



AKAI

COLOUR TV SET

Models:

LTA-15E302

LTA-20E302

LTA-20E303

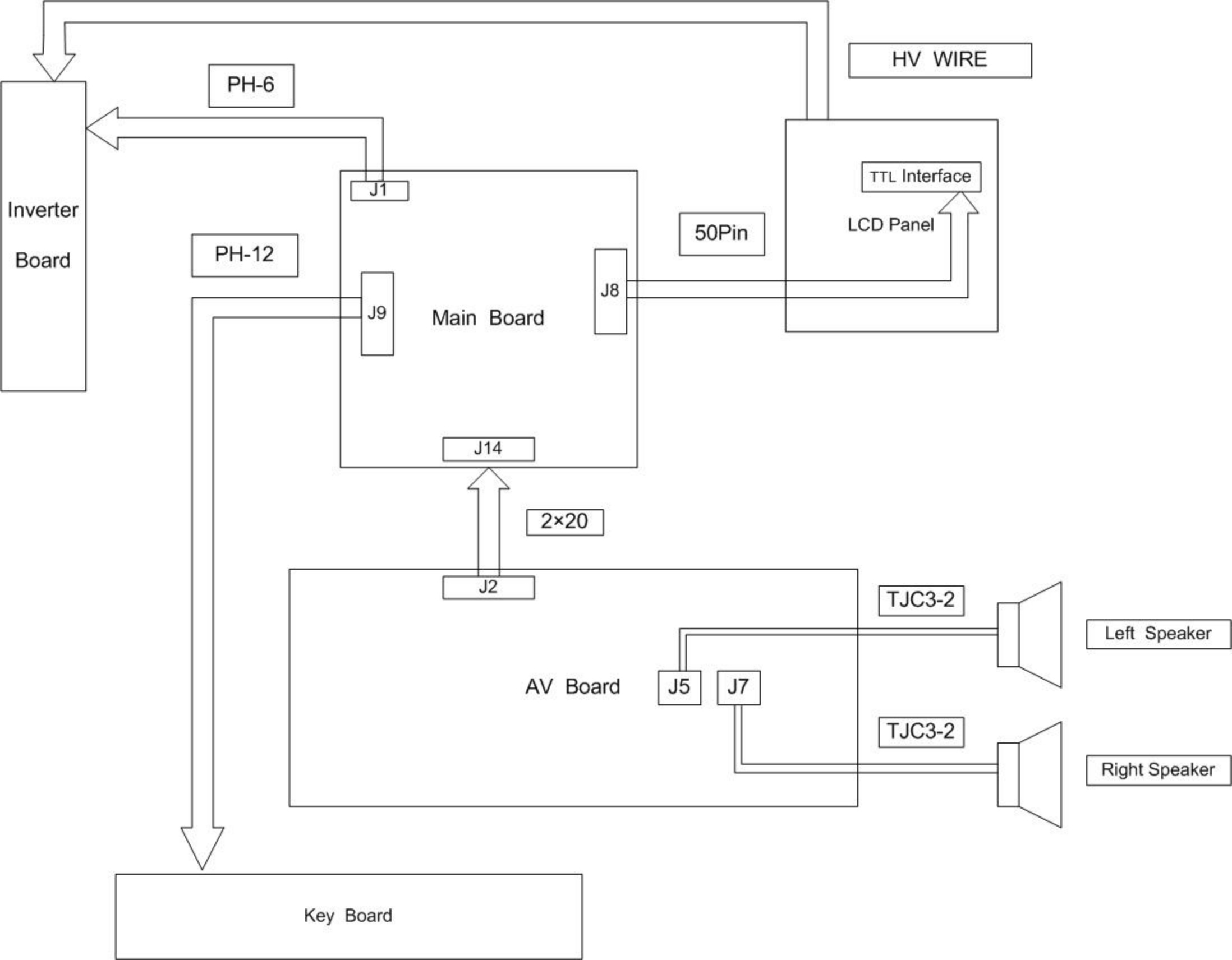
SERVICE MANUAL

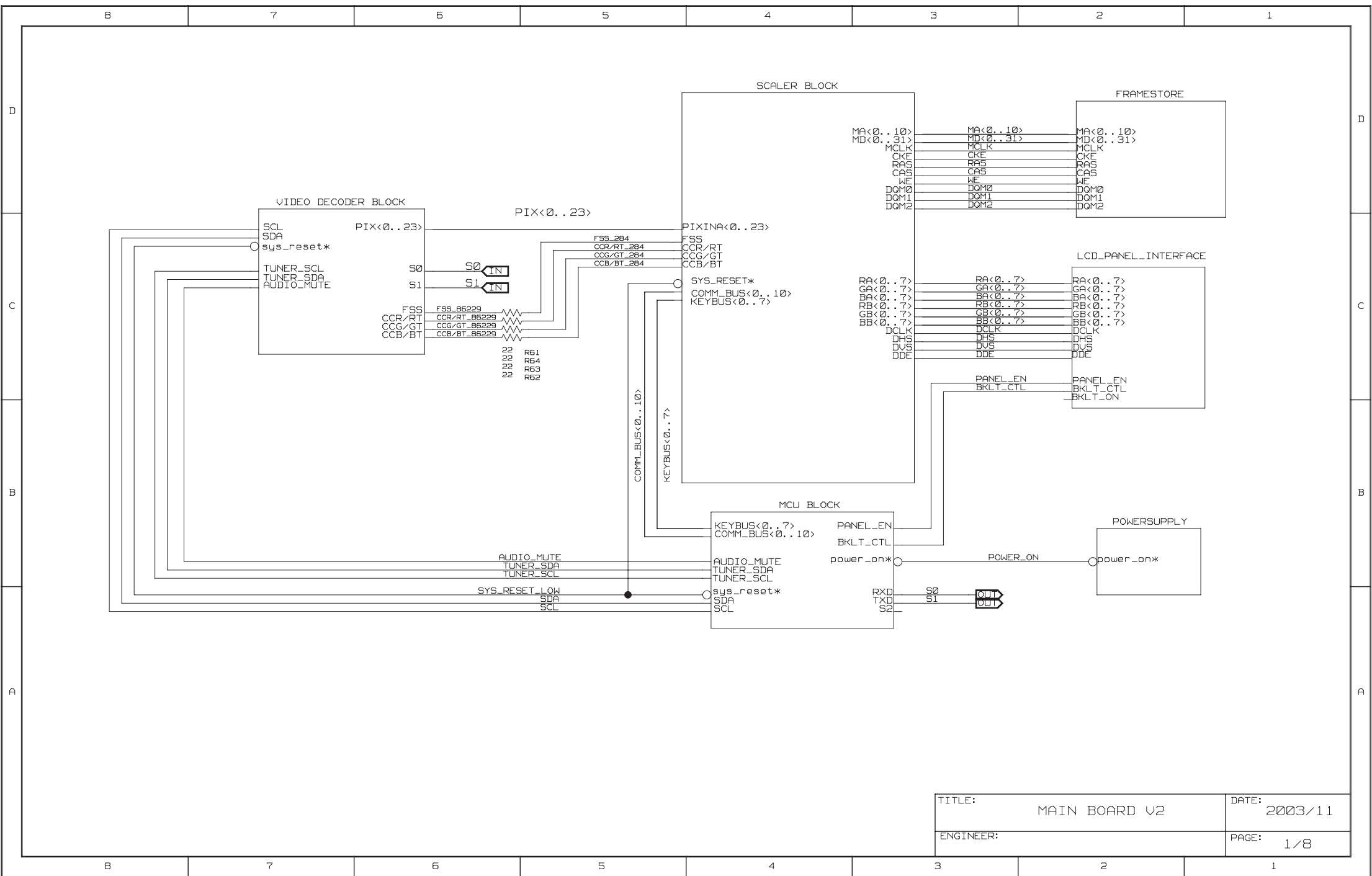


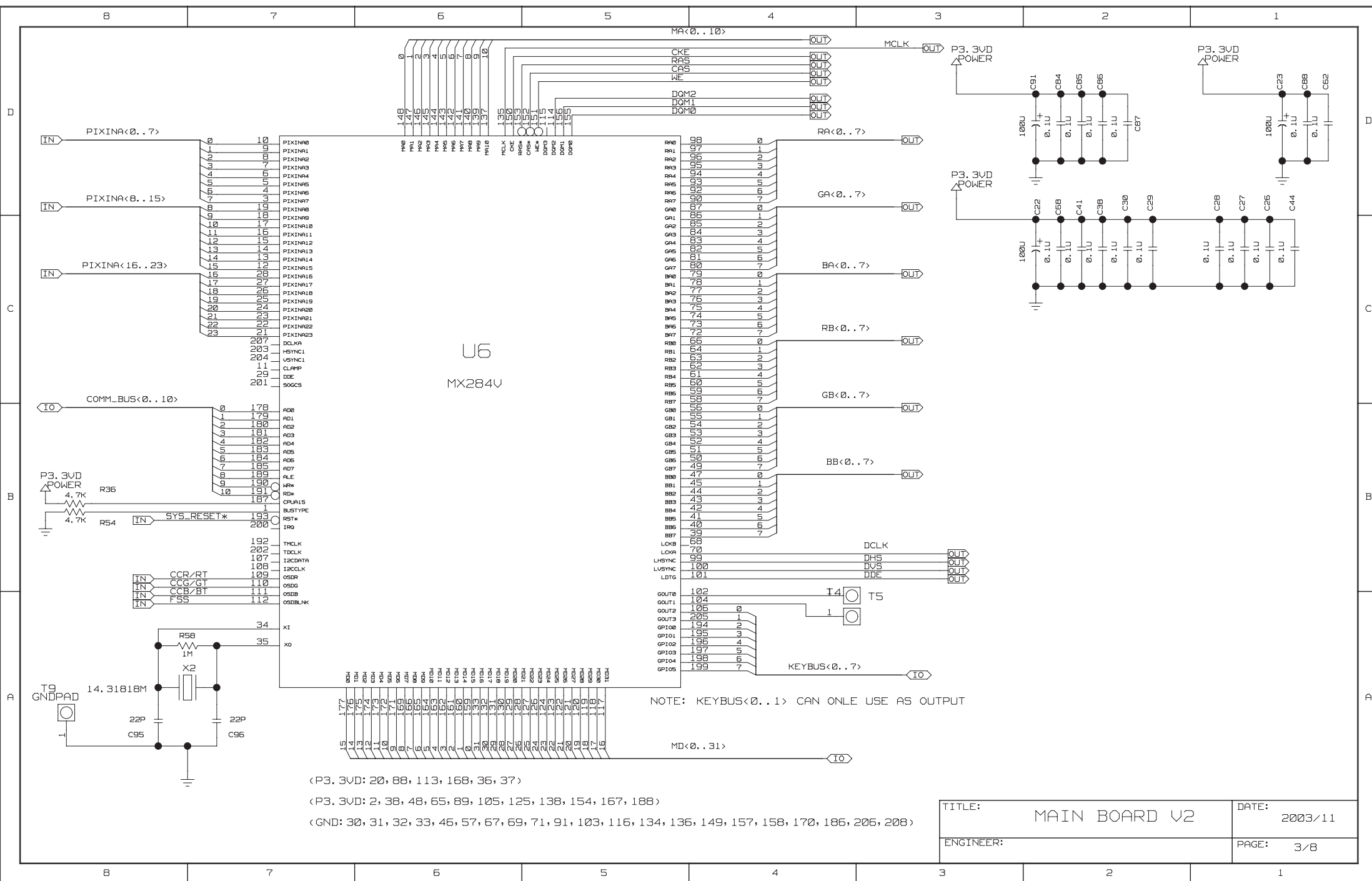
Akai LTA-15E302, LTA-20E302, LTA-20E303

LCD-TV Service Manual

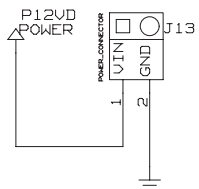
1. The System Block Diagram&the Block's Function Description
2. Schematic Circuit Diagram
3. Interconnection Diagram
4. Critical Connpoents List
5. IC Date Sheet&IC Description
6. Service Tools and Epuipment



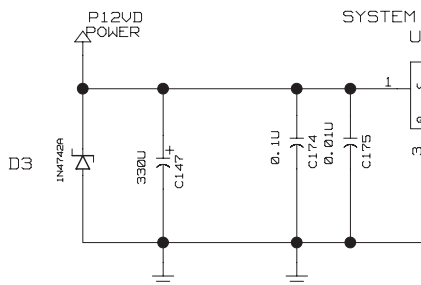




SYSTEM POWER SUPPLY INPUT



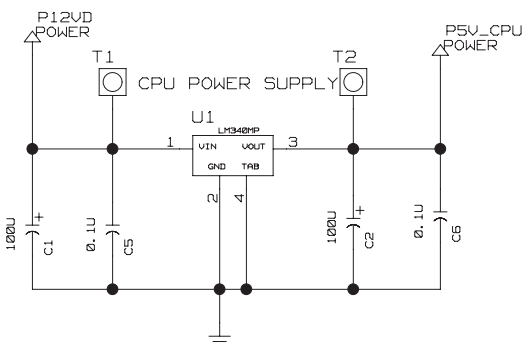
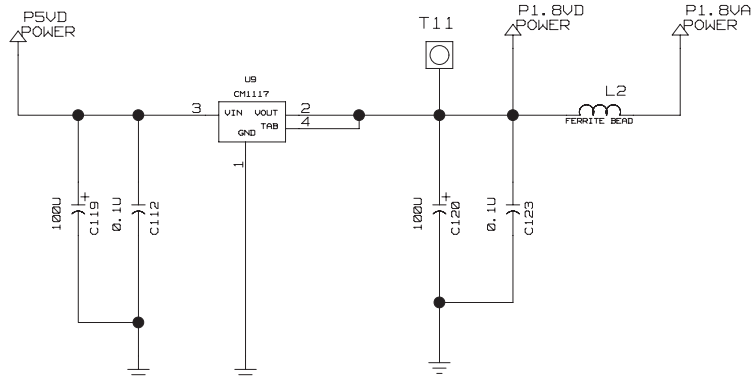
SYSTEM +12V DIGITAL POWER



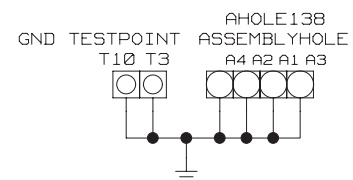
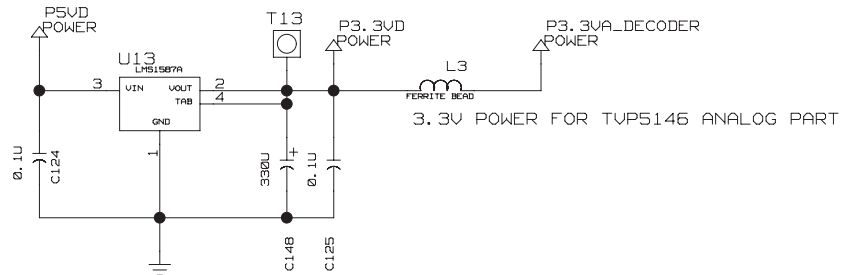
POWER_ON* ☐

SYSTEM POWER ON/OFF

SYSTEM 1.8V DIGITAL POWER 1.8D FOR TVP5146
1.8VA FOR TVP5146

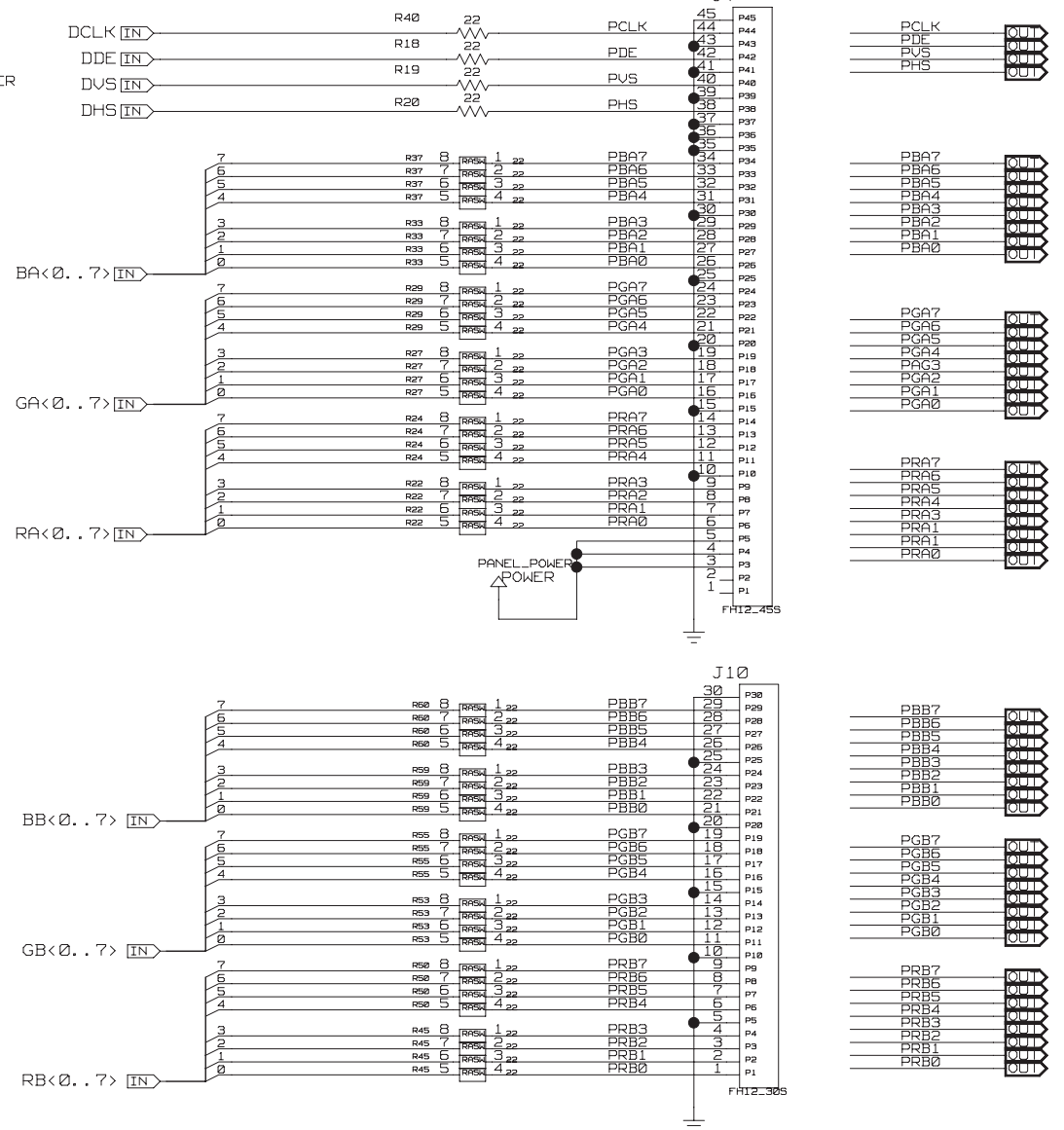
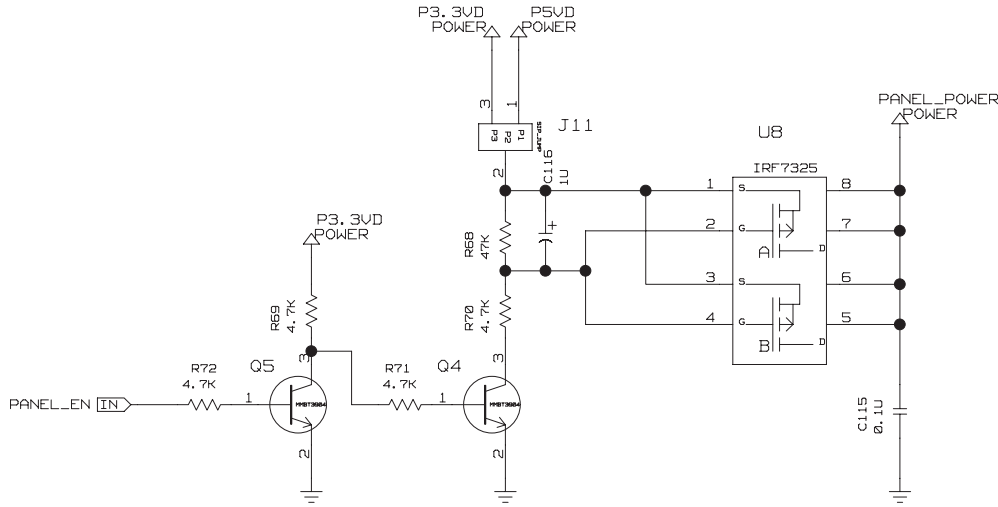


SYSTEM +3.3V DIGITAL POWER

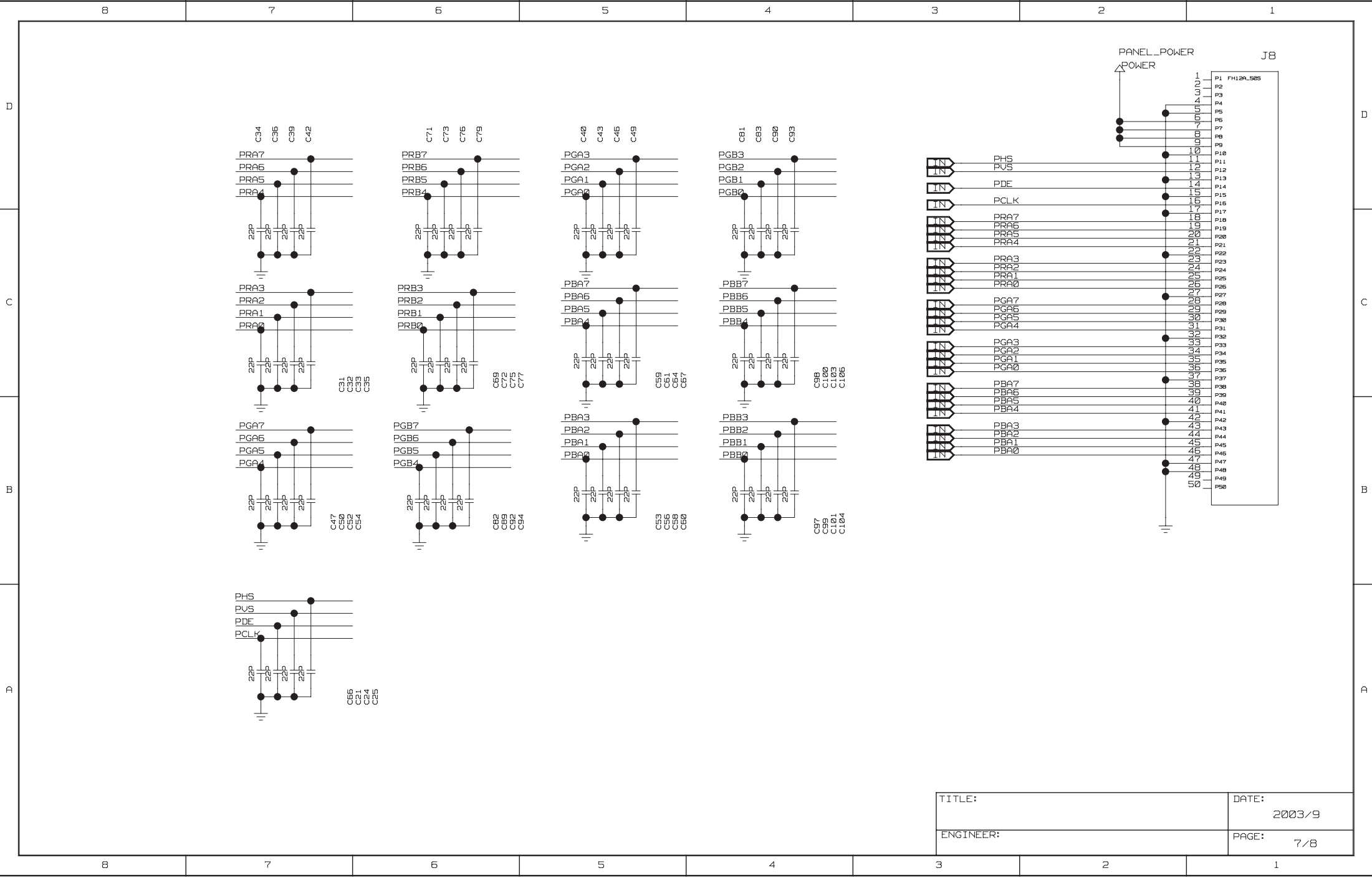


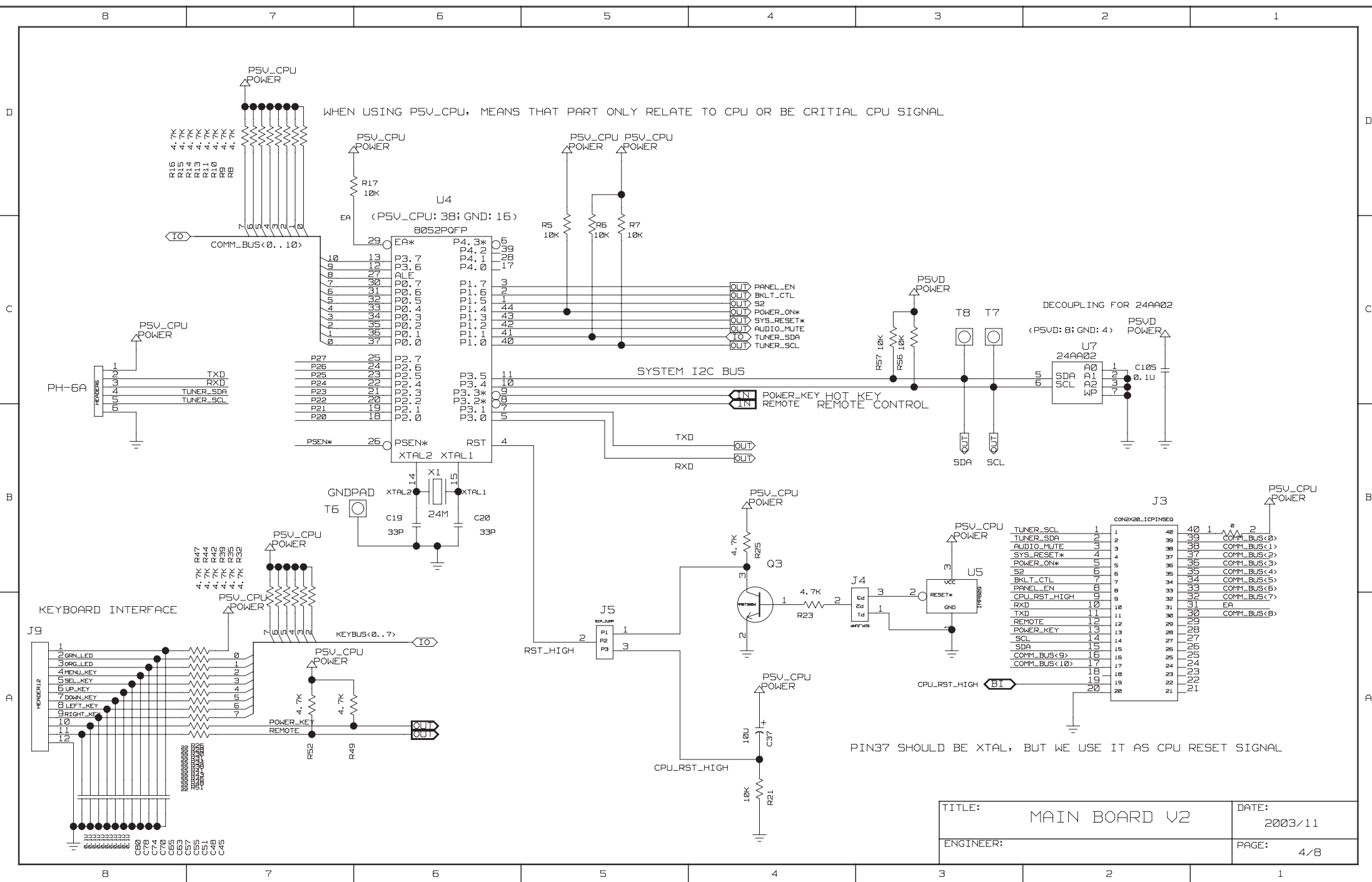
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ENGINEER:	PAGE: 8/8

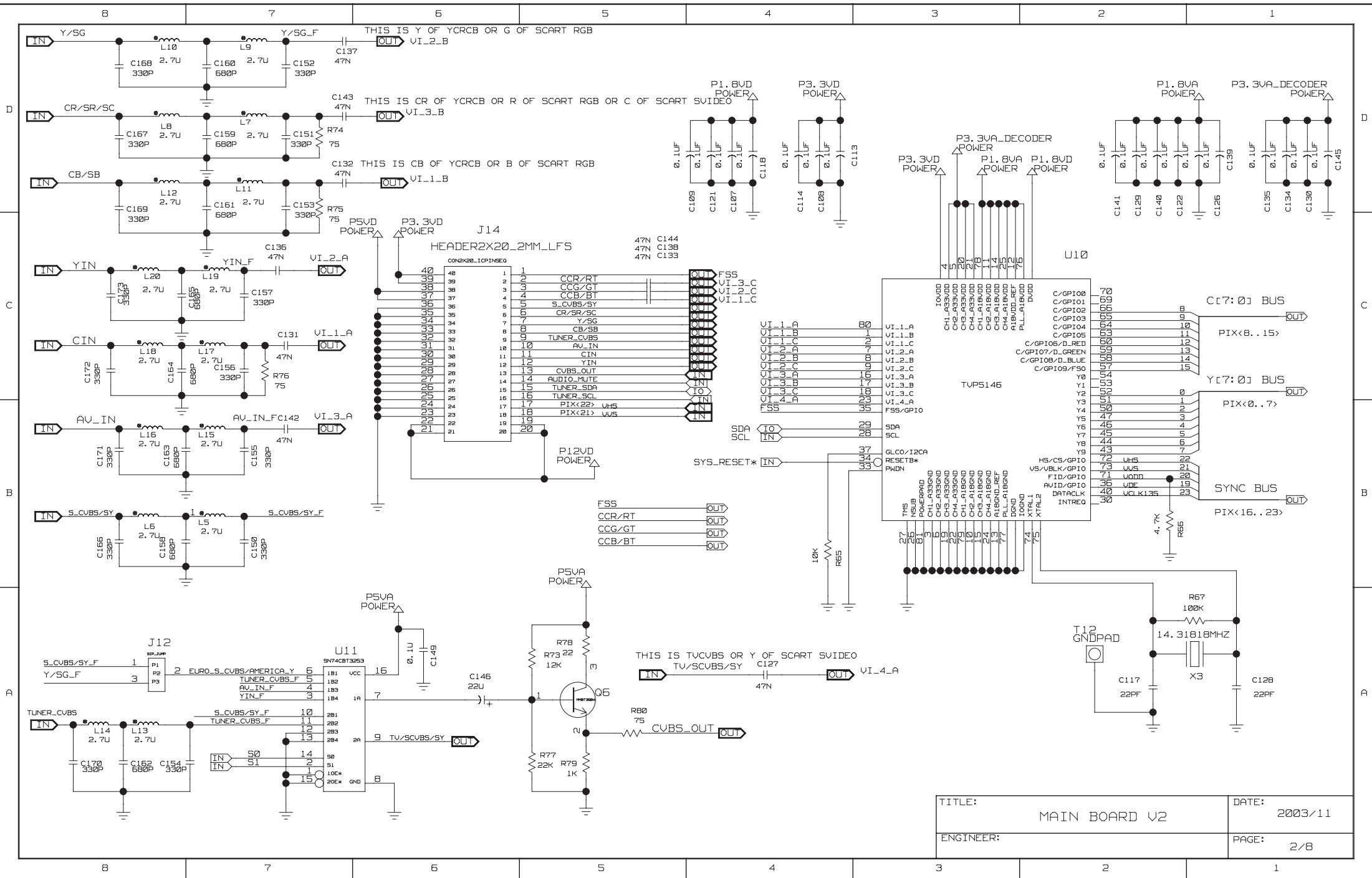
NOTE: THE CONNECTING RELATIONSHIP DEFINE IS JUST INVERTED FROM AU'S DEFINE, TO MATCH THE FPC INSTALLATION

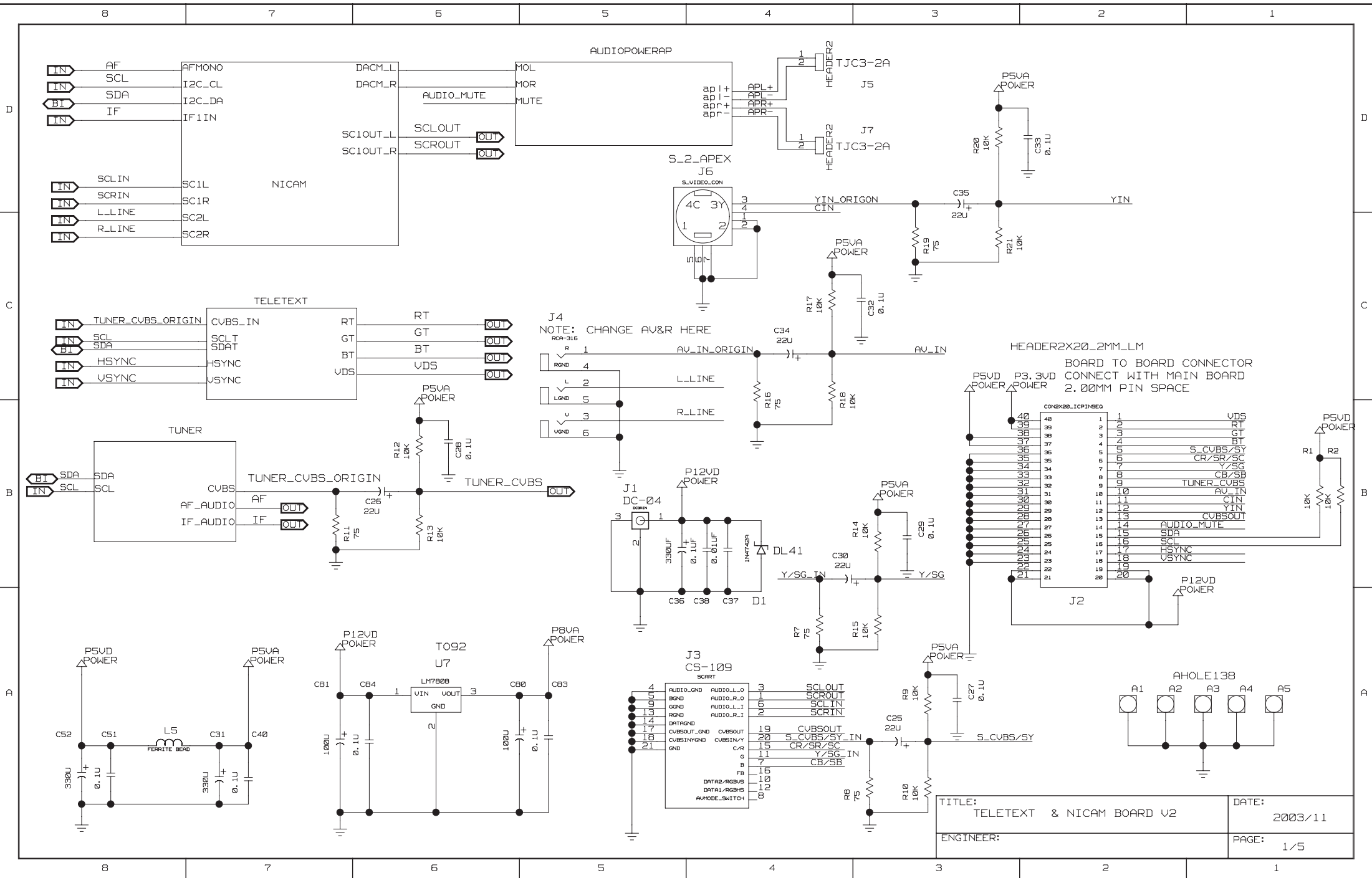


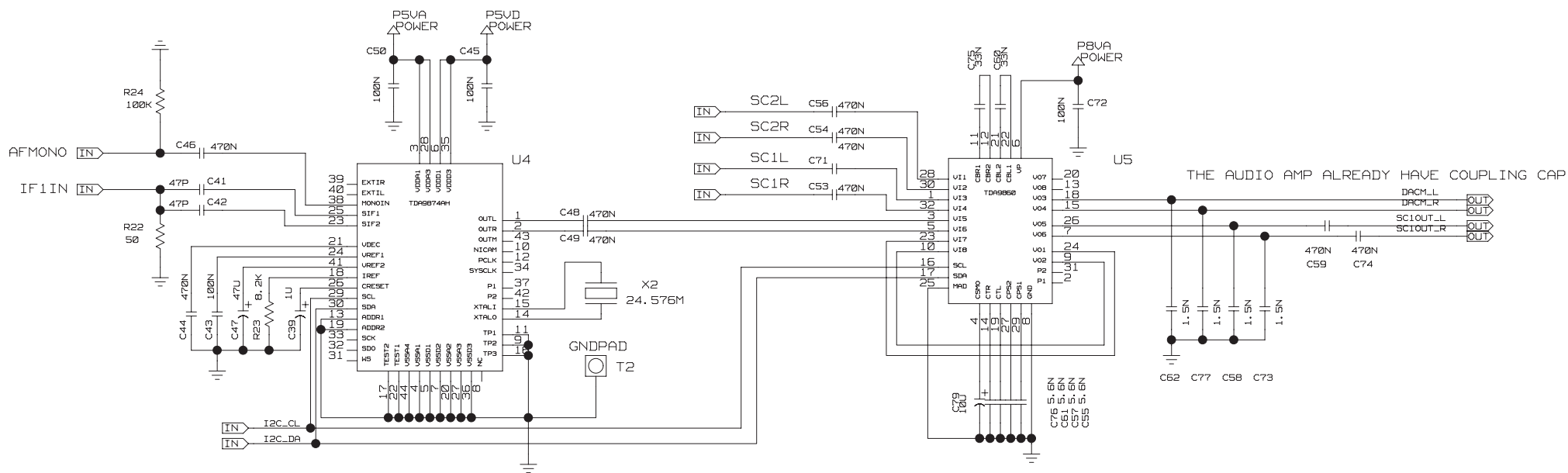
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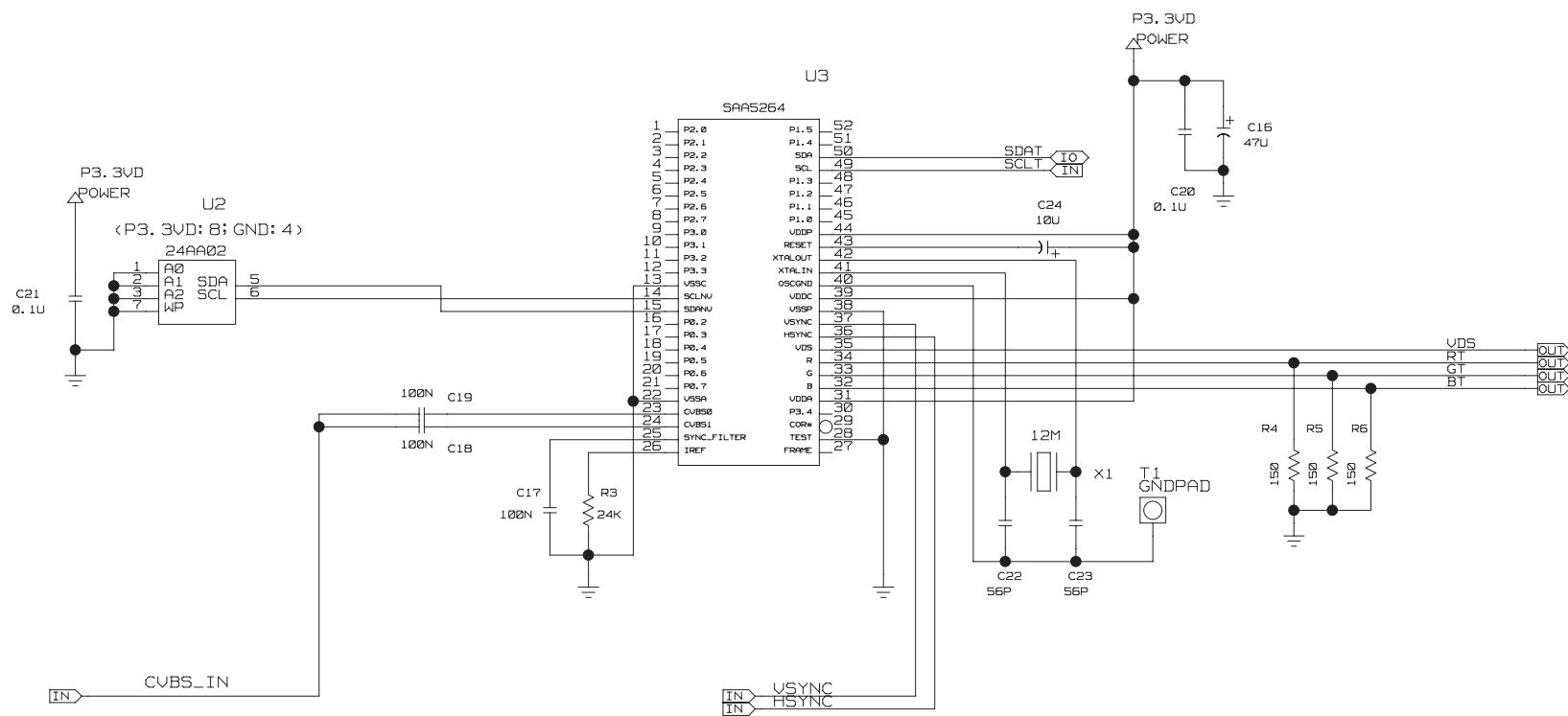






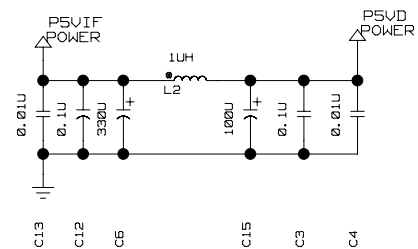
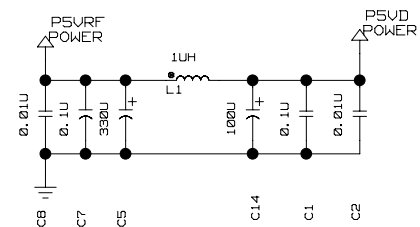
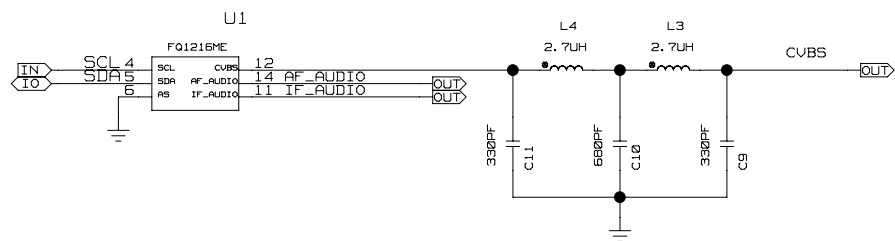


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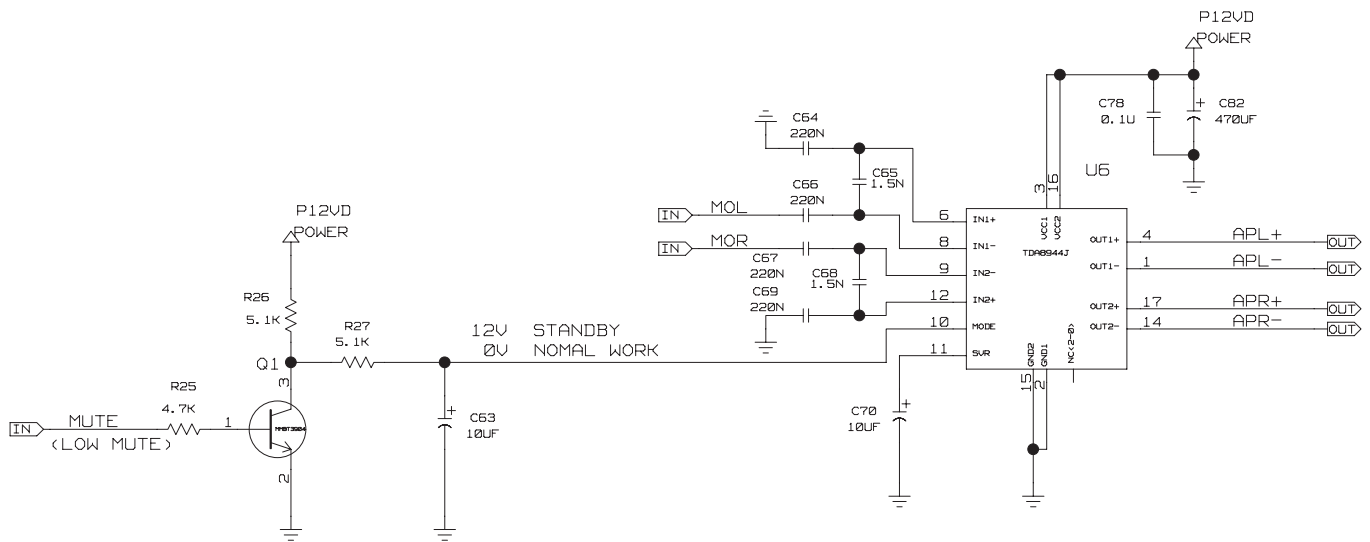


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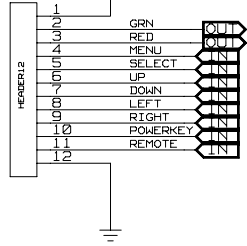


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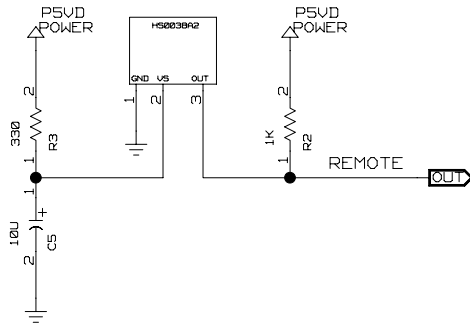


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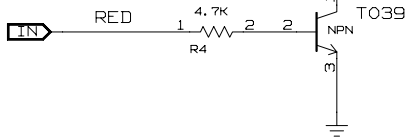
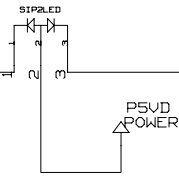
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J1



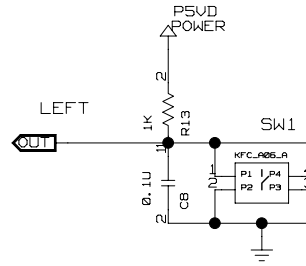
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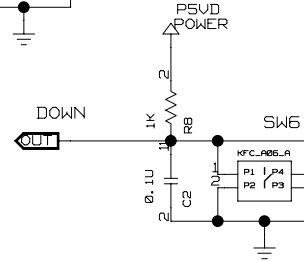
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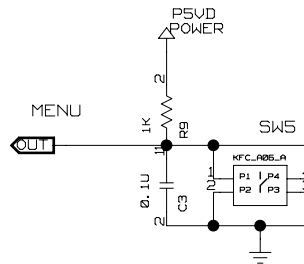
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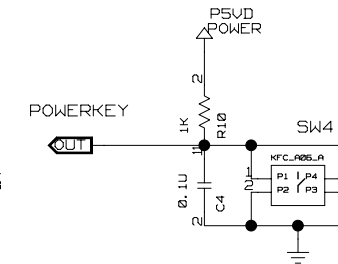
DOWN



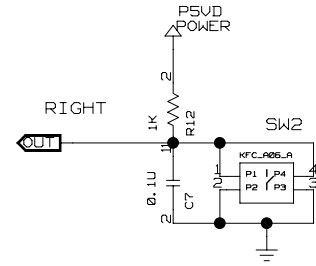
MENU



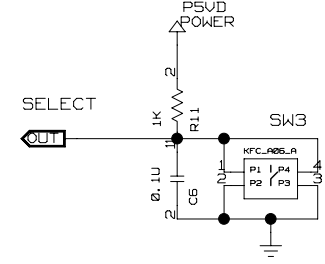
POWERKEY



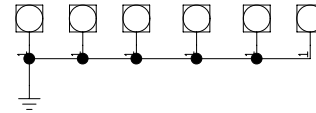
RIGHT



SELECT



AHOLE138

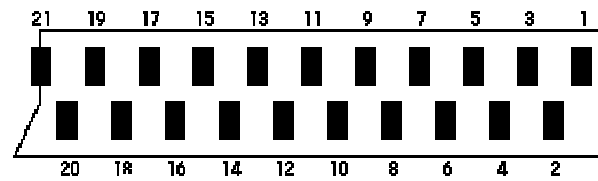


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The SCART Interface

The Scart (Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs) connector is used for combined audio and video connections.

The connector is also known as Pertitel connector or Euroconnector.



The Scart is a twenty one pin connector plug developed by the European community and found on the back of most European televisions and video players. It is used in most of the consumer video equipments like VCRs, TVs and DVD players to handle the audio and video connections all using some connector. SCART connector supports stereo audio, composite video, S-video, RGB and some control signals. SCART connector can be used to carry many signal formats, but it can't carry all of them at the same time. Note that not all SCART connections in all equipment are equivalent, connectors on other equipments might support more signal format than others. Composite video and audio are practically always supported, but there are lots of equipments that do not support RGB or S-video. For example some TVs support RGB on one SCART and S-video on other SCART (in addition to standard composite video format). The supported RGB signal format is RGBS (R, G, B and composite sync).

Arrangement 1 was the original and allows for composite video input/output, RGB inputs and stereo audio.

Arrangement 2 was added to take S-Video (S-VHS and Hi-8) inputs. This made pin 15 chrominance and pin 20 luminance.

A recent addition is a ternary level on pin 8 to signal a VCR in wide-screen mode.

Most new TV sets have 2 SCART sockets on their rear. One is usually for arrangement 1 and the other for arrangement 2, but with pin 20 switchable from composite to S-Video luminance. The first can switch from a composite input to RGB input. The second can switch from a composite input to an S-Video input, pin 20 being either composite in or luminance in. Usually the second socket outputs a selectable composite signal on pin 19. That is selectable from off-air, SCART 1, and if they exist front mounted input sockets for a camcorder.

SCART arrangement 1			
Pin	Signal	Signal level	Impedance
1	Audio output B (Right)	0.5V rms	<1kohm
2	Audio input B (Right)	0.5V rms	>10kohm
3	Audio output A (Left)	0.5V rms	<1kohm
4	Ground (Audio)		
5	Ground (blue)		
6	Audio input A (Left)	0.5V rms	>10kohm
7	Blue input/output	0.7V	75ohms
8	Function select (AV control)	High (9.5-12V) - AV mode Mid (5-8V) - Wide-screen Low (0-2V) - TV mode	>10kohm
9	Ground (green)		
10	Comms data 2		
11	Green input/output	0.7V	75ohms
12	Comms data 1		
13	Ground (red)		
14	Ground (blanking)		
15	Red input/output	0.7V	75ohms
16	Fast Blanking	High (1-3V) - RGB Low (0-0.4V) - Composite	75ohms
17	Ground (video output)		
18	Ground (video Input)		
19	Video output (composite)	1V including sync	75ohms
20	Video input (composite)	1V including sync	75ohms
21	Common ground (shield)		

SCART arrangement 2			
Pin	Signal	Signal level	Impedance
1	Audio output B (Right)	0.5V rms	<1kohm
2	Audio input B (Right)	0.5V rms	>10kohm
3	Audio output A (Left)	0.5V rms	<1kohm
4	Ground (Audio)		
5	Ground		
6	Audio input A (Left)	0.5V rms	>10kohm
7			
8	Function select (AV control)	High (9.5-12V) - AV mode Mid (5-8V) - Wide-screen Low (0-2V) - TV mode	>10kohm
9	Ground		
10	Comms data 2		
11			
12	Comms data 1		
13	Ground		
14	Ground (blanking)		
15	Chrominance input	0.3V	75ohms
16			
17	Ground (Luminance Output)		
18	Ground (Luminance input)		
19	Luminance Output	1V including sync	75ohms
20	Luminance input	1V including sync	75ohms
21	Common ground (shield)		

RGB Connection

Output Connector		Input Connector	
Pin	Signal	Pin	Signal
1	Audio output B (Right)	2	Audio input B (Right)
3	Audio output A (Left)	6	Audio input A (Left)
4	Ground (Audio)	4	Ground (Audio)
7	Blue Output	7	Blue input
5	Ground (blue)	5	Ground (blue)
11	Green Output	11	Green Input
9	Ground (Green)	9	Ground (Green)
15	Red Output	15	Red Input
13	Ground (Red)	13	Ground (Red)
16	RGB Status out	16	RGB Status in
14	Ground (RGB Status)	14	Ground (RGB Status)
19	Sync out	20	Sync in
17	Ground	18	Ground
21	Shield	21	Shield

Composite Video Connection

Output Connector		Input Connector	
Pin	Signal	Pin	Signal
1	Audio output B (Right)	2	Audio input B (Right)
3	Audio output A (Left)	6	Audio input A (Left)
4	Ground (Audio)	4	Ground (Audio)
8	Video status out	8	Video status in
19	Composite video out	20	Composite video in
17	Ground	18	Ground
21	Shield	21	Shield

Critical Components List

Components	Designator	Function
MX88L284	U8	SCALER
SM5964C40Q	U4	MCU
TVP5146PFP	U15	Video Decoder
TDA9874	U19	Nicam&A2
TDA9860	U12	Audio Processor
TDA8944	U14	Audio Amplifier
IS42S16100A1-7T	U5,U9	SDRAM
LM2596	U1	Switch Power
LM1084	U6	LDO
SN74CBT3253PWR	U21	Switch
SN74CBT3253	U20	Switch
DS90C383	U2	LVDS
FDS4953	U3、 U7	MOS
BM1117-1.8V	U18	dropout voltage regulators

Service Tools and Equipment

Application	Name
General	DVD testing disk
	General tools(screwdriver ect.)
	AV Cable
	S-Video Cable
	Scart Cable
Confirm	SVCD testing disk
	DVD player
	TV set
Special	Signal Generator
	Oscilloscope
	Probe
Antistatic	Antistatic Electric Iron
	Antistatic Wrist Strap
Atraumatic	Sponge Underlay