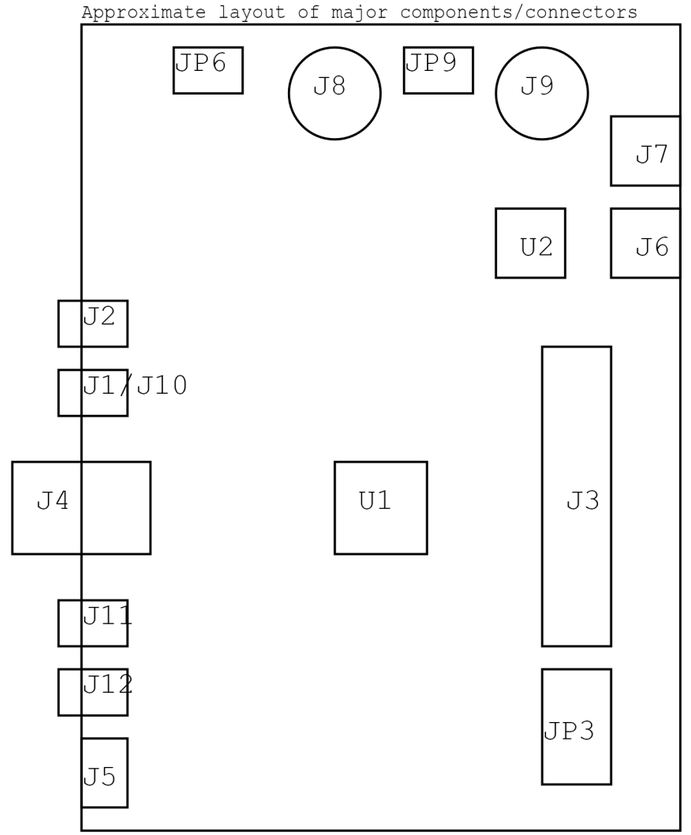
Board Block Diagram

Approximate layout of major components/connectors



Power

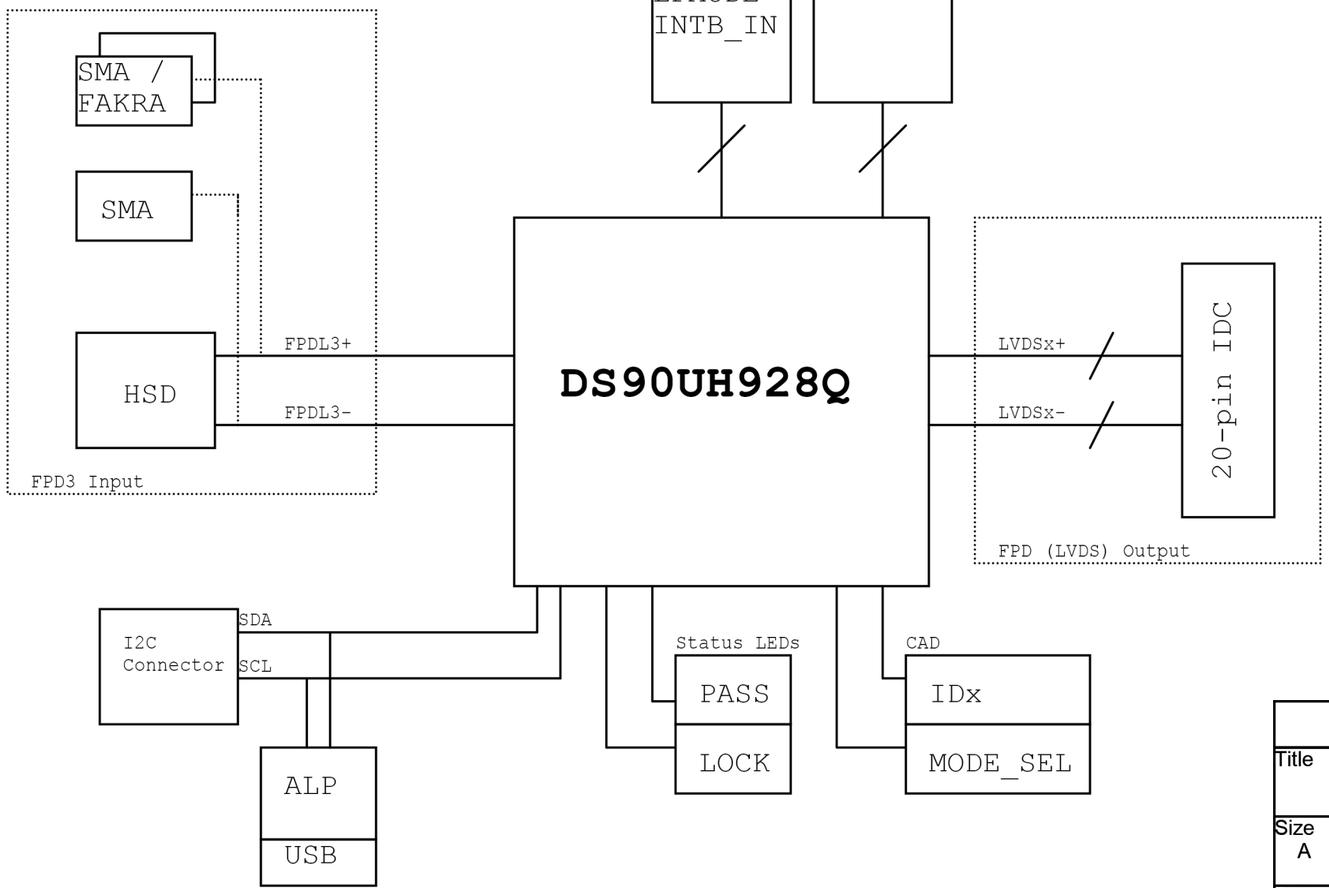
Connector	Banana	+5V Barrel	+5V Aux
Supply	VDDIO	VDD33	VSS

Options

RES0
PDB
OSS_SEL
OEN
RES1
BISTEN
MAPSEL
LFMODE
INTB_IN

I2S Bank

DD DC
DB DA
CLK
WC
MCLK
GPIO1
GPIO0



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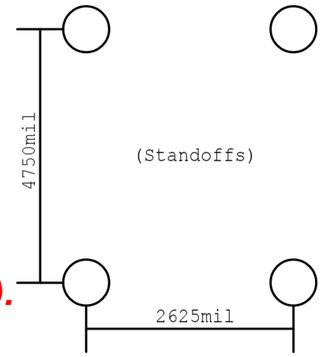
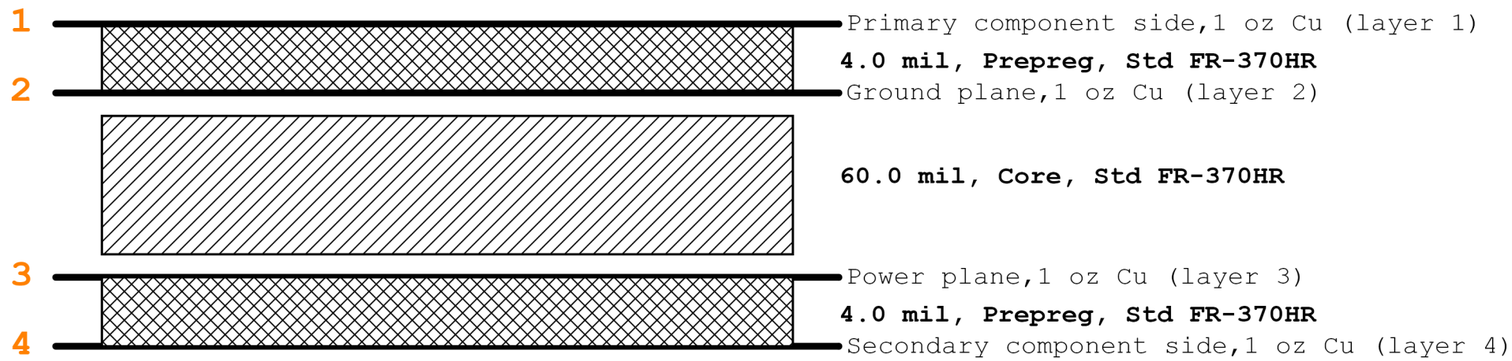
LAYOUT NOTES:
1) 4 layer board.
2) Use standard FR-4
3) 5% impedance tolerance.
4) Minimum 4 standoffs on each corner of board. (0.156 X 4).





Silkscreen Notes:
1) Place TI logo somewhere on the board
2) Place board label "DS90U[]928Q EVB" where '[]' is a solid white box
3) Place board label "NOT FOR EMI TESTING" somewhere on the front side of the board
4) Place a serial number label on the backside of the board - i.e. "S/N" followed by a box 10-12 character equivalents wide.
5) See notes in schematic for other silkscreen labels and guidelines

Core Material

Prepreg Material

Title: DS90UH927 Tx Demo Board - Board Stackup		
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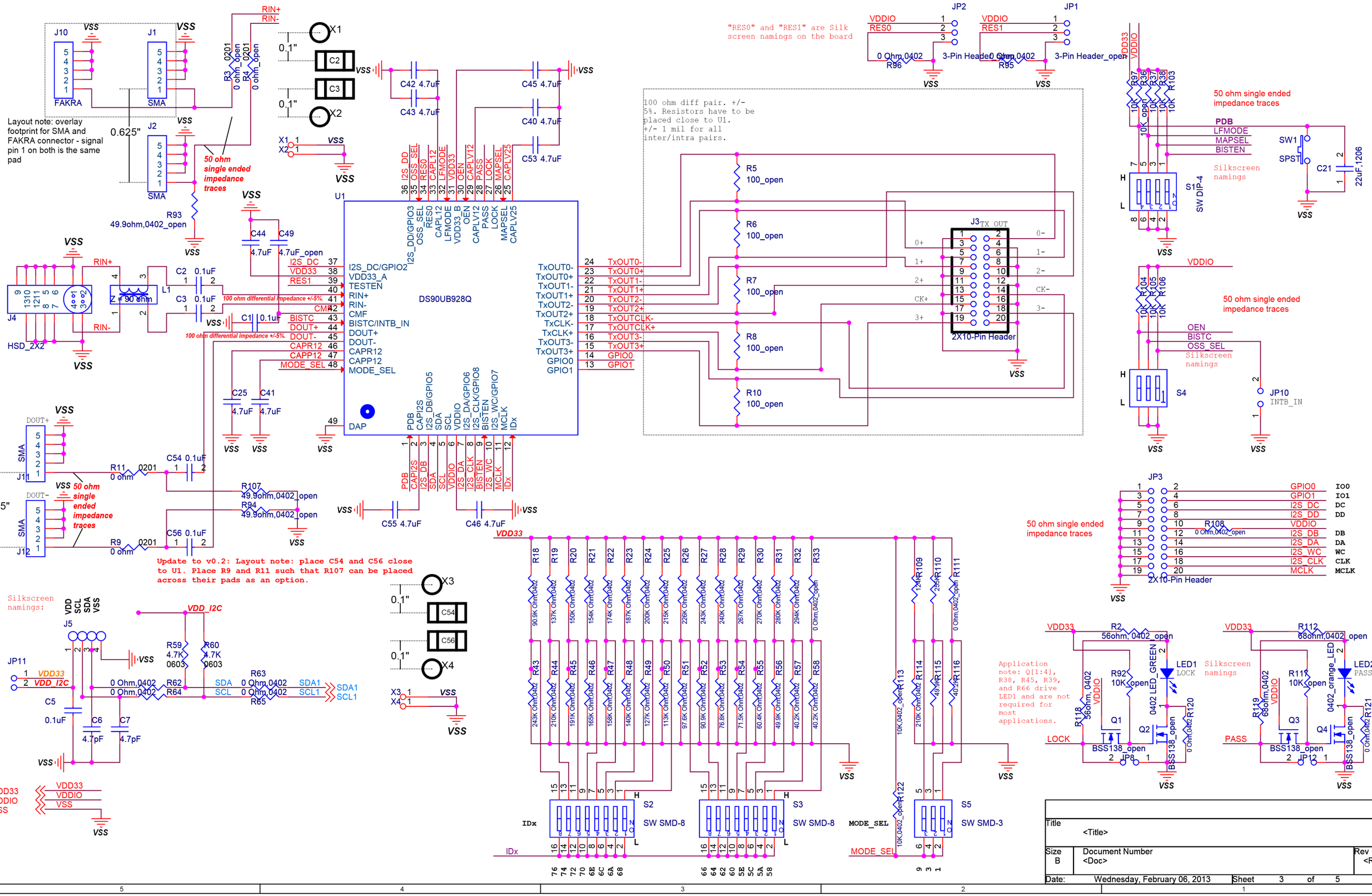
J10
J1
J2
FAKRA
SMA
Layout note: overlay footprint for SMA and FAKRA connector - signal pin 1 on both is the same pad
0.625"
RIN+
RIN-
R3 0201 0 ohm_open
R4 0201 0 ohm_open
50 ohm single ended impedance traces
X1
X2
0.1"
C2
C3
C42 4.7uF
C43 4.7uF
C45 4.7uF
C40 4.7uF
C53 4.7uF
R93 49.9ohm,0402_open
C44 4.7uF
C49 4.7uF_open
U1
I2S_DC/GPIO2
VDD33_A
TESTEN
RIN+
RIN-
CMF
BISTC/INTB_IN
DOUT+
DOUT-
CAPR12
CAPP12
MODE_SEL
DAP
DS90UB928Q
TxOUT0-
TxOUT0+
TxOUT1-
TxOUT1+
TxOUT2-
TxOUT2+
TxCLK-
TxCLK+
TxOUT3-
TxOUT3+
GPIO0
GPIO1
I2S_DD/GPIO3
OSS_SEL
RES0
CAPL12
LFMODE
VDD33_B
OEN
CAPLV12
PASS
LOCK
MAPSEL
CAPLV25
PDB
CAPI2S
I2S_DB/GPIO5
SDA
SCL
VDDIO
I2S_DA/GPIO6
I2S_CLK/GPIO8
BISTEN
I2S_WC/GPIO7
MCLK
IDx
J4
HSD_2X2
Z = 90 ohm
L1
C2 0.1uF
C3 0.1uF
C1 0.1uF
100 ohm differential impedance +/-5%.
J11
J12
R11 0201 0 ohm
R9 0201 0 ohm
C54 0.1uF
C56 0.1uF
R107 49.9ohm,0402_open
R94 49.9ohm,0402_open
50 ohm single ended impedance traces
C55 4.7uF
C46 4.7uF
Update to v0.2: Layout note: place C54 and C56 close to U1. Place R9 and R11 such that R107 can be placed across their pads as an option.
"RES0" and "RES1" are Silk screen namings on the board
JP2
JP1
VDDIO
RES0
RES1
0 Ohm 0402
R96
R95
3-Pin Header
3-Pin Header_open
100 ohm diff pair. +/- 5%. Resistors have to be placed close to U1. +/- 1 mil for all inter/intra pairs.
R5 100_open
R6 100_open
R7 100_open
R8 100_open
R10 100_open
J3 TX OUT
0+
0-
1+
1-
2+
2-
CK+
CK-
3+
3-
2X10-Pin Header
VDD33
R97 10K
R36 10K
R37 10K_open
R38 10K
R103 10K
50 ohm single ended impedance traces
PDB
LFMODE
MAPSEL
BISTEN
Silkscreen namings
SW1
SPST
C21 22uF,1206
S1
SW DIP-4
R104 10K
R105 10K
R106 10K
OEN
BISTC
OSS_SEL
S4
JP10
INTB_IN
DOUT+
DOUT-
SMA
J11
J12
50 ohm single ended impedance traces
R107 49.9ohm,0402_open
R94 49.9ohm,0402_open
C55 4.7uF
C46 4.7uF
JP3
GPIO0 IO0
GPIO1 IO1
I2S_DC DC
I2S_DD DD
VDDIO
I2S_DB DB
I2S_DA DA
I2S_WC WC
I2S_CLK CLK
MCLK MCLK
R108 0 Ohm,0402_open
2X10-Pin Header
Silkscreen namings:
VDD
SCL
SDA
VSS
J5
VDD_I2C
JP11
VDD33
R59 4.7K 0603
R60 4.7K 0603
R62 0 Ohm,0402
R64 0 Ohm,0402
R63 0 Ohm,0402
R65 0 Ohm,0402
SDA
SCL
SDA1
SCL1
C5 0.1uF
C6 4.7pF
C7 4.7pF
VDD33
VDDIO
VSS
X3
X4
C54
C56
R18 90.9K Ohm,0402
R19 137K Ohm,0402
R20 150K Ohm,0402
R21 154K Ohm,0402
R22 174K Ohm,0402
R23 187K Ohm,0402
R24 200K Ohm,0402
R25 215K Ohm,0402
R26 226K Ohm,0402
R27 243K Ohm,0402
R28 240K Ohm,0402
R29 267K Ohm,0402
R30 270K Ohm,0402
R31 280K Ohm,0402
R32 294K Ohm,0402
R33 0 Ohm,0402_open
R43 243K Ohm,0402
R44 210K Ohm,0402
R45 191K Ohm,0402
R46 165K Ohm,0402
R47 158K Ohm,0402
R48 140K Ohm,0402
R49 127K Ohm,0402
R50 113K Ohm,0402
R51 97.6K Ohm,0402
R52 90.9K Ohm,0402
R53 76.8K Ohm,0402
R54 71.5K Ohm,0402
R55 60.4K Ohm,0402
R56 49.9K Ohm,0402
R57 40.2K Ohm,0402
R58 40.2K Ohm,0402
R109 1.24M
R110 295K
R111 0 Ohm,0402_open
R113 10K,0402_open
R114 210K Ohm,0402
R115 49.9K
R116 40.2K
R122 10K,0402_open
S2
S3
S5
SW SMD-8
SW SMD-3
IDx
MODE_SEL
Application note: Q[1:4], R38, R45, R39, and R66 drive LED1 and are not required for most applications.
R2 56ohm, 0402_open
R92 10K_open
R118 56ohm, 0402
R120 0 Ohm,0402
Q1
Q2
BSS138_open
LED1 LOCK
0402 LED_GREEN
LOCK
R112 68ohm,0402_open
R119 68ohm,0402
R121 0 Ohm,0402
Q3
Q4
LED2 PASS
0402_orange_LED
PASS
Silkscreen namings
JP8
JP12
Title
<Title>
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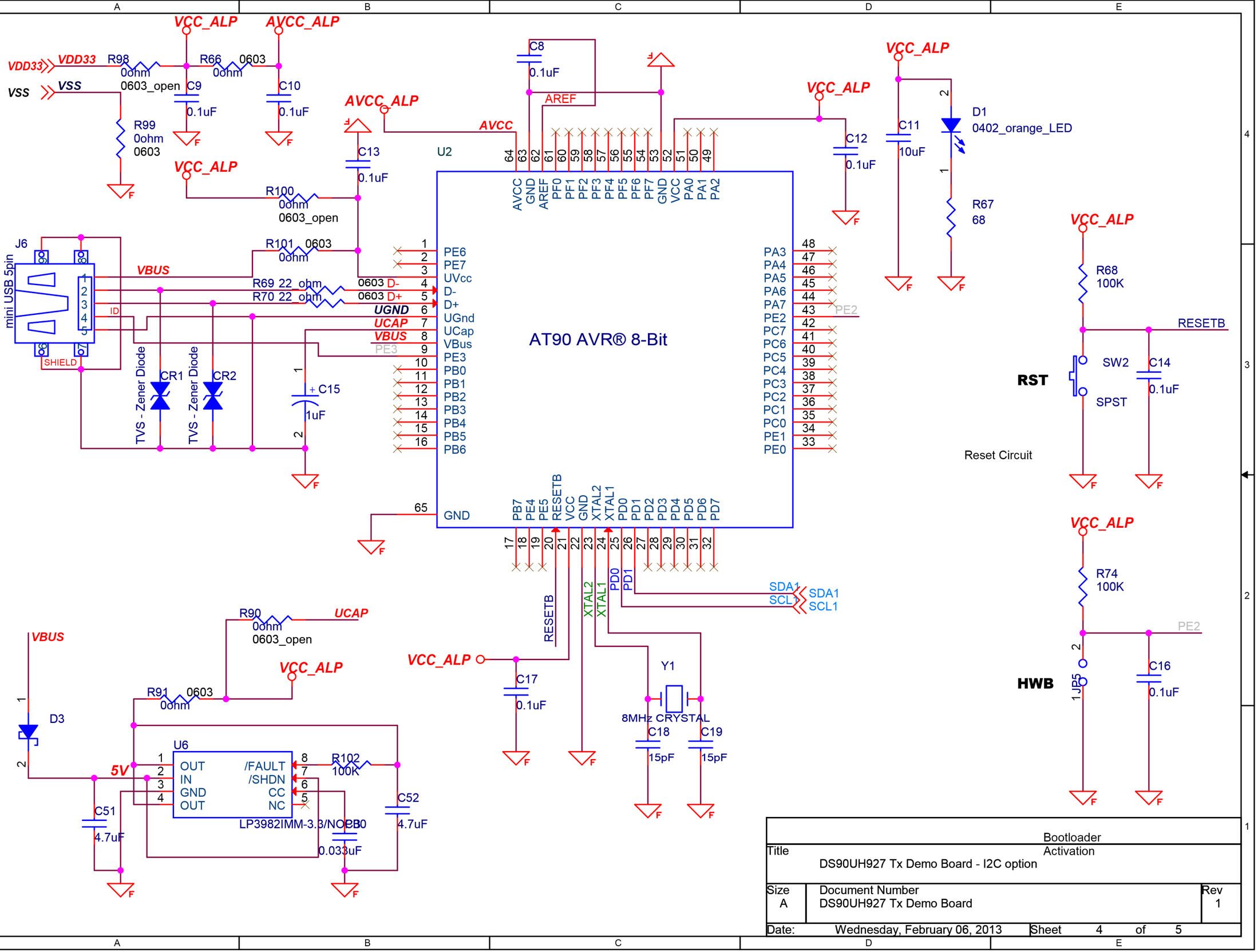

	Bootloader Activation	
Title	DS90UH927 Tx Demo Board - I2C option	
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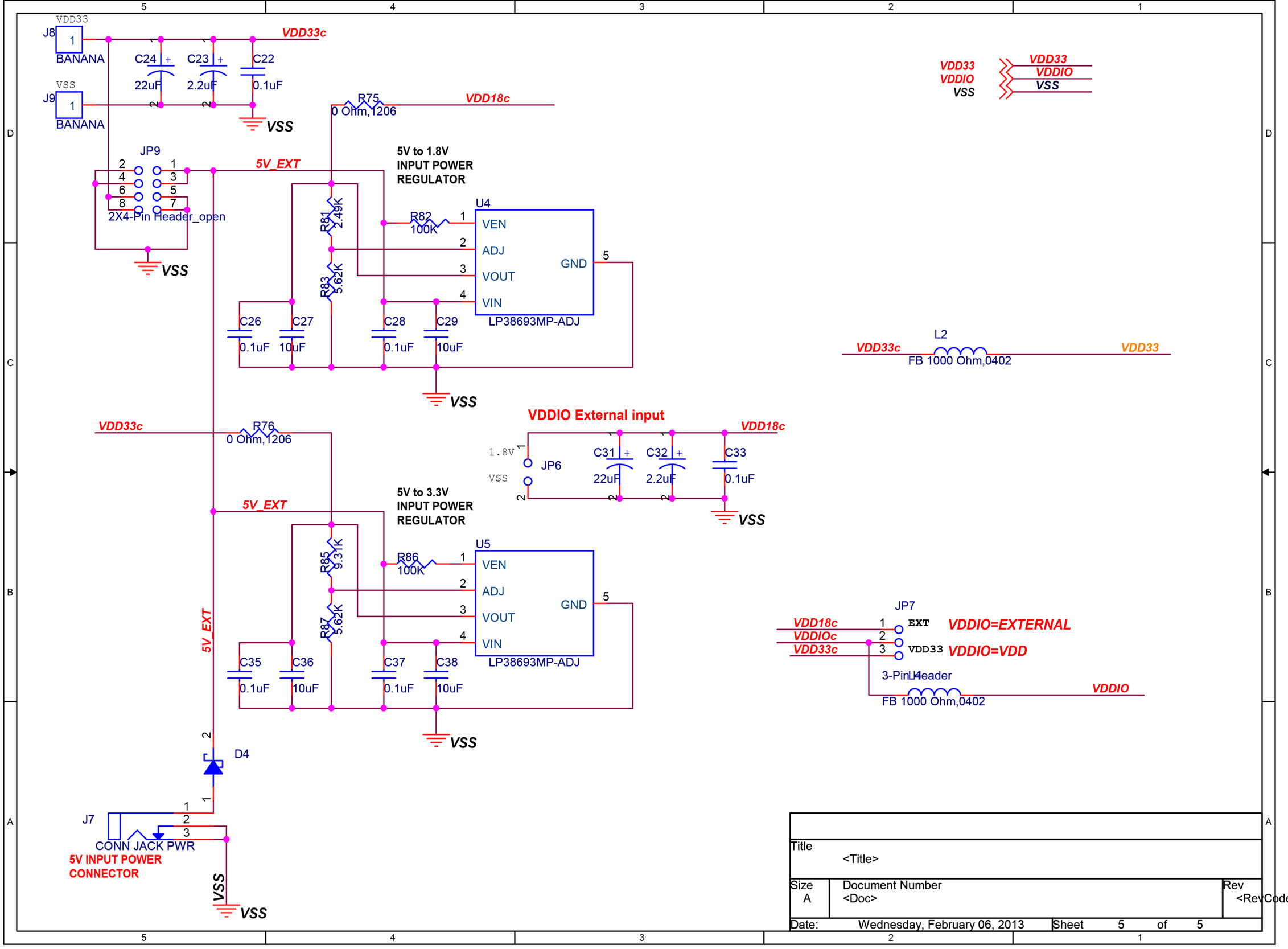

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