SCHEMATIC CONTENTS:

REVISION STATUS OF SHEETS

REV	A	A	A									
SH	21	22	23									
REV	A	A	A	A	A	A	A	A	A	A		
SH	11	12	13	14	15	16	17	18	19	20		
REV	B	A	A	A	A	A	A	A	A	A	NEXT ASSY	USED ON
SH	1	2	3	4	5	6	7	8	9	10	APPLICATION	

DWN	R.R.P.	DATE AUG 01,2005
CHK	R.R.P.	DATE AUG 01,2005
ENGR	J.T.C.	DATE AUG 01,2005
ENGR-MGR	R.R.P.	DATE AUG 01,2005
QA	C.M.D.	DATE AUG 01,2005
MFG	C.M.D.	DATE AUG 01,2005
RLSE	T.M.K.	DATE AUG 01,2005

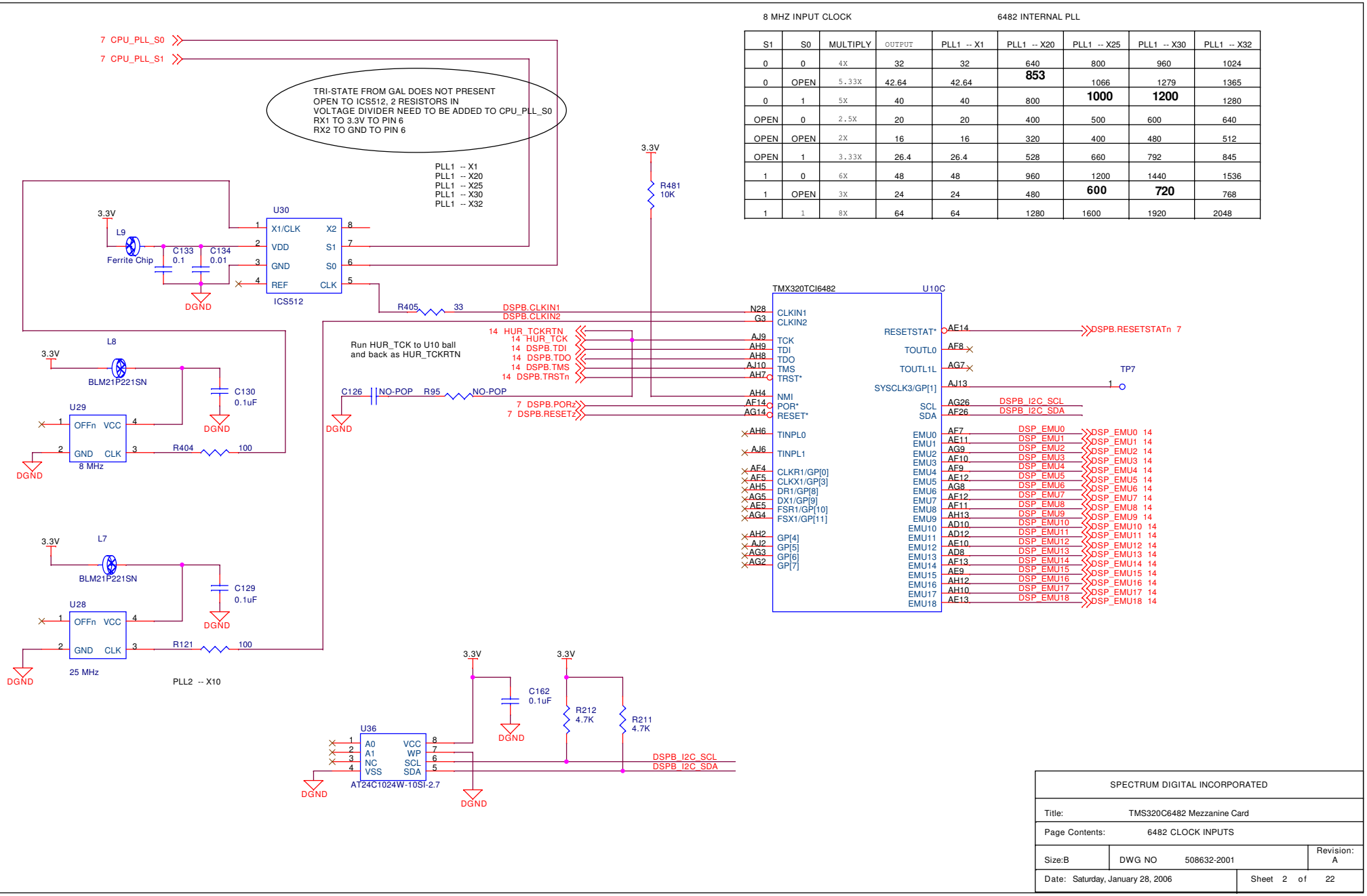
SPECTRUM DIGITAL INCORPORATED

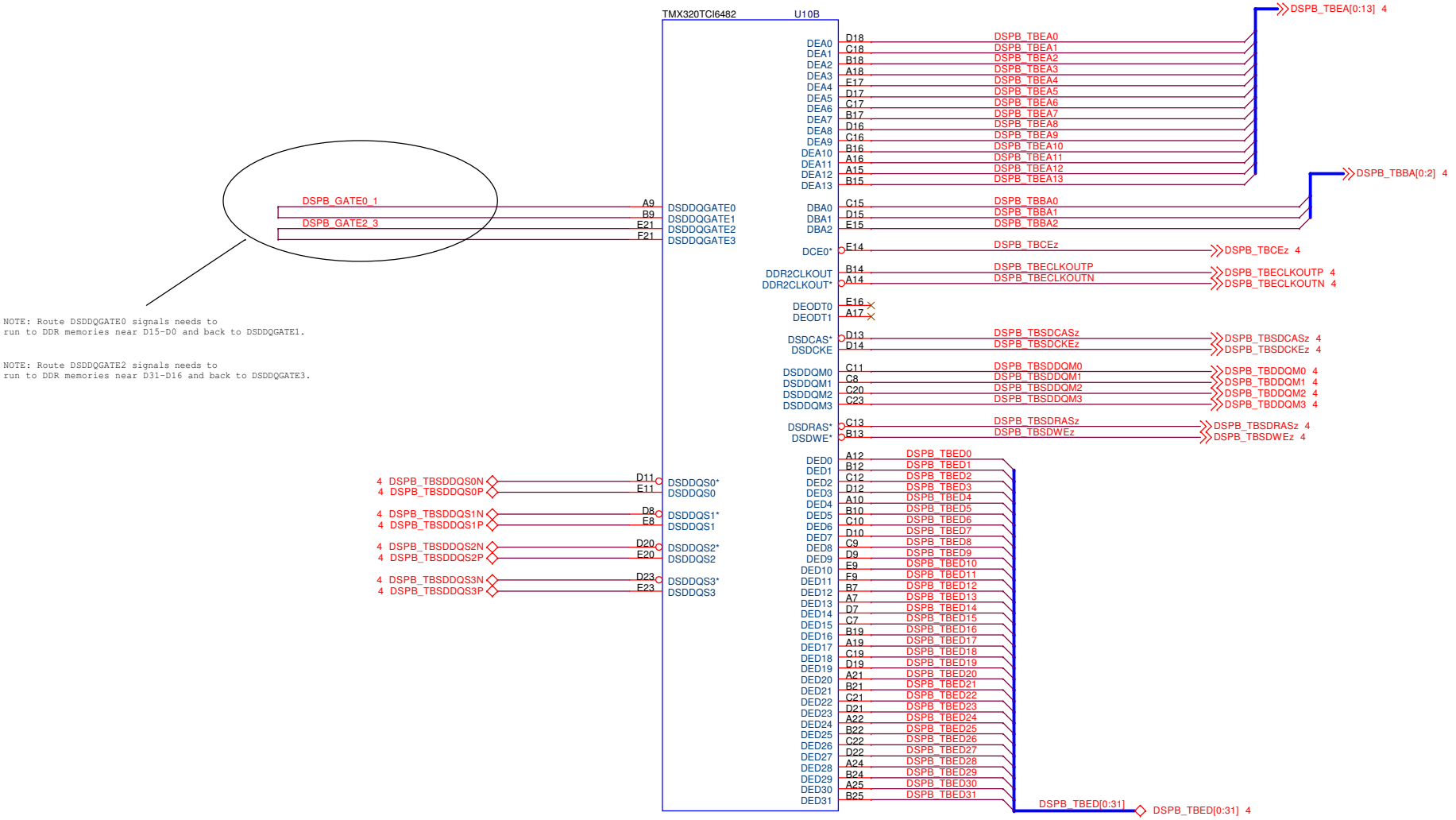
Title: TMS320C6482 Mezzanine Card

Page Contents: Title Block

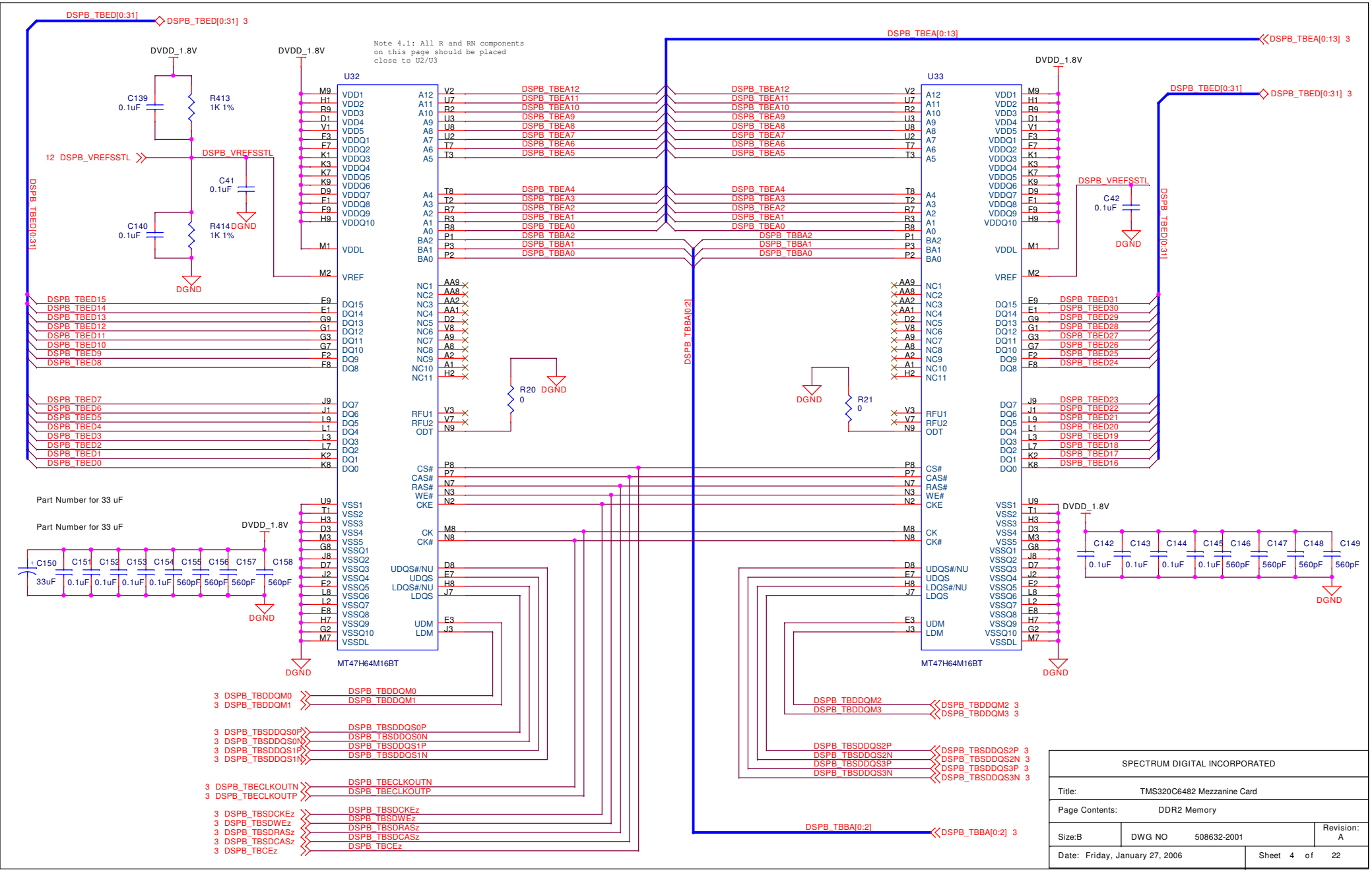
Size:B | DWG NO 508632-2001 | Revision: B

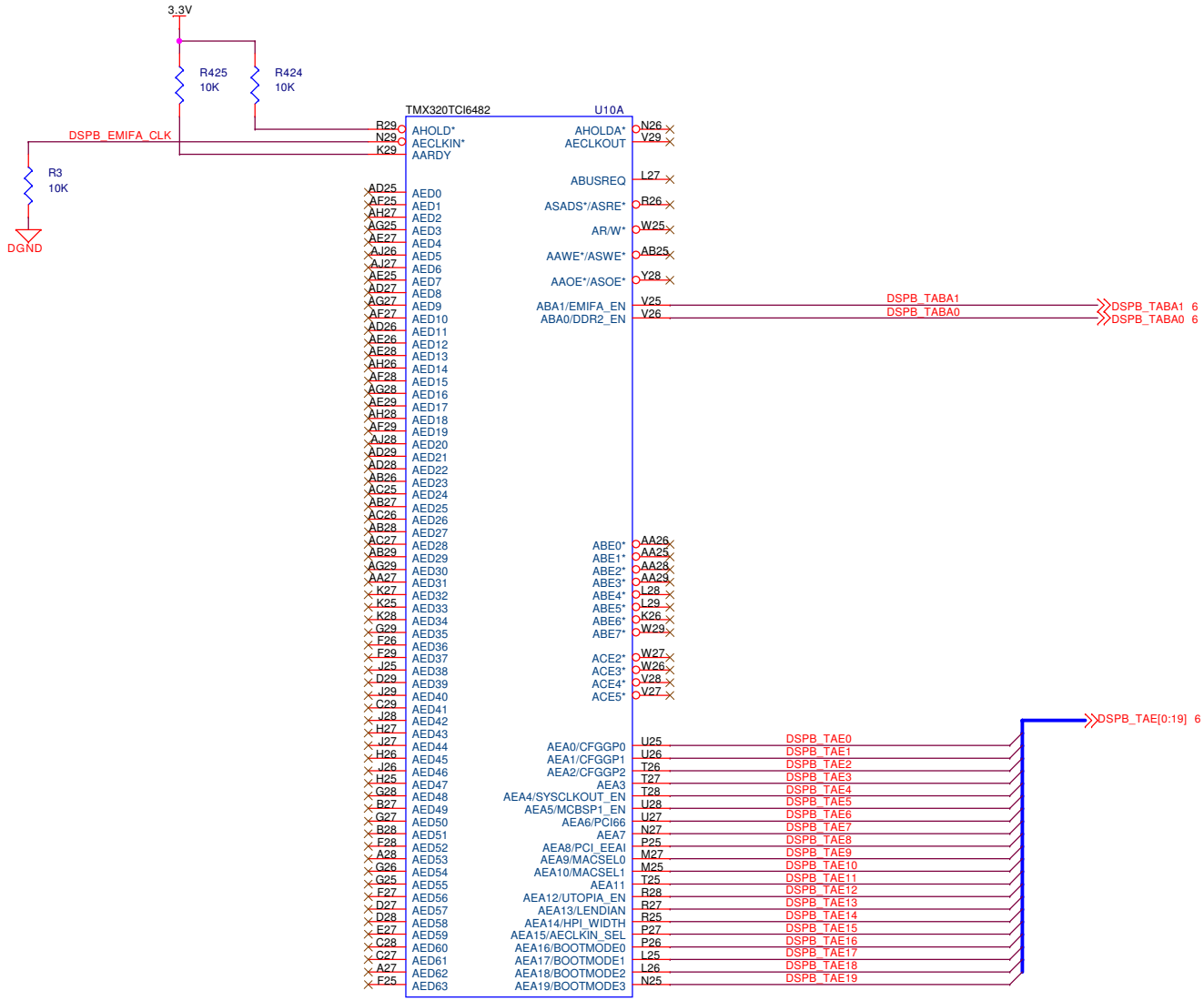
Date: Friday, January 27, 2006 | Sheet 1 of 22


8 MHZ INPUT CLOCK
6482 INTERNAL PLL
S1 S0 MULTIPLY OUTPUT PLL1 -- X1 PLL1 -- X20 PLL1 -- X25 PLL1 -- X30 PLL1 -- X32
0 0 4X 32 32 640 800 960 1024
0 OPEN 5.33X 42.64 42.64 853 1066 1279 1365
0 1 5X 40 40 800 1000 1200 1280
OPEN 0 2.5X 20 20 400 500 600 640
OPEN OPEN 2X 16 16 320 400 480 512
OPEN 1 3.33X 26.4 26.4 528 660 792 845
1 0 6X 48 48 960 1200 1440 1536
1 OPEN 3X 24 24 480 600 720 768
1 1 8X 64 64 1280 1600 1920 2048
7 CPU_PLL_S0
7 CPU_PLL_S1
TRI-STATE FROM GAL DOES NOT PRESENT
OPEN TO ICS512, 2 RESISTORS IN
VOLTAGE DIVIDER NEED TO BE ADDED TO CPU_PLL_S0
RX1 TO 3.3V TO PIN 6
RX2 TO GND TO PIN 6
PLL1 -- X1
PLL1 -- X20
PLL1 -- X25
PLL1 -- X30
PLL1 -- X32
U30
X1/CLK X2 VDD S1 GND S0 REF CLK
ICS512
3.3V
L9
Ferrite Chip
C133 0.1
C134 0.01
DGND
R481 10K
R405 33
DSPB.CLKIN1
DSPB.CLKIN2
Run HUR_TCK to U10 ball
and back as HUR_TCKRTN
14 HUR_TCKRTN
14 HUR_TCK
14 DSPB.TDI
14 DSPB.TDO
14 DSPB.TMS
14 DSPB.TRSTn
C126 NO-POP R95 NO-POP
7 DSPB.PORz
7 DSPB.RESETz
L8
BLM21P221SN
C130 0.1uF
U29
OFFn VCC GND CLK
8 MHz
R404 100
L7
BLM21P221SN
C129 0.1uF
U28
OFFn VCC GND CLK
25 MHz
R121 100
PLL2 -- X10
TMX320TCI6482
U10C
CLKIN1 CLKIN2 TCK TDI TDO TMS TRST* NMI POR* RESET* TINPL0 TINPL1
CLKR1/GP[0] CLKX1/GP[3] DR1/GP[8] DX1/GP[9] FSR1/GP[10] FSX1/GP[11]
GP[4] GP[5] GP[6] GP[7]
RESETSTAT* TOUTL0 TOUTL1L SYSCLK3/GP[1]
SCL SDA
EMU0 EMU1 EMU2 EMU3 EMU4 EMU5 EMU6 EMU7 EMU8 EMU9 EMU10 EMU11 EMU12 EMU13 EMU14 EMU15 EMU16 EMU17 EMU18
DSPB.RESETSTATn 7
TP7
DSPB_I2C_SCL
DSPB_I2C_SDA
DSP_EMU0 DSP_EMU1 DSP_EMU2 DSP_EMU3 DSP_EMU4 DSP_EMU5 DSP_EMU6 DSP_EMU7 DSP_EMU8 DSP_EMU9 DSP_EMU10 DSP_EMU11 DSP_EMU12 DSP_EMU13 DSP_EMU14 DSP_EMU15 DSP_EMU16 DSP_EMU17 DSP_EMU18
U36
A0 A1 NC VSS VCC WP SCL SDA
AT24C1024W-10SI-2.7
C162 0.1uF
R212 4.7K
R211 4.7K
SPECTRUM DIGITAL INCORPORATED
Title: TMS320C6482 Mezzanine Card
Page Contents: 6482 CLOCK INPUTS
Size:B
DWG NO 508632-2001
Revision: A
Date: Saturday, January 28, 2006
Sheet 2 of 22

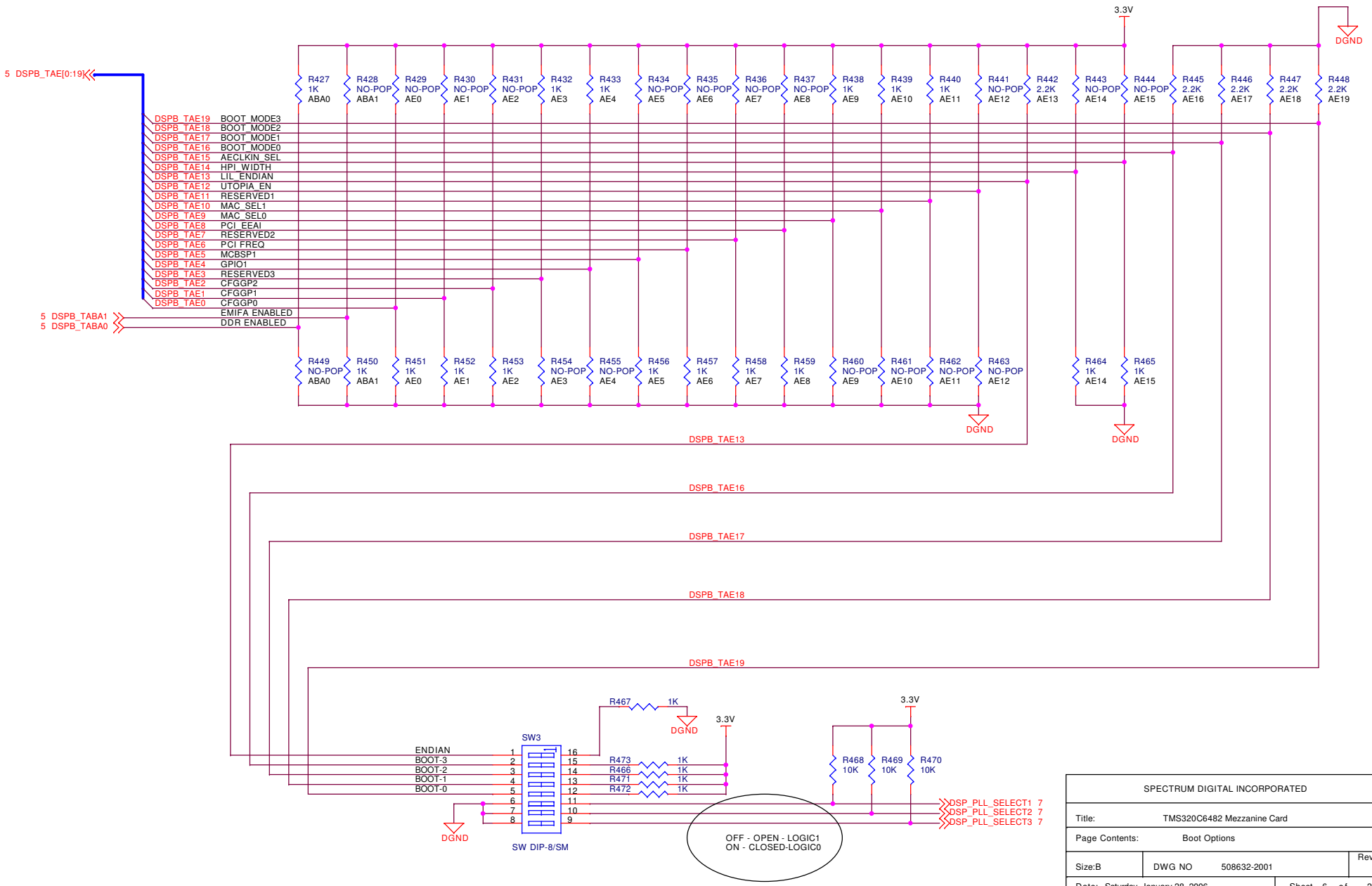


SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: 6455 DDR Interface		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 3 of 22	

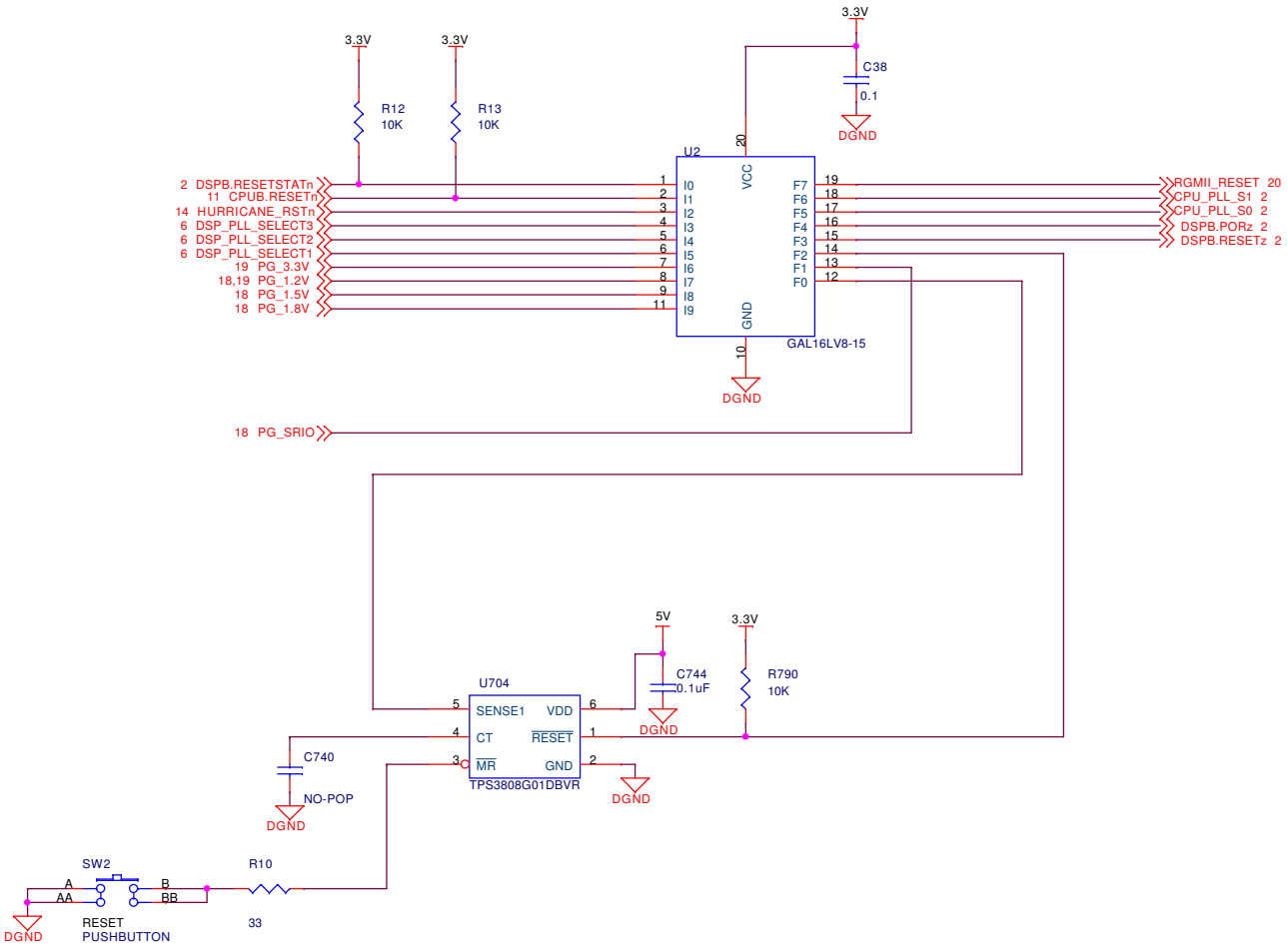

DSPB_TBED[0:31]
DSPB_TBED[0:31] 3
DVDD_1.8V
Note 4.1: All R and RN components on this page should be placed close to U2/U3
DSPB_TBEA[0:13]
DSPB_TBEA[0:13] 3
C139 0.1uF
R413 1K 1%
12 DSPB_VREFSSTL
DSPB_VREFSSTL
C41 0.1uF
C140 0.1uF
R414 1K 1%
DGND
U32
U33
DSPB_TBEA12
DSPB_TBEA11
DSPB_TBEA10
DSPB_TBEA9
DSPB_TBEA8
DSPB_TBEA7
DSPB_TBEA6
DSPB_TBEA5
DSPB_TBEA4
DSPB_TBEA3
DSPB_TBEA2
DSPB_TBEA1
DSPB_TBEA0
DSPB_TBBA2
DSPB_TBBA1
DSPB_TBBA0
DSPB_TBBA[0:2]
C42 0.1uF
DSPB_TBED15
DSPB_TBED14
DSPB_TBED13
DSPB_TBED12
DSPB_TBED11
DSPB_TBED10
DSPB_TBED9
DSPB_TBED8
DSPB_TBED7
DSPB_TBED6
DSPB_TBED5
DSPB_TBED4
DSPB_TBED3
DSPB_TBED2
DSPB_TBED1
DSPB_TBED0
DSPB_TBED31
DSPB_TBED30
DSPB_TBED29
DSPB_TBED28
DSPB_TBED27
DSPB_TBED26
DSPB_TBED25
DSPB_TBED24
DSPB_TBED23
DSPB_TBED22
DSPB_TBED21
DSPB_TBED20
DSPB_TBED19
DSPB_TBED18
DSPB_TBED17
DSPB_TBED16
R20 0
R21 0
Part Number for 33 uF
Part Number for 33 uF
C150 33uF
C151 0.1uF
C152 0.1uF
C153 0.1uF
C154 0.1uF
C155 560pF
C156 560pF
C157 560pF
C158 560pF
C142 0.1uF
C143 0.1uF
C144 0.1uF
C145 560pF
C146 560pF
C147 560pF
C148 560pF
C149 560pF
MT47H64M16BT
MT47H64M16BT
3 DSPB_TBDDQM0
3 DSPB_TBDDQM1
DSPB_TBDDQM0
DSPB_TBDDQM1
DSPB_TBDDQM2
DSPB_TBDDQM3
DSPB_TBDDQM2 3
DSPB_TBDDQM3 3
3 DSPB_TBSDDQS0P
3 DSPB_TBSDDQS0N
3 DSPB_TBSDDQS1P
3 DSPB_TBSDDQS1N
DSPB_TBSDDQS0P
DSPB_TBSDDQS0N
DSPB_TBSDDQS1P
DSPB_TBSDDQS1N
DSPB_TBSDDQS2P
DSPB_TBSDDQS2N
DSPB_TBSDDQS3P
DSPB_TBSDDQS3N
DSPB_TBSDDQS2P 3
DSPB_TBSDDQS2N 3
DSPB_TBSDDQS3P 3
DSPB_TBSDDQS3N 3
3 DSPB_TBECLKOUTN
3 DSPB_TBECLKOUTP
DSPB_TBECLKOUTN
DSPB_TBECLKOUTP
3 DSPB_TBSDCKEz
3 DSPB_TBSDWEz
3 DSPB_TBSDRASz
3 DSPB_TBSDCASz
3 DSPB_TBCEz
DSPB_TBSDCKEz
DSPB_TBSDWEz
DSPB_TBSDRASz
DSPB_TBSDCASz
DSPB_TBCEz
DSPB_TBBA[0:2]
DSPB_TBBA[0:2] 3
SPECTRUM DIGITAL INCORPORATED
Title: TMS320C6482 Mezzanine Card
Page Contents: DDR2 Memory
Size:B
DWG NO 508632-2001
Revision: A
Date: Friday, January 27, 2006
Sheet 4 of 22



SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: 6482 Emif A Interface		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 5 of 22	

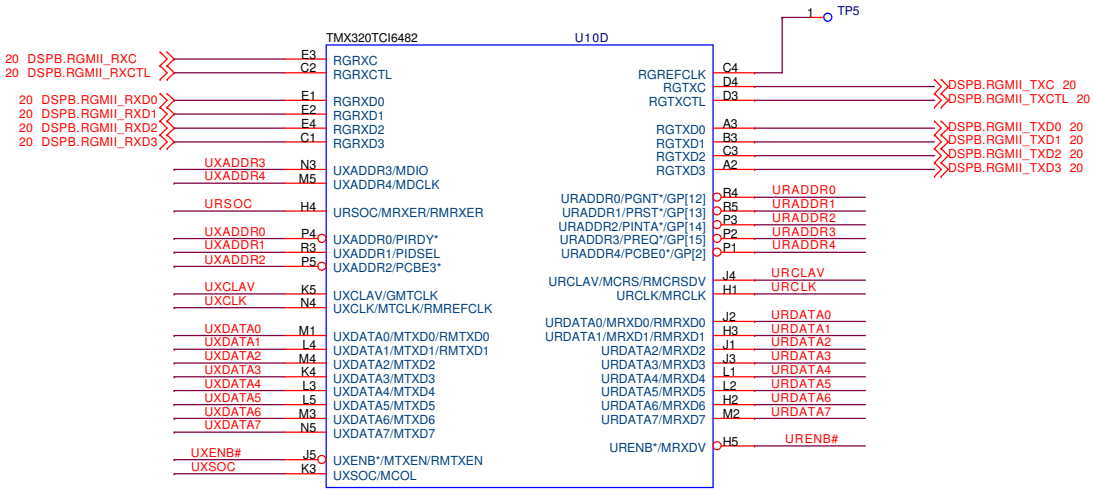


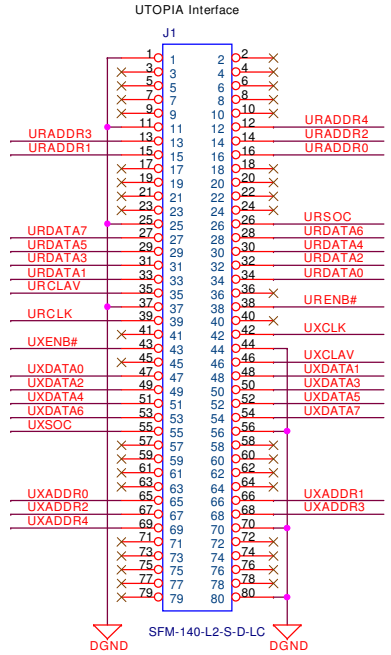
SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: Boot Options		
Size:B	DWG NO 508632-2001	Revision: A
Date: Saturday, January 28, 2006	Sheet 6 of 22	



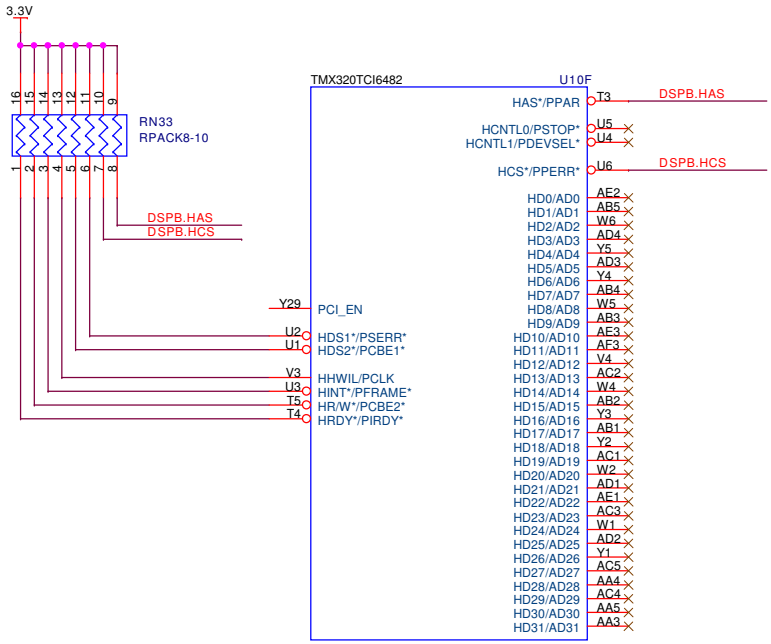
FROM USER SWITCH			CODE TO ICS512		6482 INTERNAL PLL						
PLL_SEL3	PLL_SEL2	PLL_SEL0	CPU_PLL_S0	CPU_PLL_S0	ICS MULTIPLY	DSP_IN_CLK	PLL1 -- X1	PLL1 -- X20	PLL1 -- X25	PLL1 -- X30	PLL1 -- X32
0	0	0	0	1	5	40	40	800	**1000**	**1200**	1280
0	0	1	0	1	5	40	40	800	**1000**	**1200**	1280
0	1	0	0	1	5	40	40	800	**1000**	**1200**	1280
0	1	1	0	1	8	64	64				
1	0	0	0	OPEN	5.33	42.64	42.64	**853**	1066	1279	1365
1	0	1	0	OPEN	5.33	42.64	42.64	**853**	1066	1279	1365
1	1	0	0	OPEN	5.33	42.64	42.64	**853**	1066	1279	1365
1	1	1	1	OPEN	3	24	24	480	**600**	**720**	768

SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: CPLD INTERFACE		
Size:B	DWG NO 508632-2001	Revision: A
Date: Saturday, January 28, 2006	Sheet 7 of 22	

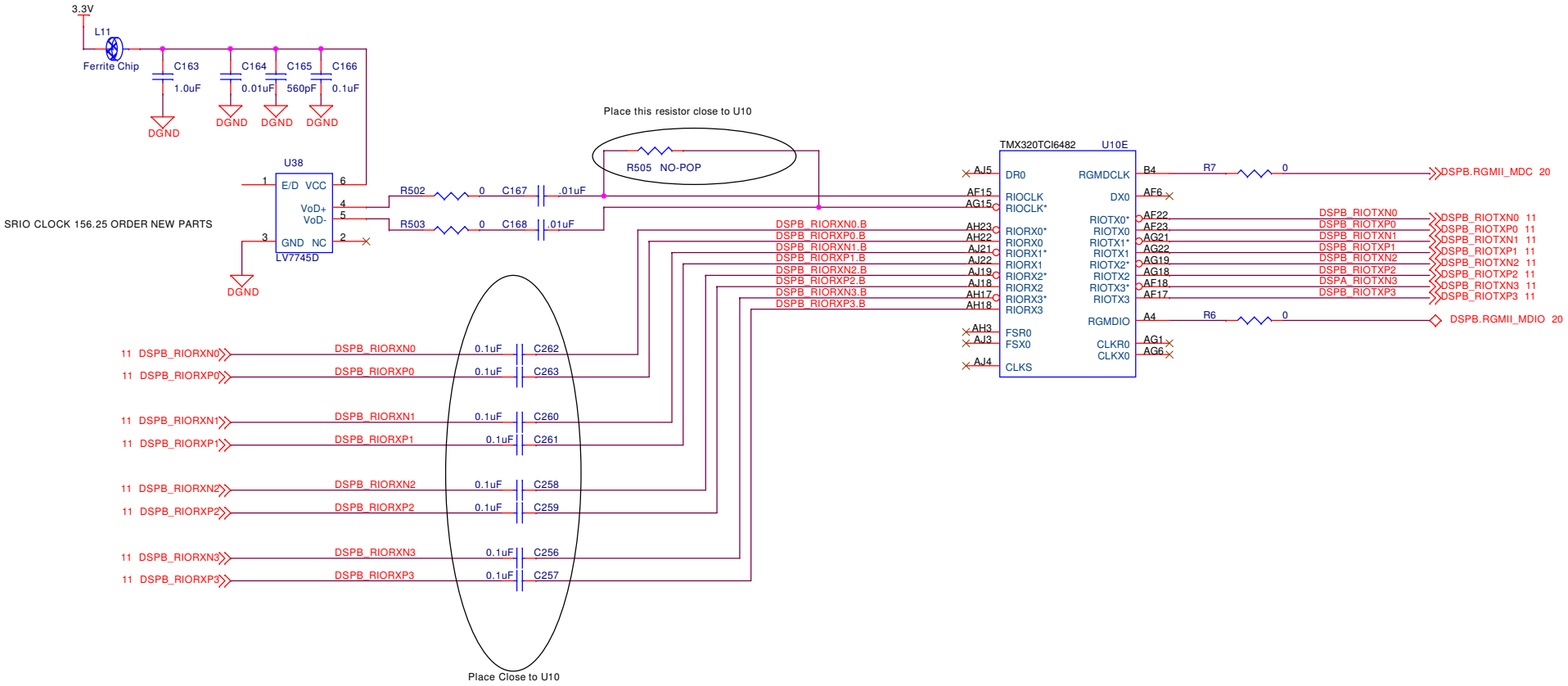




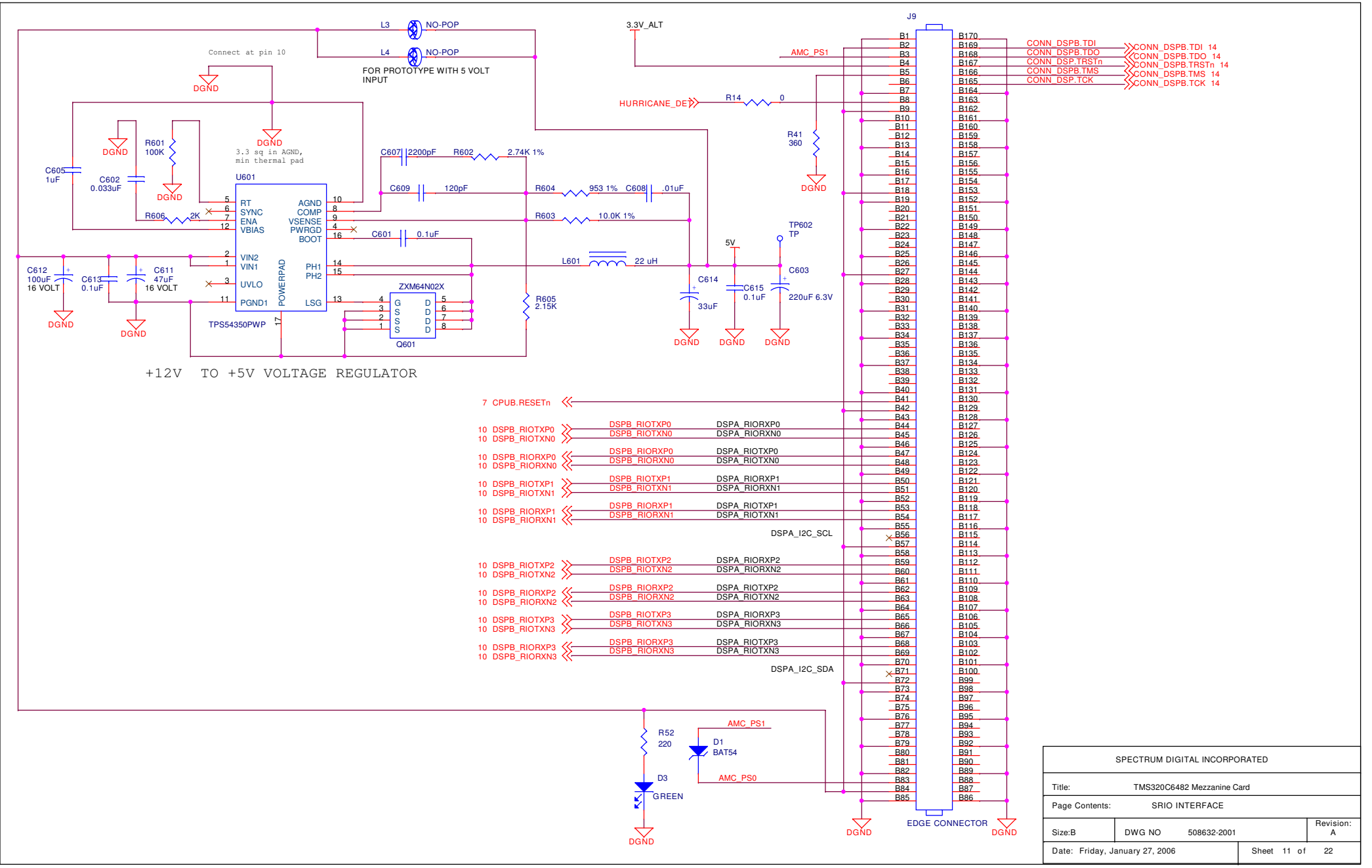
SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: UTOPIA Interface		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 8 of 22	



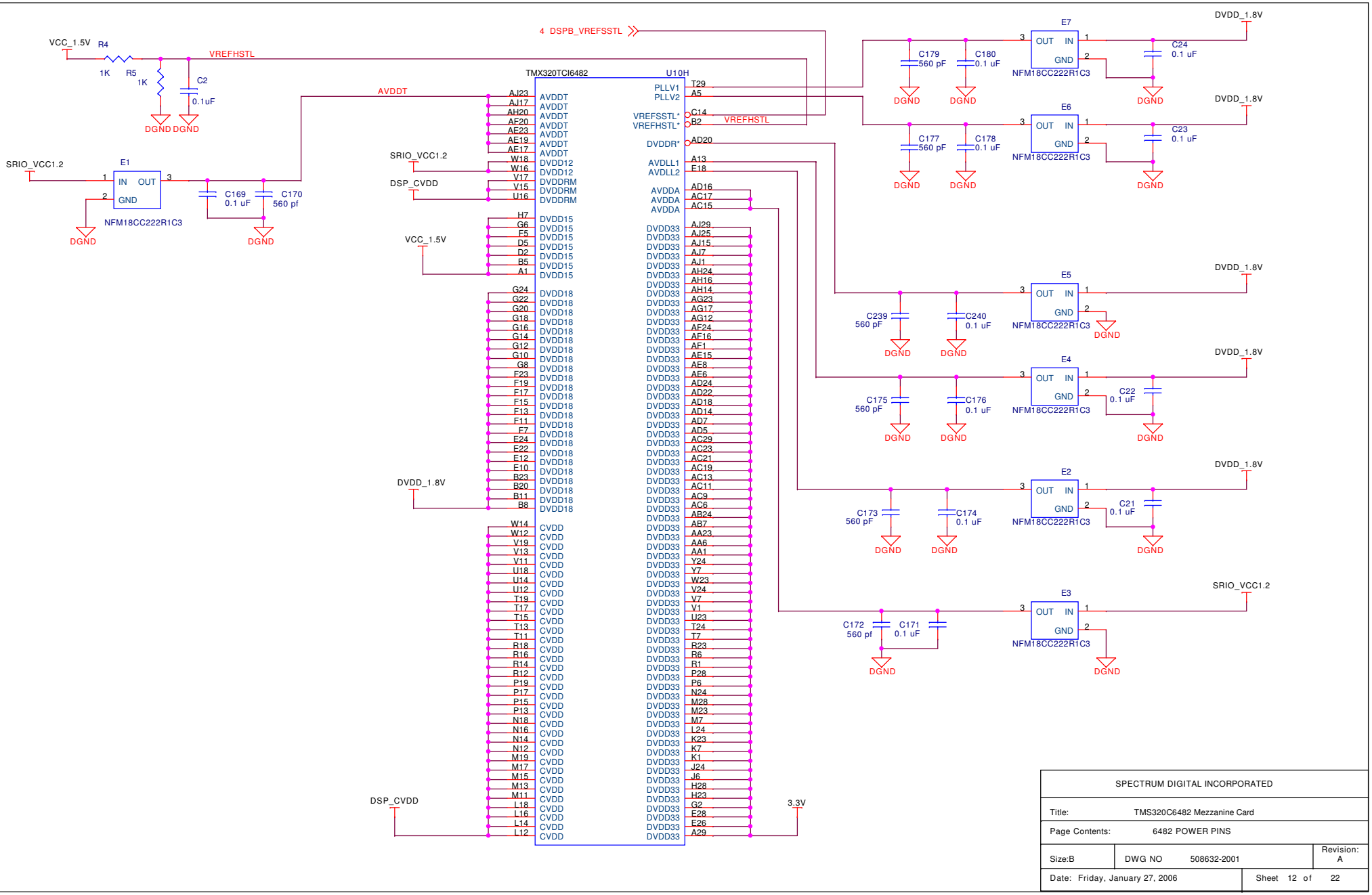
SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: PCI/HOST PORT INTERFACE		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 9 of 22	



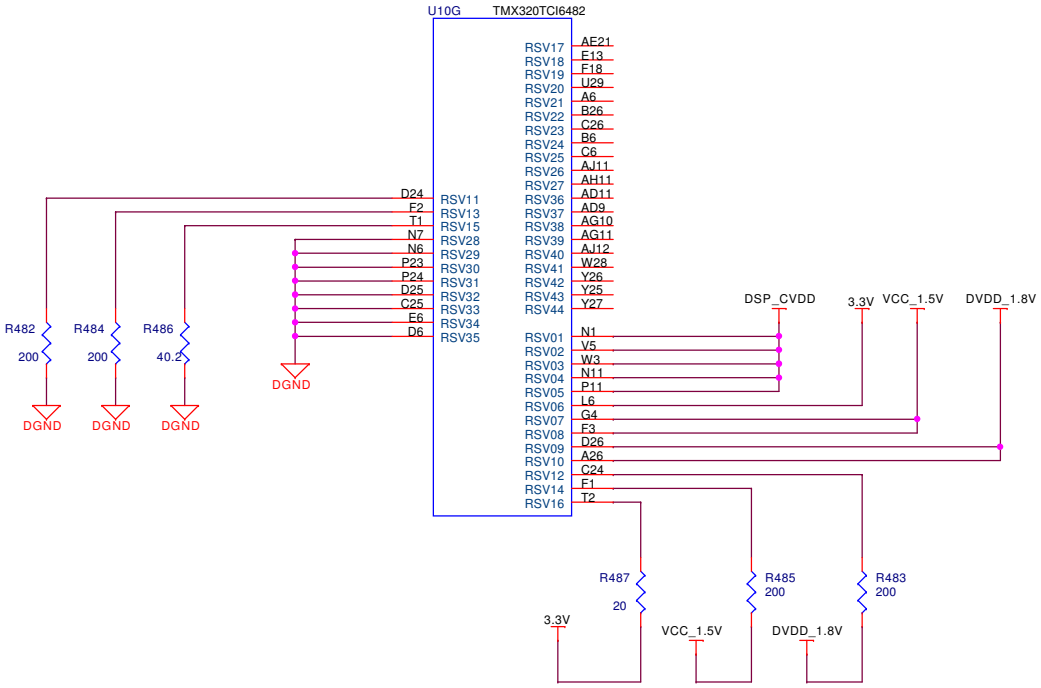
SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: SRIO INTERFACE		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 10 of 22	

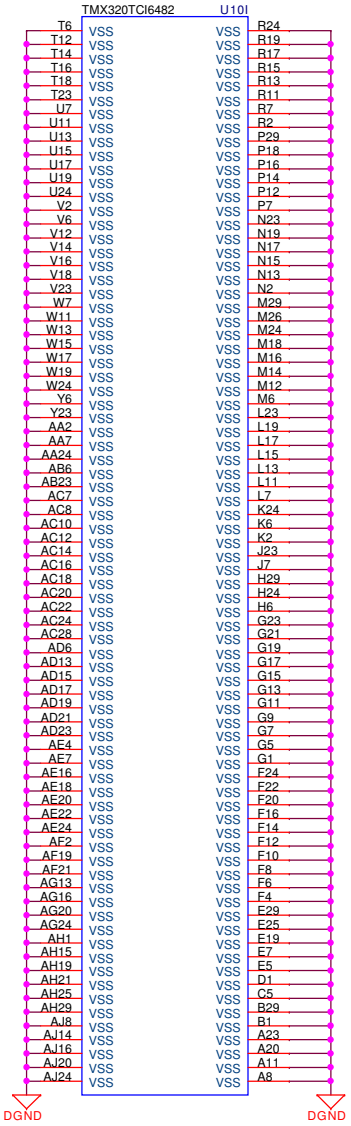


SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: SRIO INTERFACE		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 11 of 22	



SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: 6482 POWER PINS		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 12 of 22	





SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: 6482 POWER PINS		
Size:B	DWG NO 508632-2001	Revision: A
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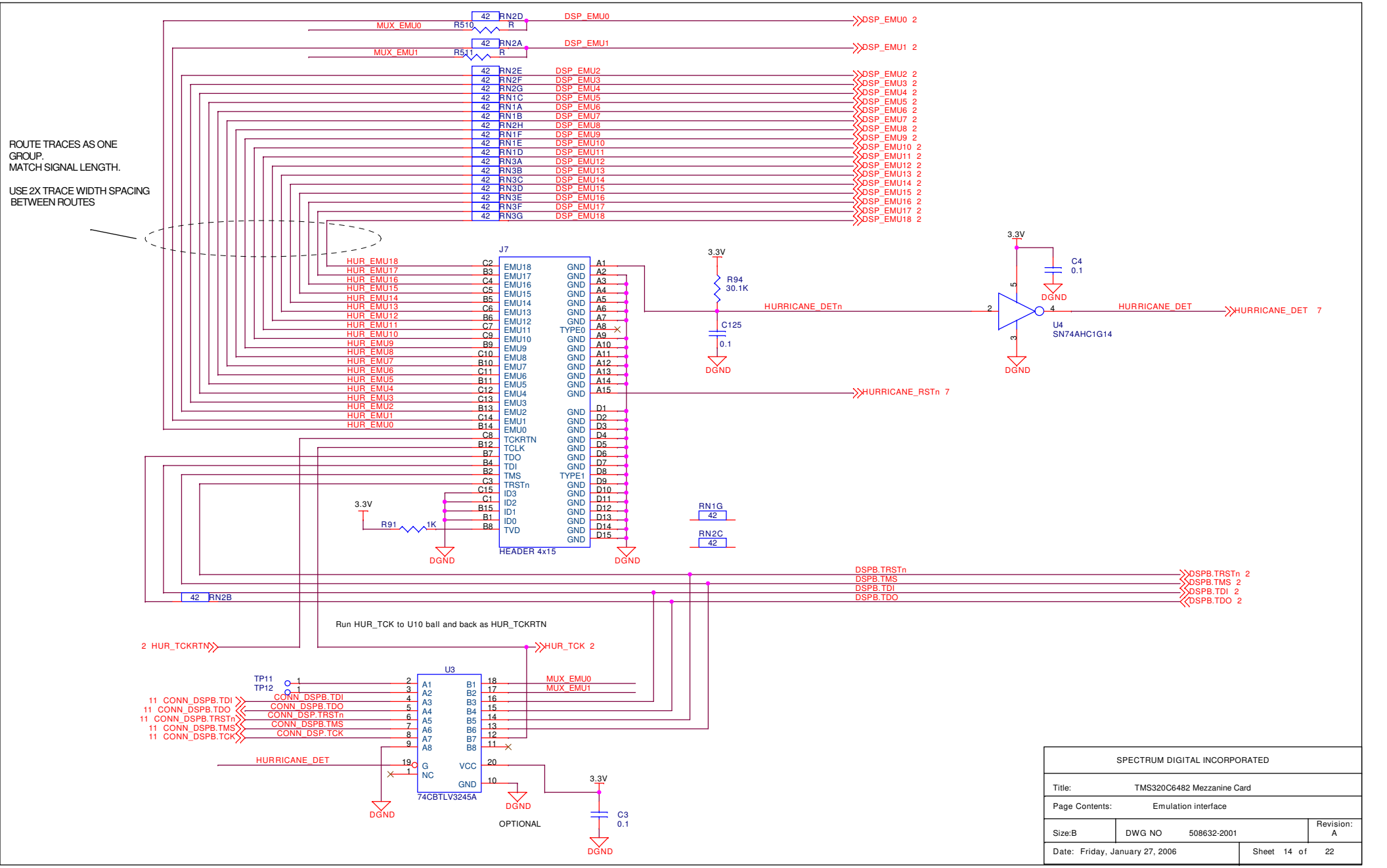
ROUTE TRACES AS ONE GROUP.
MATCH SIGNAL LENGTH.
USE 2X TRACE WIDTH SPACING BETWEEN ROUTES
42 RN2D
MUX_EMU0
R510
R
DSP_EMU0
DSP_EMU0 2
42 RN2A
MUX_EMU1
R511
R
DSP_EMU1
DSP_EMU1 2
42 RN2E DSP_EMU2 DSP_EMU2 2
42 RN2F DSP_EMU3 DSP_EMU3 2
42 RN2G DSP_EMU4 DSP_EMU4 2
42 RN1C DSP_EMU5 DSP_EMU5 2
42 RN1A DSP_EMU6 DSP_EMU6 2
42 RN1B DSP_EMU7 DSP_EMU7 2
42 RN2H DSP_EMU8 DSP_EMU8 2
42 RN1F DSP_EMU9 DSP_EMU9 2
42 RN1E DSP_EMU10 DSP_EMU10 2
42 RN1D DSP_EMU11 DSP_EMU11 2
42 RN3A DSP_EMU12 DSP_EMU12 2
42 RN3B DSP_EMU13 DSP_EMU13 2
42 RN3C DSP_EMU14 DSP_EMU14 2
42 RN3D DSP_EMU15 DSP_EMU15 2
42 RN3E DSP_EMU16 DSP_EMU16 2
42 RN3F DSP_EMU17 DSP_EMU17 2
42 RN3G DSP_EMU18 DSP_EMU18 2
J7
HUR_EMU18 C2
HUR_EMU17 B3
HUR_EMU16 C4
HUR_EMU15 C5
HUR_EMU14 B5
HUR_EMU13 C6
HUR_EMU12 B6
HUR_EMU11 C7
HUR_EMU10 C9
HUR_EMU9 B9
HUR_EMU8 C10
HUR_EMU7 B10
HUR_EMU6 C11
HUR_EMU5 B11
HUR_EMU4 C12
HUR_EMU3 C13
HUR_EMU2 B13
HUR_EMU1 C14
HUR_EMU0 B14
EMU18 EMU17 EMU16 EMU15 EMU14 EMU13 EMU12 EMU11 EMU10 EMU9 EMU8 EMU7 EMU6 EMU5 EMU4 EMU3 EMU2 EMU1 EMU0 TCKRTN TCLK TDO TDI TMS TRSTn ID3 ID2 ID1 ID0 TVD
GND A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15
TYPE0
GND D1 D2 D3 D4 D5 D6 D7 D8
TYPE1
GND D9 D10 D11 D12 D13 D14 D15
HEADER 4x15
3.3V
R94
30.1K
C125
0.1
DGND
HURRICANE_DETn
HURRICANE_RSTn 7
3.3V
C4
0.1
DGND
U4
SN74AHC1G14
HURRICANE_DET
HURRICANE_DET 7
3.3V
R91
1K
DGND
RN1G
42
RN2C
42
42 RN2B
DSPB.TRSTn
DSPB.TMS
DSPB.TDI
DSPB.TDO
DSPB.TRSTn 2
DSPB.TMS 2
DSPB.TDI 2
DSPB.TDO 2
Run HUR_TCK to U10 ball and back as HUR_TCKRTN
2 HUR_TCKRTN
HUR_TCK 2
U3
TP11
TP12
11 CONN_DSPB.TDI
11 CONN_DSPB.TDO
11 CONN_DSPB.TRSTn
11 CONN_DSPB.TMS
11 CONN_DSPB.TCK
CONN_DSPB.TDI
CONN_DSPB.TDO
CONN_DSP.TRSTn
CONN_DSPB.TMS
CONN_DSP.TCK
A1 A2 A3 A4 A5 A6 A7 A8
B1 B2 B3 B4 B5 B6 B7 B8
MUX_EMU0
MUX_EMU1
HURRICANE_DET
G
NC
VCC
GND
74CBTLV3245A
DGND
OPTIONAL
3.3V
C3
0.1
DGND
SPECTRUM DIGITAL INCORPORATED
Title: TMS320C6482 Mezzanine Card
Page Contents: Emulation interface
Size:B
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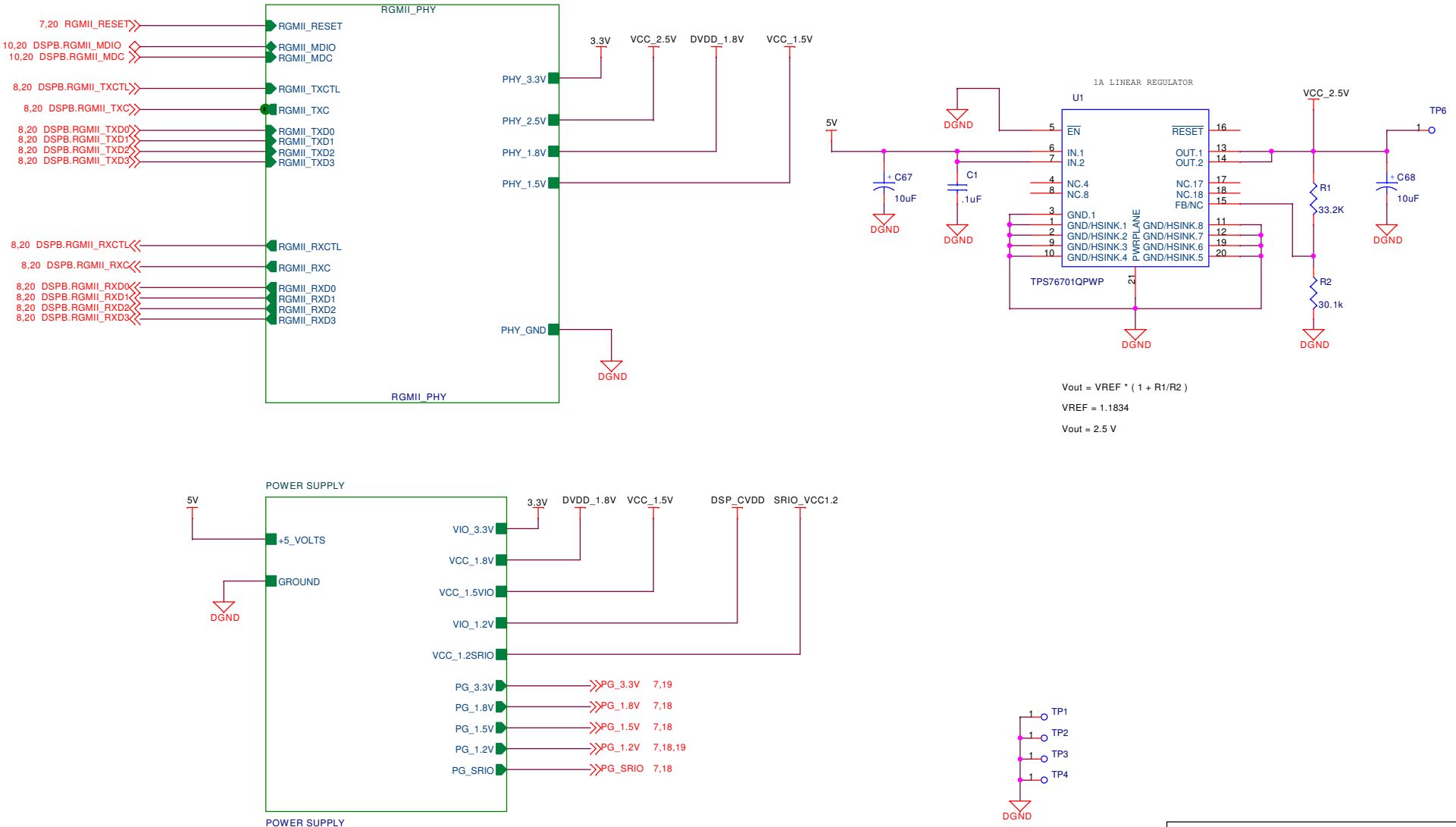
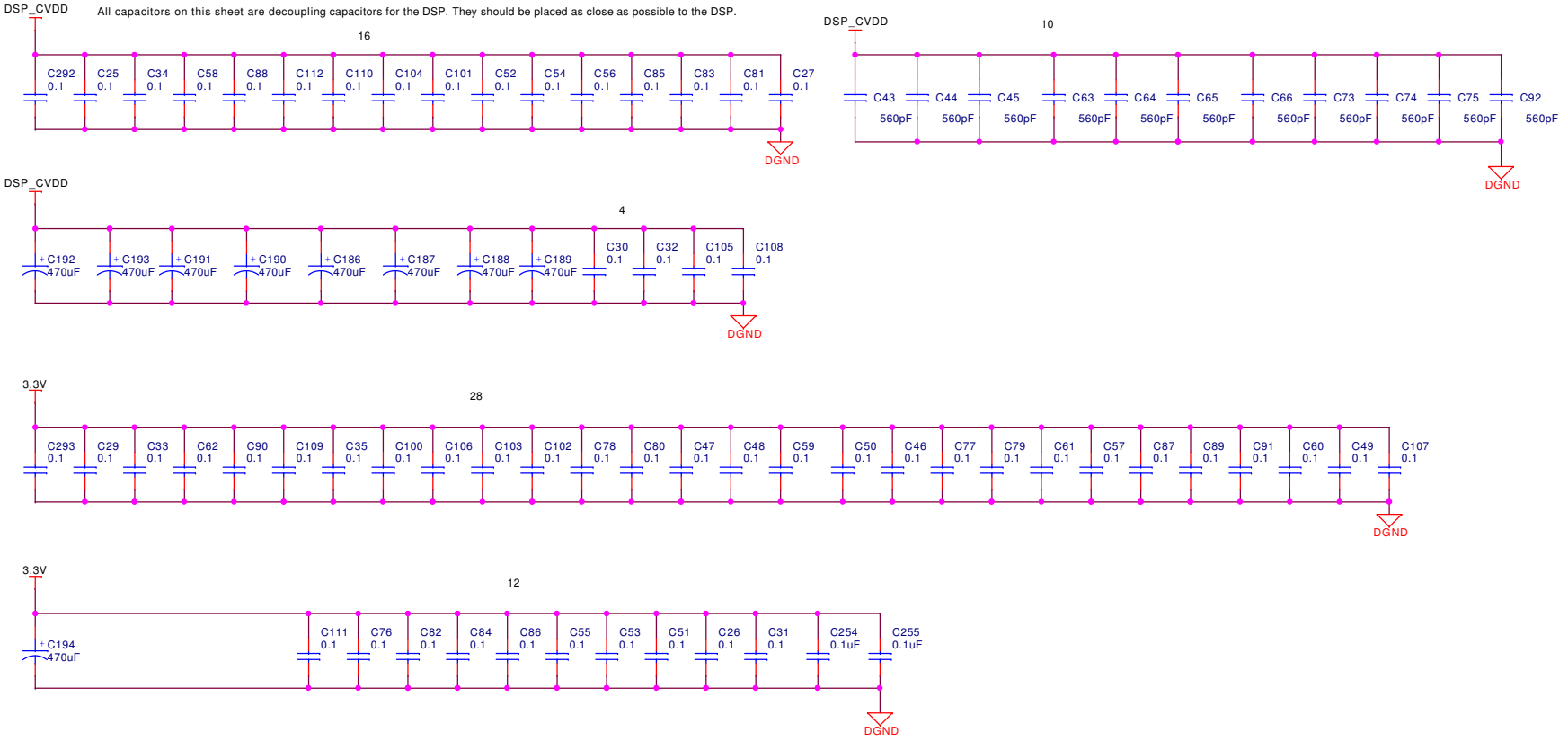
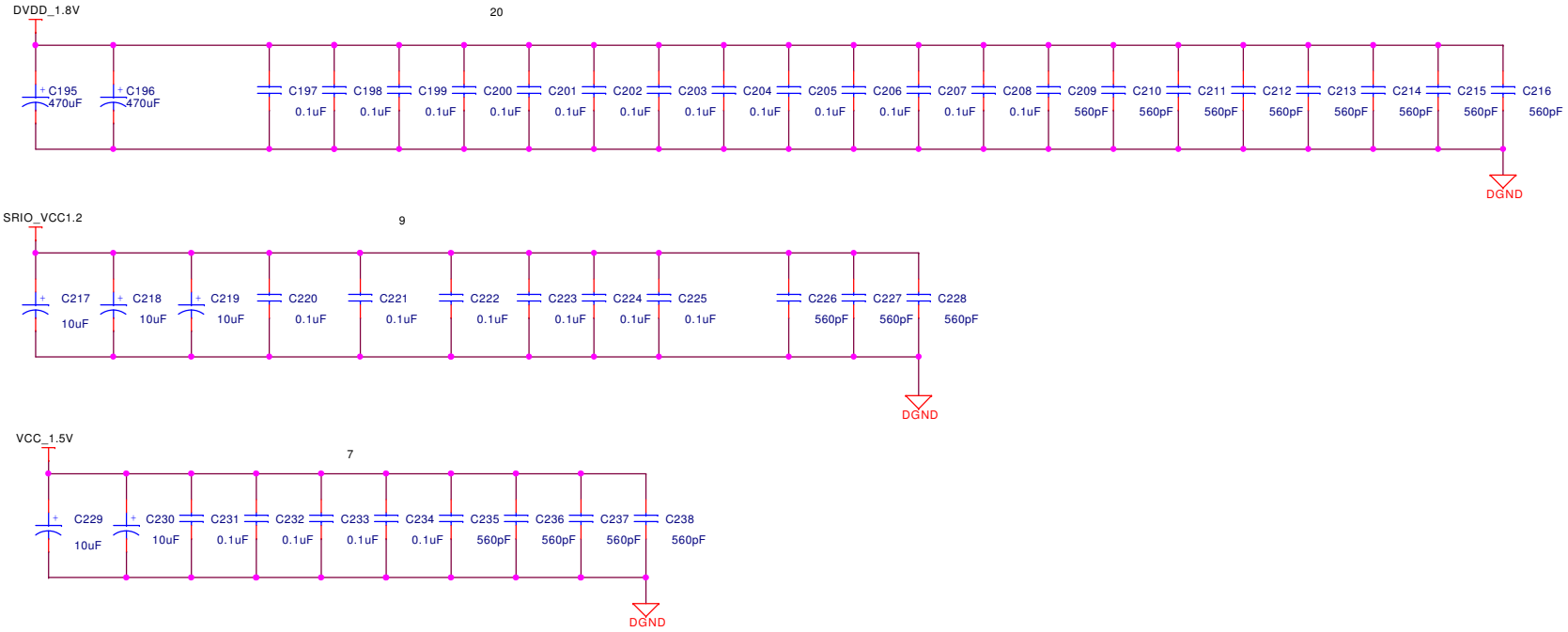


SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: Hierarchical Blocks		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 15 of 22	

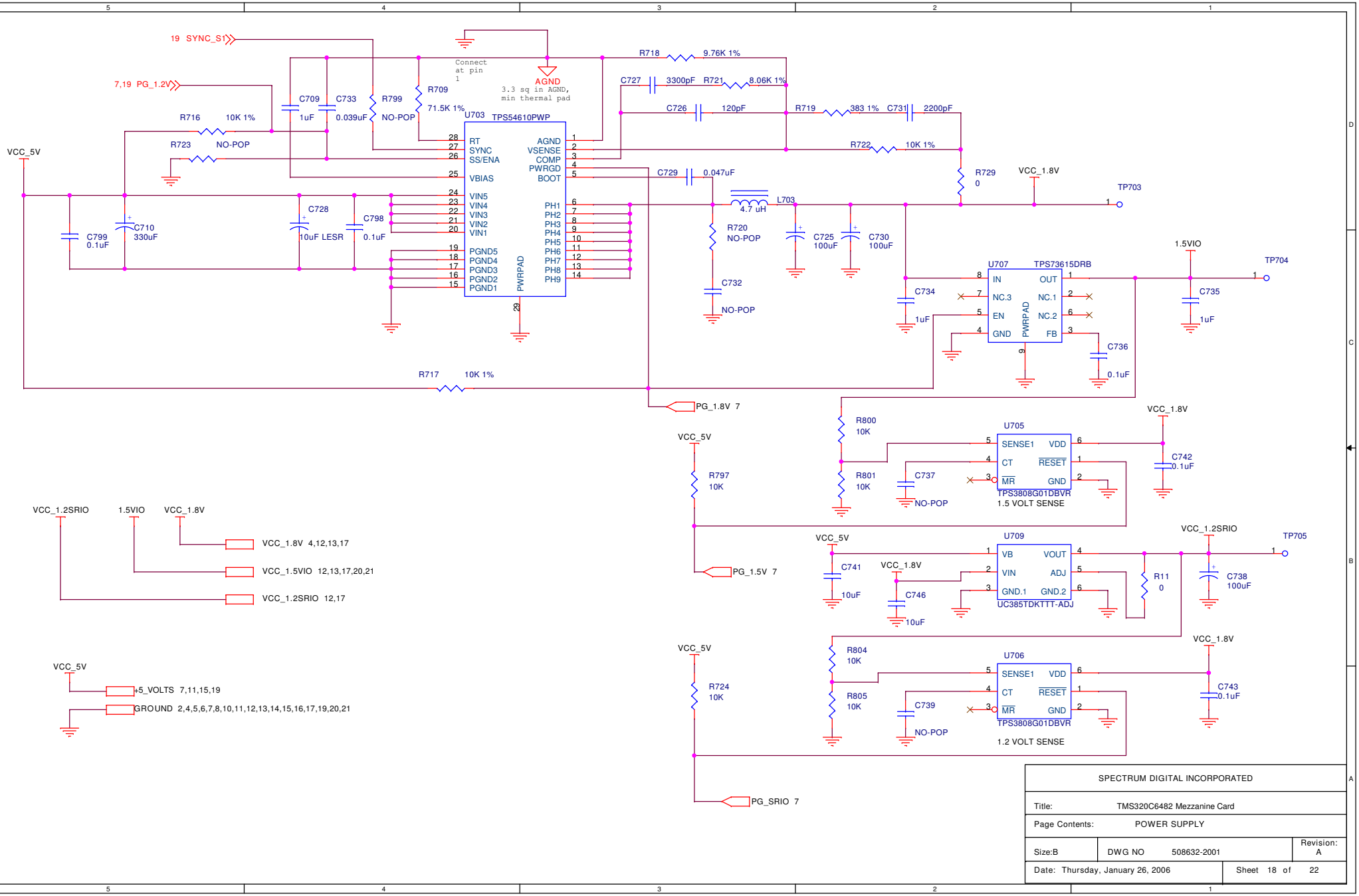
All capacitors on this sheet are decoupling capacitors for the DSP. They should be placed as close as possible to the DSP.



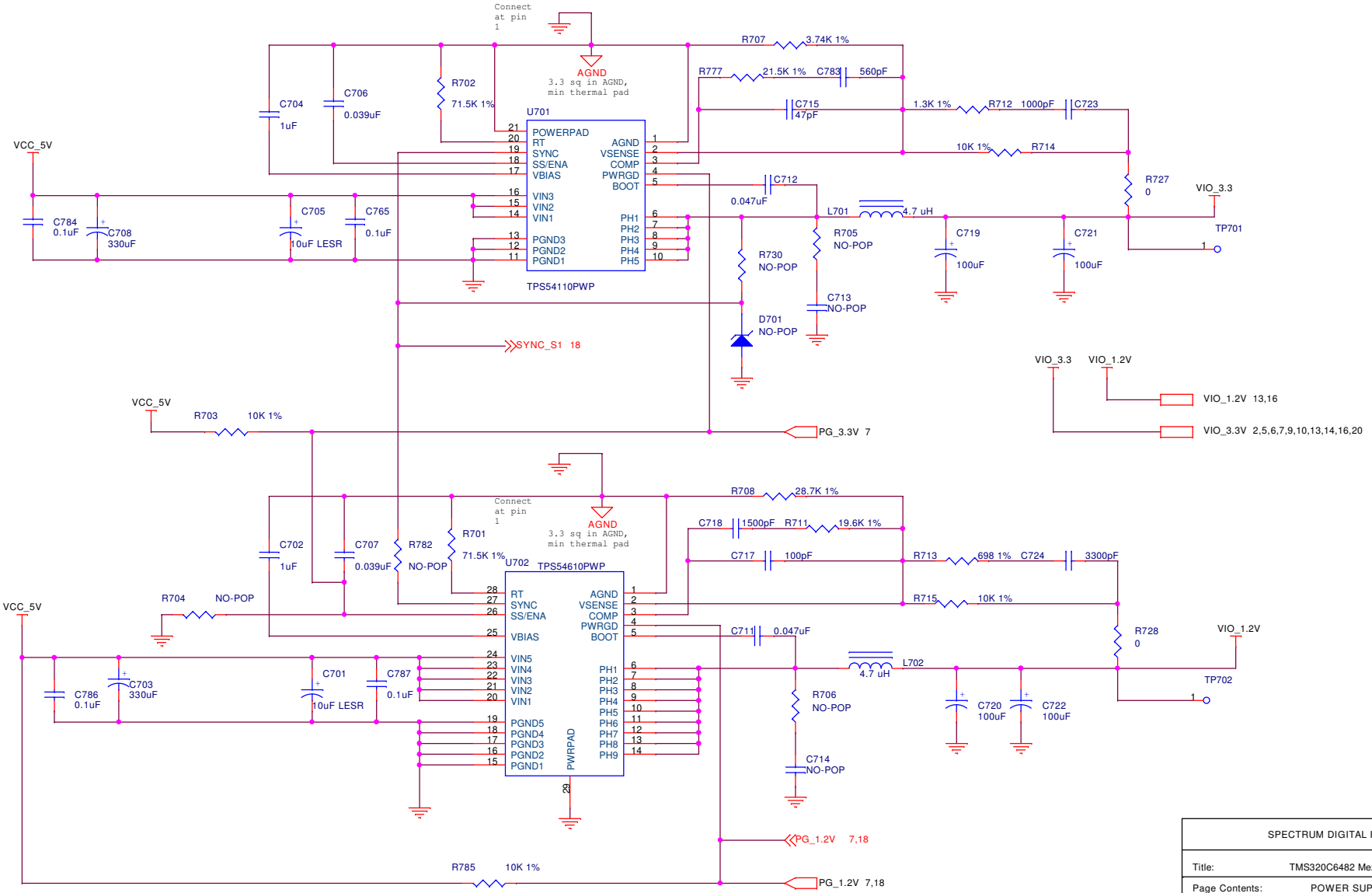
SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: Decoupling Capacitors		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 16 of 22	



SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: Decoupling Capacitors		
Size:B	DWG NO 508632-2001	Revision: A
Date: Friday, January 27, 2006	Sheet 17 of 22	



SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: POWER SUPPLY		
Size:B	DWG NO 508632-2001	Revision: A
Date: Thursday, January 26, 2006	Sheet 18 of 22	



SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: POWER SUPPLY		
Size:B	DWG NO 508632-2001	Revision: A
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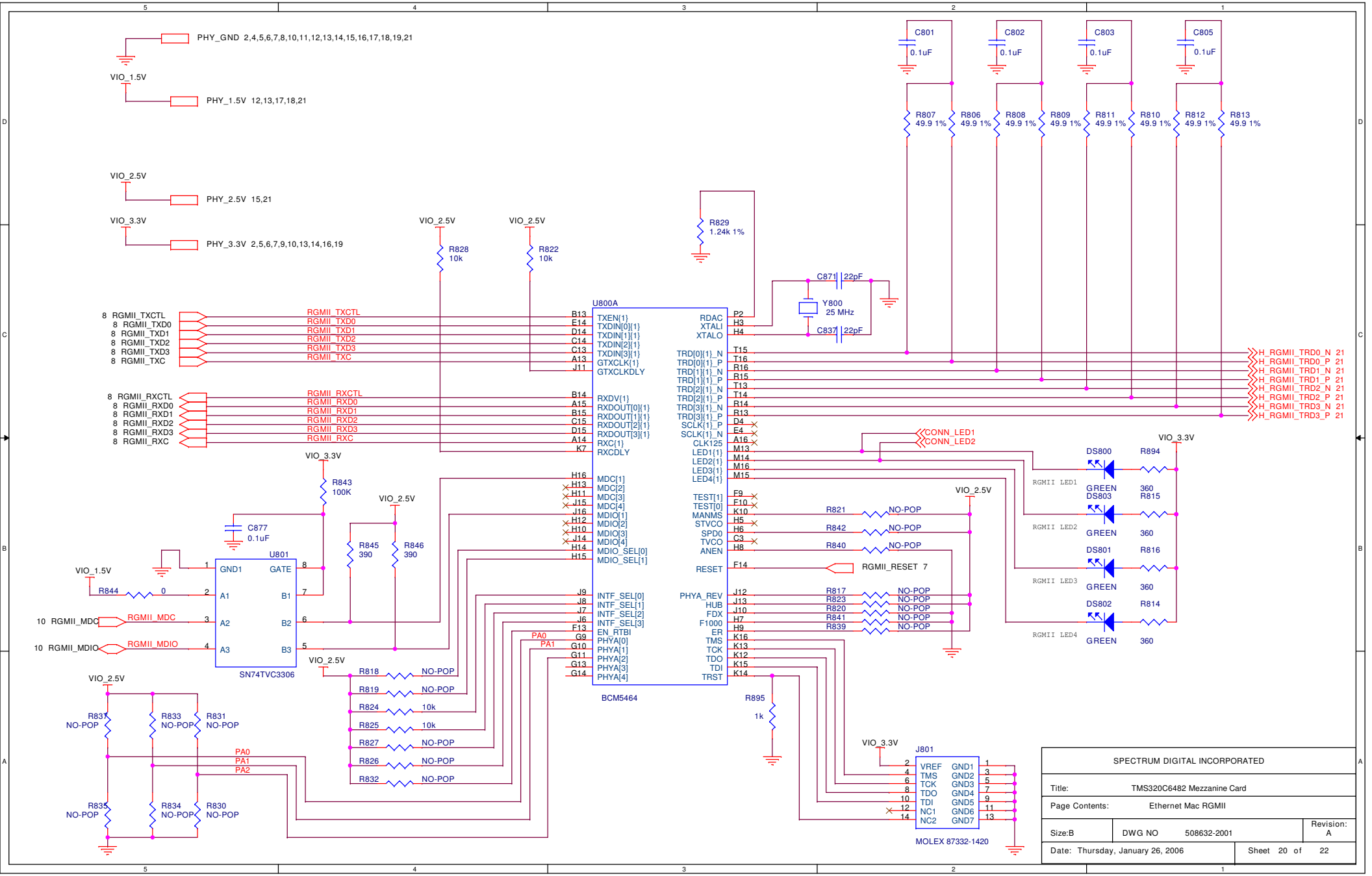
PHY_GND 2,4,5,6,7,8,10,11,12,13,14,15,16,17,18,19,21
VIO_1.5V
PHY_1.5V 12,13,17,18,21
VIO_2.5V
PHY_2.5V 15,21
VIO_3.3V
PHY_3.3V 2,5,6,7,9,10,13,14,16,19
C801 0.1uF
C802 0.1uF
C803 0.1uF
C805 0.1uF
R807 49.9 1%
R806 49.9 1%
R808 49.9 1%
R809 49.9 1%
R811 49.9 1%
R810 49.9 1%
R812 49.9 1%
R813 49.9 1%
R828 10k
R822 10k
R829 1.24k 1%
C871 22pF
Y800 25 MHz
C837 22pF
U800A
BCM5464
8 RGMII_TXCTL
8 RGMII_TXD0
8 RGMII_TXD1
8 RGMII_TXD2
8 RGMII_TXD3
8 RGMII_TXC
8 RGMII_RXCTL
8 RGMII_RXD0
8 RGMII_RXD1
8 RGMII_RXD2
8 RGMII_RXD3
8 RGMII_RXC
H_RGMII_TRD0_N 21
H_RGMII_TRD0_P 21
H_RGMII_TRD1_N 21
H_RGMII_TRD1_P 21
H_RGMII_TRD2_N 21
H_RGMII_TRD2_P 21
H_RGMII_TRD3_N 21
H_RGMII_TRD3_P 21
R843 100K
C877 0.1uF
U801
SN74TVC3306
R844 0
10 RGMII_MDC
10 RGMII_MDIO
R845 390
R846 390
R821 NO-POP
R842 NO-POP
R840 NO-POP
RGMII_RESET 7
R817 NO-POP
R823 NO-POP
R820 NO-POP
R841 NO-POP
R839 NO-POP
CONN_LED1
CONN_LED2
DS800 GREEN
DS803 GREEN
DS801 GREEN
DS802 GREEN
R894 360
R815 360
R816 360
R814 360
RGMII LED1
RGMII LED2
RGMII LED3
RGMII LED4
R818 NO-POP
R819 NO-POP
R824 10k
R825 10k
R827 NO-POP
R826 NO-POP
R832 NO-POP
R831 NO-POP
R833 NO-POP
R831 NO-POP
R835 NO-POP
R834 NO-POP
R830 NO-POP
PA0
PA1
PA2
R895 1k
J801
MOLEX 87332-1420
SPECTRUM DIGITAL INCORPORATED
Title: TMS320C6482 Mezzanine Card
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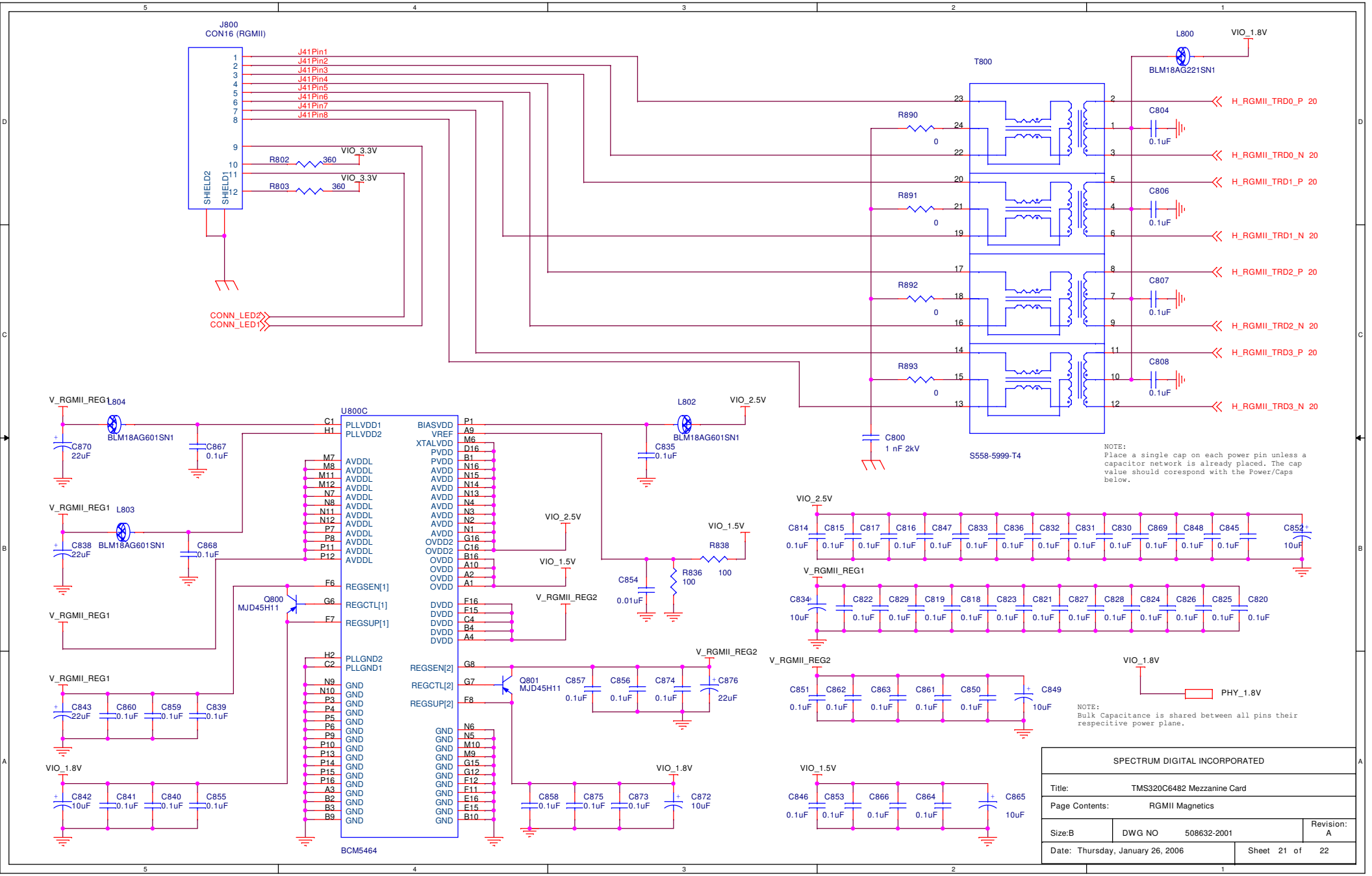
J800
CON16 (RGMII)
J41Pin1
J41Pin2
J41Pin3
J41Pin4
J41Pin5
J41Pin6
J41Pin7
J41Pin8
SHIELD2
SHIELD1
R802
360
VIO_3.3V
R803
360
VIO_3.3V
CONN_LED2
CONN_LED1
T800
L800
BLM18AG221SN1
VIO_1.8V
R890
R891
R892
R893
0
C800
1 nF 2kV
S558-5999-T4
C804
C806
C807
C808
0.1uF
H_RGMII_TRD0_P 20
H_RGMII_TRD0_N 20
H_RGMII_TRD1_P 20
H_RGMII_TRD1_N 20
H_RGMII_TRD2_P 20
H_RGMII_TRD2_N 20
H_RGMII_TRD3_P 20
H_RGMII_TRD3_N 20
NOTE:
Place a single cap on each power pin unless a capacitor network is already placed. The cap value should corespond with the Power/Caps below.
U800C
BCM5464
PLLVDD1
PLLVDD2
AVDDL
REGSEN[1]
REGCTL[1]
REGSUP[1]
PLLGND2
PLLGND1
GND
BIASVDD
VREF
XTALVDD
PVDD
AVDD
OVDD
DVDD
REGSEN[2]
REGCTL[2]
REGSUP[2]
V_RGMII_REG1
L804
BLM18AG601SN1
C870
22uF
C867
0.1uF
L803
C838
C868
Q800
MJD45H11
C843
C860
C859
C839
C842
C841
C840
C855
VIO_1.8V
L802
VIO_2.5V
C835
VIO_1.5V
R838
R836
100
C854
0.01uF
V_RGMII_REG2
Q801
MJD45H11
C857
C856
C874
C876
22uF
C858
C875
C873
C872
10uF
C814
C815
C817
C816
C847
C833
C836
C832
C831
C830
C869
C848
C845
C852
C834
C822
C829
C819
C818
C823
C821
C827
C828
C824
C826
C825
C820
C851
C862
C863
C861
C850
C849
C846
C853
C866
C864
C865
PHY_1.8V
NOTE:
Bulk Capacitance is shared between all pins their respecitive power plane.
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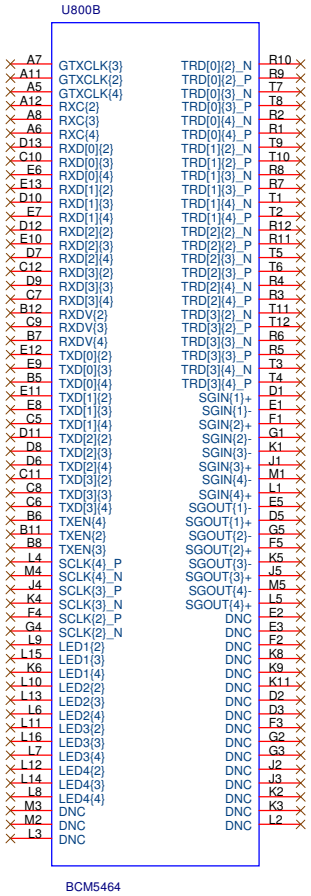

SPECTRUM DIGITAL INCORPORATED		
Title: TMS320C6482 Mezzanine Card		
Page Contents: Ethernet Mac RGMII- Not used		
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