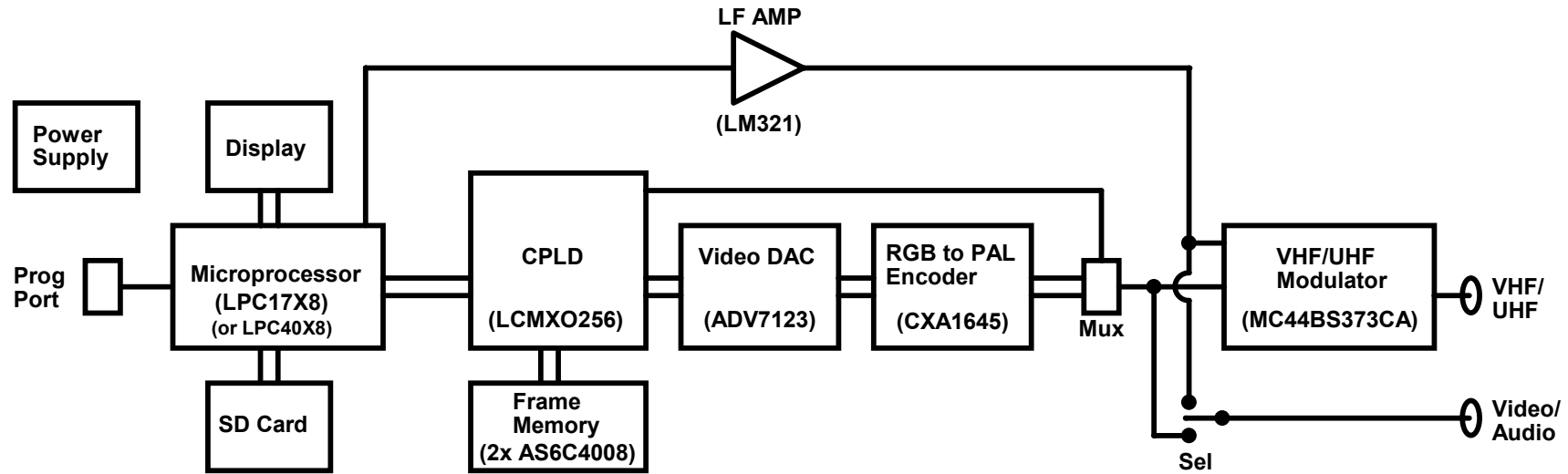
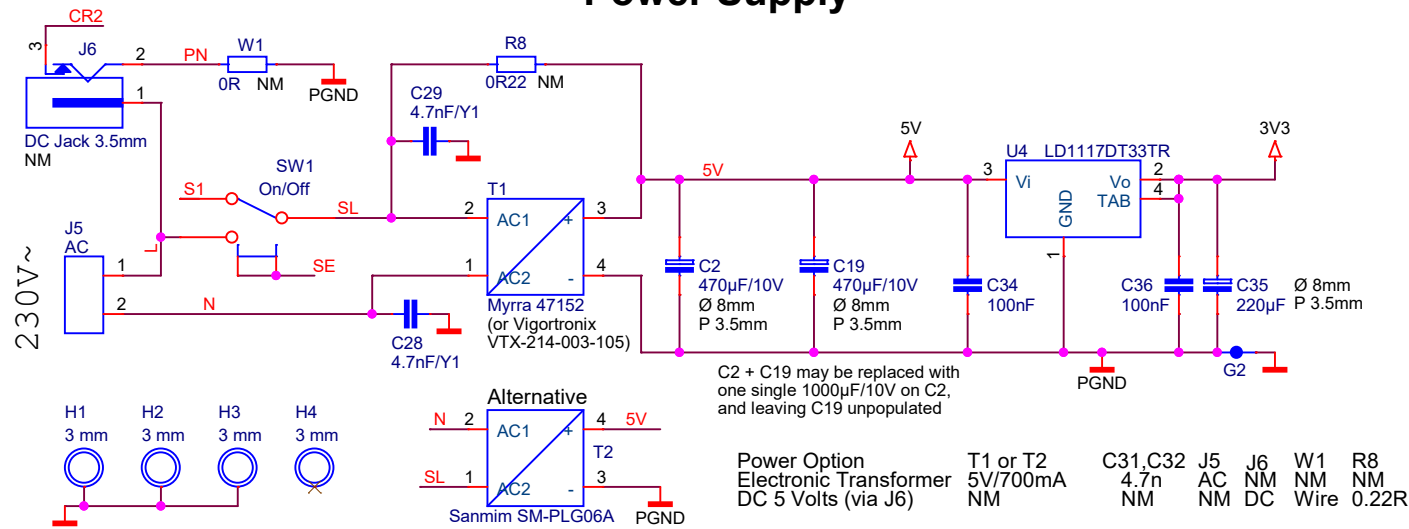


# Block Diagram

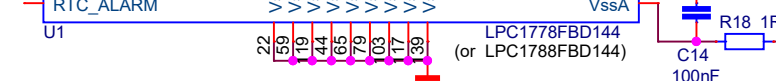
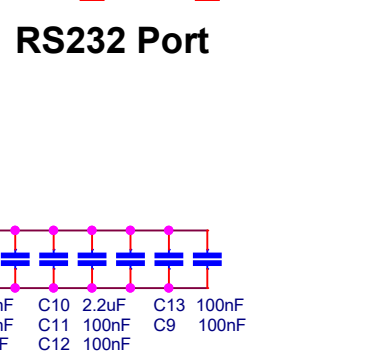
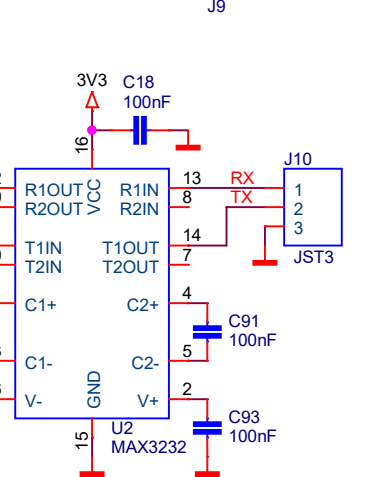
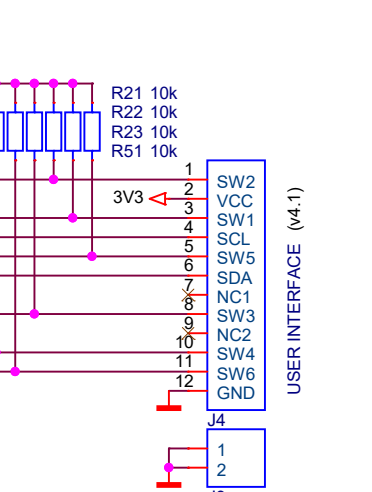
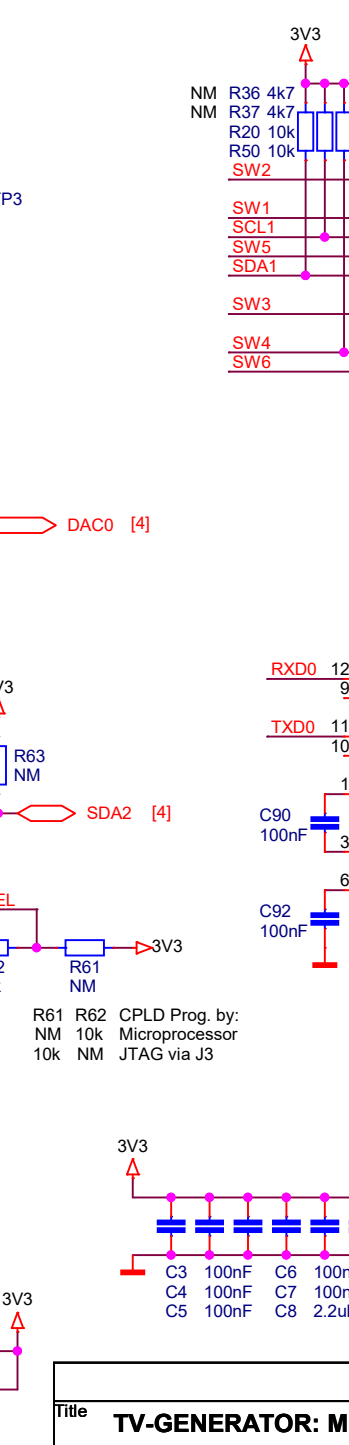
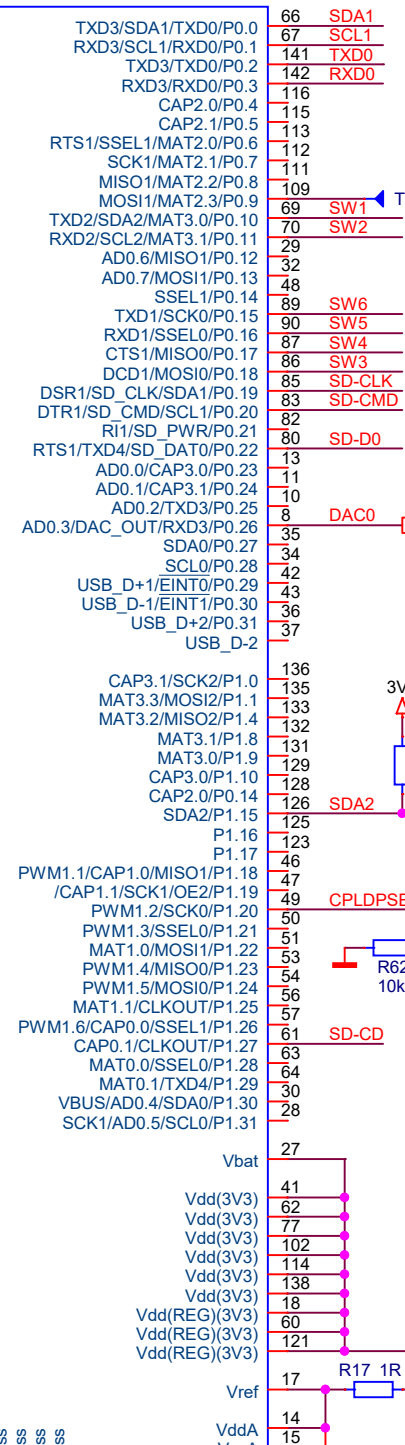
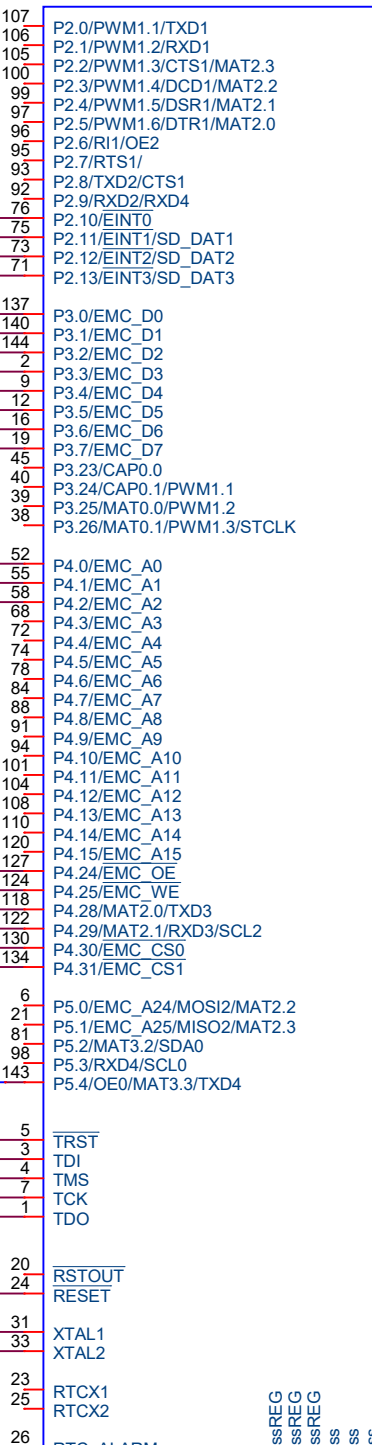
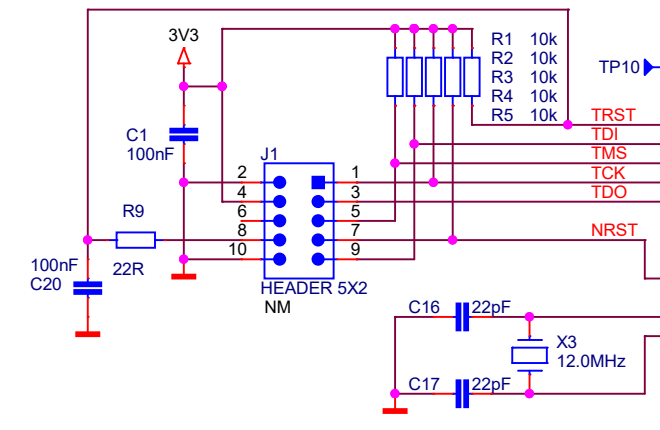
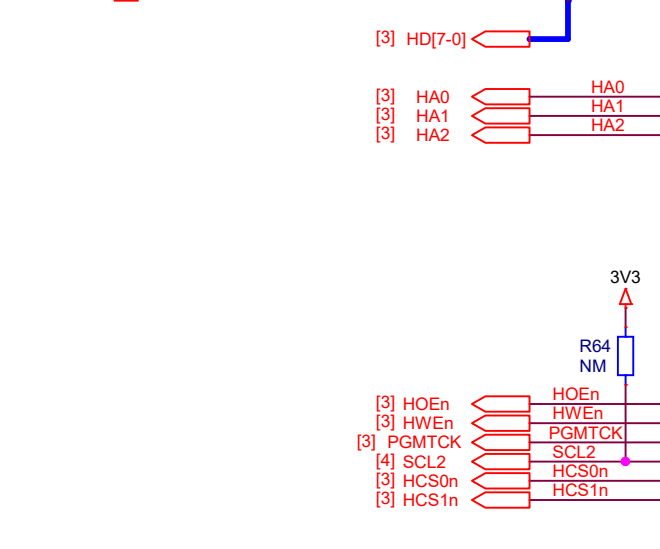
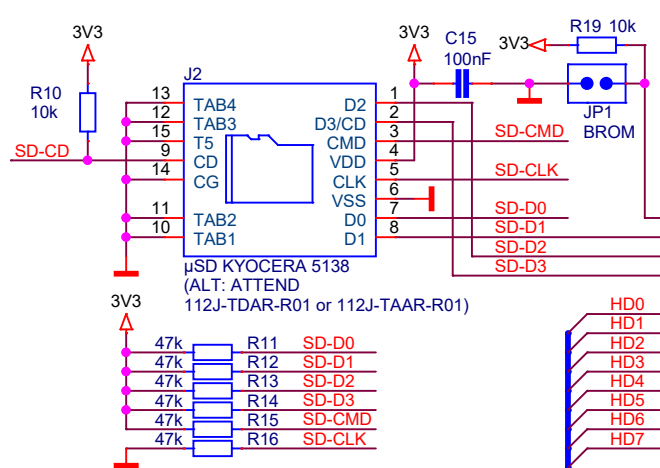


# Power Supply

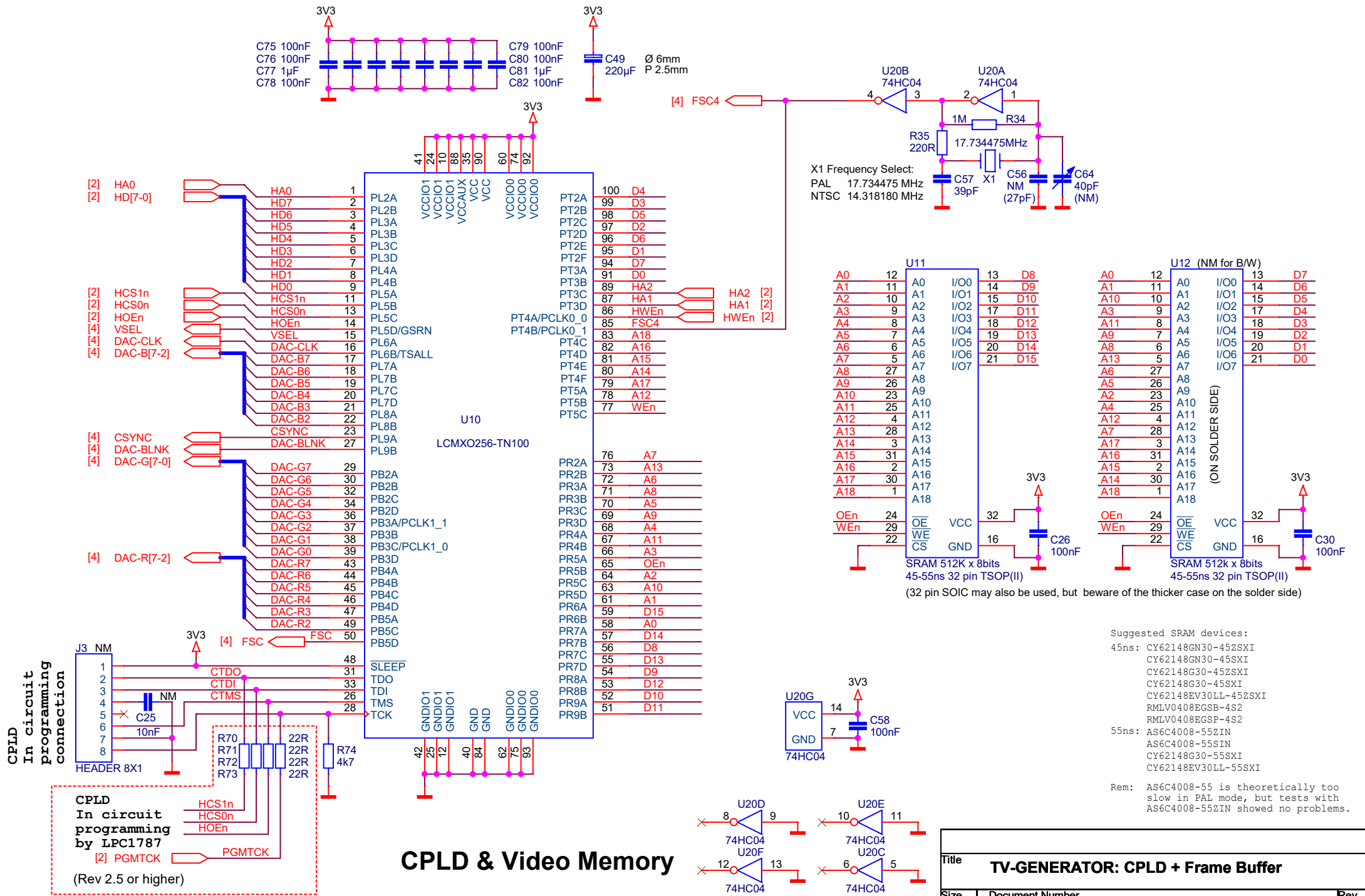


Unless noted otherwise: All component values without brackets are for the color version, and all components values in brackets are for the black and white version.

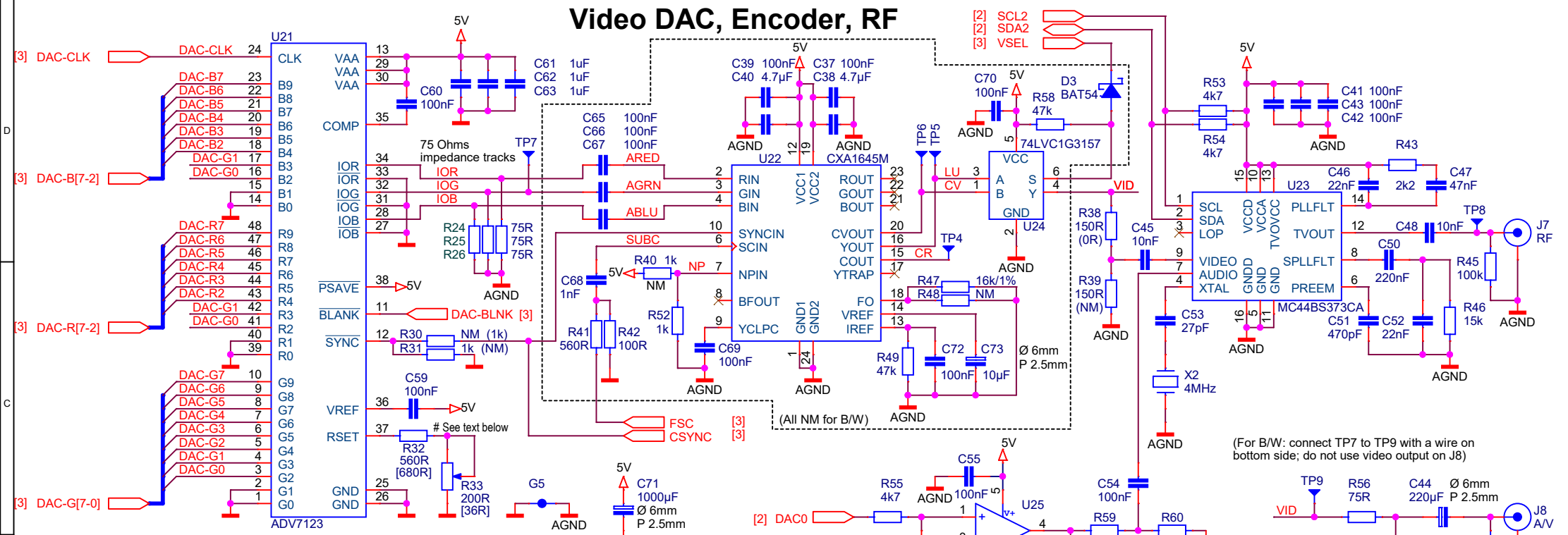
Title		
<b>TV-GENERATOR: Block Diagram &amp; Power Supply</b>		
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# Video DAC, Encoder, RF



# Full-scale (10bits) RSET (Ohm) =  $R32 // R33 = 7989.6 \times VREF (V) / IOR (mA) = 7989.6 \times VREF (V) / (IOR (V) / R26 (k\Omega)) = 7989.6 \times 1.235 / (1.0 / 0.075) = 740 \text{ Ohm}$   
 Full-scale (10bits) =  $0x3FF = 1023$ ; Full-scale (5bits) =  $0x3E0 = 992$   
 Full-scale (5bits) RSET =  $740 \times 992 / 1023 = 717.6 \text{ Ohm}$   
 R33 is a 200R 3x3mm potmeter, making RSET adjustable between 560R - 760R  
 Use vectorscope to tune voltage to desired level. When using fixed resistors:  
 E24:  $R32 + R33 = 680 + 36 = 716 \text{ Ohm}$  (E12:  $R32 + R33 = 680 + 39 = 719 \text{ Ohm}$ )  
 Replace R32 with 680R and potmeter R33 with a fixed resistor of 36R or 39R

VIDEO	R40	R52	R47	R48	or	R47	R48
PAL	NM	1K	16k/1%	NM		27k	39k
NTSC	1K	NM	20k/1%	NM		22k	220k



(For B/W: connect TP7 to TP9 with a wire on bottom side; do not use video output on J8)

## Alternative PAL encoder:

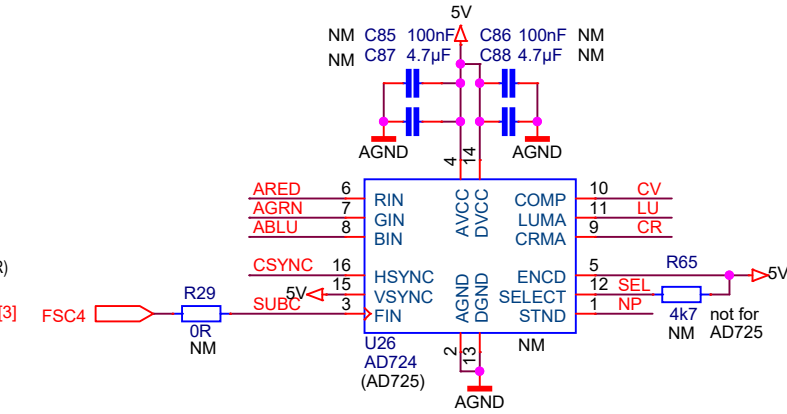
Instead of a CXA1645M, an AD724 or an AD725 can be used.

Do not place: U22, C37, C38, C39, C40, C68, C69, C72, C73, R47, R49, R41, R42

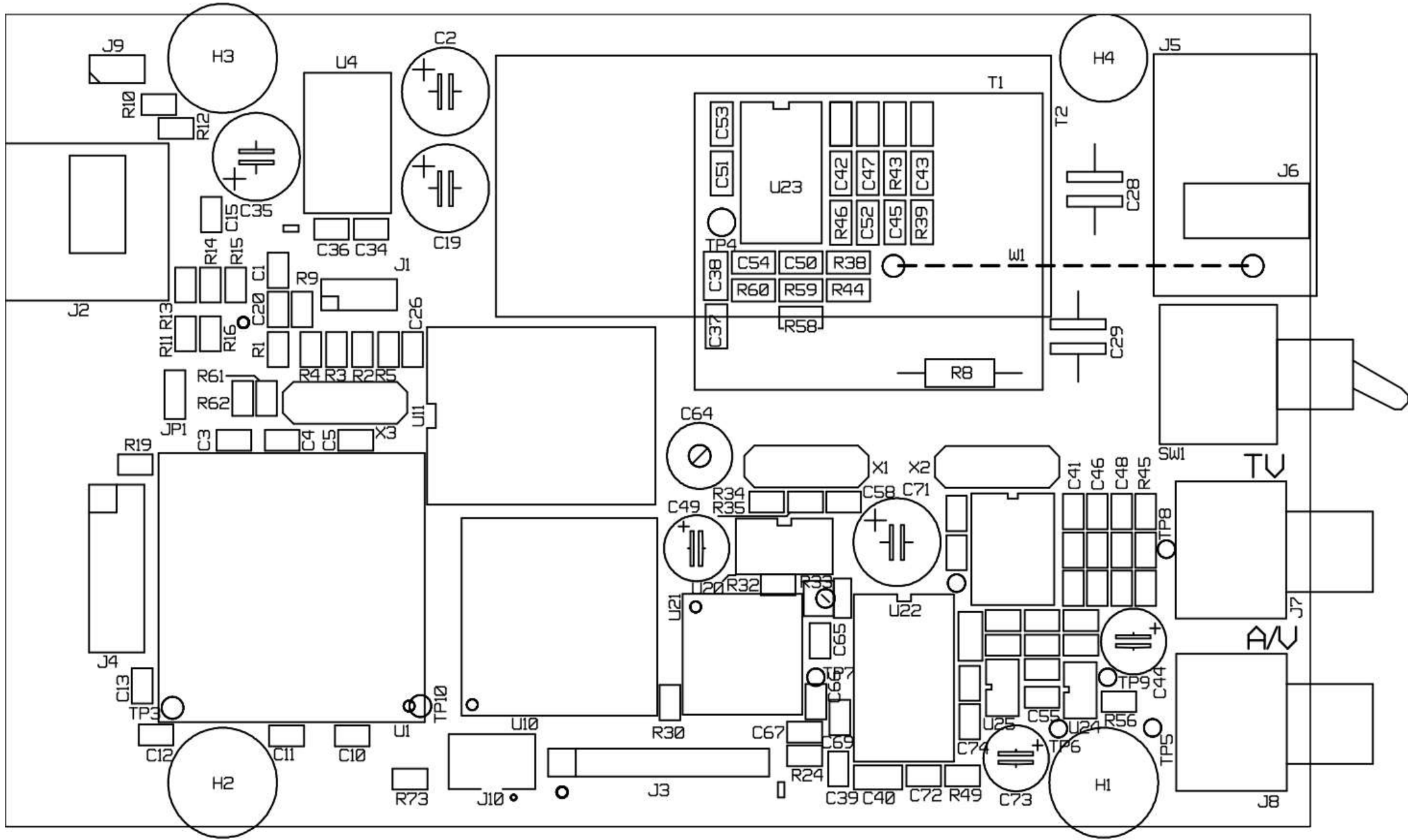
Place: U26, C85, C86, C87, C88, R29, R65\*

\*Note: place R65 only when using AD724

# Full-scale (10 bits): RSET (Ohm) =  $R32 // R33 = 7989.6 \times VREF (V) / IOR (mA) = 7989.6 \times VREF (V) / (IOR (V) / R26 (k\Omega)) = 7989.6 \times 1.235 / (0.714 / 0.075) = 1036.5 \text{ Ohm}$   
 Correction for 5 bits  $992/1023 = 1005 \text{ Ohm}$   
 Replace R32 with 820R and potmeter R33 with a one of 500R (RSET adjustable 820R - 1320R)  
 Use vectorscope to tune voltage to desired level. When using fixed resistors:  
 E24:  $R32 + R33 = 1000 + 5.1 = 1005.1 \text{ Ohm}$  (E12:  $R32 + R33 = 1000 + 4.7 = 1004.7 \text{ Ohm}$ )  
 Replace R32 with 1k and potmeter R33 with a fixed resistor of 5R1 or 4R7



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<b>TV-GENERATOR: PCB TOP SIDE</b>		
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A4	tv-generator-lpc17x8-2_5-2_6.DSN	2.5/6
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