

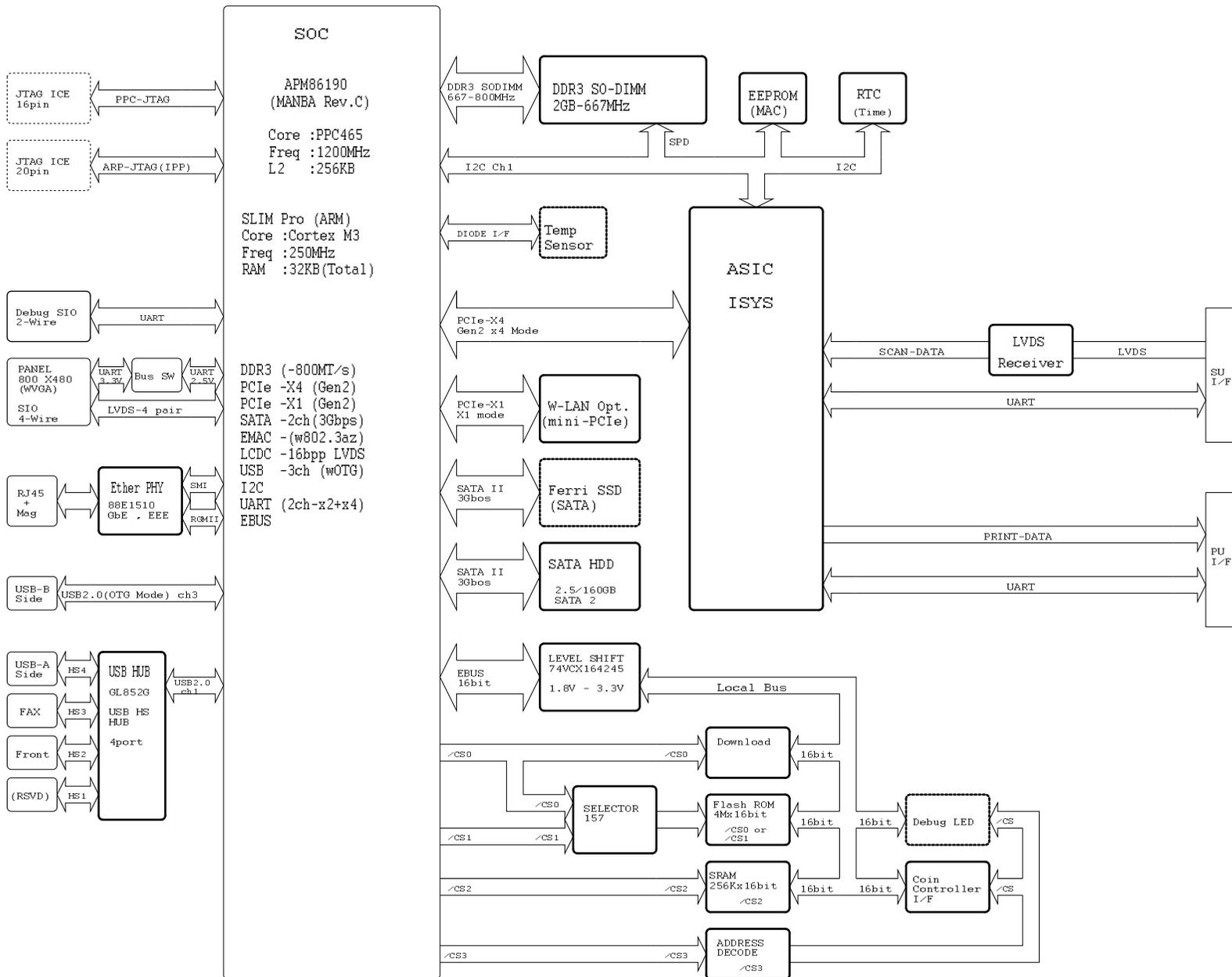
System Board
Circuit Diagram

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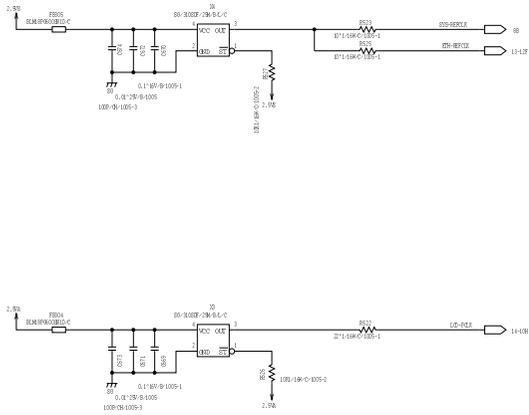
[Clock]
 SYS Ref : 25MHz
 Eth Ref : 25MHz
 CPU CORE : 1200MHz
 Memory : 667MHz (PC3-10600)
 RGMII : 125Mz
 PCIe Ref : 100MHz
 SATA Ref : 100MHz
 PCIe x4 : 50bps(Gen2)
 PCIe x1 : 2.5Gbps(Gen1)
 SATA : 3Gbps
 LCD : 33MHz
 I2C : 100KHz
 RTC : 32.768kHz

[UART baud rate]
 Debug : 57.6kbps
 Panel : 76.8kbps
 Scanner : 137.5kbps
 Printer : 68.75kbps

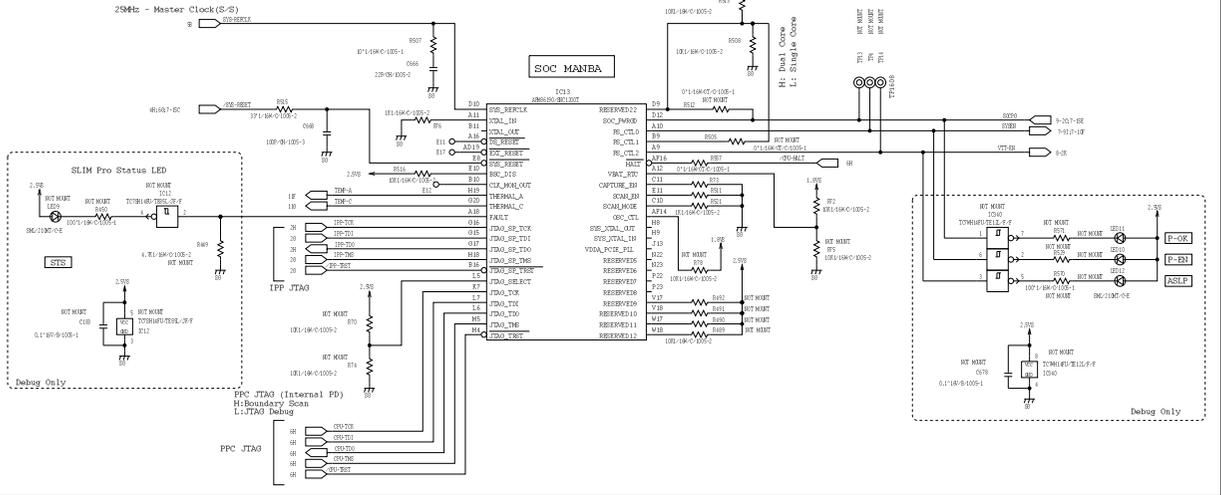
[Image Data Transfer Clock]
 Scanner : 48MHz SDR
 Printer : 19MHz DDR (St.Helens)
 3.5MHz DDR (Mosel)



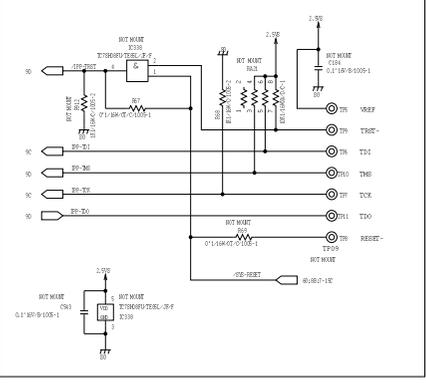
MANBA Clock



APM86190 (MANBA)

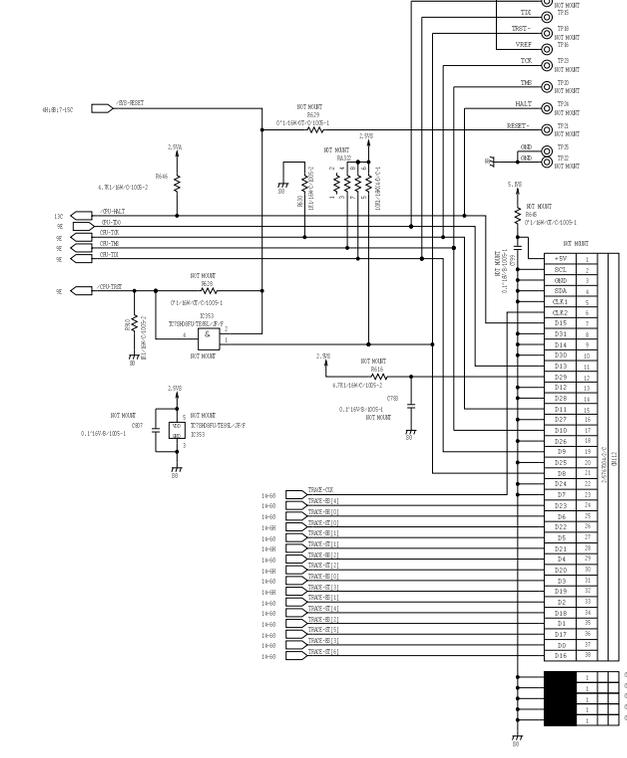


ARM(IPP) JTAG

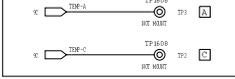


PWB	Heat Sink	LABEL
<ul style="list-style-type: none"> U10 U11 U12 U13 U14 U15 U16 U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32 U33 U34 U35 U36 U37 U38 U39 U40 U41 U42 U43 U44 U45 U46 U47 U48 U49 U50 U51 U52 U53 U54 U55 U56 U57 U58 U59 U60 U61 U62 U63 U64 U65 U66 U67 U68 U69 U70 U71 U72 U73 U74 U75 U76 U77 U78 U79 U80 U81 U82 U83 U84 U85 U86 U87 U88 U89 U90 U91 U92 U93 U94 U95 U96 U97 U98 U99 U100 	<ul style="list-style-type: none"> U101 U102 U103 U104 U105 U106 U107 U108 U109 U110 U111 U112 U113 U114 U115 U116 U117 U118 U119 U120 U121 U122 U123 U124 U125 U126 U127 U128 U129 U130 U131 U132 U133 U134 U135 U136 U137 U138 U139 U140 U141 U142 U143 U144 U145 U146 U147 U148 U149 U150 U151 U152 U153 U154 U155 U156 U157 U158 U159 U160 U161 U162 U163 U164 U165 U166 U167 U168 U169 U170 U171 U172 U173 U174 U175 U176 U177 U178 U179 U180 U181 U182 U183 U184 U185 U186 U187 U188 U189 U190 U191 U192 U193 U194 U195 U196 U197 U198 U199 U200 	<ul style="list-style-type: none"> U201 U202 U203 U204 U205 U206 U207 U208 U209 U210 U211 U212 U213 U214 U215 U216 U217 U218 U219 U220 U221 U222 U223 U224 U225 U226 U227 U228 U229 U230 U231 U232 U233 U234 U235 U236 U237 U238 U239 U240 U241 U242 U243 U244 U245 U246 U247 U248 U249 U250 U251 U252 U253 U254 U255 U256 U257 U258 U259 U260 U261 U262 U263 U264 U265 U266 U267 U268 U269 U270 U271 U272 U273 U274 U275 U276 U277 U278 U279 U280 U281 U282 U283 U284 U285 U286 U287 U288 U289 U290 U291 U292 U293 U294 U295 U296 U297 U298 U299 U300

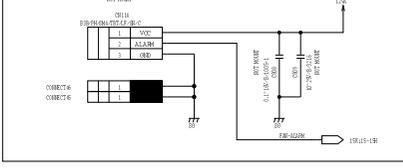
PPC JTAG



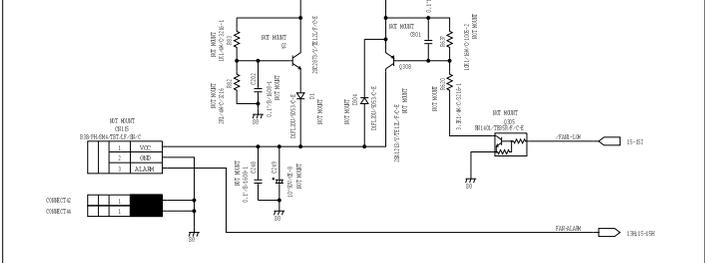
THERMAL SENSOR



CPU FAN 12V (debug)

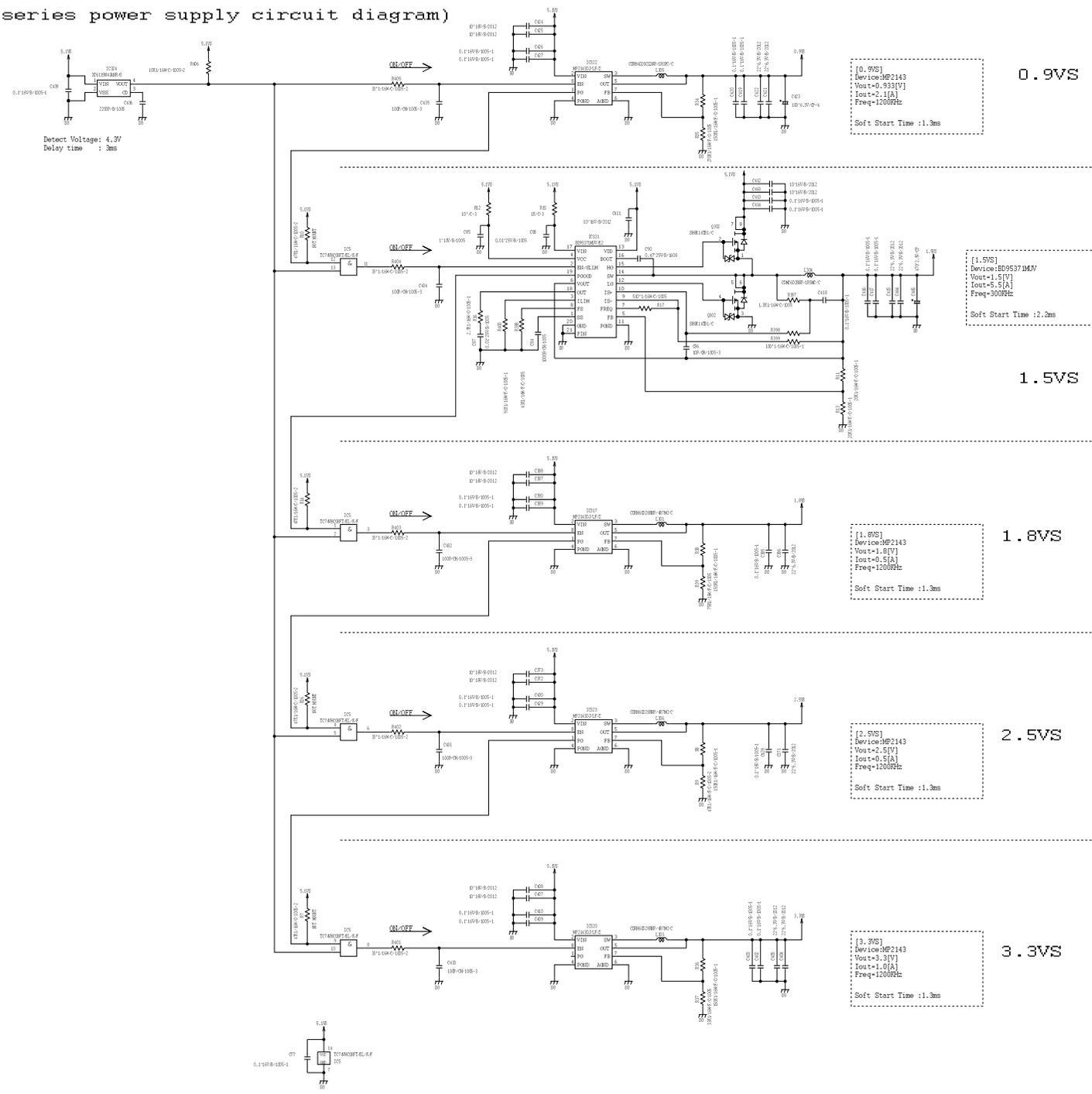


CPU FAN 24V



DEEP SLEEP POWER (S series power supply circuit diagram)

Power supply start-up sequence



SOC POWER (A series power supply circuit diagram)

006

Power supply start-up sequence

Detect Voltage: 4.9V
Delay Time: 3ms

[0.9V]
Device:BD9537LMV
Vout=0.930[V]
Iout=3.5[A]
Freq=300KHz
Soft Start Time:2.2ms

0.9VA

[1.8V]
Device:MP2143
Vout=1.8[V]
Iout=1.0[A]
Freq=1200KHz
Soft Start Time:1.3ms

1.8VA

[2.5V]
Device:MP2143
Vout=2.5[V]
Iout=0.5[A]
Freq=1200KHz
Soft Start Time:1.3ms

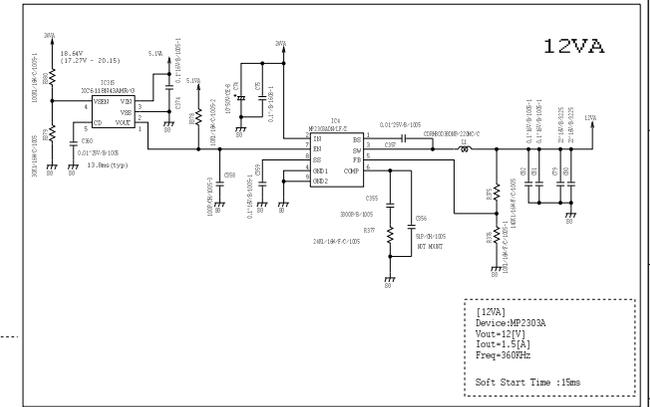
2.5VA

1.2VA

[1.2V]
Device:BD9537LMV
Vout=1.167[V]
Iout=6.8[A]
Freq=300KHz
Soft Start Time:2.2ms

[3.3V]
Device:MP2143
Vout=3.3[V]
Iout=2.1[A]
Freq=1200KHz
Soft Start Time:1.3ms

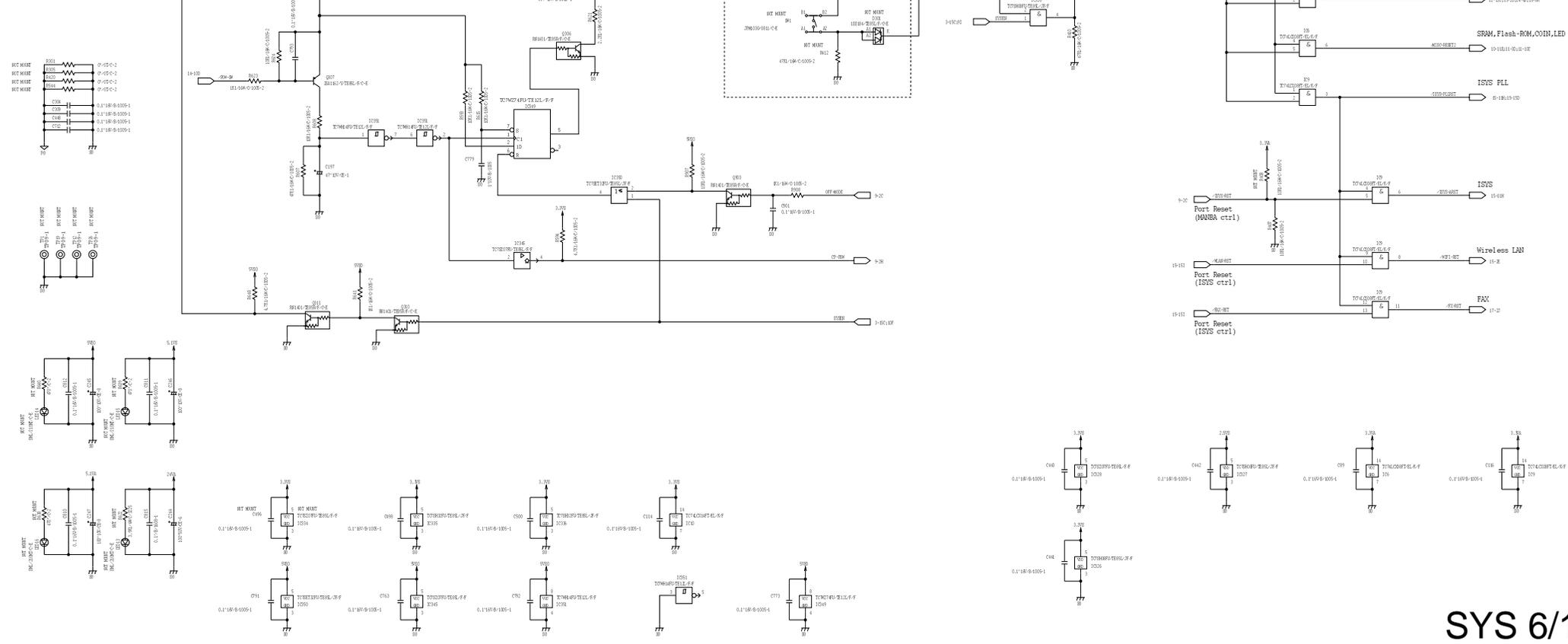
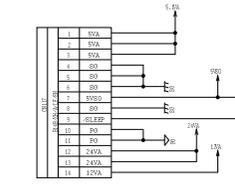
3.3VA

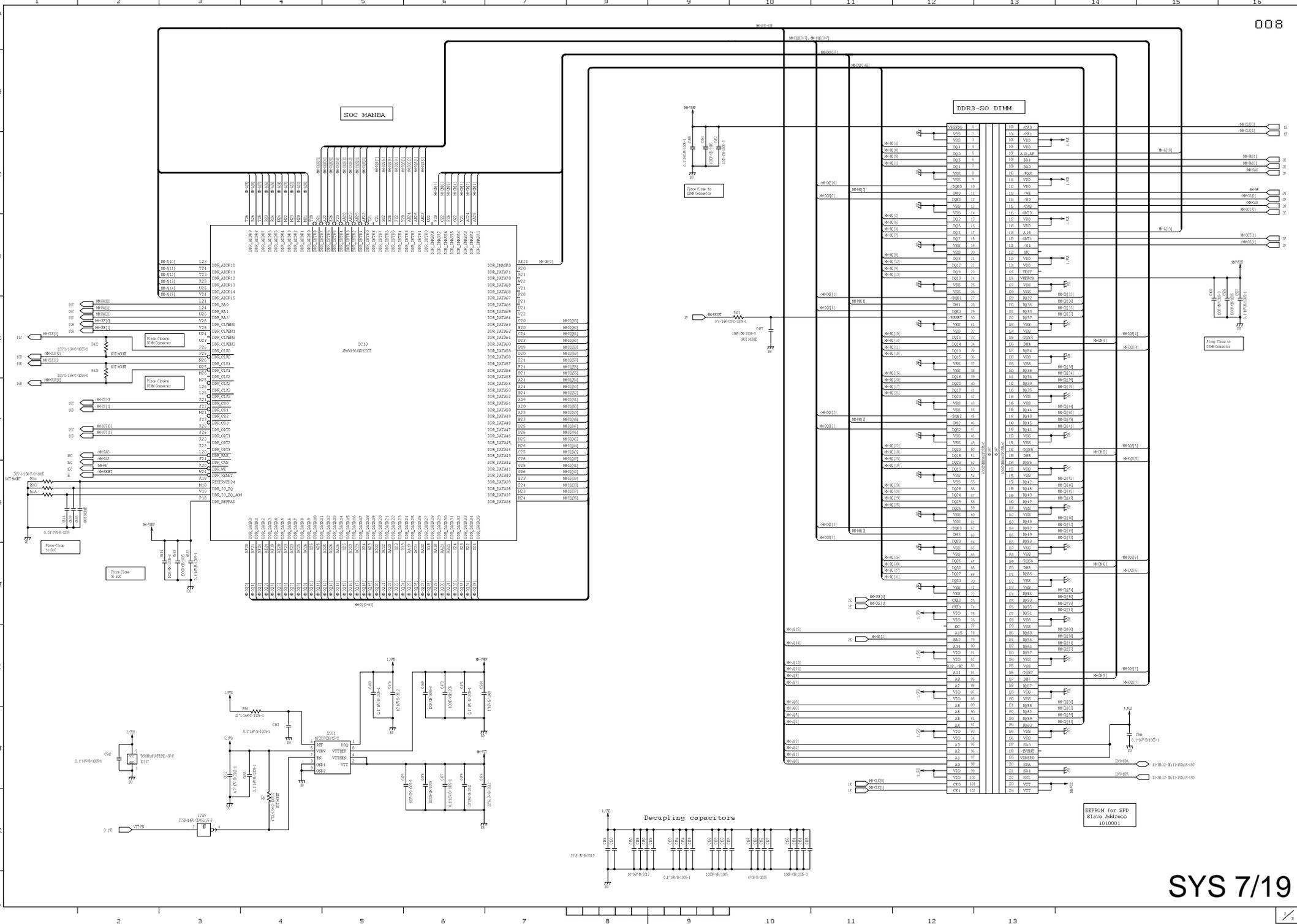


12VA

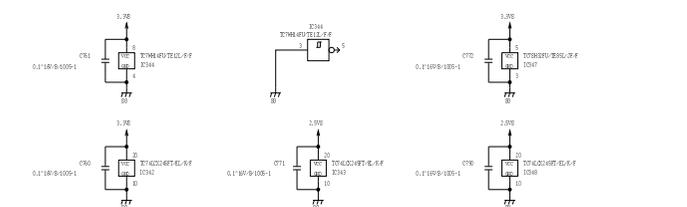
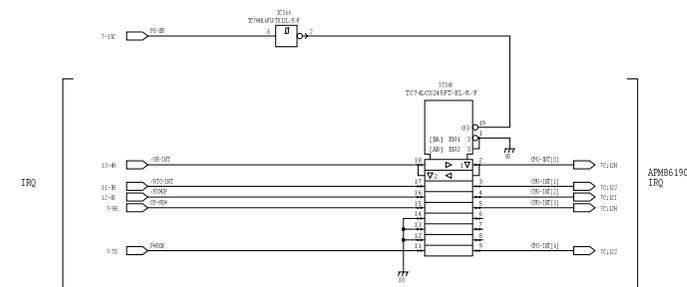
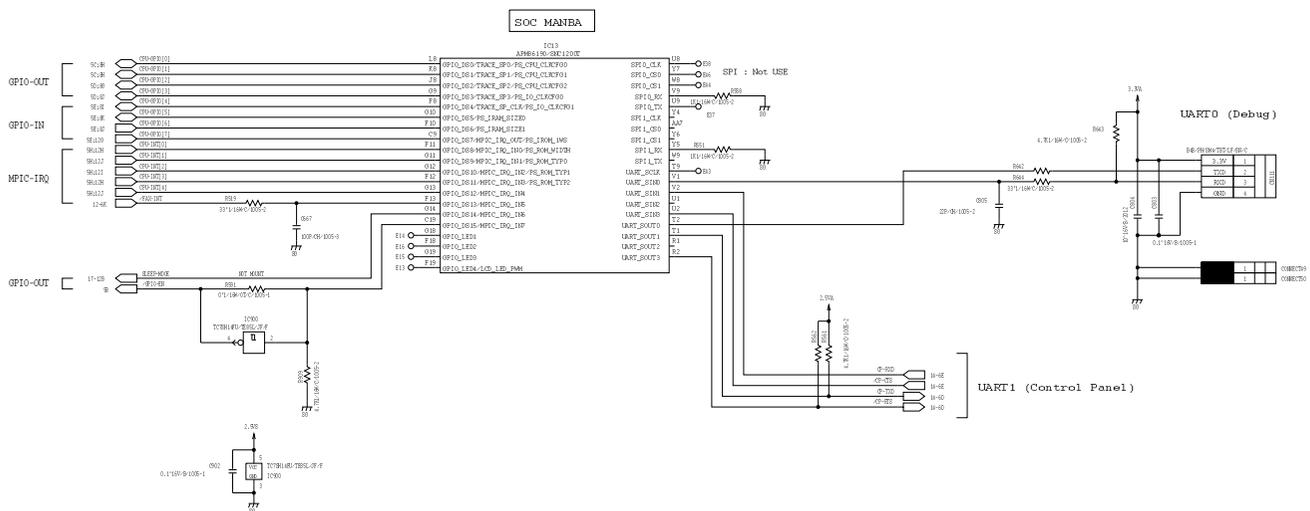
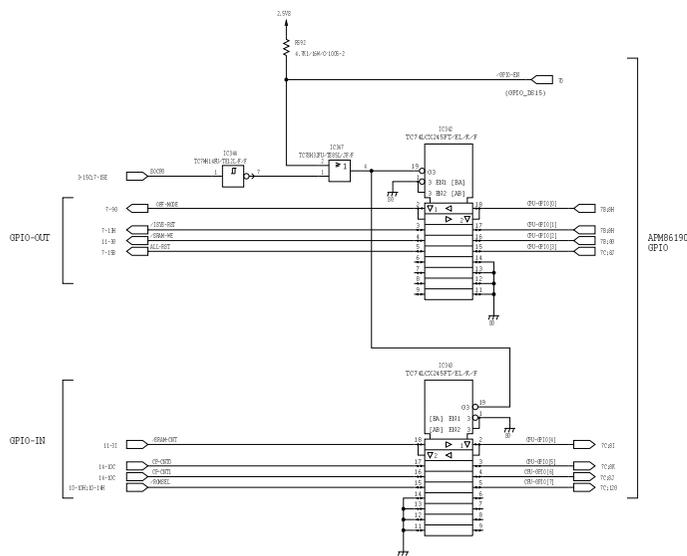
[12VA]
Device:MP2303A
Vout=12[V]
Iout=1.5[A]
Freq=360KHz
Soft Start Time:15ms

MAIN POWER
LVPS INPUT

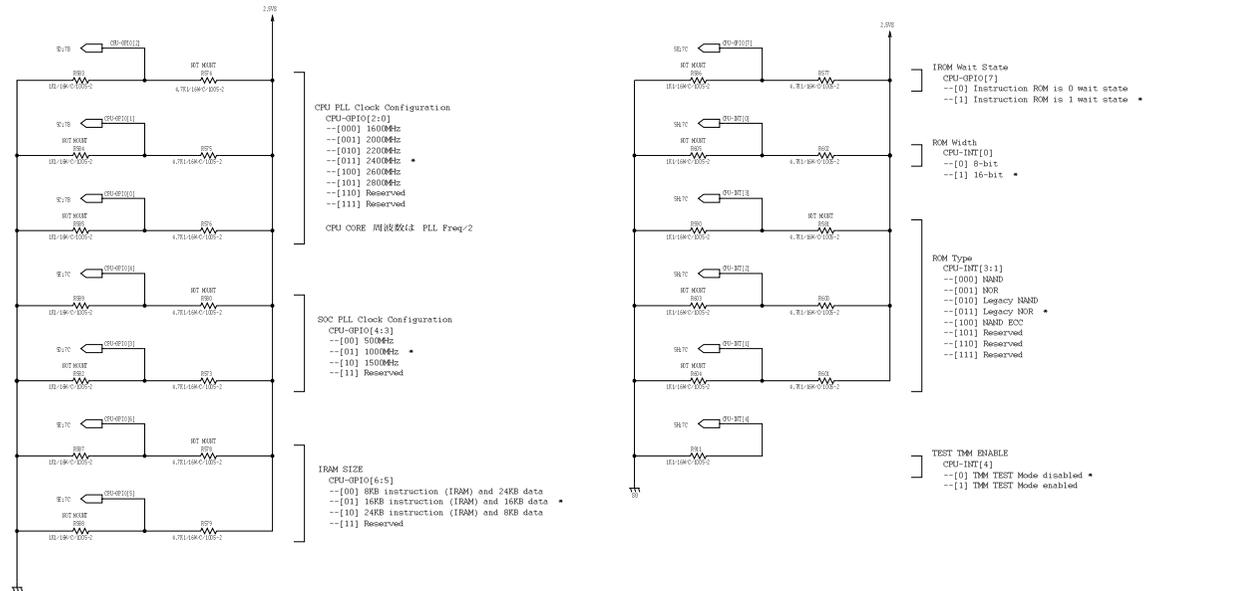




MANBA (GP IO / IRQ / SPI / UART)



APM86190 Pin Strap Setting



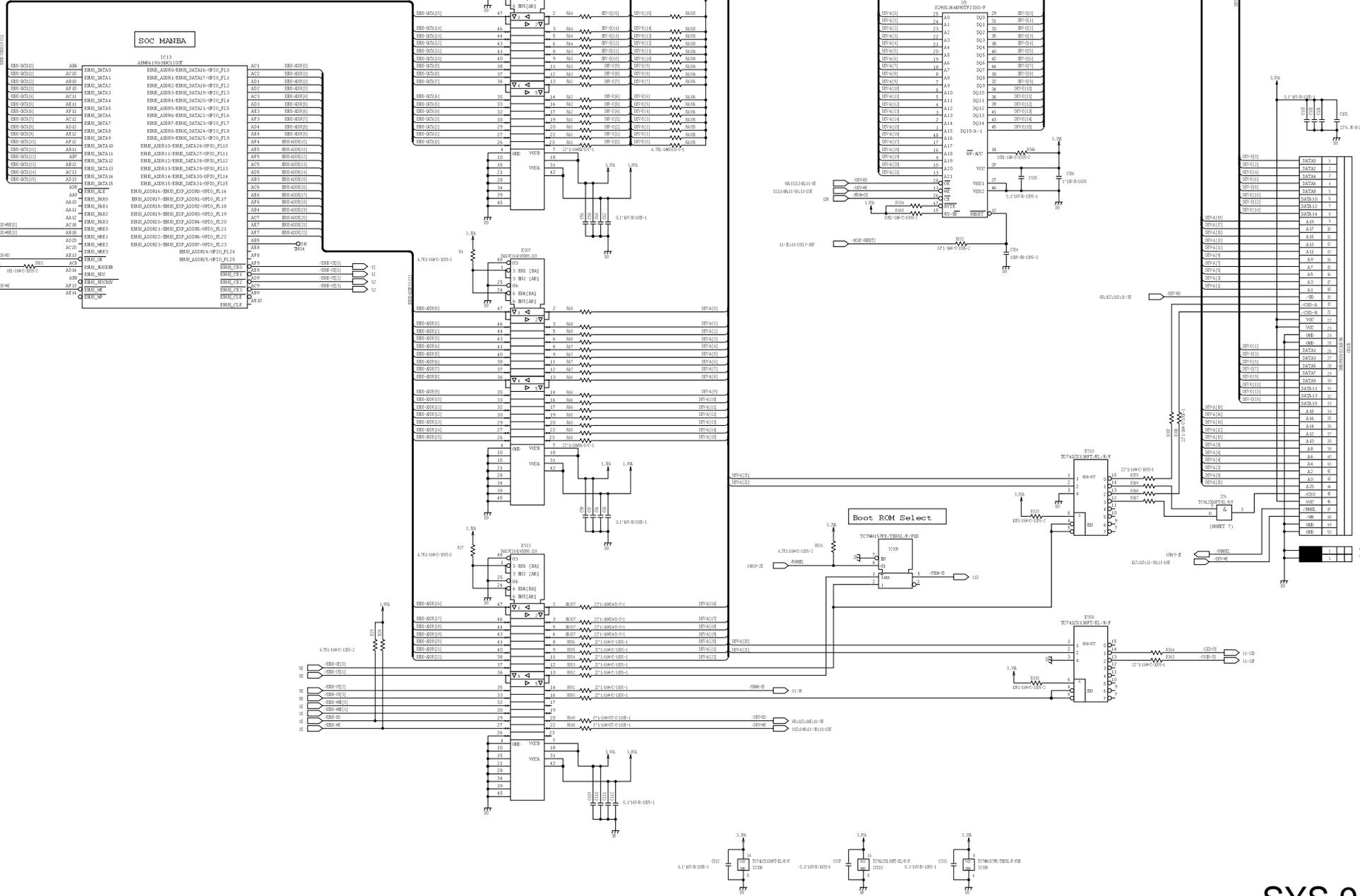
LEVEL SHIFTER
1.5V <=> 3.3V

SOC MANBA

NOR FLASH ROM
(Boot ROM)

Boot ROM Select

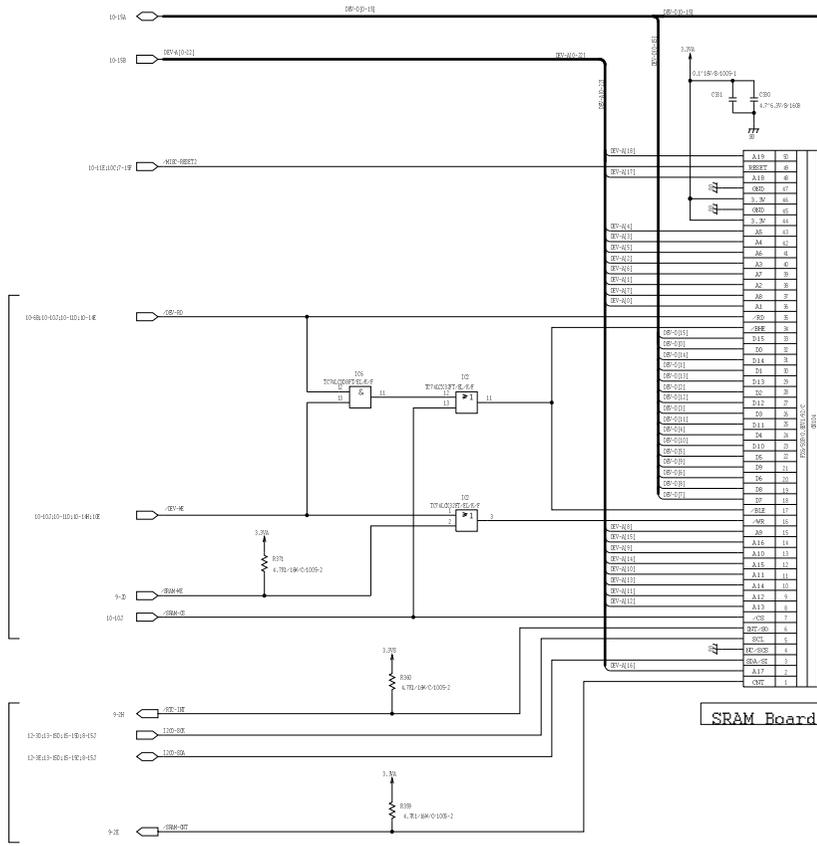
Download I/F (Ext ROM)



EBUS -- 2/2

SRAM I/F (EBUS)

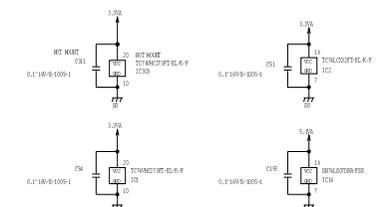
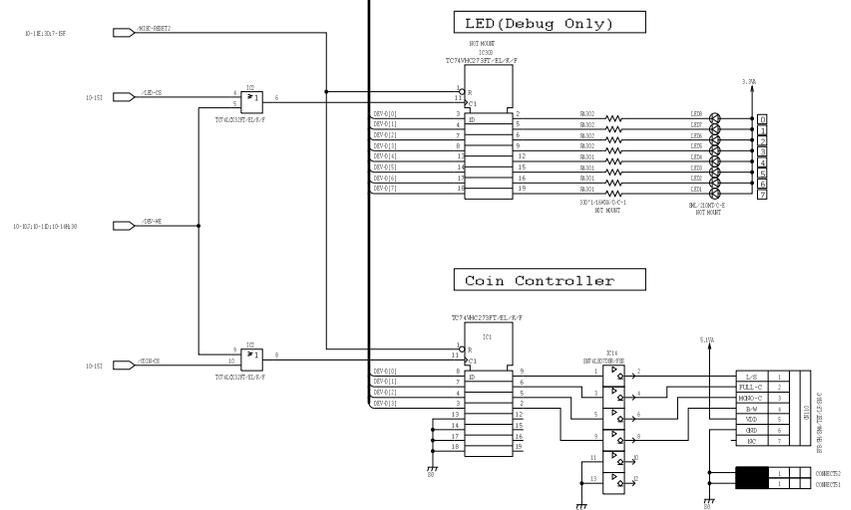
RTC I/F (I2C, GPIO, IRQ)



SRAM Board I/F

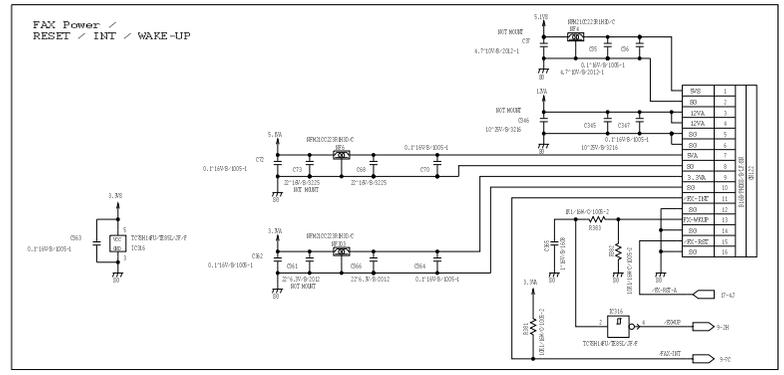
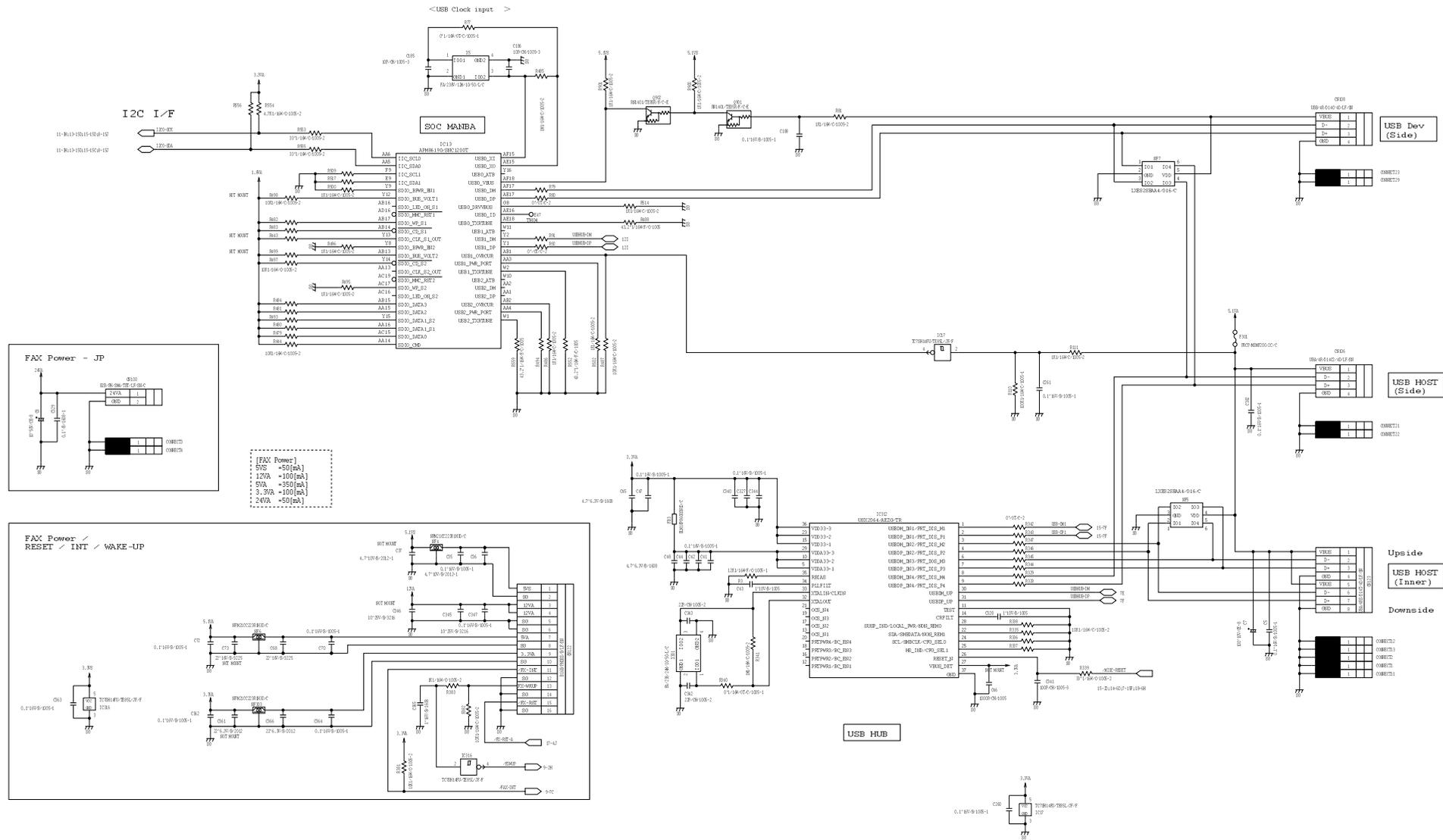
LED (Debug Only)

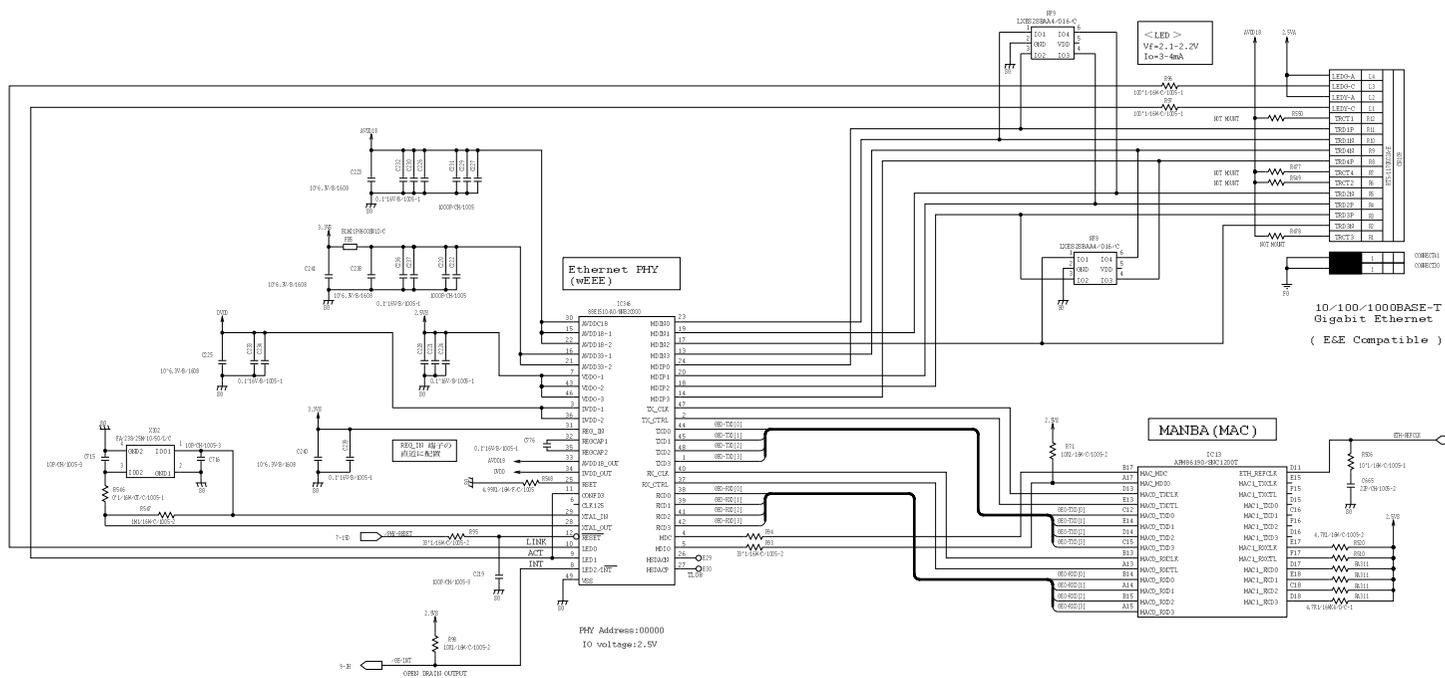
Coin Controller



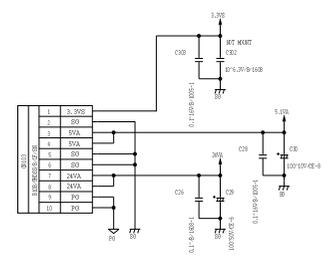
I2C Slave Address

Controller	Address SA[6:0]	Device Name
I2C0	1010001	EEPROM for MMIO DIMM SPD
	1010100	EEPROM for Ethernet Port0 MAC ADDRESS
	0110010	KTC
	0010011	(Reserved)
	0011100	ASIC ISYS
I2C1	-----	Not Use



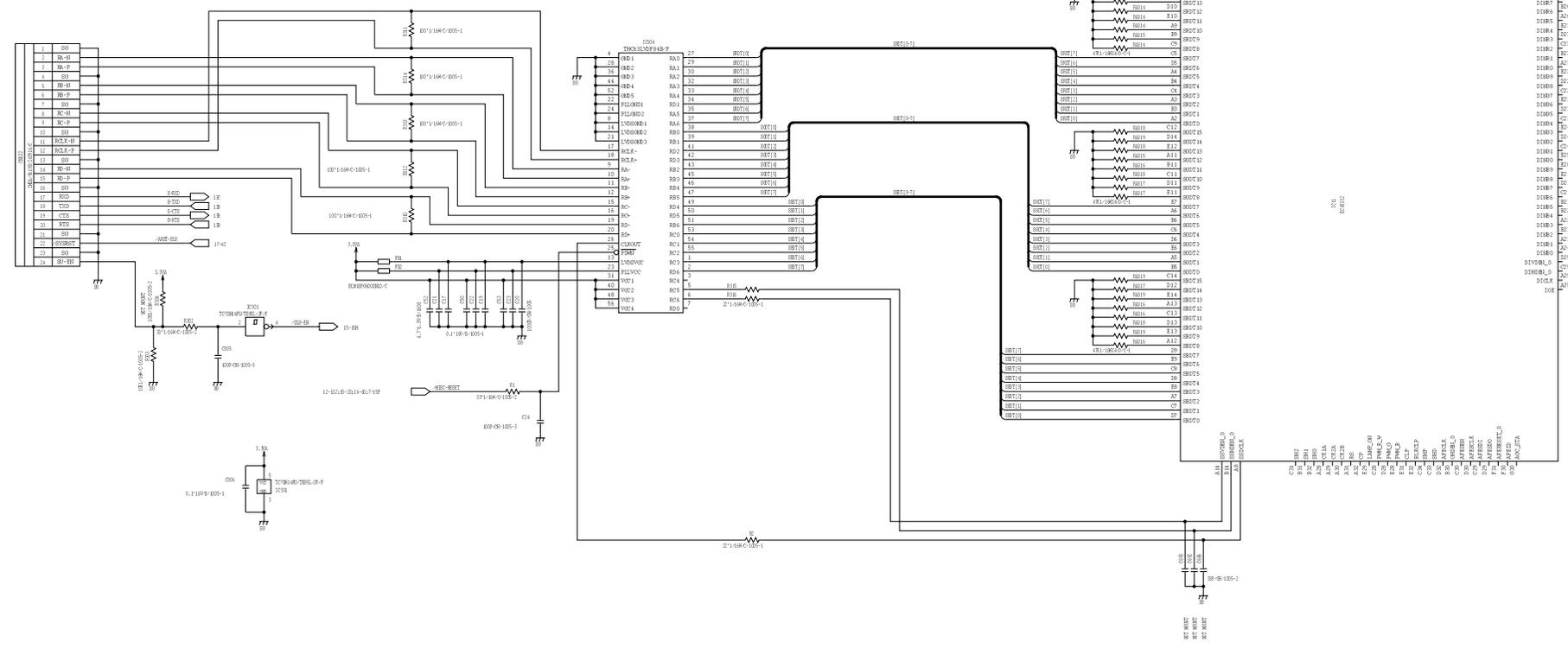


SU Power

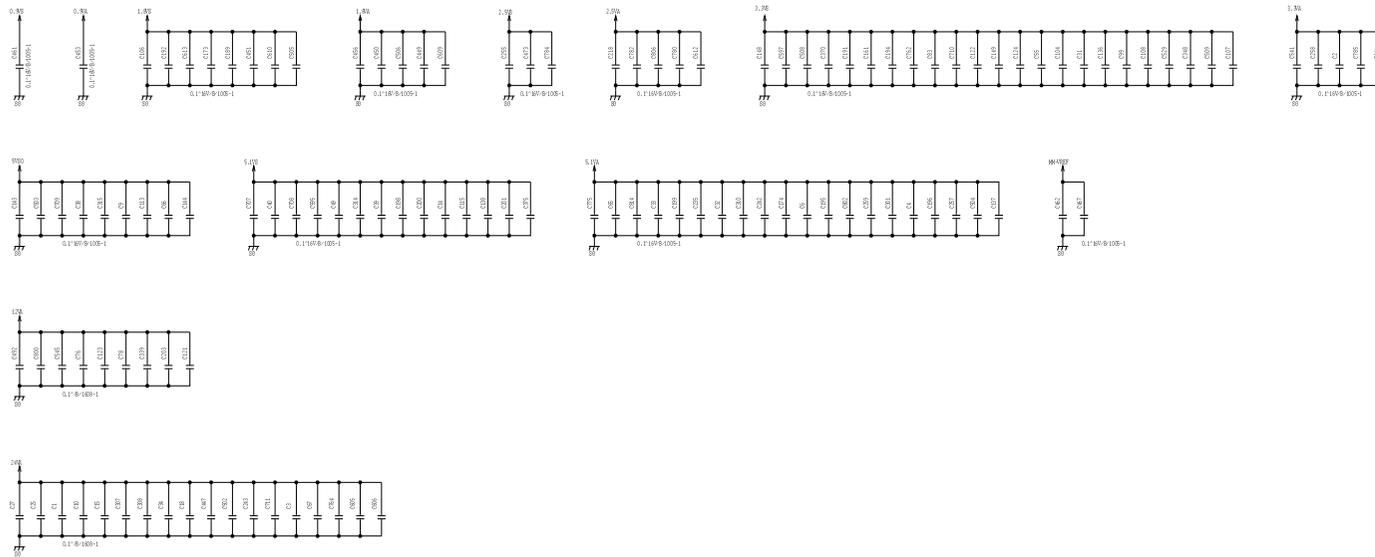


SU Power
 3.20A ±1.0[A] (Peak 1.7[A])
 5VA ±0.9[A] (Peak 2.7[A])
 24VA ±1.0[A] (Peak 1.7[A])

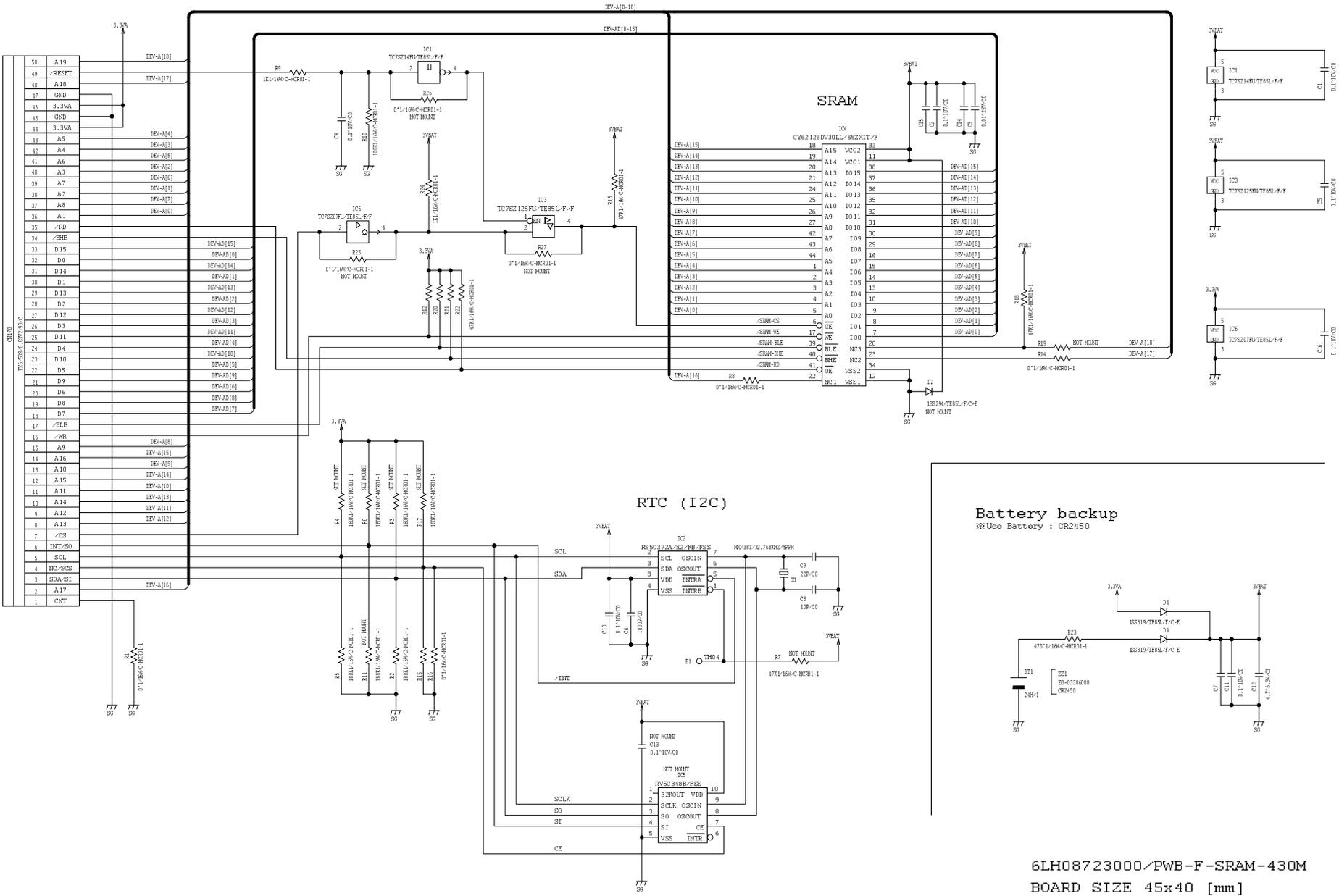
SU I/F



Capacitors (For Reducing The Power Plane Resonance)

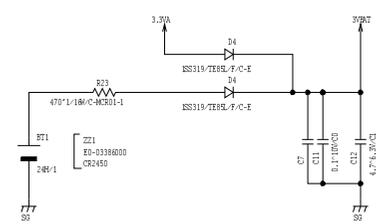


BASE-PCB-I/F



Battery backup

※Use Battery : CR2450



6LH08723000/PWB-F-SRAM-430M
BOARD SIZE 45x40 [mm]

SRAM 1/1

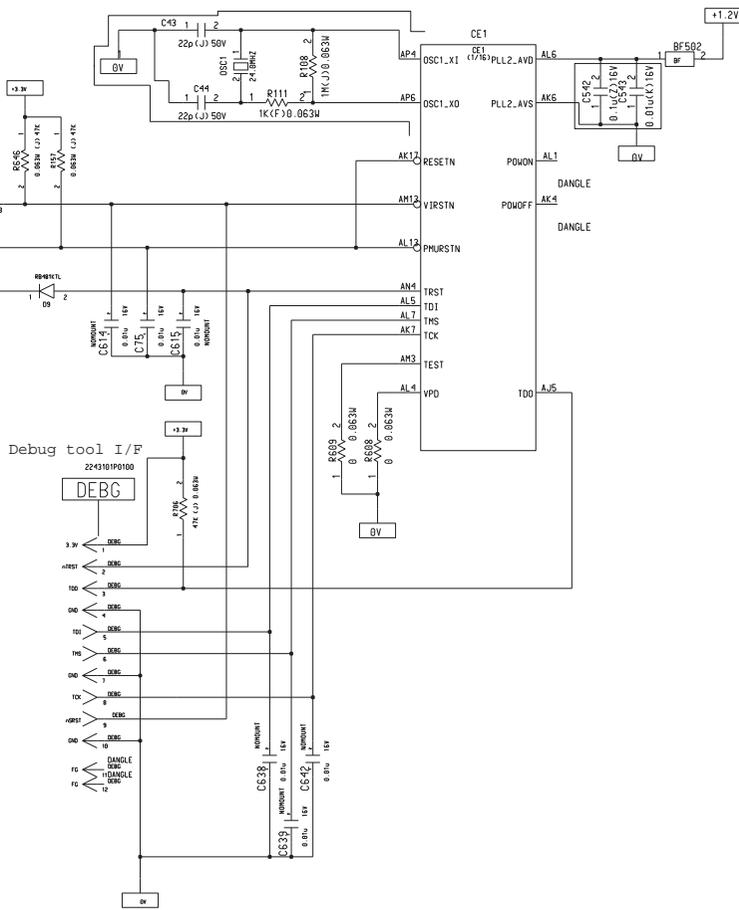
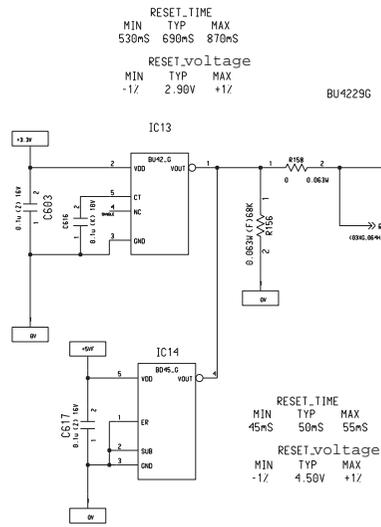
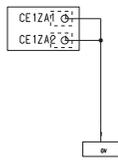
Schematics of Board PU

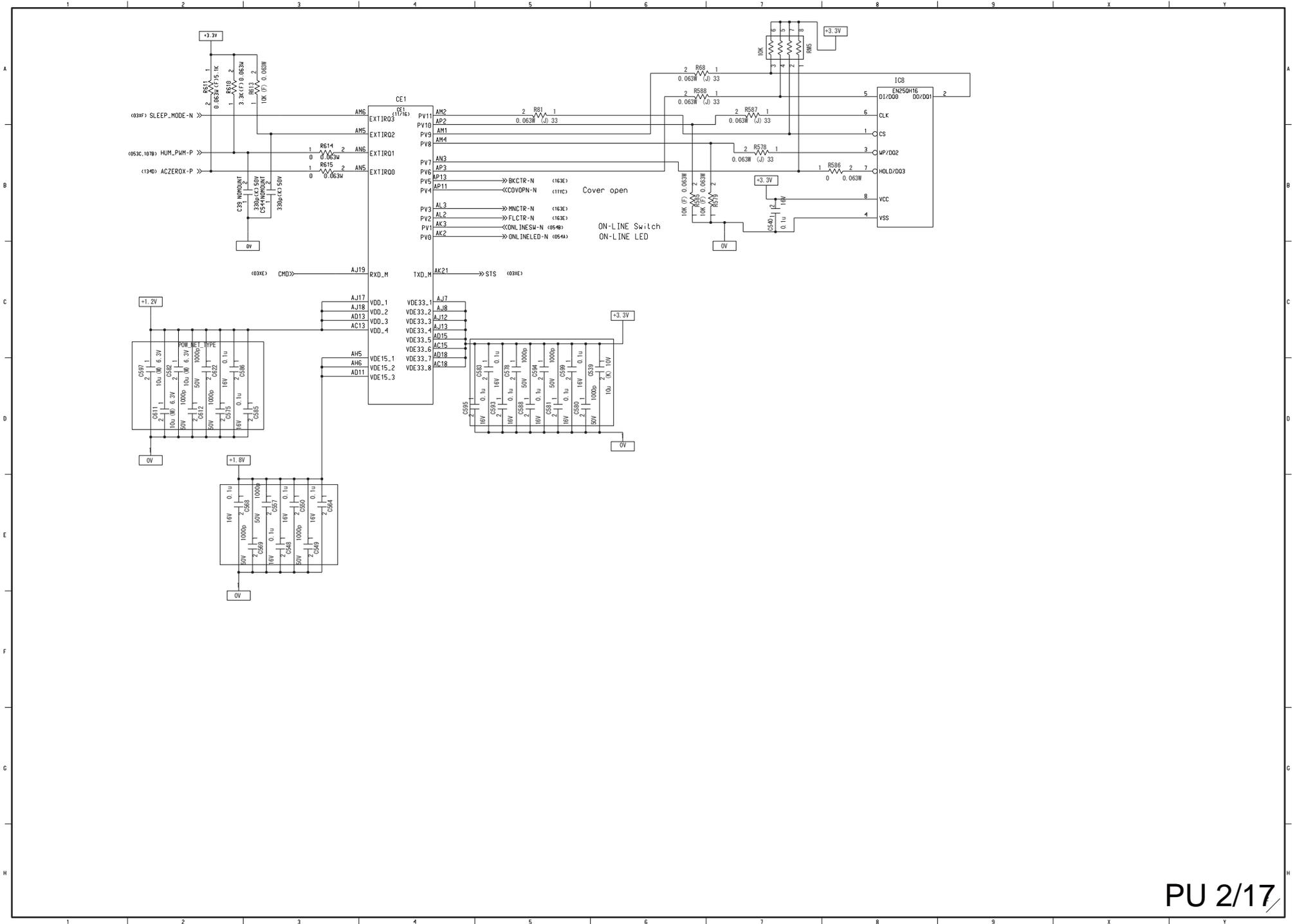
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8	Motor 1/2 Clutch	
9	Motor 2/2	
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13	Power supply connector, 1.2V DCDC, Fusing control	
14	1.8V DCDC, 3.3V DCDC	
15	CE1 Power pin	
16	FX757 extension, FN298 connector	
17	Boot setting	
18		

1 2 3 4 5 6 7 8 9 X Y

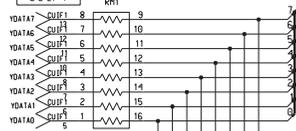
A B C D E F G H



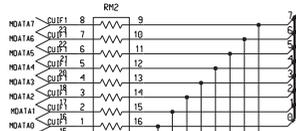


R97494011-FCT

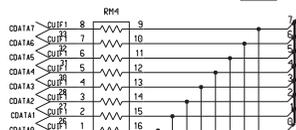
CUIF1



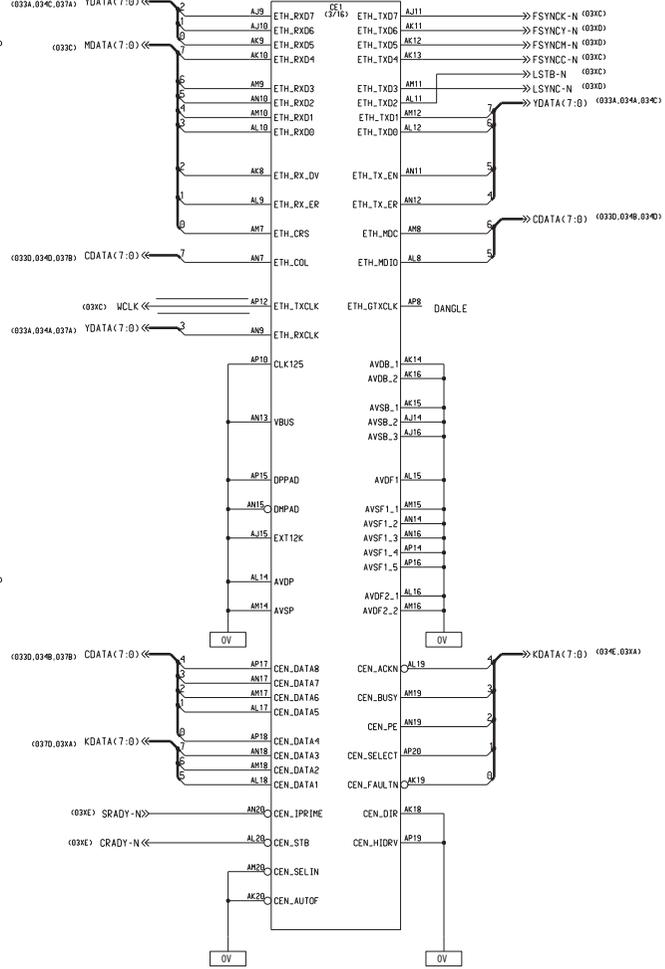
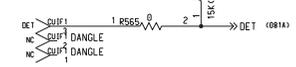
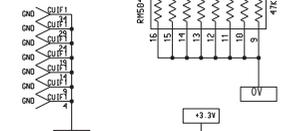
YDATA(7:0) (0344,034C,0374)



MDATA(7:0) (0344)

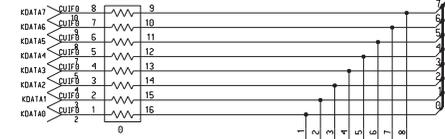


CDATA(7:0) (034B,034D,037B)

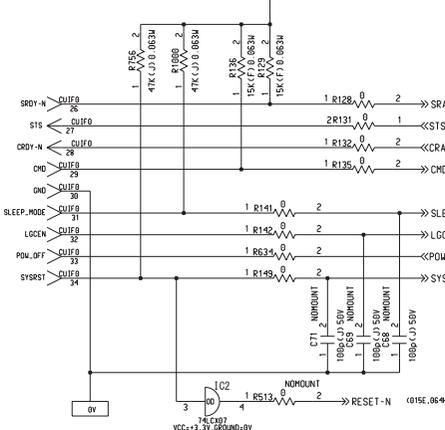
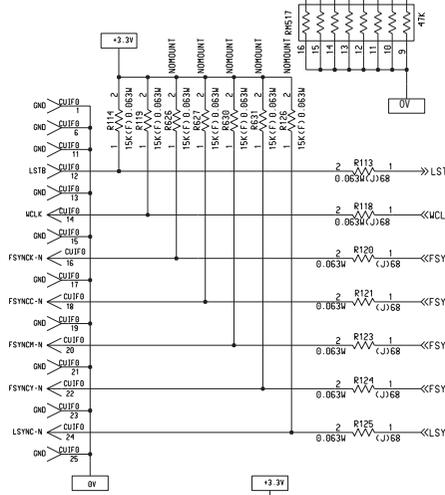


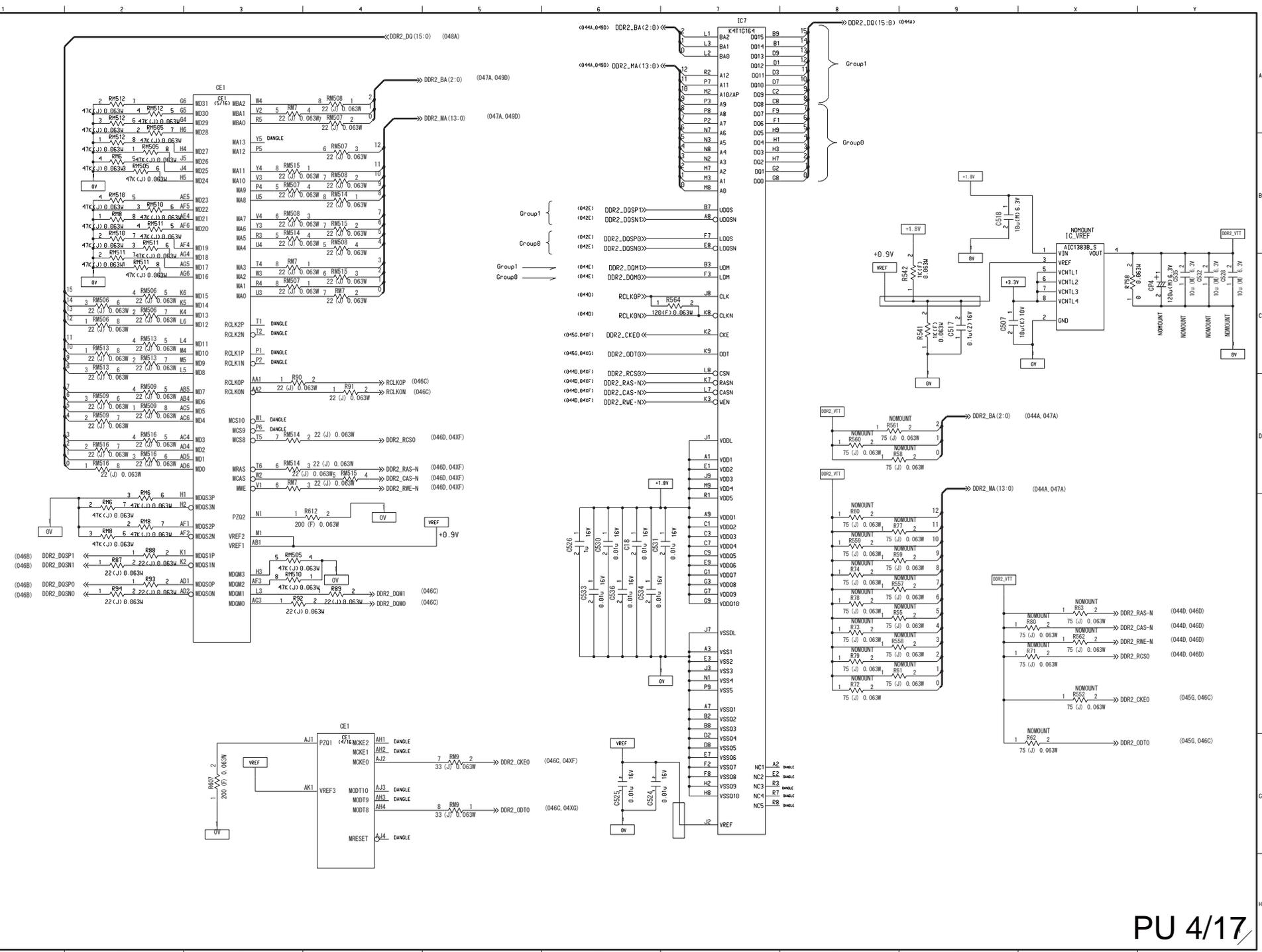
R97494011-FCT

CUIF0

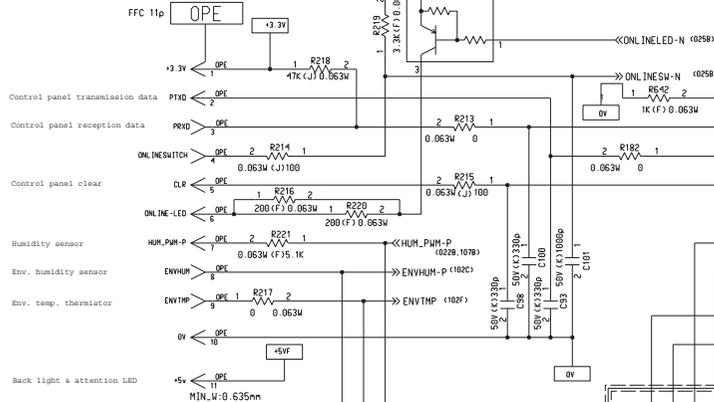


KDATA(7:0) (034E,037D)

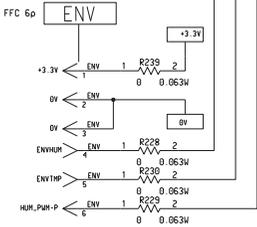




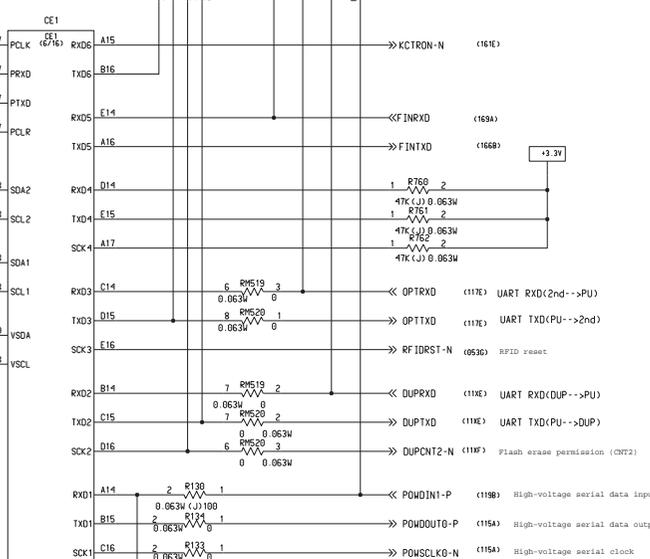
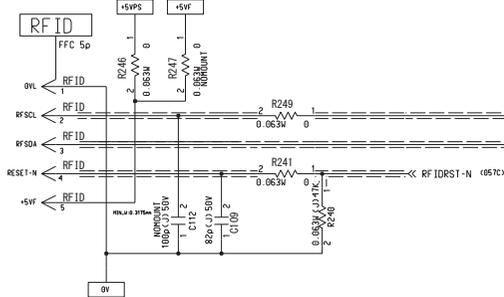
2243105P01101-FCT
Control panel I/F

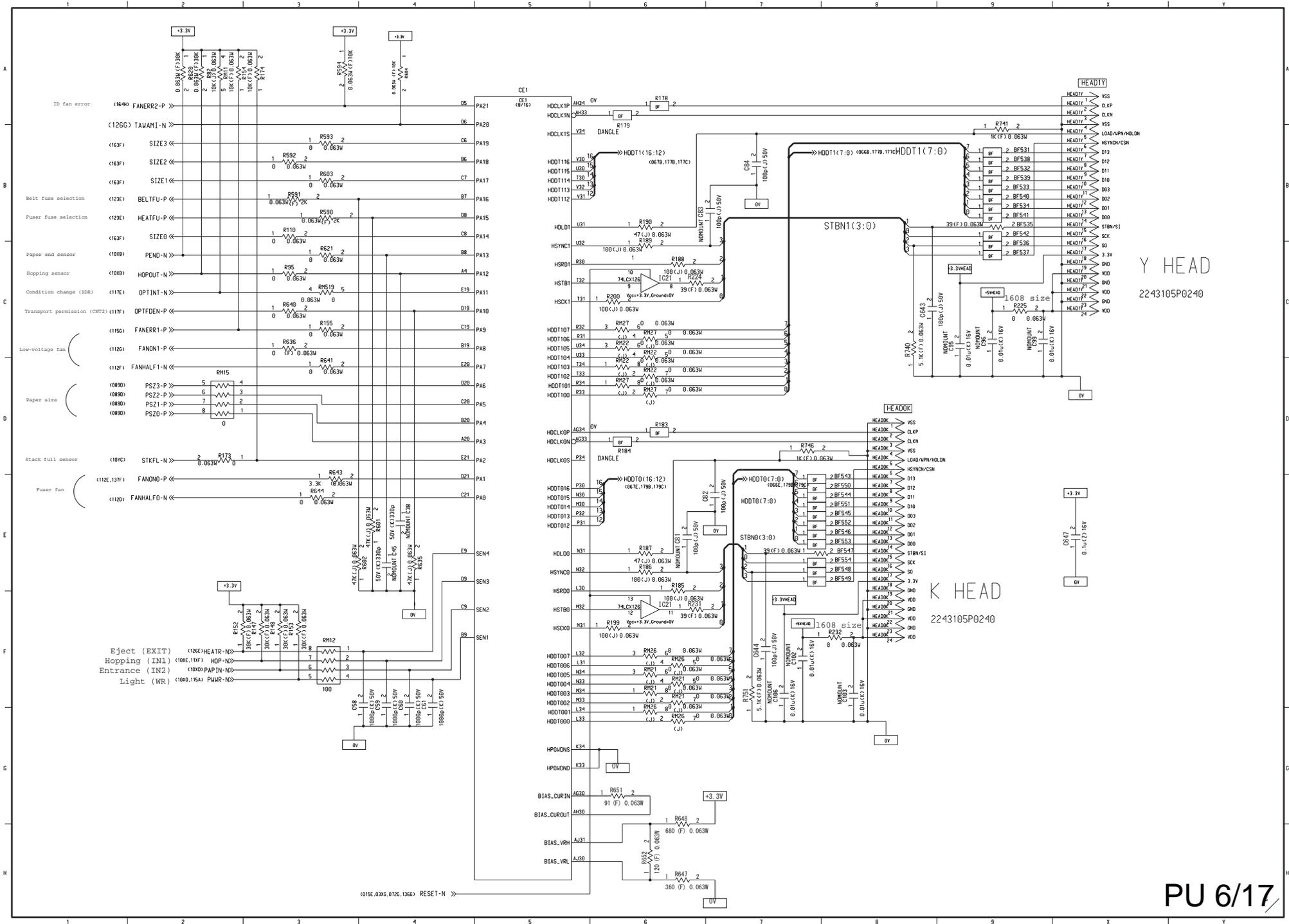


2243105P00601-FCT
Env. sensor



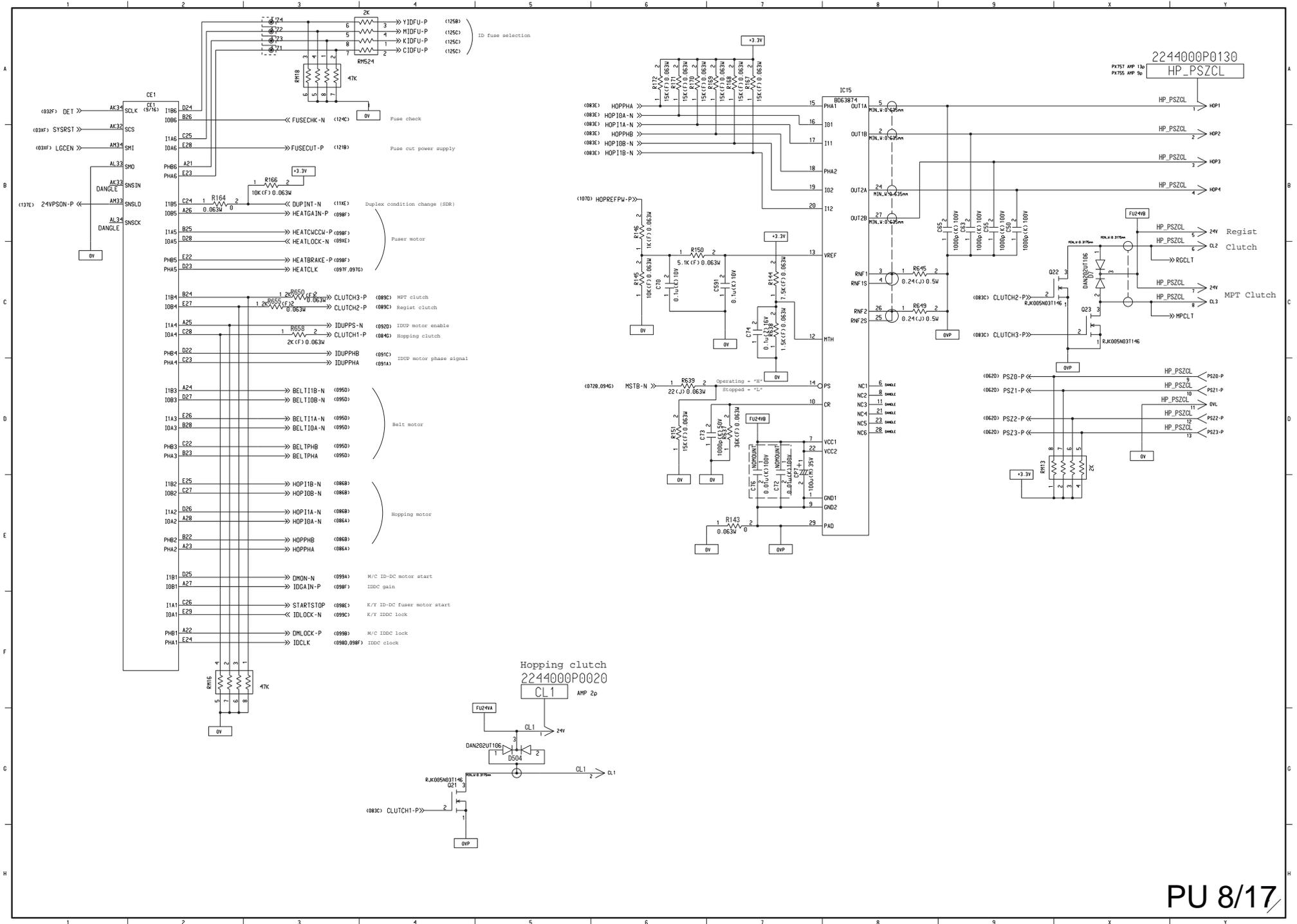
2243105P00501-FCT

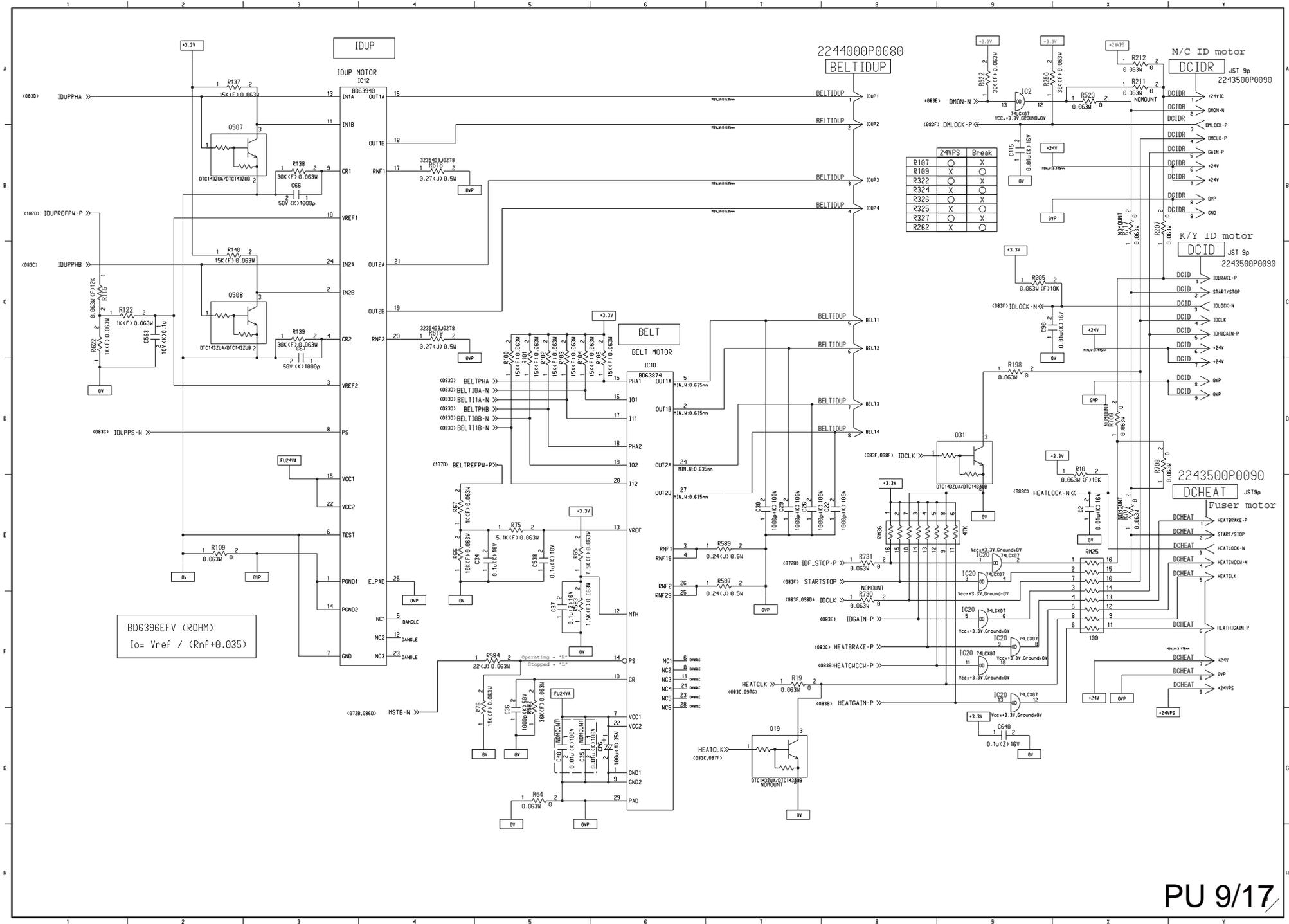




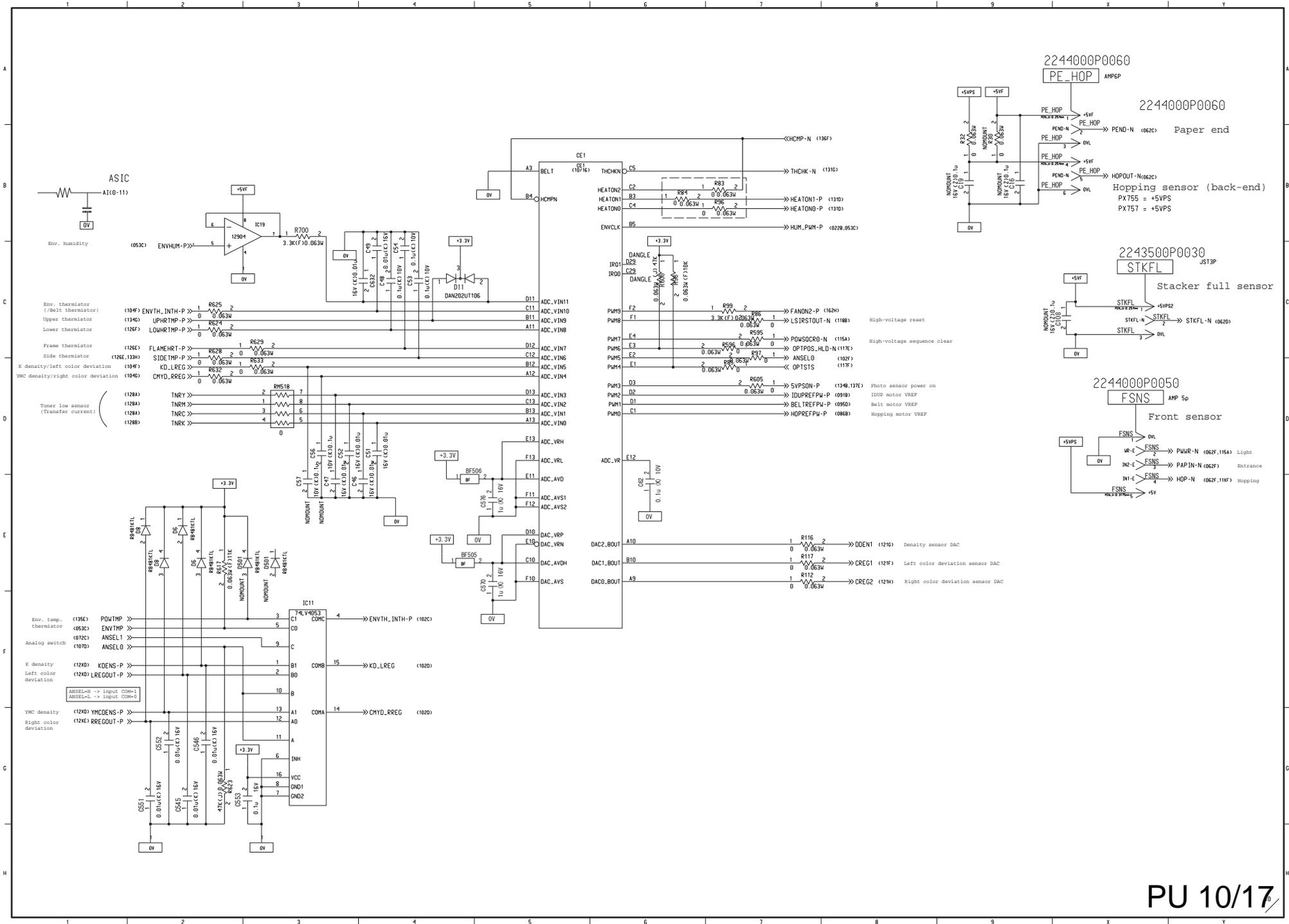
Y HEAD
2243105P0240

K HEAD
2243105P0240

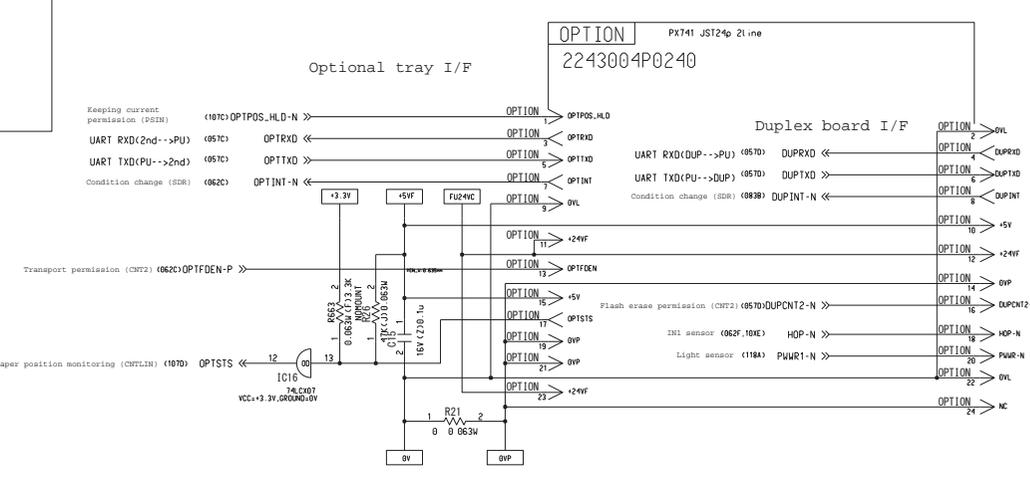
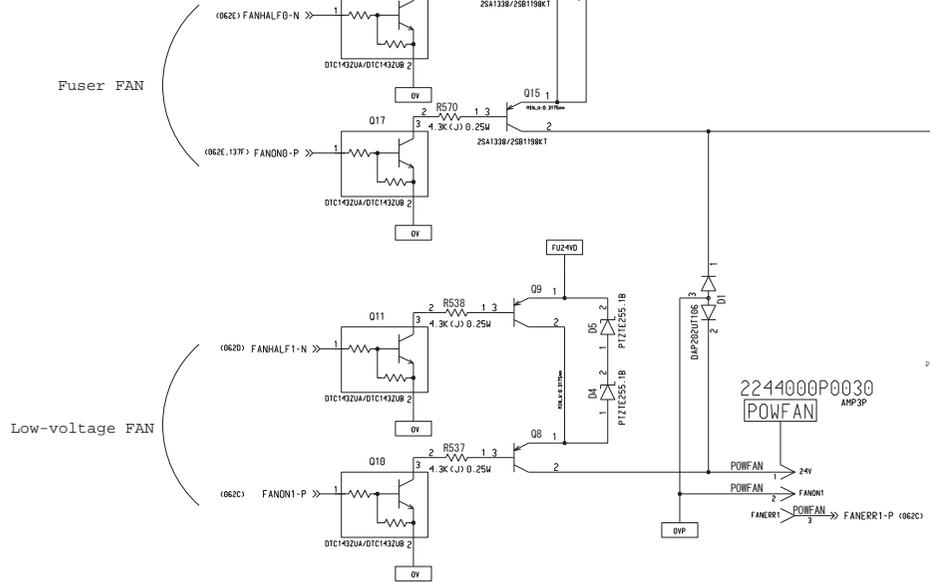
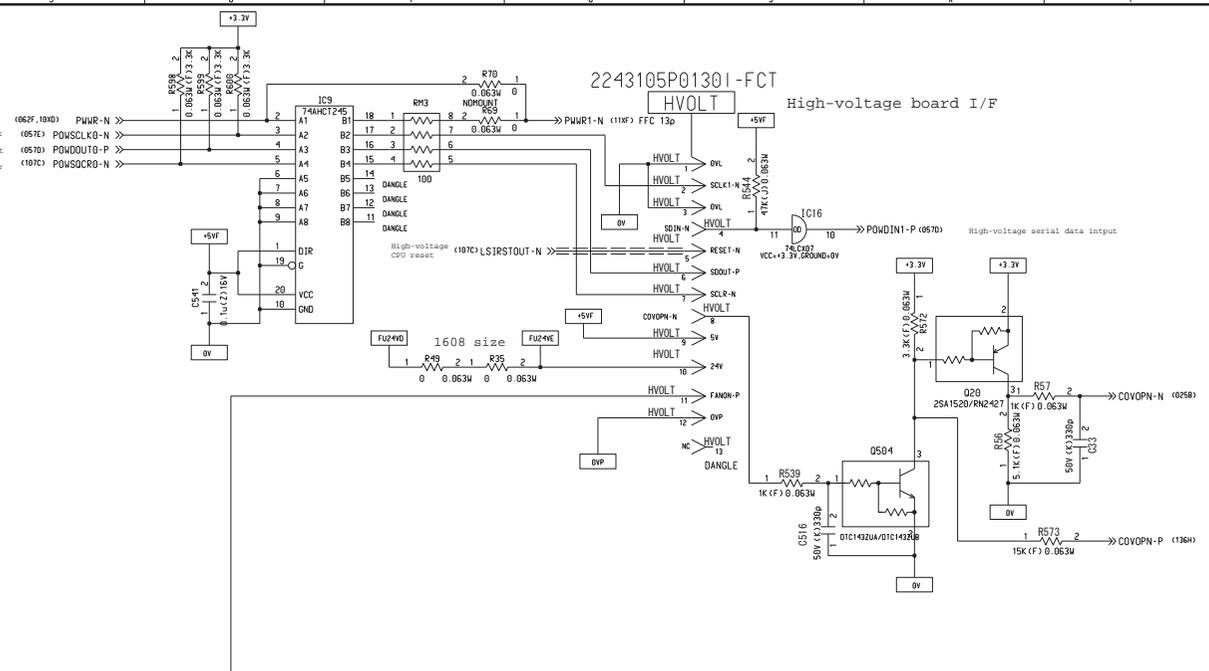


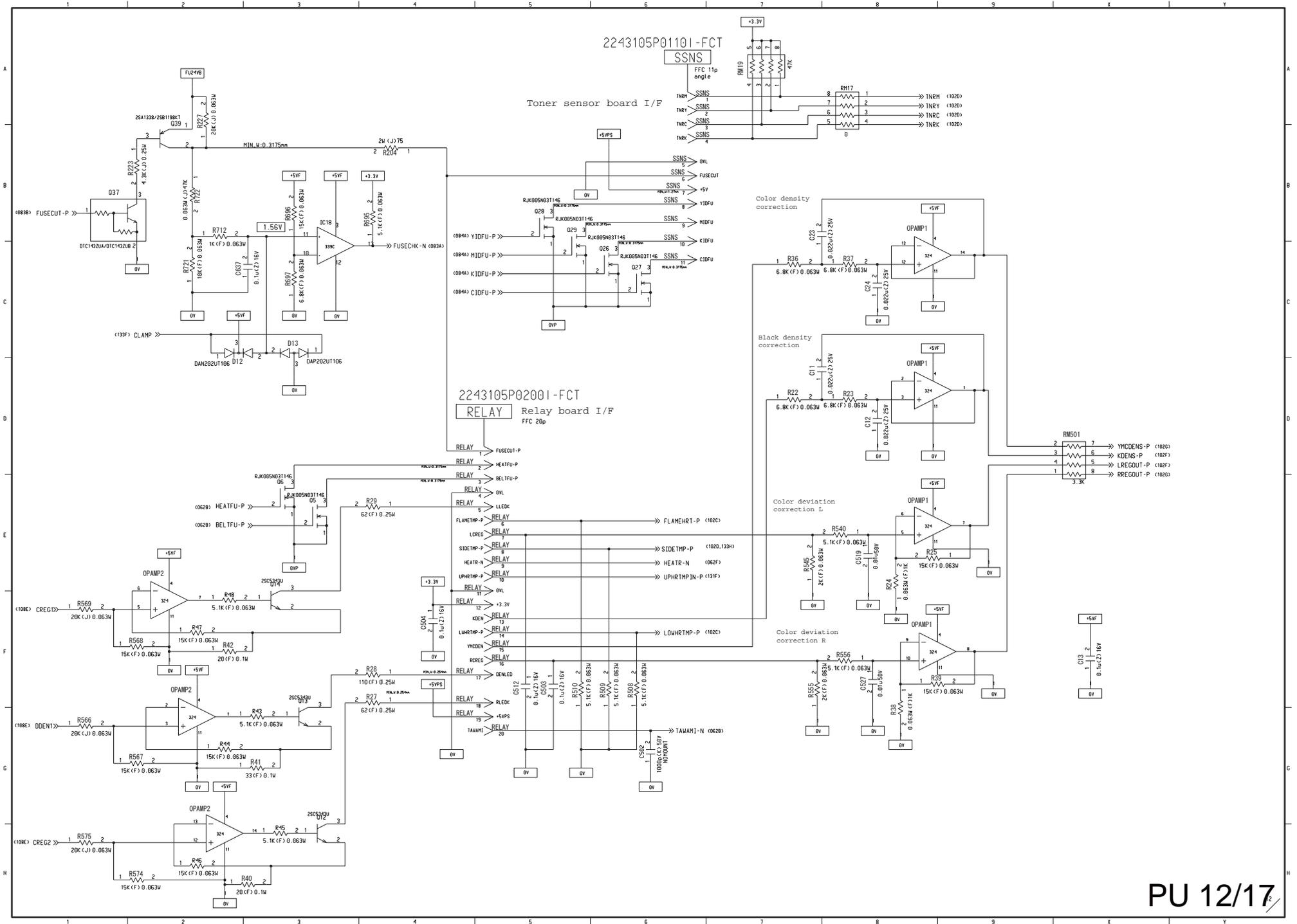


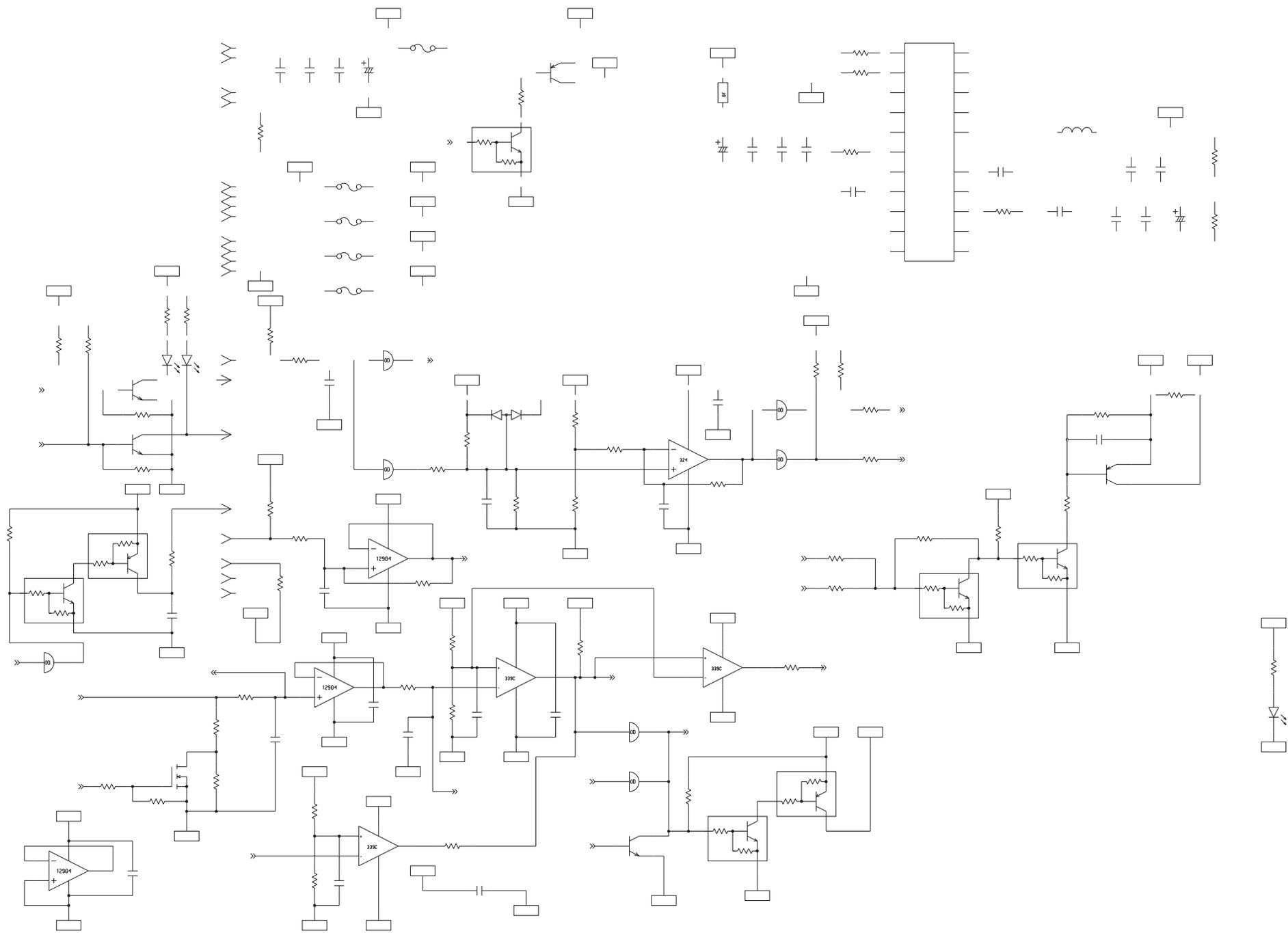
BD6396FV (ROHM)
 $I_o = V_{ref} / (R_{nf} + 0.035)$



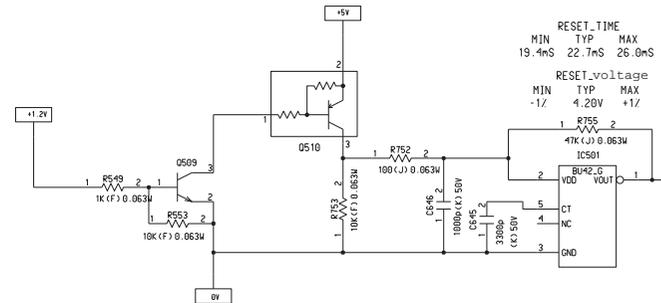
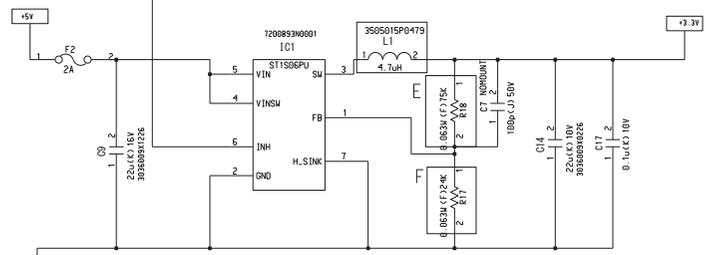
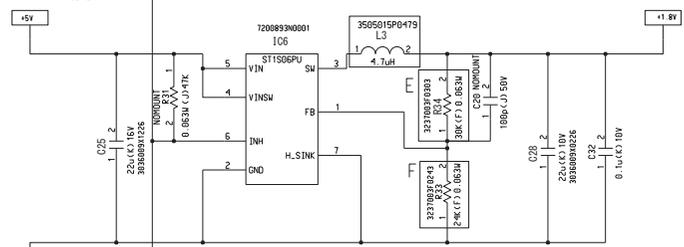
High-voltage serial clock
 High-voltage serial data output
 High-voltage sequence clear





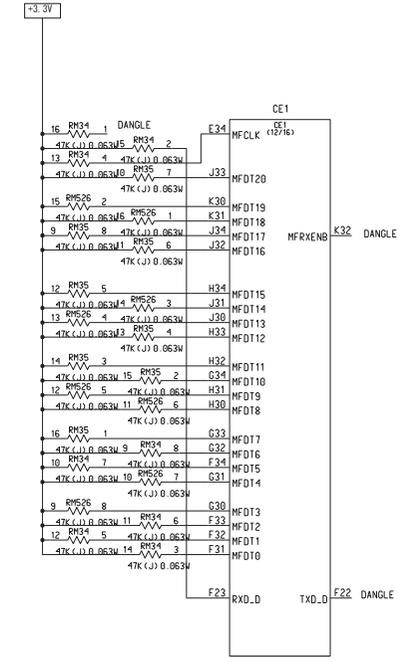
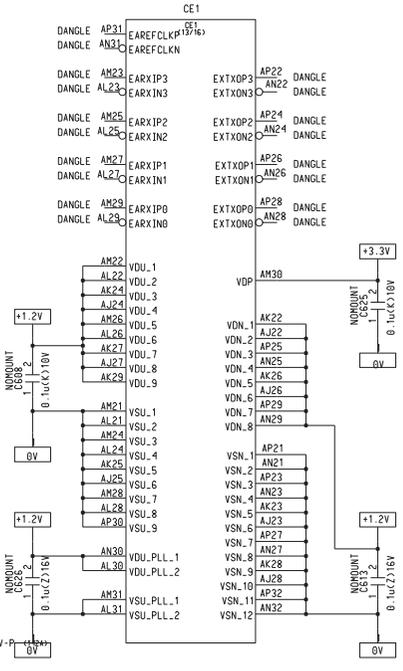


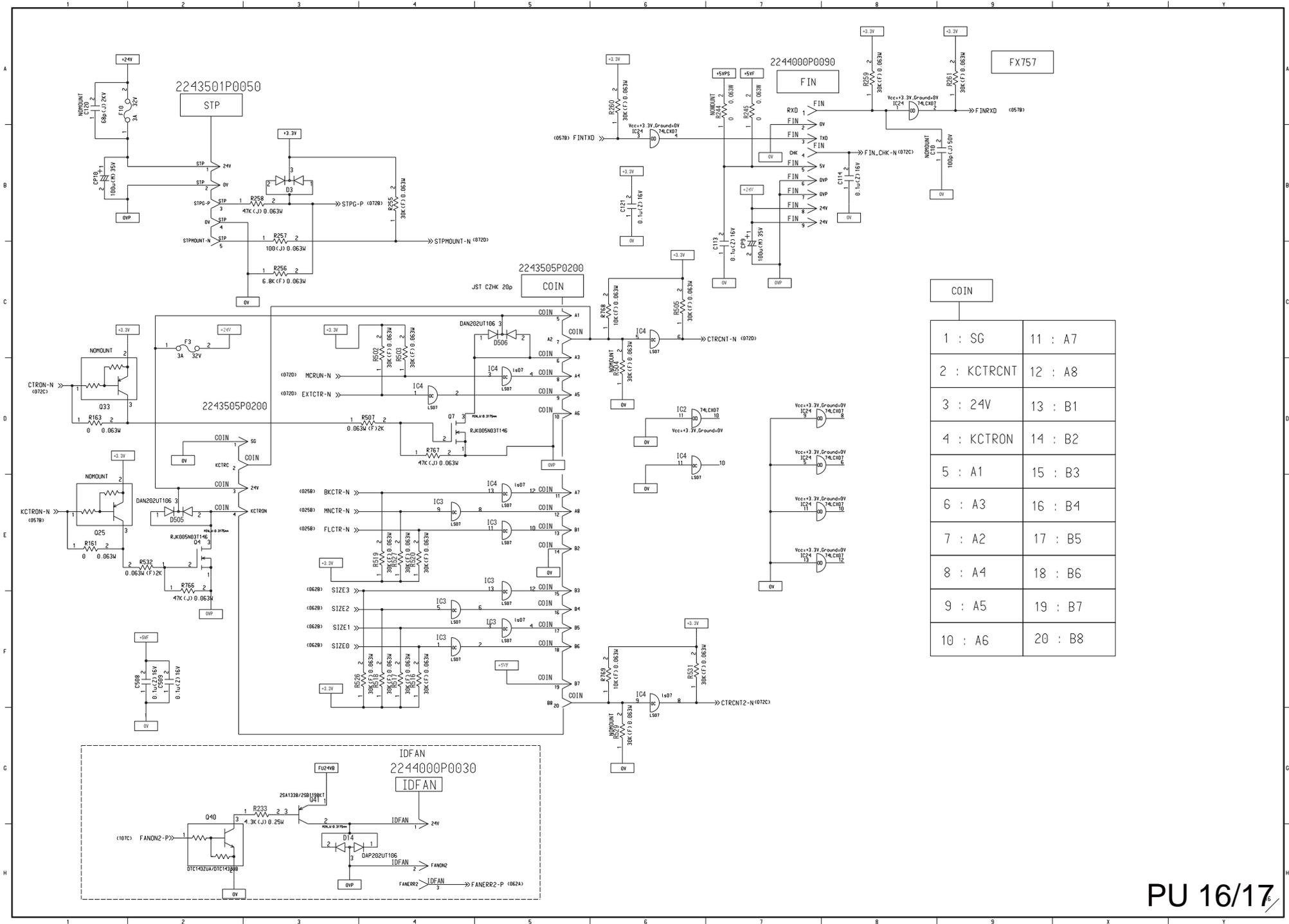
$$VO = 0.8 * (1 + E/F)$$



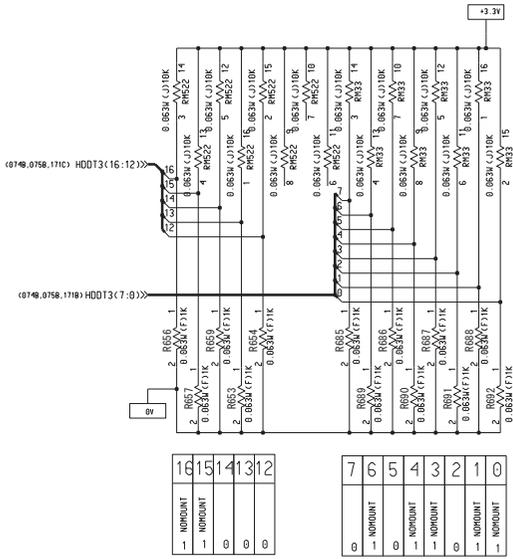
RESET TIME		
MIN	TYP	MAX
19.4ms	22.7ms	26.0ms

RESET voltage		
MIN	TYP	MAX
-1V	4.20V	+1V





1 : SG	11 : A7
2 : KCTRCNT	12 : A8
3 : 24V	13 : B1
4 : KCTRON	14 : B2
5 : A1	15 : B3
6 : A3	16 : B4
7 : A2	17 : B5
8 : A4	18 : B6
9 : A5	19 : B7
10 : A6	20 : B8



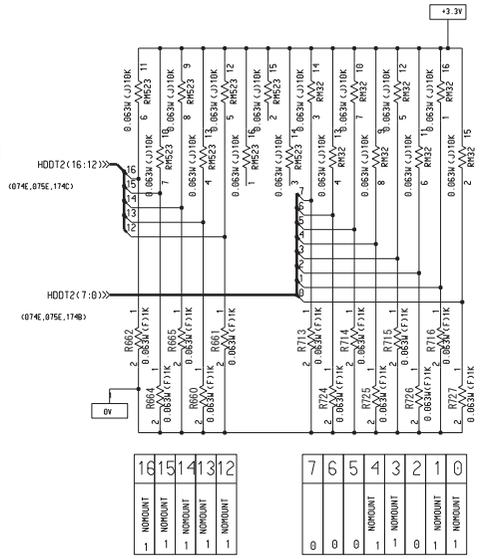
FH setting

PCIe non 1:PCIe out/0:normal
 Clk non 1:clk out/0:normal
 ext armored 1:use/0:inner ARM

user logic test 1:test/0:normal
 ARM boot 1:ARM/0:PCIe
 PIM initial 1:Low/0:Hi-z

FH setting

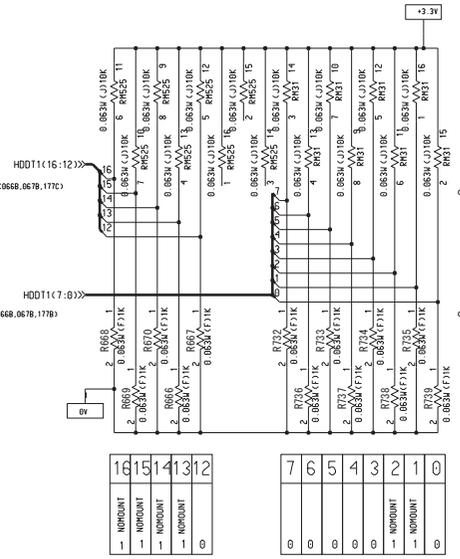
multi use 1:multi/0:mono



FH setting

CE1 mem size:128MByte

PCIe mem get en 1:non/0:get
 PCIe base 1:32bit/0:64bit
 Mem type 1:DDR3/0:DDR2
 DQS 1:different/al/0:single end
 Mem width 1:16bit/0:32bit



FH setting

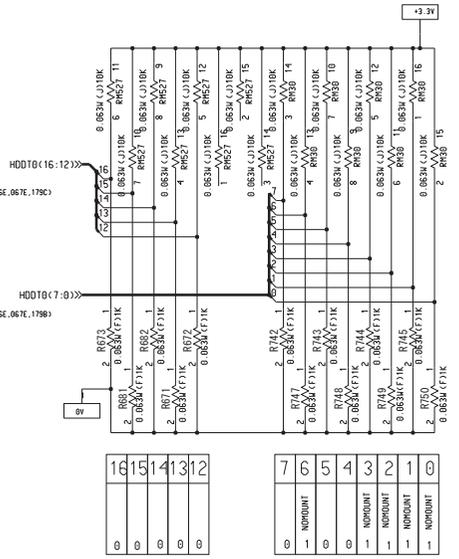
SSCC 1:Active/0:Non
 1:/2048/71024

param_sscc_div:x1

param_sscc_div:x16

SSCC 0:0.5/1:1/2:2/(3/3)

param_pll1_div:x1

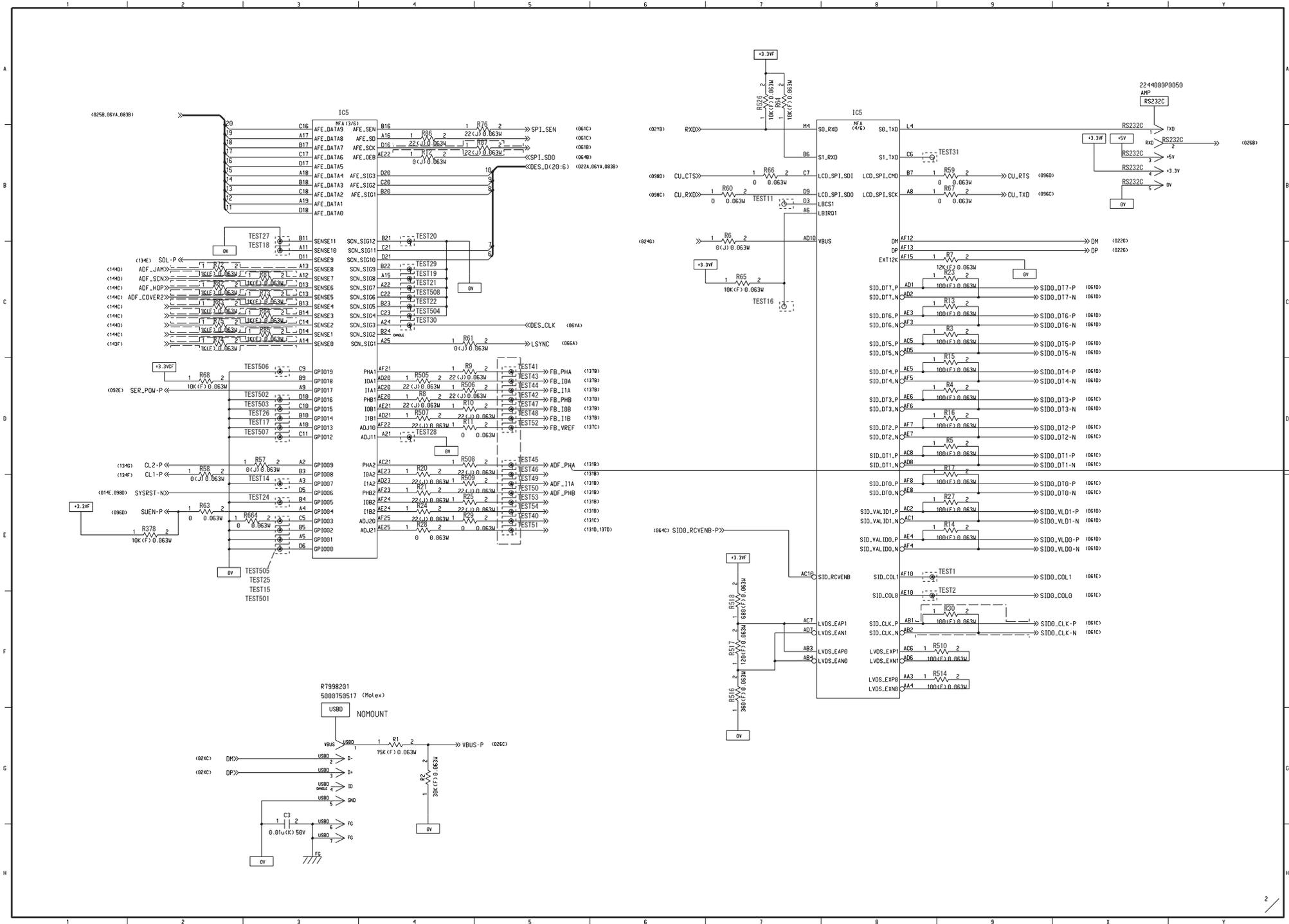


div setting

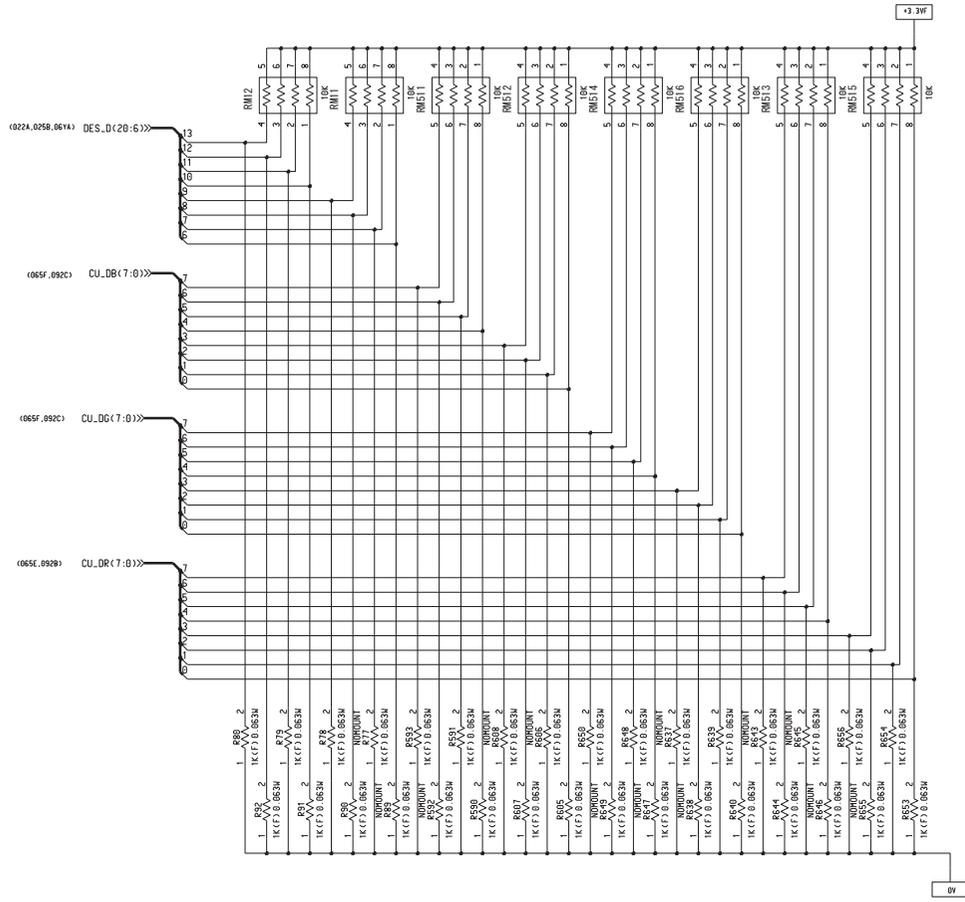
1:user logic sync/0:async

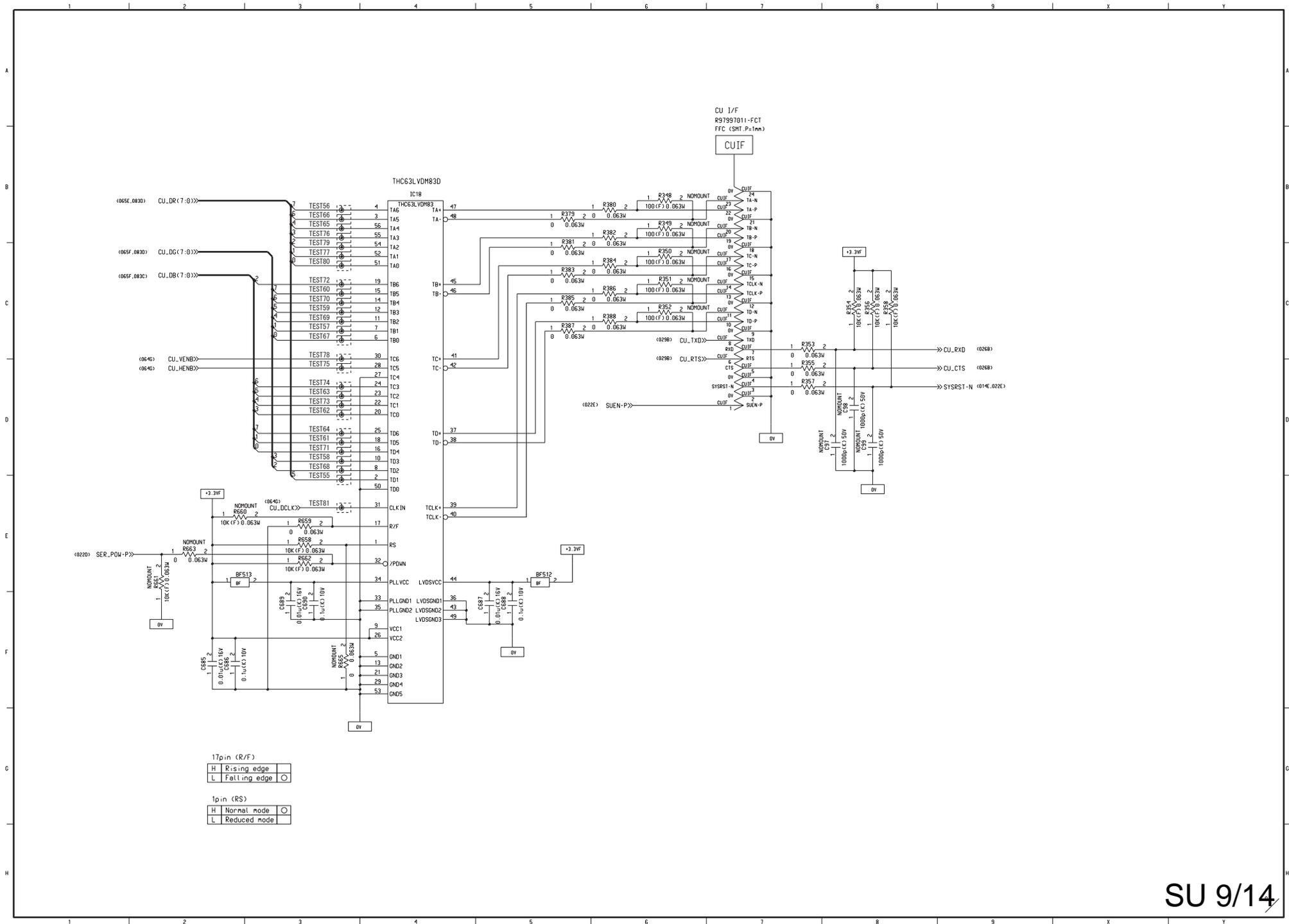
Fvco=33MHz*(param_pll1_mul(14-0)+16)>x2
 Fcvo=33MHz*40=132MHz

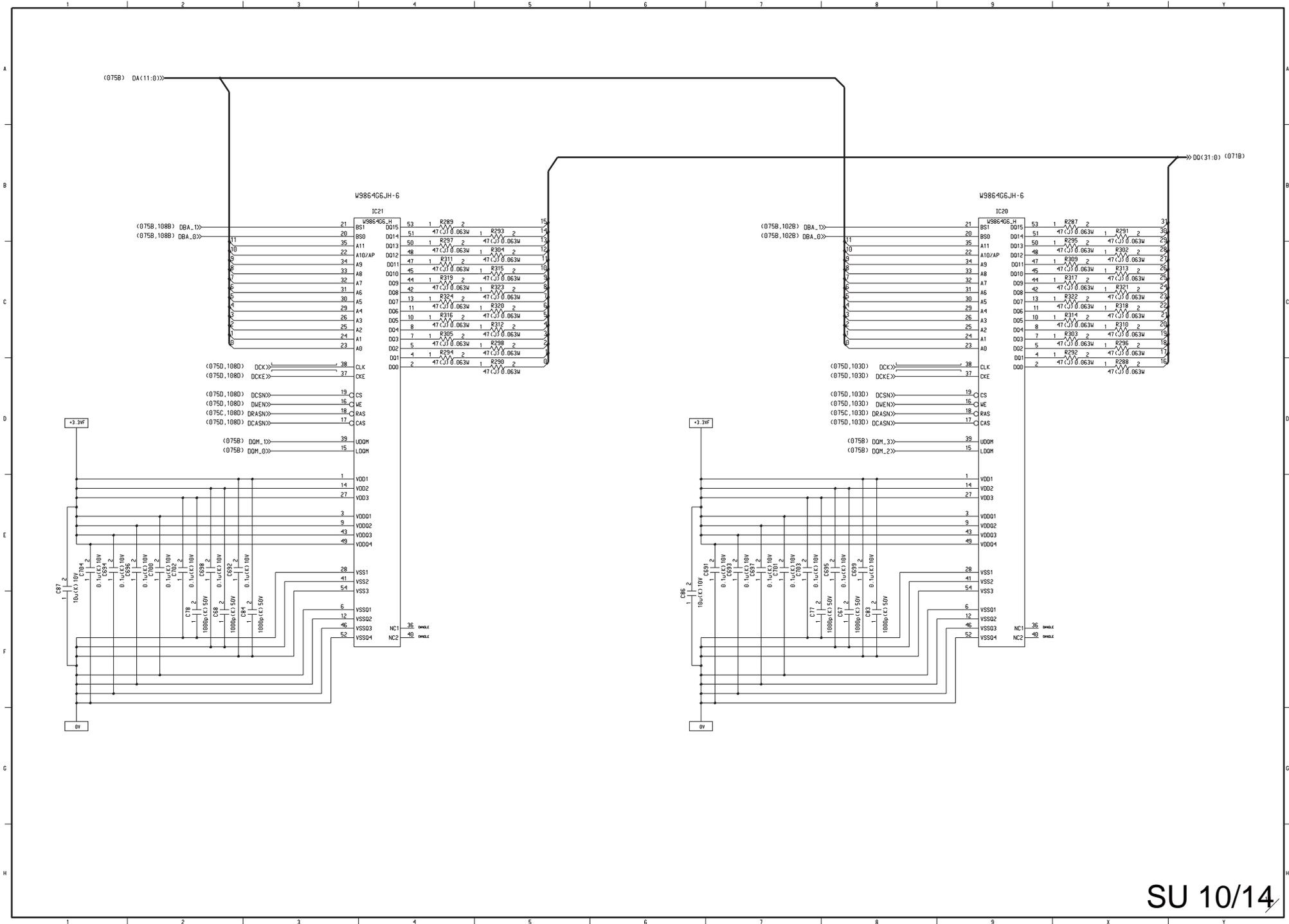
1:0SC2/0:0SC1x1/2
 1:Main chip/0:sub chip
 1:Le:1sus/0:PCIe



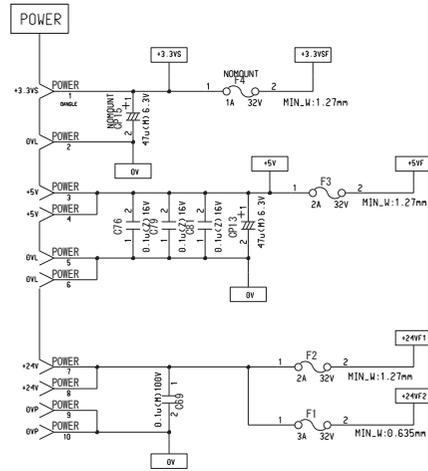
Boot Setting







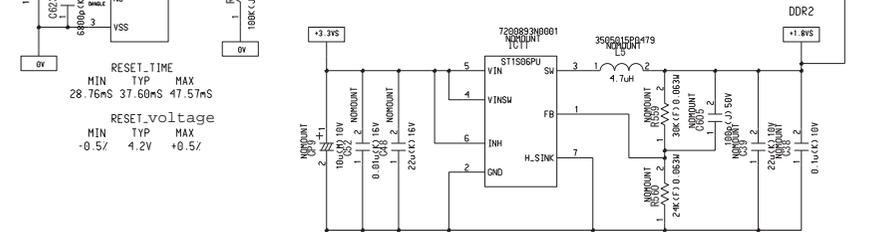
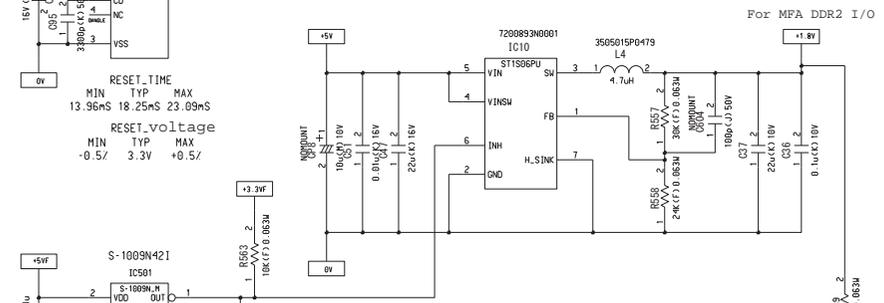
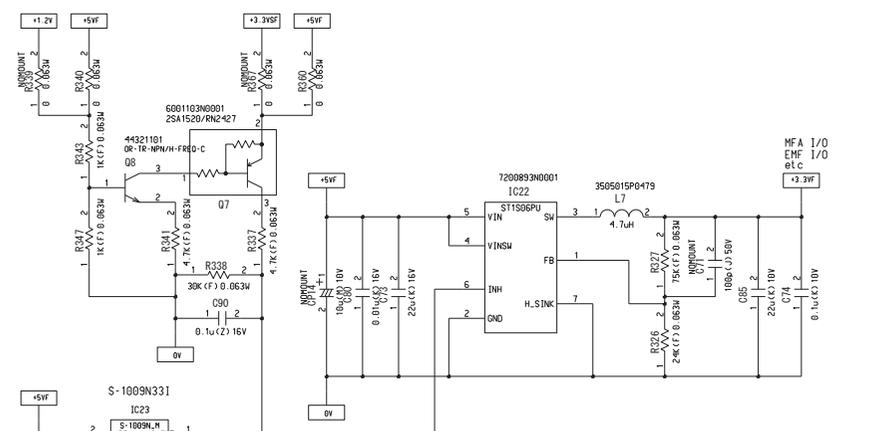
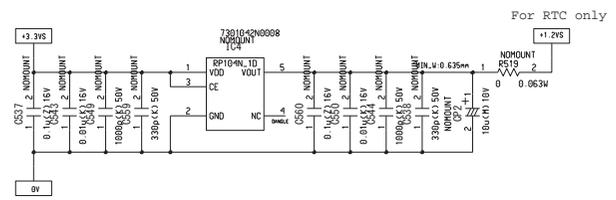
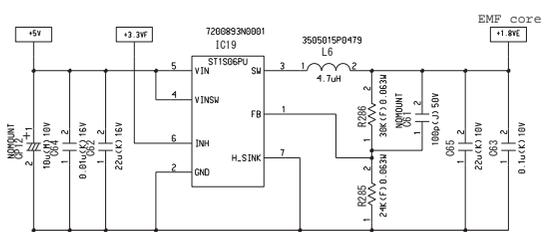
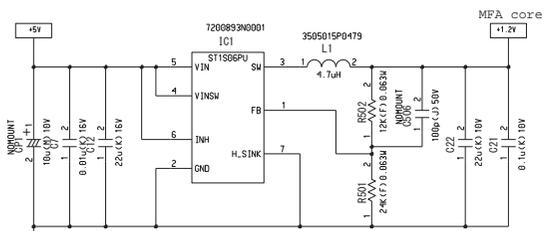
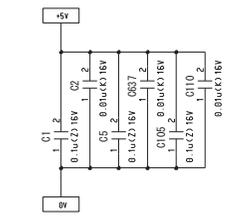
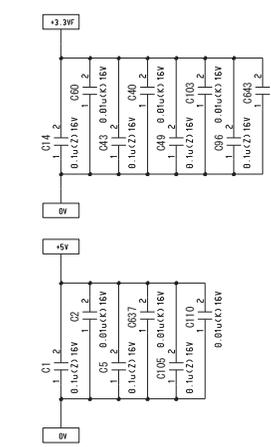
2243804P0160

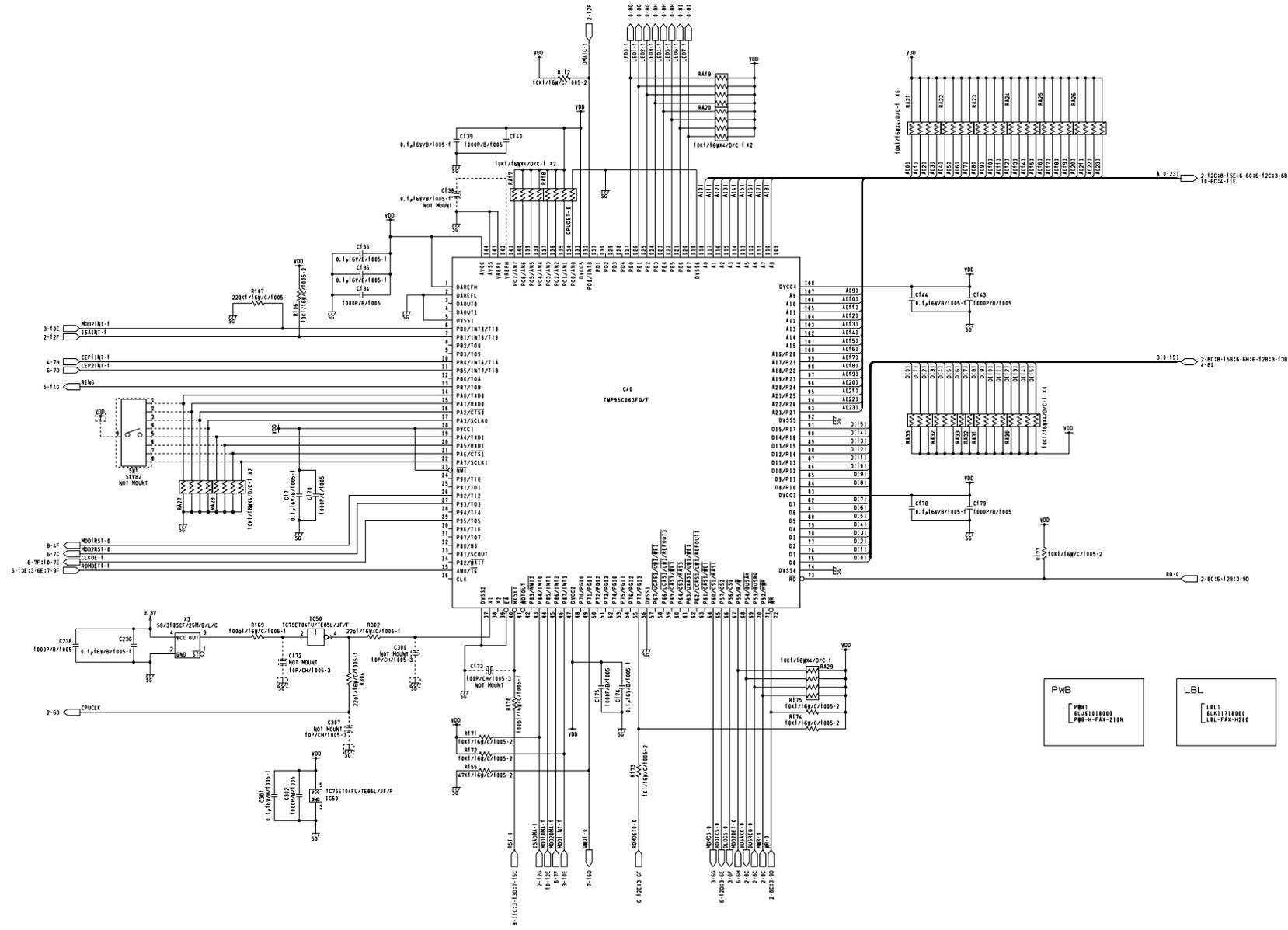


F1	+3.3V	MFA, RST-IC
F2	+5V	RST-IC, +3.3V_OCDC(sensor, MFA, etc)
F3	+24V1	FB motor, clutch, solenoid
F4	+24V2	ADF motor

$V_0 = 0.8 * (1 + R1/R2)$

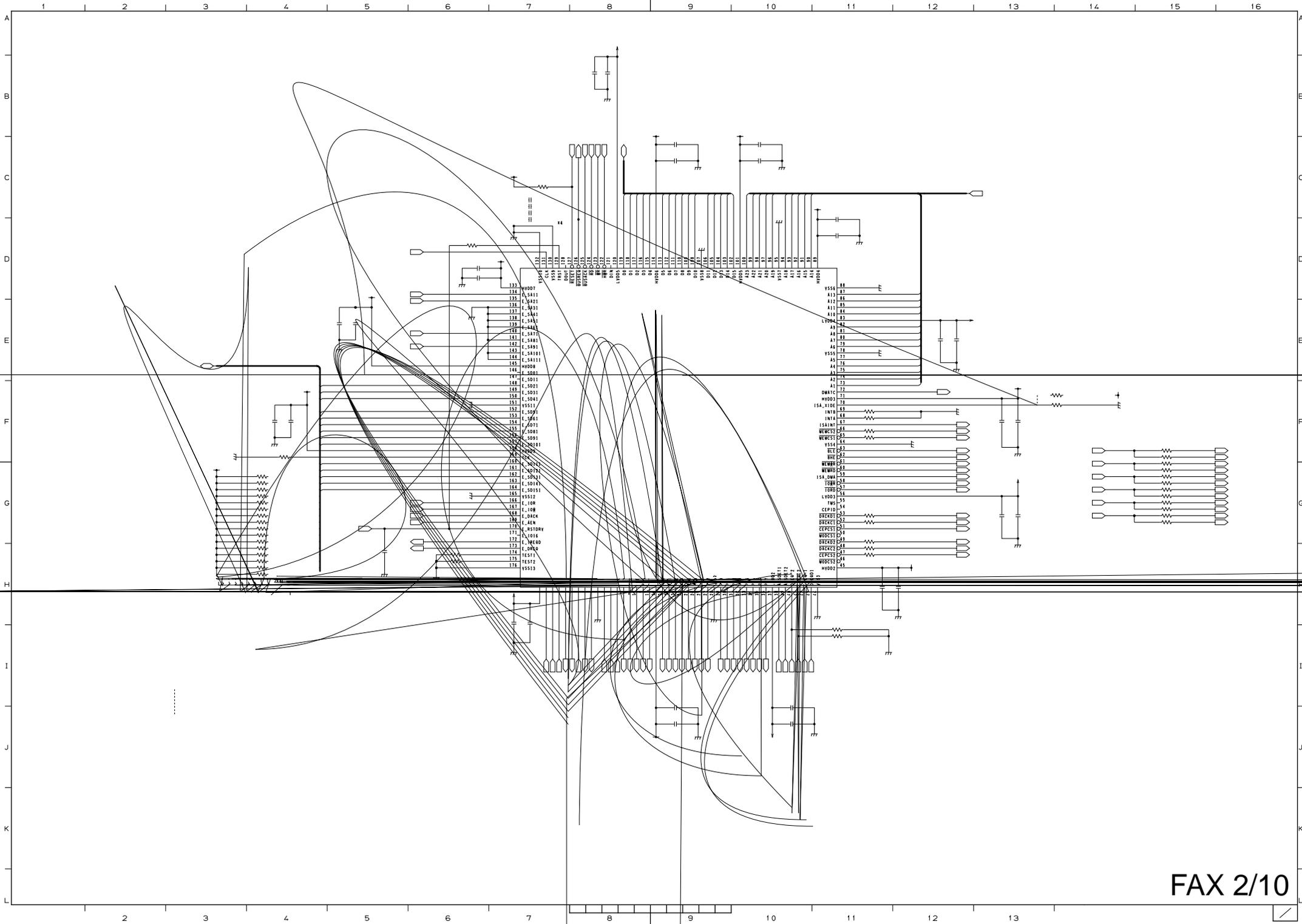
R1	1.2V	1.8V	3.3V
R2	12k	30k	75k
	24k	24k	24k

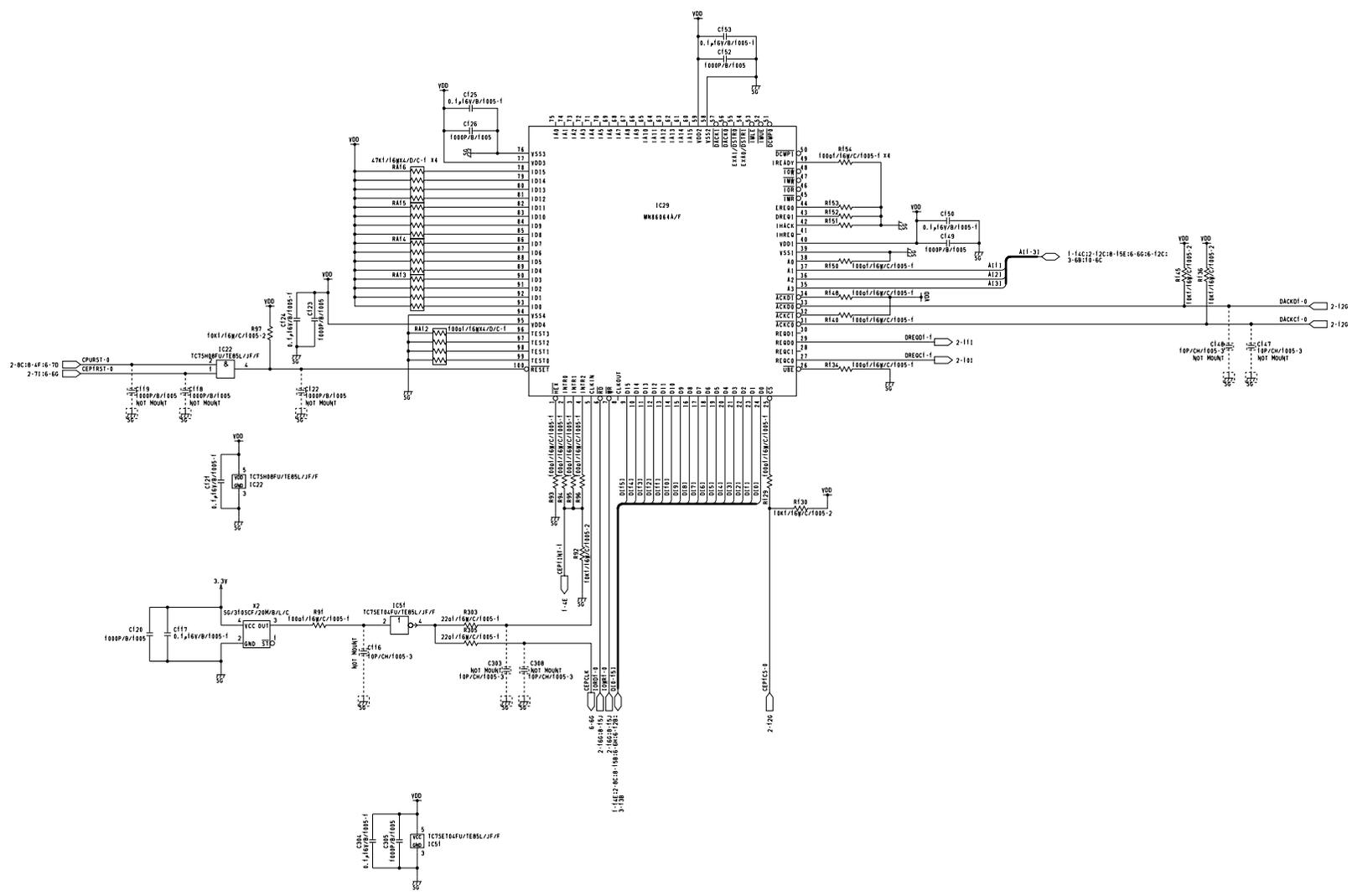


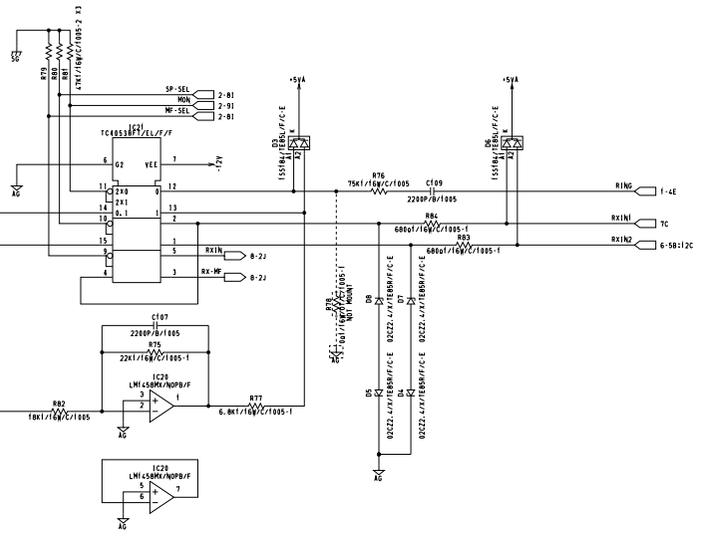
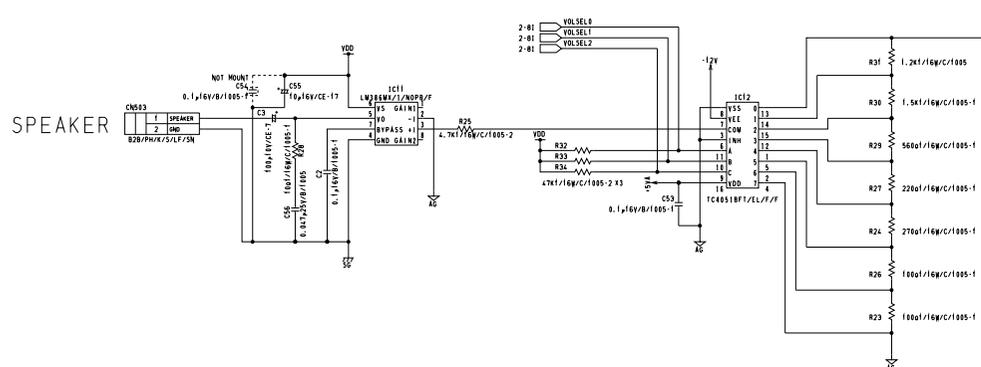
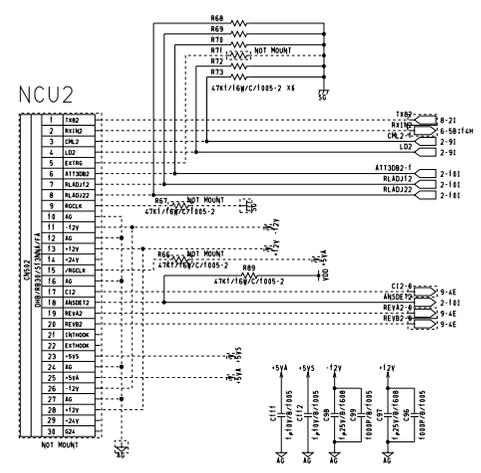
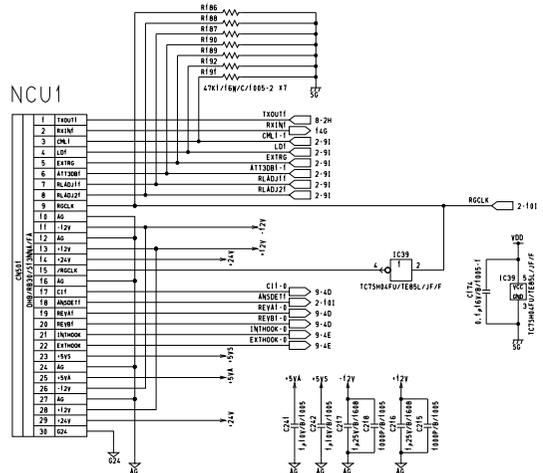


PWB
 PWB1
 G101101000
 PWB-X-FAX-210N

LBL
 LBL1
 G101101000
 LBL-FAX-210N

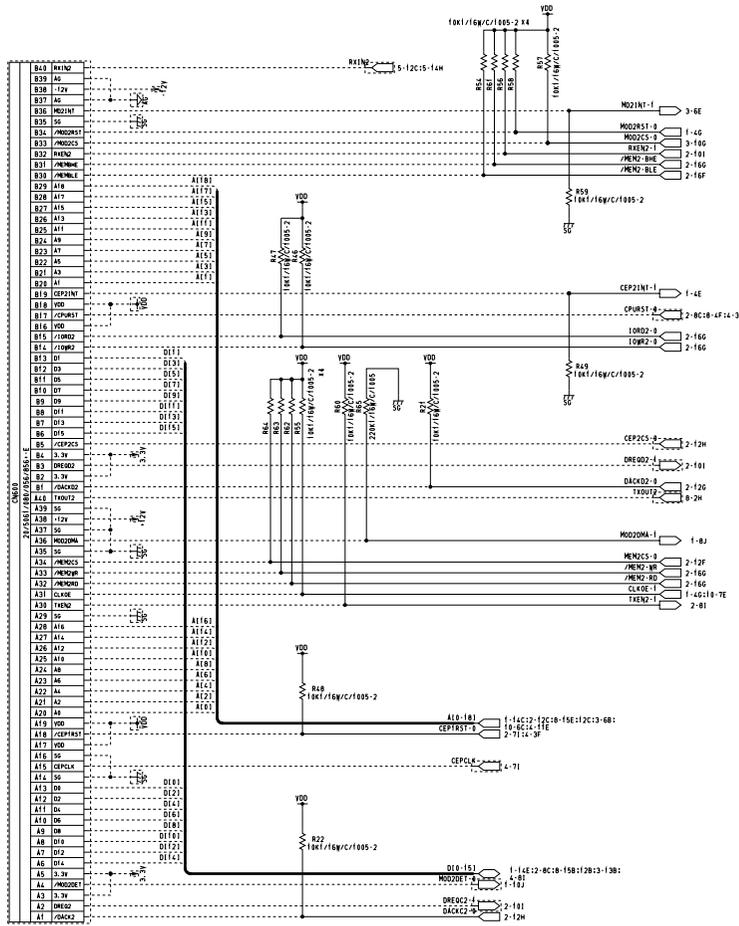




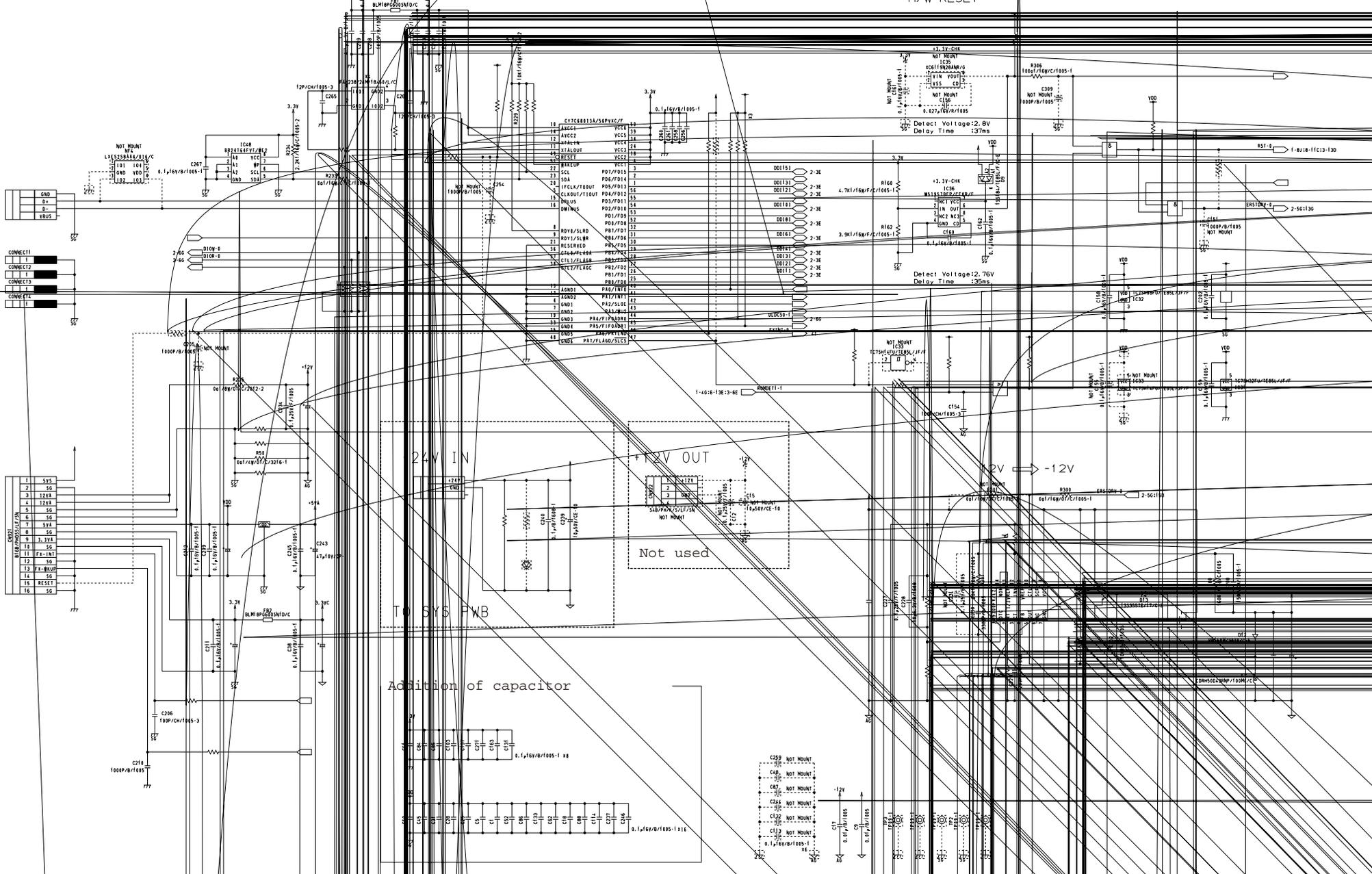


MODEM I/F

DOWN LOAD

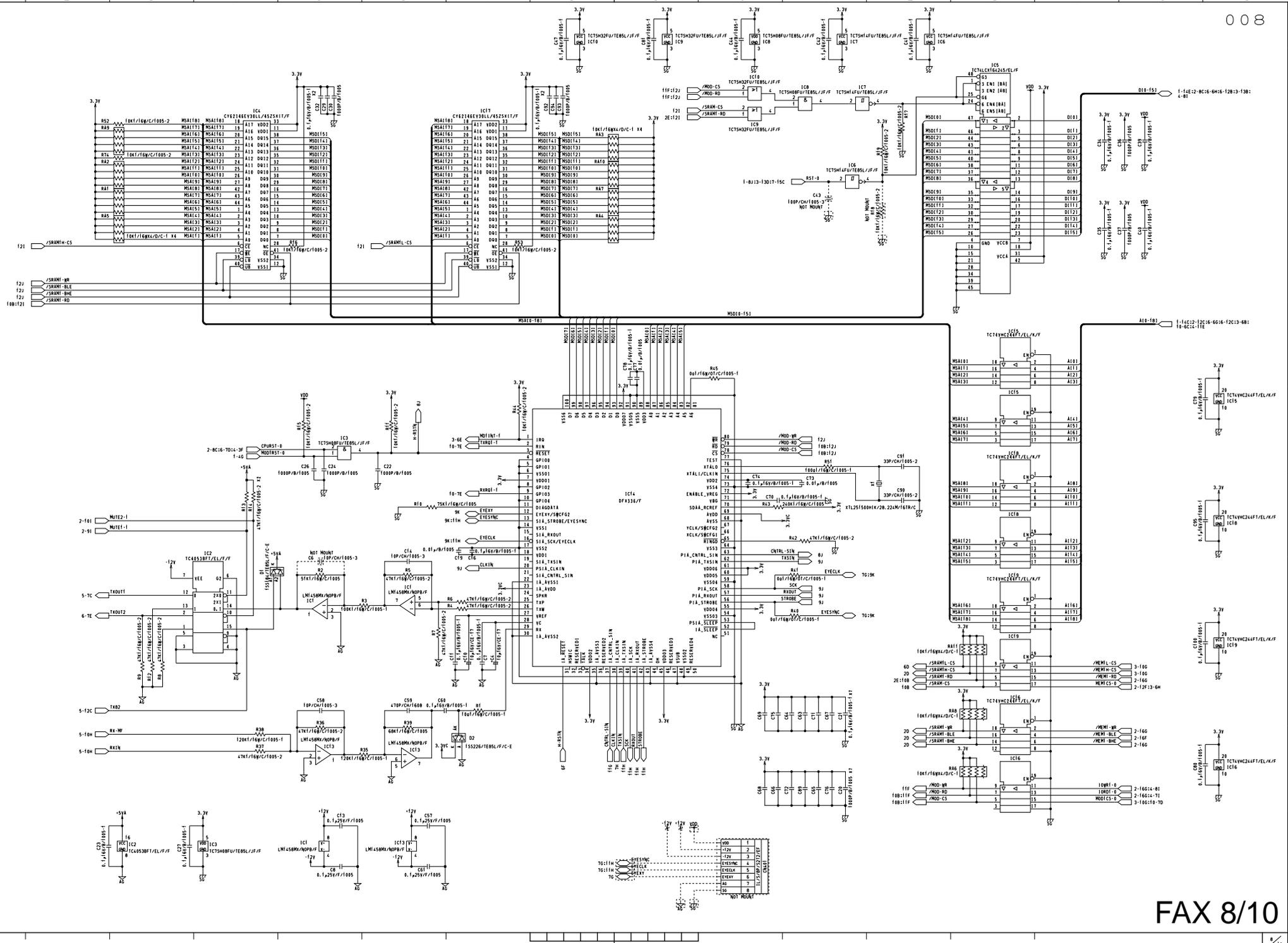


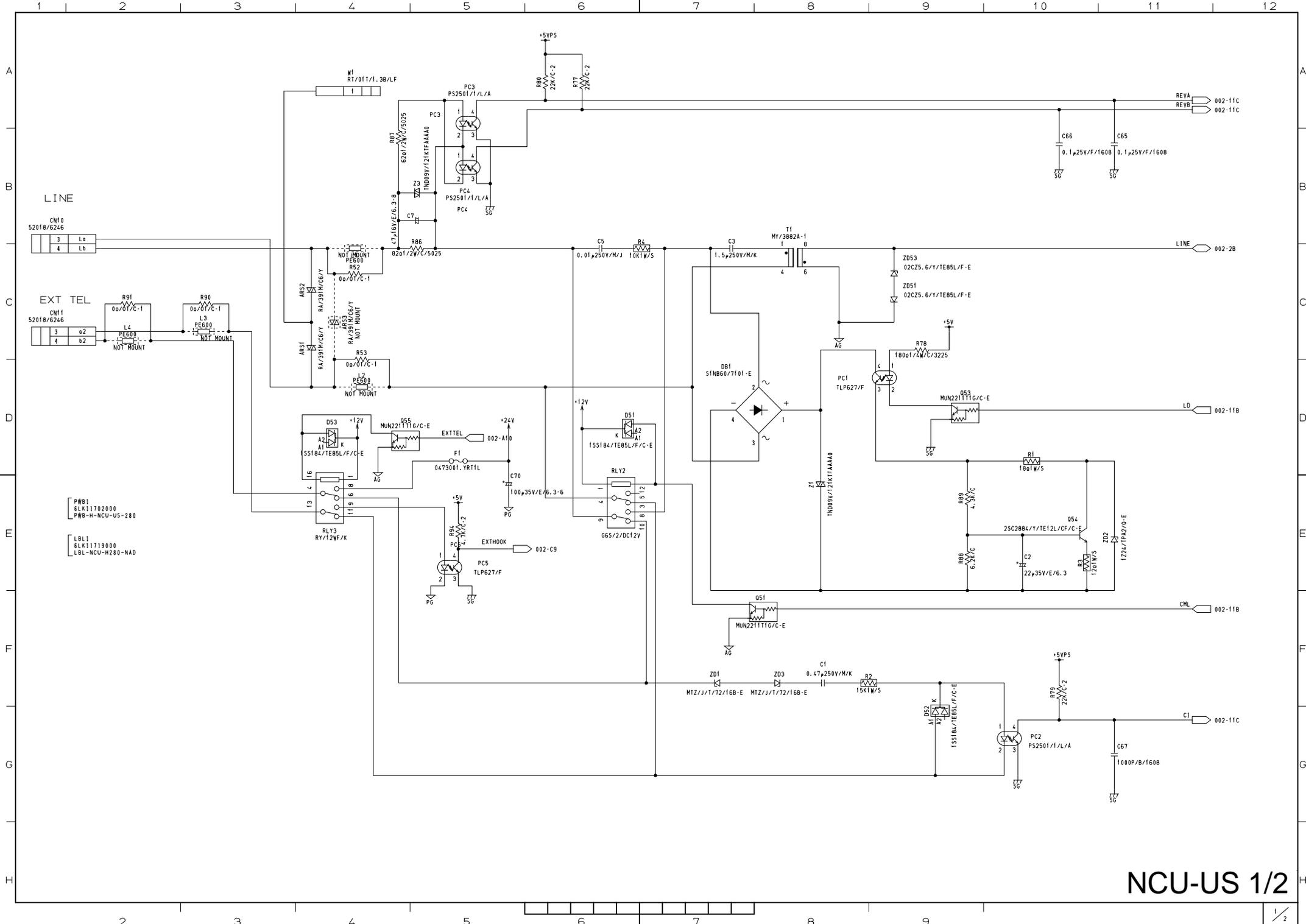
H/W RESET



Addition of capacitor

Not used



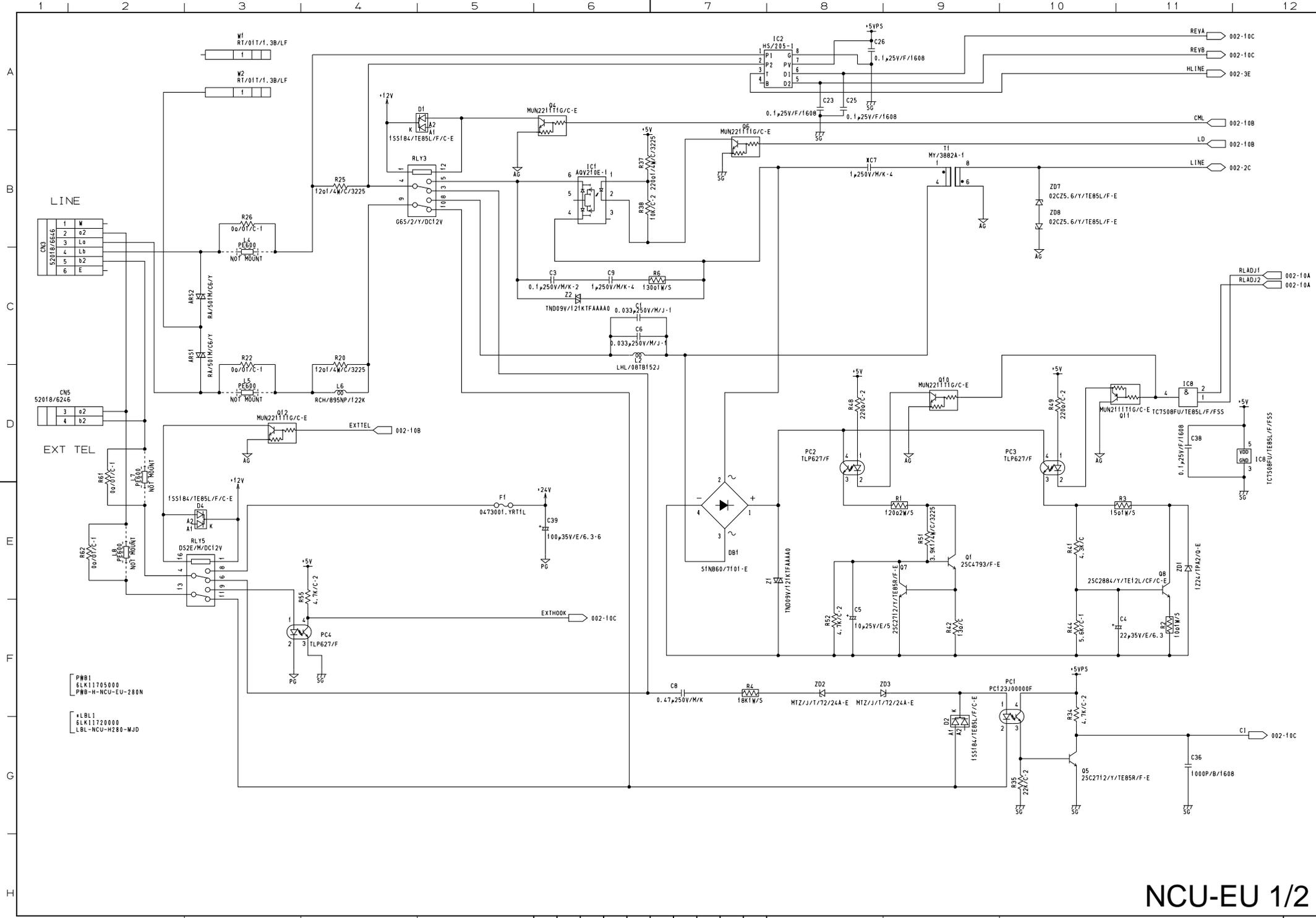


LINE

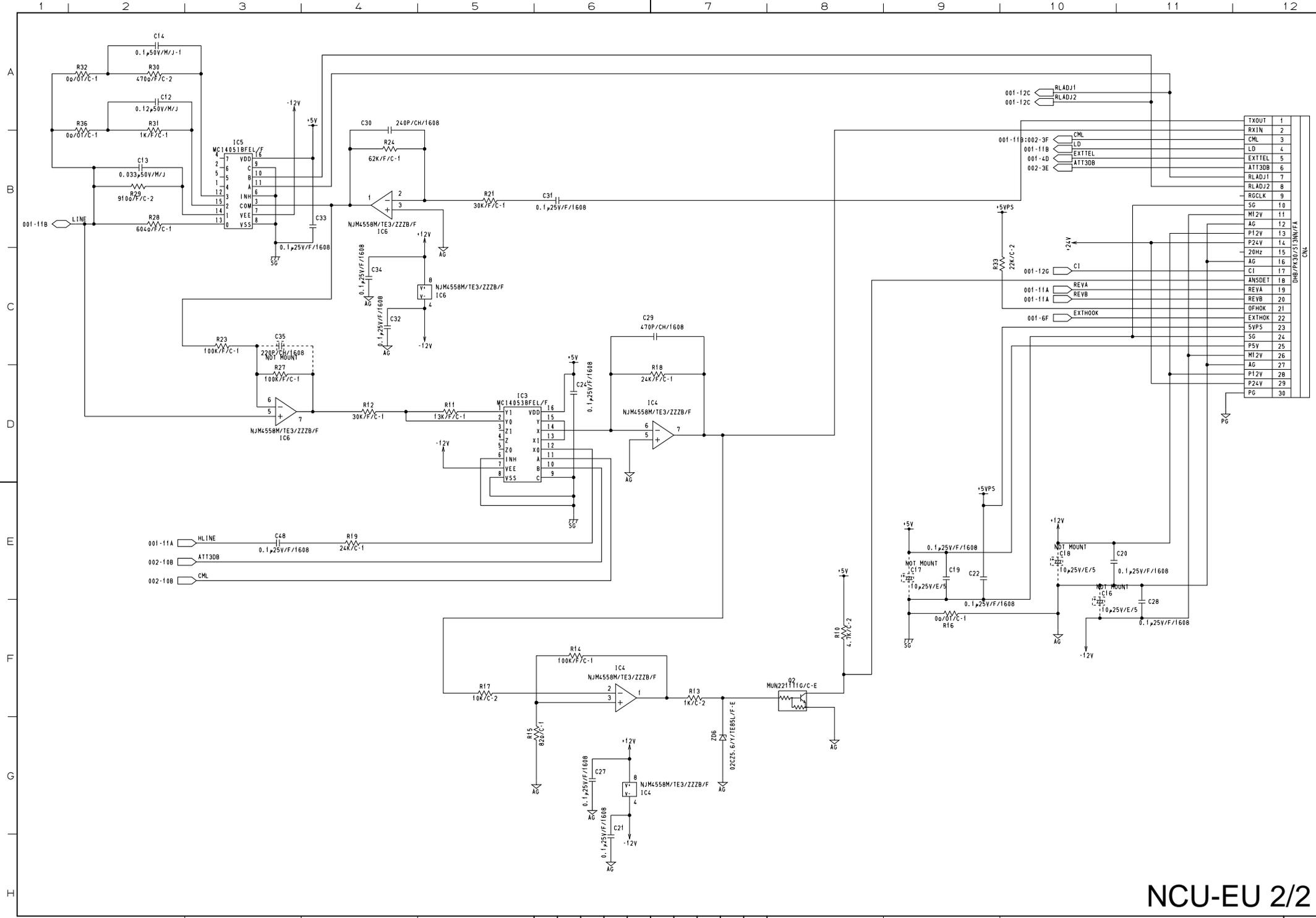
EXT TEL

- PWB1
6LK11702000
PWB-H-NCU-US-280
- LBL1
6LK1119000
LBL-NCU-H280-NAD

NCU-US 1/2

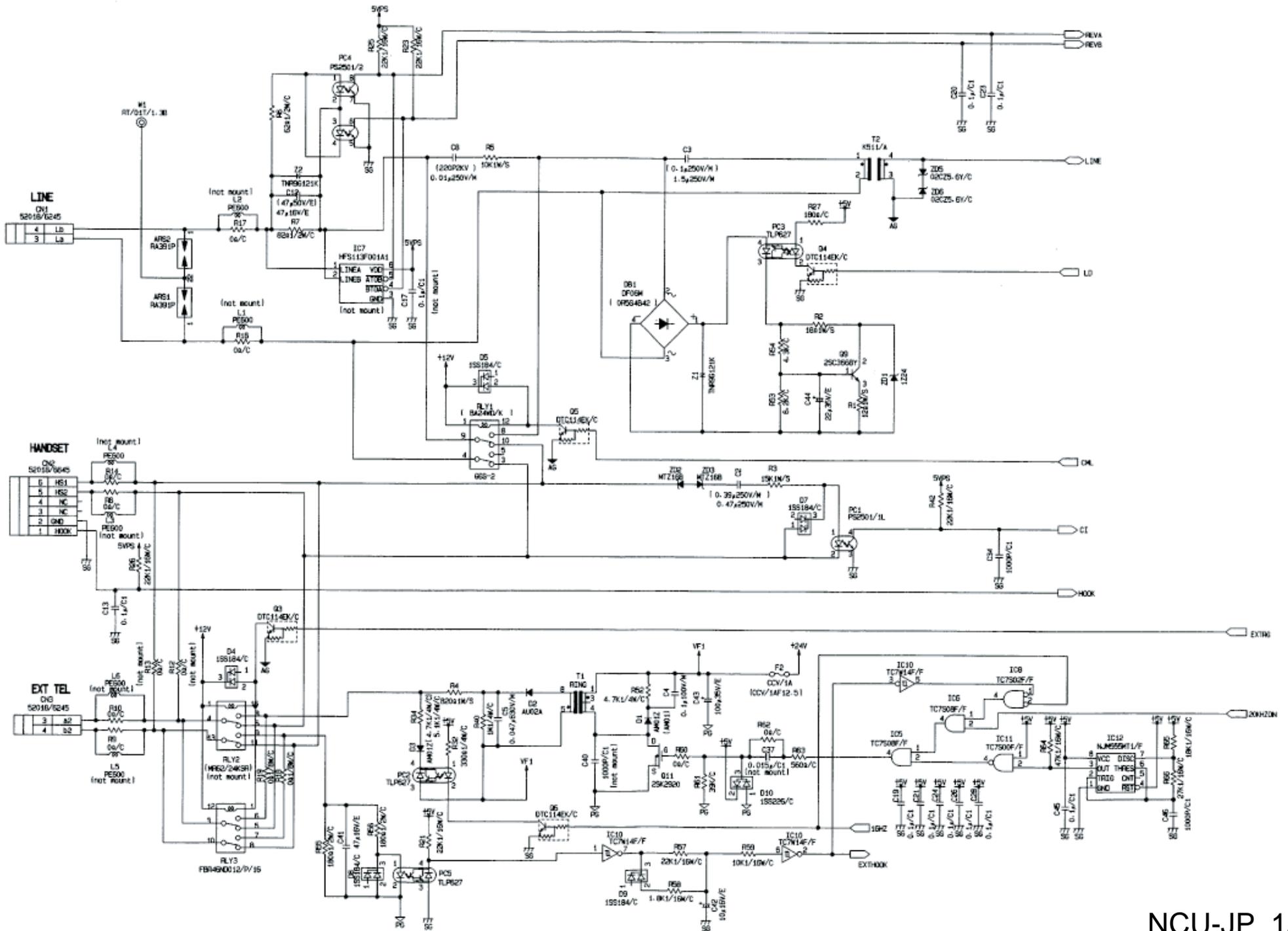


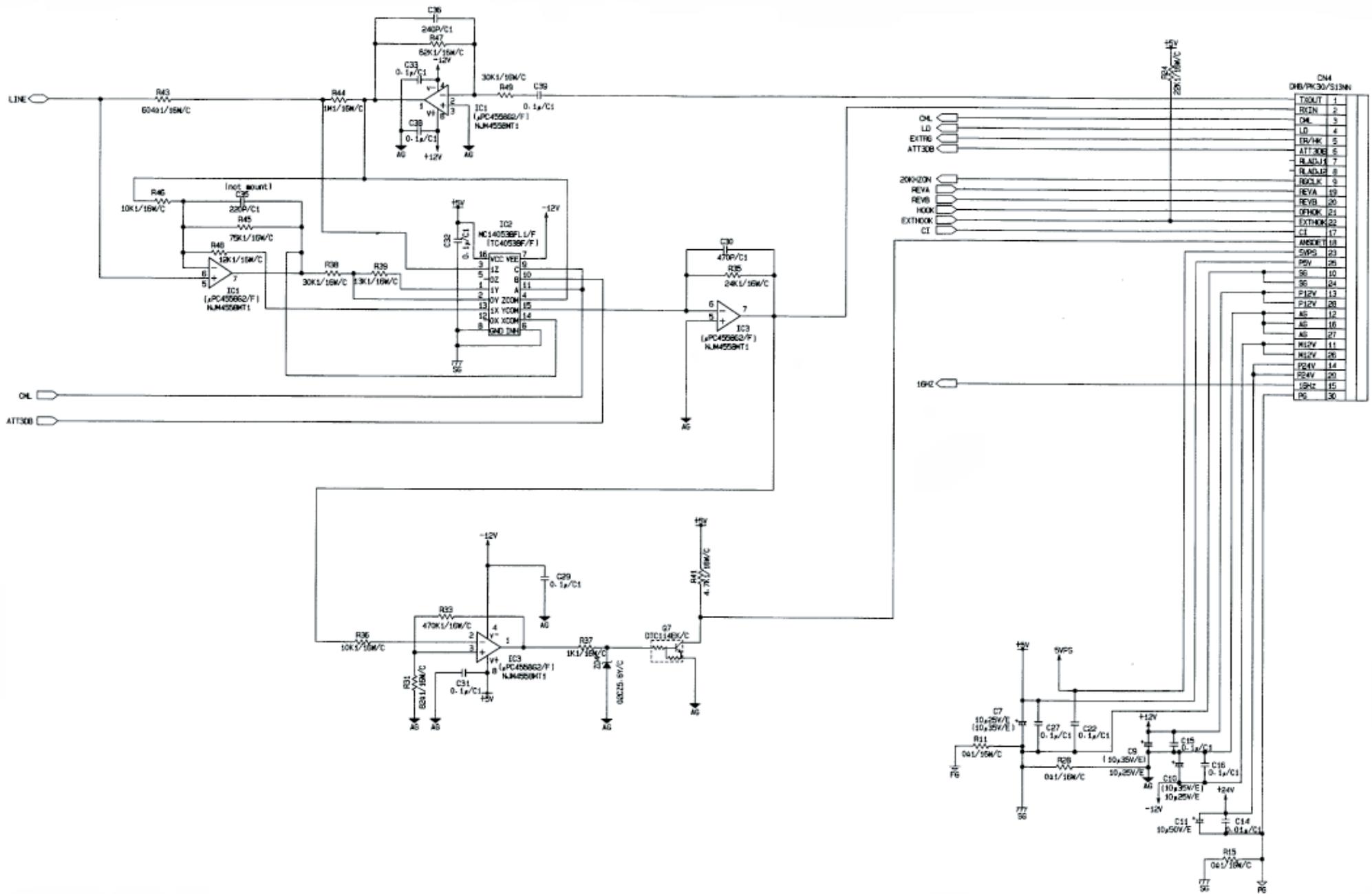
NCU-EU 1/2



Pin	Signal
1	TXOUT
2	RXIN
3	CML
4	LD
5	EXTTEL
6	ATT3DB
7	RLADJ1
8	RLADJ2
9	RGCLK
10	SG
11	M12V
12	AG
13	P12V
14	P24V
15	20Hz
16	AG
17	C1
18	ANSDET
19	REVA
20	REVB
21	OFHOK
22	EXTHOK
23	5VPS
24	SG
25	PSY
26	M12V
27	AG
28	P12V
29	P24V
30	PG

NCU-EU 2/2





PU Connector List (Signal functions)

*P: Power supply system signal

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
		1	GND	P		Logic system ground
		2	CLKP	O		Direct connection head clock output (differential)
		3	CLKN	O		Direct connection head clock output (differential)
		4	GND	P		Logic system ground
		5	LOAD/WPN/HOLDN	O		load output
		6	HSYNCN/CSN	O		hsync output
		7	D13	O		Head data output
		8	D12	O		Head data output
		9	D11	O		Head data output
		10	D10	O		Head data output
		11	D03	O		Head data output
		12	D02	O		Head data output
		13	D01	O		Head data output
		14	D00	O		Head data output
		15	STBN/SI	O		stb output
		16	SCK	O		sck output
		17	SO	I		Head EEPROM read data input
		18	3.3V	P		Head 3.3V output via chip fuse F8
		19	GND	P		Logic system ground
		20	5V	P		Head 5V output via chip fuse F9
		21	GND	P		Logic system ground
		22	5V	P		Head 5V output via chip fuse F9
		23	GND	P		Logic system ground
		24	5V	P		Head 5V output via chip fuse F9
		1	GND	P		Logic system ground
		2	CLKP	O		Direct connection head clock output (differential)
		3	CLKN	O		Direct connection head clock output (differential)
		4	GND	P		Logic system ground
		5	LOAD/WPN/HOLDN	O		load output
		6	HSYNCN/CSN	O		hsync output
		7	D13	O		Head data output
		8	D12	O		Head data output
		9	D11	O		Head data output
		10	D10	O		Head data output
		11	D03	O		Head data output
		12	D02	O		Head data output
		13	D01	O		Head data output
		14	D00	O		Head data output
		15	STBN/SI	O		stb output
		16	SCK	O		sck output
		17	SO	I		Head EEPROM read data input
		18	3.3V	P		Head 3.3V output via chip fuse F8
		19	GND	P		Logic s

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
3	HEAD2M	1	GND	P	M LED Head	Logic system ground
		2	CLKP	O		Direct connection head clock output (differential)
		3	CLKN	O		Direct connection head clock output (differential)
		4	GND	P		Logic system ground
		5	LOAD/WPN/HOLDN	O		load output
		6	HSYNCN/CSN	O		hsync output
		7	D13	O		Head data output
		8	D12	O		Head data output
		9	D11	O		Head data output
		10	D10	O		Head data output
		11	D03	O		Head data output
		12	D02	O		Head data output
		13	D01	O		Head data output
		14	D00	O		Head data output
		15	STBN/SI	O		stb output
		16	SCK	O		sck output
		17	SO	I		Head EEPROM read data input
		18	3.3V	P		Head 3.3V output via chip fuse F8
		19	GND	P		Logic system ground
		20	5V	P		Head 5V output via chip fuse F9
		21	GND	P		Logic system ground
		22	5V	P		Head 5V output via chip fuse F9
		23	GND	P		Logic system ground
		24	5V	P		Head 5V output via chip fuse F9
4	HEAD3C	1	GND	P	C LED Head	Logic system ground
		2	CLKP	O		Direct connection head clock output (differential)
		3	CLKN	O		Direct connection head clock output (differential)
		4	GND	P		Logic system ground
		5	LOAD/WPN/HOLDN	O		load output
		6	HSYNCN/CSN	O		hsync output
		7	D13	O		Head data output
		8	D12	O		Head data output
		9	D11	O		Head data output
		10	D10	O		Head data output
		11	D03	O		Head data output
		12	D02	O		Head data output
		13	D01	O		Head data output
		14	D00	O		Head data output
		15	STBN/SI	O		stb output
		16	SCK	O		sck output
		17	SO	I		Head EEPROM read data input
		18	3.3V	P		Head 3.3V output via chip fuse F8
		19	GND	P		Logic system ground
		20	5V	P		Head 5V output via chip fuse F9
		21	GND	P		Logic system ground
		22	5V	P		Head 5V output via chip fuse F9
		23	GND	P		Logic system ground
		24	5V	P		Head 5V output via chip fuse F9
5	RFID	1	GND	P	RFID PCB	Logic system ground
		2	RFSCS	I/O		I2C clock input/output
		3	RFSDA	I/O		I2C data input/output
		4	RESET-N	O		Hardware reset output (0: Reset, 1: Not reset)
		5	5VPS	P		5V when OFF at power save
6	IDFAN	1	24V-IDFAN	P	Image Drum FAN	Fan ON output (Off: Open, On: 24V output)
		2	PG	O		Power system ground
		3	FANERR2	I		Error input (0: Normal, 1: Error)
7	STKFL	1	5V	P	Stacker Full Sensor	5V via chip fuse F4
		2	STKFL-N	I		Stack full sensor input (0: Paper exists, 1: No paper)
		3	GND	P		Logic system ground

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
8	DCIDR	1	24VPS	P	CM_Image Drum Motor	Logic system via chip fuse F5, and 24V when OFF at power save
		2	DMON-N	O		Motor START/STOP output (0: START, 1: STOP)
		3	DMLOCK-P	I		Motor lock input (0: Within the lock area, 1: Out of the lock area)
		4	DMCLK-P	O		Clock output
		5	GAIN-P	O		GAIN switching output (0: Low speed, 1: High speed)
		6	24V	P		Power system 24V
		7	24V	P		Power system 24V
		8	PG	P		Power system ground
		9	PG	P		Power system ground
9	STP	1	24V	P	Offline Stapler (Option)	24V via chip fuse F10
		2	PG	P		Power system ground
		3	STPG-P	I		Stapler good signal (0: No STP or abnormal, 1: STP exists and normal)
		4	GND	P		Logic system ground
		5	STPMOUNT-N	I		Stapler mount status signal (0: Mounted, 1: Not mounted)
10	FIN	1	RXD	I	Finisher Unit (Option)	Data input
		2	GND	P		Logic system ground
		3	TXD	O		Data output
		4	CHK	I		Finisher mount check input signal (0: Mounted, 1: Not mounted)
		5	5V	P		5V via chip fuse F4
		6	PG	P		Power system ground
		7	PG	P		Power system ground
		8	24V	P		Power system 24V
		9	24V	P		Power system 24V
11	ENV	1	3.3V	P	Environment sensor PCB	Logic system 3.3V
		2	GND	P		Logic system ground
		3	GND	P		Logic system ground
		4	ENVHUM	I		Environment humidity sensor
		5	ENVTMP	I		Environment temperature thermistor
		6	HUM_PWM-P	O		Humidity sensor read timing output
12	SSNS	1	TNRM	I	Toner Sensor PCB	Toner sensor M input
		2	TNRY	I		Toner sensor Y input
		3	TNRC	I		Toner sensor C input
		4	TNRK	I		Toner sensor K input
		5	GND	P		Logic system ground
		6	FUSECUT	O		Electricity-removing light ON output (used in common with fuse cut) (0: Normal, 1: Cut)
		7	5VPS	P		5V when OFF at power save
		8	YIDFU	O		YID fuse cut output
		9	MIDFU	O		MID fuse cut output
		10	KIDFU	O		KID fuse cut output
		11	CIDFU	O		CID fuse cut output
13	DCID	1	IDBRAKE-P	P	YK_Image Drum Motor	Logic system 24V via chip fuse F5
		2	START/STOP	O		Motor START/STOP output (0: START, 1: STOP)
		3	IDLOCK-N	I		Motor lock input (0: Within the lock range, 1: Out of the lock range)
		4	IDCLK	O		Clock output
		5	IDHIGAIN-P	O		GAIN switch output (0: Low speed, 1: High speed)
		6	24V	P		Power system 24V
		7	24V	P		Power system 24V
		8	PG	P		Power system ground
		9	PG	P		Power system ground
14	FSNS	1	GND	P	Front Sensor PCB (WR, IN1, IN2)	Logic system ground
		2	PWWR-N	I		Write sensor input (0: Paper exists, 1: No paper)
		3	PAPIN-N	I		IN2 sensor input (0: Paper exists, 1: No paper)
		4	HOP-N	I		IN1 sensor input (hopping) (0: Paper exists, 1: No paper)
		5	5VPS	P		5V when OFF at power save

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
15	PE_HOP	1	5VPS	P	1st Paper Empty Sensor	5V when OFF at power save
		2	PEND-N	I		Paper end input (0: Paper exists, 1: No paper)
		3	GND	P		Logic system ground
		4	5VPS	P	Hopping Sensor	5V when OFF at power save
		5	HOPOUT-N	I		Hopping sensor input (trailing edge detection) (0: Paper exists, 1: No paper)
		6	GND	P		Logic system ground
16	CL1	1	24V	P	Hopping Clutch	24V via chip fuse F6
		2	CL1	O		ON signal output (0: Off, 1: On)
17	HP_PSZCL	1	HOP1	O	Hopping Motor	Hopping motor 1A output
		2	HOP2	O		Hopping motor 1B output
		3	HOP3	O		Hopping motor 2B output
		4	HOP4	O		Hopping motor 2A output
		5	24V	P	Regist Clutch	24V via chip fuse F7
		6	CL2	O		ON signal output (0: Off, 1: On)
		7	24V	P	MPT Clutch	24V via chip fuse F7
		8	CL3	O		ON signal output (0: Off, 1: On)
		9	PSZ0-P	I	Paper Size SW	Paper size detection bit0 input
		10	PSZ1-P	I		Paper size detection bit1 input
		11	GND	P		Logic system ground
		12	PSZ2-P	I		Paper size detection bit2 input
		13	PSZ3-P	I		Paper size detection bit3 input
18	BELTIDUP	1	IDUP1	O	Image Drum Up Motor	ID Up motor 1A output
		2	IDUP2	O		ID Up motor 1B output
		3	IDUP3	O		ID Up motor 2A output
		4	IDUP4	O		ID Up motor 2B output
		5	BELT1	O	Belt Motor	Belt motor 1A output
		6	BELT2	O		Belt motor 1B output
		7	BELT3	O		Belt motor 2A output
		8	BELT4	O		Belt motor 2B output
19	OPTION	1	OPTPOS_HLD	O	Odd number pins: PFU PCB (Option) Even number pins: Duplex Unit PCB	Tray retention current direction output (0: Enable, 1: Disable)
		2	GND	P		Logic system ground
		3	OPTRXD	I		Option Tray data input
		4	DUPRSD	I		Duplex data input
		5	OPTTXD	O		Option Tray data output
		6	DUPTXD	O		Duplex data output
		7	OPTINT	I		Option Tray status change input (SDR) (0: Changed, 1 No change)
		8	DUPINT	I		Duplex status change input (SDR) (0: Changed, 1 No change)
		9	GND	P		Logic system ground
		10	5V	P		5V via chip fuse F4
		11	24V	P		24V via chip fuse F1
		12	24V	P		24V via chip fuse F1
		13	OPTFDEN	O		Option Tray transfer permission direction output (CONT2) (0: Permitted, 1: Stop)
		14	PG	P		Power system ground
		15	5V	P		5V via chip fuse F4
		16	DUPCNT2-N	O		Duplex flash erase direction output
		17	OPTSTS	I		Option Tray paper position monitoring input (0: L level output, 1: H level output)
		18	HOP-N	O		IN1 sensor output (hopping)
		19	PG	P		Power system ground
		20	PWWR-N	O		Write sensor output
		21	PG	P		Power system ground
		22	GND	P		Logic system ground
		23	24V	P		24V via chip fuse F1
		24	NC	-		Not connected
20	POWFAN	1	24V-POWFAN	P	Low-voltage FAN	Fan ON output (Off: Open, On: 24V output)
		2	PG	O		Power system ground
		3	FANERR1-P	I		Error input (0: Normal, 1: Error)

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
21	HVOLT	1	GND	P	High Voltage Power Supply Unit PCB	Logic system ground
		2	SCLK1-N	O		High voltage serial clock
		3	GND	P		Logic system ground
		4	SDIN-N	I		High voltage serial data input
		5	RESET-N	O		High voltage CPU reset (0: Reset, 1: Not reset)
		6	SDOUT-P	O		High voltage serial data output
		7	SCLR-N	O		High voltage sequence clear (0: Assert, 1: De-assert)
		8	COVOPN-N	I		Upper cover open monitoring input (0: Close, 1: Open)
		9	5V	P		5V via chip fuse F4
		10	24V	P		24V via chip fuse F5
		11	FANON-P	O		Fan ON output (0: Off, 1: On)
		12	PG	P		Power system ground
		13	NC	-		Not connected
22	RELAY	1	FUSECUT-P	O	Relay PCB	Fuse cut power supply output (0: Normal, 1: Cut)
		2	HEATFU-P	O		Fuser unit fuse cut output (0: Off, 1: On)
		3	BELTFU-P	O		Belt fuse cut output (0: Off, 1: On)
		4	GND	P		Logic system ground
		5	LLEDK	O		LED current value output for left color registration sensor
		6	FLAMETMP-P	I		UPPER roller temperature (for compensation) input
		7	LCREG	I		Color registration correction L
		8	SIDETMP-P	I		SIDE roller temperature input
		9	HEATR-N	I		Exit sensor input (0: Paper exists, 1: No paper)
		10	UPHRTMP-P	I		UPPER roller temperature input
		11	GND	P		Logic system ground
		12	3.3V	I		Logic system 3.3V
		13	KDEN	I		BLACK density correction
		14	LWHRTMP-P	I		LOWER roller temperature input
		15	YMCDEN	I		COLOR density correction
		16	RCREG	I		Color registration R
		17	DENLED	O		LED current value output for the density sensor
		18	RLEDK	O		LED current value output for right color registration
		19	5VPS	P		5V when OFF at power save
		20	TAWAMI	I		Face Up cover open detection input (0: Open, 1: Close)
23	POWER	1	24V	P	Low Voltage Power Supply Unit PCB	24V generated by low-voltage power supply
		2	24V	P		24V generated by low-voltage power supply
		3	24V	P		24V generated by low-voltage power supply
		4	24V	P		24V generated by low-voltage power supply
		5	PG	P		Power system ground
		6	PG	P		Power system ground
		7	PG	P		Power system ground
		8	PG	P		Power system ground
		9	GND	P		Logic system ground
		10	GND	P		Logic system ground
		11	5V	P		5V generated by low-voltage power supply
		12	HARD GUARD	O		Hard guard signal output
		13	5V	P		5V generated by low-voltage power supply
		14	ACONG-N	O		Main heater ON output (0: Off, 1: On)
		15	ACZEROX	I		AC zero-cross signal input
		16	ACON1-N	O		Sub heater ON output (0: Off, 1: On)
		17	POWEROVER	I		Notification signal input of power supply overloading to PU (1: Normal load, 0: Overload)
		18	PULLUP	I		Pull up (5V return)
		19	NC	-		Not connected
		20	NC	-		Not connected

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
24	DCHEAT	1	HEATBRAKE-P	O	Fuser Motor	ON/OFF (brake) output (0: Release, 1: Brake)
		2	START/STOP	O		START/STOP output (0: START, 1: STOP)
		3	HEATLOCK-N	I		Lock input (0: Within the lock range, 1: Out of the lock range)
		4	HEATCWCCW-N	O		CW/CCW switch output (0: Forward rotation, 1: Reverse rotation)
		5	HEATCLK	O		Clock output
		6	HEATHIGAIN-P	O		GAIN switch output (0: Low speed, 1: High speed)
		7	24V	P		Power system 24V
		8	PG	P		Power system ground
		9	24VPS	P		Logic system via chip fuse F5, and 24V when OFF at power save
25	COIN	1	GND	P	COIN Controller	Logic system ground
		2	KCTRCNT-N	I		Key counter connection signal input
		3	24V	P		24V via chip fuse F3
		4	KCTRON-N	O		Key counter ON signal output
		5	24V	P		24V via chip fuse F3
		6	CTRON-N	O		Total counter ON signal output
		7	CTRCNT-N	I		Copy permission signal
		8	MCRUN-N	O		Copying operation signal output
		9	EXCTR-N	O		Exit sensor ON signal output
		10	PG	P		Power system ground
		11	BKCTR-N	O		Black mode counter signal output
		12	MNCTR-N	O		Mono color mode counter ON signal output
		13	FLCTR-N	O		Full color mode counter ON signal output
		14	GND	P		Logic system ground
		15	SIZE3	O		Paper size output
		16	SIZE2	O		Paper size output
		17	SIZE1	O		Paper size output
		18	SIZE0	O		Paper size output
		19	5V	P		5V via chip fuse F4
		20	CTRCNT2-N	I		Reserved

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
26	CUIF0	1	GND	P	SYS PCB - 0	Logic system ground
		2	KDATA0	I		K data signal input
		3	KDATA1	I		K data signal input
		4	KDATA2	I		K data signal input
		5	KDATA3	I		K data signal input
		6	GND	P		Logic system ground
		7	KDATA4	I		K data signal input
		8	KDATA5	I		K data signal input
		9	KDATA6	I		K data signal input
		10	KDATA7	I		K data signal input
		11	GND	P		Logic system ground
		12	LSTB	I		Strobe signal input
		13	GND	P		Logic system ground
		14	WCLK	I		Image data transmission CLK input
		15	GND	P		Logic system ground
		16	FSYNCK-N	O		VSYNC-K output
		17	GND	P		Logic system ground
		18	FSYNCC-N	O		VSYNC-C output
		19	GND	P		Logic system ground
		20	FSYNCM-N	O		VSYNC-M output
		21	GND	P		Logic system ground
		22	FSYNCY-N	O		VSYNC-Y output
		23	GND	P		Logic system ground
		24	LSYNC-N	O		HSYNC output
		25	GND	P		Logic system ground
		26	SRDY-N	I		Serial communication_SRDY input (CTS#)
		27	STS	O		Serial communication_STS output (TXD)
		28	CRDY-N	O		Serial communication_CRDY output (RTS#)
		29	CMD	I		Serial communication_CMD input (RXD)
		30	GND	P		Logic system ground
		31	SLEEP_MODE	I		Signal that notifies whether recovery is from SLEEP or power ON (from CU to PU) (0: From SLEEP, 1: Power ON)
		32	LGREN	O		PU communication Ready output (0: Not ready, 1: Ready)
		33	POW_OFF	O		AC OFF detection signal output (1: AC OFF, 0: AC ON)
		34	SYRST	I		Reset input

No.	Name of Connector	Pin No.	Name of Signal	I/O Type	Connected to	Signal function
27	CUIF1	1	NC	-	SYS PCB - 1	Not connected
		2	NC	-		Not connected
		3	DET	-		Not used (Reserved)
		4	GND	P		Logic system ground
		5	YDATA0	I		Y data signal input
		6	YDATA1	I		Y data signal input
		7	YDATA2	I		Y data signal input
		8	YDATA3	I		Y data signal input
		9	GND	P		Logic system ground
		10	YDATA4	I		Y data signal input
		11	YDATA5	I		Y data signal input
		12	YDATA6	I		Y data signal input
		13	YDATA7	I		Y data signal input
		14	GND	P		Logic system ground
		15	MDATA0	I		M data signal input
		16	MDATA1	I		M data signal input
		17	MDATA2	I		M data signal input
		18	MDATA3	I		M data signal input
		19	GND	P		Logic system ground
		20	MDATA4	I		M data signal input
		21	MDATA5	I		M data signal input
		22	MDATA6	I		M data signal input
		23	MDATA7	I		M data signal input
		24	GND	P		Logic system ground
		25	CDATA0	I		C data signal input
		26	CDATA1	I		C data signal input
		27	CDATA2	I		C data signal input
		28	CDATA3	I		C data signal input
		29	GND	P		Logic system ground
		30	CDATA4	I		C data signal input
		31	CDATA5	I		C data signal input
		32	CDATA6	I		C data signal input
		33	CDATA7	I		C data signal input
		34	GND	P		Logic system ground