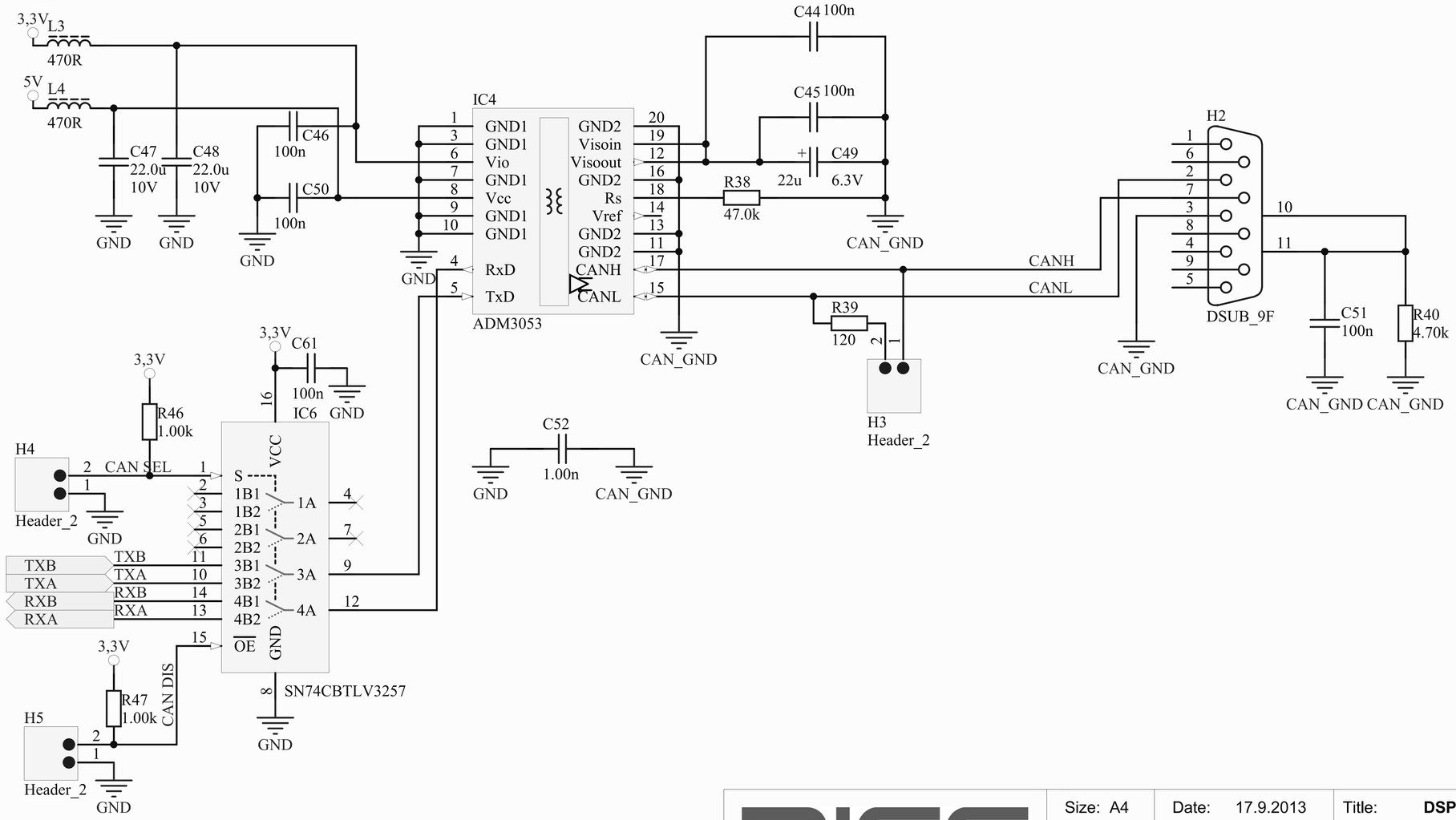
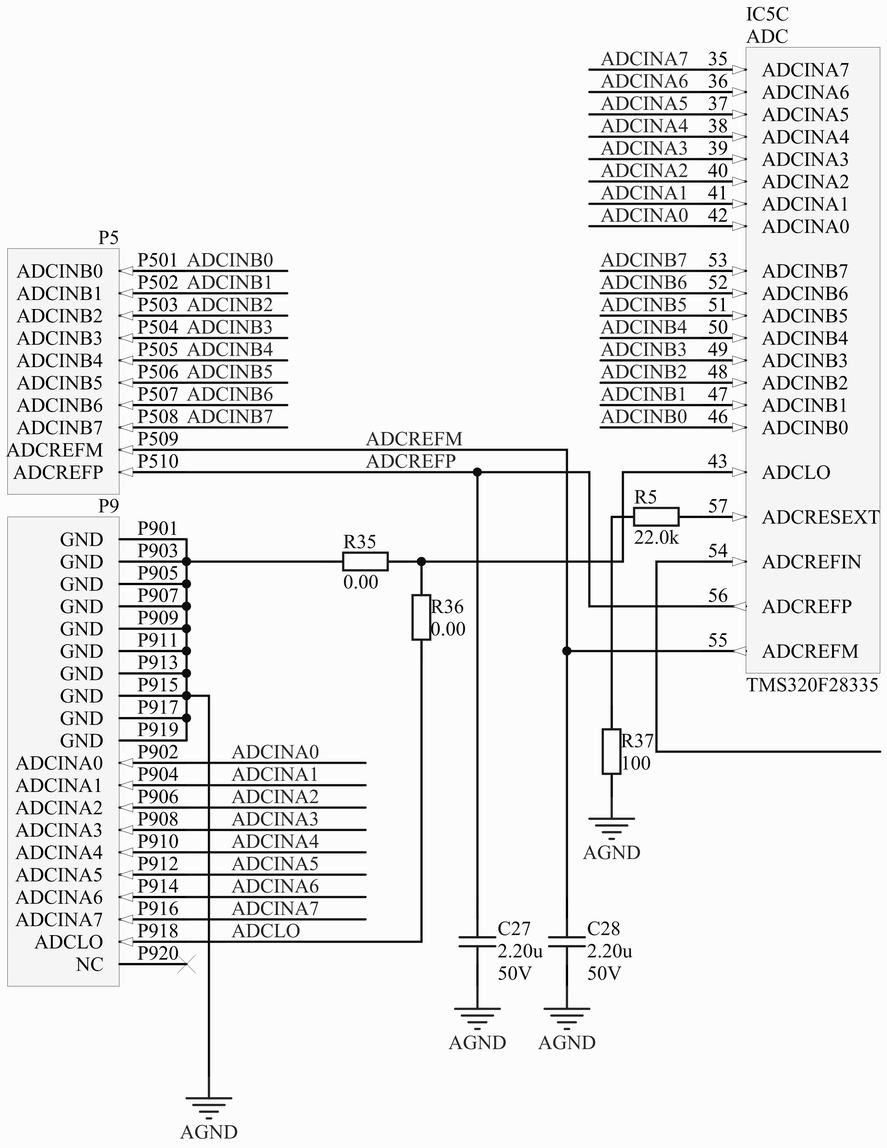


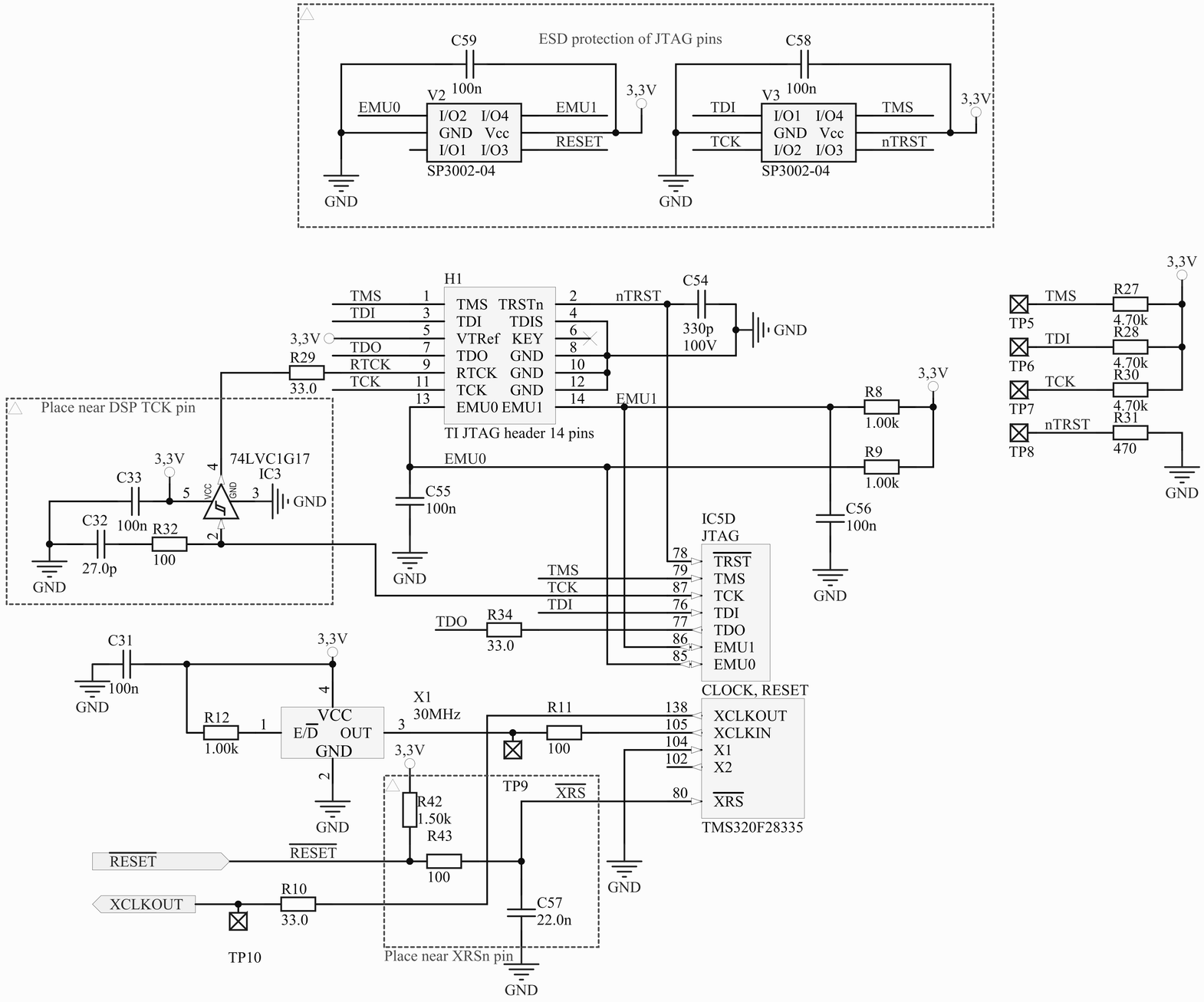
RICE	Size: A4	Date: 17.9.2013	Title: **DSP module for MLC interface**
Regional Innovation Centre for Electrical Engineering Univerzitni 26 306 14 Plzen Czech Republic	Author: Tomas Kosan		Subtitle: **[SUBTITLE]**
	Checked by:		Nr.: **Sch_Number** Revision: **0.2**
	Approved by:		Type: typ Sheet 1 of 1
			File: isoCan.SchDoc

Note: Data in fields enter via project/document parameters.



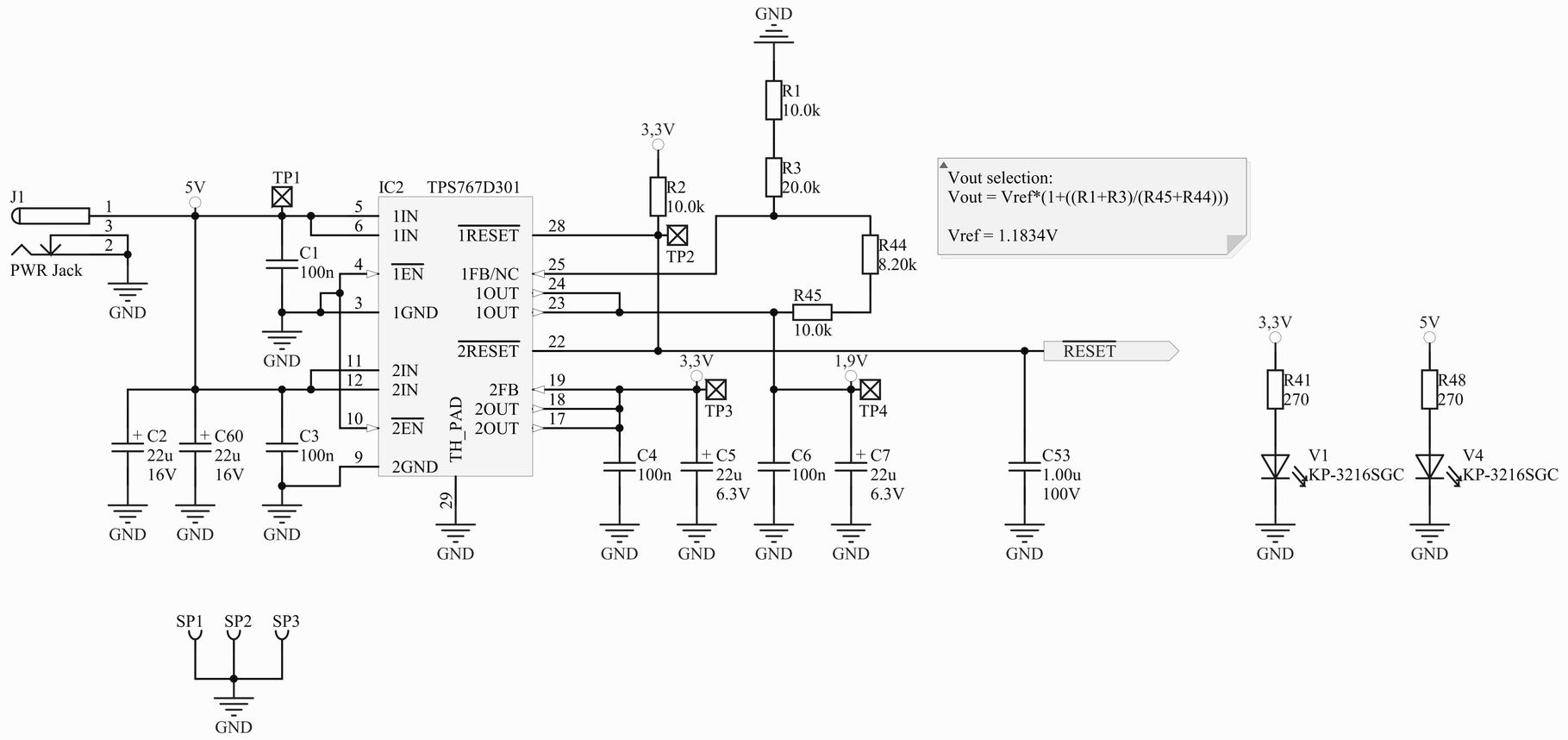
Size: A4	Date: 17.9.2013	Title:	**DSP module for MLC interface**
Author: Tomas Kosan		Subtitle:	**[SUBTITLE]**
Checked by:		Nr.: **Sch_Number**	Revision: **0.2**
Approved by:		Type: typ	Sheet * of *
		File: Analog_part.SchDoc	

Note: Data in fields enter via project/document parameters.



Size: A4	Date: 17.9.2013	Title:	**DSP module for MLC interface**
Author:	Tomas Kosan	Subtitle:	**Clocking and JTAG connection**
Checked by:		Nr.: **Sch_Number**	Revision: **0.2**
Approved by:		Type: typ	Sheet * of *
		File:	Clock_and_JTAG.SchDoc

Note: Data in fields enter via project/document parameters.



Size: A4	Date: 17.9.2013	Title:	**DSP module for MLC interface**
Author:	Tomas Kosan	Subtitle:	**Power source 3V3 and 1V9**
Checked by:		Nr.: **Sch_Number**	Revision: **0.2**
Approved by:		Type: typ	Sheet * of *
		File: Power_source.SchDoc	

Note: Data in fields enter via project/document parameters.

FID1 FID4
FID2 FID5
FID3 FID6

5V P8
P801 +3V3/5V/NC +3.3V/+5V/NC * P802 5V
XA19 P803 MUX_GPIO29_SCITXDA_XA19 MUX_GPIO28_SCIRXDA_XZCS6n P804 XZCS6
XHOLD P805 GPIO14_TZ3n_XHOLD_SCITXDB_MCLKXB GPIO20_EAEP1A_MXDA_CANTXB P806 GPIO20
GPIO21 P807 GPIO21_EQEP18_MDRA_CANRXB GPIO23_EQEP1_MFSXA_SCIRXDB P808 GPIO23
GPIO0 P809 GPIO0_EPWM1A GPIO1_EPWM1B/ECAP6/MFSRB P810 GPIO1
GPIO2 P811 GPIO2_EPWM2A GPIO3_EPWM2B_ECAP5_MCLKRB P812 GPIO3
GPIO4 P813 GPIO4_EPWM3A GPIO5_EPWM3B_MFSRA_ECAP1 P814 GPIO5
GPIO27 P815 GPIO27_ECAP4_EQEP2S_MFSXB GPIO6_EPWMN4A_EPWMSYNCI/EPWMSYNCO P816 GPIO6
GPIO13 P817 GPIO13_TZ2N_CANRXB_MDRB GPIO34_ECAP1_XREADY P818 XREADY
P819 GND GND P820
GND GPIO7 P821 GPIO7_EPWM4B_MCLKRA_ECAP2 GPIO15TZ4n_XHOLDA_SCIRXDB_MFSXB P822 XHOLDA
GPIO16 P823 GPIO16_SPISIMOA_CANTXB_TZ5n GPIO17_SPISOMIA_CANRXB_TZ6n P824 GPIO17 GND
GPIO18 P825 GPIO18_SPICLKA_SCITXDB_CANRXA GPIO19_SPISTAn_SCIRXDB_CANTXA P826 GPIO19
XA17 P827 _MUX_GPIO31_CANRXA_XA17 MUX_GPIO30_CANRXA_XA18 P828 XA18
GPIO11 P829 MUX_GPIO11_EPWM6B_SCIRXDB_ECAP4 MUX_GPIO8EPWM5A_CANTXB_ADCSOCAOnP3 P830 GPIO8
GPIO9 P831 MUX_GPIO9_EPWM5B_SCITXDB_ECAP3 MUX_GPIO10_EPWM6A_CANRXB_ADCASOCB0n P832 GPIO10
P833 MUX_GPIO22 GPIO25_ECAP2_EPEQ2B_MDRB P834 GPIO25
GPIO26 P835 GPIO26_ECAP3_EQEP21_MCLKXB GPIO32_SDAA_EPWMSYNCI_ADCSOCAOn P836 GPIO32
GPIO12 P837 GPIO12_TZ1N_CANTXB_MDXB GPIO33_SCLA_EPWNSYNCVO_ADCSOCBOn P838 GPIO33
P839 GND GND P840
GND GND

GPIO24 R21 0.00
GPIO22 R33 0.00

SRAM
IC1
XA0 24 A11 D10 31 XD15
XA1 23 A12 D5 14 XD14
XA2 18 A17 D6 15 XD13
XA3 25 A10 D7 16 XD12
XA4 21 A14 D4 13 XD11
XA5 20 A15 D3 10 XD10
XA6 19 A16 D2 9 XD9
XA7 22 A13 D1 8 XD8
XA8 5 A0 D0 7 XD7
XA9 26 A9 D15 38 XD6
XA10 3 A2 D14 37 XD5
XA11 4 A1 D13 36 XD4
XA12 1 A4 D12 35 XD3
XA13 2 A3 D11 32 XD2
XA14 42 A7 D9 31 XD1
XA15 27 A8 D8 30 XD0
XA16 43 A6 29 XD0
XA17 44 A5
3,3V
VDD 11
VDD 33
XRD 41 OE
WE0 17 WE
3,3V XZCS7 6 CE1
R6 28 CE2 GND 12
1.00k 39 LB GND 34
40 UB
C29 100n
C30 100n
GND GND
GS74116AGP-10I

Processor power
Processor_power.SchDoc

Analog inputs
Analog_part.SchDoc

Clock and JTAG
Clock_and_JTAG.SchDoc
RESET XCLKOUT XCLKOUT

Main power source
Power_source.SchDoc
RESET RESET

ISO CAN
isoCan.SchDoc
TXB GPIO20
TXA GPIO19
RXB GPIO21
RXA GPIO18

5V P4
P401 +3V3/5V/NC
P402 NC
GPIO22 P403 GPIO22_EQEP1S_MCLKRA_SCITXDB
GPIO7 P404 GPIO7_EPWM4B_MCLKRA_ECAP2
GPIO23 P405 GPIO23_EQEP1_MFSXA_SCIRXDB
GPIO5 P406 GPIO5_EPWM3B_MFSRA_ECAP1
GPIO20 P407 GPIO20_EAEP1A_MXDA_CANTXB
GPIO21 P408 GPIO21_EQEP1B_MDRA_CANRXB
P409 NC
P410 GND
GPIO3 P411 GPIO3_EPWM2B_ECAP5_MCLKRB
GPIO1 P412 GPIO1_EPWM1B_ECAP6_MFSRB
P413 NC
P414 NC
P415 NC
P416 NC
P417 NC
XHOLD P418 GPIO14_TZ3n_XHOLD_SCITXDB_MCLKXB
XHOLDA P419 GPIO15_TZ4n_XHOLDA_SCIRXDB_MFSXB
P420 GND
GND

P10 5V
P1001 +3.3V/+5V/NC
P1003 GPIO63 GPIO63_SCITXDC_XD16
P1005 GPIO61 GPIO61_MFSRB_XD18
P1007 GPIO59 GPIO59_MFSRA_XD20
P1009 GPIO57 GPIO57_SPISTEAn_XD22
P1011 GPIO55 GPIO55_SPISOMIA_XD24
P1013 GPIO53 GPIO53_EQEP1I_XD26
P1015 GPIO51 GPIO51_EAEP1B_XD28
P1017 GPIO49 GPIO49_ECAP6_XD30
GND P1059
GND

P10 5V
P1002 +3.3V/+5V/NC
P1004 GPIO62 GPIO62_SCIRXDC_XD17
P1006 GPIO60 GPIO60_MCLKRB_XD19
P1008 GPIO58 GPIO58_MCLKRA_XD21
P1010 GPIO56 GPIO56_SPICLKA_XD23
P1012 GPIO54 GPIO54_SPISIMOA_XD25
P1014 GPIO52 GPIO52_EQEP1S_XD27
P1016 GPIO50 GPIO50_EQEP1A_XD29
P1018 GPIO48 GPIO48_ECAP5_XD31
GND P1060
GND

3,3V
R7 22.0k
R13 22.0k
R14 22.0k
R15 22.0k
SW1
1 8 XA12
2 7 XA13
3 6 XA14
4 5 XA15
DIP switch 4
BOOT MODE SELECT
R16 2.20k
R17 2.20k
R18 2.20k
R19 2.20k
GND GND GND GND

5V P2
P201 +3V3/5V/NC +3V3/5V/NC P202 5V
XD0 P203 GPIO79_XD0 GPIO78_XD1 P204 XD1
XD2 P205 GPIO77_XD2 GPIO76_XD3 P206 XD3
XD4 P207 GPIO75_XD4 GPIO74_XD5 P208 XD5
XD6 P209 GPIO73_XD6 GPIO72_XD7 P210 XD7
XD8 P211 GPIO71_XD8 GPIO70_XD9 P212 XD9
XD10 P213 GPIO69_XD10 GPIO68_XD11 P214 XD11
XD12 P215 GPIO67_XD12 GPIO66_XD13 P216 XD13
XD14 P217 GPIO65_XD14 GPIO64_XD15 P218 XD15
XA0 P219 GPIO40_XA0_XWE1n GPIO41_XA1 P220 XA1
XA2 P221 GPIO42_XA2 GPIO43_XA3 P222 XA3
XA4 P223 GPIO44_XA4 GPIO45_XA5 P224 XA5
XA6 P225 GPIO46_XA6 GPIO47_XA7 P226 XA7
XA8 P227 GPIO80_XA8 GPIO81_XA9 P228 XA9
XA10 P229 GPIO82_XA10 GPIO85_XA11 P230 XA11
XA12 P231 GPIO84_XA12 GPIO85_XA13 P232 XA13
XA14 P233 GPIO86_XA14 GPIO87_XA15 P234 XA15
P235 GND GND P236
XZCS0 P237 GPIO36_SCIRXDA_XZCS0n GPIO37_ECAP2_XZCS7n P238 XZCS7
XREADY P239 GPIO34_ECAP1_XREADY GPIO28_SCIRXDA_XZCS6n P240 XZCS6
XRNW P241 GPIO35_SCIRXDA_XRNW 10k pull up P242
3,3V WE0 P243 GPIO38_WE0n XRDn P244 XRD
P245 +3V3 NC P246
RESET P247 DSP_RSn XCLKOUT P248 XCLKOUT
P249 GND GND P250
P251 GND GND P252
XA16 P253 GPIO39_XA16 GPIO31_CANTXA_XA17 P254 XA17
XA18 P255 GPIO30_CANRXA_XA18 GPIO14_TZ3n_XHOLDn_SCITXB_MCLKXB P256 XHOLD
XHOLDA P257 GPIO15_XHOLDAn_SCIRXDB_MFSXB GPIO29_SCITXDA_XA19 P258 XA19
P259 NC NC P260
GND GND

Boot mode select configuration

PIN	XA15	XA14	XA13	XA12	MODE
0000	ON	ON	ON	ON	Branch to SCI, skip ADC CAL
0001	ON	ON	ON	OFF	Branch to SARAM, skip ADC CAL
0010	ON	ON	OFF	ON	Branch to FLASH, skip ADC CAL
0011	ON	ON	OFF	OFF	Branch to check boot mode
0100	ON	OFF	ON	ON	Jump to SARAM
0101	ON	OFF	ON	OFF	Prallel XINTF boot
0110	ON	OFF	OFF	ON	Parallel GPIO boot
0111	ON	OFF	OFF	OFF	Jump to OTP
1000	OFF	ON	ON	ON	Jump to XINTF x32
1001	OFF	ON	ON	OFF	Jump to XINTF x16
1010	OFF	ON	OFF	ON	McBSP-A boot
1011	OFF	ON	OFF	OFF	eCAN-A boot
1100	OFF	OFF	ON	ON	I2C-A boot
1101	OFF	OFF	ON	OFF	SPI-A boot
1110	OFF	OFF	OFF	ON	SCI-A boot
1111	OFF	OFF	OFF	OFF	Jump to FLASH

DSP itself

IC5E
XD15 115 GPIO64, XD15
XD14 116 GPIO65, XD14
XD13 119 GPIO66, XD13
XD12 122 GPIO67, XD12
XD11 123 GPIO68, XD11
XD10 124 GPIO69, XD10
XD9 127 GPIO70, XD9
XD8 128 GPIO71, XD8
XD7 129 GPIO72, XD7
XD6 130 GPIO73, XD6
XD5 131 GPIO74, XD5
XD4 132 GPIO75, XD4
XD3 133 GPIO76, XD3
XD2 134 GPIO77, XD2
XD1 135 GPIO78, XD1
XD0 136 GPIO79, XD0

XA0 151 GPIO40, XA0/XWE1
XA1 152 GPIO41, XA1
XA2 153 GPIO42, XA2
XA3 156 GPIO43, XA3
XA4 157 GPIO44, XA4
XA5 158 GPIO45, XA5
XA6 161 GPIO46, XA6
XA7 162 GPIO47, XA7
XA8 163 GPIO80, XA8
XA9 164 GPIO81, XA9
XA10 165 GPIO82, XA10
XA11 168 GPIO83, XA11
XA12 169 GPIO84, XA12
XA13 172 GPIO85, XA13
XA14 173 GPIO86, XA14
XA15 174 GPIO87, XA15
XA16 175 GPIO39, XA16
XA17 176 GPIO31, CANTXA, XA17
XA18 1 GPIO30, CANRXA, XA18
XA19 2 GPIO29, SCITXDA, XA19

XRD R20 33.0
XREADY 149
XRNW R22 33.0 148
XZCS0 R23 33.0 145
XZCS7 R24 33.0 150
WE0 R25 33.0 137
XZCS6 R26 33.0 141

XRD
GPIO34, ECAP1, XREADY
GPIO35, SCITXDA, XR/W
GPIO36, SCIRXDA, XZCS0
GPIO37, ECAP2, XZCS7
GPIO38, XWE0
GPIO28, SCIRXDA, XZCS6
TMS320F28335

IC5A
GPIO0 5 GPIO0, EPWM1A
GPIO1 6 GPIO1, EPWM1B, ECAP6, MFSRB
GPIO2 7 GPIO2, EPWM2A
GPIO3 10 GPIO3, EPWM2B, ECAP5, MCLKRB
GPIO4 11 GPIO4, EPWM3A
GPIO5 12 GPIO5, EPWM3B, MFSRA, ECAP1
GPIO6 13 GPIO6, EPWM4A, EPWMSYNCI, EPWMSYNCO
GPIO7 16 GPIO7, EPWM4B, MCLKRA, ECAP2
GPIO8 17 GPIO8, EPWM5A, CANTXB, ADSOCAO
GPIO9 18 GPIO9, EPWM5B, SCITXDB,ECAP3
GPIO10 19 GPIO10, EPWM6A, CANRXB, ADSOCBO
GPIO11 20 GPIO11, EPWM6B, SCIRXDB, ECAP4
GPIO12 21 GPIO12, TZ1, CANTXB, MDXB
GPIO13 24 GPIO13, TZ2, CANRXB, MDRB
XHOLD 25 GPIO14, TZ3/XHOLD, SCITXDB, MCLKXB
XHOLDA 26 GPIO15, TZ4/XHOLDA, SCIRXDB, MFSXB
GPIO16 27 GPIO16, SPISIMOA, CANTXB, TZ5
GPIO17 28 GPIO17, SPISOMIA, CANRXB, TZ6

GPIO18 62 GPIO18, SPICLKA, SCITXDB,CANRXA
GPIO19 63 GPIO19, SPISTEA, SCIRXDB, CANTXA
GPIO20 64 GPIO20, EQEP1A, MDXA, CANTXB
GPIO21 65 GPIO21, EQEP1B, MDRA, CANRXB
GPIO22 66 GPIO22, EQEP1S, MCLKXA, SCITXDB
GPIO23 67 GPIO23, EQEP1I, MFSXA, SCIRXDB
GPIO24 68 GPIO24,ECAP1, EQEP2A, MDXB
GPIO25 69 GPIO25, ECAP2, EQEP2B, MDRB
GPIO26 72 GPIO26, ECAP3, EQEP2I, MCLKXB
GPIO27 73 GPIO27, ECAP4, EQEP2S, MFSXB

GPIO32 74 GPIO32, SDAA, EPWSYNCI, ADSOCAO
GPIO33 75 GPIO33, SCLA, EPWSYNCO, ADSOCBO

GPIO48 88 GPIO48, ECAP5
GPIO49 89 GPIO49, ECAP6
GPIO50 90 GPIO50, EQEP1A
GPIO51 91 GPIO51, EQEP1B
GPIO52 94 GPIO52, EQEP1S
GPIO53 95 GPIO53, EQEP1I
GPIO54 96 GPIO54, SPISIMOA
GPIO55 97 GPIO55, SPISOMIA
GPIO56 98 GPIO56, SPICLKA
GPIO57 99 GPIO57, SPISTEA
GPIO58 100 GPIO58, MCLKRA
GPIO59 110 GPIO59, MFSRA
GPIO60 111 GPIO60, MCLKRB
GPIO61 112 GPIO61, MFSRB
GPIO62 113 GPIO62, SCIRXDC
GPIO63 114 GPIO63, SCITXDC
TMS320F28335

RICE
University of West Bohemia
Univerzitni 26

Size: A3	Date: 17.9.2013	Title:	**DSP module for MLC interface**
Author:	Tomas Kosan	Subtitle:	**Top level schematics**
Checked by:		Nr.: **Sch_Number**	Revision: **0.2**
Approved by:		Type: Typ	Sheet * of *
		File: processor.SchDoc	

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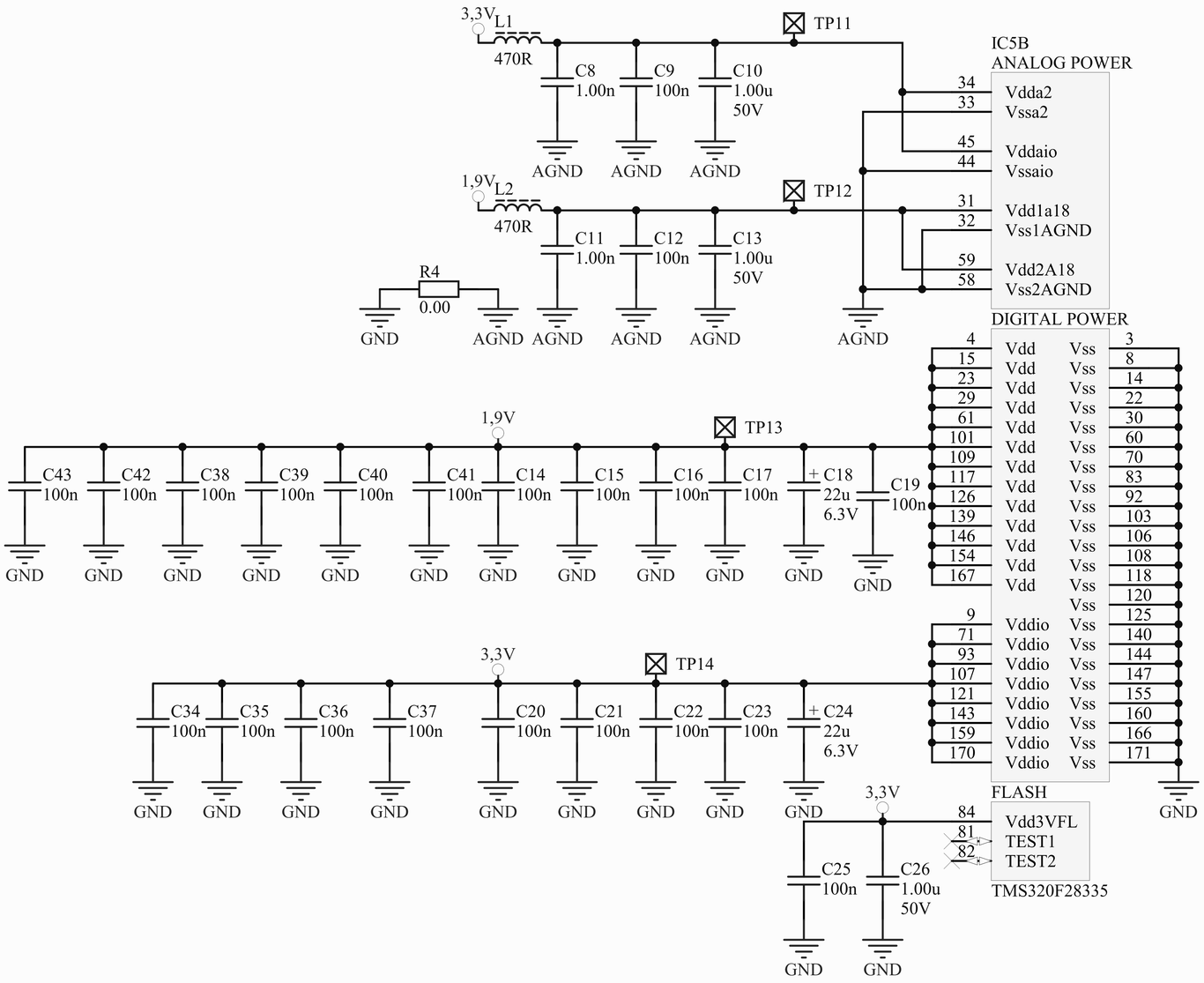

RICE	Size: A4	Date: 17.9.2013	Title: **DSP module for MLC interface**
	Author: Tomas Kosan		Subtitle: **[SUBTITLE]**
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	Approved by:		Type: typ Sheet * of *
			File: Processor_power.SchDoc

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