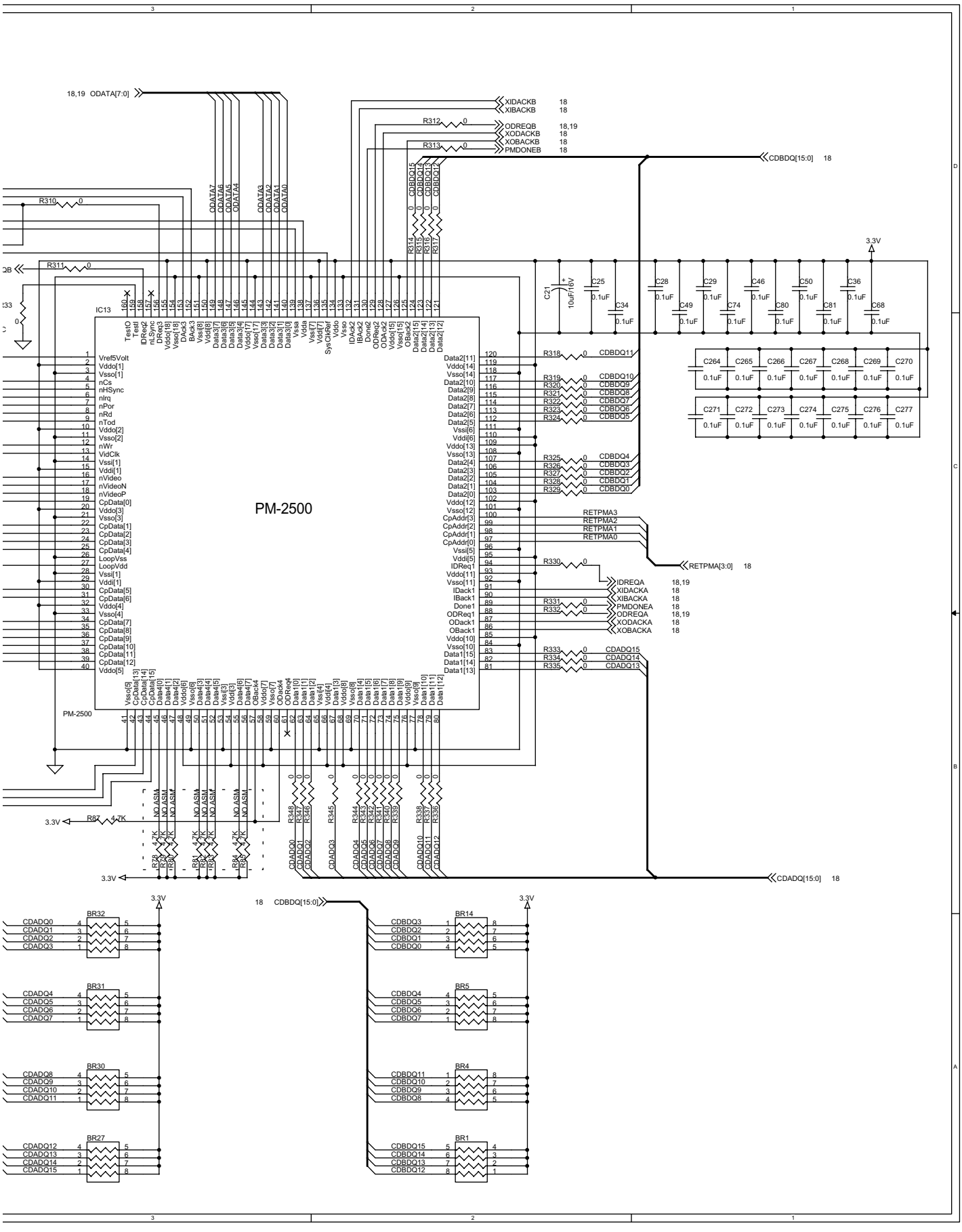


[ICU SDRAM]

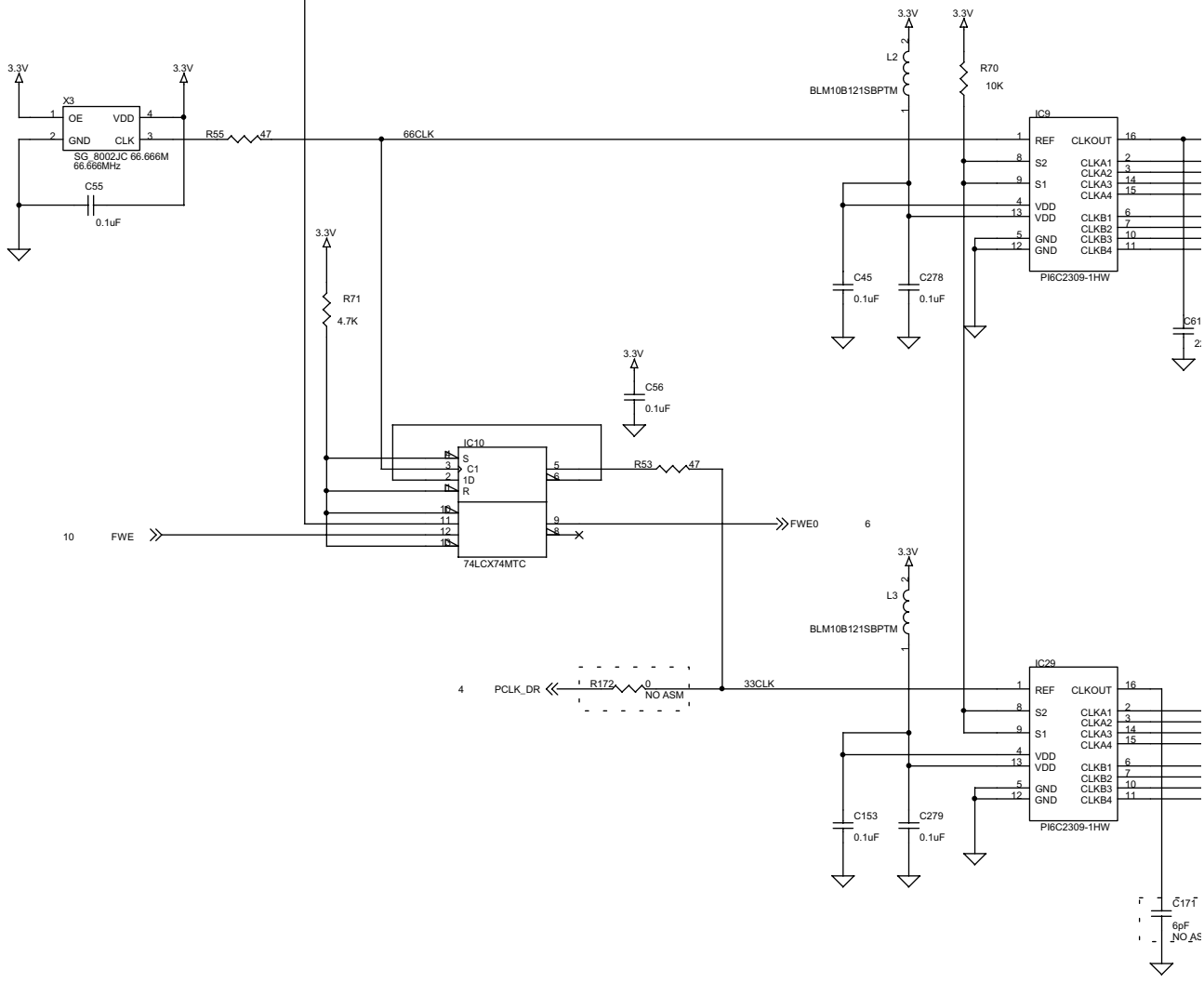


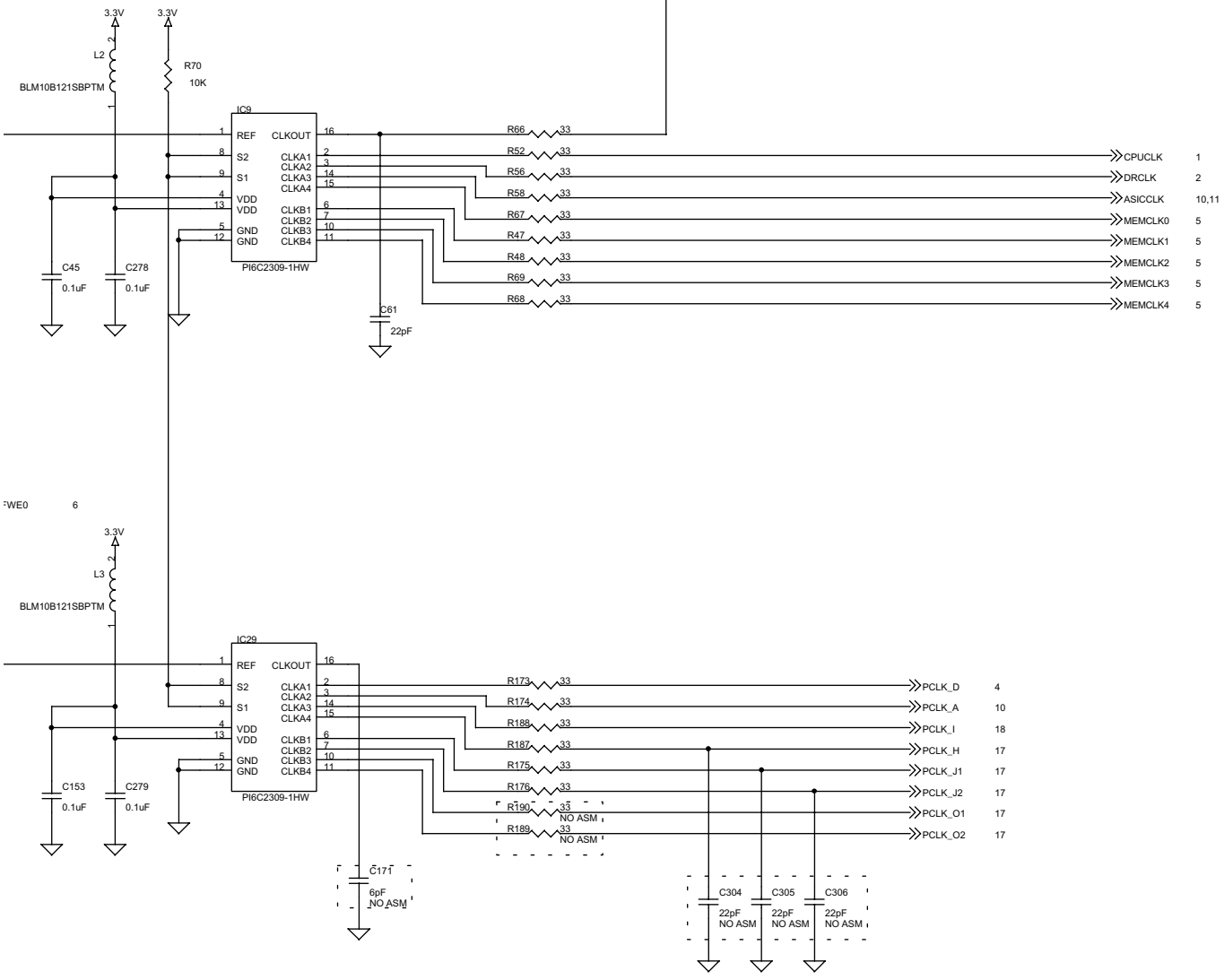




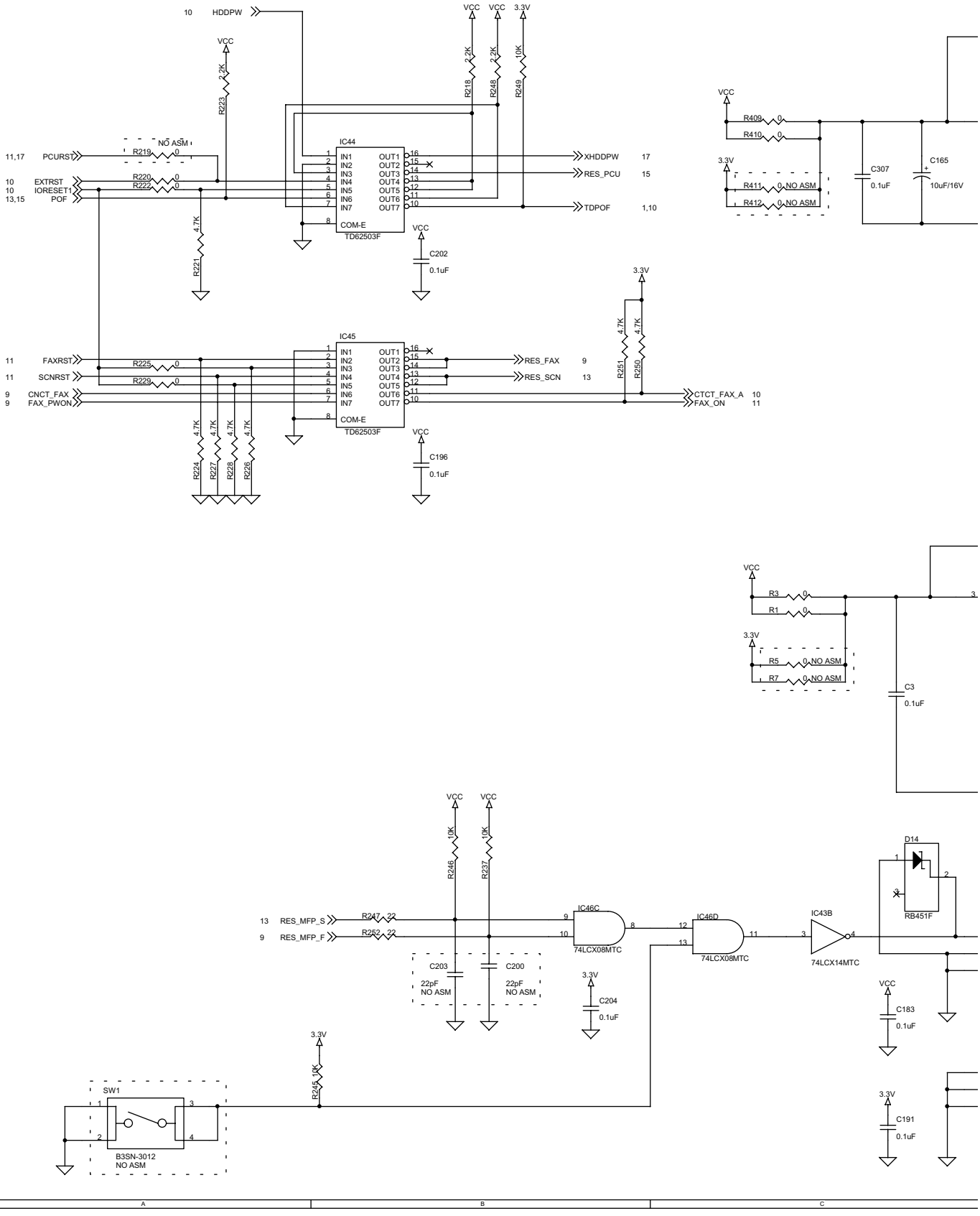


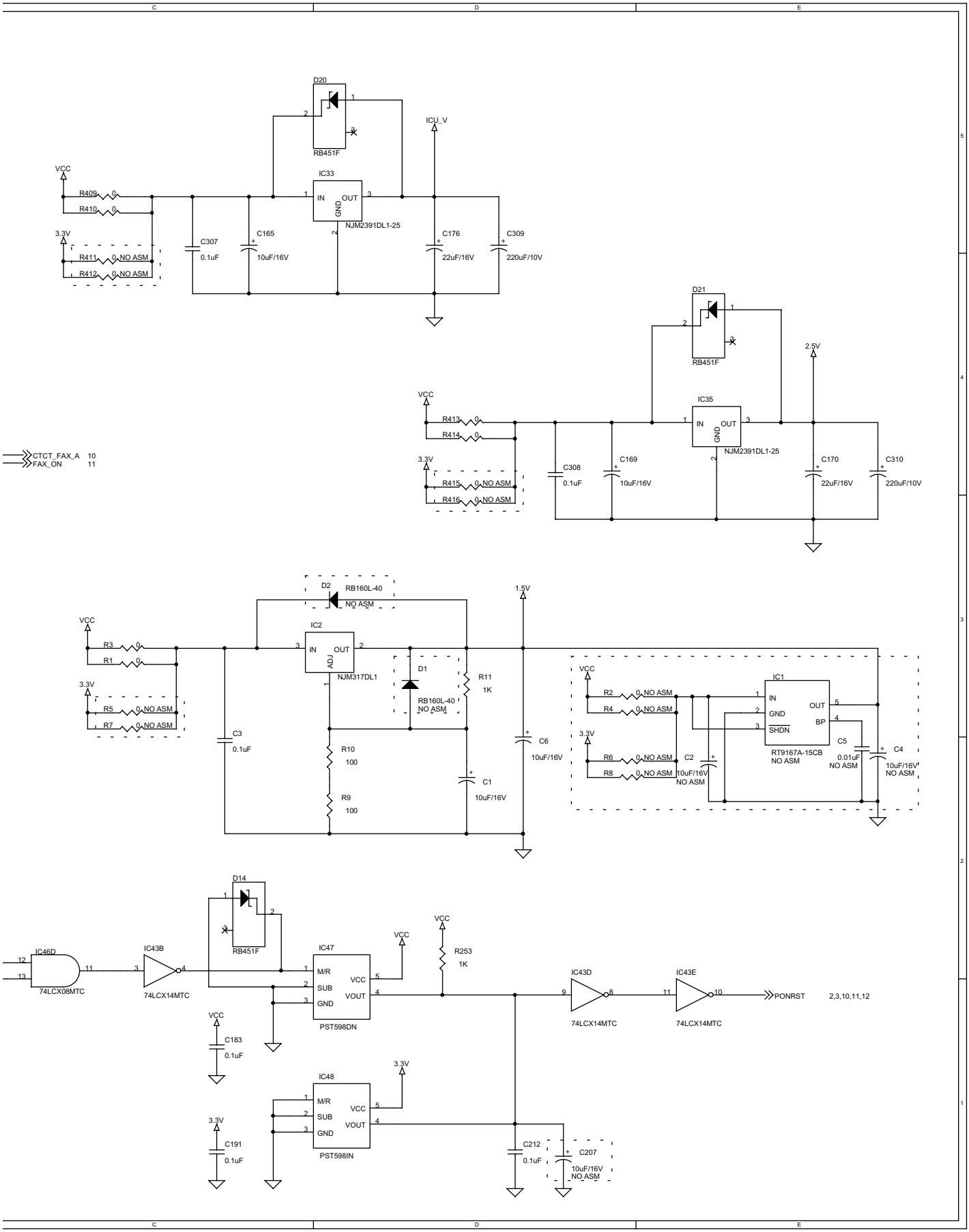
[CLOCK]





[RESET / POWER]





CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA,CANADA)

Contains lithium-ion battery. Must be disposed of properly.
Remove the battery from the product and contact
federal or state environmental
agencies for information on recycling and disposal options.

SHARP

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