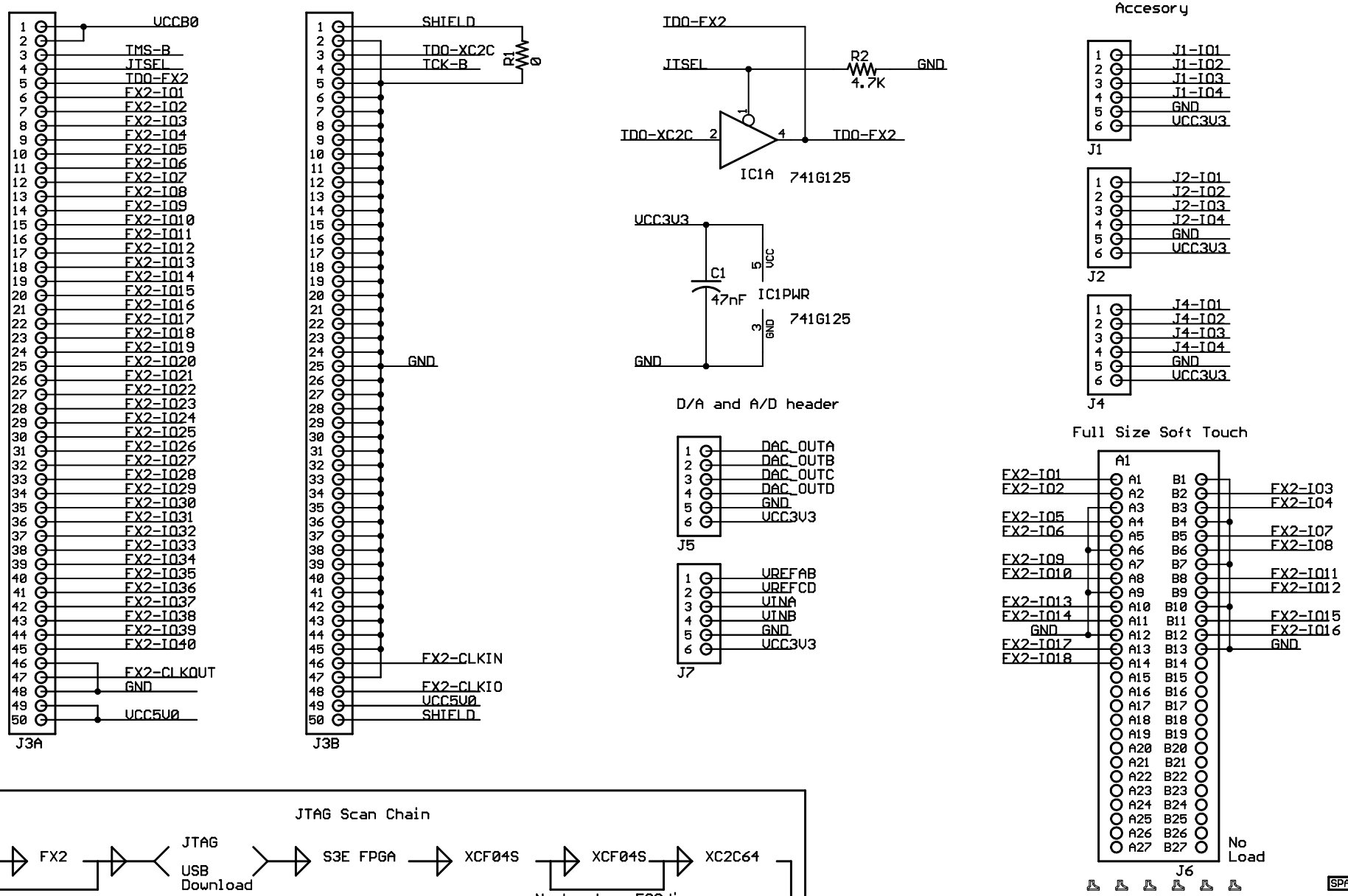
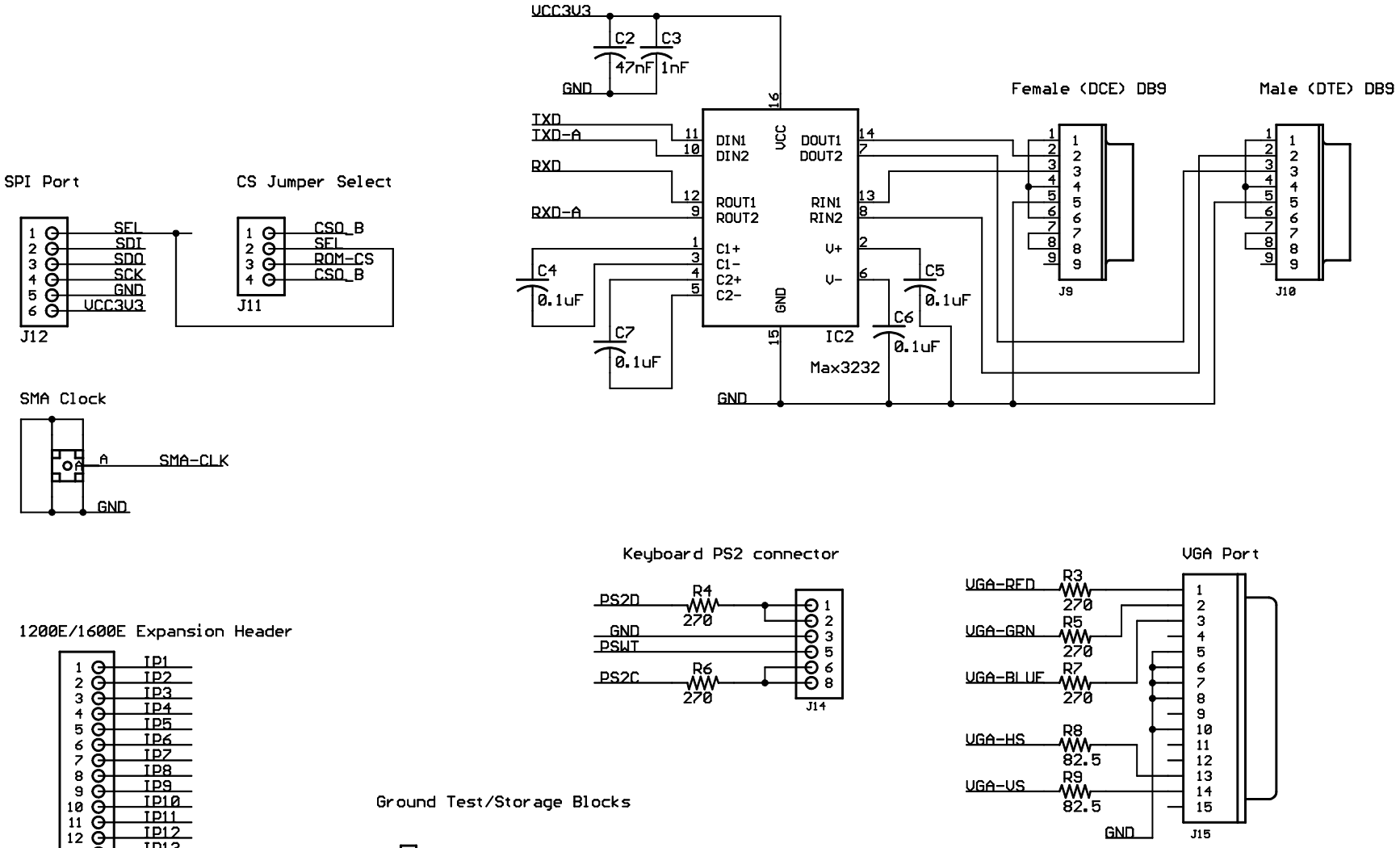

J3A
VCCB0
TMS-B
JTSEL
TDO-FX2
FX2-IO01
FX2-IO02
FX2-IO03
FX2-IO04
FX2-IO05
FX2-IO06
FX2-IO07
FX2-IO08
FX2-IO09
FX2-IO010
FX2-IO011
FX2-IO012
FX2-IO013
FX2-IO014
FX2-IO015
FX2-IO016
FX2-IO017
FX2-IO018
FX2-IO019
FX2-IO020
FX2-IO021
FX2-IO022
FX2-IO023
FX2-IO024
FX2-IO025
FX2-IO026
FX2-IO027
FX2-IO028
FX2-IO029
FX2-IO030
FX2-IO031
FX2-IO032
FX2-IO033
FX2-IO034
FX2-IO035
FX2-IO036
FX2-IO037
FX2-IO038
FX2-IO039
FX2-IO040
FX2-CLKOUT
GND
VCC5V0
J3B
SHIELD
TDO-XC2C
TCK-B
R1
0
GND
FX2-CLKIN
FX2-CLKIO
VCC5V0
SHIELD
TDO-FX2
JTSEL
R2
4.7K
GND
TDO-XC2C
TDO-FX2
IC1A
74LG125
VCC3V3
C1
47nF
IC1PWR
74LG125
VCC
GND
GND
D/A and A/D header
J5
DAC_OUTA
DAC_OUTB
DAC_OUTC
DAC_OUTD
GND
VCC3V3
J7
VREFAB
VREFCD
VINA
VINB
GND
VCC3V3
6 Pin Header
Accesory
J1
J1-IO1
J1-IO2
J1-IO3
J1-IO4
GND
VCC3V3
J2
J2-IO1
J2-IO2
J2-IO3
J2-IO4
GND
VCC3V3
J4
J4-IO1
J4-IO2
J4-IO3
J4-IO4
GND
VCC3V3
Full Size Soft Touch
A1
FX2-IO01
FX2-IO02
FX2-IO05
FX2-IO06
FX2-IO09
FX2-IO010
FX2-IO013
FX2-IO014
GND
FX2-IO017
FX2-IO018
FX2-IO03
FX2-IO04
FX2-IO07
FX2-IO08
FX2-IO011
FX2-IO012
FX2-IO015
FX2-IO016
GND
No
Load
J6
JTAG Scan Chain
FX2
JTAG
USB
Download
S3E FPGA
XCF04S
XCF04S
XC2C64
No Load on 500die
SPARTAN 3E
Spartan 3E 1600 Board
Digilent Inc. Copyright 2005, 2006
Engineer: CC
SHEET: Hirose and Expansion Connectors
Author: GMA
TITLE: S3E-1600
Rev: A
Doc#: 500-108
Date: 3/14/06
Sheet:1/14
Xilinx.com
SPARTAN 3E
Designed and Manufactured by Digilent Inc.
Linear Technology
Micron
Intel Strataflash
SMSC
Texas Instruments
Xilinx Platform Flash
ST Micro
WEEE



Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: RS232, VGA, PS2 and Parallel IV		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet: 2/14

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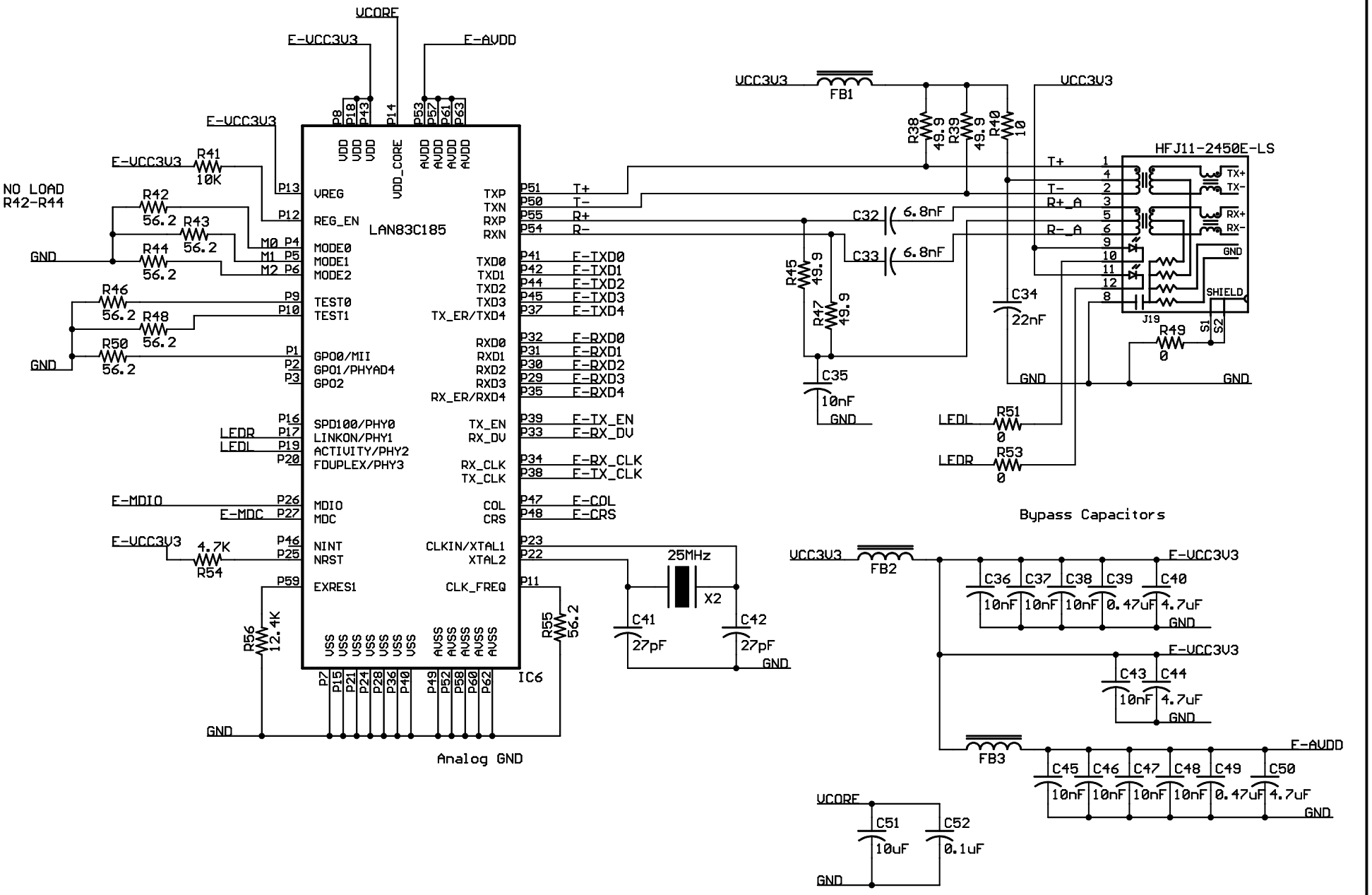
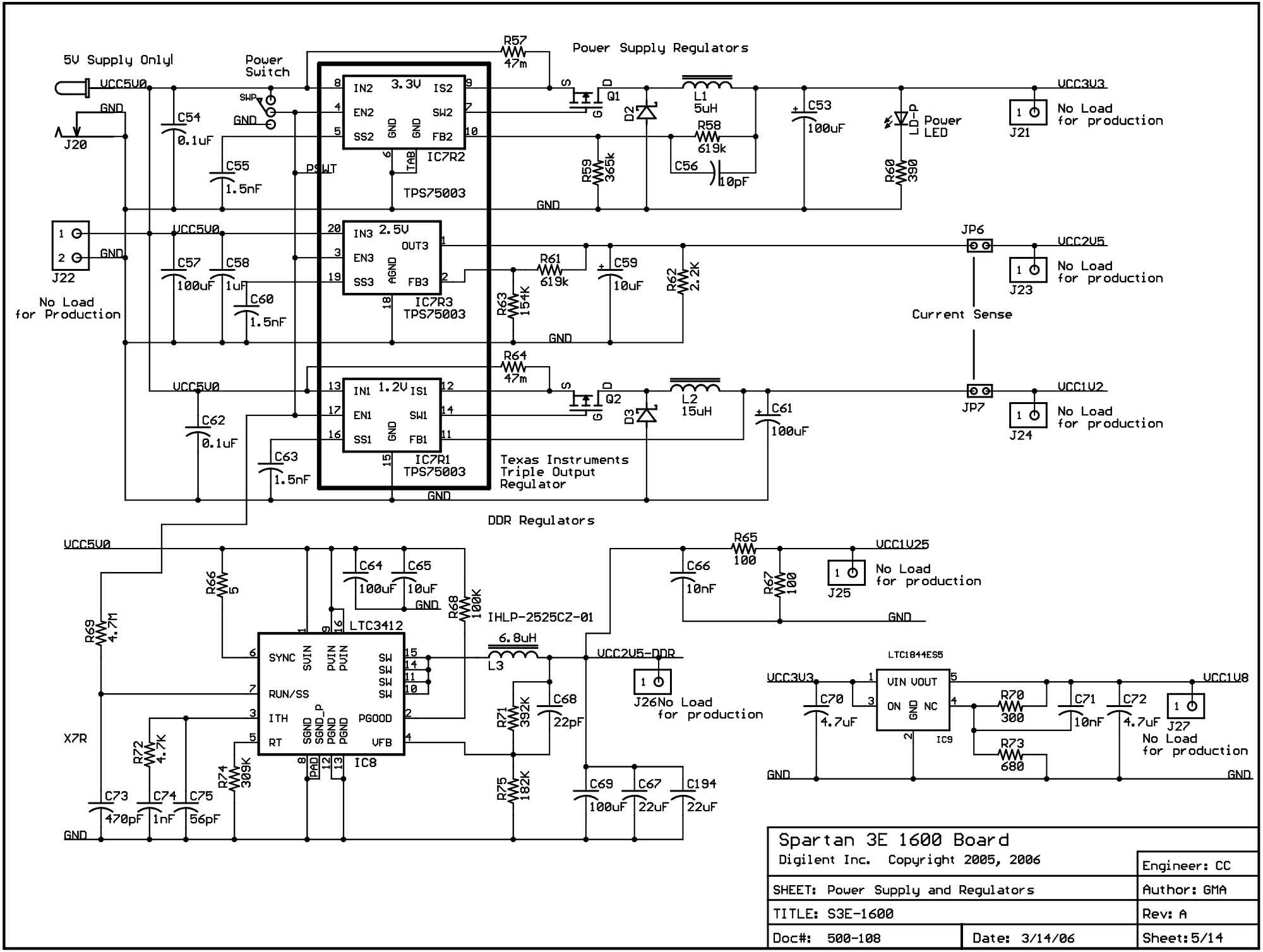
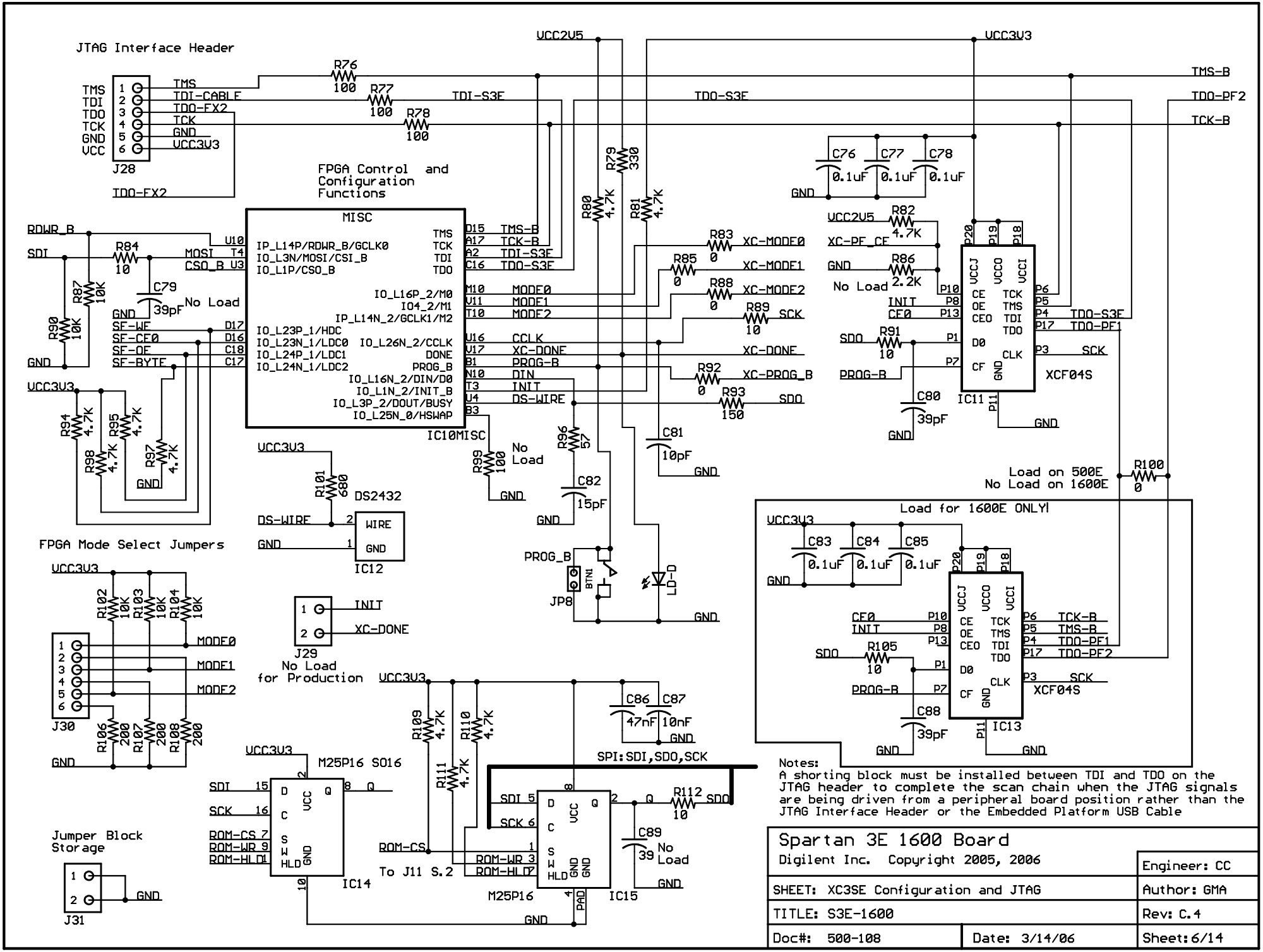
(This page outlines the Xilinx ® proprietary USB 2.0 layout/interface.)

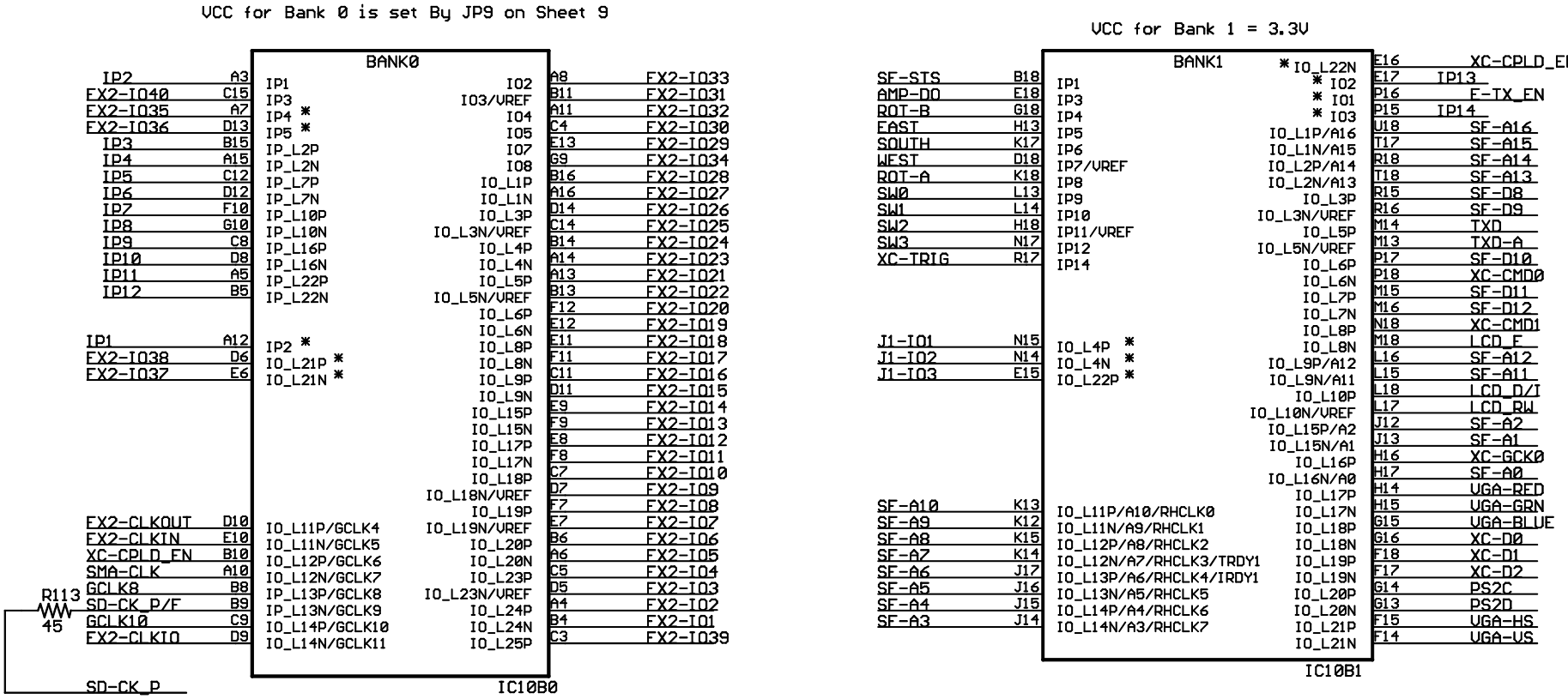


Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: Ethernet Interface		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet: 4/14



Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: Power Supply and Regulators		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet:5/14


JTAG Interface Header
J28
TMS
TDI
TDO
TCK
GND
VCC3V3
TDO-FX2
R76 100
R77 100
R78 100
TDI-S3E
TDO-S3E
VCC2V5
VCC3V3
TMS-B
TDO-PF2
TCK-B
FPGA Control and Configuration Functions
MISC
IP_L14P/RDWR_B/GCLK0
IO_L3N/MOSI/CSI_B
IO_L1P/CSO_B
IO_L16P_2/M0
IO4_2/M1
IP_L14N_2/GCLK1/M2
IO_L23P_1/HDC
IO_L23N_1/LDC0
IO_L24P_1/LDC1
IO_L24N_1/LDC2
IO_L26N_2/CCLK
DONE
PROG_B
IO_L16N_2/DIN/D0
IO_L1N_2/INIT_B
IO_L3P_2/DOUT/BUSY
IO_L25N_0/HSWAP
IC10MISC
RDWR_B
SDI
SF-WE
SF-CE0
SF-OE
SF-BYTE
R84 10
R87 10K
R90 10K
C79 39pF No Load
R79 330
R80 4.7K
R81 4.7K
R83 0 XC-MODE0
R85 0 XC-MODE1
R88 0 XC-MODE2
R89 10 SCK
R92 0 XC-PROG_B
R93 150 SDO
R96 57
R99 100 No Load
C81 10pF
C82 15pF
C76 0.1uF
C77 0.1uF
C78 0.1uF
R82 4.7K
R86 2.2K No Load
XC-PF_CE
IC11
XCF04S
C80 39pF
R91 10
R100 0
Load on 500E
No Load on 1600E
Load for 1600E ONLY!
C83 0.1uF
C84 0.1uF
C85 0.1uF
R105 10
C88 39pF
IC13
XCF04S
R94 4.7K
R95 4.7K
R97 4.7K
R98 4.7K
R101 680
DS2432
IC12
FPGA Mode Select Jumpers
R102 10K
R103 10K
R104 10K
R106 200
R107 200
R108 200
J30
MODE0
MODE1
MODE2
J29
No Load for Production
INIT
XC-DONE
JP8
BTN1
LD-D
PROG_B
SPI:SDI,SDO,SCK
C86 47nF
C87 10nF
R109 4.7K
R110 4.7K
R111 4.7K
R112 10
C89 39 No Load
M25P16 SO16
IC14
M25P16
IC15
ROM-CS
ROM-WR
ROM-HLD
To J11 S.2
Jumper Block Storage
J31
Notes:
A shorting block must be installed between TDI and TDO on the JTAG header to complete the scan chain when the JTAG signals are being driven from a peripheral board position rather than the JTAG Interface Header or the Embedded Platform USB Cable
Spartan 3E 1600 Board
Digilent Inc. Copyright 2005, 2006
Engineer: CC
SHEET: XC3SE Configuration and JTAG
Author: GMA
TITLE: S3E-1600
Rev: C.4
Doc#: 500-108
Date: 3/14/06
Sheet: 6/14

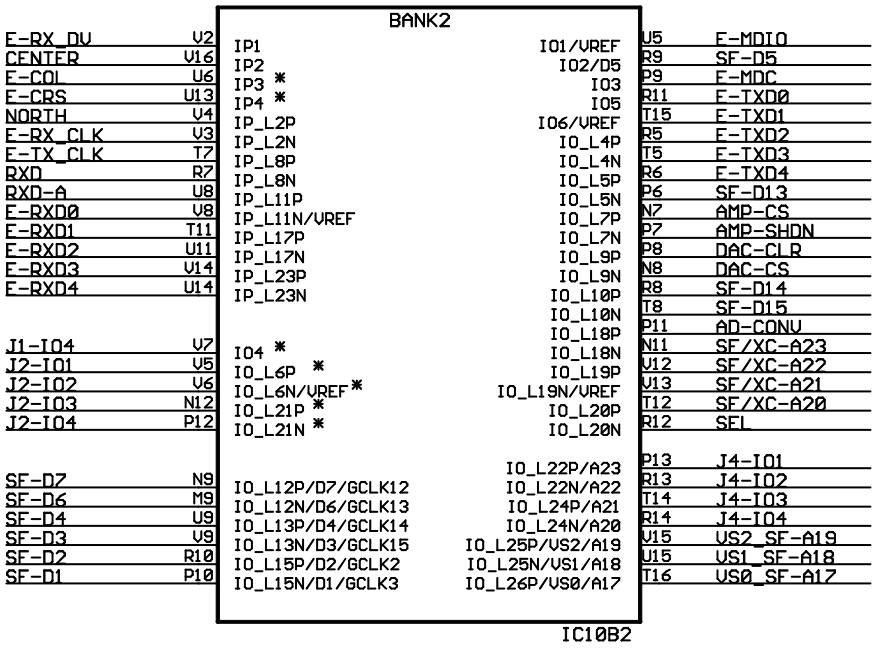


AD - A/D Converter (11)
AMP - Gain Amplifier (11)
DAC - D/A converter (11)
E- Ethernet (4)
FX2 - Hirose FX2 Connector (1)
ROM - M25P16 (6)
SD- SD RAM (12)
SF - StrataFlash (12)
ST - Soft Touch Connector (1)
U - USB (3)
XC - XC9572 (10)

* Notes are for pins that very between 500/1200/1600 dies

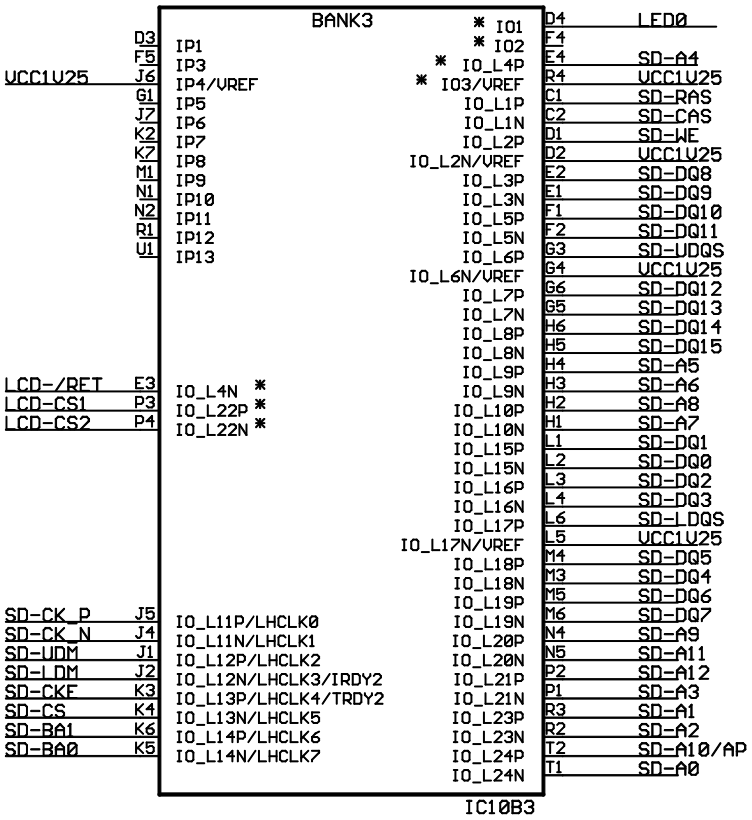
Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: XC3SE Banks 0 and 1, Clock ICs		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet: 7/14

Vcc for Bank 2 = 3.3V

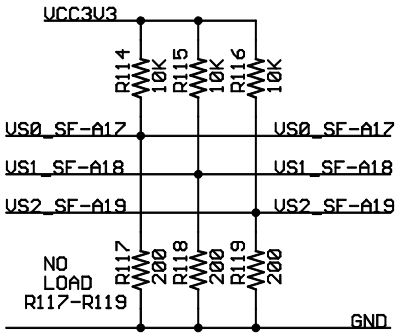


IC10B2

VCC vor Bank 3 = 2.5V DDR



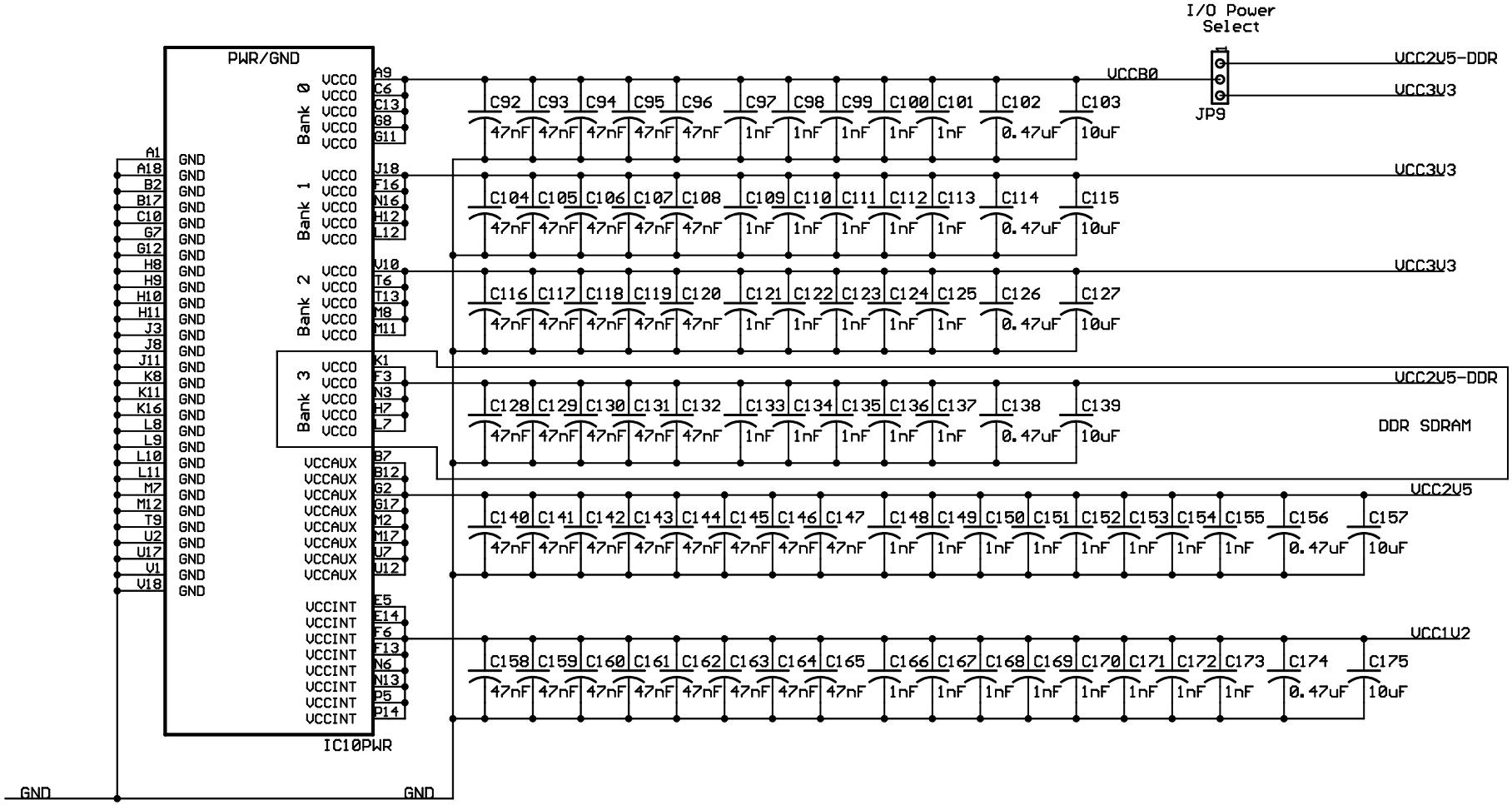
IC10B3



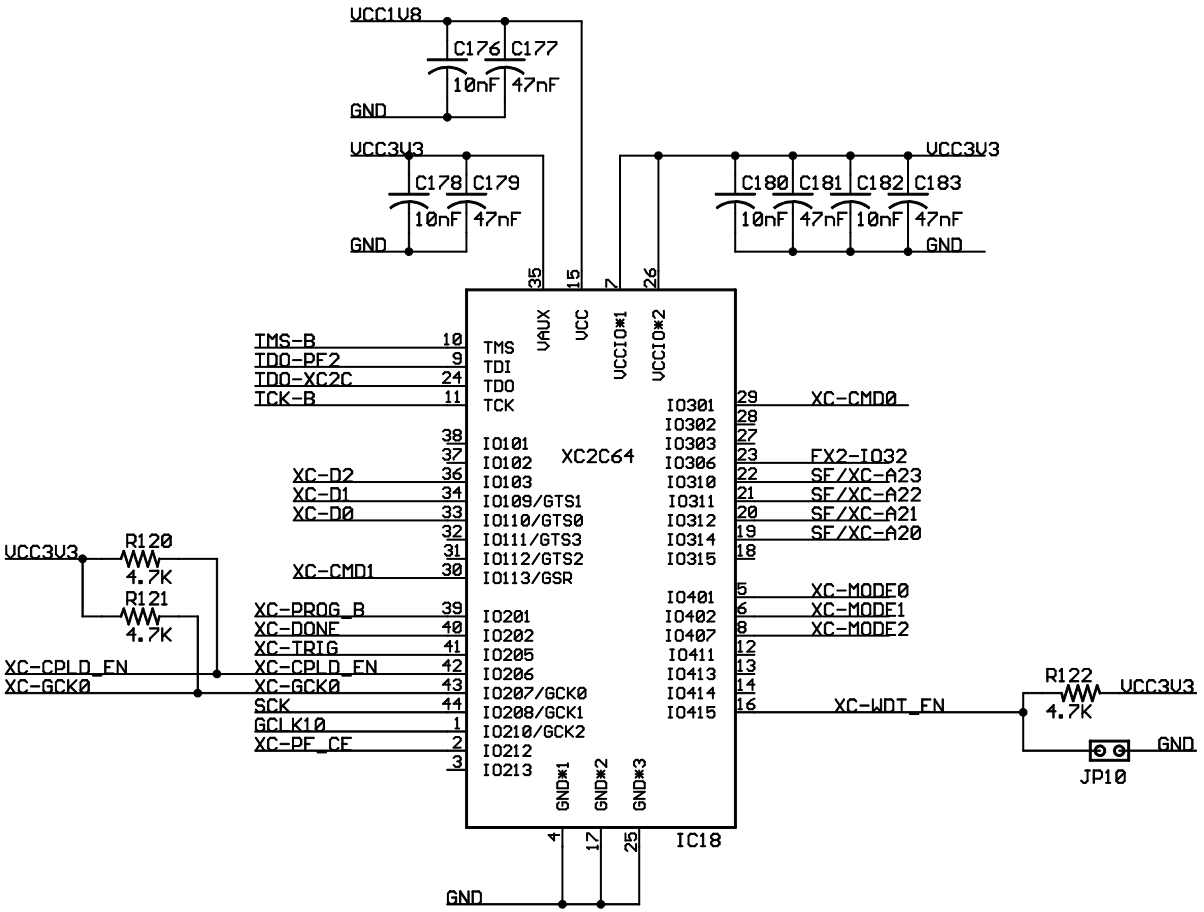
AD - A/D Converter (11)
AMP - Gain Amplifier (11)
DAC - D/A converter (11)
E- Ethernet (4)
FX2 - Hirose FX2 Connector (1)
ROM - M25P16 (6)
SD- SD RAM (12)
SF - StrataFlash (12)
ST - Soft Touch Connector (1)
U - USB (3)
XC - XC9572 (10)

* Notes are for pins that very between 500/1200/1600 dies

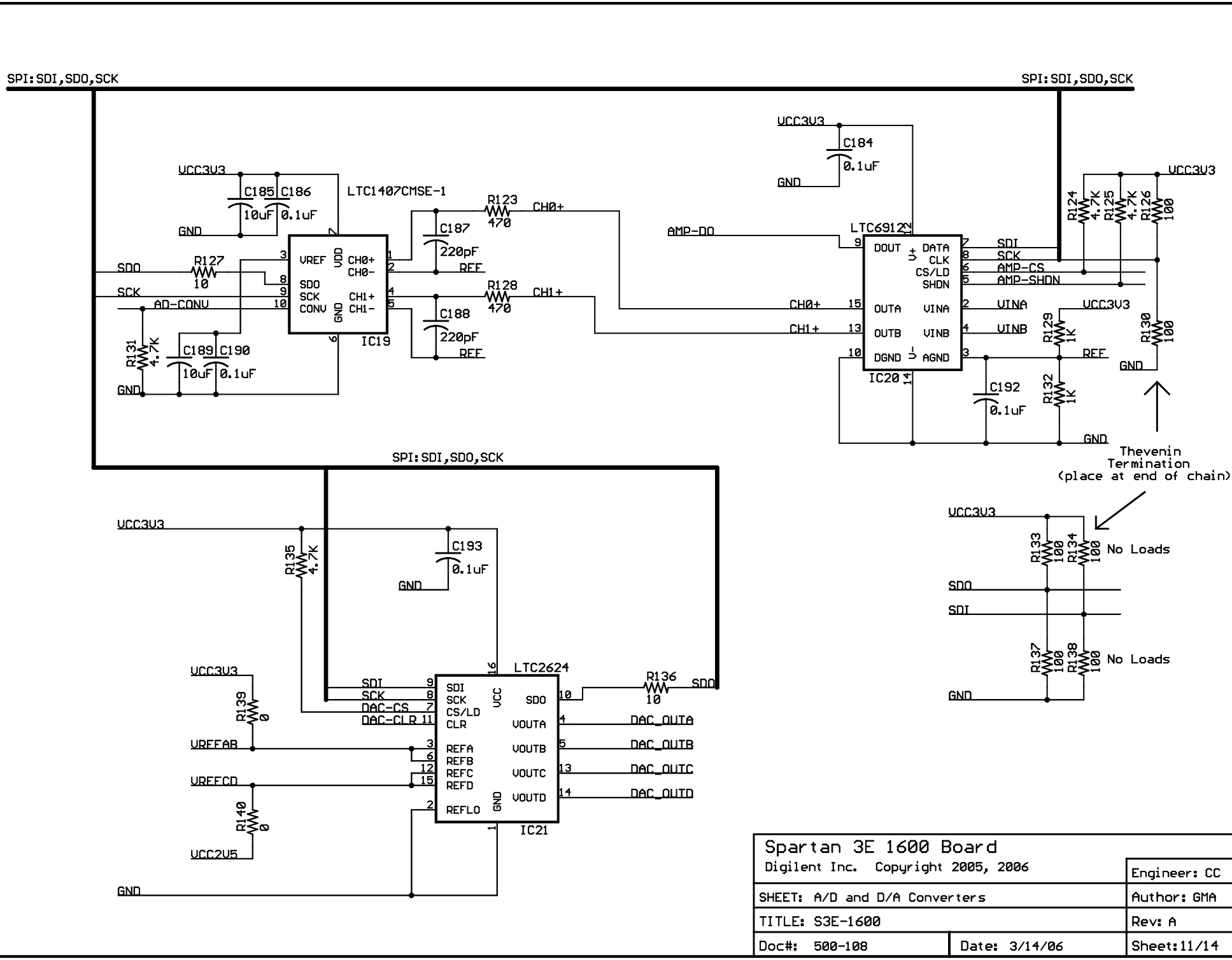
Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: XC3SE Banks 2 and 3		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet: 8/14

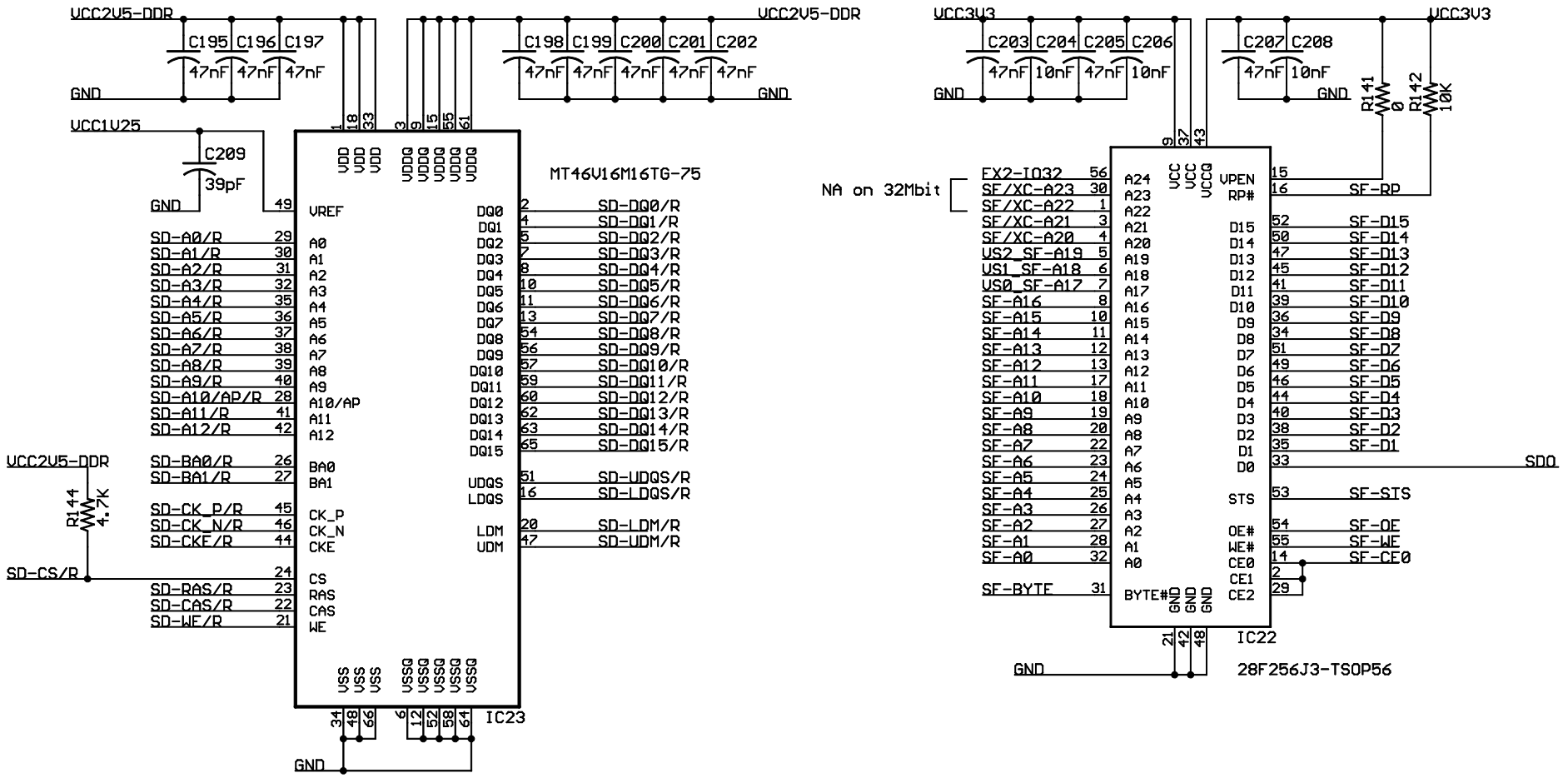


Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: XC3SE Power Decoupling		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet: 9/14



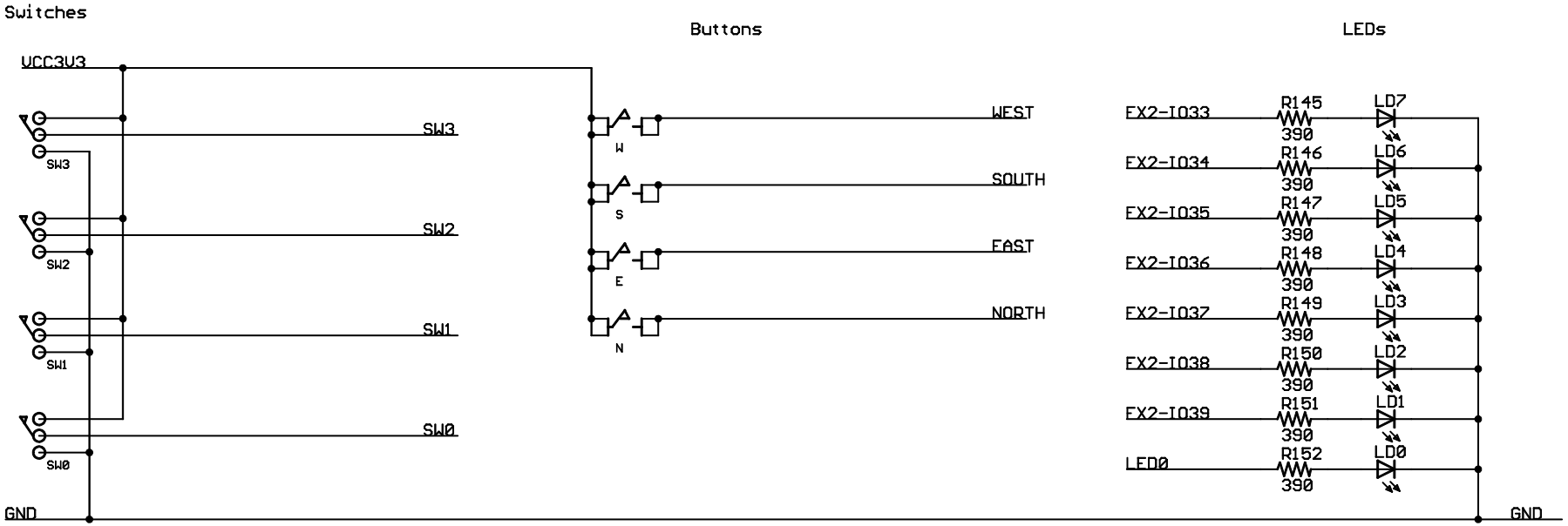
Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: XC2C64 CPLD		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet:10/14

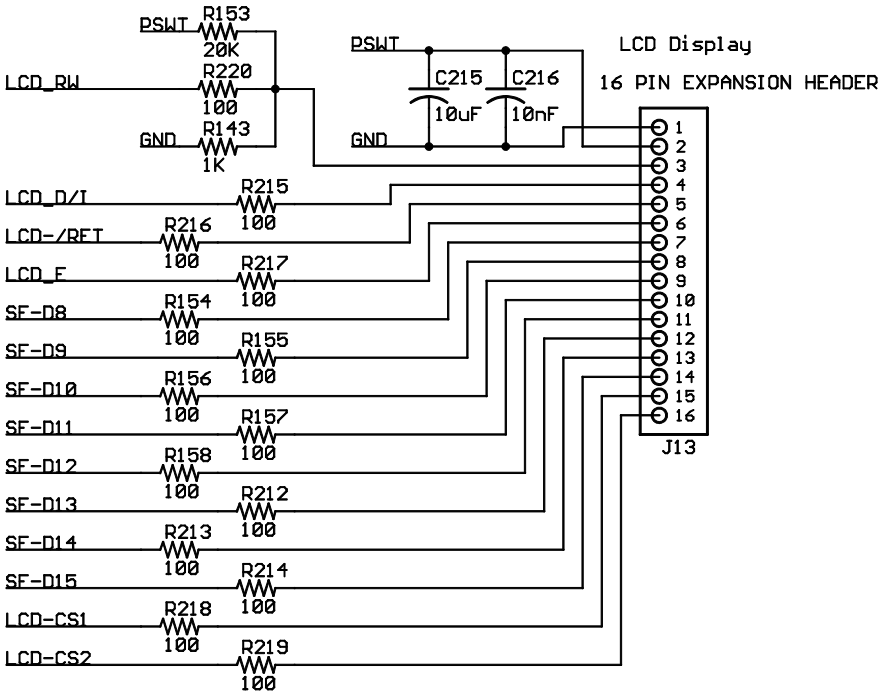

SPI:SDI,SDO,SCK
SPI:SDI,SDO,SCK
SPI:SDI,SDO,SCK
VCC3V3
C185
C186
10uF
0.1uF
GND
LTC1407CMSE-1
VREF
VDD
CH0+
CH0-
SDO
SCK
CONV
GND
CH1+
CH1-
IC19
R123
470
CH0+
C187
220pF
REF
R128
470
CH1+
C188
220pF
REF
R127
10
SDO
SCK
AD-CONV
R131
4.7K
C189
C190
10uF
0.1uF
GND
C184
0.1uF
GND
AMP-DO
LTC6912
DOUT
V+
DATA
CLK
CS/LD
SHDN
OUTA
VINA
OUTB
VINB
DGND
V-
AGND
IC20
SDI
SCK
AMP-CS
AMP-SHDN
VINA
VINB
CH0+
CH1+
R124
4.7K
R125
4.7K
R126
100
R129
1K
R130
100
R132
1K
C192
0.1uF
REF
GND
GND
Thevenin
Termination
(place at end of chain)
VCC3V3
R133
100
R134
100
No Loads
SDO
SDI
R137
100
R138
100
No Loads
GND
VCC3V3
R135
4.7K
C193
0.1uF
GND
LTC2624
SDI
SCK
CS/LD
CLR
REFA
REFB
REFC
REFD
REFLO
VCC
GND
SDO
VOUTA
VOUTB
VOUTC
VOUTD
IC21
SDI
SCK
DAC-CS
DAC-CLR
R136
10
SDO
DAC_OUTA
DAC_OUTB
DAC_OUTC
DAC_OUTD
VCC3V3
R139
0
VREFAB
VREFCD
R140
0
VCC2V5
GND
Spartan 3E 1600 Board
Digilent Inc. Copyright 2005, 2006
Engineer: CC
SHEET: A/D and D/A Converters
Author: GMA
TITLE: S3E-1600
Rev: A
Doc#: 500-108
Date: 3/14/06
Sheet:11/14

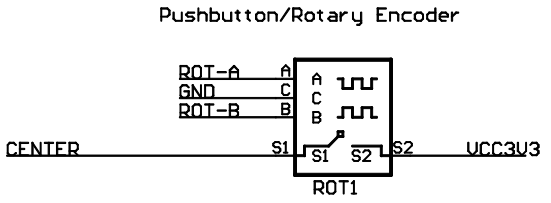


NOTE: Termination network for IC20, the MT46V16M16TG-75 on sheet 14

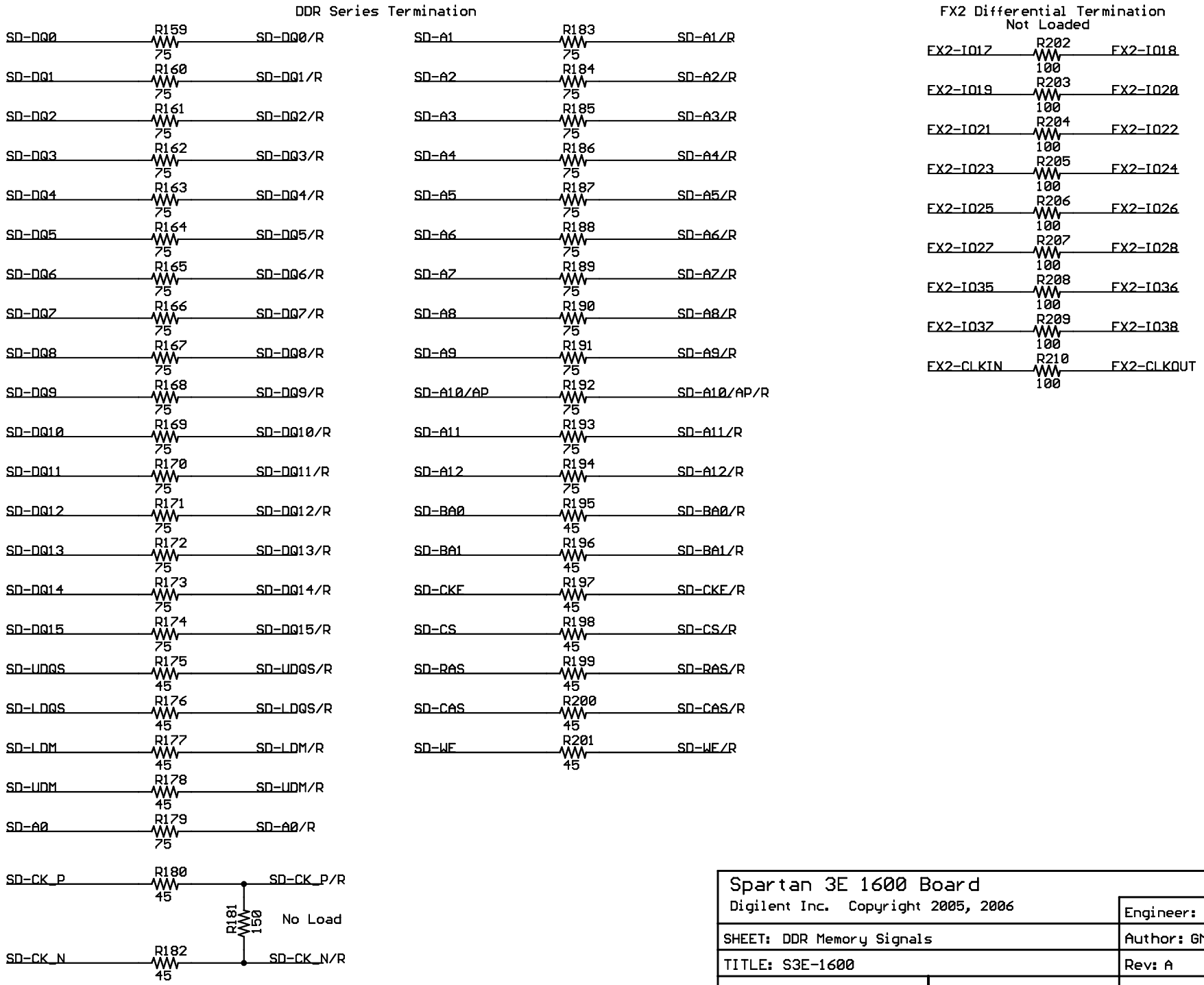
Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: DDR SDRAM and StrataFlash		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet:12/14







Spartan 3E 1600 Board Digilent Inc. Copyright 2005, 2006		Engineer: CC
SHEET: LCD and General IOs		Author: GMA
TITLE: S3E-1600		Rev: A
Doc#: 500-108	Date: 3/14/06	Sheet:13/14


DDR Series Termination
SD-DQ0
R159
75
SD-DQ0/R
SD-DQ1
R160
75
SD-DQ1/R
SD-DQ2
R161
75
SD-DQ2/R
SD-DQ3
R162
75
SD-DQ3/R
SD-DQ4
R163
75
SD-DQ4/R
SD-DQ5
R164
75
SD-DQ5/R
SD-DQ6
R165
75
SD-DQ6/R
SD-DQ7
R166
75
SD-DQ7/R
SD-DQ8
R167
75
SD-DQ8/R
SD-DQ9
R168
75
SD-DQ9/R
SD-DQ10
R169
75
SD-DQ10/R
SD-DQ11
R170
75
SD-DQ11/R
SD-DQ12
R171
75
SD-DQ12/R
SD-DQ13
R172
75
SD-DQ13/R
SD-DQ14
R173
75
SD-DQ14/R
SD-DQ15
R174
75
SD-DQ15/R
SD-UDQS
R175
45
SD-UDQS/R
SD-LDQS
R176
45
SD-LDQS/R
SD-LDM
R177
45
SD-LDM/R
SD-UDM
R178
45
SD-UDM/R
SD-A0
R179
75
SD-A0/R
SD-CK_P
R180
45
SD-CK_P/R
R181
150
No Load
SD-CK_N
R182
45
SD-CK_N/R
SD-A1
R183
75
SD-A1/R
SD-A2
R184
75
SD-A2/R
SD-A3
R185
75
SD-A3/R
SD-A4
R186
75
SD-A4/R
SD-A5
R187
75
SD-A5/R
SD-A6
R188
75
SD-A6/R
SD-A7
R189
75
SD-A7/R
SD-A8
R190
75
SD-A8/R
SD-A9
R191
75
SD-A9/R
SD-A10/AP
R192
75
SD-A10/AP/R
SD-A11
R193
75
SD-A11/R
SD-A12
R194
75
SD-A12/R
SD-BA0
R195
45
SD-BA0/R
SD-BA1
R196
45
SD-BA1/R
SD-CKE
R197
45
SD-CKE/R
SD-CS
R198
45
SD-CS/R
SD-RAS
R199
45
SD-RAS/R
SD-CAS
R200
45
SD-CAS/R
SD-WE
R201
45
SD-WE/R
FX2 Differential Termination
Not Loaded
FX2-IO17
R202
100
FX2-IO18
FX2-IO19
R203
100
FX2-IO20
FX2-IO21
R204
100
FX2-IO22
FX2-IO23
R205
100
FX2-IO24
FX2-IO25
R206
100
FX2-IO26
FX2-IO27
R207
100
FX2-IO28
FX2-IO35
R208
100
FX2-IO36
FX2-IO37
R209
100
FX2-IO38
FX2-CLKIN
R210
100
FX2-CLKOUT
Spartan 3E 1600 Board
Digilent Inc. Copyright 2005, 2006
Engineer: CC
SHEET: DDR Memory Signals
Author: GMA
TITLE: S3E-1600
Rev: A
Doc#: 500-108
Date: 3/14/06
Sheet:14/14