

REV	DESCRIPTION	DATE	APPROVED
E	SEE DETAILS ON REVISION SHEET AT END OF SCHEMATIC	08/20/10	RRP

SCHEMATIC CONTENTS

- SHEET01 - TITLE
- SHEET02 - DM368 DDR2 INTERFACE
- SHEET03 - DM368 EMIF/BOOT MODES/CFG MODES
- SHEET04 - DM368 USB
- SHEET05 - DM368 VIDEO PORT IN
- SHEET06 - DM368 VIDEO PORT OUT
- SHEET07 - DM368 ANALOG VIDEO OUT
- SHEET08 - DM368 SD/MMC/MS IF
- SHEET09 - DM368 I/O
- SHEET10 - DM368 JTAG,CLKS,RESET
- SHEET11 - DM368 ADC
- SHEET12 - DM368 MIC/SPEAKER
- SHEET13 - DM368 POWER PINS
- SHEET14 - DM368 POWER CONTROL
- SHEET15 - DM368 GROUND PINS
- SHEET16 - DM368 DECOUPLING CAPS
- SHEET17 - DDR2 MEMORY
- SHEET18 - USB INTERFACE CONNECTOR
- SHEET19 - JTAG CONNECTORS
- SHEET20 - CPLD BANK A
- SHEET21 - CPLD BANK B
- SHEET22 - CPLD BANK C
- SHEET23 - CPLD BANK D
- SHEET24 - CLPD POWER
- SHEET25 - HOST/EMIF DC INTERFACE
- SHEET26 - NAND FLASH
- SHEET27 - ONE NAND I2C Device
- SHEET28 - I2C/SPI EEPROM
- SHEET29 - RS232 INTERFACE 0x18 AIC3101
- SHEET30 - SD/MMC/MS IF 0x25 MSP430
- SHEET31 - SD.MMC IF 2 0x2C THS7303
- SHEET32 - VIDEO COMPONENT OUT 0x2E THS7353
- SHEET33 - VIDEO INPUT MULTIPLEXER 0x50 CAT24C256
- SHEET34 - VIDEO INPUT DC CONNECTORS 0x5D TVP5146
- SHEET35 - TVP7002 0x5C TVP7002
- SHEET36 - HD VIDEO IN CONNECTORS
- SHEET37 - TVP5146 DECODER
- SHEET38 - McBSP MUX
- SHEET39 - AIC3101
- SHEET40 - VIDEO OUTPUT DC CONNECTOR
- SHEET41 - DILC HOST CONNECTOR
- SHEET42 - ETHERNET MUX
- SHEET43 - ETHERNET PHY
- SHEET44 - MSP IR CONTROLLER
- SHEET45 - SWITCHES
- SHEET46 - LEDS
- SHEET47 - POWER SUPPLY TPS65510
- SHEET48 - POWER SUPPLY TPS65530
- SHEET49 - POWER SUPPLY
- SHEET50 - DECODER POWER 3V3 AND 1V8
- SHEET51 - ALT 3V3
- SHEET52 - POWER IN
- SHEET53 - REVISION HISTORY

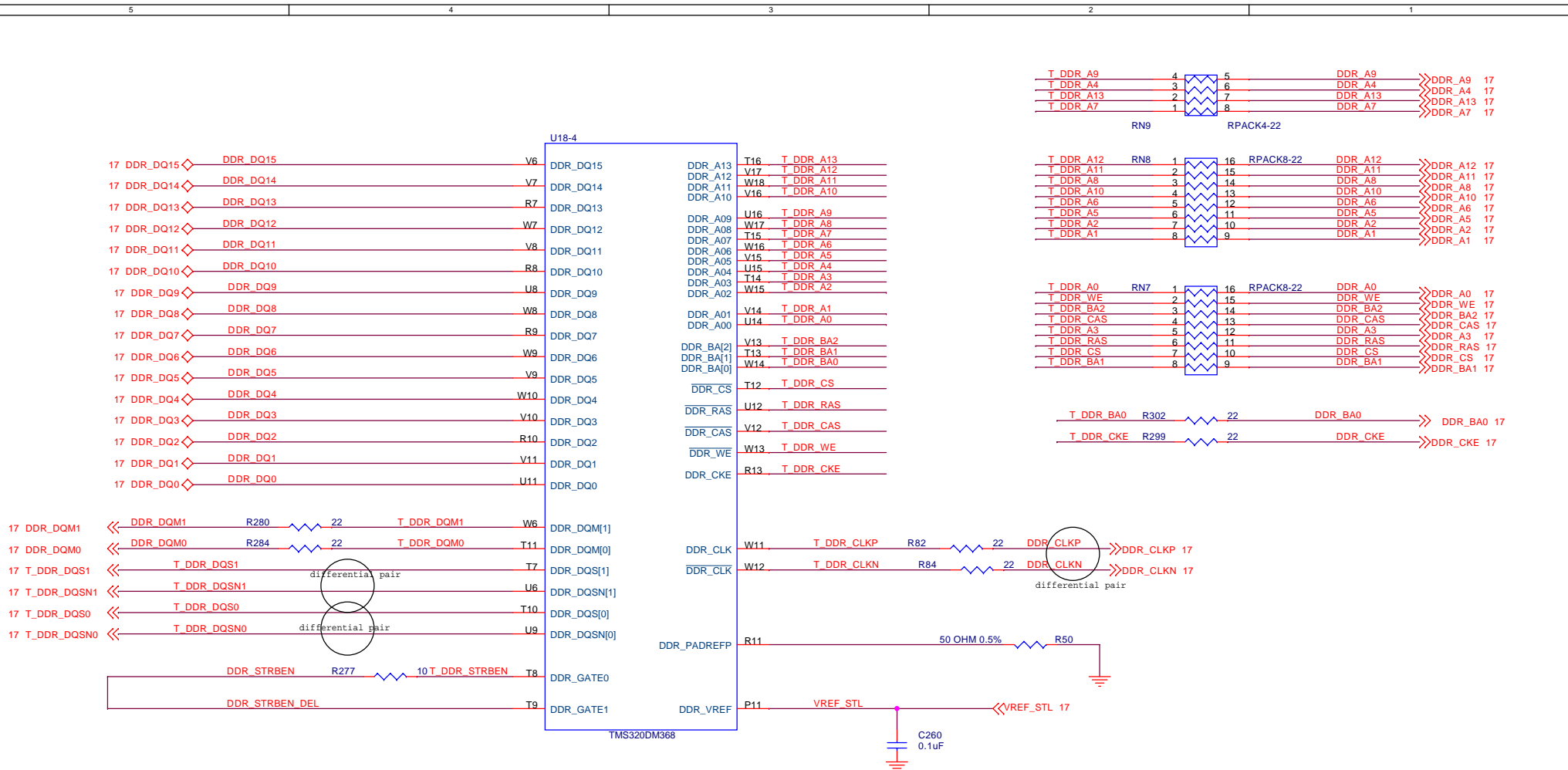
REVISION STATUS OF SHEETS

REV	A	A	A	A	A	A	A	A	A	A	A
SHEET	41	42	43	44	45	46	47	48	49	50	
REV	A	A	A	A	A	A	A	A	A	A	A
SHEET	31	32	33	34	35	36	37	38	39	40	
REV	A	A	A	A	A	A	A	A	A	A	A
SHEET	21	22	23	24	25	26	27	28	29	30	
REV	A	A	A	A	A	A	A	A	A	A	A
SHEET	11	12	13	14	15	16	17	18	19	20	
REV	E	A	A	A	A	A	A	A	A	A	A
SHEET	1	2	3	4	5	6	7	8	9	10	

DATE	BY	DESCRIPTION
04/01/2007	DWN	R.R.P.
04/01/2007	CHK	T.W.K.
04/01/2007	ENGR	R.R.P.
04/01/2007	ENGR-MGR	R.R.P.
04/01/2007	QA	C.M.D.
04/01/2007	MFG	R.R.P.
04/01/2007	RLSE	R.R.P.

SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: TITLE SHEET			
Size: B	DWG NO	510842-0001	Revision: E
Date:	Thursday, April 21, 2011		Sheet 1 of 53

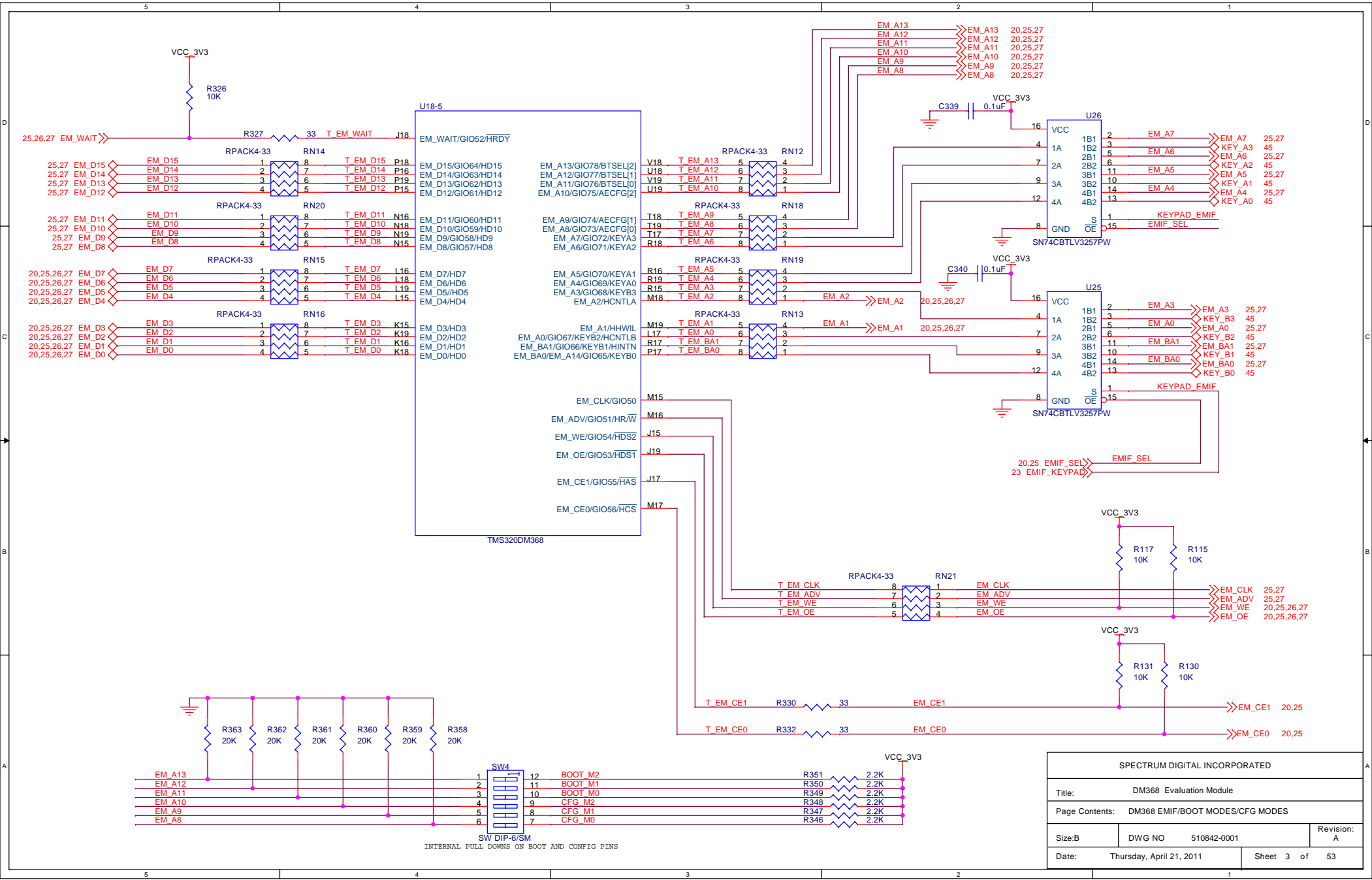
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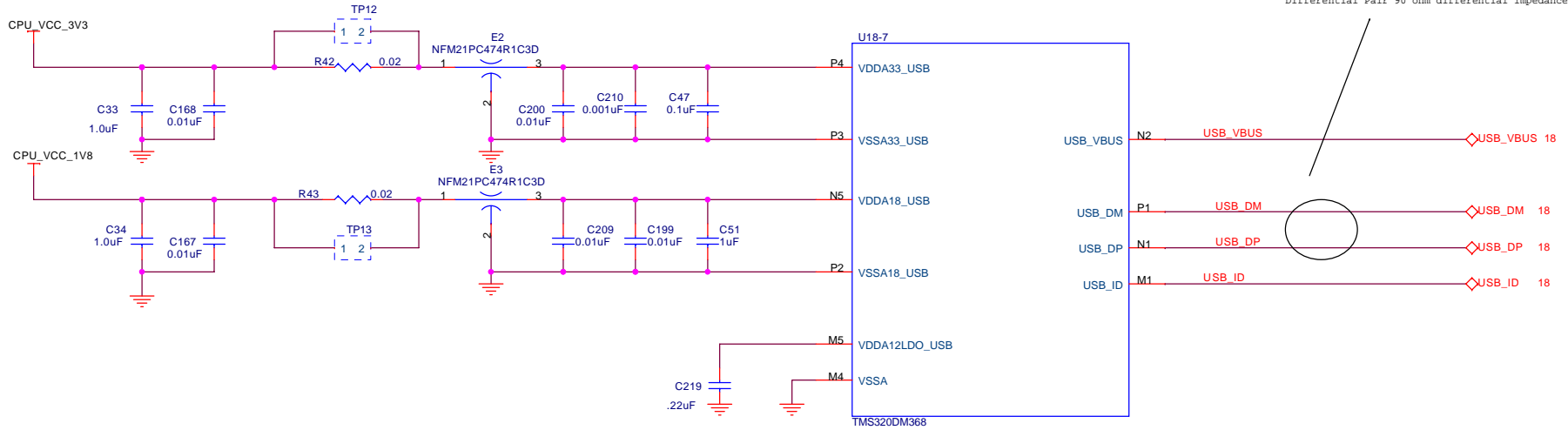
DDR_STRBEN is trace to DDR memory
for delay compensation

This net is equal to the DDR_CLKP (or DDR_CLKN)
plus
the length of DDR_DQXX Average Trace length

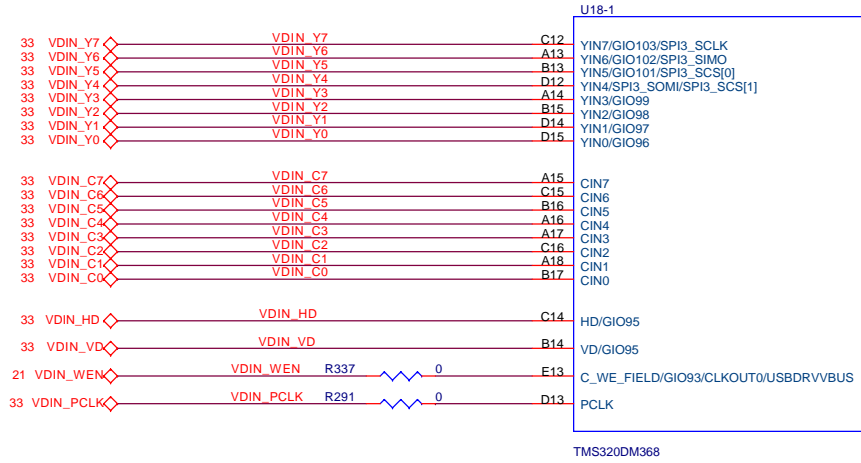
SPECTRUM DIGITAL INCORPORATED			
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Page Contents: DM368 DDR INTERFACE			
Size: B	DWG NO	510842-0001	Revision: A
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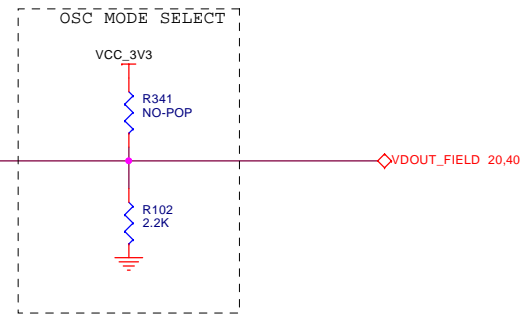
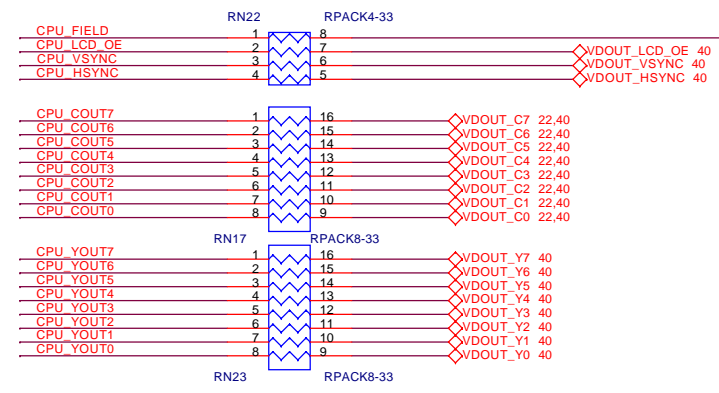
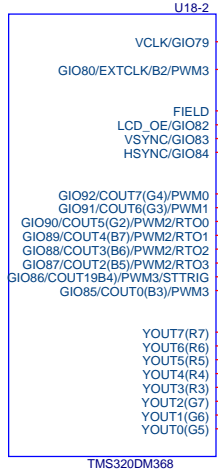
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Size: B	DWG NO	510842-0001	Revision: A
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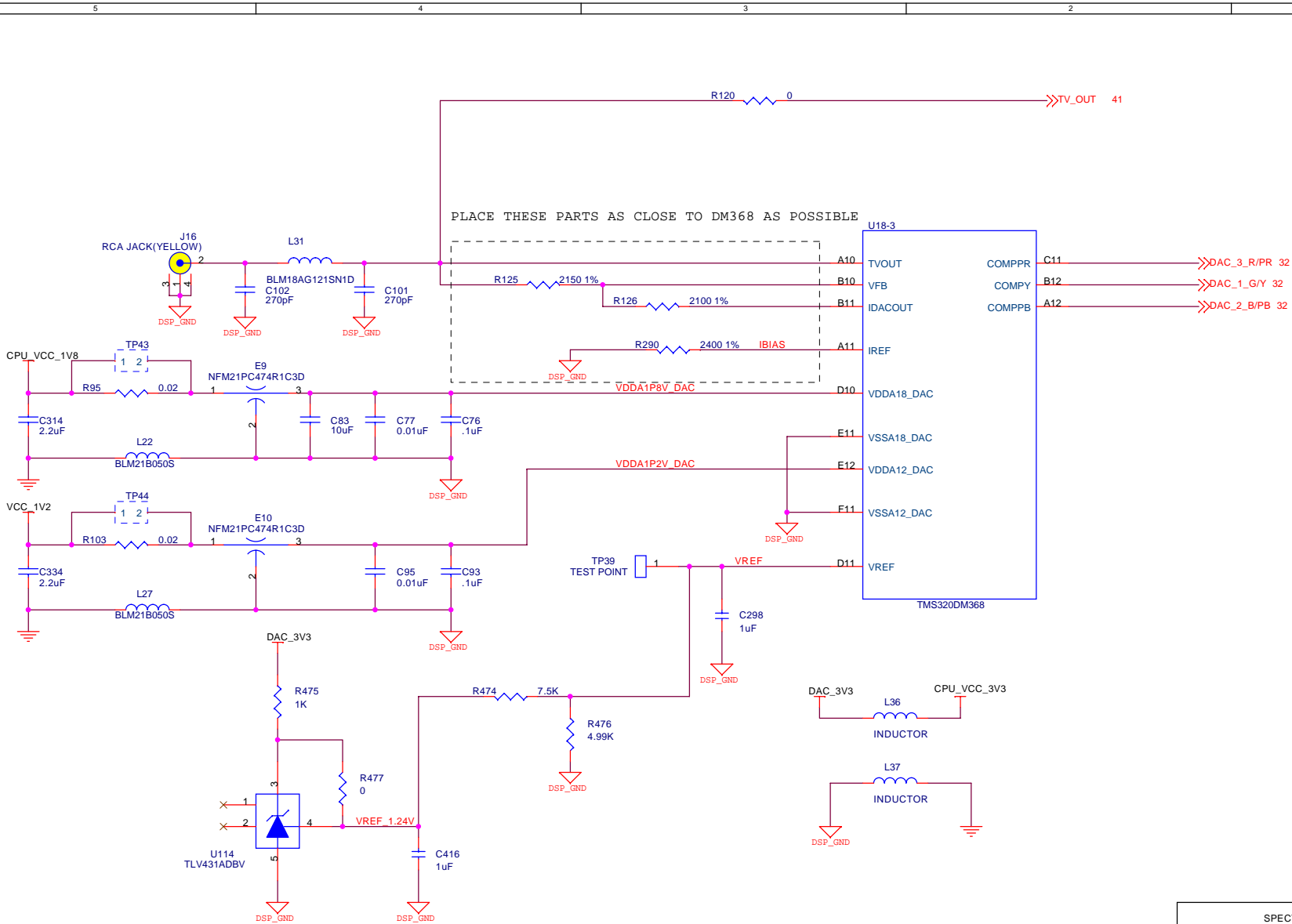
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Title: DM368 Evaluation Module			
Page Contents: DM368 USB			
Size: B	DWG NO	510842-0001	Revision: A
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SPECTRUM DIGITAL INCORPORATED			
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Page Contents: DM368 VIDEO IN			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011	Sheet 5 of	53

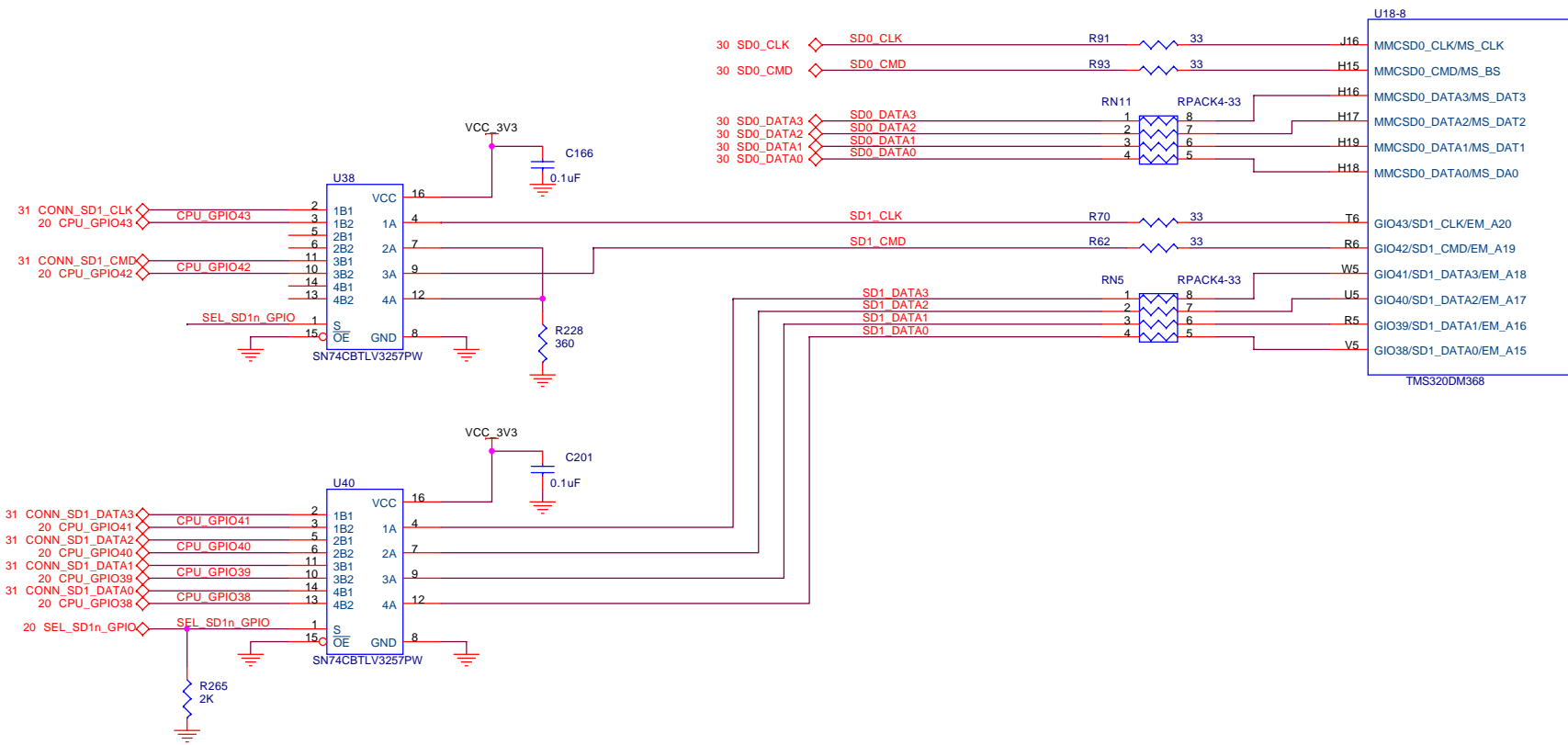


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Page Contents: DM368 VIDEO PORT OUT			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 6 of 53

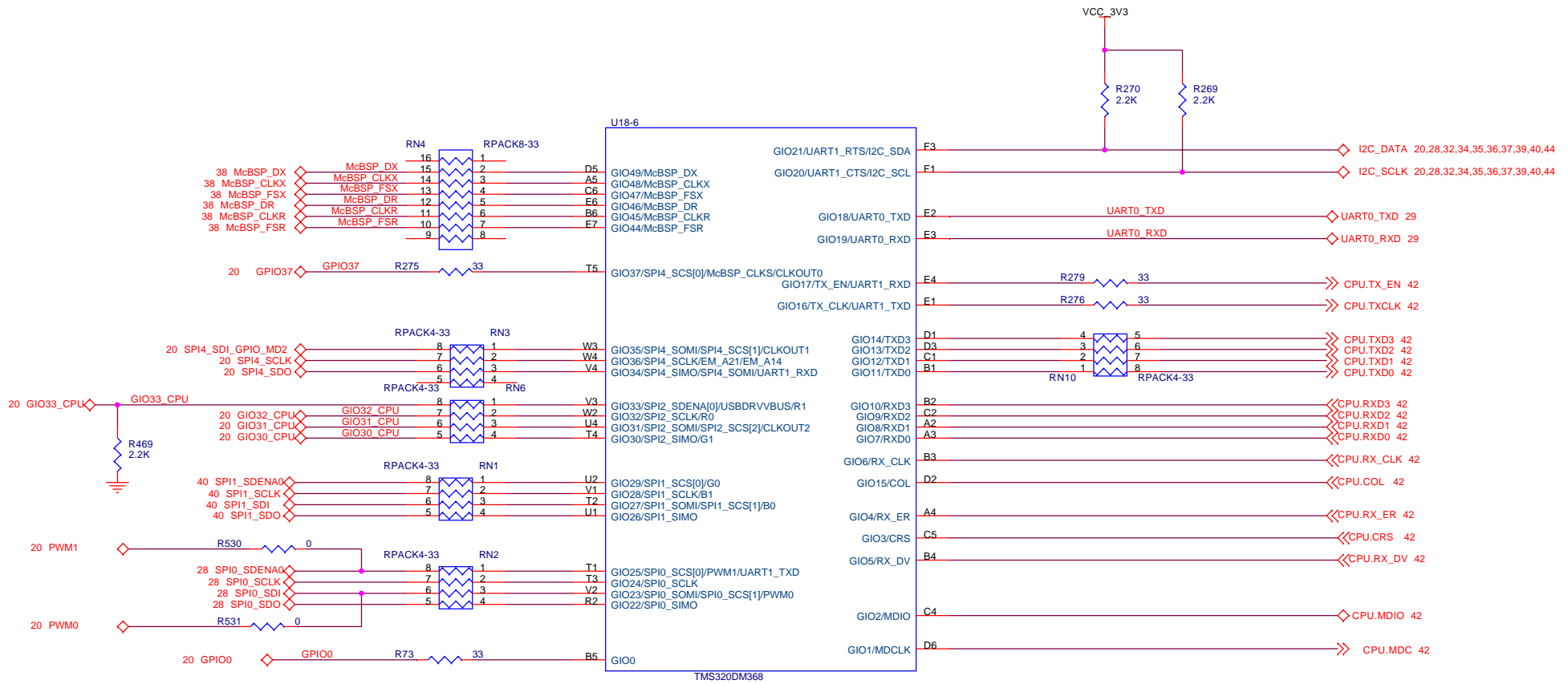


PLACE THESE PARTS AS CLOSE TO DM368 AS POSSIBLE

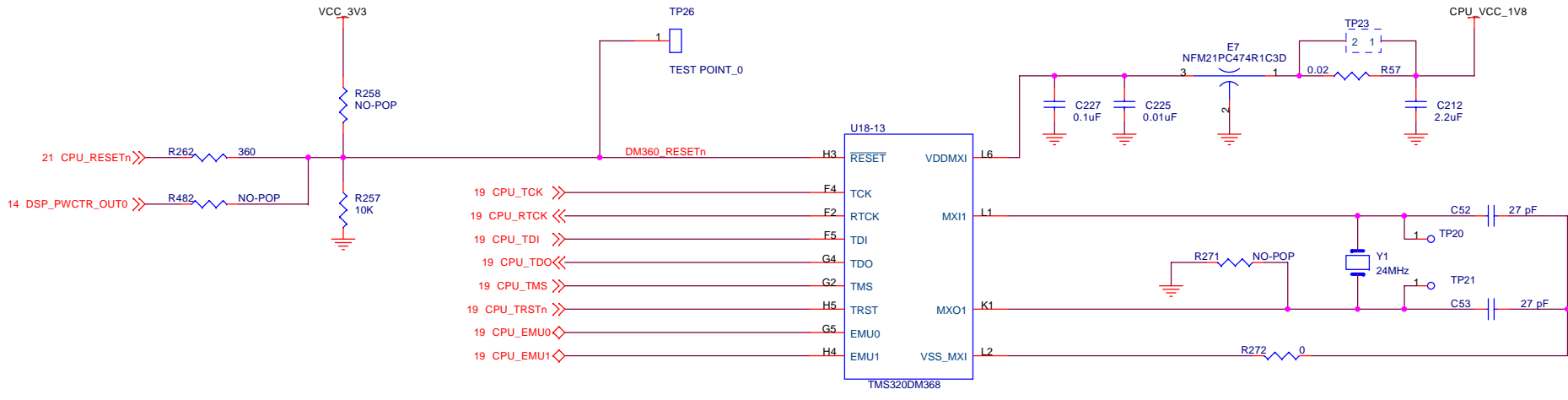
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Title:		DM368 Evaluation Module	
Page Contents: DM368 ANALOG VIDEO OUT			
Size: B	DWG NO	510842-0001	Revision: D
Date:	Thursday, April 21, 2011	Sheet 7 of 53	



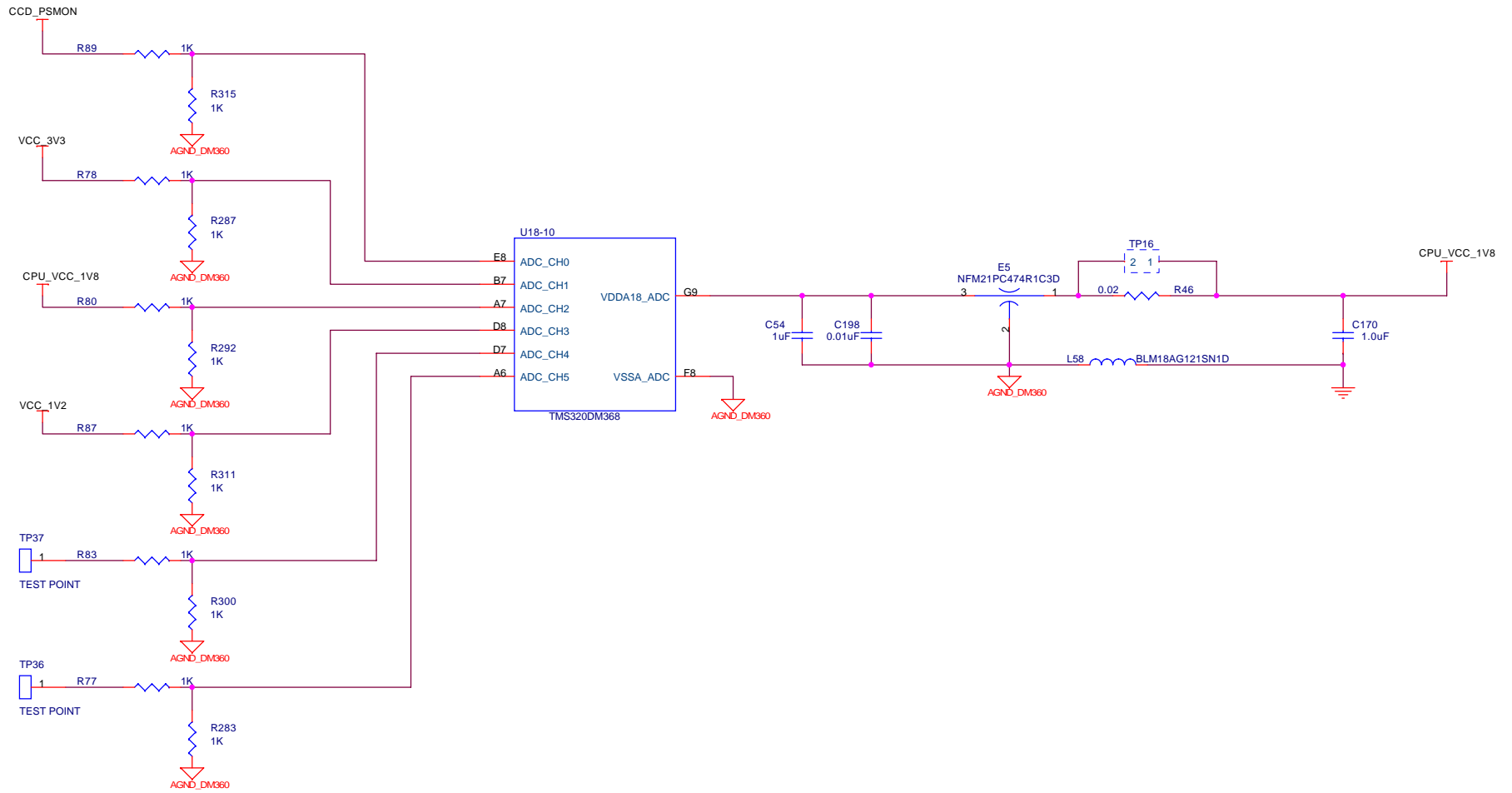
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Page Contents: DM368 SD/MMC/MS INTERFACE			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 8 of 53



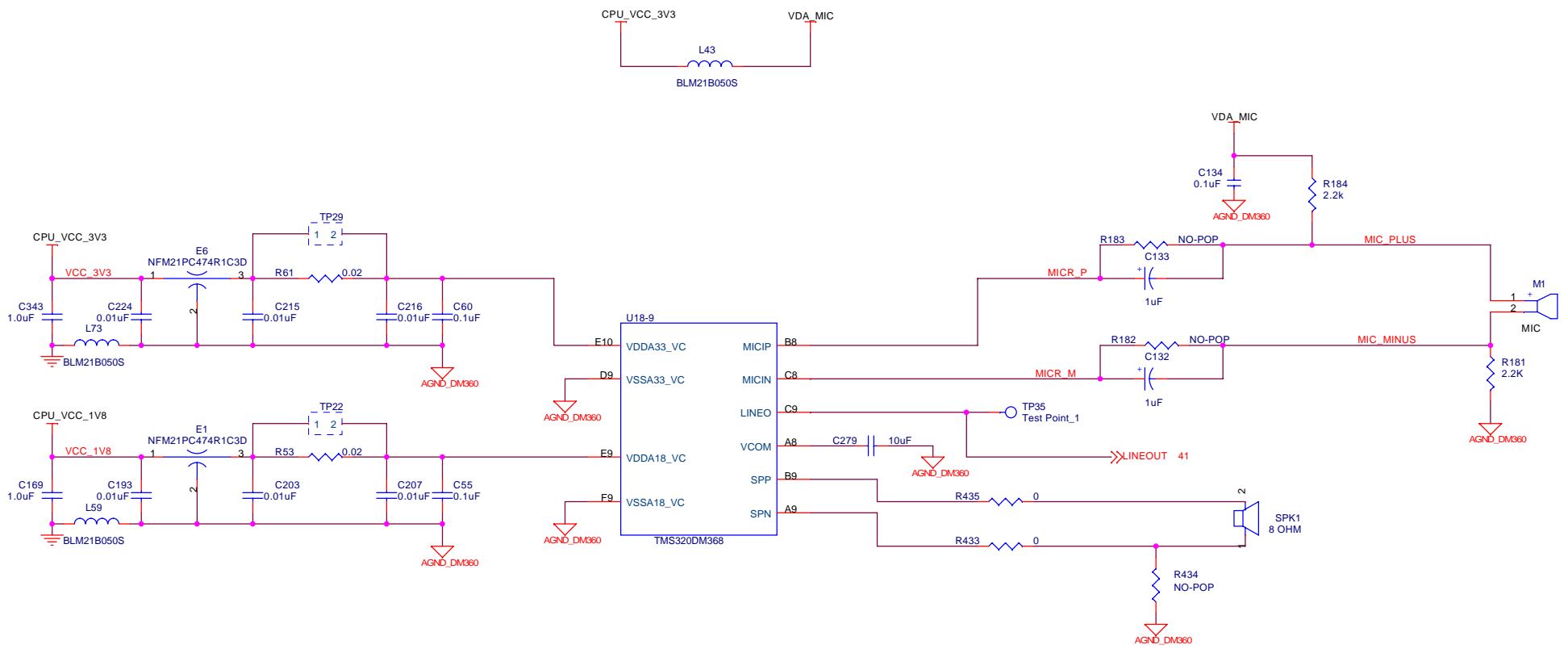
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Page Contents: DM368 I/O			
Size: B	DWG NO	510842-0001	Revision: A
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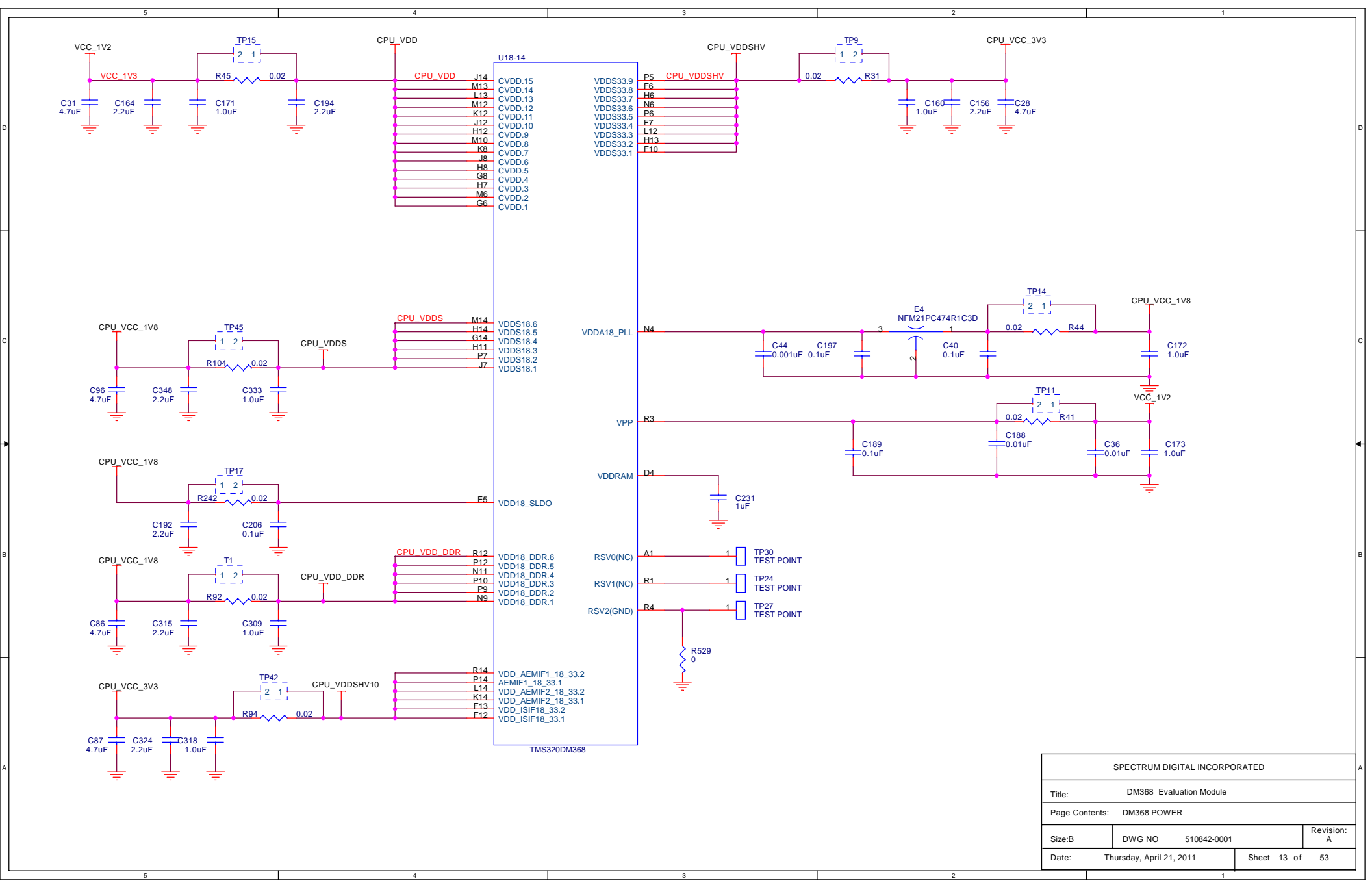
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Title: DM368 Evaluation Module			
Page Contents: DM368 JTAG,RESET,CLOCKS			
Size: B	DWG NO	510842-0001	Revision: A
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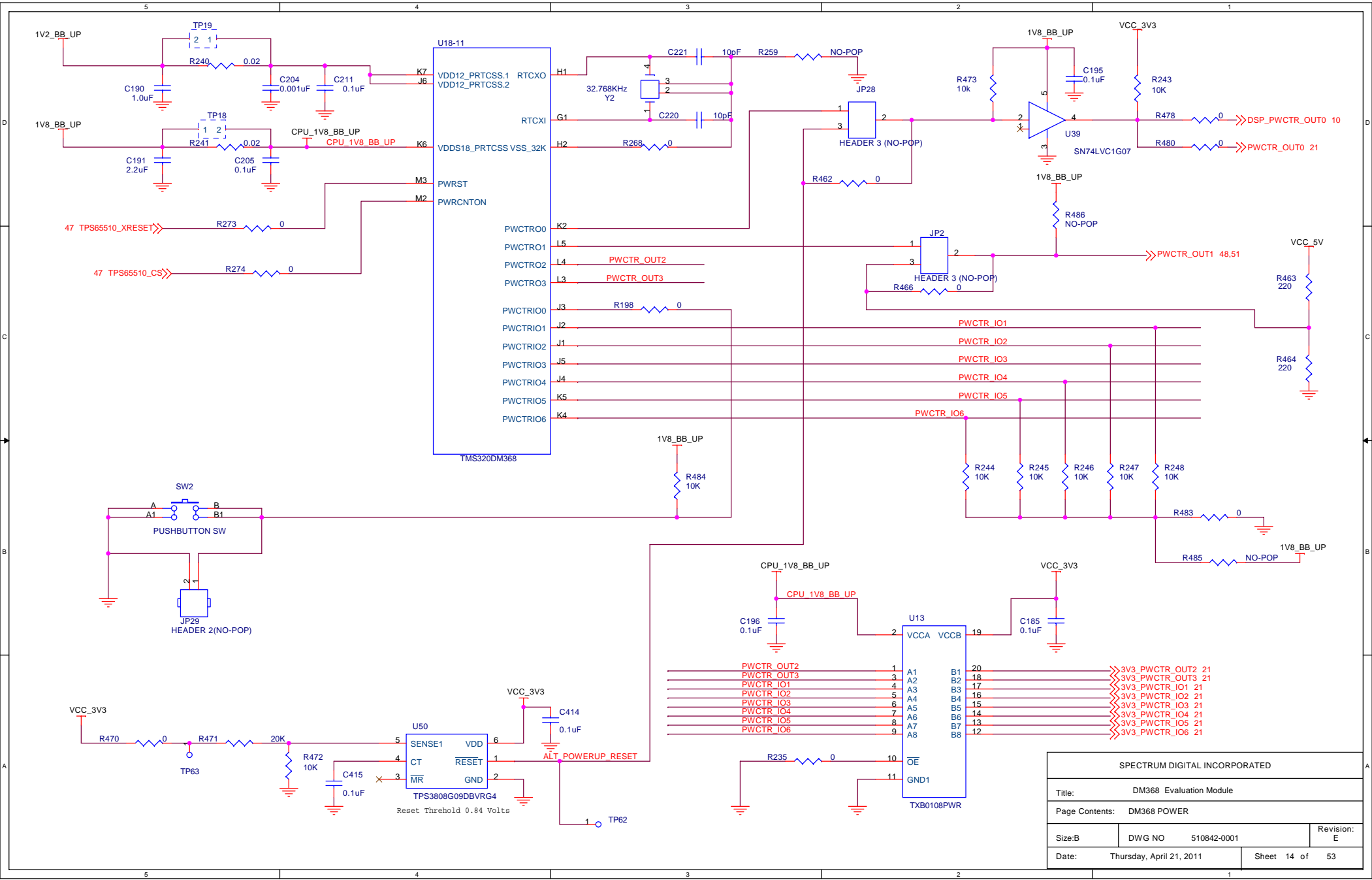
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Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 11 of 53



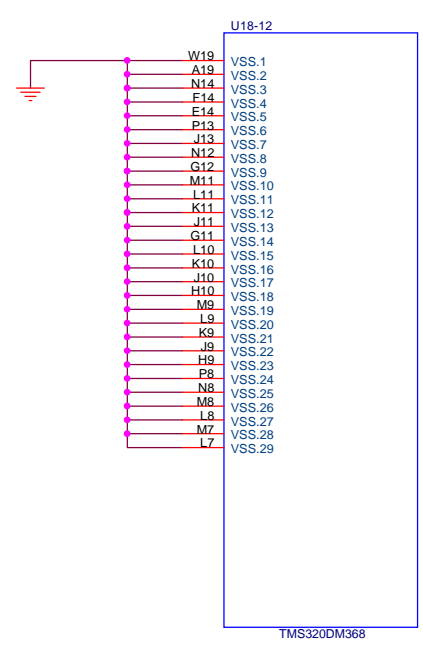
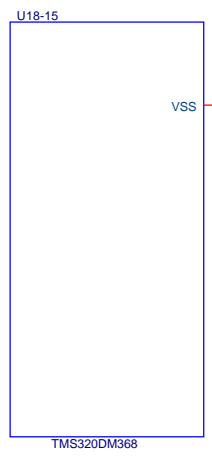
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Title: DM368 Evaluation Module			
Page Contents: DM368 MIC/SPEAKER			
Size: B	DWG NO	510842-0001	Revision: A
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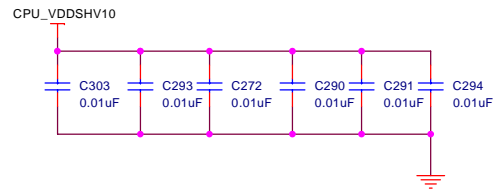
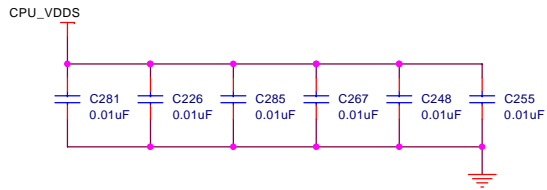
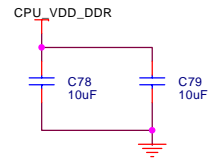
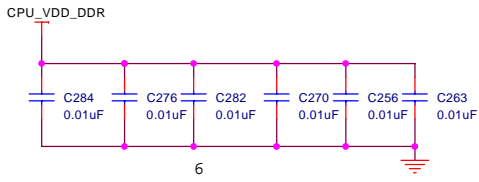
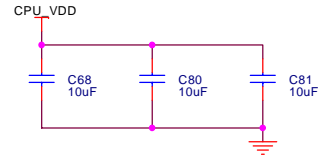
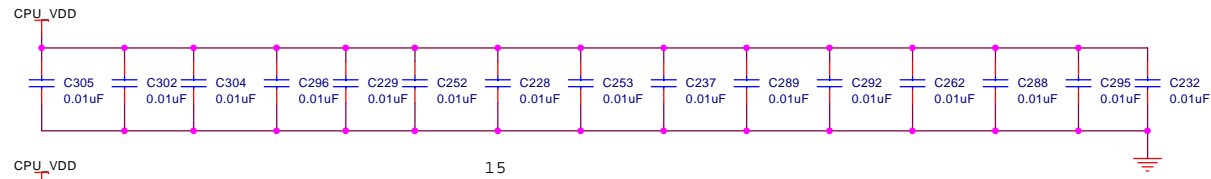
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Title: DM368 Evaluation Module			
Page Contents: DM368 POWER			
Size: B	DWG NO	510842-0001	Revision: A
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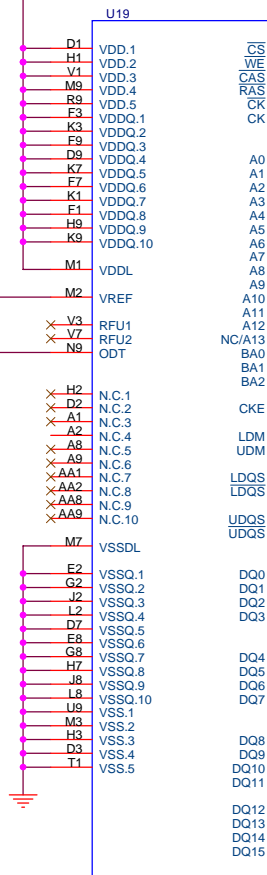
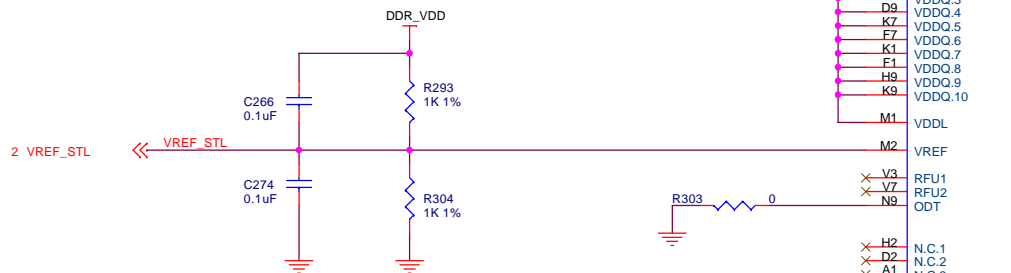
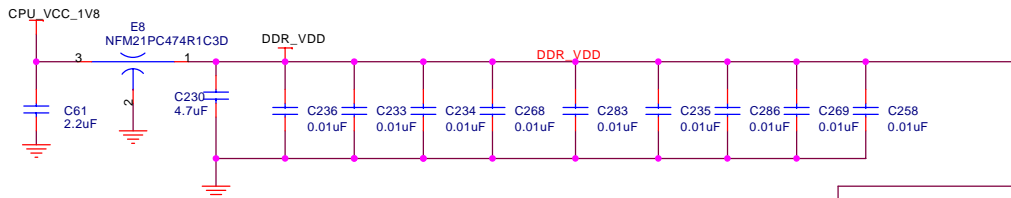
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Page Contents: DM368 POWER			
Size: B	DWG NO	510842-0001	Revision: E
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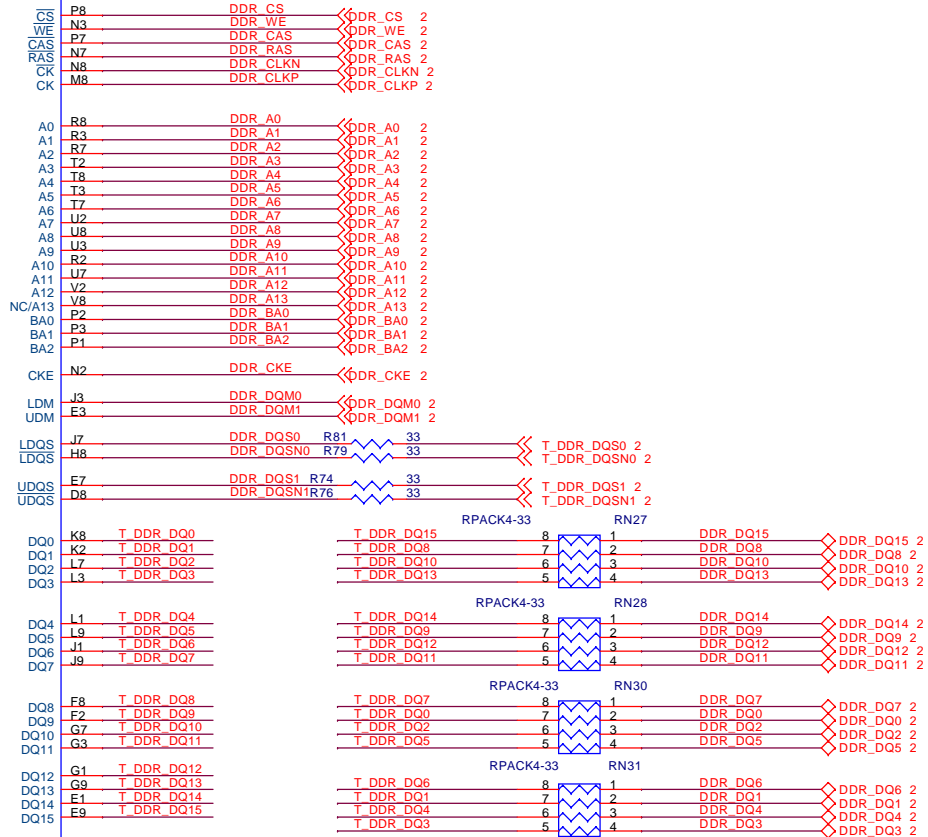
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Title: DM368 Evaluation Module			
Page Contents: DM368 POWER			
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SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: DM368 DECOUPLING CAPACITORS			
Size: B	DWG NO	510842-0001	Revision: A
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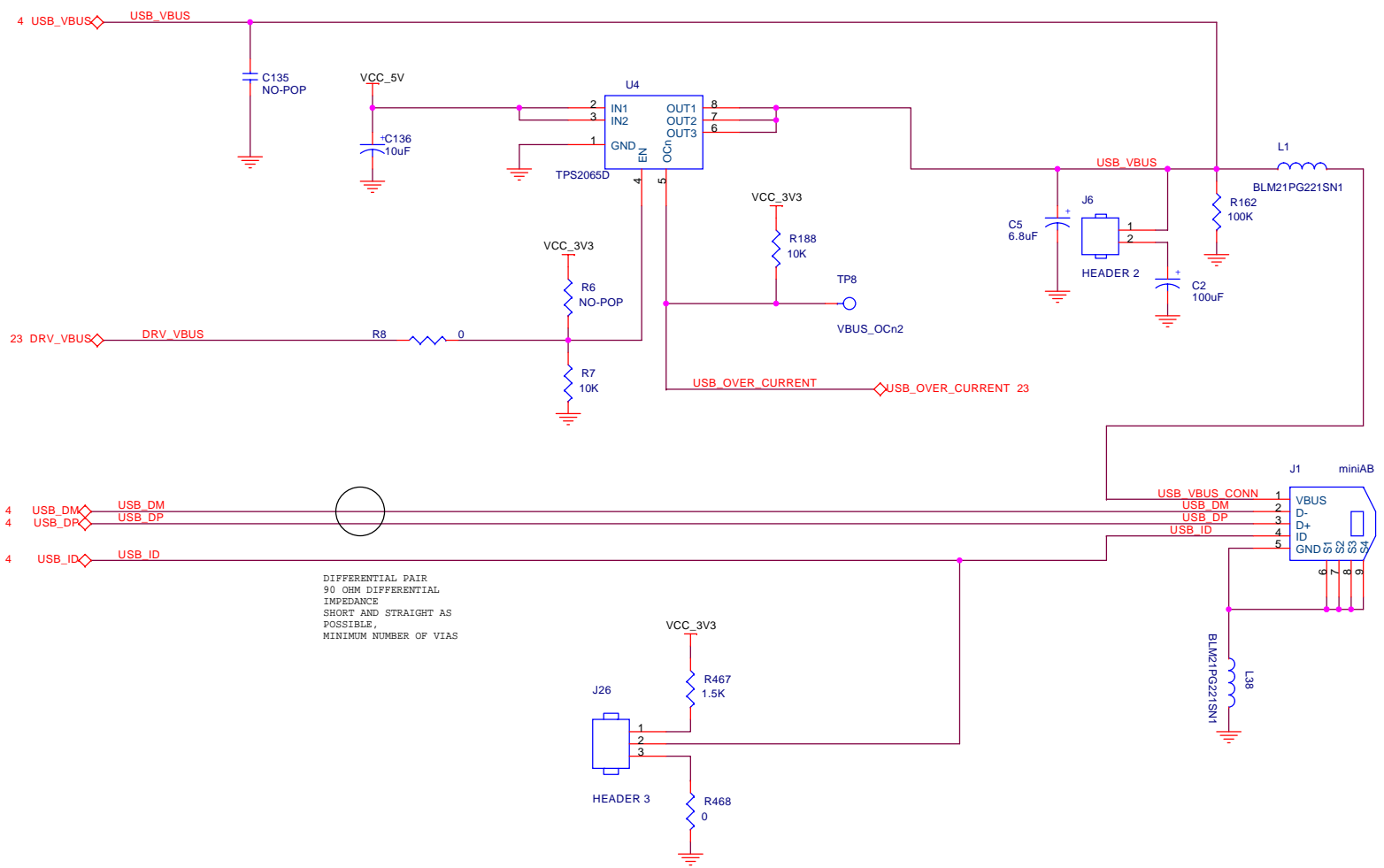


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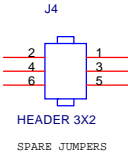


Layout for the 92-ball DDR Package but populate the 84-ball MT47H64M16HR-3:E. 84 Ball memories reside in the center section of the 92 Ball Package

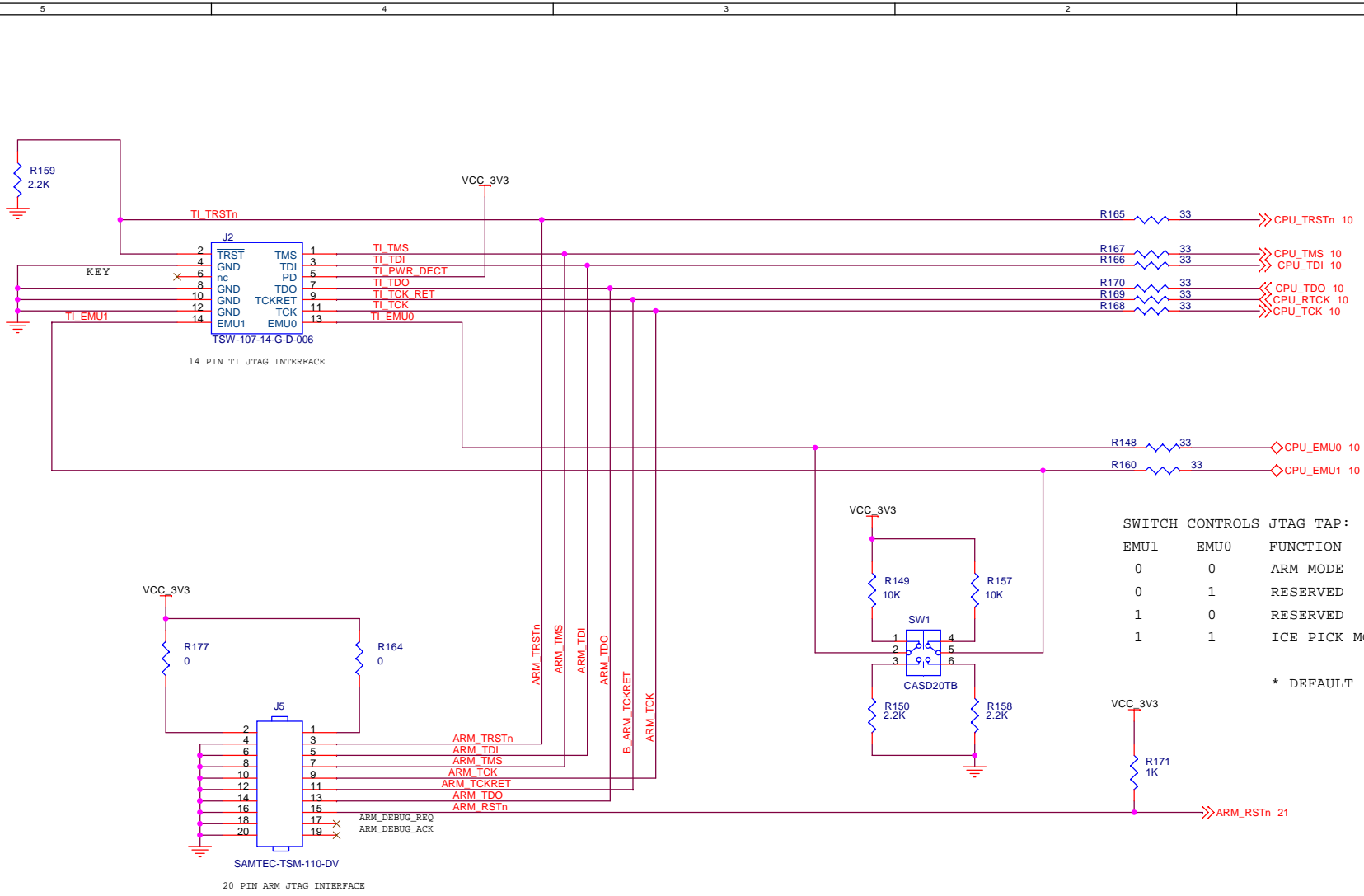
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: DDR2 MEMORY			
Size: B	DWG NO	510842-0001	Revision: A
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DIFFERENTIAL PAIR
90 OHM DIFFERENTIAL
IMPEDANCE
SHORT AND STRAIGHT AS
POSSIBLE,
MINIMUM NUMBER OF VIAS



SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: DM368 USB			
Size: B	DWG NO	510842-0001	Revision: A
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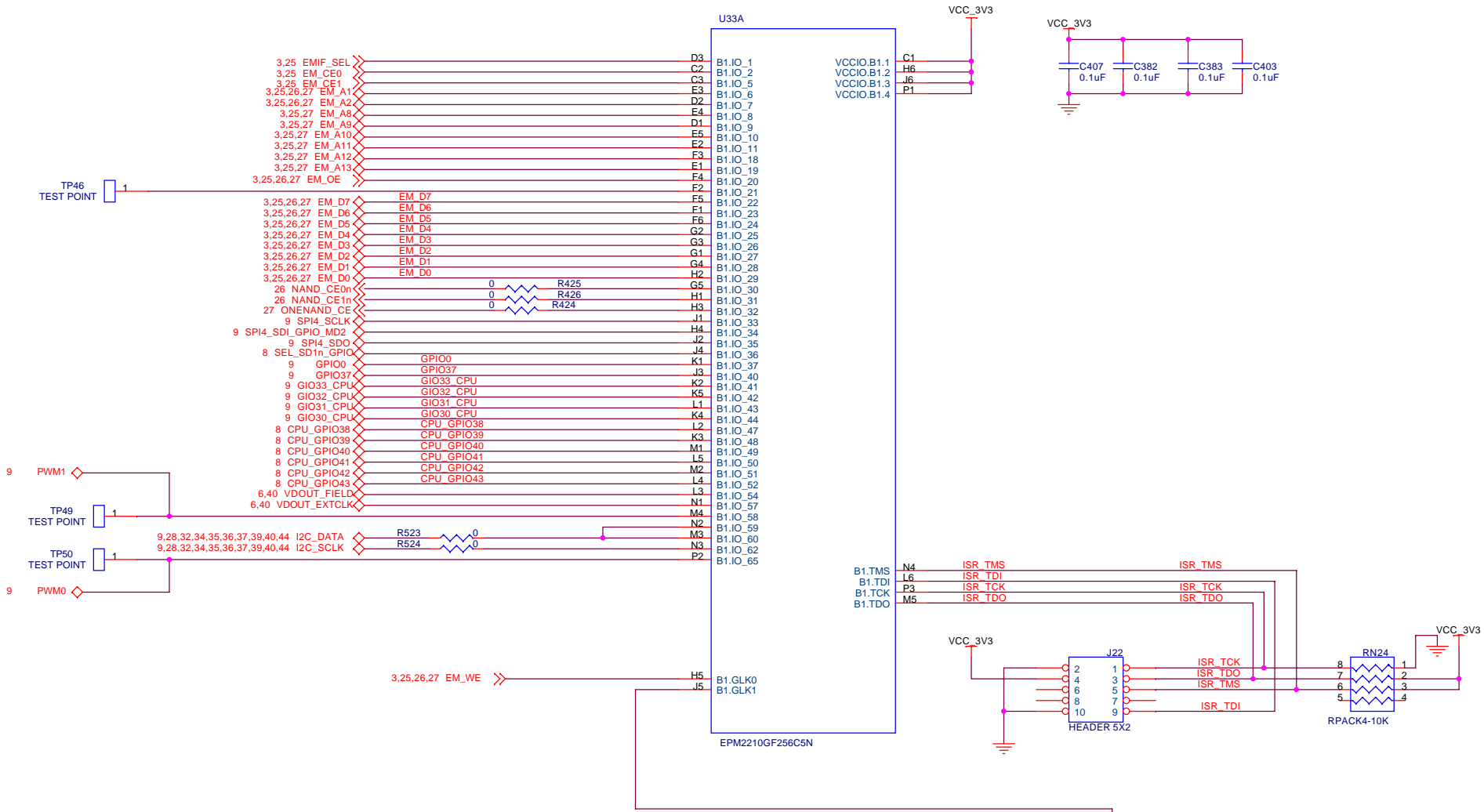


SWITCH CONTROLS JTAG TAP:

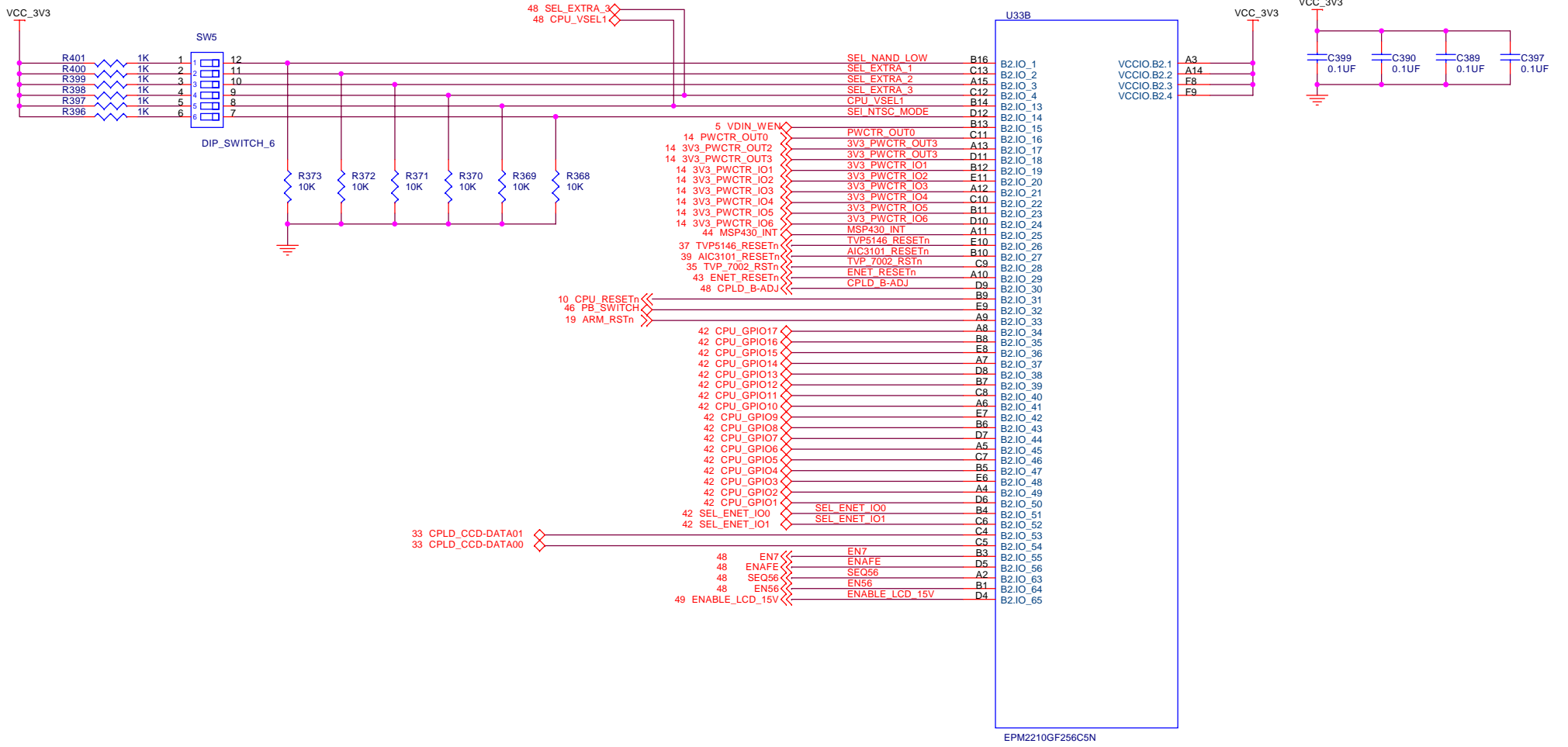
EMU1	EMU0	FUNCTION
0	0	ARM MODE
0	1	RESERVED
1	0	RESERVED
1	1	ICE PICK MODE *

* DEFAULT

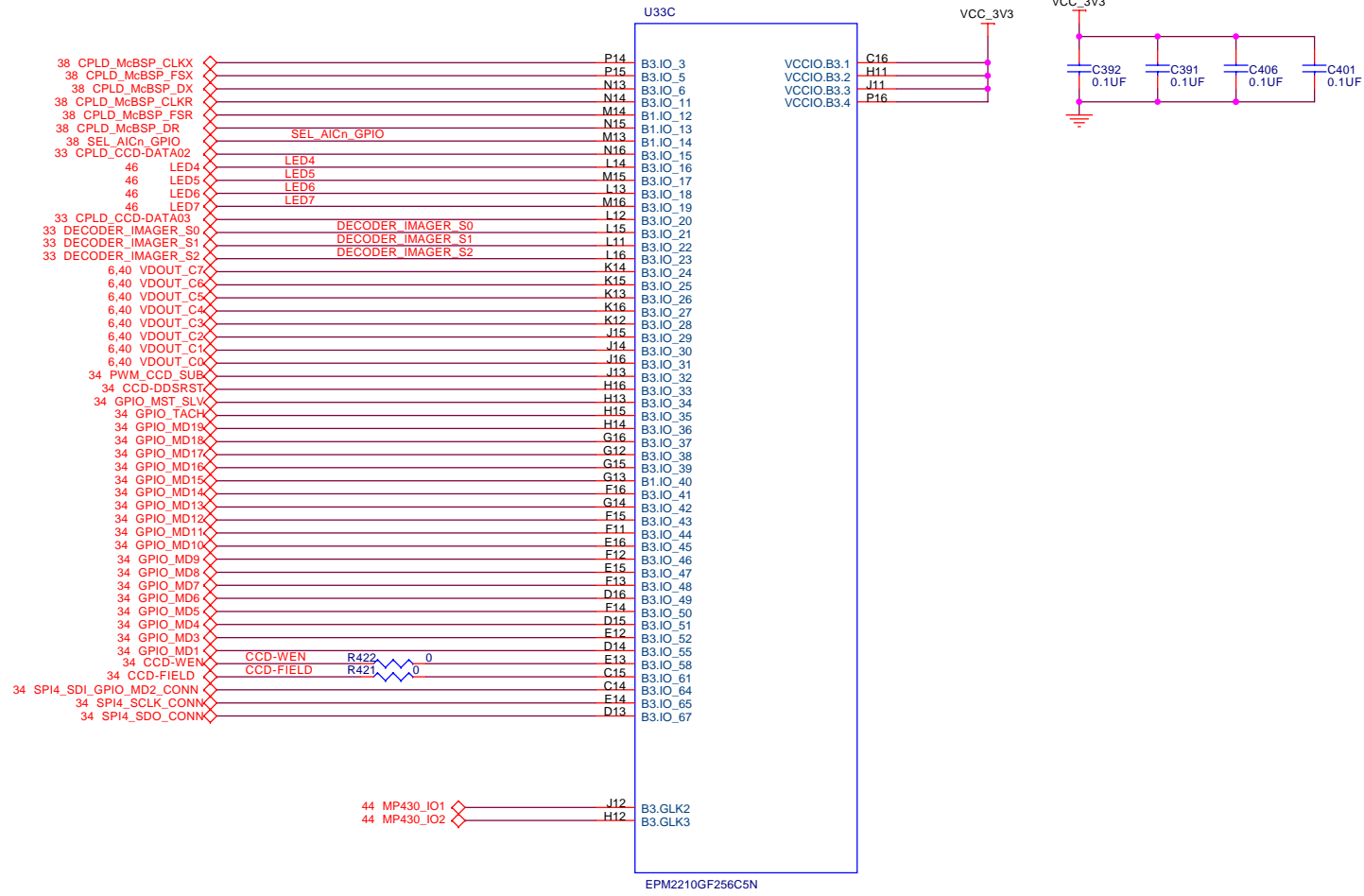
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: JTAG INTERFACE			
Size: B	DWG NO	510842-0001	Revision: A
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SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: CPLD SECTION A			
Size: B	DWG NO	510842-0001	Revision: A
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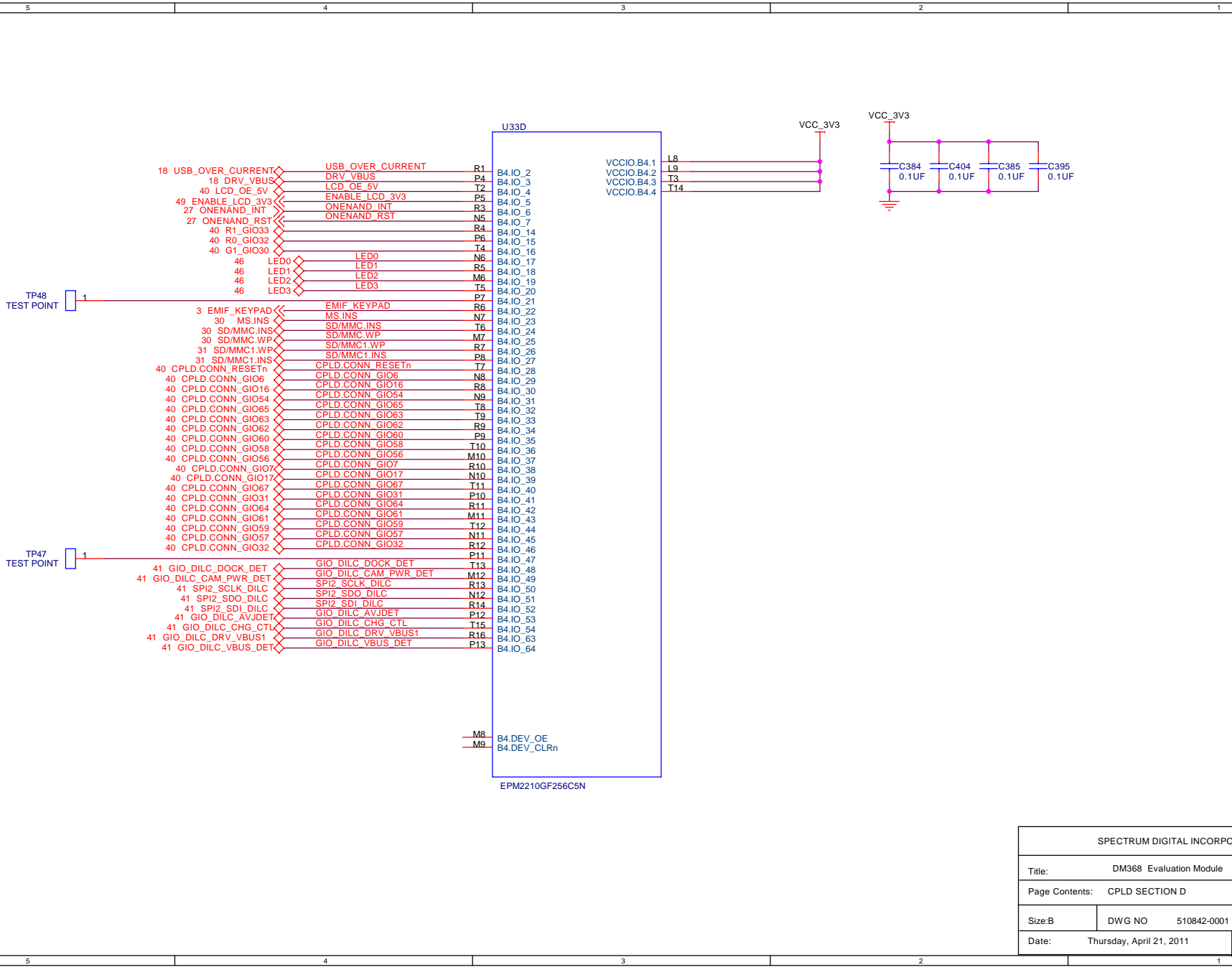


SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: CPLD SECTION B			
Size: B	DWG NO	510842-0001	Revision: A
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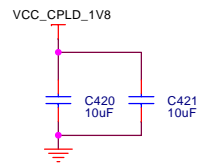
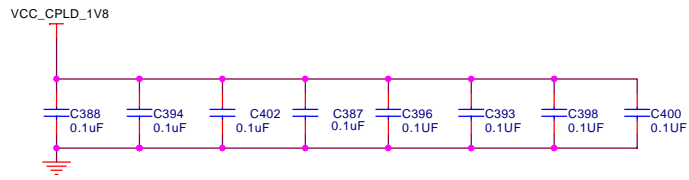
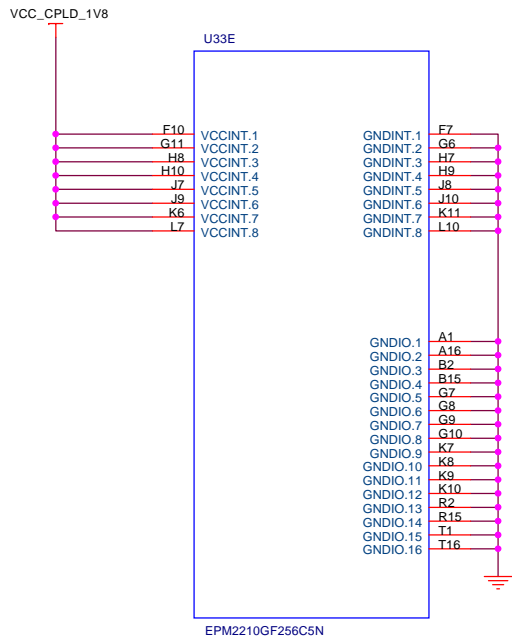


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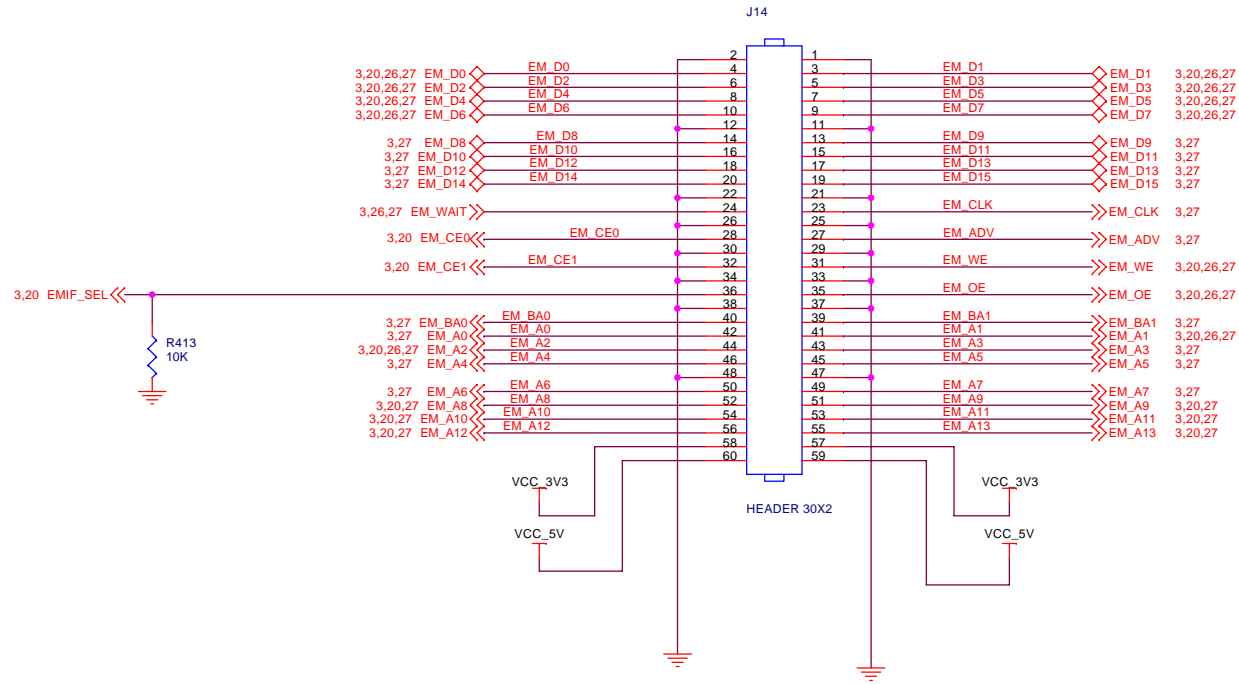
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Size: B	DWG NO	510842-0001	Revision: A
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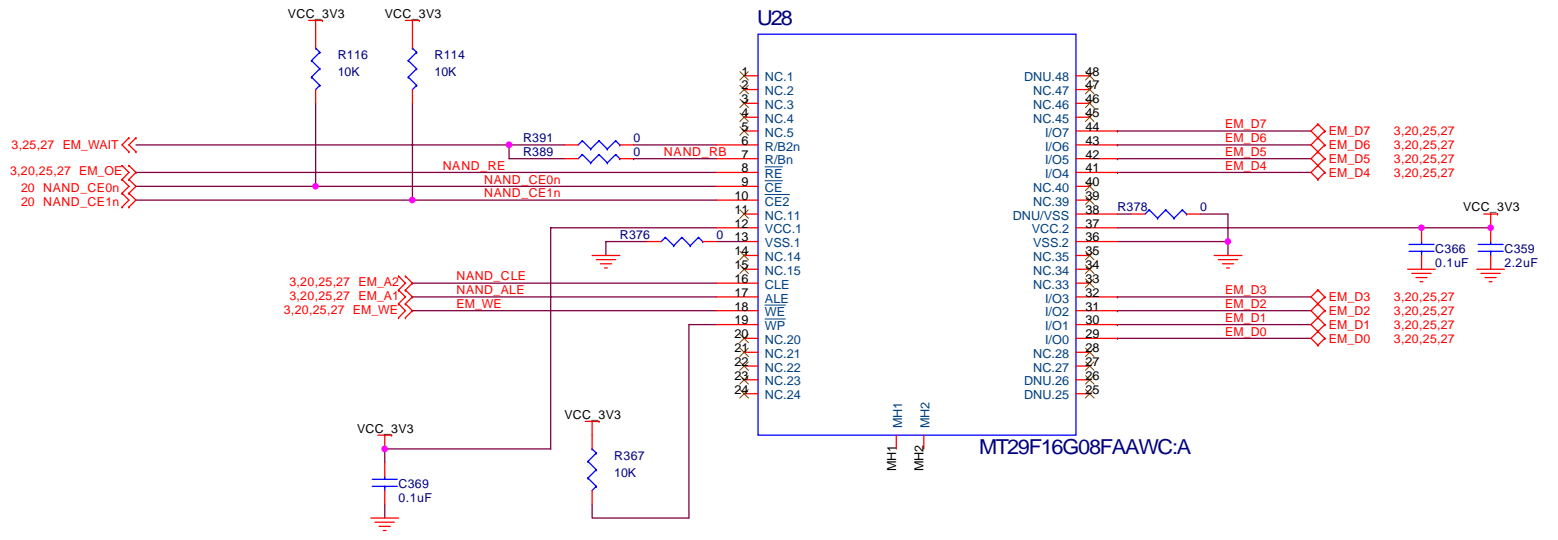
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Title: DM368 Evaluation Module			
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Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011	Sheet 23 of	53



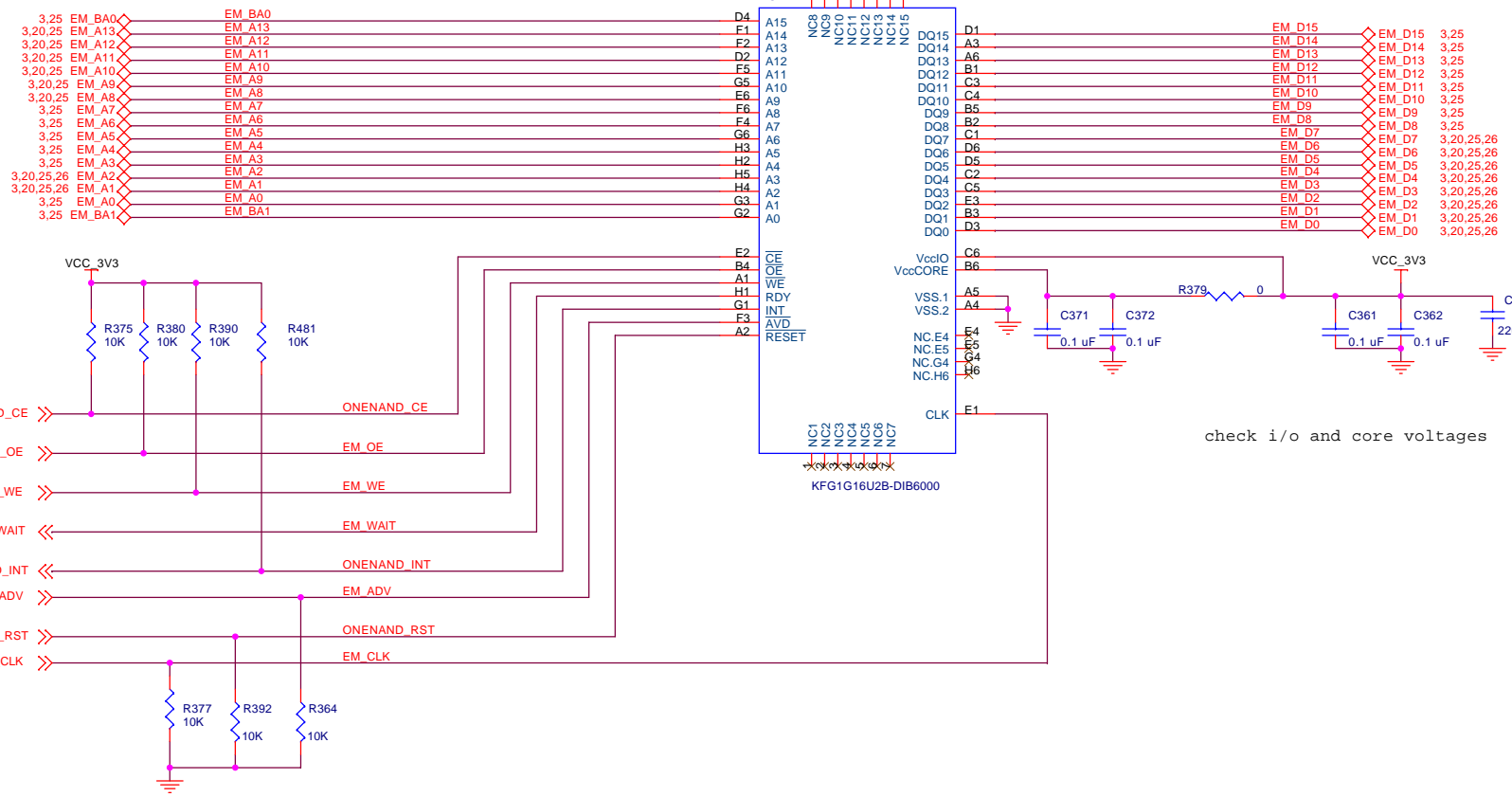
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: CPLD POWER			
Size: B	DWG NO	510842-0001	Revision: A
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SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: EMIF/UHPI DC INTERFACE			
Size: B	DWG NO	510842-0001	Revision: A
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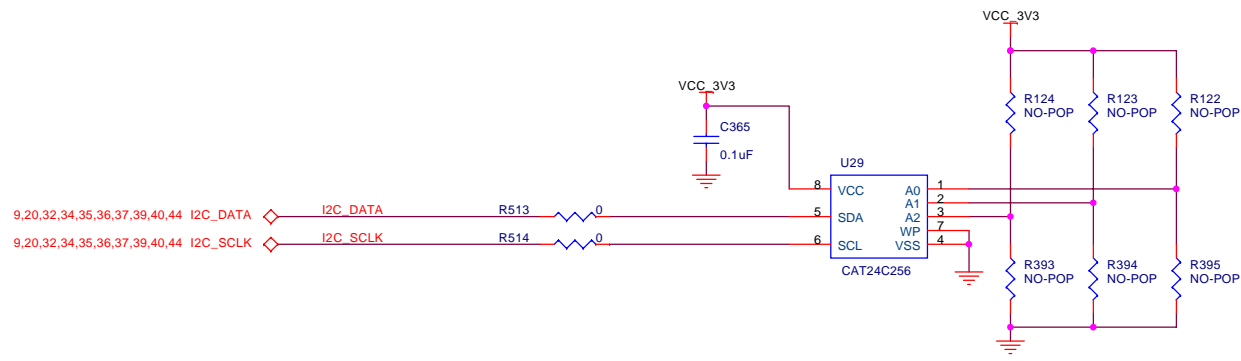
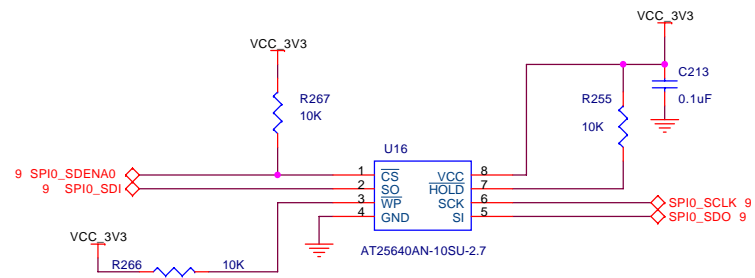


SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: NAND FLASH			
Size: B	DWG NO	510842-0001	Revision: A
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SPECTRUM DIGITAL INCORPORATED			
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Page Contents: ONE NAND			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011	Sheet 27 of	53

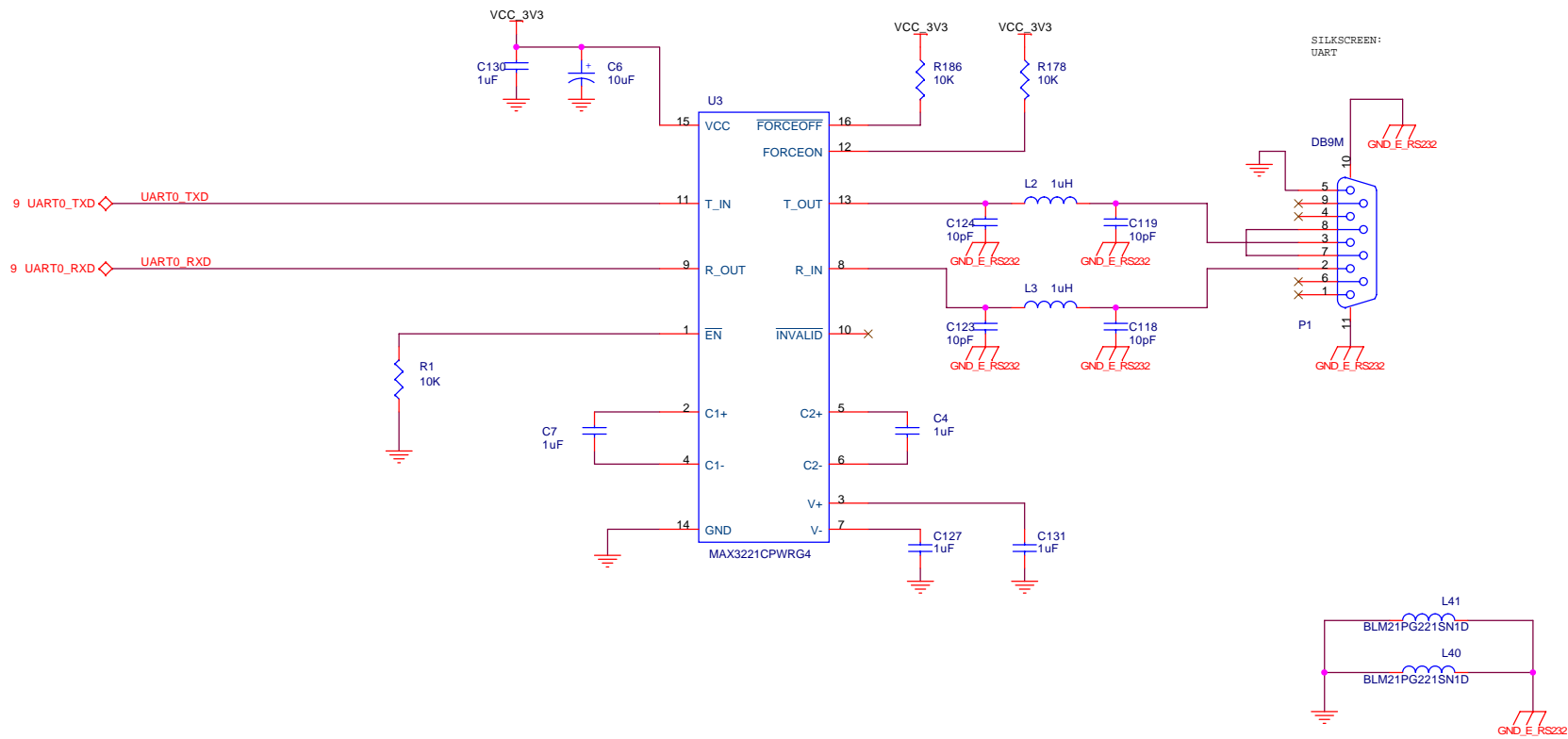
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SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: SPI EEPROM			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 28 of 53

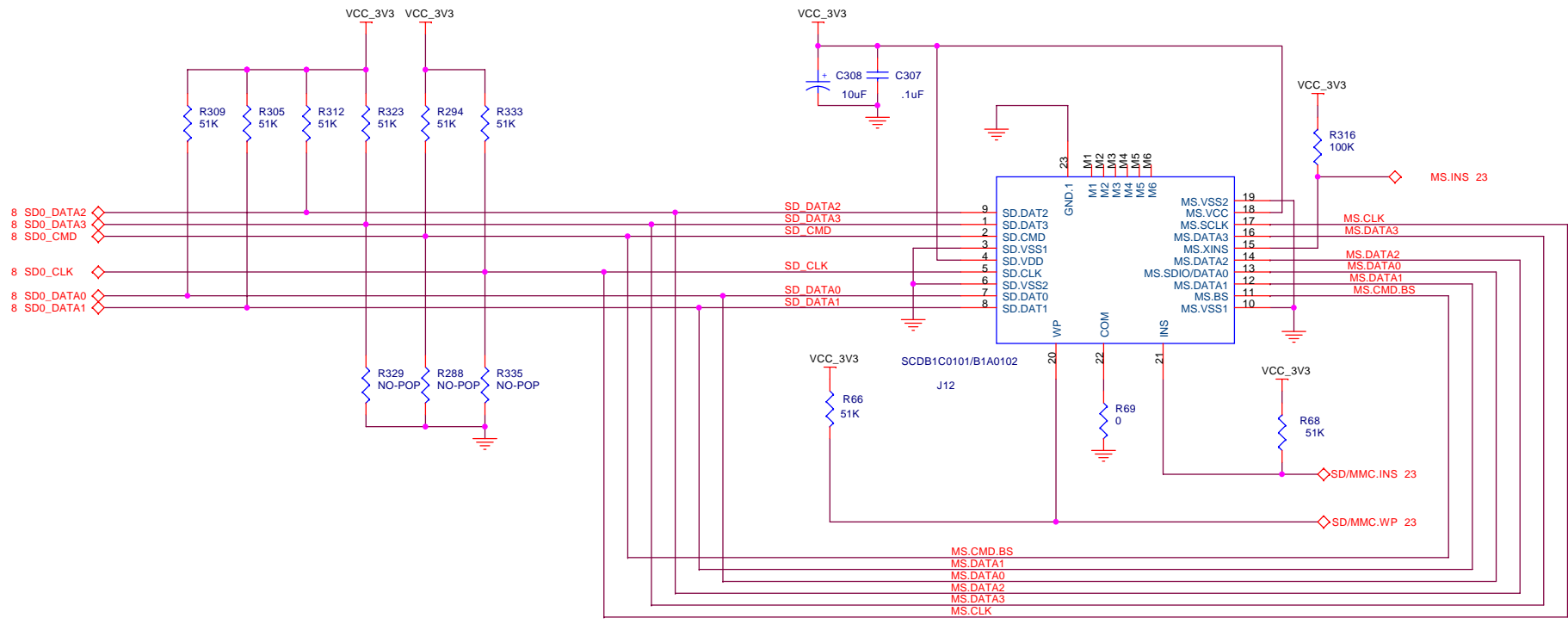
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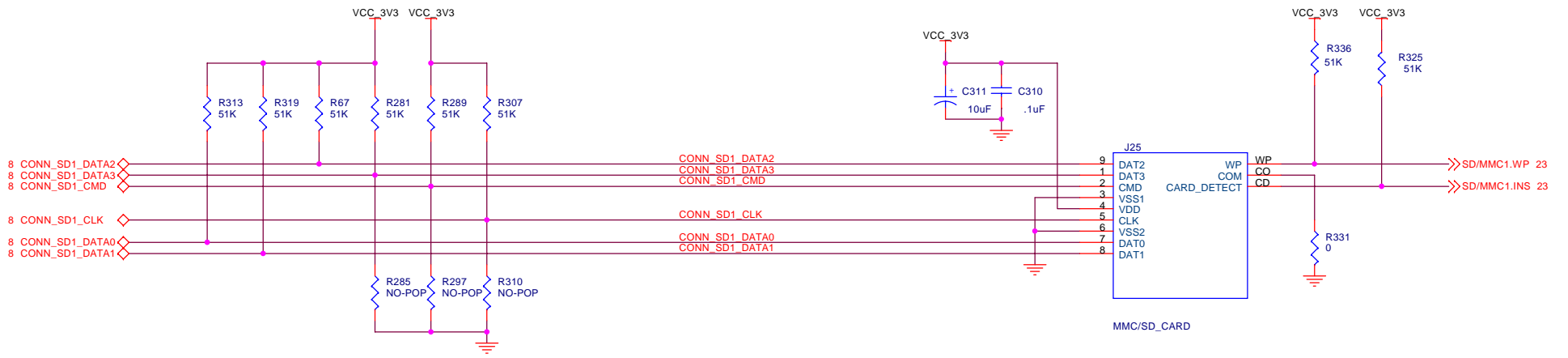


SPECTRUM DIGITAL INCORPORATED			
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Page Contents: RS232			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 29 of 53

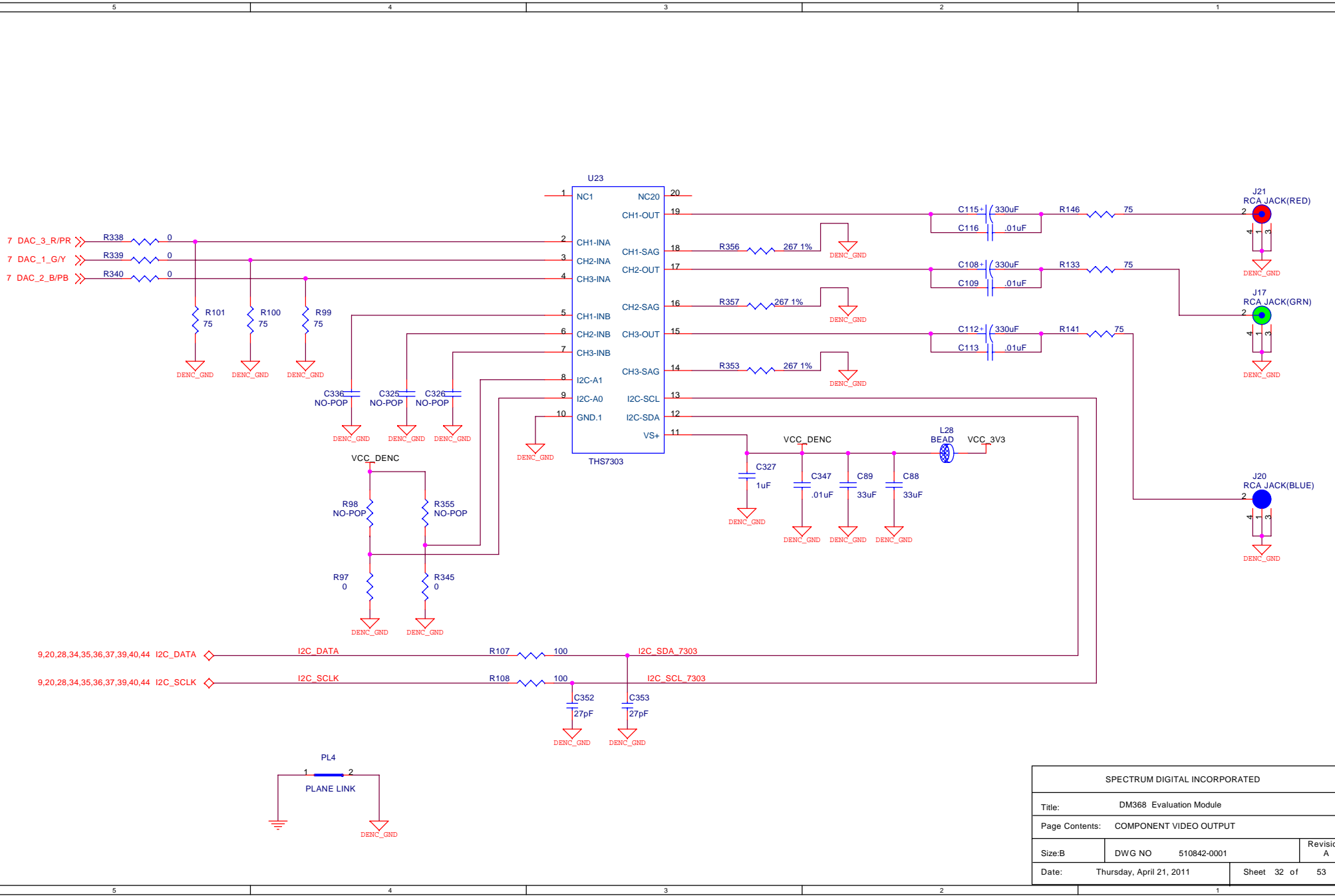
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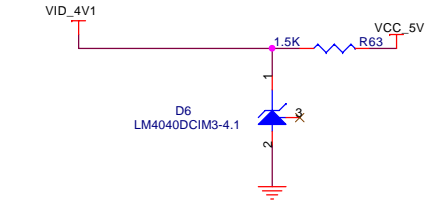
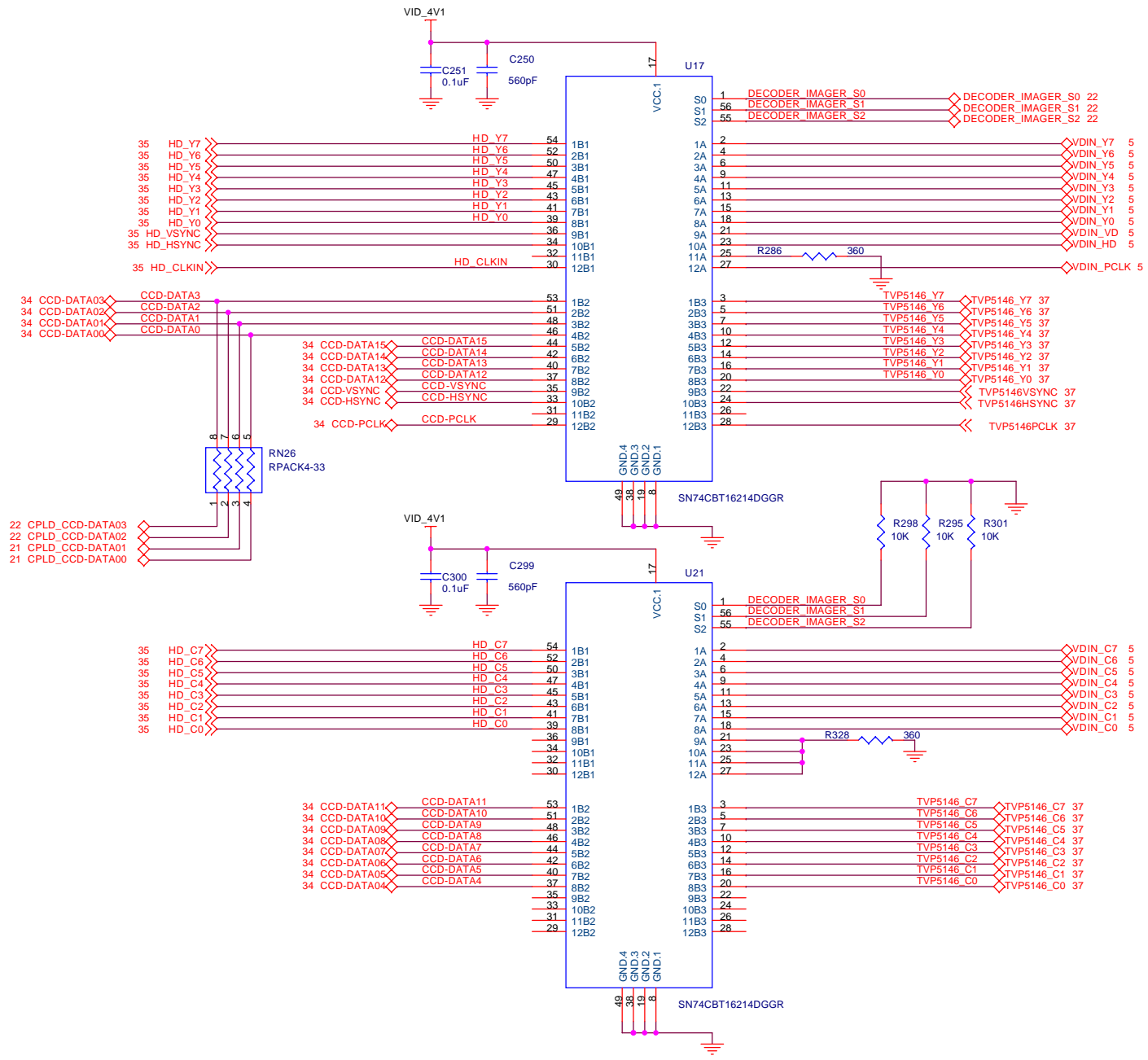
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
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Size: B	DWG NO	510842-0001	Revision: A
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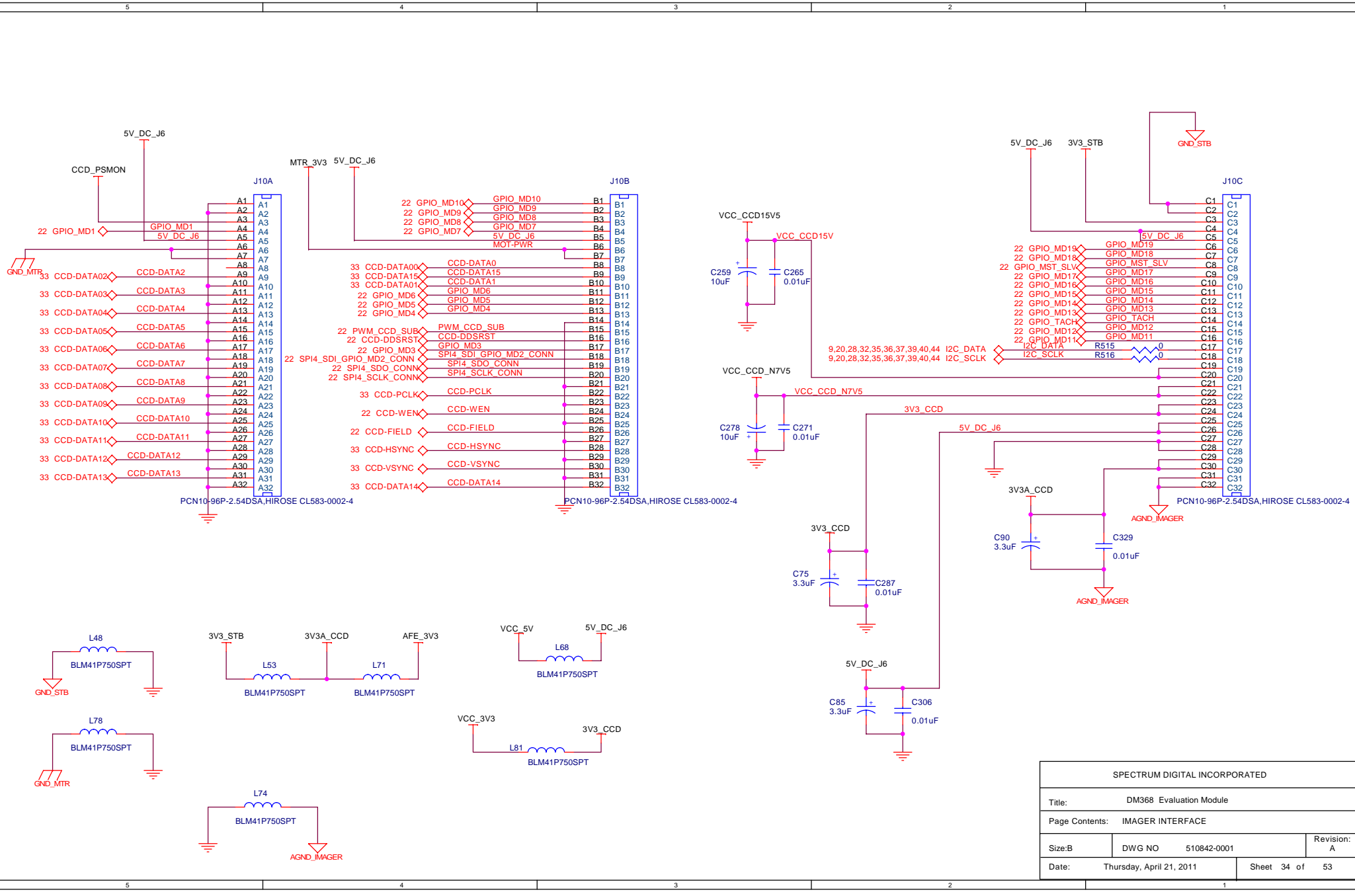
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Size: B	DWG NO	509902-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 31 of 53



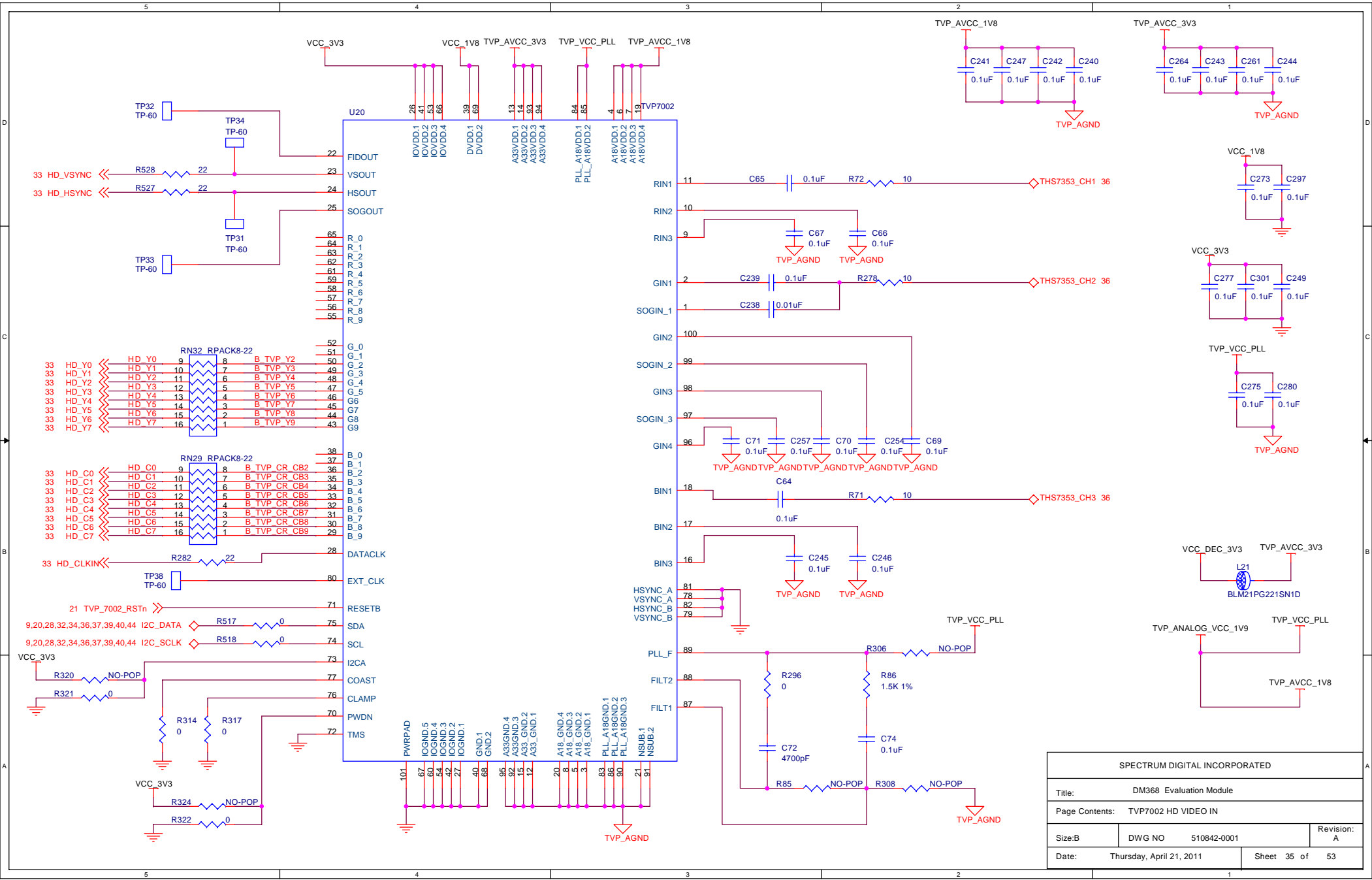
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Title: DM368 Evaluation Module			
Page Contents: COMPONENT VIDEO OUTPUT			
Size: B	DWG NO: 510842-0001	Revision: A	
Date: Thursday, April 21, 2011	Sheet 32 of 53		



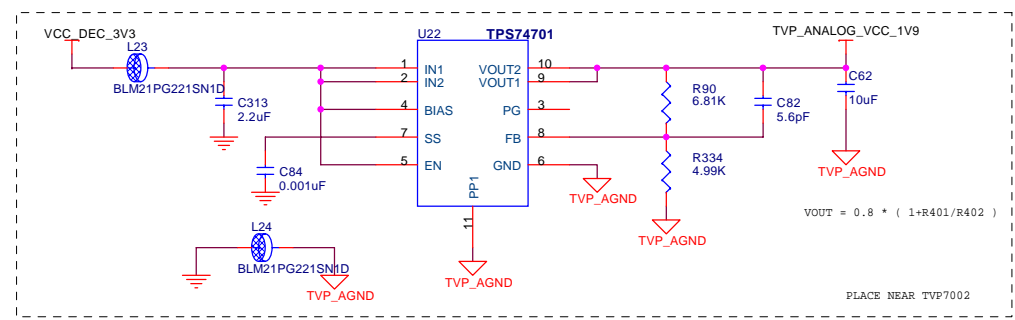
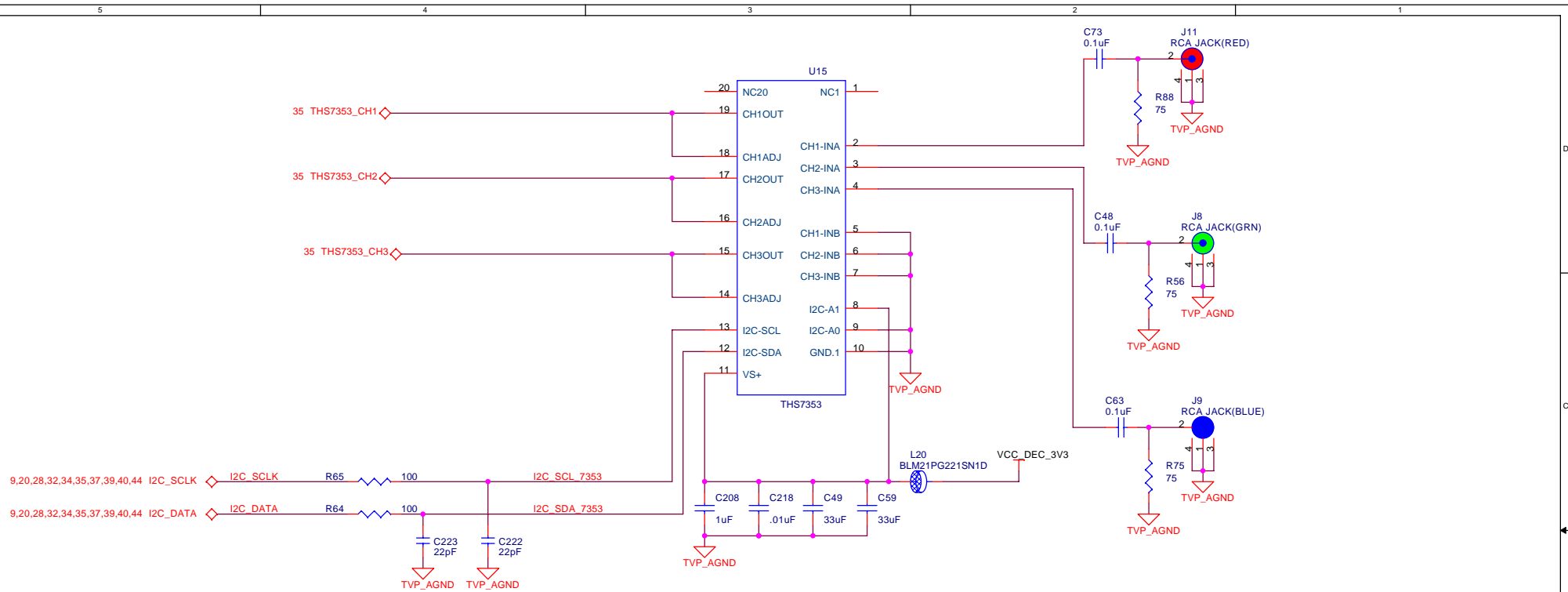
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Title: DM368 Evaluation Module			
Page Contents: VIDEO INPUT MULTIPLEXER			
Size: B	DWG NO	510842-0001	Revision: A
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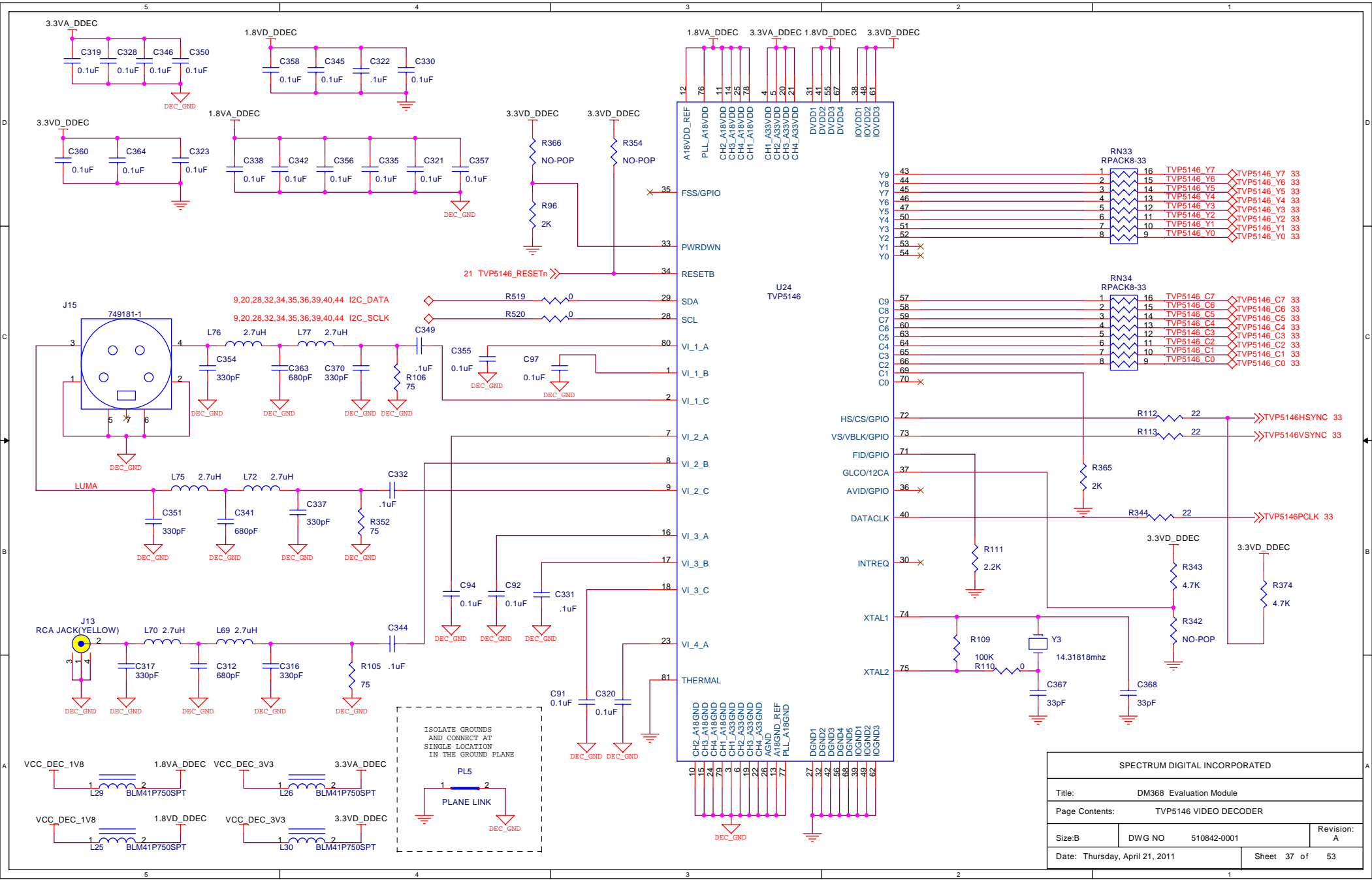
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: IMAGER INTERFACE			
Size: B	DWG NO: 510842-0001	Revision: A	
Date: Thursday, April 21, 2011	Sheet 34 of 53		



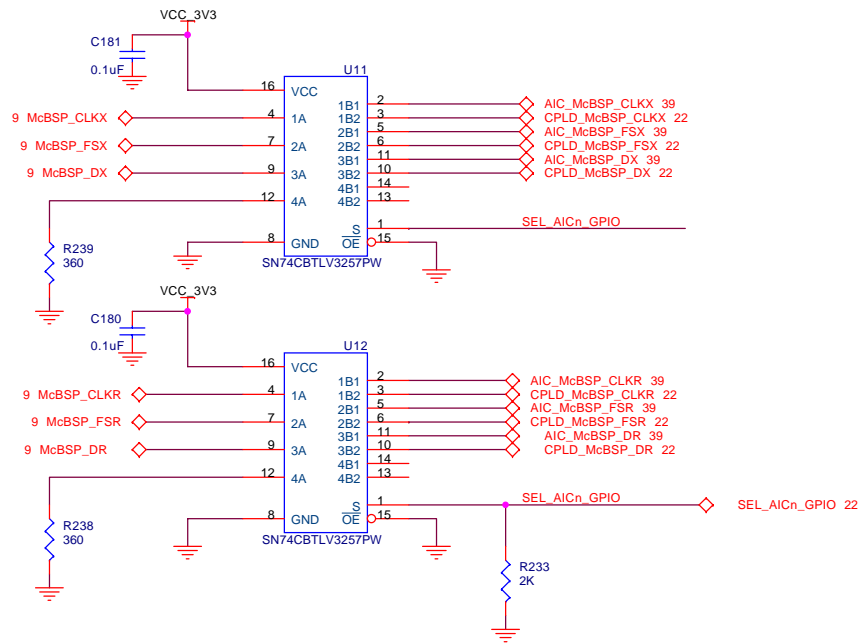
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: TVP7002 HD VIDEO IN			
Size: B	DWG NO	510842-0001	Revision: A
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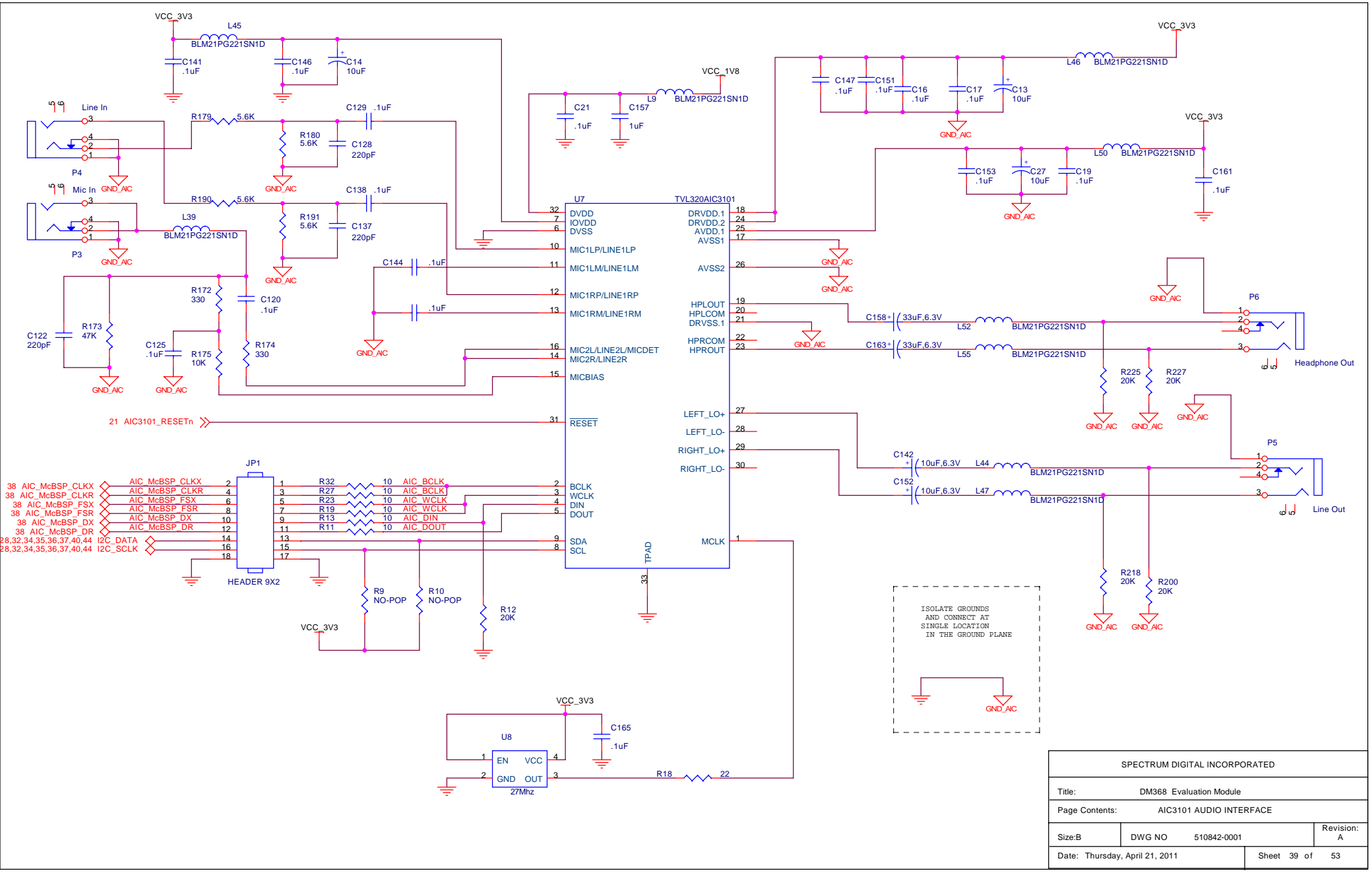
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: TVP7002 HD VIDEO IN			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011	Sheet 36 of	53

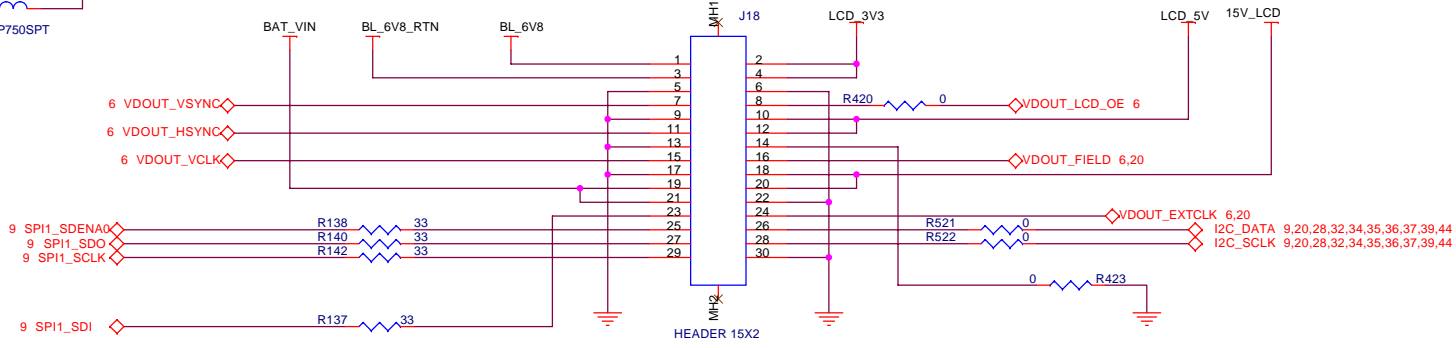
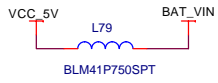
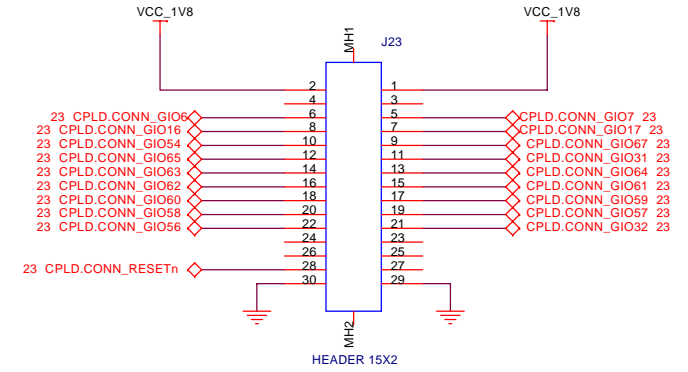
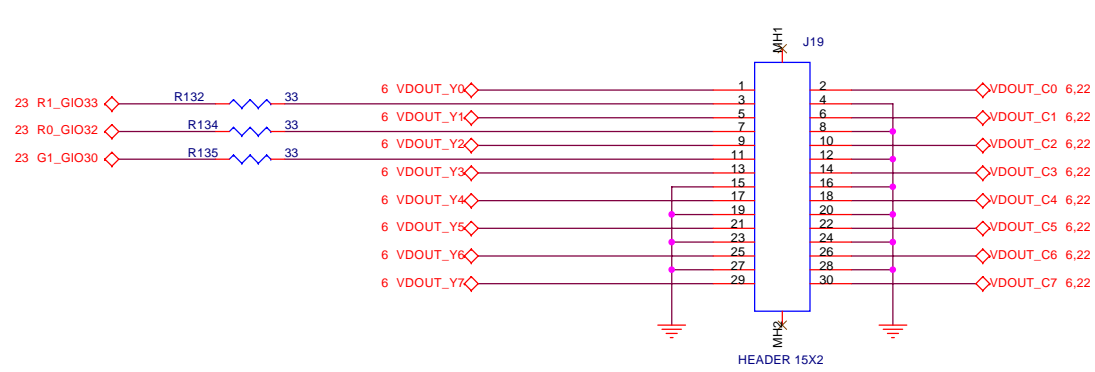


SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: TVP5146 VIDEO DECODER			
Size: B	DWG NO	510842-0001	Revision: A
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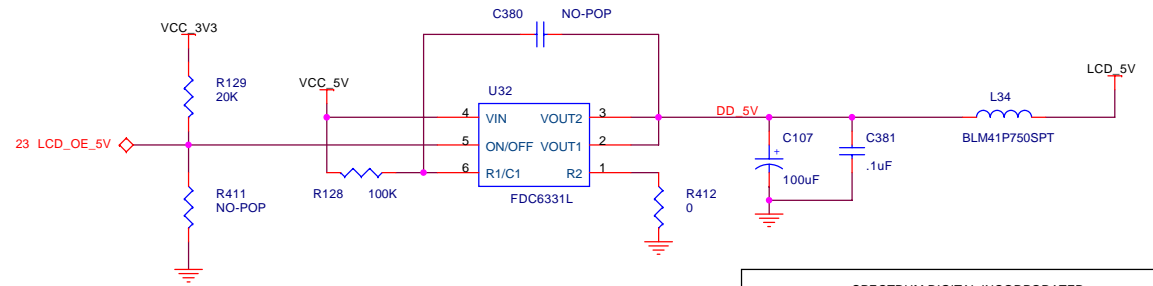


SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: McBSP Muxes			
Size: B	DWG NO	510842-0001	Revision: A
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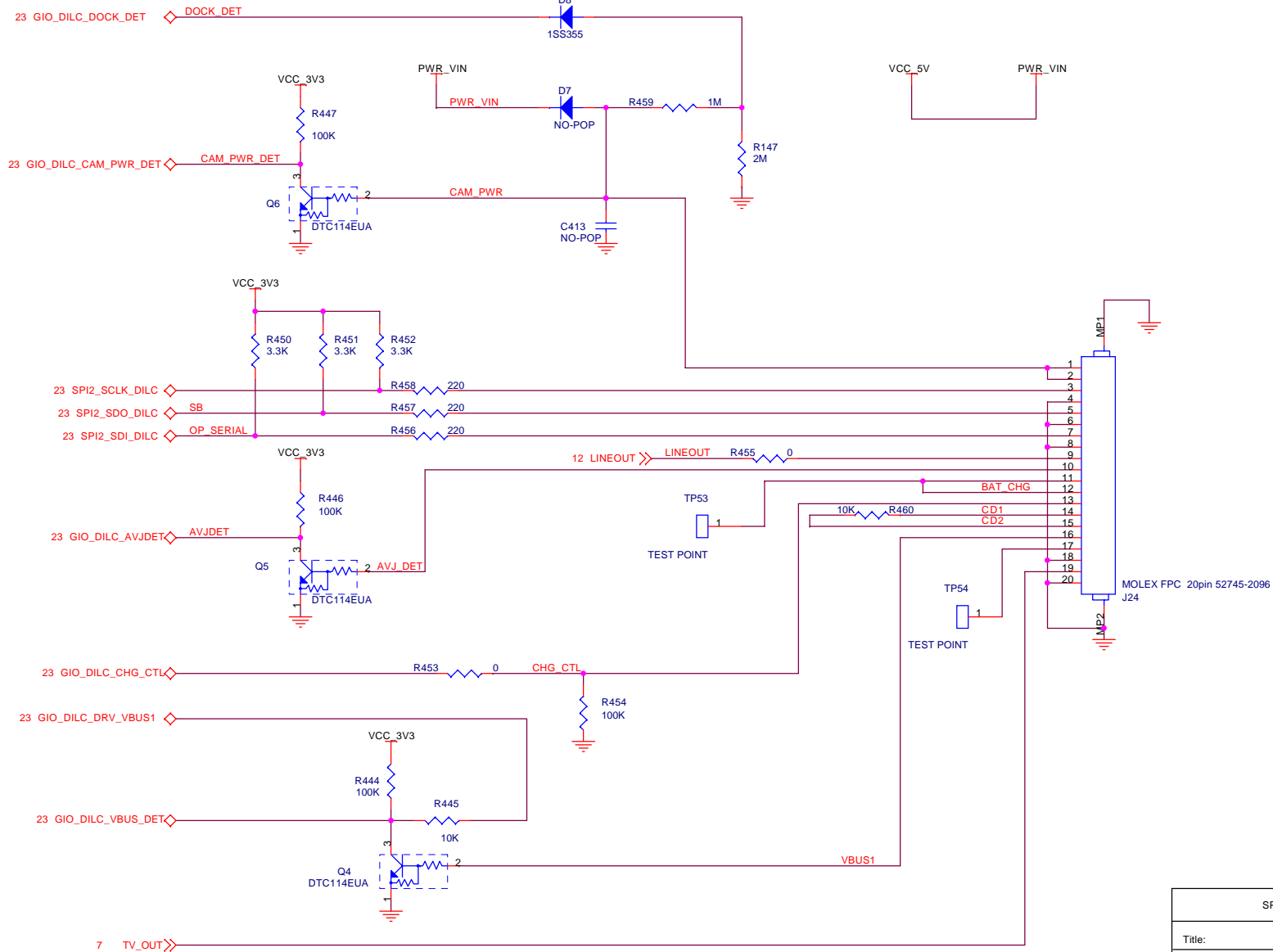




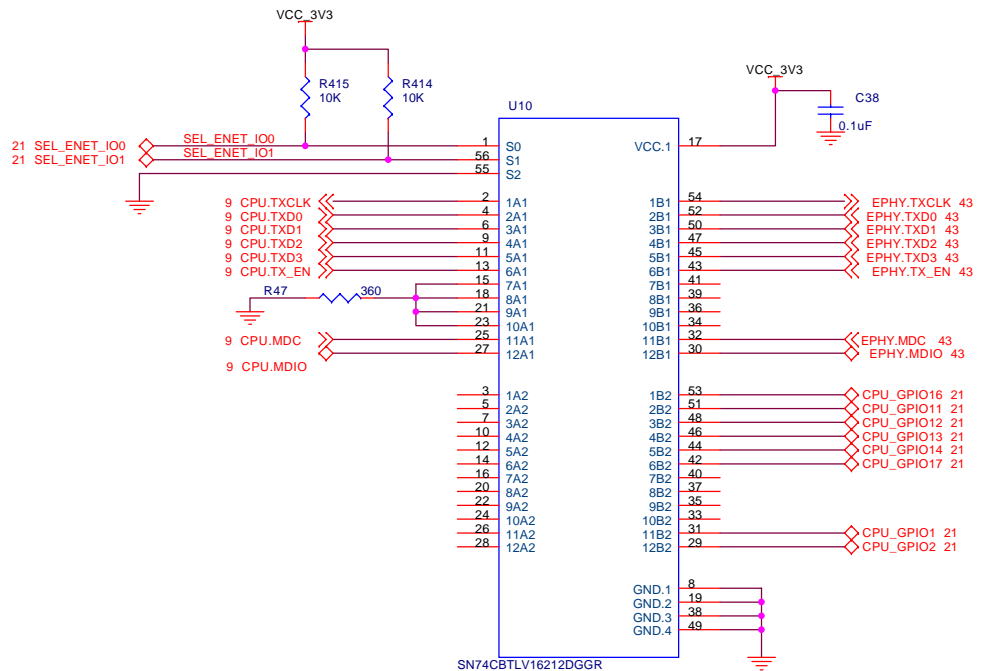
- | | | | | | |
|----|-------------|----|------------|----|-------------|
| R0 | R1_GIO33 | B0 | SPI1_SDI | G0 | SPI1_SDENA0 |
| R1 | R1_GIO33 | B1 | SPI1_CLK | G1 | G1_GIO30 |
| R2 | VDOUT_FIELD | B2 | VDOUT_VCLK | G2 | COUT5 |
| R3 | YOUT3 | B3 | COUT0 | G3 | COUT6 |
| R4 | YOUT4 | B4 | COUT1 | G4 | COUT7 |
| R5 | YOUT5 | B5 | COUT2 | G5 | YOUT0 |
| R6 | YOUT6 | B6 | COUT3 | G6 | YOUT1 |
| R7 | YOUT7 | B7 | COUT4 | G7 | YOUT2 |



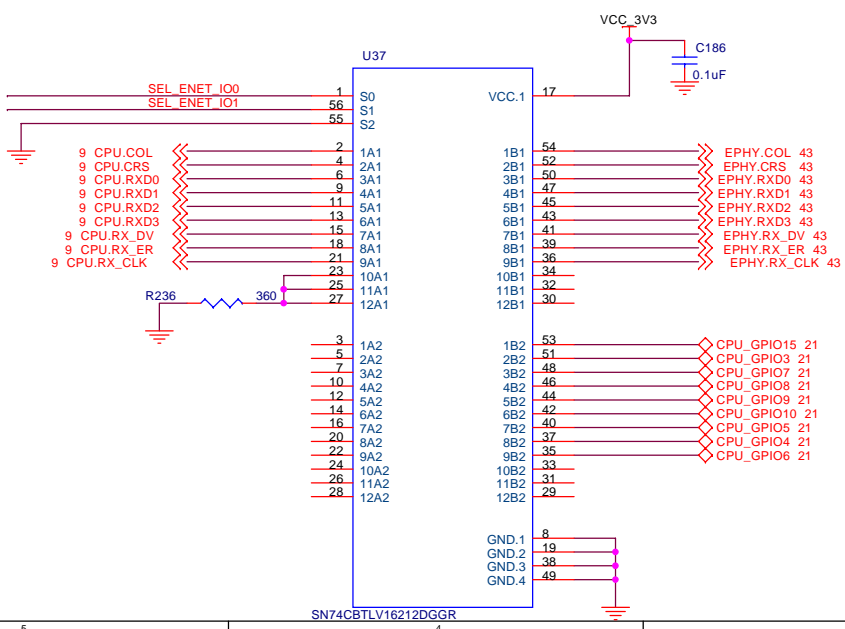
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: VIDEO OUTPUT DC J41/J42			
Size: B	DWG NO	510842-0001	Revision: D
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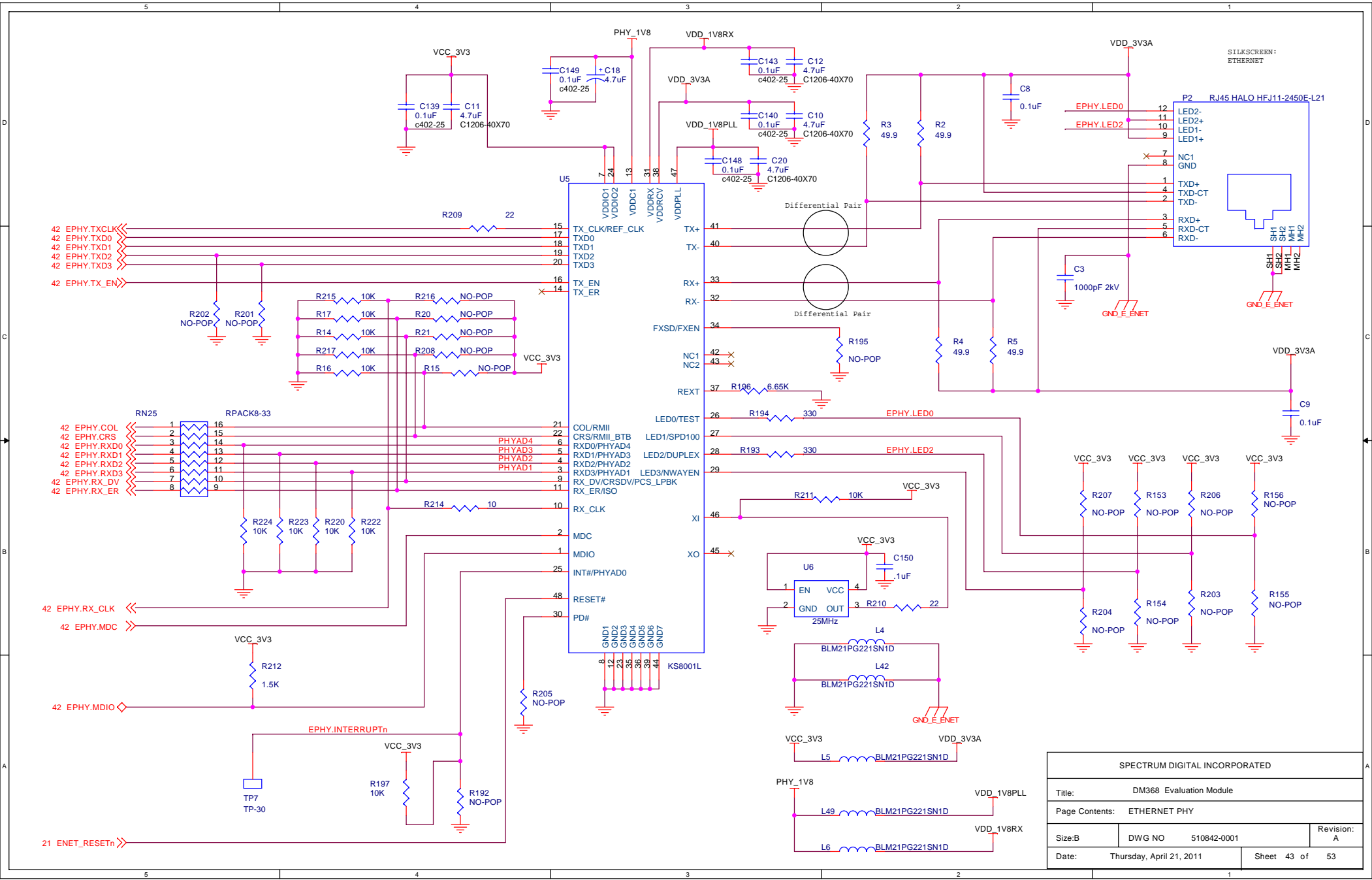
SPECTRUM DIGITAL INCORPORATED			
Title:		DM368 Evaluation Module	
Page Contents:		DILC HOST CONNECTOR	
Size: B	DWG NO	510842-0001	Revision: A
Date: Thursday, April 21, 2011		Sheet 41 of 53	



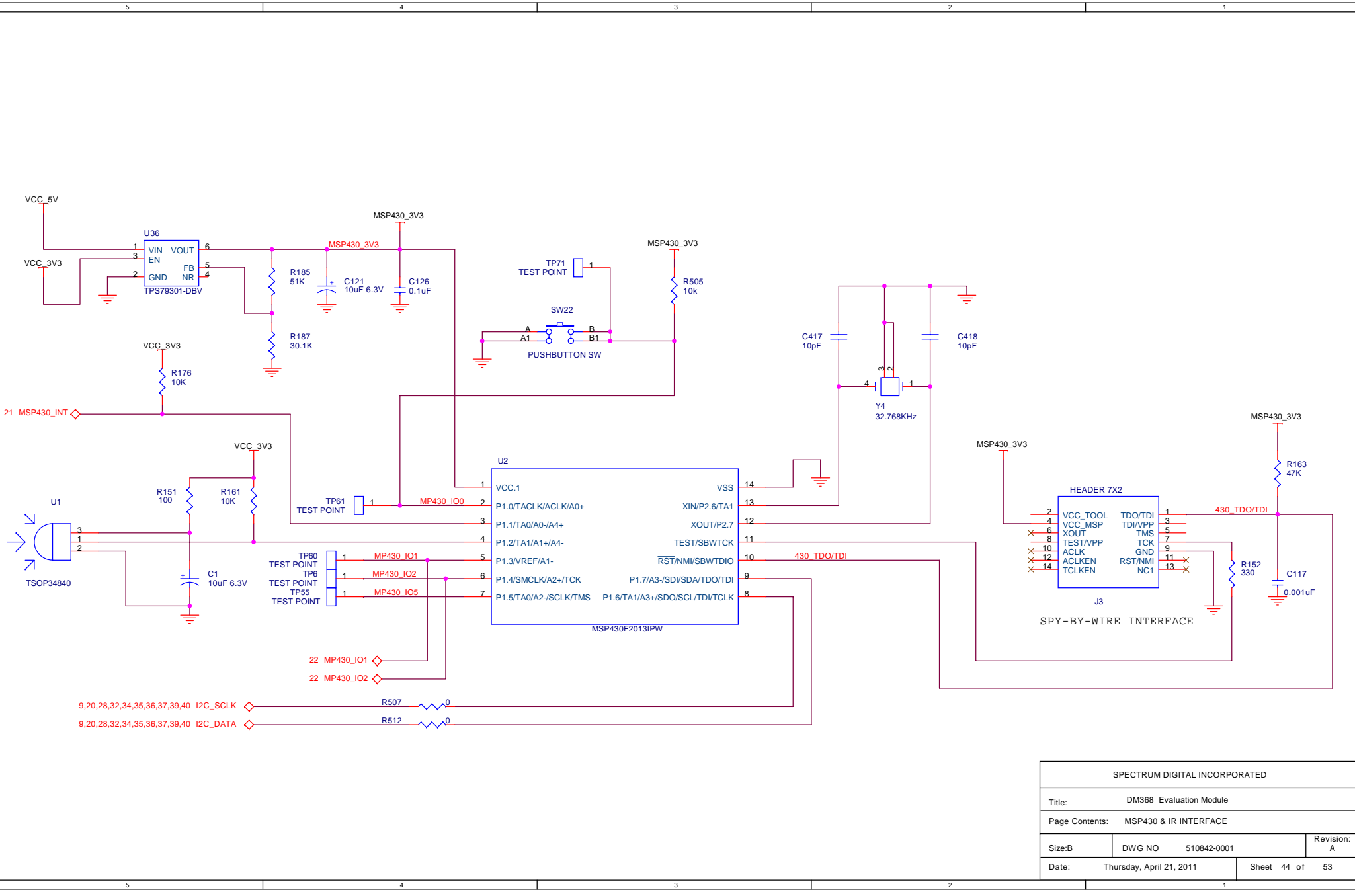
S2	S1	S0	A1	A2	FUNCTION
0	0	0	Z	Z	DISCONNECT
0	0	1	B1	Z	A1 TO B1
0	1	0	B2	Z	A1 TO B2
0	1	1	Z	B1	A2 TO B1
1	0	0	Z	B2	A2 TO B2
1	0	1	Z	Z	DISCONNECT
1	1	0	B1	B2	A1 TO B1 A2 TO B2
1	1	1	B2	B1	A1 TO B2 A2 TO B1



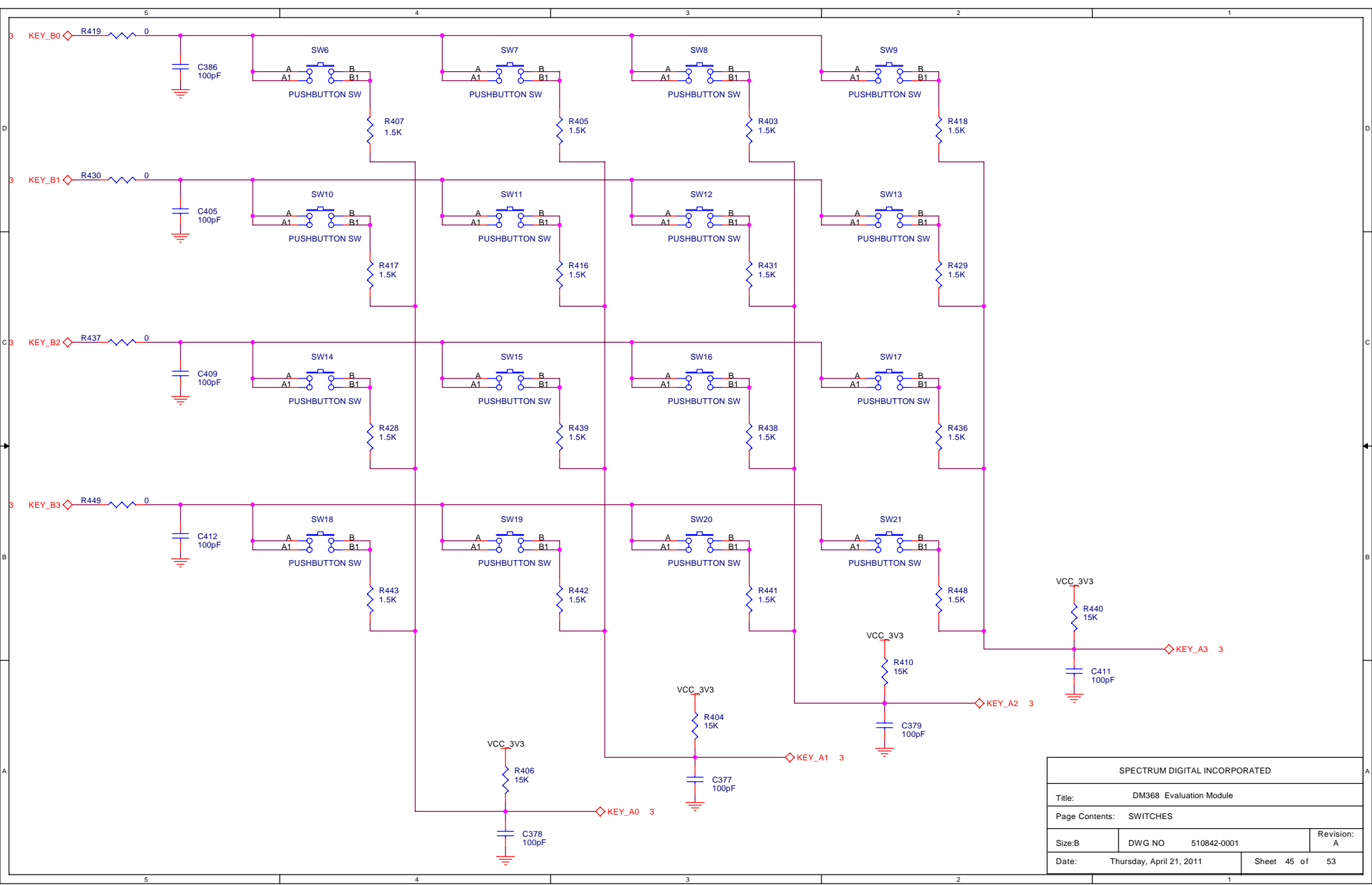
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: ETHERNET MUXES			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 42 of 53



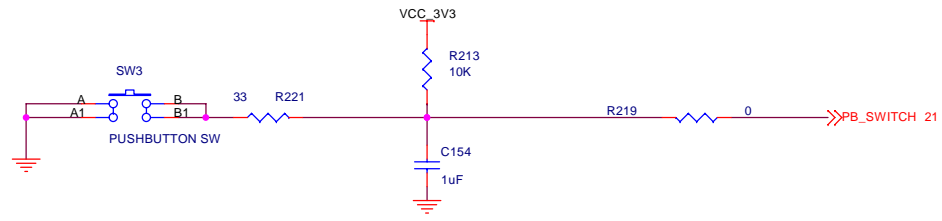
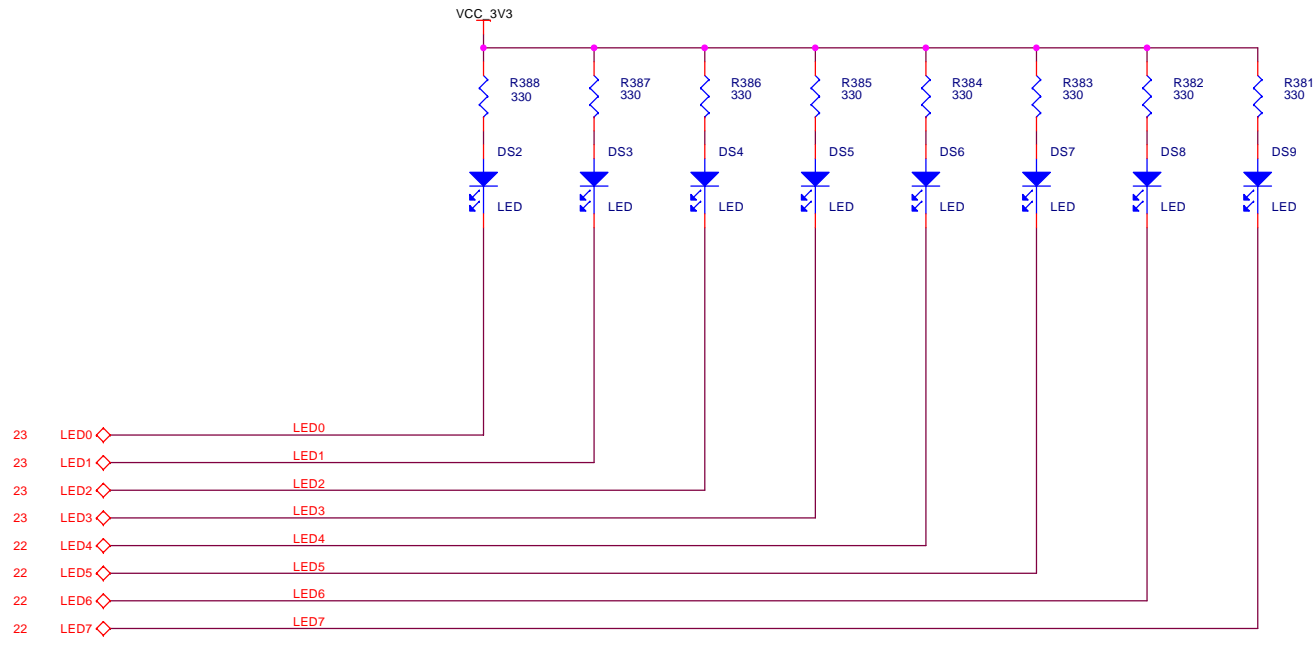
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: ETHERNET PHY			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011	Sheet 43 of	53



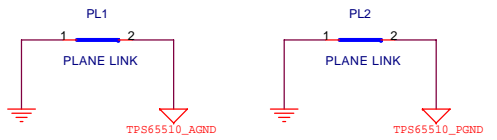
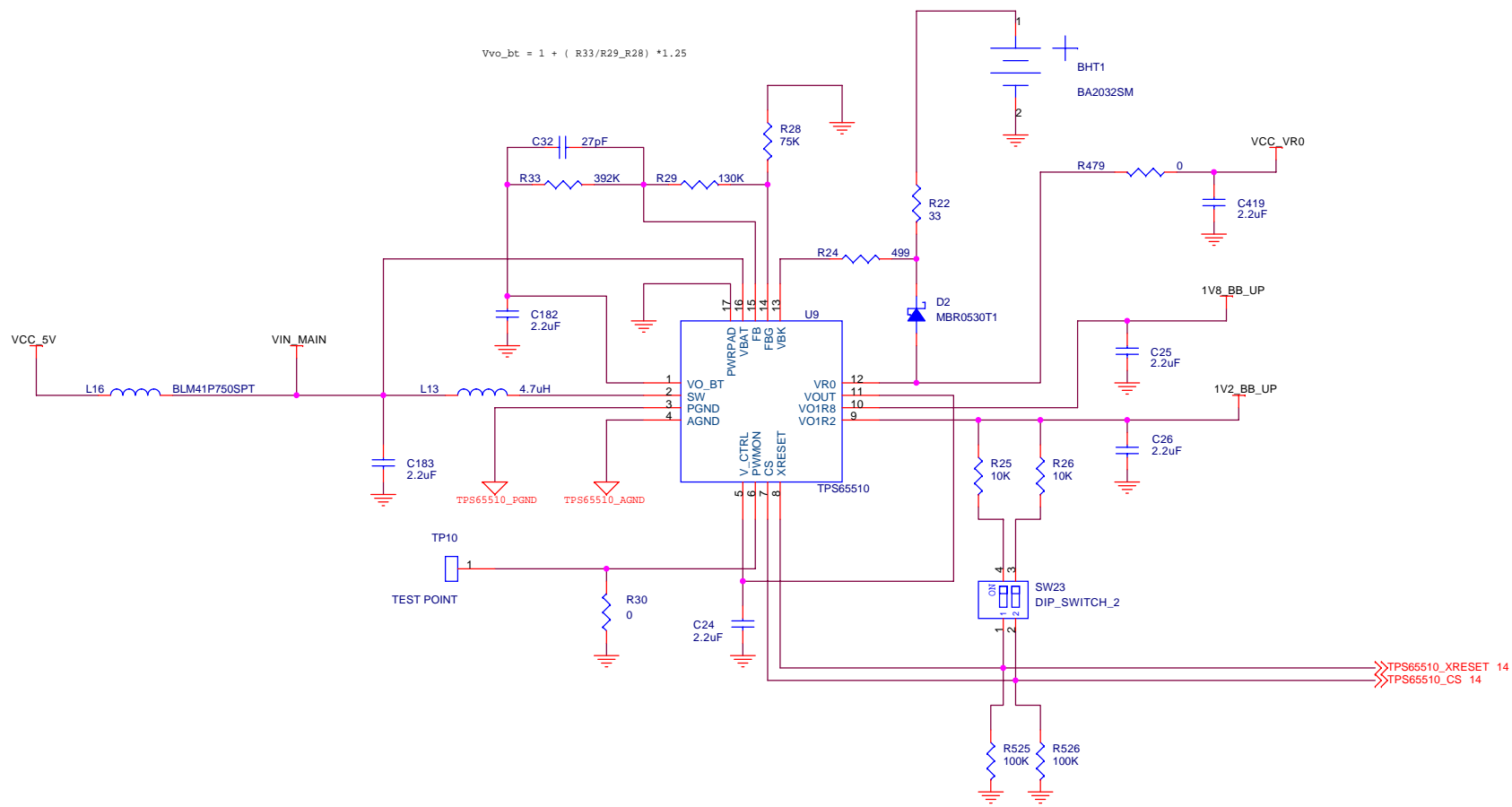
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: MSP430 & IR INTERFACE			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011	Sheet 44 of	53



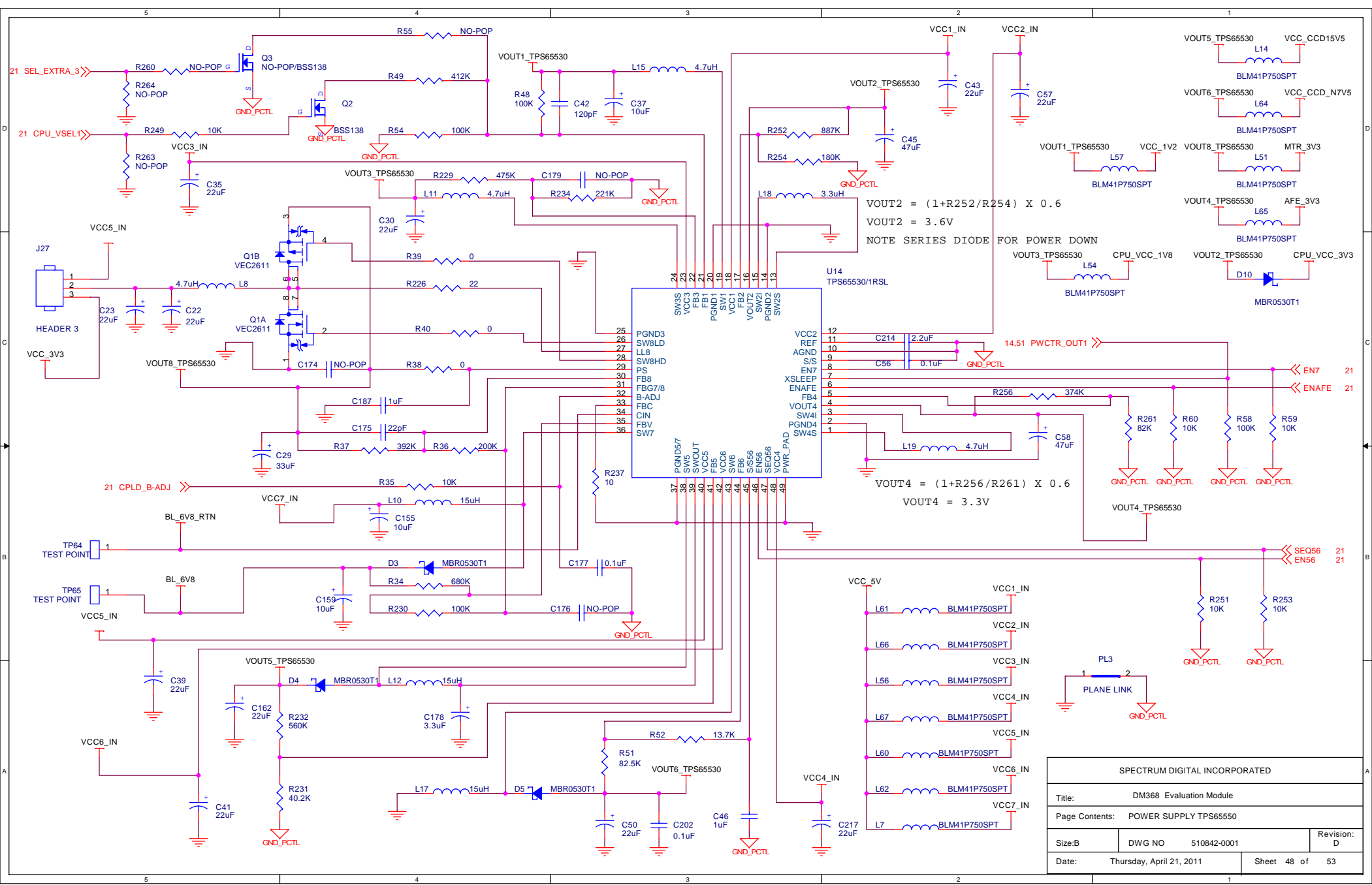
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: SWITCHES			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 45 of 53



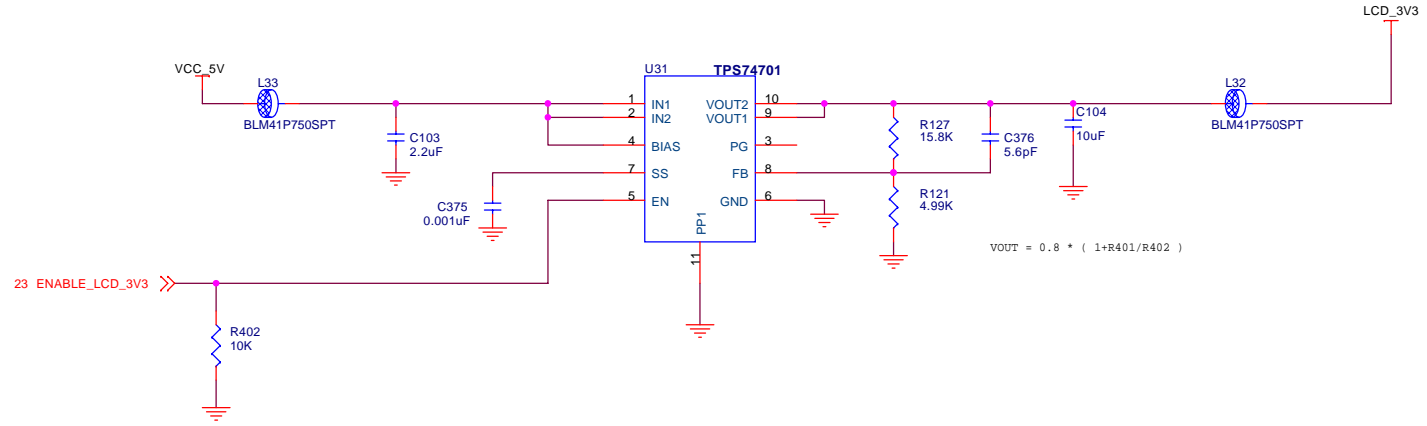
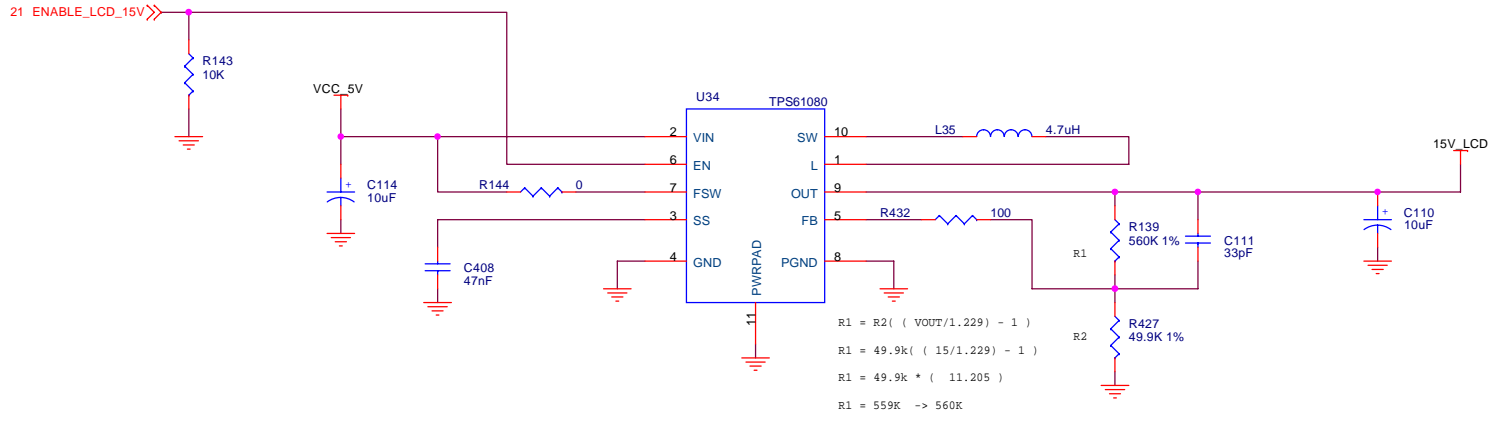
SPECTRUM DIGITAL INCORPORATED		
Title: DM368 Evaluation Module		
Page Contents: SWITCHES		
Size: B	DWG NO: 510842-0001	Revision: A
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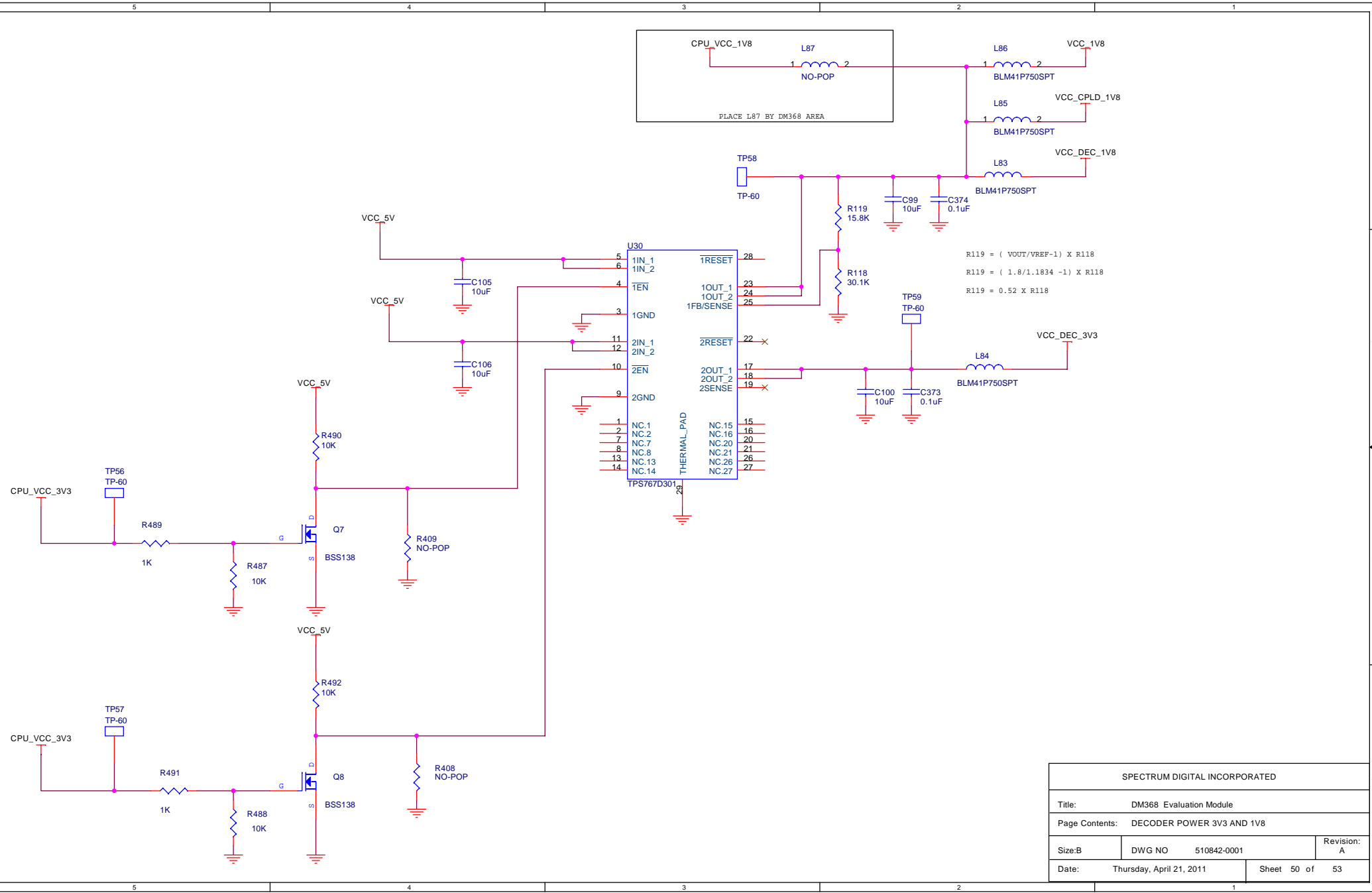
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: POWER SUPPLY TPS65510			
Size: B	DWG NO	510842-0001	Revision: A
Date:	Thursday, April 21, 2011		Sheet 47 of 53



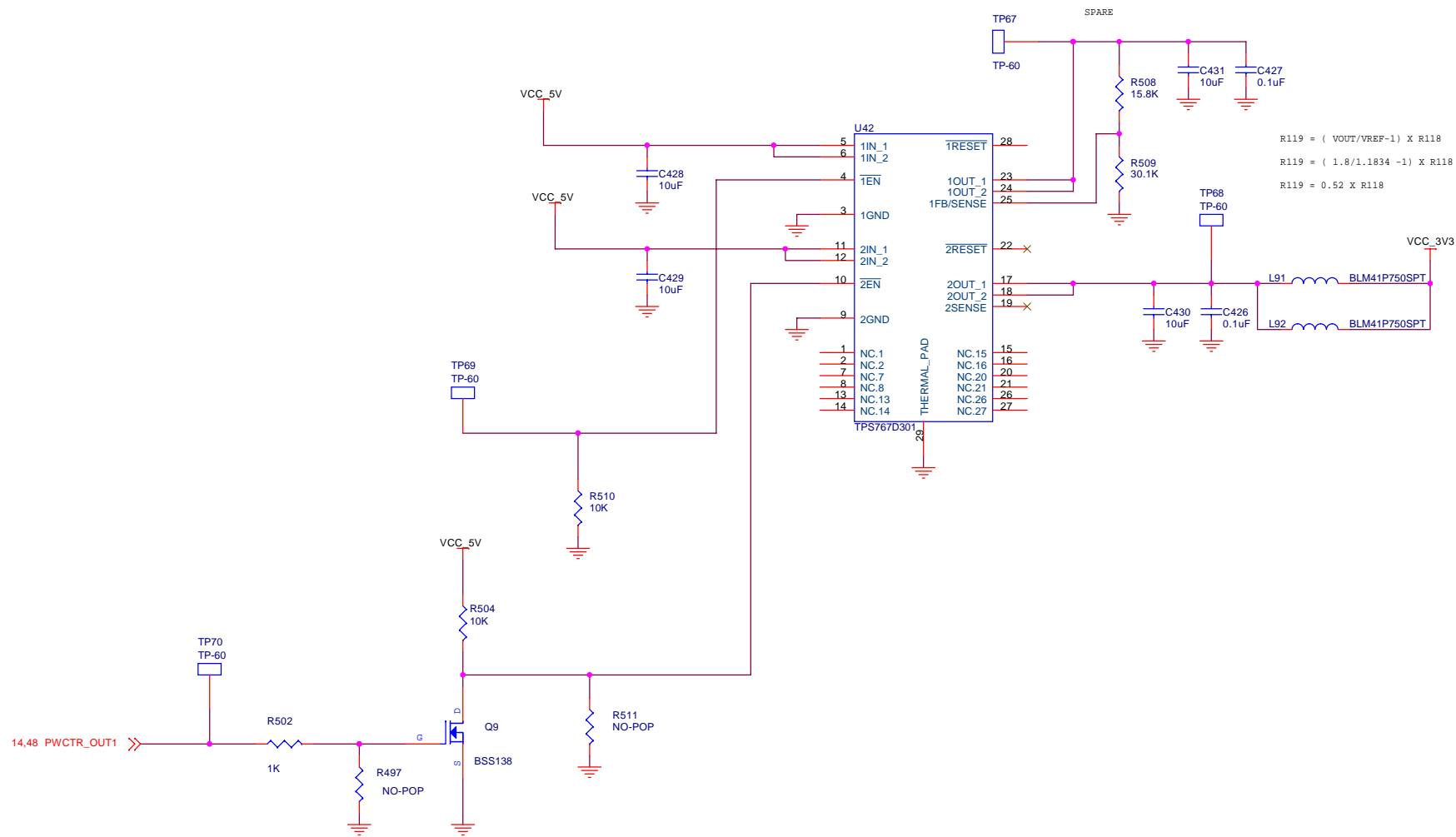
SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: POWER SUPPLY TPS65530			
Size: B	DWG NO	510842-0001	Revision: D
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SPECTRUM DIGITAL INCORPORATED			
Title: DM368 Evaluation Module			
Page Contents: POWER SUPPLY			
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SPECTRUM DIGITAL INCORPORATED			
Title:		DM368 Evaluation Module	
Page Contents:		DECODER POWER 3V3 AND 1V8	
Size: B	DWG NO	510842-0001	Revision: A
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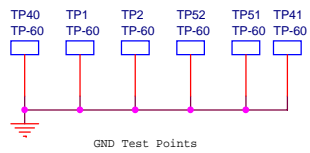
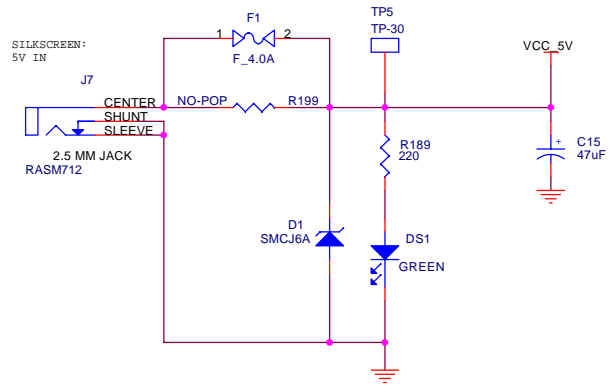


$$R119 = (V_{OUT}/V_{REF} - 1) \times R118$$

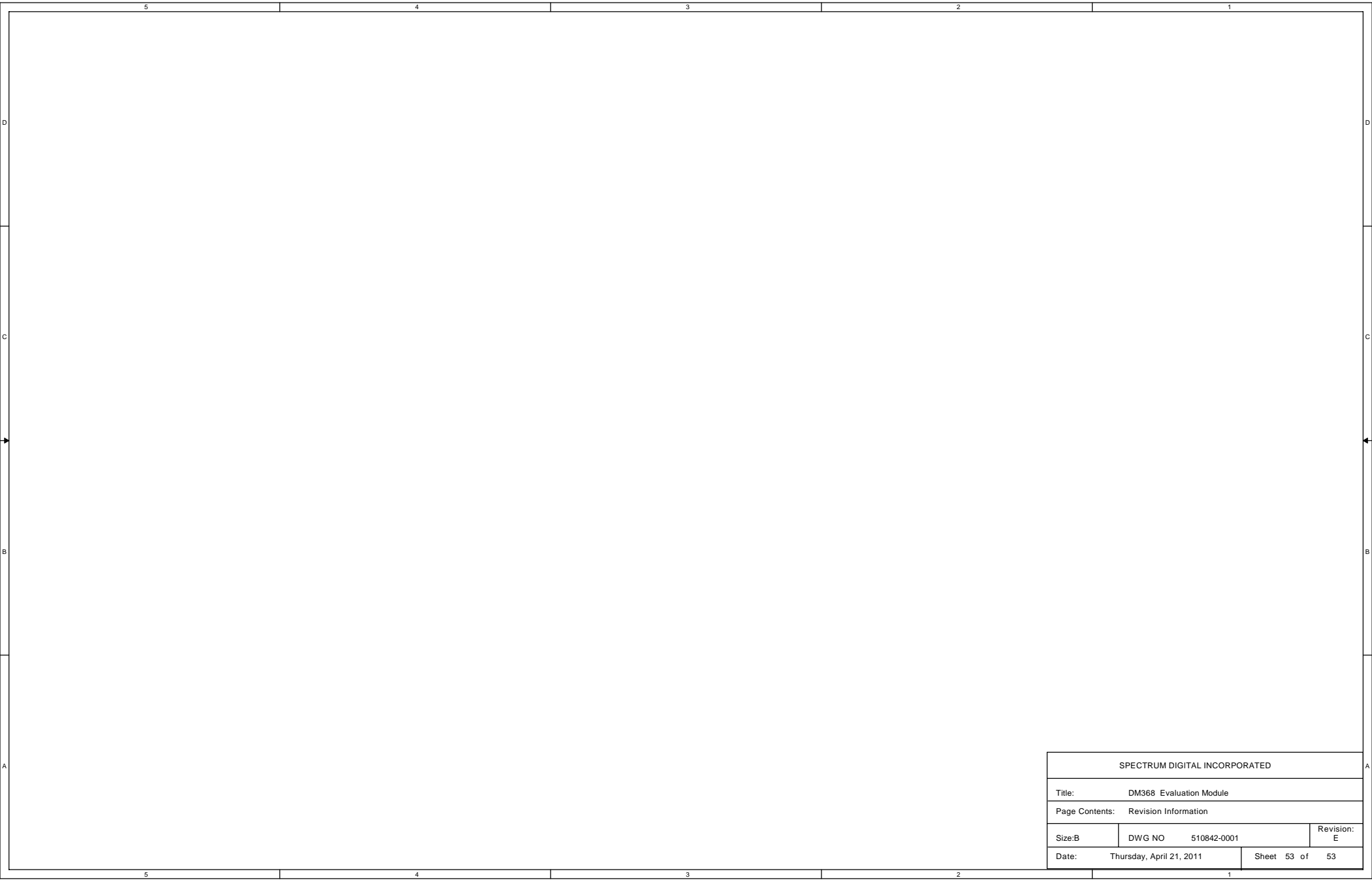
$$R119 = (1.8/1.1834 - 1) \times R118$$

$$R119 = 0.52 \times R118$$

SPECTRUM DIGITAL INCORPORATED			
Title:		DM368 Evaluation Module	
Page Contents:		POWER INPUT	
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Title:		DM368 Evaluation Module	
Page Contents: POWER INPUT			
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SPECTRUM DIGITAL INCORPORATED		
Title: DM368 Evaluation Module		
Page Contents: Revision Information		
Size: B	DWG NO 510842-0001	Revision: E
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