Self Diagnosis Supported model

SERVICE MANUAL

AE-6BA CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-32XL90B	RM-942	FR	SCC-Q83S-A	KV-32XL90E	RM-942	ESP	SCC-Q81V-A

FD Trinitron



KV-32XL90



RM-942

TRINITRON ® COLOR TV

SONY®

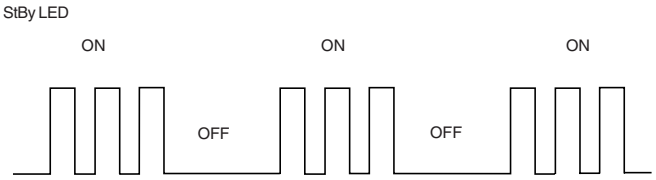
AE-6BA SELF DIAGNOSTIC SOFTWARE

The identification of errors within the AE-6BA chassis is triggered in one of two ways :- 1: Busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED (Series of flashes which must be counted) See table 1, non fatal errors are reported using this method. Each time the software detects an error it is stored within the NVM. See Table 2.

Table 1

Error Message	LED Code
No error	00
Reserved	01
OCP (Over Current Protection)	02
Over Voltage Protection	03
No Vertical Sync	04
IKR Error at power on	05
IIC bus clock and/or data lines low at power on	06
NVM no IIC bus acknowledge at power on	07
Horizontal Protection	08
Tuner no acknowledge at power on	09
Sound Processor Error	10
Reserved	11
Scanrate Error	12
DAC Error	13
Backend Error	14
Dynamic Convergence Error	15
PIP Error	16

Flash Timing Example : e.g. error number 3



How to enter into Table 2

1. Turn on the main power switch of the TV set.
2. Program Remote Commander for Operation in Service Mode. [See Page 21].
3. Press 'AUX/VIDEO' 'AUX/VIDEO' > 'MENU' on the Remote Commander.
4. Using the Remote Commander, Scroll to the 'Error' item using the down arrow key, then press the right arrow key.
5. The following table will be displayed indicating the error count.

Table 2

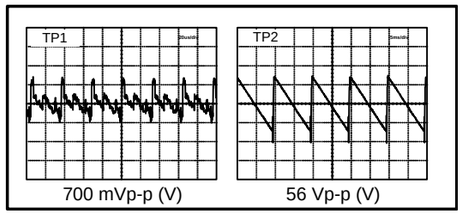
Error monitor		
WORKING TIME:	**(Hours:Minutes)**	82:33
Error counters:		
E02: OCP		0
E03: OVP		0
E04: NO V SYNC		0
E05: IKR		0
E06: IIC		0
E07: NVM		0
E08: H PROT		0
E09: TUNER		0
E10: SOUND		0
E11: 9 VOLTS		0
E12: SCANRATE		0
E13: 3DCOMB		0
E14: BACKEND		0
E15: DYNCON		0
E16: HIGH VOLTAGE		0
E17: AVSWITCH		0
E18: CHROMA DEC		0
E19: FRCA		0
E20: PJ ENG		0
E21: DAC		0
E24: SPEAKER PROT		0
E25: MEMORY STICK		0
Select: ▲ ▼	Previous Menu: ◀	

Note: To clear the error count data press '80' on the Remote commander.

~ A Board Semiconductor Voltage Table ~

Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)
Q1100	0	0	4.5	Q2202	0	0.4	0	Q2500	0.1	0.1	0.6	Q5101	0.8	1.4	6.8	Q5208	0	0	1.5	Q6202	3.4	3.4	0
Q1300	2.7	2.1	8.4	Q2300	0	0	0.7	Q2501	0	0.6	0	Q5200	6.8	6.3	3.0	Q5209	0	0	1.5	Q6203	0	0	3.4
Q1301	2.1	2.1	0	Q2301	0	0.4	0	Q2502	0	0	5.0	Q5201	0	0.4	3.0	Q5210	0	0	1.5	Q6204	3.4	3.4	0
Q2000	0	0	4.7	Q2302	0	0.4	0	Q2503	0	0	5.0	Q5203	0	0.4	3.0	Q5211	0	0	1.5	Q6205	3.5	2.7	3.4
Q2200	0	0	-1.6	Q2400	3.9	3.4	0	Q2504	5.0	5.0	0	Q5205	0	0.4	1.5	Q5404	0	12.1	0	Q6206	1.5	2.0	2.7
Q2201	0	0.4	0	Q2401	0	0	4.7	Q5100	2.4	1.8	0	Q5207	0	0.4	3.0	Q6201	1.5	0.6	3.4	Q6207	0	0	3.4

~ A Board Waveforms ~



~ A Board IC Voltage Table ~

IC Voltage Table			IC Voltage Table			IC Voltage Table			IC Voltage Table			IC Voltage Table		
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC2200	1	4.5	IC2300	6	0	IC2400	12	-4.0	IC5102	2	0	IC5400	7	0.4
	2	4.5		7	0	IC2500	2	0		5	2.5	IC6202	4	1.3
	3	4.5		8	0.5		5	0.9		6	2.5		5	6.7
	5	4.5	IC2400	1	0		7	0		8	2.2	IC6207	4	1.3
	6	4.5		2	-4.0		8	0	IC5104	1	14.6		5	6.7
	7	4.5		3	10.0		9	0	IC5400	1	0.4	IC6209	4	1.3
IC2300	1	4.0		5	0		10	0		3	-12.3		5	6.7
	3	4.0		6	-13.2		11	0		5	0	IC6212	4	5.1
	5	0.5		10	3.9	IC5102	1	17.1		6	15.7		5	0

~ A Board Location Table (A Side) ~

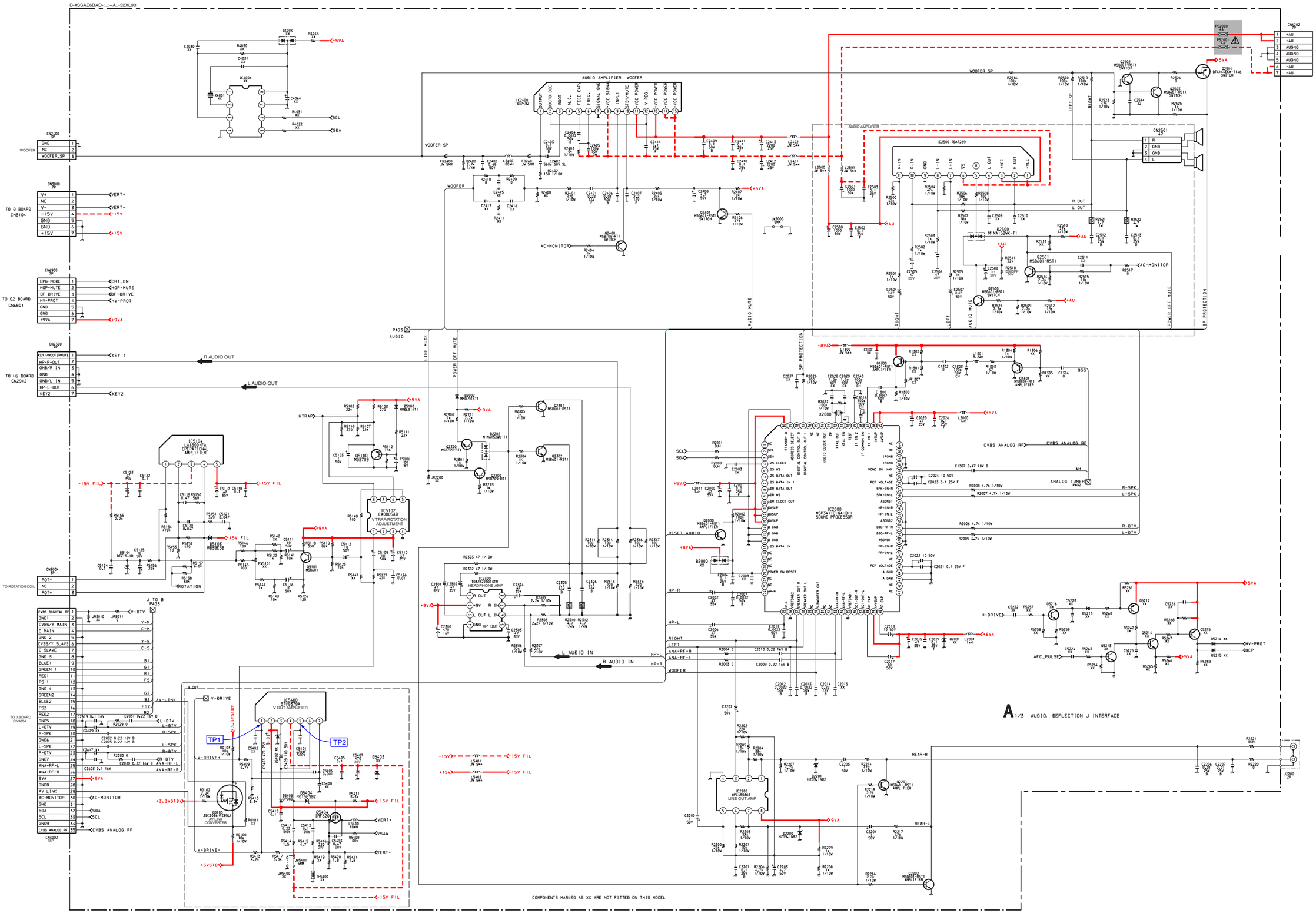
DIODE						IC					
D2200	D - 3	D5405	D - 10	D6211	K - 4	IC2500	H - 3	IC6204	M - 4	IC6212	L - 3
D2201	E - 3	D6201	J - 9	D6212	J - 9	IC5102	I - 10	IC6207	J - 10		
D5103	H - 10	D6203	L - 5	D6213	L - 8	IC5104	H - 10	IC6209	J - 8		
D5404	E - 11	D6204	K - 2	IC		IC5400	E - 10	IC6210	K - 4		
		D6210	L - 4	IC2400	J - 4	IC6202	L - 8				

~ A Board Difference Table ~

Ref	KV-32XL90B	KV-32XL90E
TU1100	BTF-EF411	BTF-EC411

~ A Board Location Table (B Side) ~

DIODE										IC						TRANSISTOR									
D2200	L - 3	D5206	G - 7	D6204	E - 2	IC2200	L - 4	IC6207	F - 9	Q1300	L - 2	Q2401	F - 4	Q5202	H - 4	Q5404	K - 10	IC2000	K - 4	Q0100	K - 6	Q2202	L - 3	Q2504	H - 4	Q5207	H - 6	Q6205	E - 2
D2201	J - 4	D5207	G - 6	D6205	E - 3	IC2300	J - 3	IC6209	F - 9	Q1301	K - 2	Q2500	H - 3	Q5203	H - 4	Q6201	E - 2	IC6200	E - 5	Q0200	K - 7	Q2300	I - 4	Q5100	G - 10	Q5208	G - 7	Q6206	E - 2
D2202	J - 4	D5208	H - 6	D6206	D - 3	IC2400	G - 4	IC6210	F - 4	Q2000	J - 3	Q2501	H - 3	Q5204	G - 7	Q6202	E - 3	IC6202	D - 8	Q0201	K - 7	Q2301	I - 4	Q5101	F - 10	Q5209	H - 6	Q6207	E - 2
D2500	H - 3	D5209	G - 7	D6207	D - 3	IC2500	H - 3	IC6211	E - 5	Q2200	I - 4	Q2502	H - 4	Q5205	F - 6	Q6203	E - 3	IC6204	E - 4	Q1100	M - 2	Q2400	F - 4	Q5201	F - 6	Q5211	G - 6	Q6209	E - 4
D5100	G - 10	D5210	G - 6	D6208	D - 3	IC5102	G - 10	IC6212	E - 4	Q2201	L - 3	Q2503	H - 4	Q5206	H - 7	Q6204	E - 3												
D5104	H - 9	D5211	G - 6	D6210	D - 3	IC5104	H - 10			Q2202	L - 3	Q2504	H - 4	Q5207	H - 6	Q6205	E - 2												
D5200	F - 7	D5404	K - 10	D6213	D - 8	IC5400	K - 10			Q2300	I - 4	Q5100	G - 10	Q5208	G - 7	Q6206	E - 2												
D5202	F - 6	D5405	L - 10	D6214	E - 4	IC6200	E - 5			Q2301	I - 4	Q5101	F - 10	Q5209	H - 6	Q6207	E - 2												
D5205	G - 7	D6201	F - 9	IC		IC6202	D - 8			Q2302	J - 4	Q5200	F - 6	Q5210	G - 6	Q6208	E - 3												
		D6203	D - 5	IC2000	K - 4	IC6204	E - 4			Q2400	F - 4	Q5201	F - 6	Q5211	G - 6	Q6209	E - 4												



~ A Board Schematic Diagram [Audio, Deflection J Interface] Page 1/3 ~

B-#SSAE6BAD<...> A -32XL90

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

CN6200 XP
MAINRY 1 — R2025 0 — MAIN-RY 2
DGC RY 2 — DGCRY
SGND 3
STBY 4 — STBY
STBYAC 5 — D6204 BINL20U-TA — +11V
STBY5V 6 — +5VSTBY
TO G BOARD CN6008

CN6207 XX
+11VD 1 — +11VD
NC 2 — J46209 7.5MM
DGND 3
+15V 4 — +15V
+11V 5 — +11V
AGND 6
+6V 7 — +6V
AGND 8
+33V 9 — +33V
OCP 10 — OCP
OVP 11 — OVP

CN6201 7P
+11V 1 — +11V
AGND 2
+6V 3 — +6V
AGND 4
+33V 5 — +33V
OCP 6 — OCP
OVP 7 — OVP
TO G BOARD CN6006

STBY AREA
IC6210 S1-36500-LF1101 5 VOLT REGULATOR
STBY — C6235 2200uF 50V — R6222 0 — R6254 XX — R6214 0
D6211 EKT9-VO — L6215 150uH — C6257 1000 16V — L6211 JW 5**
+5VSTBY
R6248 47k 1/10W — R6247 47k 1/10W — Q6209 MSB601-RST
D6213 UDZ-7.5B — Q6208 MSB601-RST — C6258 50V
C6254 47 85V — R6250 47k 1/10W
IC6210 R4550 VOLT REGULATOR
+3.3VSTBY — C6245 0.1 25V — C6247 100 25V — C6246 100 25V — C6244 0.1 25V — R6218 JW 5MM
IC6211 KF25G01 2.5 VOLT REGULATOR
+2.5VSTBY — C6249 0.1 25V — C6251 100 25V — C6250 100 25V — C6248 0.1 25V

DIGITAL TUNER
TUI200 XX
TSYNC BSLOCK SSPIVAL SSCLK SSDT SSDA SSRS SSRQ SSBI SSBO
R1227 XX — +3.5VA — R1214 XX — R1215 XX
DIGITAL TUNER
L1201 XX L1200 XX L1202 XX L1205 XX L1204 XX L1209 XX L1206 XX
C1200 XX C1201 XX C1205 XX C1206 XX C1209 XX C1212 XX C1215 XX
B1200 XX B1201 XX B1202 XX B1205 XX B1204 XX
R1224 XX R1228 XX
SCL-TU SDA-TU +3.3VD +1.8VD +3.3VD +5VD +5VA

TUNER
TU1100 M TUNER
AGC SCL SDA +33V IF GND +5V AM DSS VIDEO
STEREO
C1107 100 16V — C1108 33PF — B1105 XX — L1103 10UH — +5VA
R1100 0 — C1100 XX — B1100 XX — C1101 XX — L1100 1uH — R1104 XX — R1105 0 — +33VA
C1102 XX — R1101 XX — C1105 1000 16V — C1106 0.0047 50V — R1106 0 — R1108 0 — L1104 1uH — C1109 220 6.3V CH — B1104 XX — B1102 XX — B1105 XX
R1110 18k 1/10W — R1111 75 1/10W — B1100 MSB601-RST — AGC DEFEAT FROM B-BRD CONNECTOR
SCL SDA — AM DSS CVBS ANALOG RF — PAG1 ANALOG TUNER

CN6205 TAB(CONTACT) 1 — A-L-IGHTNING-WIRE
CN6204 XX 1 — A-L-IGHTNING-WIRE
CN6206 XX 1 — A-L-IGHTNING-WIRE

OCP/OVP LATCH
+3.3VSTBY — R6215 10k 1/10W — Q6202 MSB709-RT1 LATCH — OCP_OVP
R6216 1k 1/10W — Q6205 MSB601-RST1 — D6209 MMBL914T1 — R6220 10k 1/10W — D6206 MMBL914T1 — OVP
D6205 MIMA152WK-T1 — R6217 1k 1/10W — R6218 1k 1/10W — D6207 MMBL914T1
D6210 RB715EGB2 — Q6203 MSB601-RST1 — R6219 47k 1/10W — C6252 0.1 25V — OCP
C6255 0.1 25V — R6221 10k 1/10W — D6208 MMBL914T1 — OCP_UC

+9V & +12V REG AREA
+11V — IC6204 L78M09CV-LSY 9 VOLT REGULATOR — C6240 0.1 25V — C6242 100 25V — C6248 100 25V — C6241 0.1 25V — D6205 B1NL20U-TA — C6229 100 25V — +8VA — +9VA — JW6201 10MM — +9VA_DEF
IC6205 XX
+15V — JW6207 7.5MM — +11VD — JW6203 XX — C6215 XX — C6214 XX — C6212 XX — JW6204 7.5MM — +12VA — JW6205 XX — +9VB — JW6206 XX — +9VA_DEF

+3.3V REGULATORS AREA
IC6201 XX
+6V — C6201 XX — C6207 XX — C6210 XX — C6204 XX — +3.3VA
IC6207 PQ1CG20H2FZ 3.3 VOLT REGULATOR
L6210 5mm
+11VD — FB6201 5MM — C6217 1000 16V — R6201 0.25AMP — R6211 0.4A — R6212 XX — R6204 1k — R6205 0.5A — R6209 0 — C6228 50V — L6205 100uH — L6224 470 6.3V — L6207 10uH — C6229 330 16V — +3.3VD

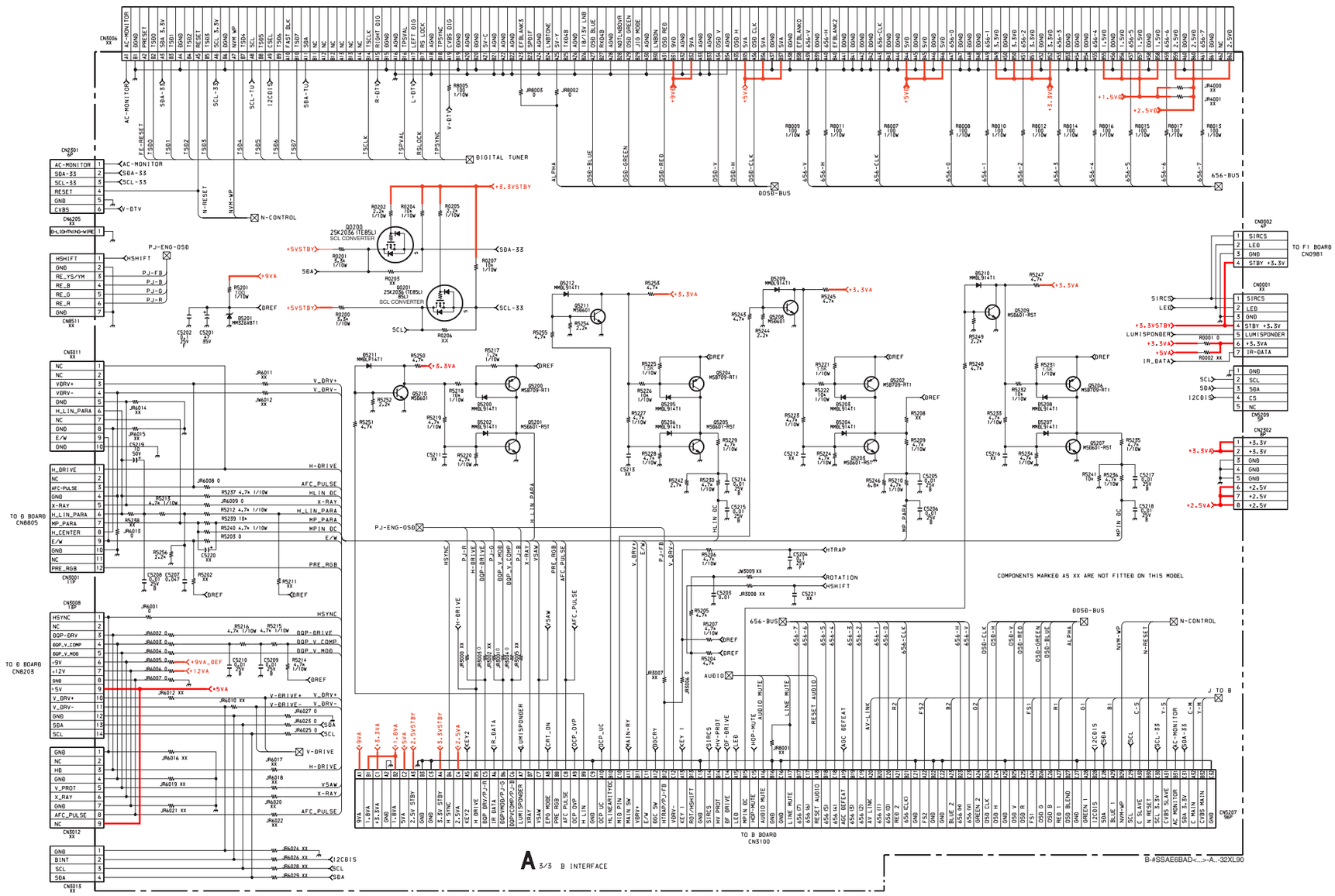
AC ON/OFF
+5VA — R6255 XX — Q6205 MSB709-RT1 BUFFER — AC-MONITOR
+3.3VSTBY — R6232 0 — R6229 100k 1/10W — Q6204 MSB709-RT1 — R6238 0 — Q6207 MSB601-RST1 — R6228 10k 1/10W — R6227 150K
STBYAC — R6223 100K 1/10W — R6251 22K 1/10W — R6230 100k 1/10W — Q6201 MSB601-RST1 — Q6206 MSB601-RST1
R6224 10K 1/10W — C6254 0.047 50V — R6225 10K 1/10W — R6226 10k 1/10W

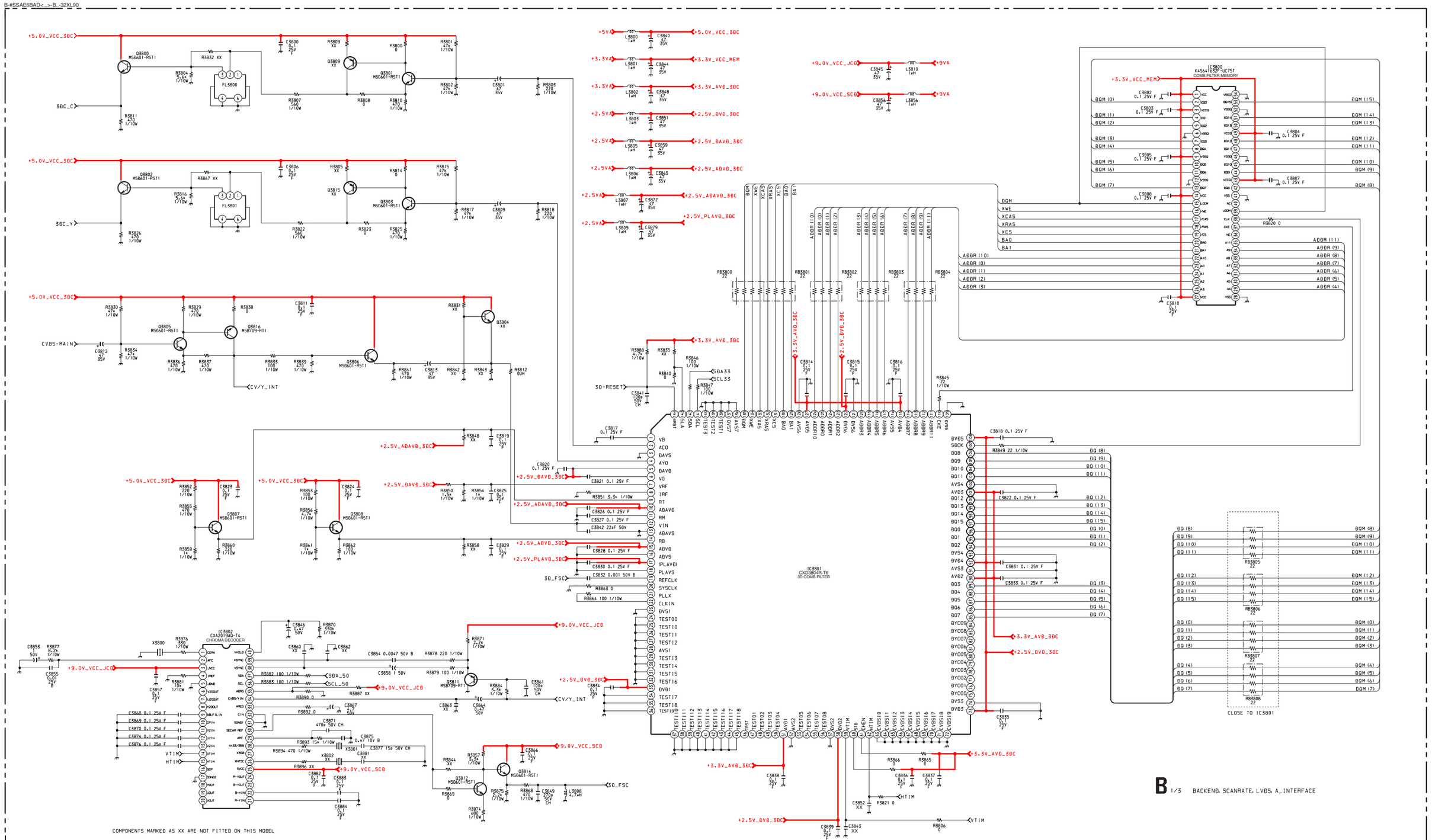
+5V REGULATORS AREA
+6V — C6200 0.1 25V — IC6200 L78M05CV-LSY 5 VOLT REGULATOR — C6206 100 25V — C6209 100 25V — C6205 0.1 25V — +5VA
IC6206 XX
FB6200 XX — C6216 XX — R6201 XX — R6205 XX — R6202 XX — L6209 XX — +5VD
R6200 XX — R6208 XX — L6200 XX — L6201 XX — L6206 XX — C6225 XX — C6228 XX — C6222 XX — R6200 XX

+2.5V REGULATORS AREA
+6V — C6261 XX — C6259 XX — IC6216 XX — C6260 XX — C6262 XX — +2.5VA
IC6209 PQ1CG20H2FZ
L6216 5mm
+11VD — FB6205 50M — C6202 1000 16V — R6212 0.25AMP — R6299 100K — R6205 33K — R6257 39K — R6256 150K — R6240 0 — C6281 0.1 50V — L6214 100uH — C6252 100 6.3V — L6215 10uH — C6255 470 16V — +2.5VD

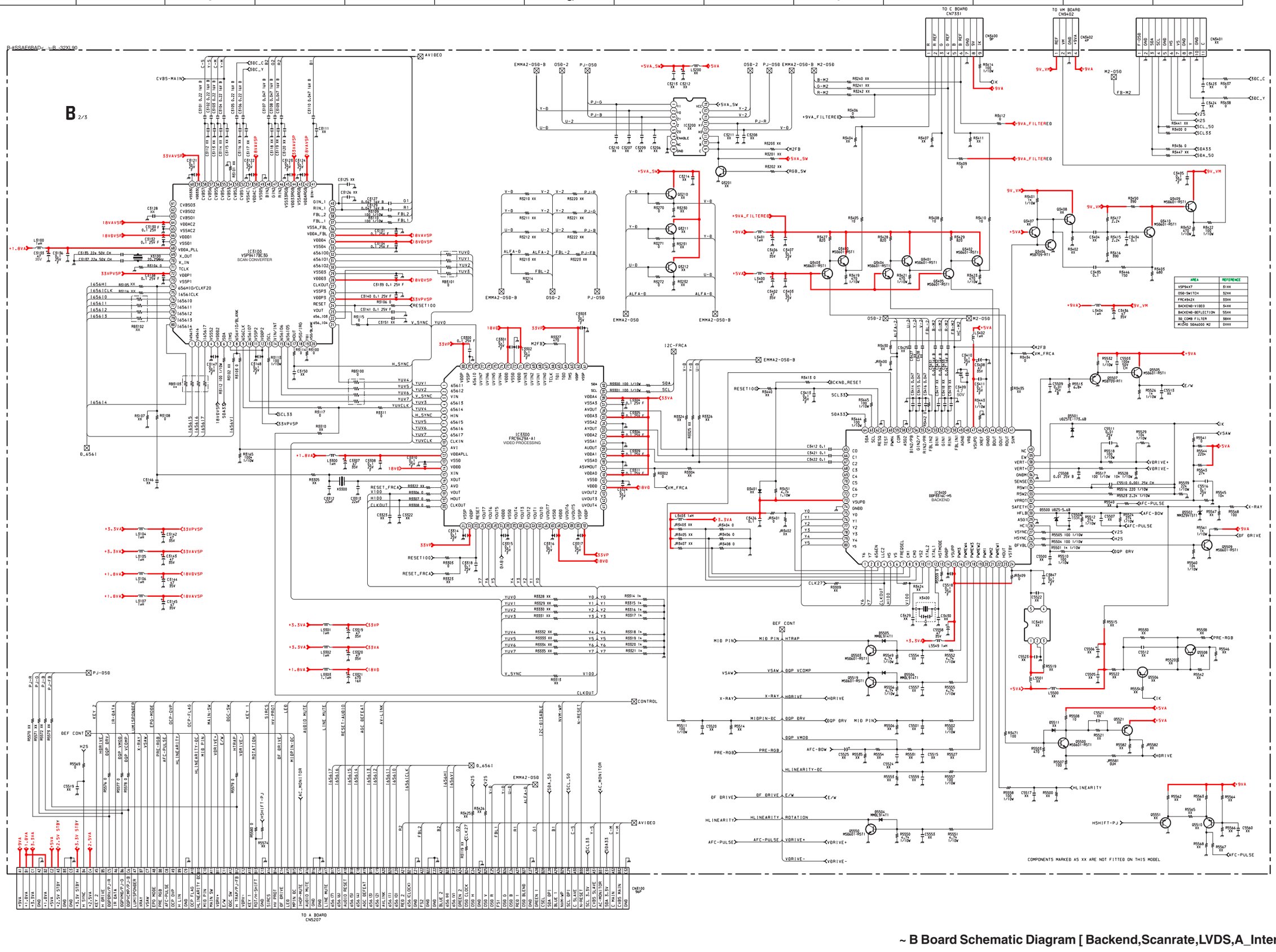
+1.8V & +1.5V REG. AREA
IC6203 PQ1CG25H2FZ 2.5 VOLT REGULATOR
+11VD — JW6201 XX — C6210 10MM — FB6204 JW 5MM — R6245 XX — R6244 1k 1/10W — R6246 470 1/10W — +1.8VD
R6215 0.25AMP — L6218 100uH — C6256 470 6.3V — C6265 100 16V
R6247 0 — C6254 0.1 50V — R6252 XX — R6253 XX — C6211 XX — R6215 XX — Q6210 XX — C6257 XX — R6251 XX
IC6208 XX
JW6208 XX — +2.5VD — +11VD — C6218 XX — FB6202 XX — R6207 XX — R6241 XX — R6204 XX — R6242 XX — R6202 XX — R6210 XX — L6205 XX — L6208 XX — +1.5VD — C6224 XX — C6227 XX — C6230 XX

A 2/3 TUNER REGULATORS


DIGITAL TUNER
N-CONTROL
PJ-ENG-OSD
656-BUS
BDSD-BUS
TO D BOARD CNB805
TO D BOARD CNB203
TO B BOARD CN5100
TO F1 BOARD CN0981
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
A 3/3 B INTERFACE

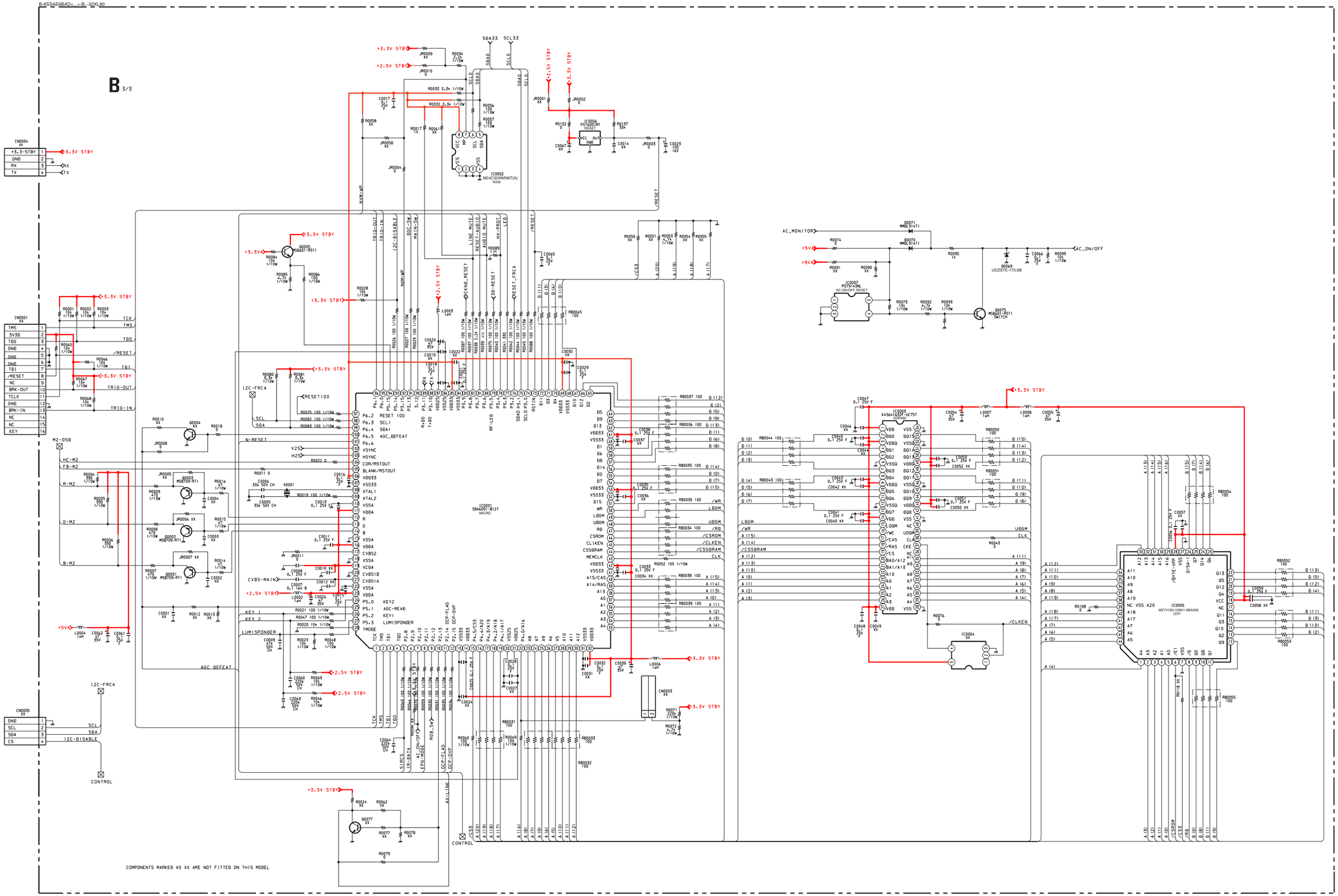


~ B Board Schematic Diagram [Backend,Scanrate,LVDS,A_Interface] Page 1/3 ~

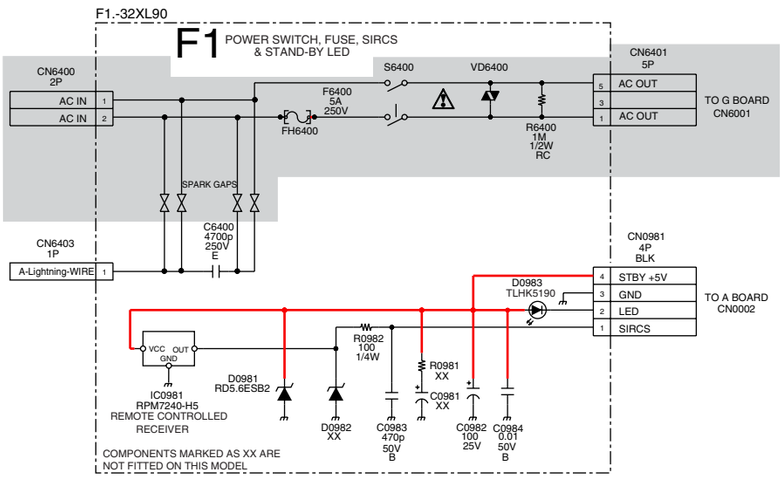


AREA	REFERENCE
VSP9xx7	51xx
OSD-SWITCH	52xx
FRC49x2x	53xx
BACKEND-VIDEO	54xx
BACKEND-DEFLECTION	55xx
SD_COMB FILTER	58xx
MICRO SDA6000 M2	0XXX

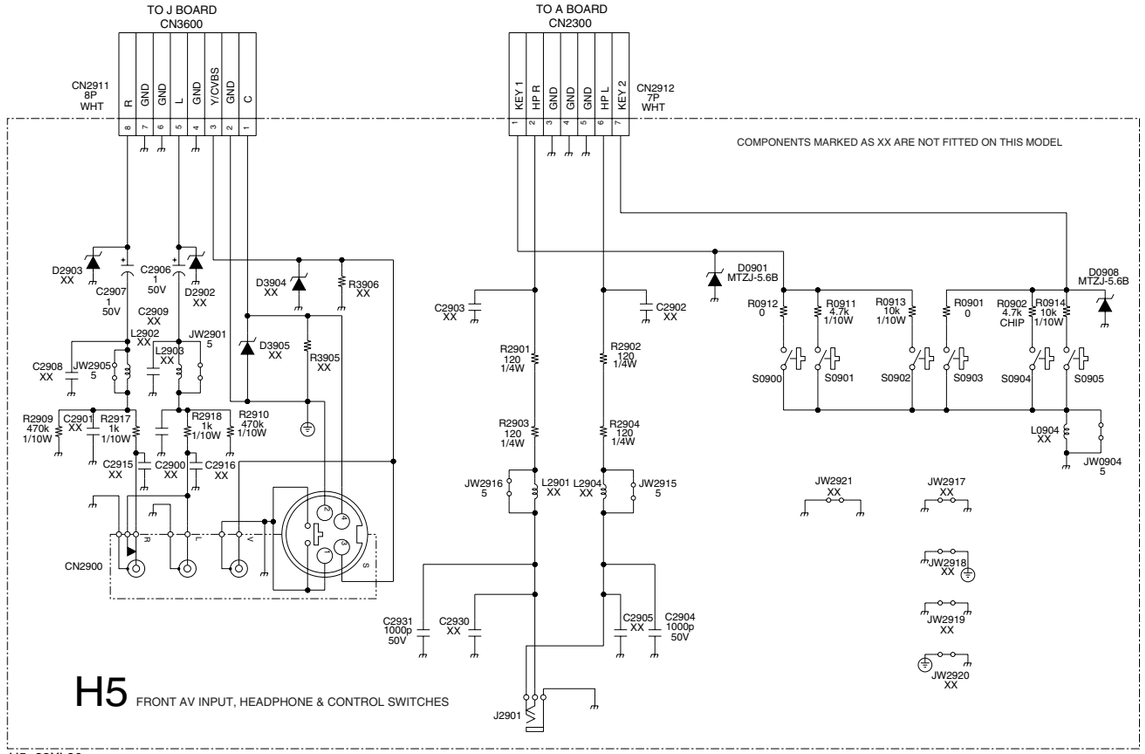
B 3/3


CN0004
+3.3-STBY
GND
RX
TX
CN0001
TMS
3V3D
TDO
GND
GND
TDI
/RESET
NC
BRK-OUT
TCLK
GND
BRK-IN
NC
NC
KEY
M2-OSD
HC-M2
FB-M2
R-M2
G-M2
B-M2
I2C-FRCA
SCL
SDA
I2C-DISABLE
CONTROL
CN0005
GND
SCL
SDA
CS
IC0001
5DA6001-B12T
MICRO
IC0002
M24C32WMN6T(A)
NVM
IC0004
PST6001MT
RESET
IC0005
M27V160-100K1-6BA006
OTP
IC0006
PST6001MT
RESET
IC0007
PST914NL
AC ON/OFF RESET
IC0008
K4S643232F-UC75T
SDRAM
IC0004
SWITCH
Q0004
MSB709-RT1
Q0002
MSB709-RT1
Q0001
MSB709-RT1
Q0005
MSB601-RST1
Q0006
MSB601-RST1
Q0077
D0069
UDZSTE-173.6B
D0071
NME5141
D0070
NME5141
SWITCH
SDA33
SCL33
+3.3V STBY
+2.5V STBY
+3.3V
+5V
+9V
+5VA
/RESET
NVM-WP
TRIG-OUT
TRIG-IN
I2C-DISABLE
BGC-SW
MAIN-SW
LINE MUTE
RESET-MODE
AUDIO MODE
HV-PROT
LED
BKEND_RESET
LCD-RESET
RESET_FRCA
AGC_DEFEAT
KEY 1
KEY 2
LUMISPONDER
CVBS-MAIN
SIRCS
IR-DATA
AC_ON/OFF
EPG-MODE
RGB_SW
OCP-FLAG
OCP-DVP
AV-LINK
AC_MONITOR
AC_ON/OFF
/CLKEN
/CS33
/CSROM
/CSSDRAM
/WR
/RD
/LDQM
/UDQM
/CAS
/RAS
CKE
CLK
/WE
/CS
BA0/A12
BA1/A13
RESET100
N-RESET
V2S
H2S
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

~ F1 Board Schematic Diagram [Power Switch, Fuse, SIRCS and Stand-By LED] ~

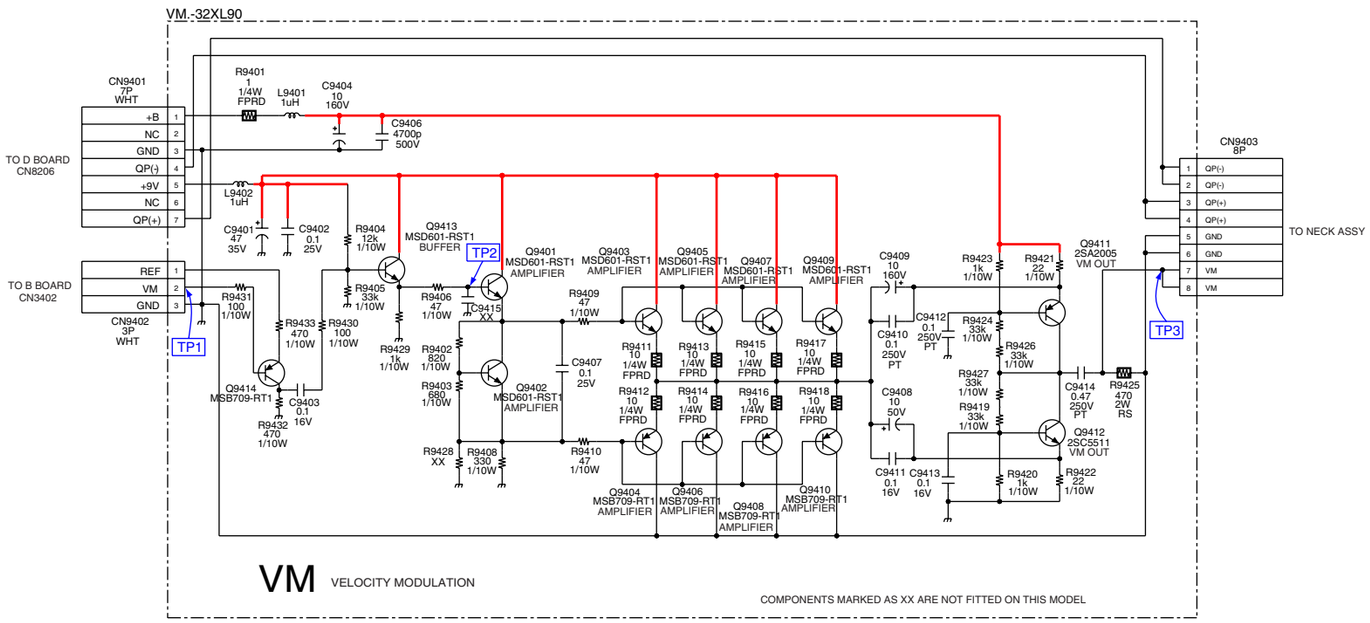


~ H5 Board Schematic Diagram [Front AV Input, Headphone and Control Switches] ~



H5.-32XL90

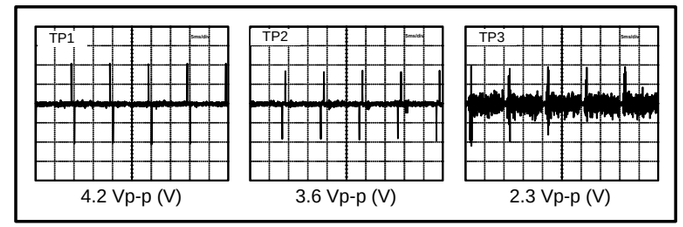
~ VM Board Schematic Diagram [Velocity Modulation] ~

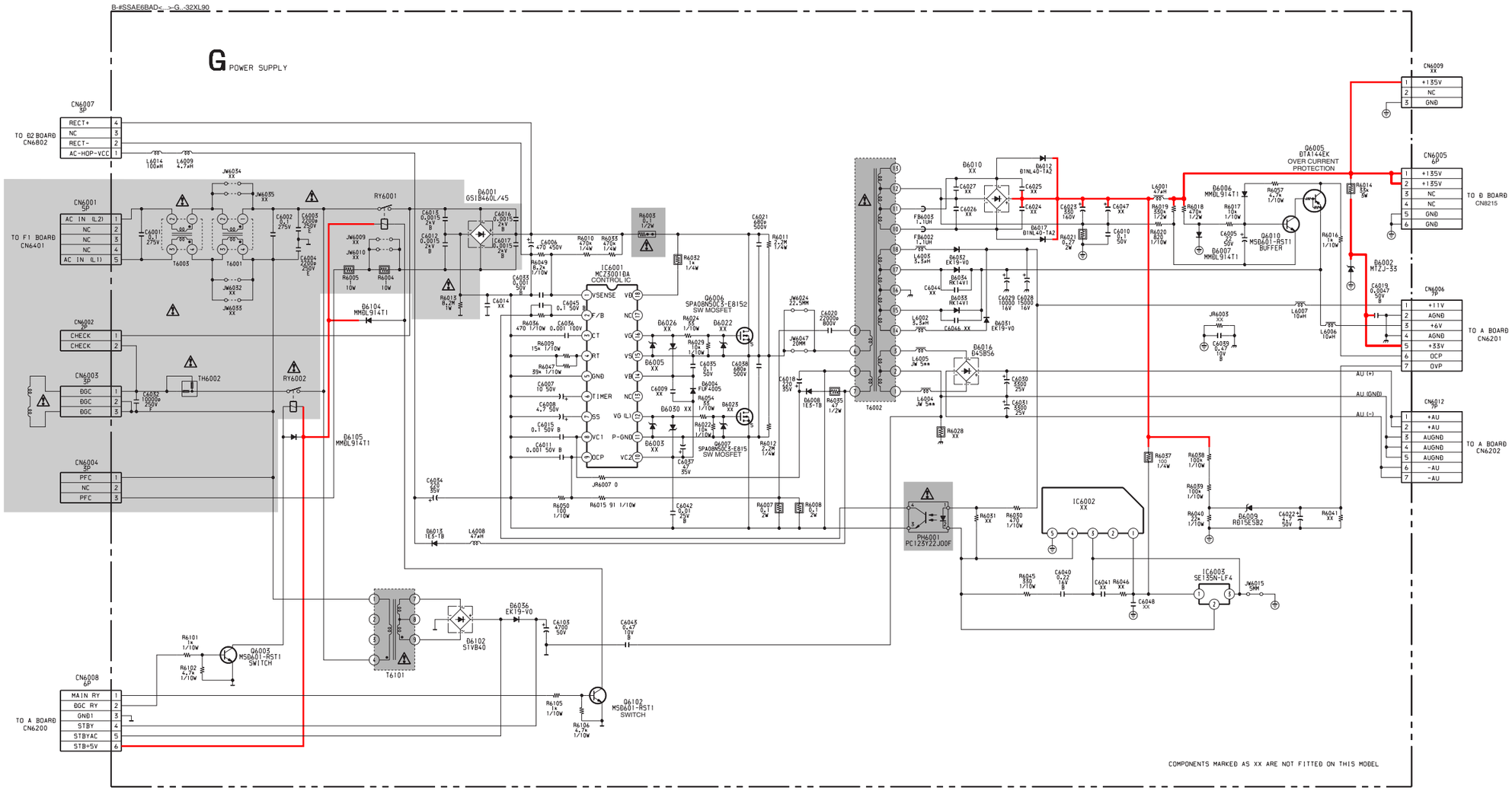


~ VM Board Voltage Table ~

Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)
Q9401	5.1	5.7	8.9	Q9408	4.3	3.6	0
Q9402	3.4	4.3	5.1	Q9409	4.4	5.1	8.9
Q9403	4.4	5.1	8.9	Q9410	4.3	3.6	0
Q9404	4.3	3.6	0	Q9411	4.3	3.6	0
Q9405	4.4	5.1	8.9	Q9412	135.1	1.4.6	70.5
Q9406	4.3	3.6	0	Q9413	0.3	0.9	70.5
Q9407	4.4	5.1	8.9	Q9413	6.6	5.9	2.4

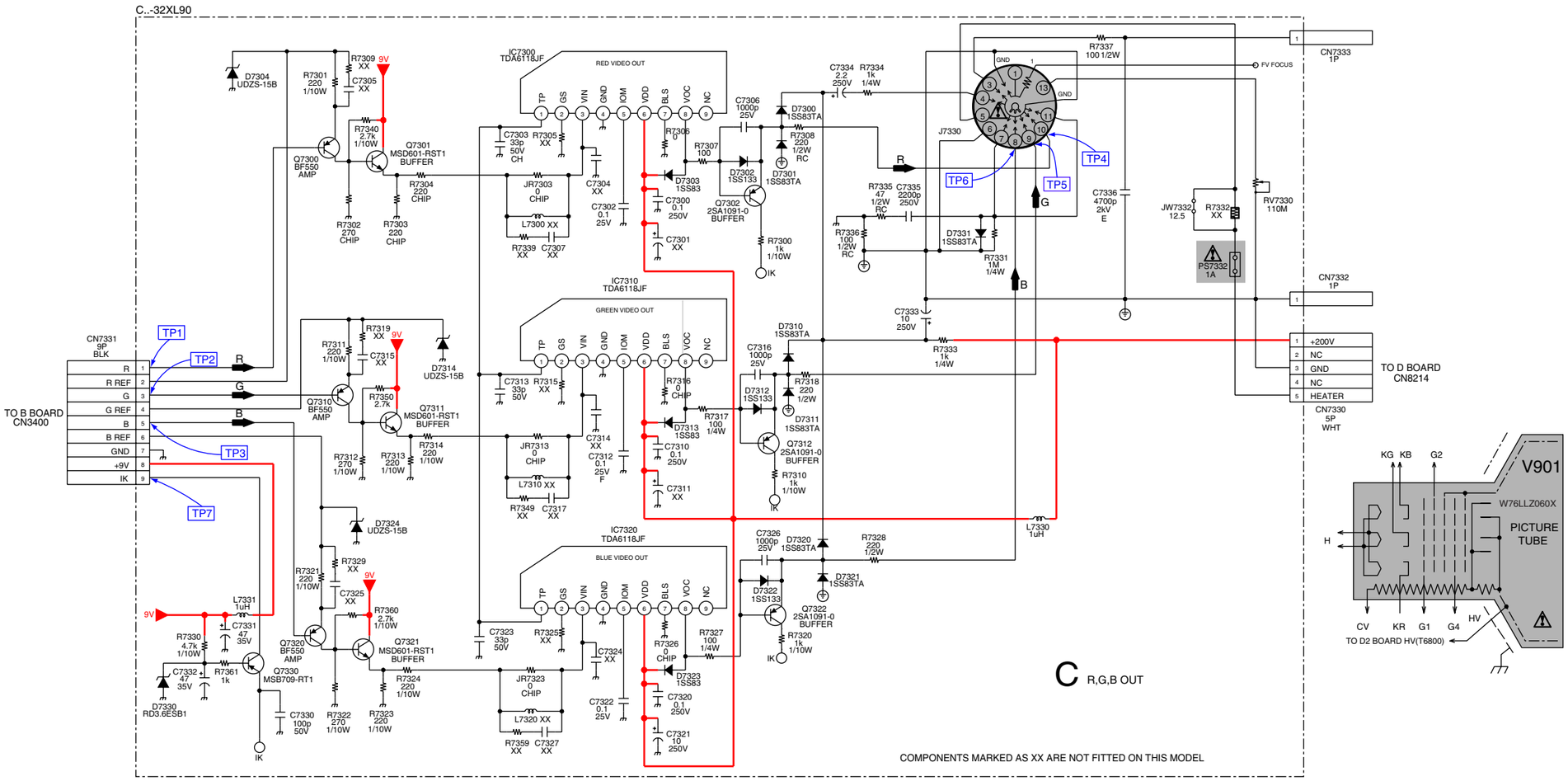
~ VM Board Waveforms ~





~ G Board Schematic Diagram [Power Supply] ~

C..-32XL90



~ C Board Schematic Diagram [R-G-B Out] ~

J.-32XL90

AUDIO R OUT
AUDIO R IN
AUDIO L OUT
AUDIO L IN
VIDEO OUT
VIDEO IN

CN3601 21P
CN3602 21P
CN3603 21P
CN3600 BP RED
TO H5 BOARD CN2911

SC1-OUT-R
SC1-IN-R
SC1-OUT-L
SC1-IN-L
SC2-OUT-R
SC2-IN-R
SC2-OUT-L
SC2-IN-L
SC3-OUT-R
SC3-IN-R
SC3-OUT-L
SC3-IN-L

BLUE-1
MODE1
GREEN-1
RED-1
V-OUT-1B
V-IN-1
BLUE-2
MODE2
GREEN-2
RED-2
V-IN-2
BLK2
V-IN-3
C-IN-3
V-OUT-3B
C-FRONT
Y/CVBS-FRONT
FRONT-L
FRONT-R
MODE3
AV-LINK
V-OUT-1S
V-OUT-3S
CVBS/YSLAVE
C-SLAVE
V-ANALOGRF

SC2-OUT-L
SC2-OUT-R
9V-AUDIO
SPEAKER-R
SPEAKER-L

IC3600 CXA2149AQ-TL AV SWITCH

V-OUT-3S
V-OUT-2S
V-OUT-1S
V-OUT-1B
V-OUT-2B
V-OUT-3B

L-DIGITALRF
SPEAKER-R
SPEAKER-L
R-DIGITALRF
L-ANALOGRF
R-ANALOGRF
V-ANALOGRF
AV-LINK
AC-ON/OFF
SDA
SCL

CN3604 35P WHT
TO A BOARD CN3002

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

J AV SCART I/O SWITCHING AND SOCKETS

~ J Board Schematic Diagram [AV Scart I/O Switching and Sockets] ~

MS-32XL90

MS 1/3 TRIMEDIA MEMORY STICK

IC1
PNX1300EH
MEDIA PROCESSOR

IC12
SN74LV00APWR
ADRESS DECODER

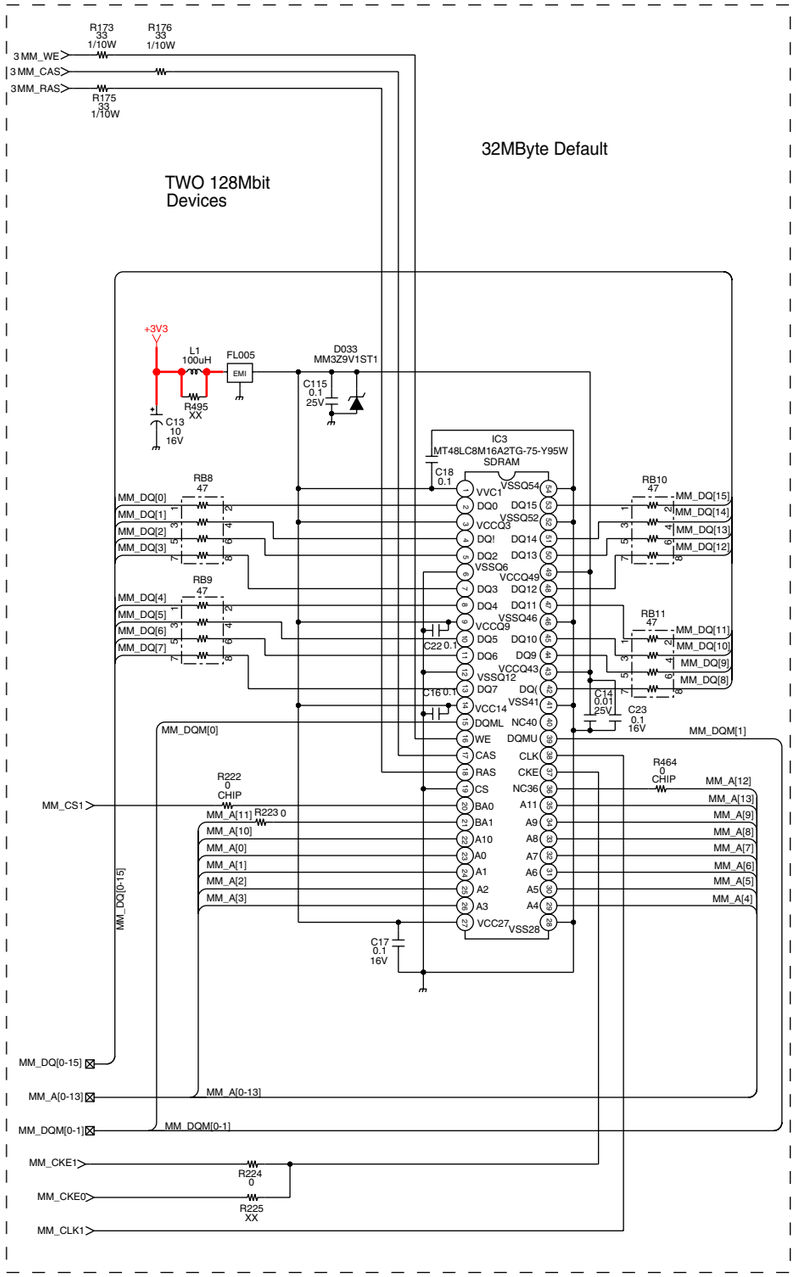
IC11
P87LPC762-7
MICRO CONTROLLER

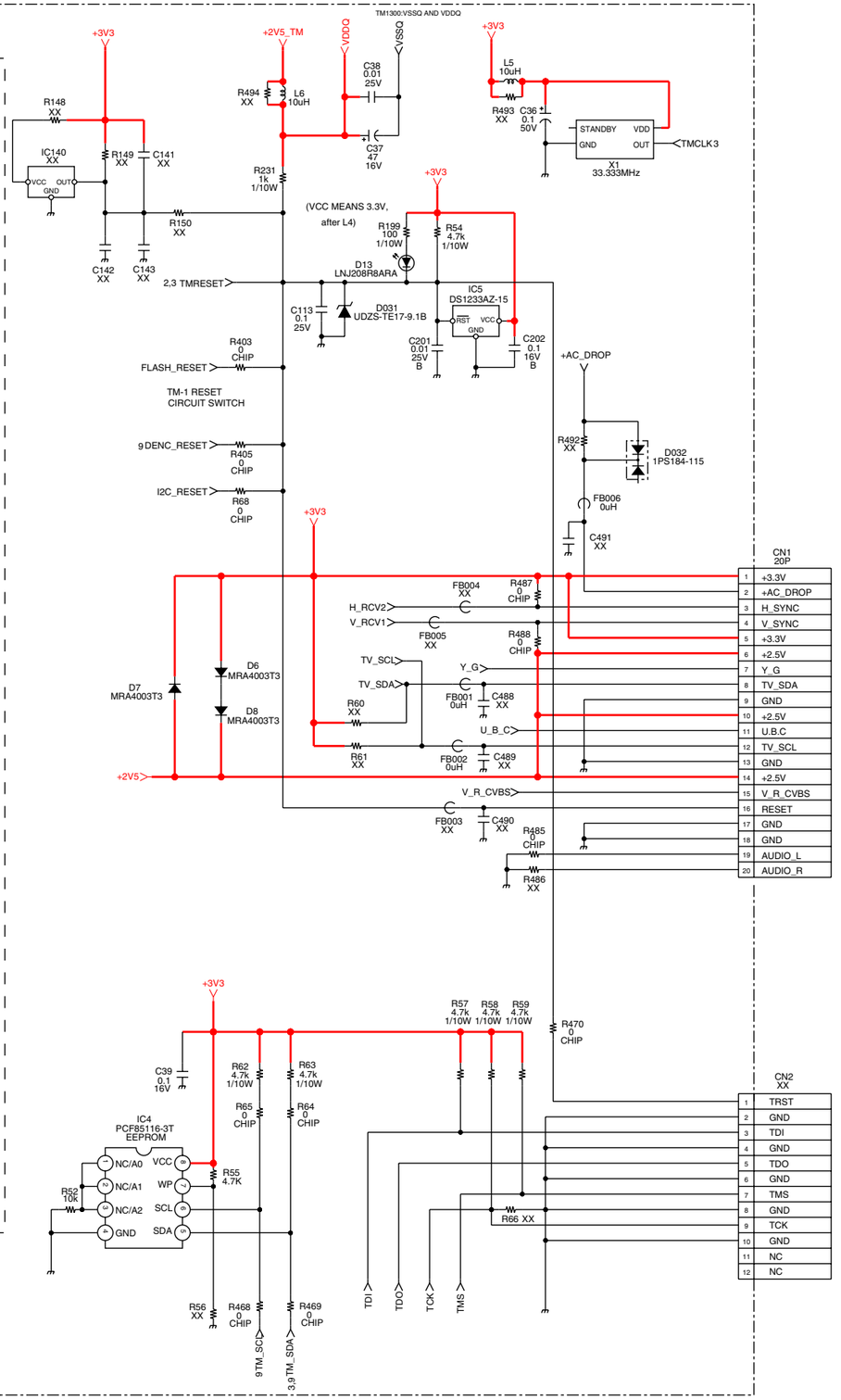
IC8
AM29LV160DT-90EC
FLASH MEMORY

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

MS.-32XL90

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL



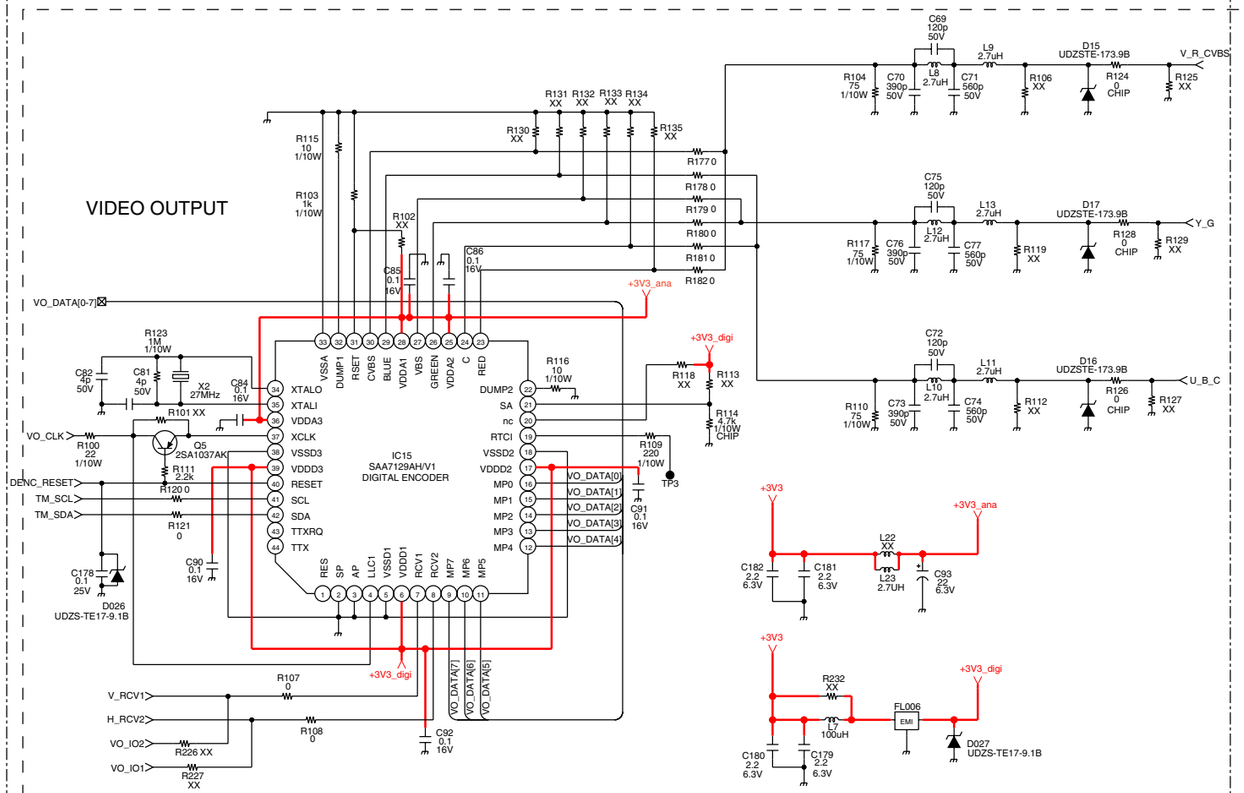


MS 2/3

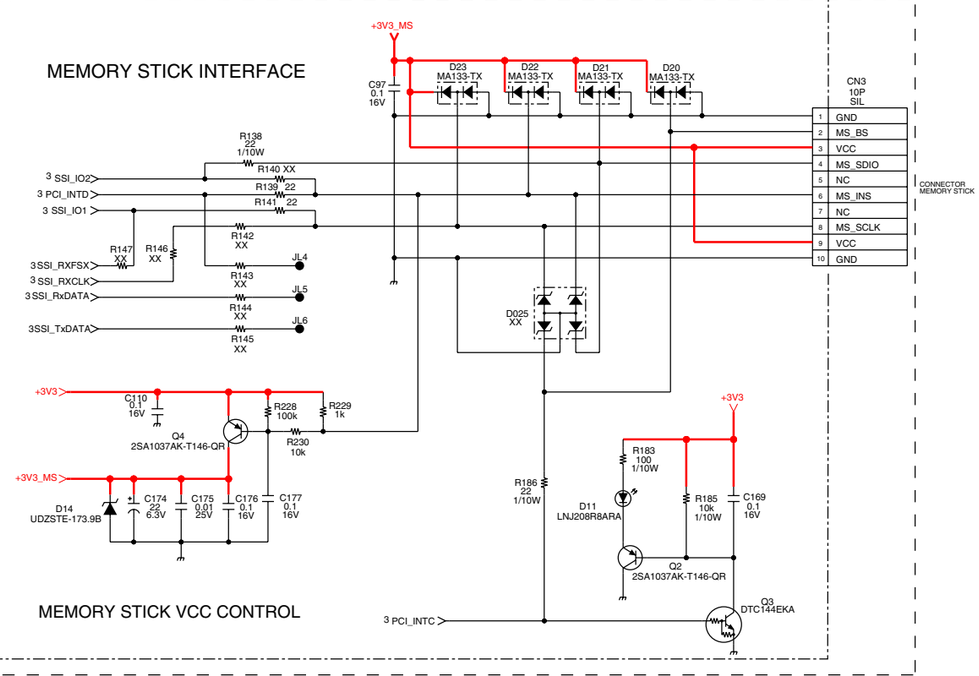
MS.-32XL90

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

VIDEO OUTPUT

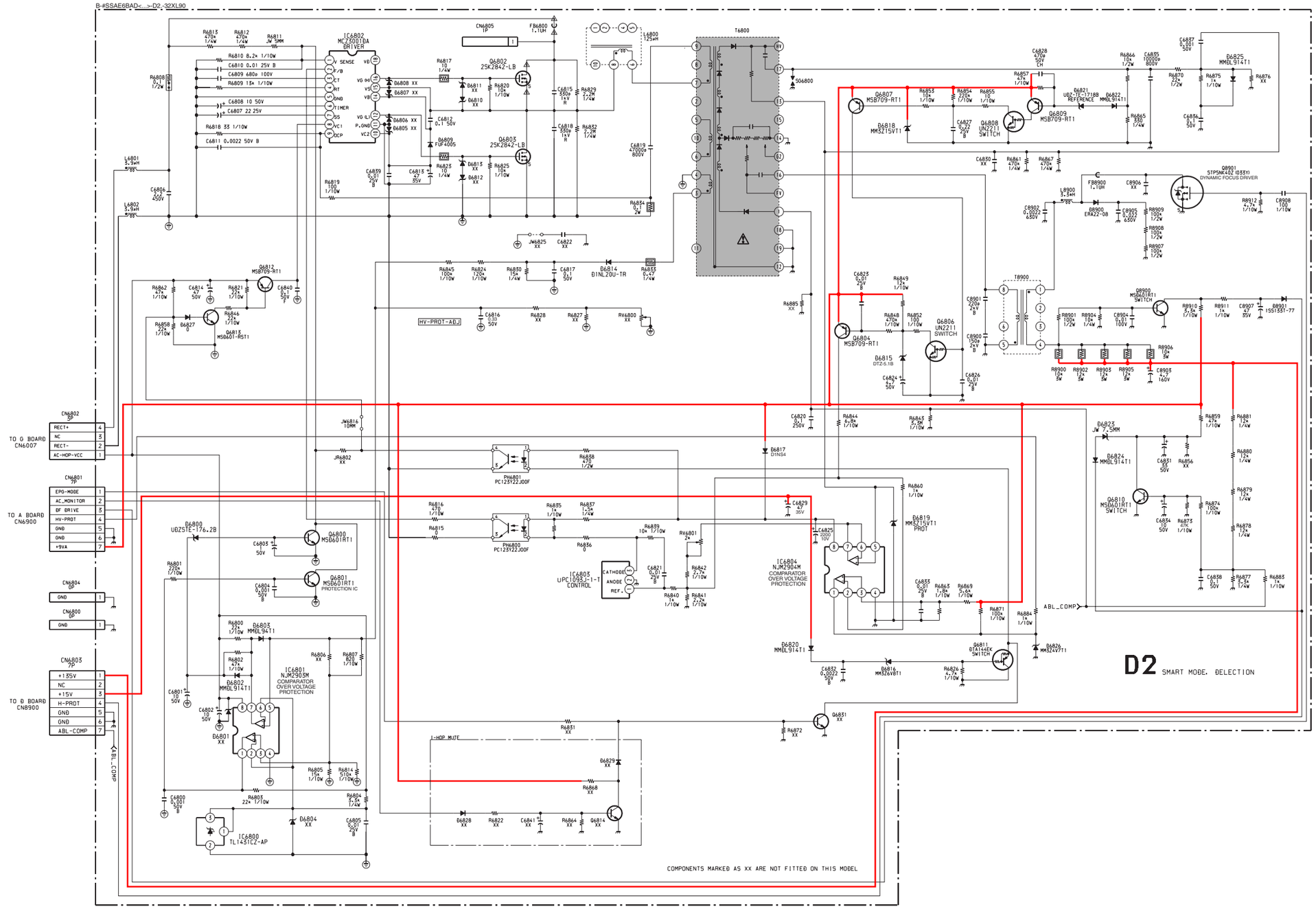


MEMORY STICK INTERFACE

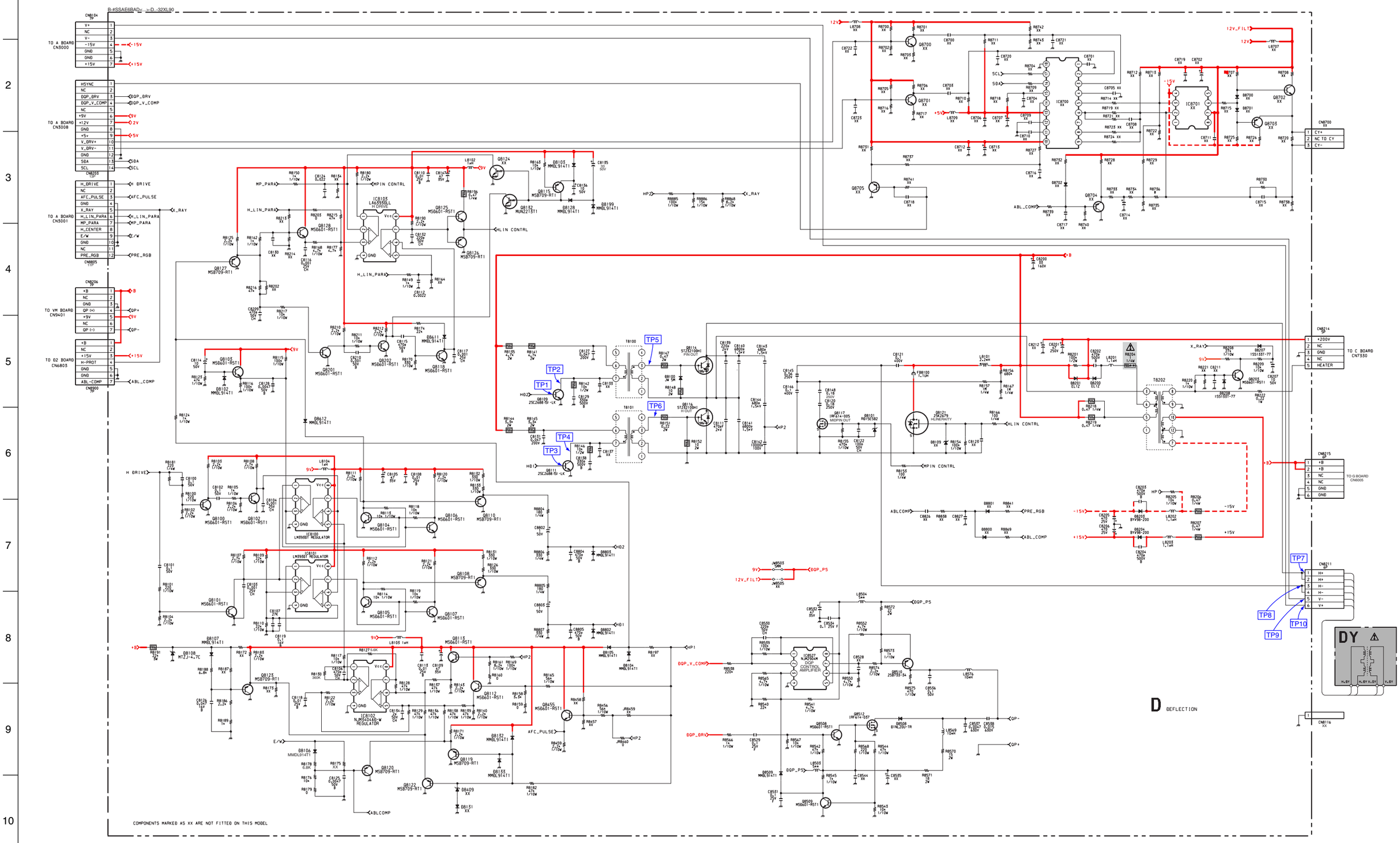


MEMORY STICK VCC CONTROL

MS 3/3



~ D2 Board Schematic Diagram [Smart Mode Deflection] ~



~ D Board Schematic Diagram [Deflection] ~