S3AN01B

XILINX Spartan 3AN

FPGA School Board

1.00 Updated from S3AN01A

Nezapomente, ze obvody rady Spartan 3A nejmaji vstupy odolne vuci napeti 5V.

Vsimnete si prosim, ze obvody rady Spartan 3A nemaji ochrannou diodu mezi vstupem a jakymkoli kladnym napajecim napetim.

Do not forget that Spartan 3A device is not 5V tollerant!

Please notice that Spartan 3A device does not have diodes from any I/O pin to VCCO or any other power rail.

Firma: MLAB			Author: MIHO
Size: A3	Project Name: MLAB	Schematic Name: S3AN01B	Rev: 1.00
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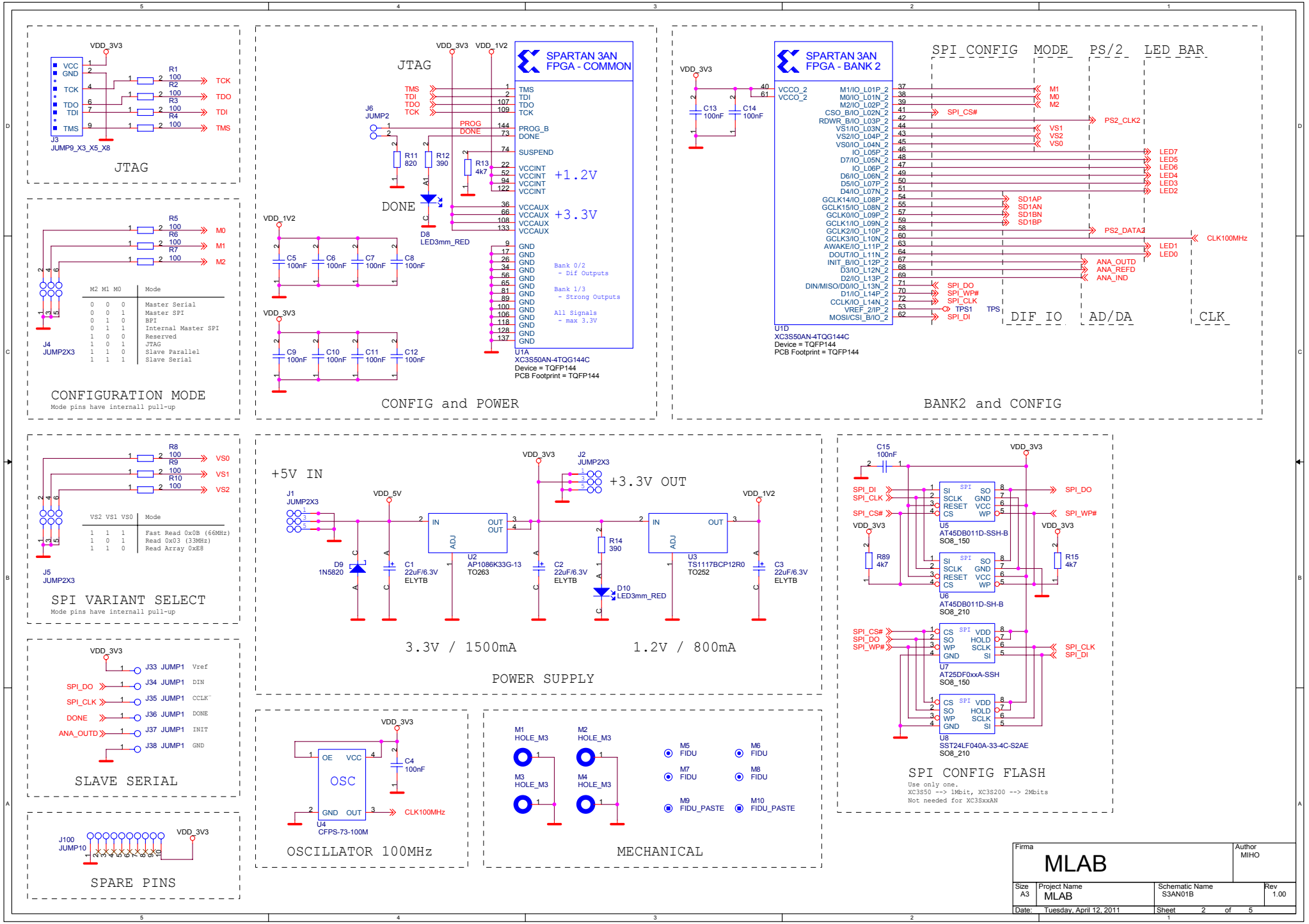
JTAG
CONFIGURATION MODE
Mode pins have internall pull-up
SPI VARIANT SELECT
Mode pins have internall pull-up
SLAVE SERIAL
SPARE PINS
CONFIG and POWER
BANK2 and CONFIG
POWER SUPPLY
3.3V / 1500mA
1.2V / 800mA
OSCILLATOR 100MHz
MECHANICAL
SPI CONFIG FLASH
Use only one.
XC3S50 --> 1Mbit, XC3S200 --> 2Mbits
Not needed for XC3SxxAN
SPARTAN 3AN FPGA - COMMON
SPARTAN 3AN FPGA - BANK 2
SPI_CONFIG
MODE
PS/2
LED BAR
DIF IO
AD/DA
CLK
+5V IN
+3.3V OUT
Firma
MLAB
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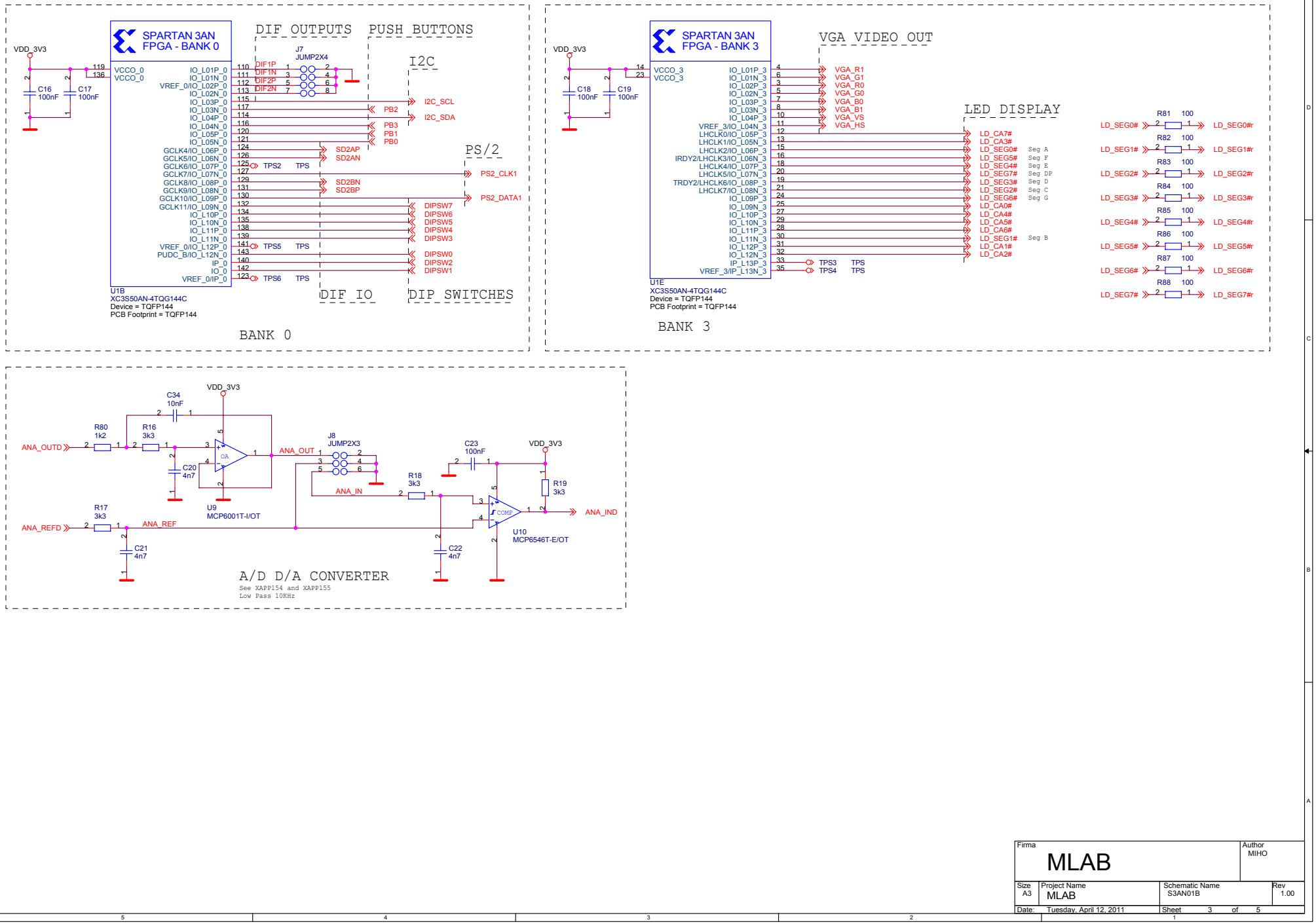
SPARTAN 3AN
FPGA - BANK 0
DIF OUTPUTS
PUSH BUTTONS
I2C
PS/2
DIF IO
DIP SWITCHES
U1B
XC3S50AN-4TQG144C
Device = TQFP144
PCB Footprint = TQFP144
BANK 0
SPARTAN 3AN
FPGA - BANK 3
VGA VIDEO OUT
LED DISPLAY
U1E
XC3S50AN-4TQG144C
Device = TQFP144
PCB Footprint = TQFP144
BANK 3
A/D D/A CONVERTER
See XAPP154 and XAPP155
Low Pass 10KHz
Firma
MLAB
Author
MIHO
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A3
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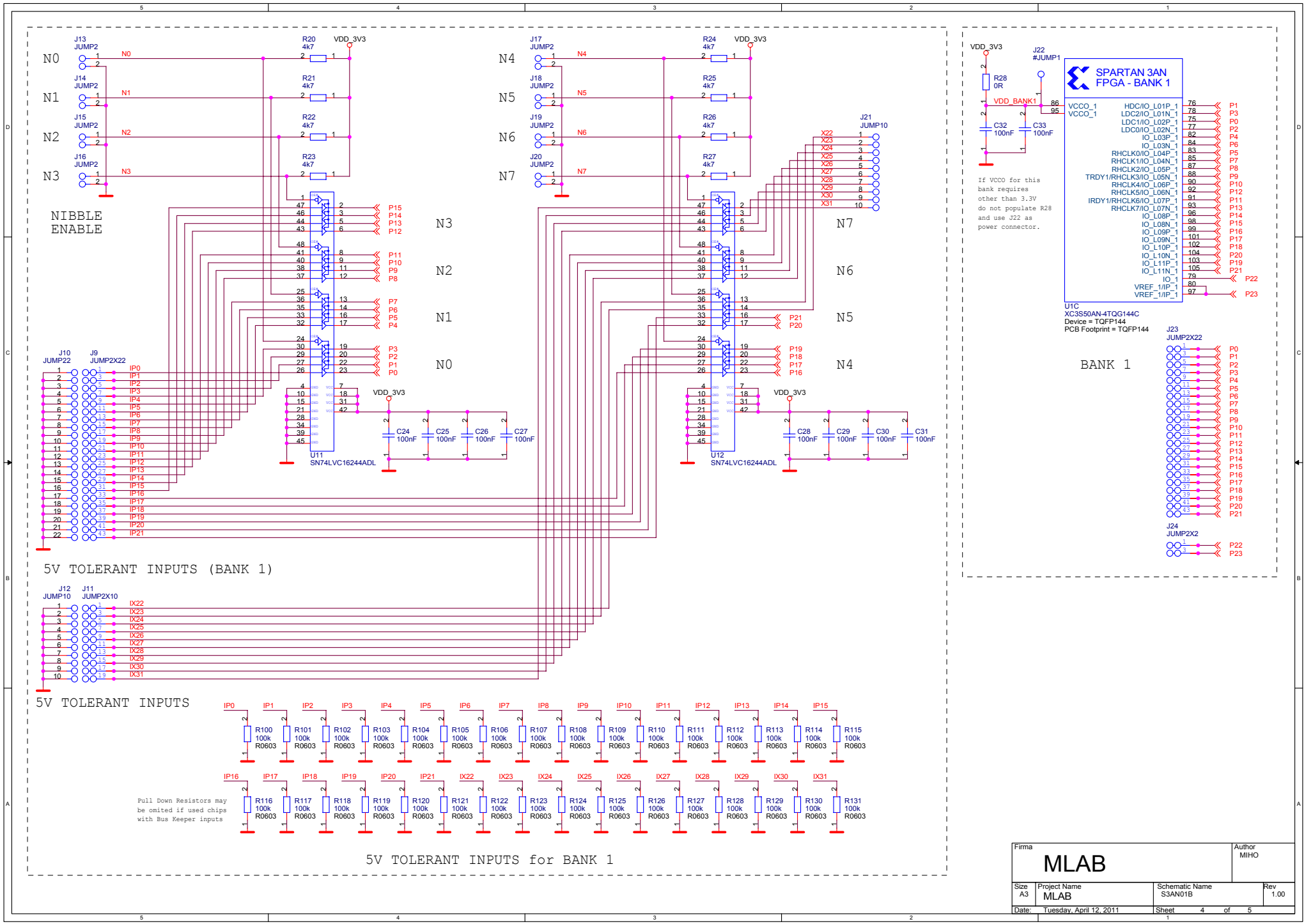
NIBBLE ENABLE
5V TOLERANT INPUTS (BANK 1)
5V TOLERANT INPUTS
5V TOLERANT INPUTS for BANK 1
Pull Down Resistors may be omited if used chips with Bus Keeper inputs
SPARTAN 3AN FPGA - BANK 1
U1C
XC3S50AN-4TQG144C
Device = TQFP144
PCB Footprint = TQFP144
BANK 1
If VCCO for this bank requires other than 3.3V do not populate R28 and use J22 as power connector.
U11
SN74LVC16244ADL
U12
SN74LVC16244ADL
VDD_3V3
VDD_BANK1
Firma
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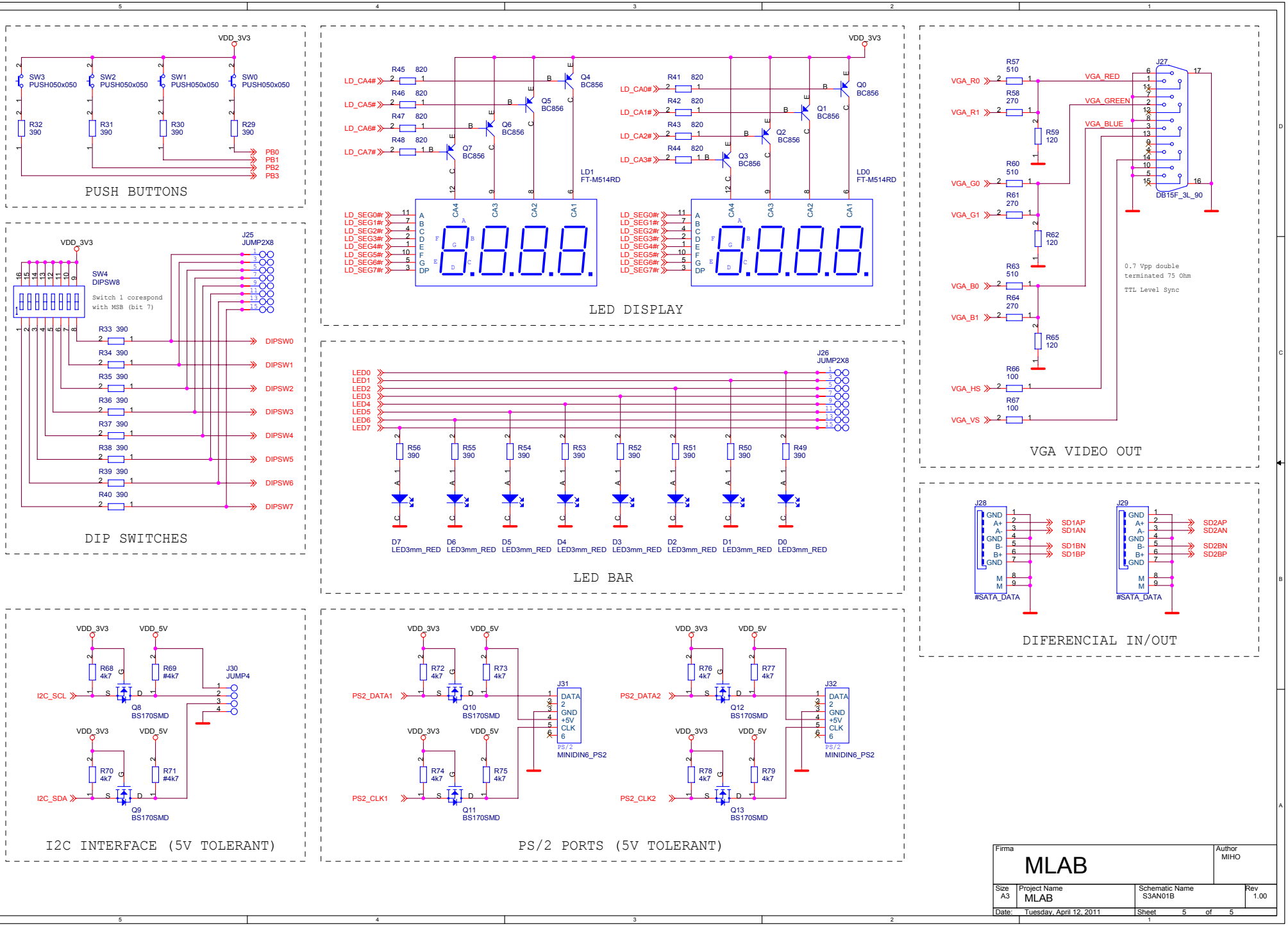
PUSH BUTTONS
VDD_3V3
SW3 PUSH050x050
SW2 PUSH050x050
SW1 PUSH050x050
SW0 PUSH050x050
R32 390
R31 390
R30 390
R29 390
PB0
PB1
PB2
PB3
DIP SWITCHES
J25 JUMP2X8
SW4 DIPSW8
Switch 1 corespond with MSB (bit 7)
R33 390
R34 390
R35 390
R36 390
R37 390
R38 390
R39 390
R40 390
DIPSW0
DIPSW1
DIPSW2
DIPSW3
DIPSW4
DIPSW5
DIPSW6
DIPSW7
LED DISPLAY
LD_CA4#
LD_CA5#
LD_CA6#
LD_CA7#
LD_CA0#
LD_CA1#
LD_CA2#
LD_CA3#
R45 820
R46 820
R47 820
R48 820
R41 820
R42 820
R43 820
R44 820
Q4 BC856
Q5 BC856
Q6 BC856
Q7 BC856
Q0 BC856
Q1 BC856
Q2 BC856
Q3 BC856
LD1 FT-M514RD
LD0 FT-M514RD
LD_SEG0#
LD_SEG1#
LD_SEG2#
LD_SEG3#
LD_SEG4#
LD_SEG5#
LD_SEG6#
LD_SEG7#
CA4
CA3
CA2
CA1
LED BAR
J26 JUMP2X8
LED0
LED1
LED2
LED3
LED4
LED5
LED6
LED7
R56 390
R55 390
R54 390
R53 390
R52 390
R51 390
R50 390
R49 390
D7 LED3mm_RED
D6 LED3mm_RED
D5 LED3mm_RED
D4 LED3mm_RED
D3 LED3mm_RED
D2 LED3mm_RED
D1 LED3mm_RED
D0 LED3mm_RED
VGA VIDEO OUT
VGA_R0
VGA_R1
VGA_G0
VGA_G1
VGA_B0
VGA_B1
VGA_HS
VGA_VS
VGA_RED
VGA_GREEN
VGA_BLUE
R57 510
R58 270
R59 120
R60 510
R61 270
R62 120
R63 510
R64 270
R65 120
R66 100
R67 100
J27
DB15F_3L_90
0.7 Vpp double terminated 75 Ohm
TTL Level Sync
DIFERENCIAL IN/OUT
J28
J29
GND
A+
A-
B
B+
M
SD1AP
SD1AN
SD1BN
SD1BP
SD2AP
SD2AN
SD2BN
SD2BP
#SATA_DATA
I2C INTERFACE (5V TOLERANT)
VDD_3V3
VDD_5V
I2C_SCL
I2C_SDA
R68 4k7
R69 #4k7
R70 4k7
R71 #4k7
J30 JUMP4
Q8 BS170SMD
Q9 BS170SMD
PS/2 PORTS (5V TOLERANT)
PS2_DATA1
PS2_CLK1
PS2_DATA2
PS2_CLK2
R72 4k7
R73 4k7
R74 4k7
R75 4k7
R76 4k7
R77 4k7
R78 4k7
R79 4k7
J31
J32
DATA
GND
+5V
CLK
PS/2
MINIDIN6_PS2
Q10 BS170SMD
Q11 BS170SMD
Q12 BS170SMD
Q13 BS170SMD
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