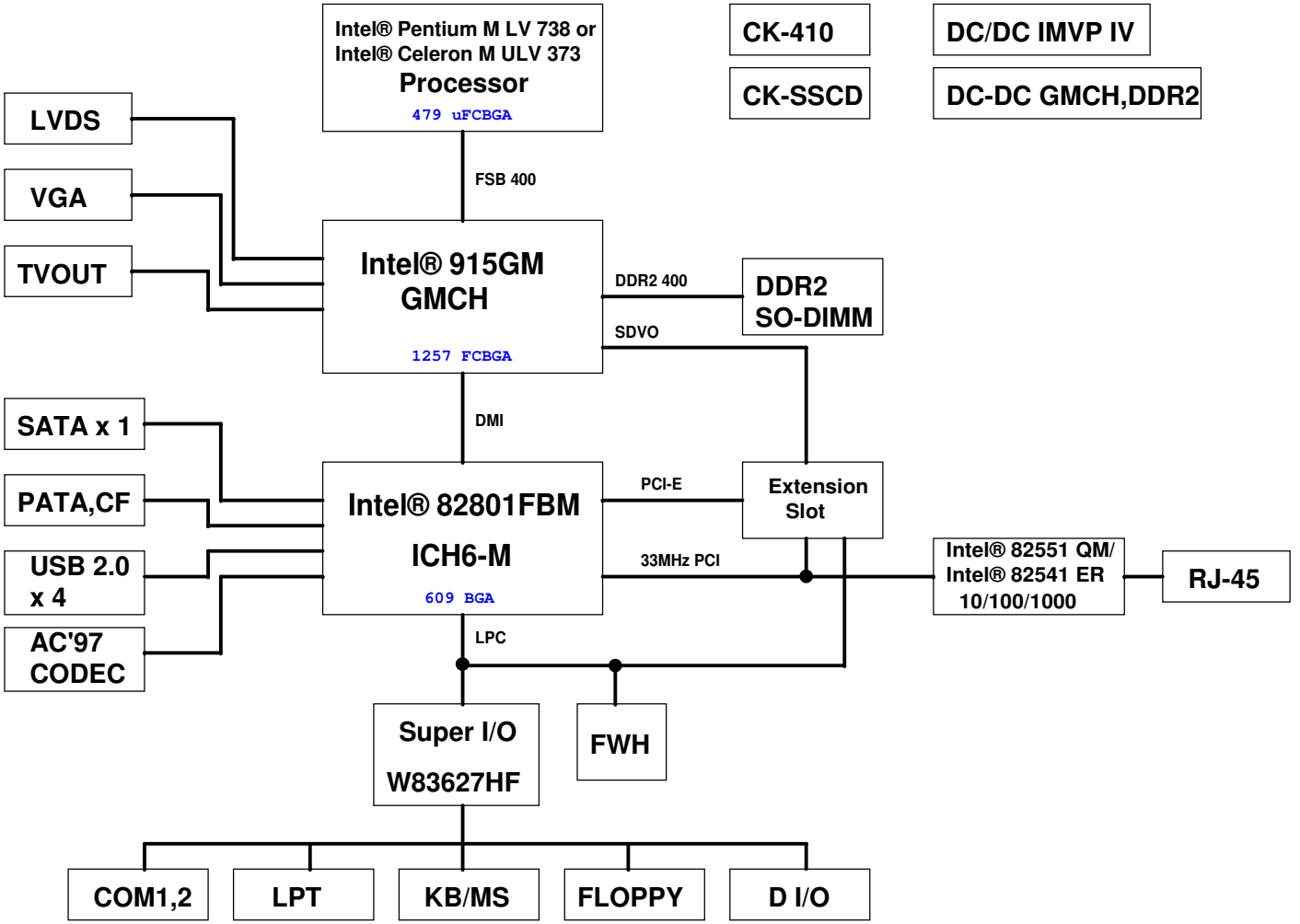
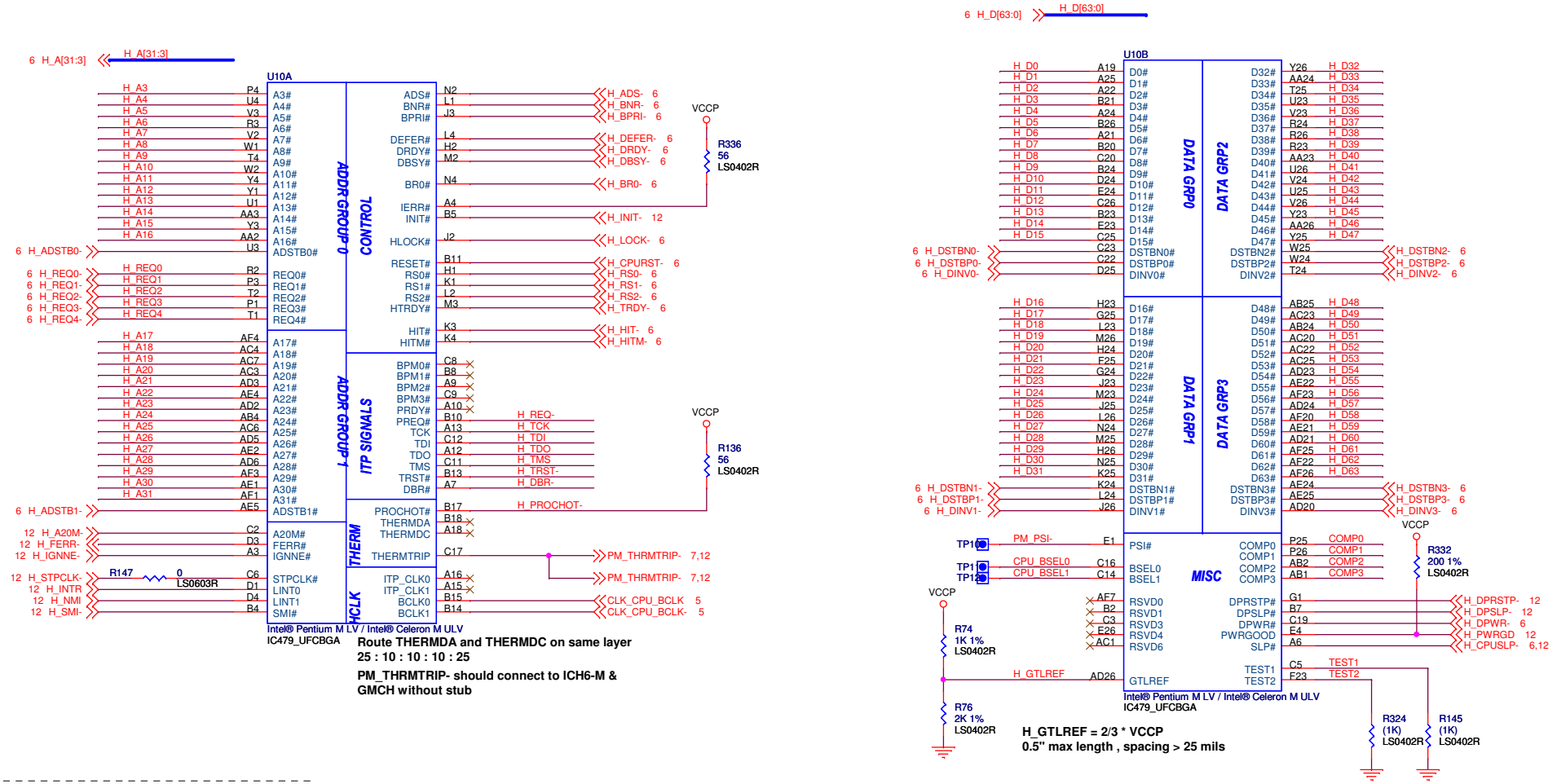
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

ON BOARD PCI_LAN/AD20/INT-D/REQ0
PCI1/AD17/INT-FGHD/REQ1
PCI2/AD18/INT-GHDF/REQ2

Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: Cover Sheet		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 1 of 28	



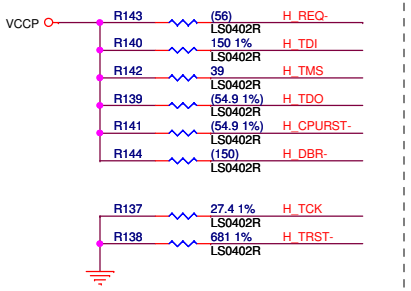
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset			
Title: BLOCK DIAGRAM			
Size: B	Document Number		Rev: 1.0
Date: Monday, January 09, 2006	Sheet 2 of 28		



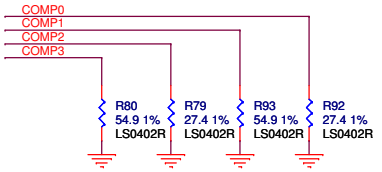
Route THERMDA and THERMDC on same layer
25 : 10 : 10 : 10 : 25

PM_THRMTRIP- should connect to ICH6-M & GMCH without stub

H_GTLREF = 2/3 * VCCP
0.5" max length , spacing > 25 mils



Placement within 2.0" of the CPU



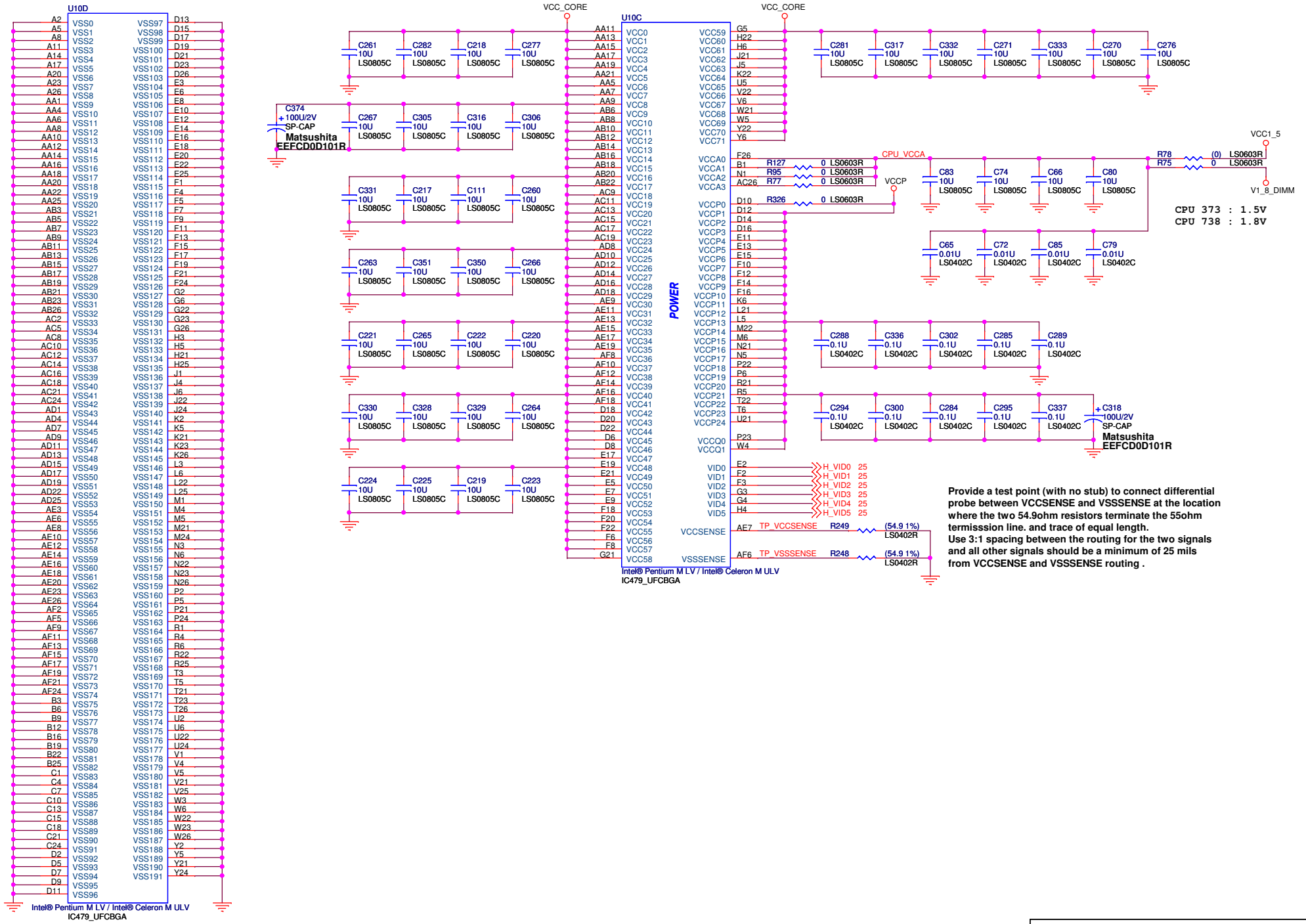
COMP0 and CPMP2 need to be Zo=27.4ohm traces. Best estimate is 18mil wide trace for outer layer and 14mil if on internal layer. See RDDP of Banias. Traces COMP1, COMP3 should be routed as Zo=55ohm traces shorter than 0.5"

Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

Title: CPU 1 of 2

Size	Document Number	Rev
B		1.0

Date: Monday, January 09, 2006 Sheet 3 of 28

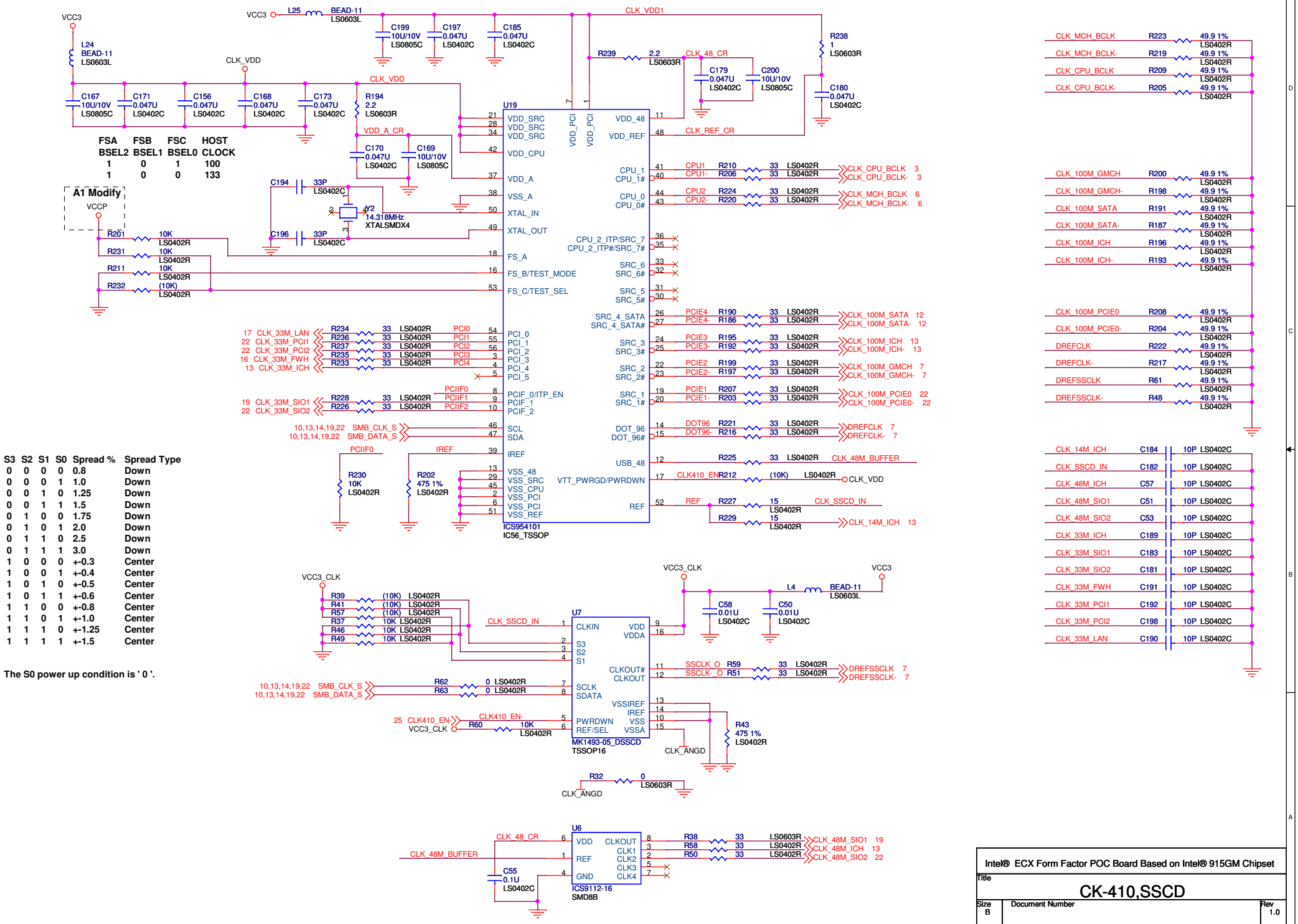


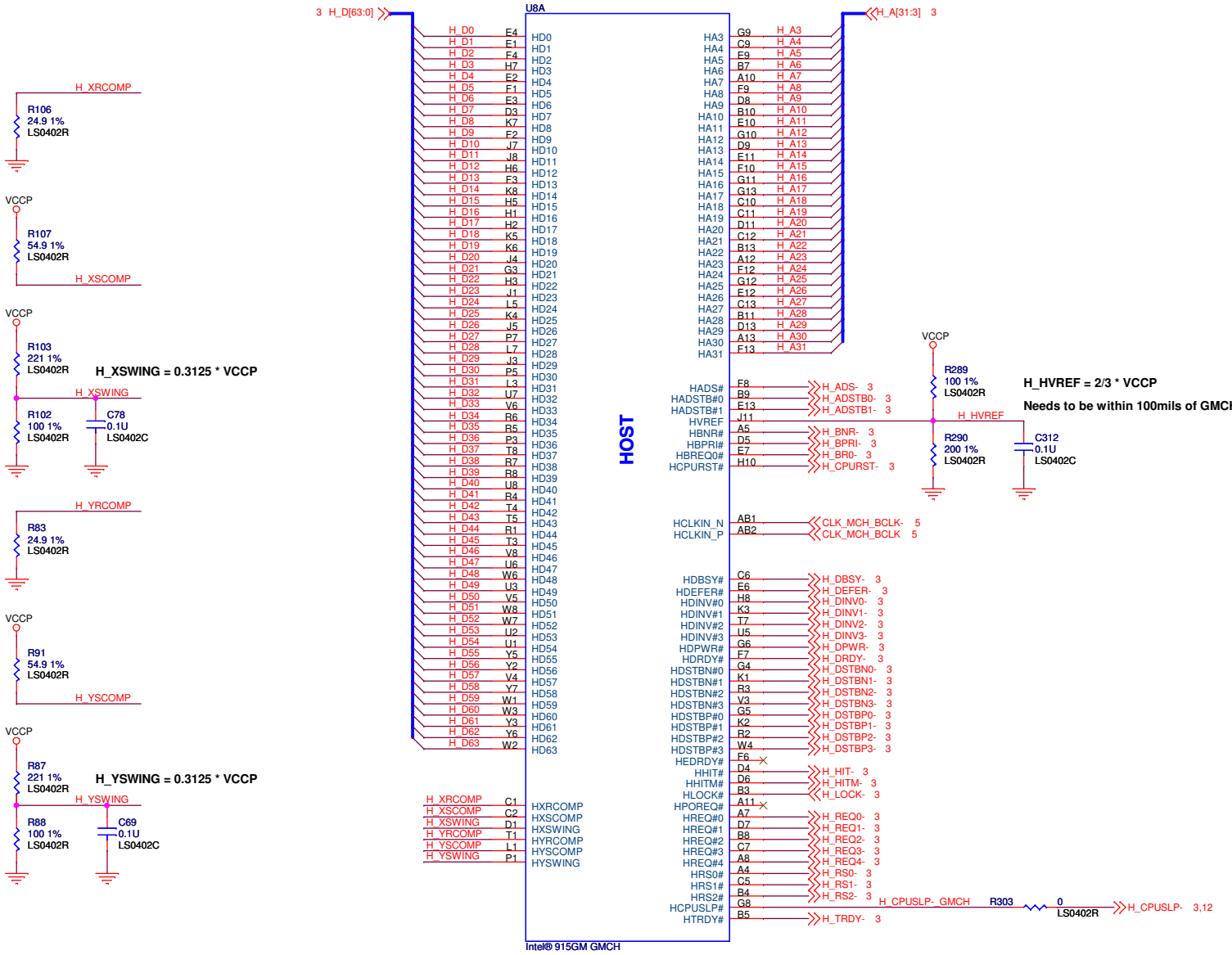
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

Title: CPU 2 of 2

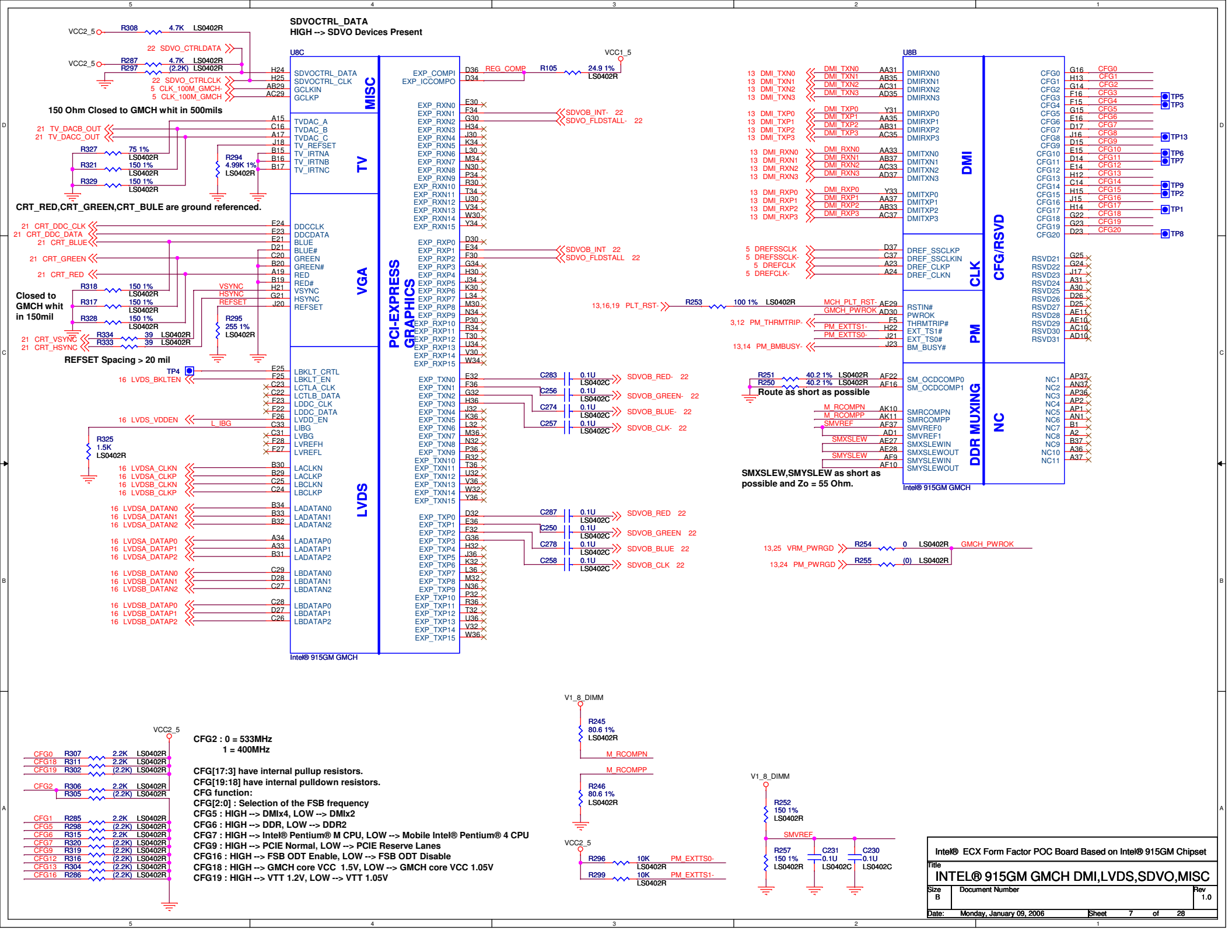
Size	Document Number	Rev
B		1.0

Date: Monday, January 09, 2006 Sheet 4 of 28


VCC3
L25 BEAD-11 LS0603L
C199 10U/10V LS0805C
C197 0.047U LS0402C
C185 0.047U LS0402C
CLK_VDD1
L24 BEAD-11 LS0603L
CLK_VDD
C167 10U/10V LS0805C
C171 0.047U LS0402C
C156 0.047U LS0402C
C168 0.047U LS0402C
C173 0.047U LS0402C
R194 2.2 LS0603R
VDD_A_CR
C170 0.047U LS0402C
C169 10U/10V LS0805C
R239 2.2 LS0603R
CLK_48_CR
C179 0.047U LS0402C
C200 10U/10V LS0805C
R238 1 LS0603R
C180 0.047U LS0402C
CLK_REF_CR
U19
VDD_SRC
VDD_SRC
VDD_SRC
VDD_CPU
VDD_A
VSS_A
XTAL_IN
XTAL_OUT
FS_A
FS_B/TEST_MODE
FS_C/TEST_SEL
VDD_PCI
VDD_PCI
VDD_48
VDD_REF
CPU_1
CPU_1#
CPU_0
CPU_0#
CPU_2_ITP/SRC_7
CPU_2_ITP#/SRC_7#
SRC_6
SRC_6#
SRC_5
SRC_5#
SRC_4_SATA
SRC_4_SATA#
SRC_3
SRC_3#
SRC_2
SRC_2#
SRC_1
SRC_1#
DOT_96
DOT_96#
USB_48
VTT_PWRGD/PWRDWN
REF
PCI_0
PCI_1
PCI_2
PCI_3
PCI_4
PCI_5
PCIF_0/ITP_EN
PCIF_1
PCIF_2
SCL
SDA
IREF
VSS_48
VSS_SRC
VSS_CPU
VSS_PCI
VSS_PCI
VSS_REF
ICS954101
IC56_TSSOP
FSA BSEL2 FSB BSEL1 FSC BSEL0 HOST CLOCK
1 0 1 100
1 0 0 133
A1 Modify
VCCP
C194 33P LS0402C
C196 33P LS0402C
Y2 14.318MHz XTALSMDX4
R201 10K LS0402R
R231 10K LS0402R
R211 10K LS0402R
R232 (10K) LS0402R
CLK_CPU_BCLK
CLK_CPU_BCLK-
CLK_MCH_BCLK
CLK_MCH_BCLK-
CLK_100M_SATA
CLK_100M_SATA-
CLK_100M_ICH
CLK_100M_ICH-
CLK_100M_PCIE0
CLK_100M_PCIE0-
DREFCLK
DREFCLK-
DREFSSCLK
DREFSSCLK-
CLK_MCH_BCLK R223 49.9 1% LS0402R
CLK_MCH_BCLK- R219 49.9 1% LS0402R
CLK_CPU_BCLK R209 49.9 1% LS0402R
CLK_CPU_BCLK- R205 49.9 1% LS0402R
CLK_100M_GMCH R200 49.9 1% LS0402R
CLK_100M_GMCH- R198 49.9 1% LS0402R
CLK_100M_SATA R191 49.9 1% LS0402R
CLK_100M_SATA- R187 49.9 1% LS0402R
CLK_100M_ICH R196 49.9 1% LS0402R
CLK_100M_ICH- R193 49.9 1% LS0402R
CLK_100M_PCIE0 R208 49.9 1% LS0402R
CLK_100M_PCIE0- R204 49.9 1% LS0402R
DREFCLK R222 49.9 1% LS0402R
DREFCLK- R217 49.9 1% LS0402R
DREFSSCLK R61 49.9 1% LS0402R
DREFSSCLK- R48 49.9 1% LS0402R
CLK_14M_ICH C184 10P LS0402C
CLK_SSCD_IN C182 10P LS0402C
CLK_48M_ICH C57 10P LS0402C
CLK_48M_SIO1 C51 10P LS0402C
CLK_48M_SIO2 C53 10P LS0402C
CLK_33M_ICH C189 10P LS0402C
CLK_33M_SIO1 C183 10P LS0402C
CLK_33M_SIO2 C181 10P LS0402C
CLK_33M_FWH C191 10P LS0402C
CLK_33M_PCI1 C192 10P LS0402C
CLK_33M_PCI2 C198 10P LS0402C
CLK_33M_LAN C190 10P LS0402C
R234 33 LS0402R PCI0
R236 33 LS0402R PCI1
R237 33 LS0402R PCI2
R235 33 LS0402R PCI3
R233 33 LS0402R PCI4
CLK_33M_LAN
CLK_33M_PCI1
CLK_33M_PCI2
CLK_33M_FWH
CLK_33M_ICH
R228 33 LS0402R PCIIF1
R226 33 LS0402R PCIIF2
PCIIF0
CLK_33M_SIO1
CLK_33M_SIO2
SMB_CLK_S
SMB_DATA_S
R230 10K LS0402R
R202 475 1% LS0402R
IREF
R225 33 LS0402R CLK_48M_BUFFER
CLK410_EN
R212 (10K) LS0402R CLK_VDD
REF
R227 15 LS0402R CLK_SSCD_IN
R229 15 LS0402R CLK_14M_ICH
ICS954101
IC56_TSSOP
S3 S2 S1 S0 Spread % Spread Type
0 0 0 0 0.8 Down
0 0 0 1 1.0 Down
0 0 1 0 1.25 Down
0 0 1 1 1.5 Down
0 1 0 0 1.75 Down
0 1 0 1 2.0 Down
0 1 1 0 2.5 Down
0 1 1 1 3.0 Down
1 0 0 0 +-0.3 Center
1 0 0 1 +-0.4 Center
1 0 1 0 +-0.5 Center
1 0 1 1 +-0.6 Center
1 1 0 0 +-0.8 Center
1 1 0 1 +-1.0 Center
1 1 1 0 +-1.25 Center
1 1 1 1 +-1.5 Center
The S0 power up condition is ' 0 '.
VCC3_CLK
R39 (10K) LS0402R
R41 (10K) LS0402R
R57 (10K) LS0402R
R37 10K LS0402R
R46 10K LS0402R
R49 10K LS0402R
U7
CLKIN
S3
S2
S1
SCLK
SDATA
PWRDWN
REF/SEL
VDD
VDDA
CLKOUT#
CLKOUT
VSSIREF
IREF
VSS
VSSA
MK1493-05_DSSCD
TSSOP16
L4 BEAD-11 LS0603L
C58 0.01U LS0402C
C50 0.01U LS0402C
SSCLK_O
SSCLK-_O
R59 33 LS0402R
R51 33 LS0402R
DREFSSCLK
DREFSSCLK-
R62 0 LS0402R
R63 0 LS0402R
CLK410_EN-
R60 10K LS0402R
R43 475 1% LS0402R
CLK_ANGD
R32 0 LS0603R
U6
CLK_48_CR
CLK_48M_BUFFER
C55 0.1U LS0402C
VDD
REF
GND
CLKOUT
CLK1
CLK2
CLK3
CLK4
ICS9112-16
SMD8B
R38 33 LS0603R
R58 33 LS0402R
R50 33 LS0402R
CLK_48M_SIO1
CLK_48M_ICH
CLK_48M_SIO2
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
CK-410,SSCD
Size B
Document Number
Rev 1.0
Date: Monday, January 09, 2006
Sheet 5 of 28



Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: INTEL® 915GM GMCH HOST		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 6 of 28	


SDVOCTRL_DATA
HIGH --> SDVO Devices Present
U8C
MISC
TV
VGA
LVDS
PCI-EXPRESS GRAPHICS
Intel® 915GM GMCH
U8B
DMI
CLK
PM
DDR MUXING
CFG/RSVD
NC
150 Ohm Closed to GMCH whit in 500mils
CRT_RED,CRT_GREEN,CRT_BULE are ground referenced.
Closed to GMCH whit in 150mil
REFSET Spacing > 20 mil
Route as short as possible
SMXSLEW,SMYSLEW as short as possible and Zo = 55 Ohm.
CFG2 : 0 = 533MHz
1 = 400MHz
CFG[17:3] have internal pullup resistors.
CFG[19:18] have internal pulldown resistors.
CFG function:
CFG[2:0] : Selection of the FSB frequency
CFG5 : HIGH --> DMIx4, LOW --> DMIx2
CFG6 : HIGH --> DDR, LOW --> DDR2
CFG7 : HIGH --> Intel® Pentium® M CPU, LOW --> Mobile Intel® Pentium® 4 CPU
CFG9 : HIGH --> PCIE Normal, LOW --> PCIE Reserve Lanes
CFG16 : HIGH --> FSB ODT Enable, LOW --> FSB ODT Disable
CFG18 : HIGH --> GMCH core VCC 1.5V, LOW --> GMCH core VCC 1.05V
CFG19 : HIGH --> VTT 1.2V, LOW --> VTT 1.05V
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
INTEL® 915GM GMCH DMI,LVDS,SDVO,MISC
Size B
Document Number
Rev 1.0
Date: Monday, January 09, 2006
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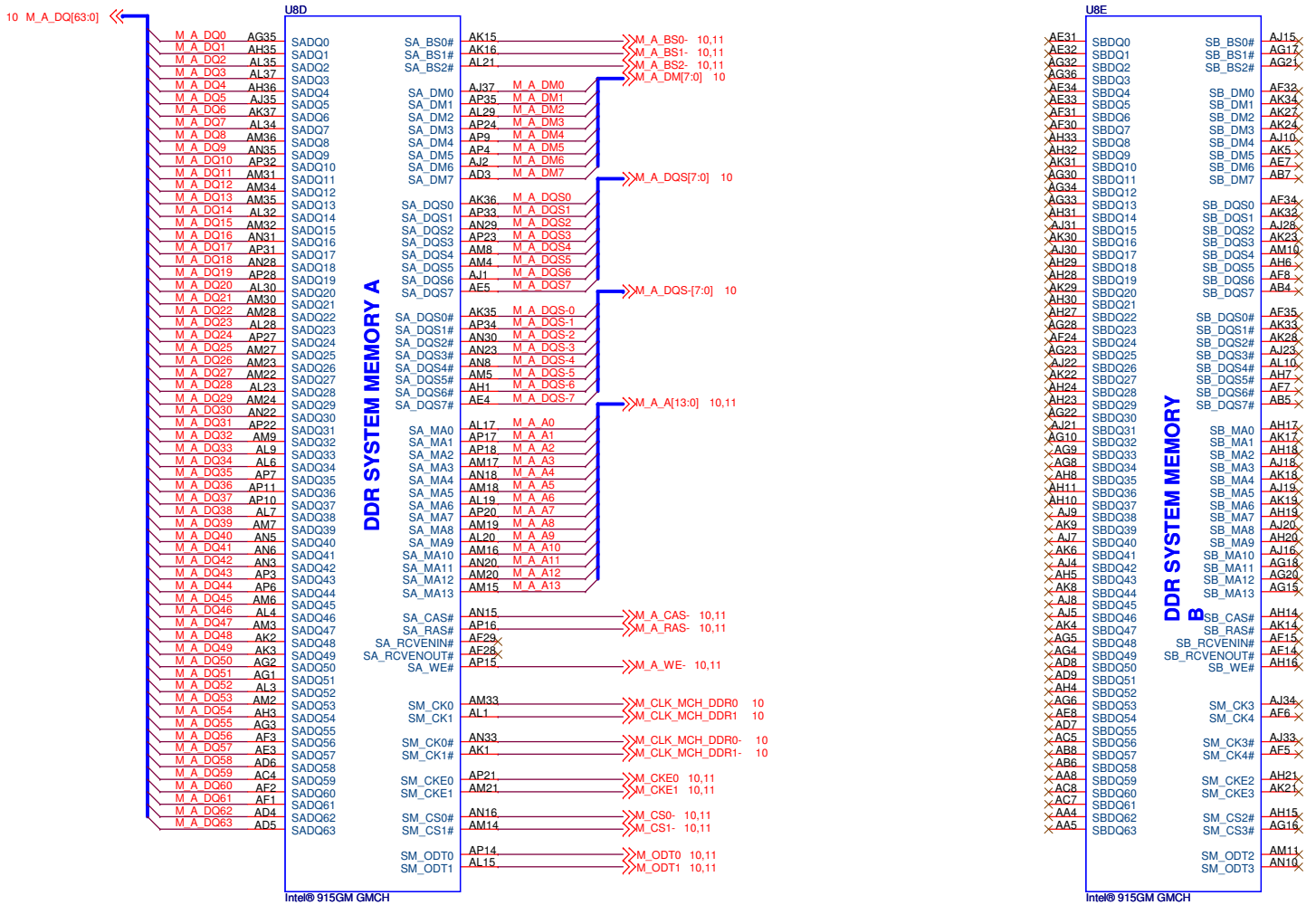
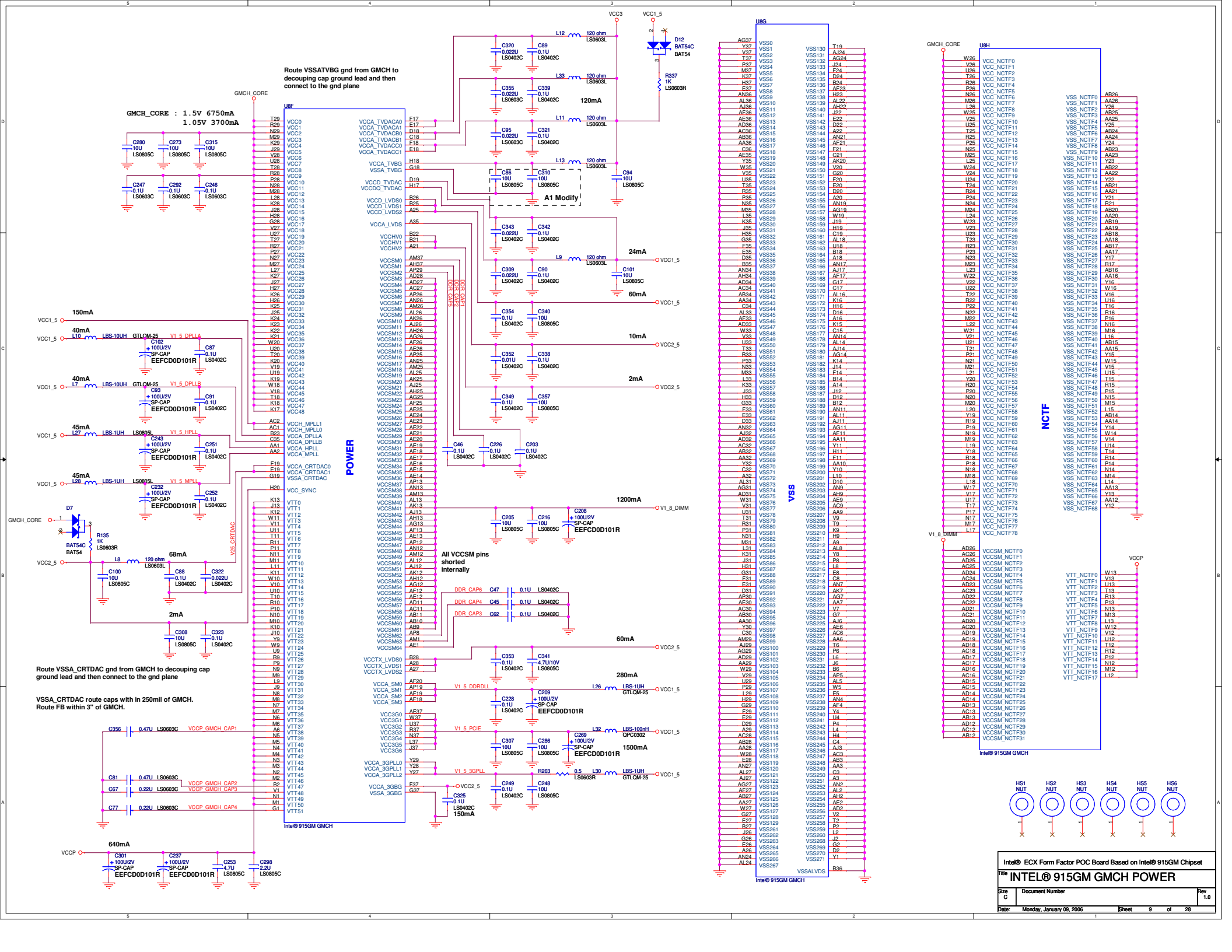


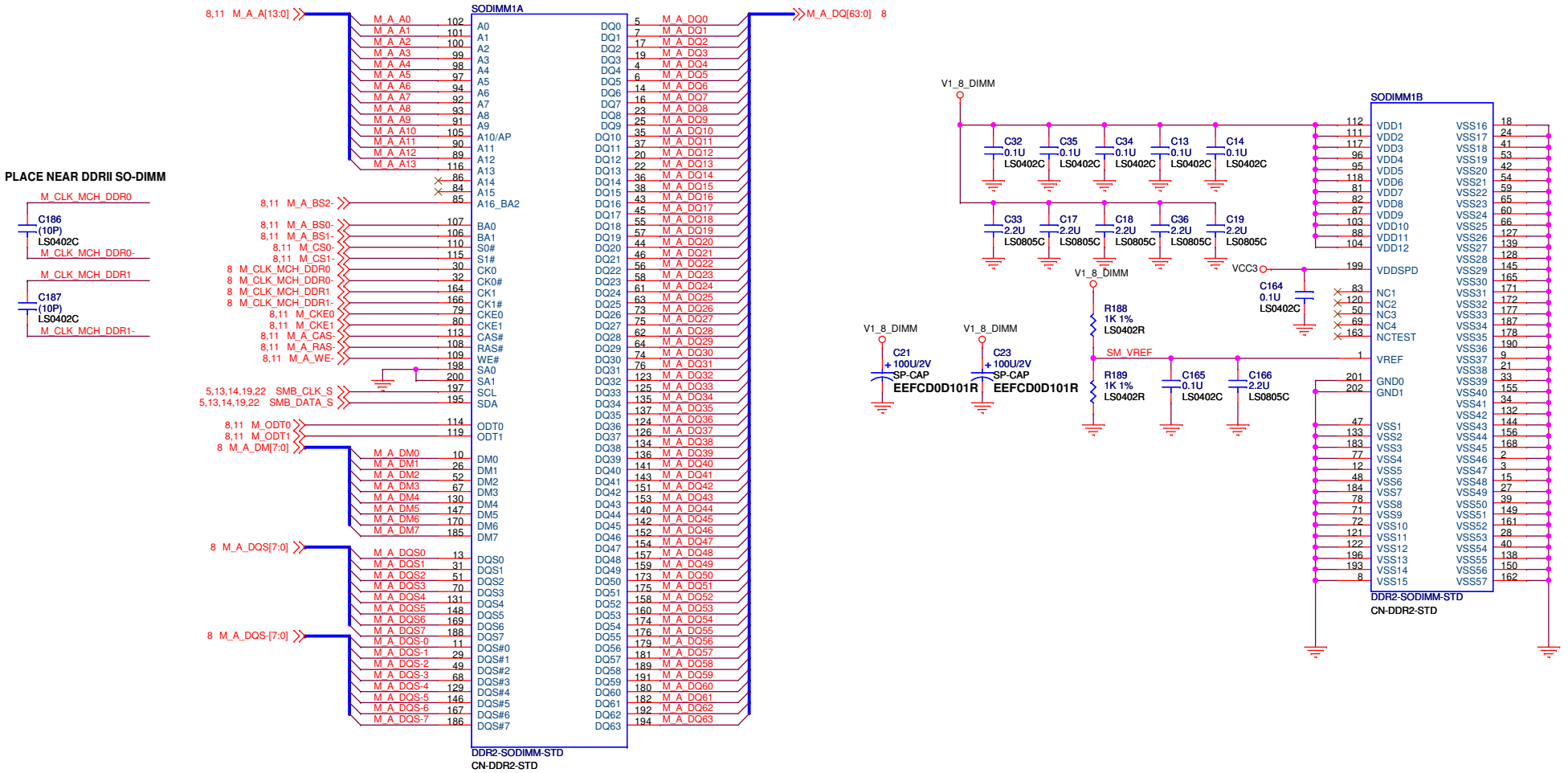
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

Title: INTEL® 915GM GMCH MEMORY

Size	Document Number	Rev
B		1.0

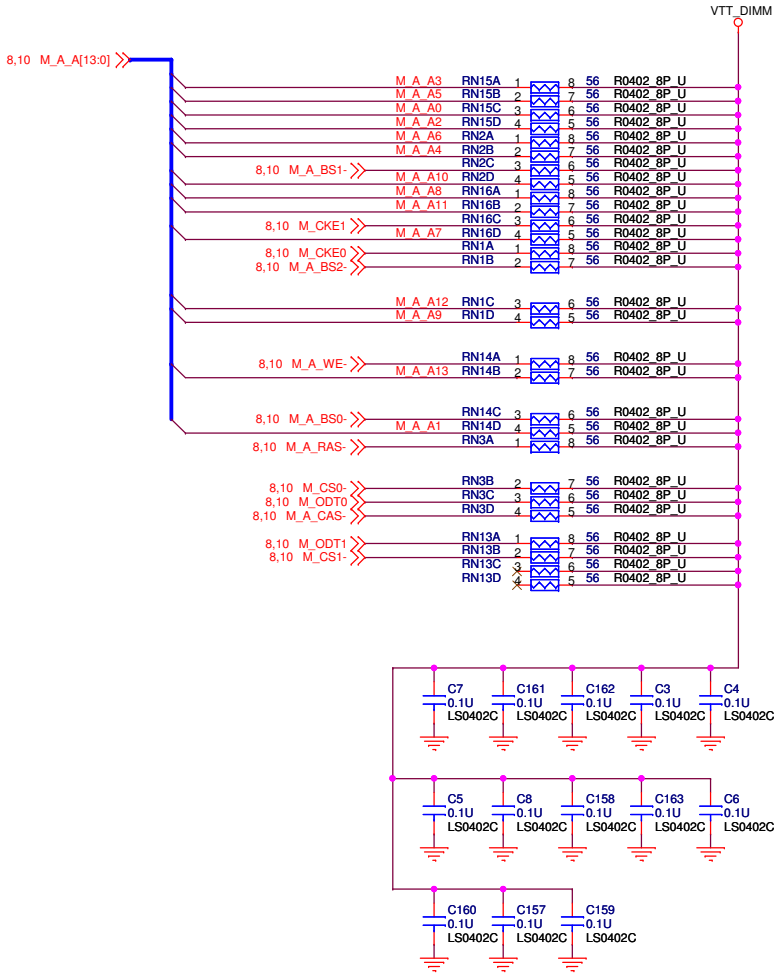
Date: Monday, January 09, 2006 Sheet 8 of 28


GMCH_CORE : 1.5V 6750mA
1.05V 3700mA
Route VSSATVBG gnd from GMCH to decoupling cap ground lead and then connect to the gnd plane
A1 Modify
All VCCSM pins shorted internally
Route VSSA_CRTDAC gnd from GMCH to decoupling cap ground lead and then connect to the gnd plane
VSSA_CRTDAC route caps with in 250mil of GMCH.
Route FB within 3" of GMCH.
POWER
VSS
NCTF
Intel® 915GM GMCH
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
INTEL® 915GM GMCH POWER
Size C
Document Number
Rev 1.0
Date: Monday, January 09, 2006
Sheet 9 of 28



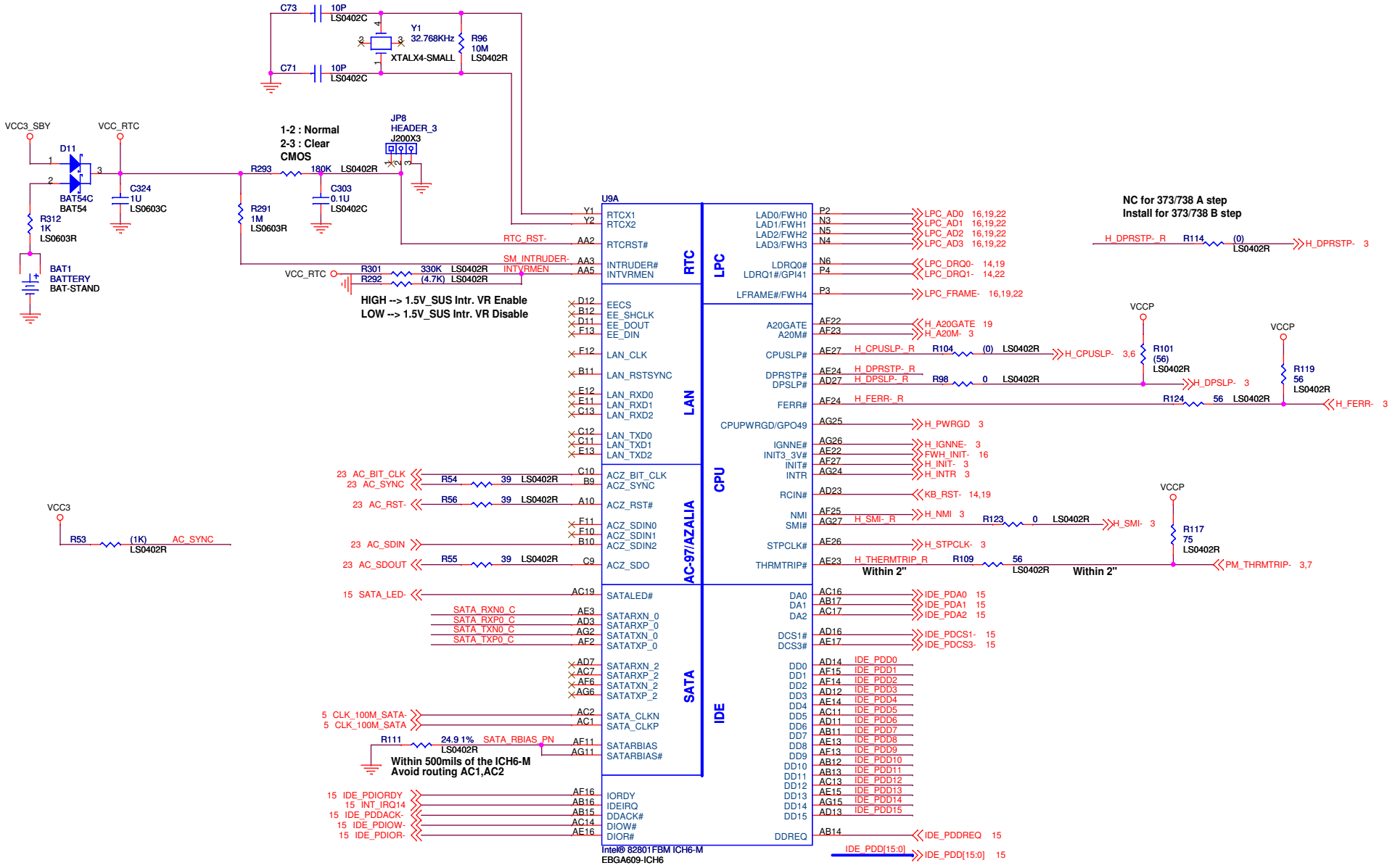
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: DDR2 SO-DIMM		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 10 of 28	

Parallel Termination

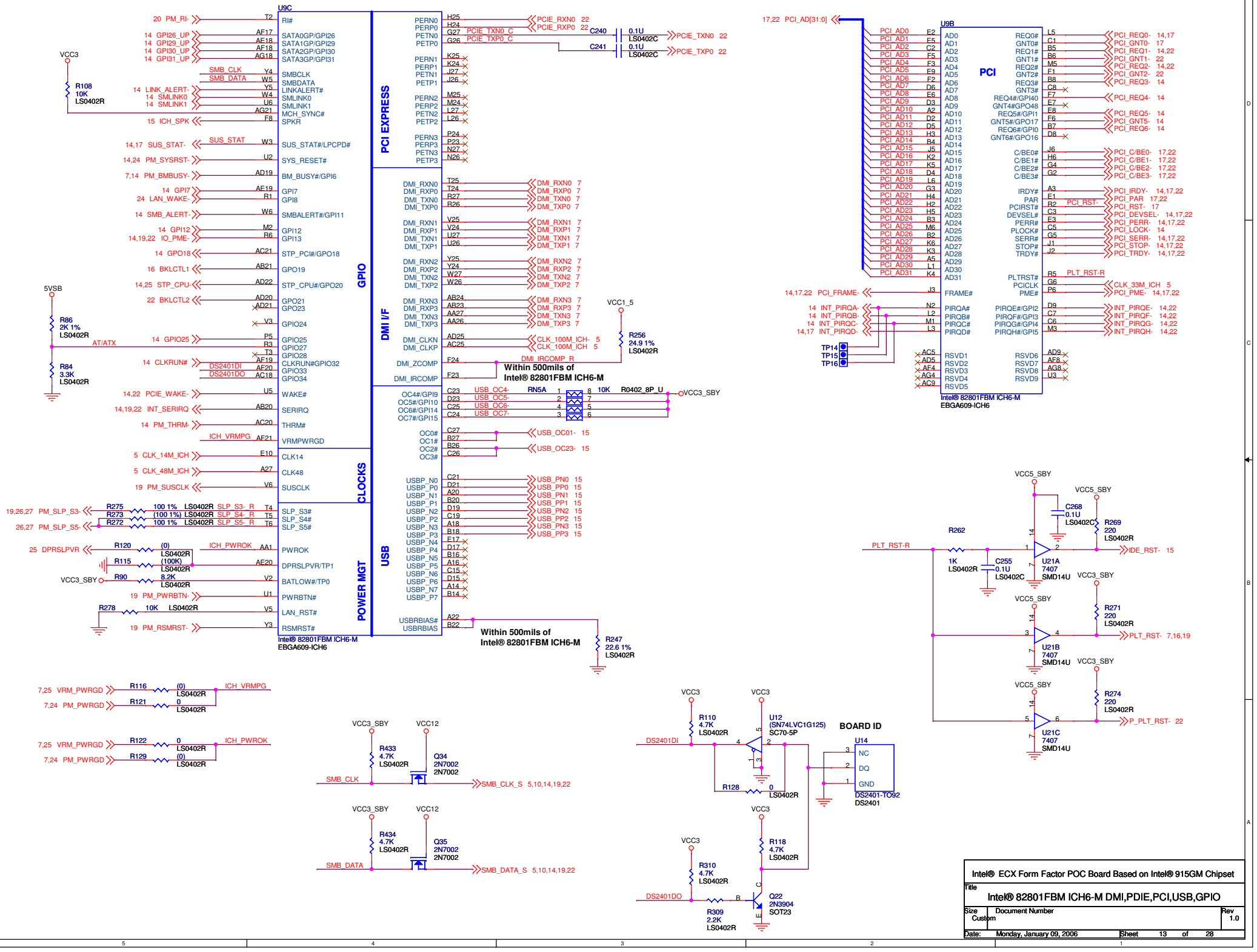


PLACE ONE CAP CLOSE TO EVERY 2 PULLUP RESISTORS TERMINATED TO VTT_DIMM

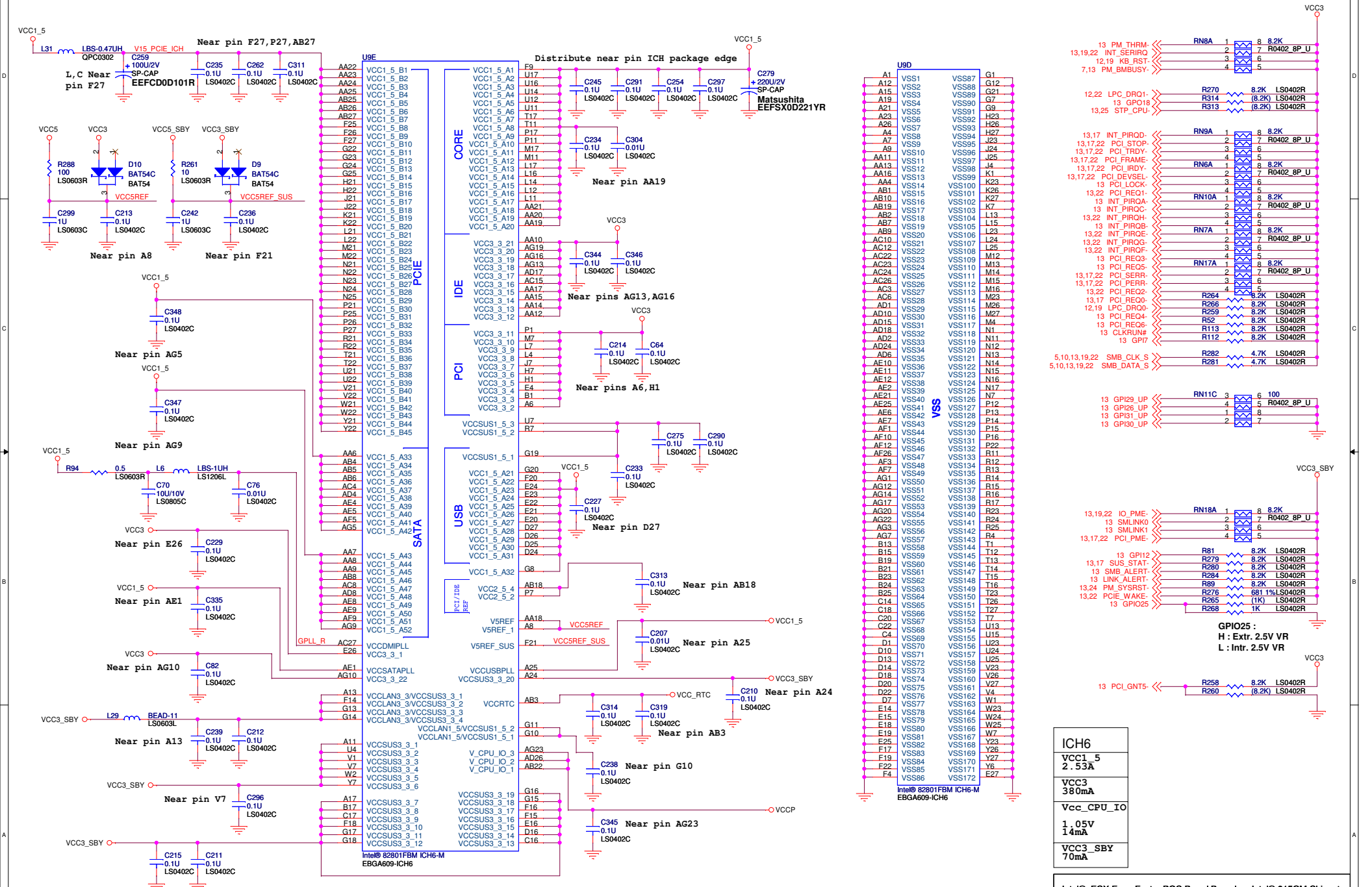
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: DDR2 TERMINATION		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 11 of 28	



Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset	
Title	Intel® 82801FBM ICH6-M CPU,SATA,IDE,RTC,AC97
Size B	Document Number
Rev 1.0	
Date: Monday, January 09, 2006	Sheet 12 of 28


U9C
PCI EXPRESS
GPIO
DMI I/F
CLOCKS
USB
POWER MGT
Intel® 82801FBM ICH6-M
EBGA609-ICH6
Within 500mils of Intel® 82801FBM ICH6-M
U9B
PCI
Intel® 82801FBM ICH6-M
EBGA609-ICH6
BOARD ID
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Intel® 82801FBM ICH6-M DMI,PDIE,PCI,USB,GPIO
Size Custom
Document Number
Rev 1.0
Date: Monday, January 09, 2006
Sheet 13 of 28

All Capacitors should be placed less than 100 mils from the package



ICH6
VCC1_5 2.53A
VCC3 380mA
Vcc_CPU_IO 1.05V 14mA
VCC3_SBY 70mA

Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

Title: Intel® 82801FBM ICH6-M POWER

Size	Document Number	Rev
Custom		1.0

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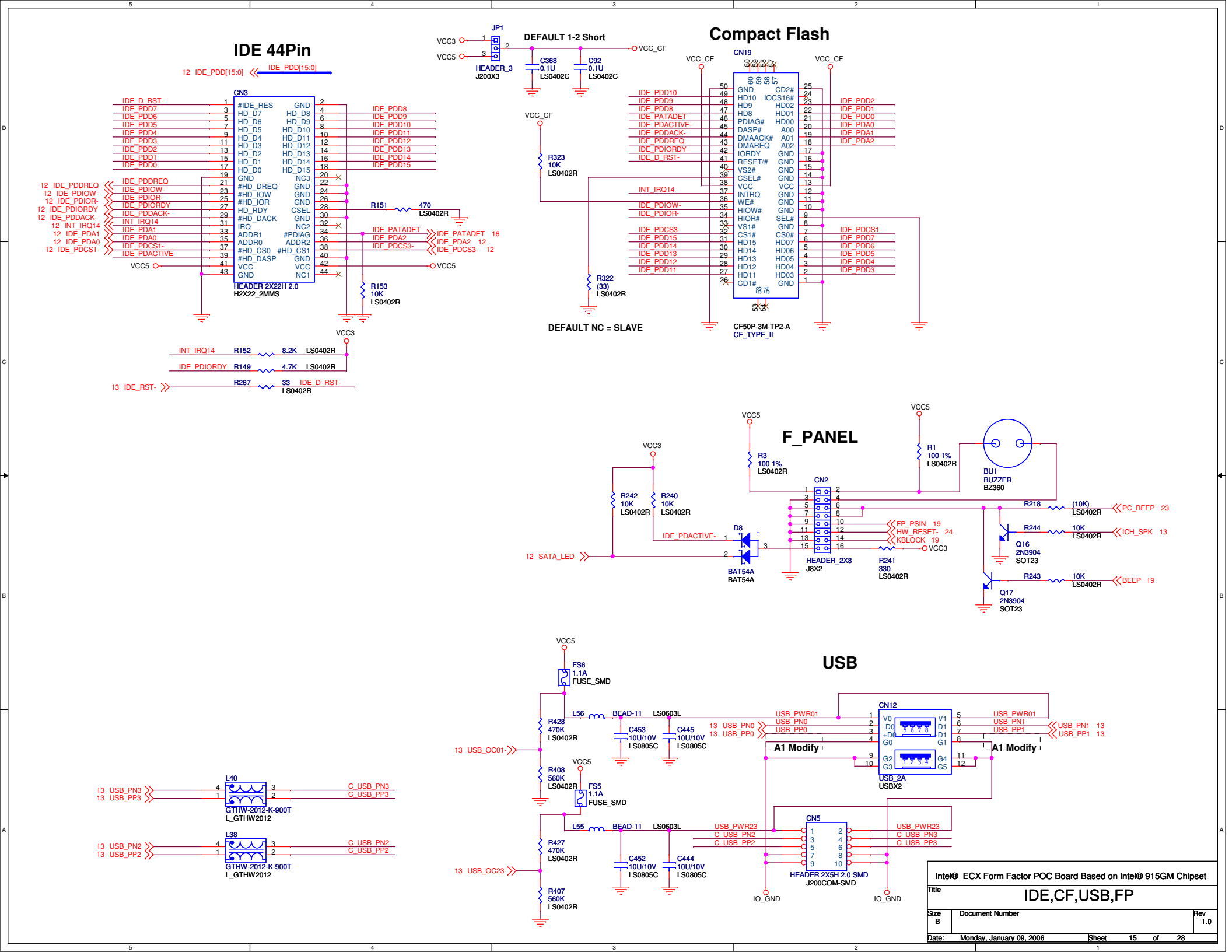
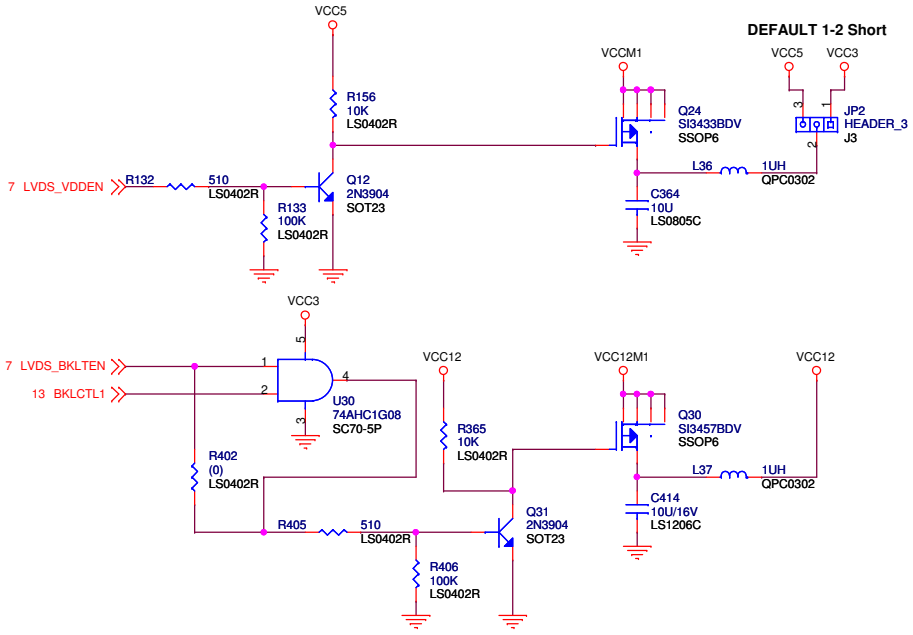
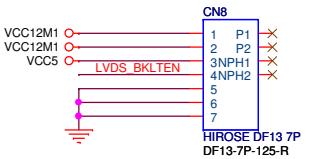
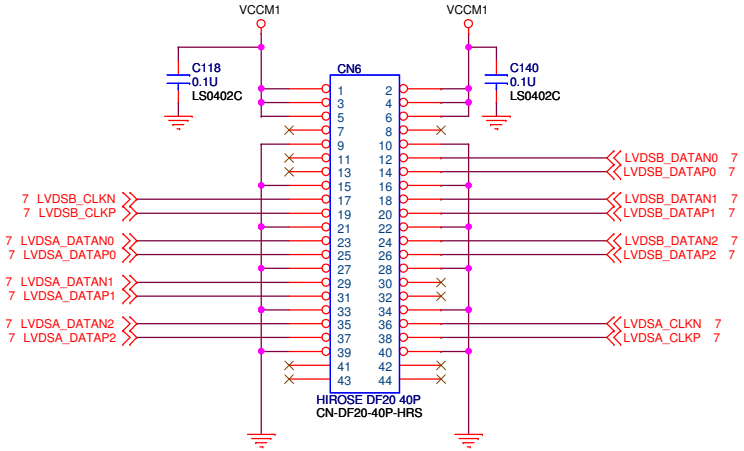
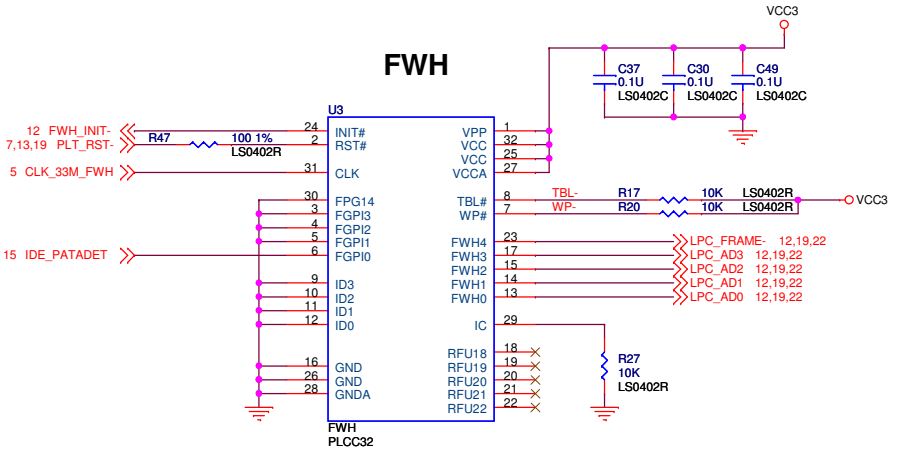
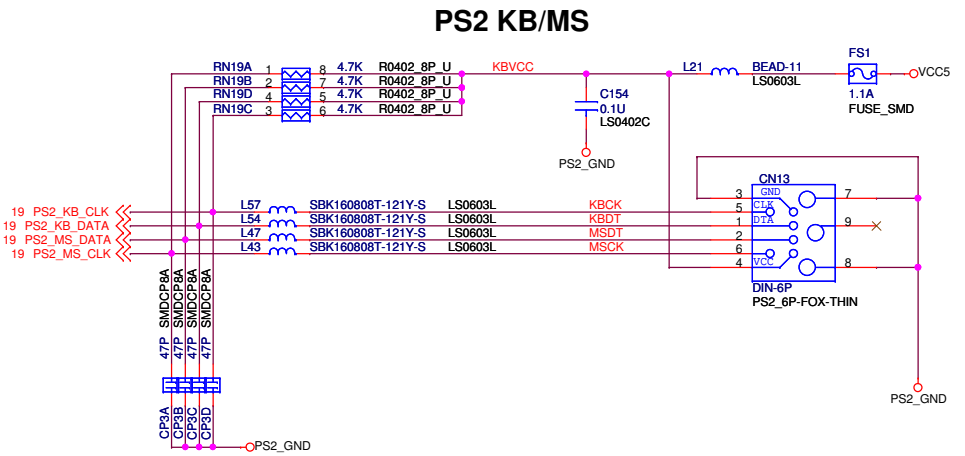

IDE 44Pin
Compact Flash
F_PANEL
USB
DEFAULT 1-2 Short
DEFAULT NC = SLAVE
CN3
CN19
JP1
CN2
CN12
CN5
HEADER 2X22H 2.0
H2X22_2MMS
CF50P-3M-TP2-A
CF_TYPE_II
HEADER_3
J200X3
HEADER_2X8
J8X2
BAT54A
BUZZER
BZ360
USB_2A
USBX2
HEADER 2X5H 2.0 SMD
J200COM-SMD
GTHW-2012-K-900T
L_GTHW2012
A1_Modify
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
IDE,CF,USB,FP
Size B
Document Number
Rev 1.0
Date: Monday, January 09, 2006
Sheet 15 of 28

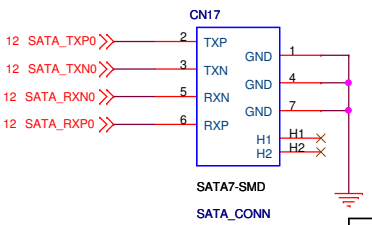










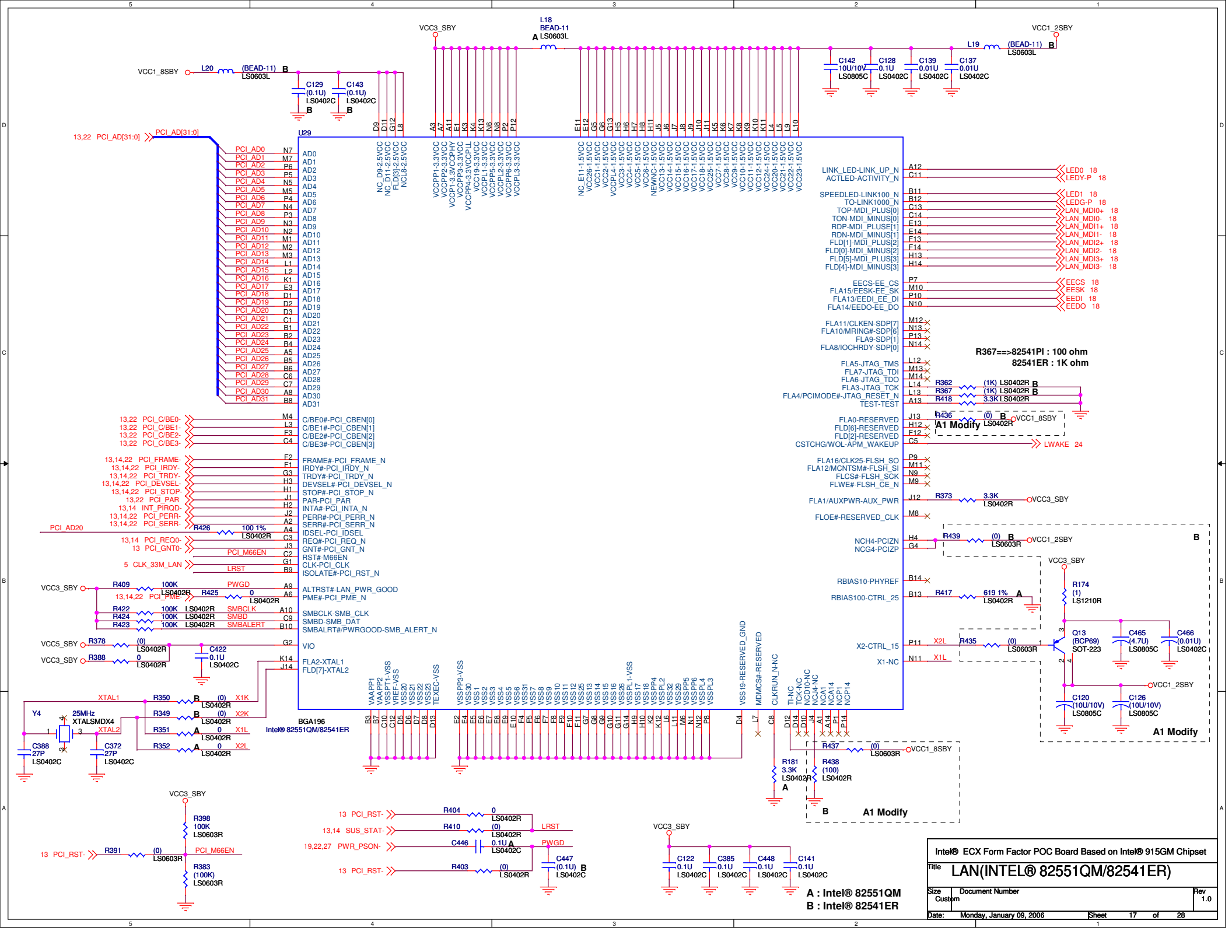


Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

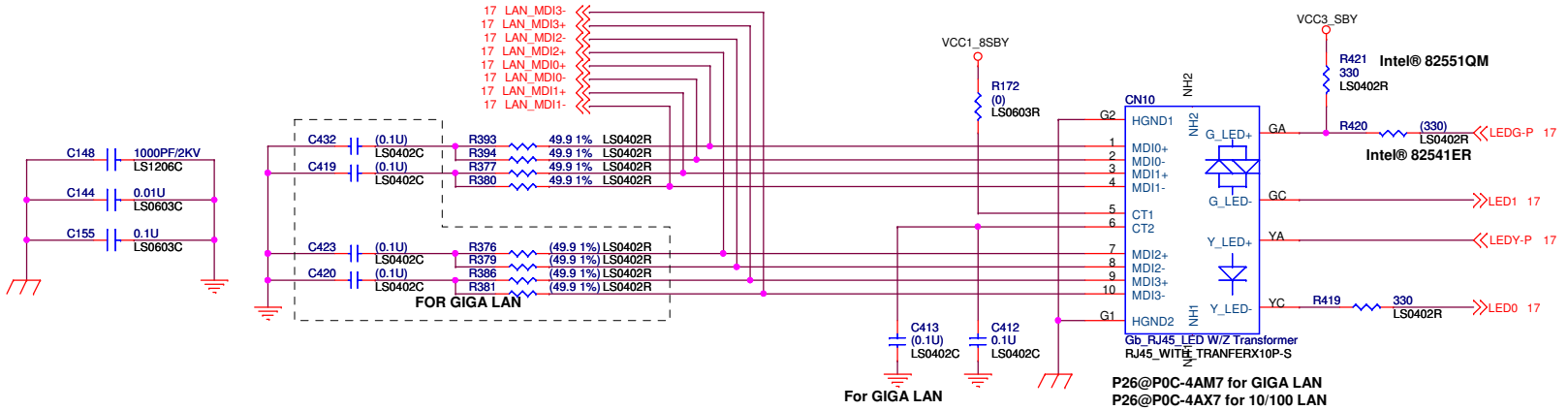
Title: LVDS,SATA,FWH,PS/2

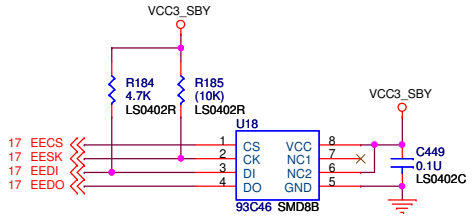
Size	Document Number	Rev
B		1.0

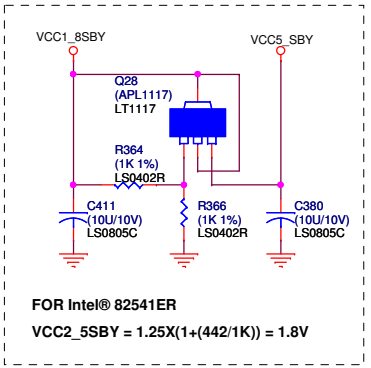
Date: Monday, January 09, 2006 Sheet 16 of 28


U29
BGA196
Intel® 82551QM/82541ER
R367==>82541PI : 100 ohm
82541ER : 1K ohm
A1 Modify
A : Intel® 82551QM
B : Intel® 82541ER
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
LAN(INTEL® 82551QM/82541ER)
Size
Custom
Document Number
Rev
1.0
Date: Monday, January 09, 2006
Sheet 17 of 28

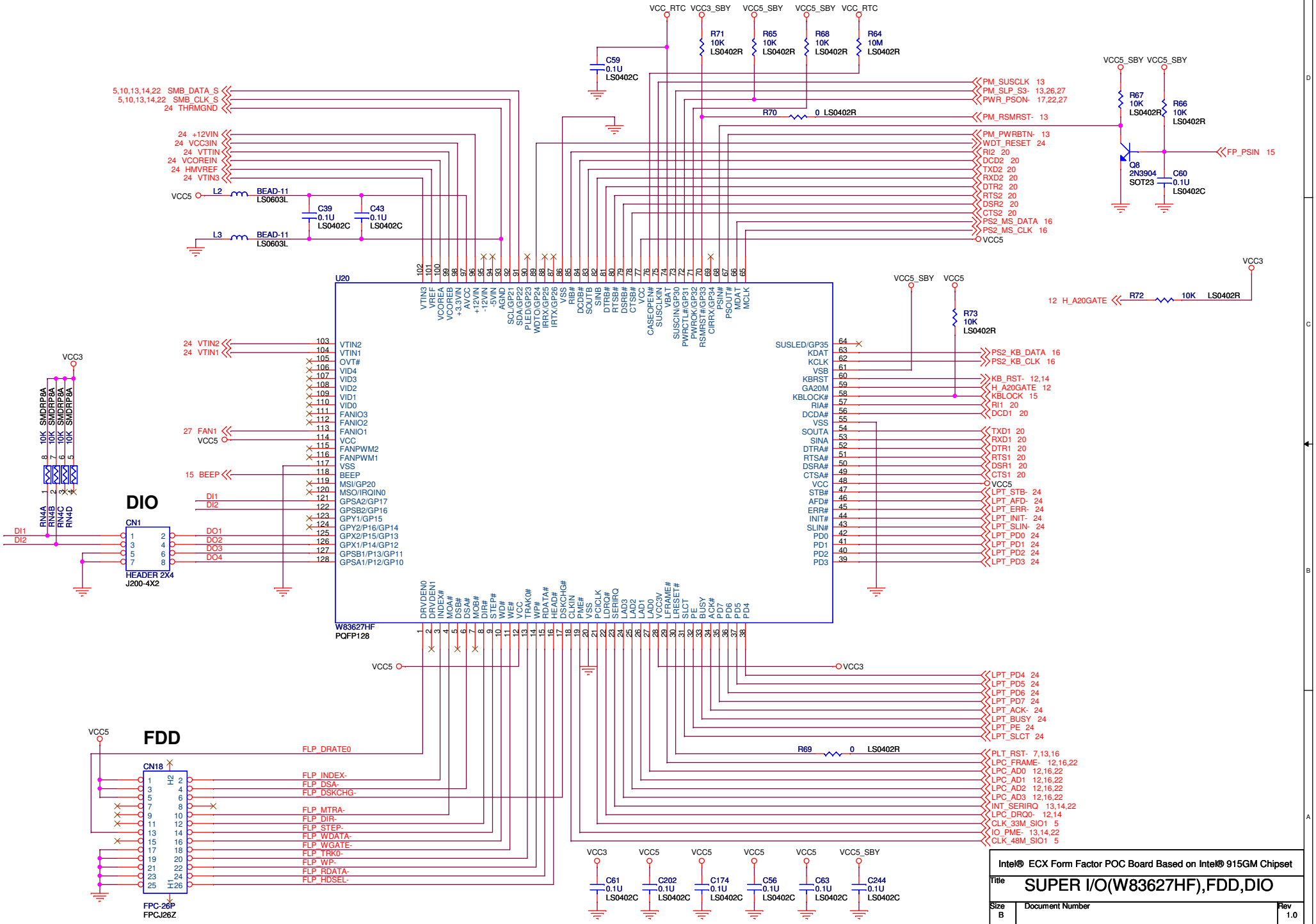
LAN RJ-45 --> 10/100MHz

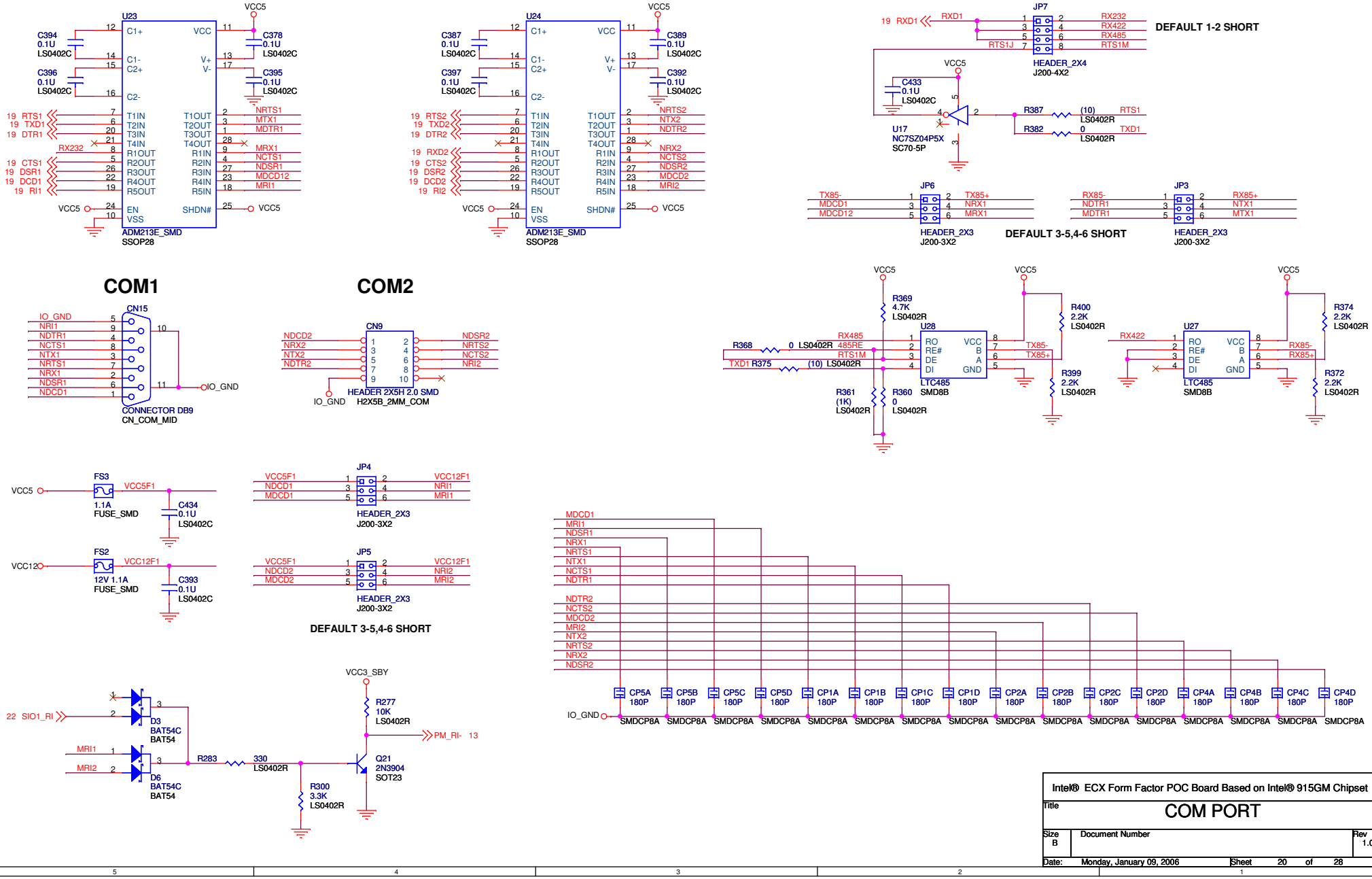






Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: LAN RJ-45		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 18 of 28	


VCC_RTC VCC3_SBY VCC5_SBY VCC5_SBY VCC_RTC
R71 10K LS0402R
R65 10K LS0402R
R68 10K LS0402R
R64 10M LS0402R
C59 0.1U LS0402C
PM_SUSCLK 13
PM_SLP_S3- 13,26,27
PWR_PSON- 17,22,27
R70 0 LS0402R
PM_RSMRST- 13
PM_PWRBTN- 13
WDT_RESET 24
RI2 20
DCD2 20
TXD2 20
RXD2 20
DTR2 20
RTS2 20
DSR2 20
CTS2 20
PS2_MS_DATA 16
PS2_MS_CLK 16
VCC5
VCC5_SBY VCC5_SBY
R67 10K LS0402R
R66 10K LS0402R
Q8 2N3904 SOT23
C60 0.1U LS0402C
FP_PSIN 15
5,10,13,14,22 SMB_DATA_S
5,10,13,14,22 SMB_CLK_S
24 THRMGND
24 +12VIN
24 VCC3IN
24 VTTIN
24 VCOREIN
24 HMVREF
24 VTIN3
VCC5 L2 BEAD-11 LS0603L
L3 BEAD-11 LS0603L
C39 0.1U LS0402C
C43 0.1U LS0402C
U20
VTIN3 VREF VCOREA VCOREB +3.3VIN AVCC +12VIN -12VIN -5VIN AGND SCL/GP21 SDA/GP22 PLED/GP23 WDTO/GP24 IRRX/GP25 IRTX/GP26 VSS RIB# DCDB# SOUTB SINB DTRB# RTSB# DSRB# CTSB# VCC CASEOPEN# SUSCLKIN VBAT SUSCLKIN/GP30 PWRCTL#/GP31 PWRLOCK/GP33 RSMRST#/GP34 CIRRX/GP32 PSIN# PSOUT# MDAT MCLK
VCC3
12 H_A20GATE
R72 10K LS0402R
VCC5_SBY VCC5
R73 10K LS0402R
24 VTIN2
24 VTIN1
VTIN2 VTIN1 OVT# VID4 VID3 VID2 VID1 VID0 FANIO3 FANIO2 FANIO1 VCC FANPWM2 FANPWM1 VSS BEEP MSI/GP20 MSO/IRQIN0 GPSA2/GP17 GPSB2/GP16 GPY1/GP15 GPY2/P16/GP14 GPX2/P15/GP13 GPX1/P14/GP12 GPSB1/P13/GP11 GPSA1/P12/GP10
SUSLED/GP35 KDAT KCLK VSB KBRST GA20M KBLOCK# RIA# DCDA# VSS SOUTA SINA DTRA# RTSA# DSRA# CTSA# VCC STB# AFD# ERR# INIT# SLIN# PD0 PD1 PD2 PD3
PS2_KB_DATA 16
PS2_KB_CLK 16
KB_RST- 12,14
H_A20GATE 12
KBLOCK 15
RI1 20
DCD1 20
TXD1 20
RXD1 20
DTR1 20
RTS1 20
DSR1 20
CTS1 20
VCC5
LPT_STB- 24
LPT_AFD- 24
LPT_ERR- 24
LPT_INIT- 24
LPT_SLIN- 24
LPT_PD0 24
LPT_PD1 24
LPT_PD2 24
LPT_PD3 24
W83627HF PQFP128
DRVDEN0 DRVDEN1 INDEX# MOA# DSB# DSA# MOB# DIR# STEP# WD# WE# VCC TRAK0# WP# RDATA# HEAD# DSKCHG# CLKIN PME# VSS PCICLK LDRQ# SERIRQ LAD3 LAD2 LAD1 LAD0 VCC3V LFRAME# LRESET# SLCT PE BUSY ACK# PD7 PD6 PD5 PD4
VCC3
VCC3
10K SMDRP8A
RN4A RN4B RN4C RN4D
DI1
DI2
DIO
CN1
HEADER 2X4
J200-4X2
DO1
DO2
DO3
DO4
27 FAN1
VCC5
15 BEEP
DI1
DI2
VCC5
FDD
CN18
FPC-26P
FPCJ26Z
FLP_DRATE0
FLP_INDEX-
FLP_DSA-
FLP_DSKCHG-
FLP_MTRA-
FLP_DIR-
FLP_STEP-
FLP_WDATA-
FLP_WGATE-
FLP_TRK0-
FLP_WP-
FLP_RDATA-
FLP_HDSEL-
LPT_PD4 24
LPT_PD5 24
LPT_PD6 24
LPT_PD7 24
LPT_ACK- 24
LPT_BUSY 24
LPT_PE 24
LPT_SLCT 24
R69 0 LS0402R
PLT_RST- 7,13,16
LPC_FRAME- 12,16,22
LPC_AD0 12,16,22
LPC_AD1 12,16,22
LPC_AD2 12,16,22
LPC_AD3 12,16,22
INT_SERIRQ 13,14,22
LPC_DRQ0- 12,14
CLK_33M_SIO1 5
IO_PME- 13,14,22
CLK_48M_SIO1 5
VCC3 VCC5 VCC5 VCC5 VCC5 VCC5_SBY
C61 0.1U LS0402C
C202 0.1U LS0402C
C174 0.1U LS0402C
C56 0.1U LS0402C
C63 0.1U LS0402C
C244 0.1U LS0402C
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
SUPER I/O(W83627HF),FDD,DIO
Size B
Document Number
Rev 1.0
Date: Monday, January 09, 2006
Sheet 19 of 28


U23
ADM213E_SMD
SSOP28
U24
ADM213E_SMD
SSOP28
JP7
DEFAULT 1-2 SHORT
HEADER_2X4
J200-4X2
U17
NC7SZ04P5X
SC70-5P
JP6
HEADER_2X3
J200-3X2
DEFAULT 3-5,4-6 SHORT
JP3
HEADER_2X3
J200-3X2
COM1
CN15
CONNECTOR DB9
CN_COM_MID
COM2
CN9
HEADER 2X5H 2.0 SMD
H2X5B_2MM_COM
U28
LTC485
SMD8B
U27
LTC485
SMD8B
JP4
HEADER_2X3
J200-3X2
JP5
HEADER_2X3
J200-3X2
DEFAULT 3-5,4-6 SHORT
D3
BAT54C
BAT54
D6
BAT54C
BAT54
Q21
2N3904
SOT23
SMDCP8A
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
COM PORT
Size
B
Document Number
Rev
1.0
Date:
Monday, January 09, 2006
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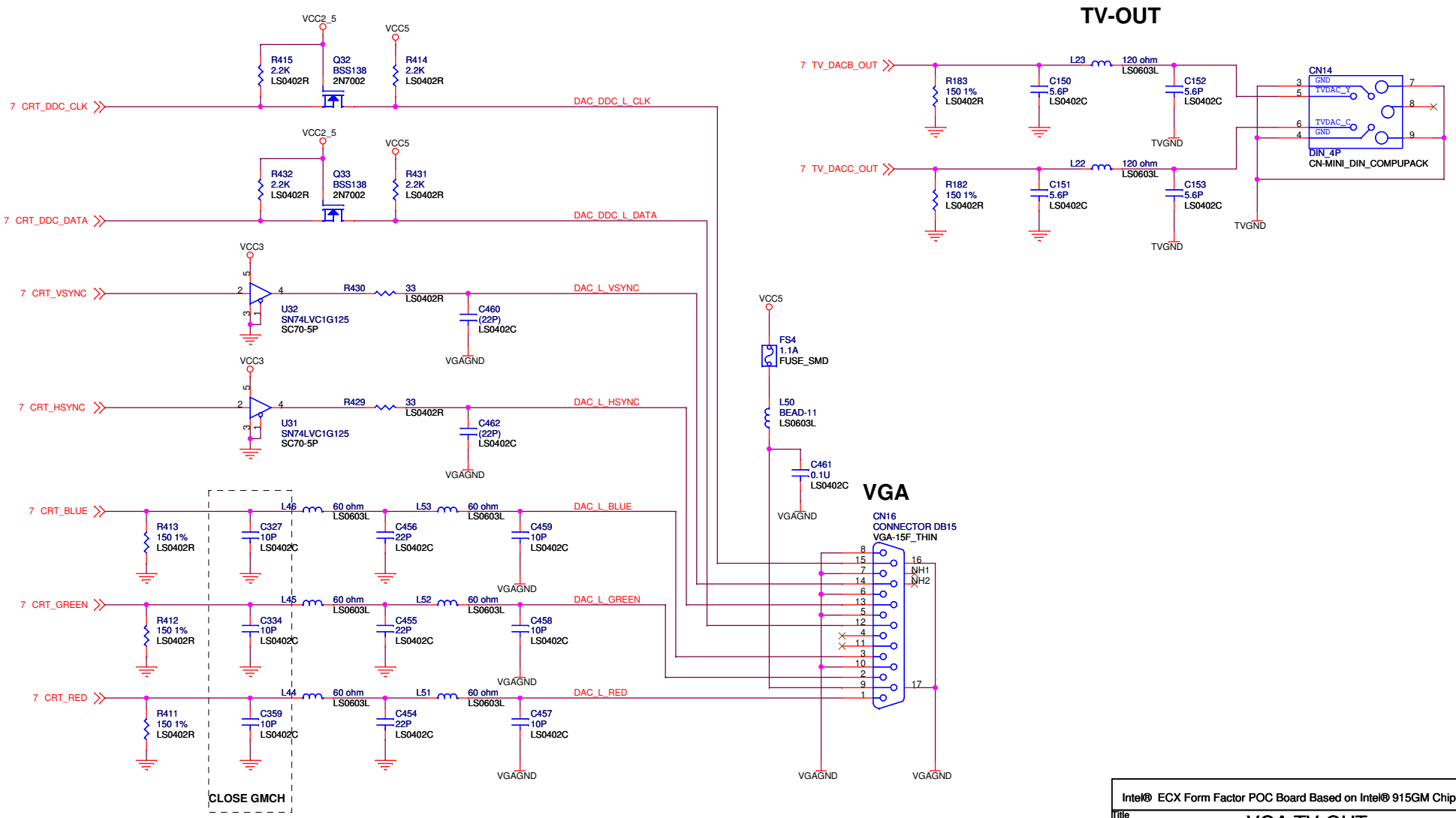
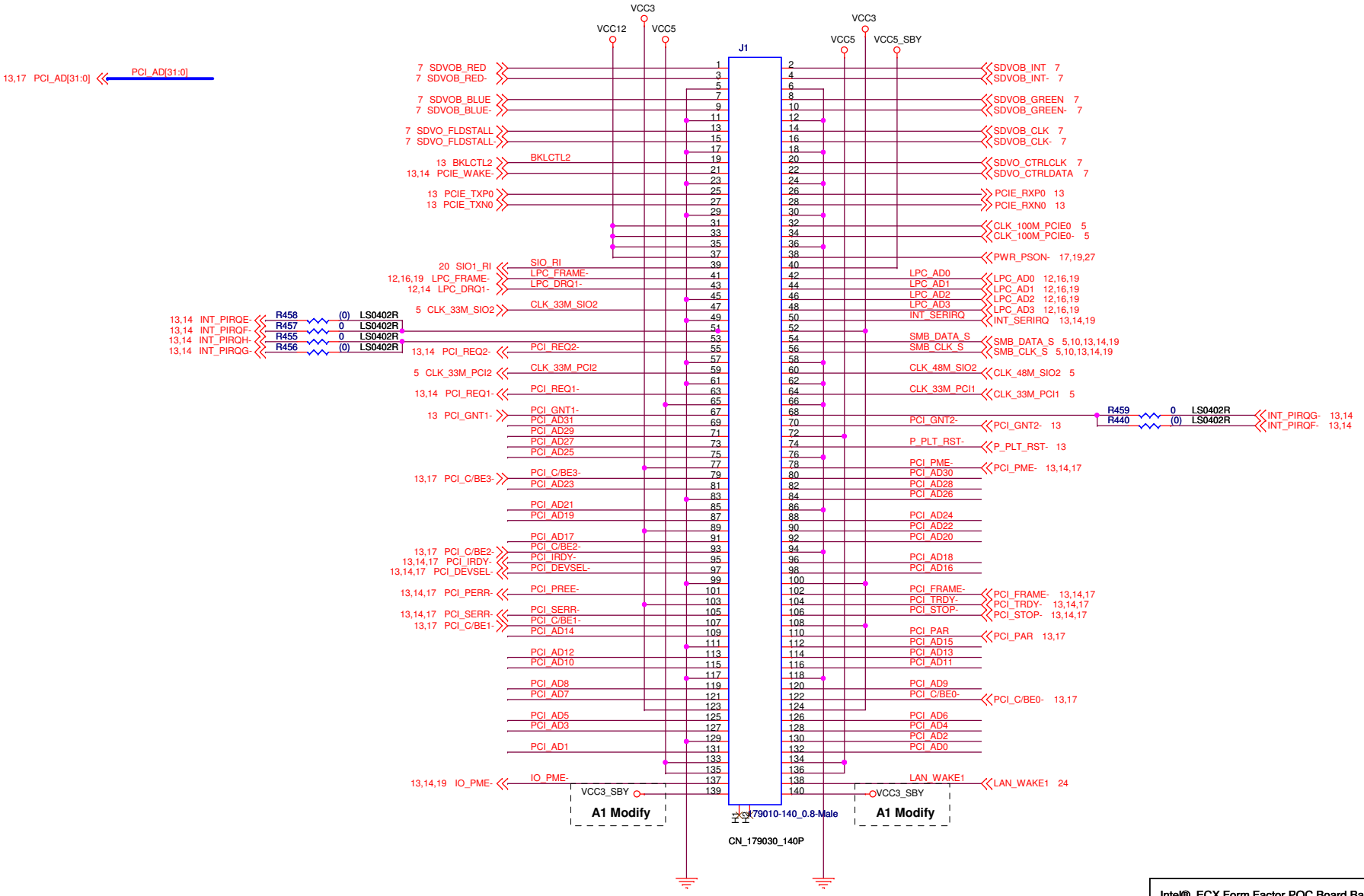
20
of
28

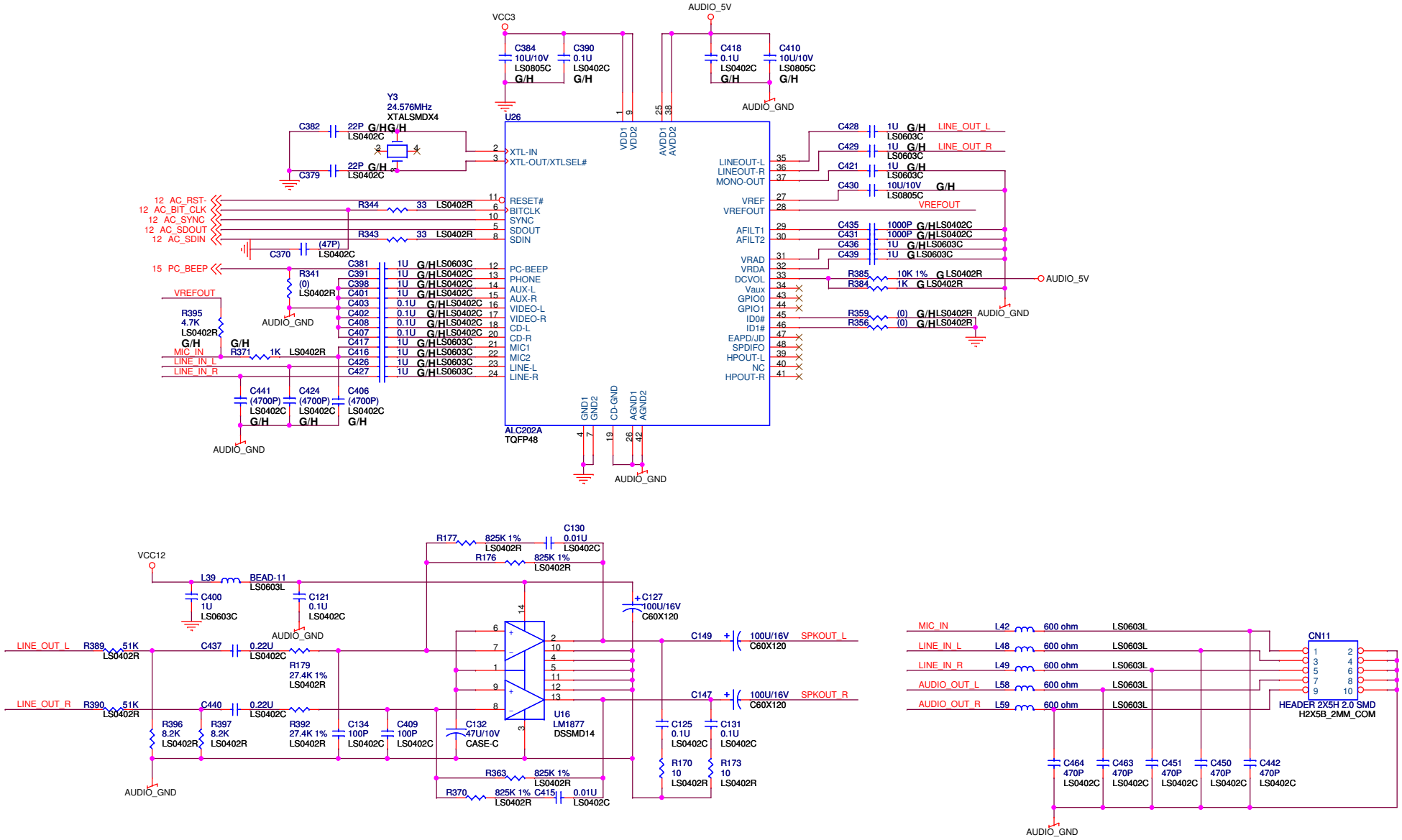


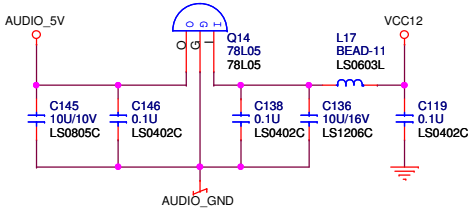
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: VGA,TV-OUT		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 21 of 28	

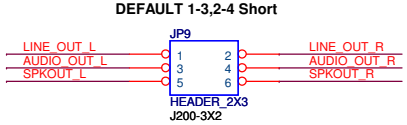


LAN,MINIPCI NON-USE PCI_LOCK

Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: EXTENSION SLOT		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 22 of 28	







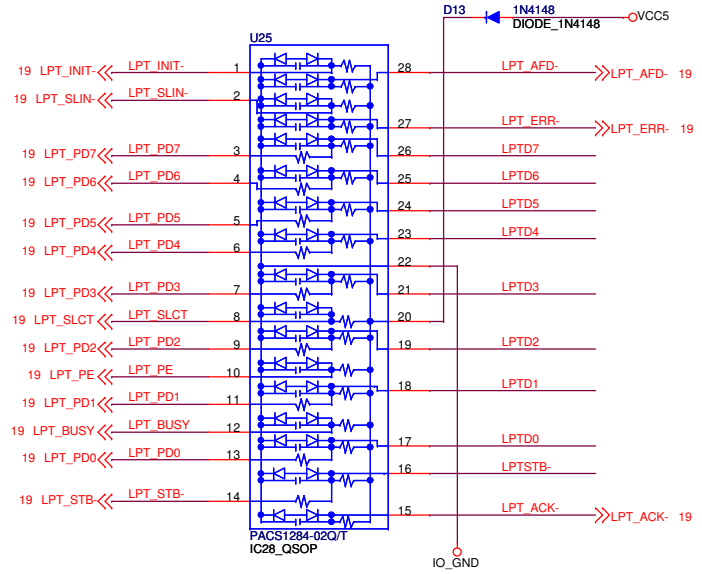
G FOR ALC202A
H FOR ALC655

Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

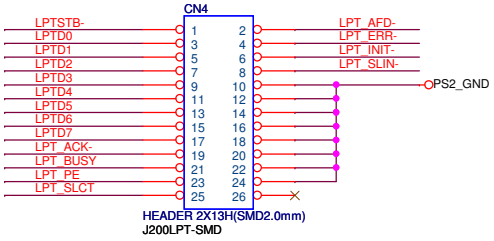
Title: AC-97 CODEC

Size	Document Number	Rev
B		1.0

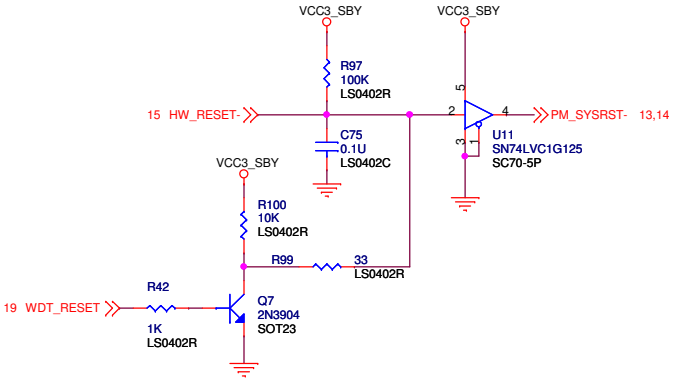
Date: Monday, January 09, 2006 Sheet 23 of 28

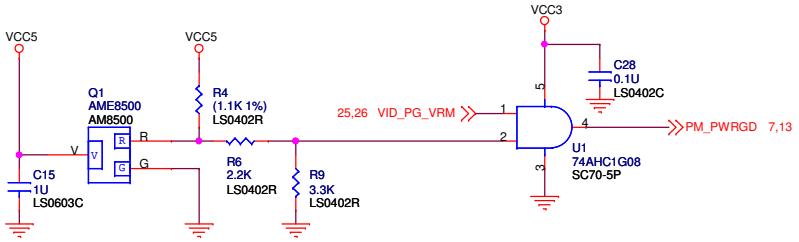


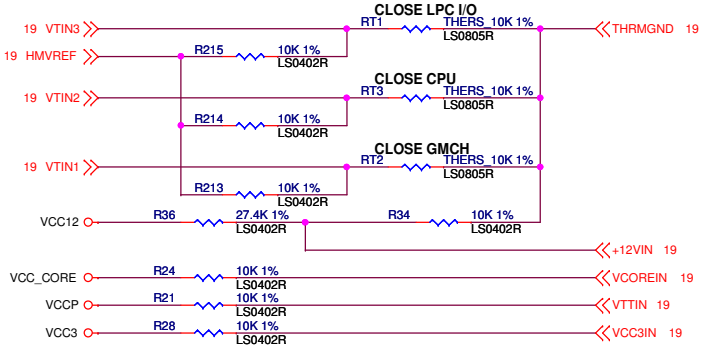
PARALLEL PORT

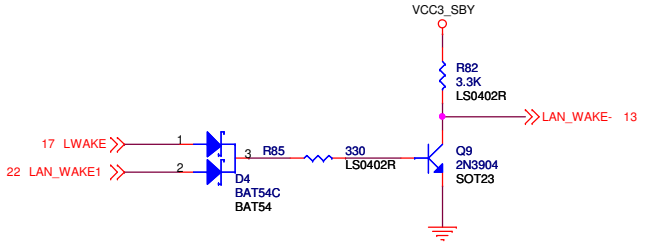


RESET

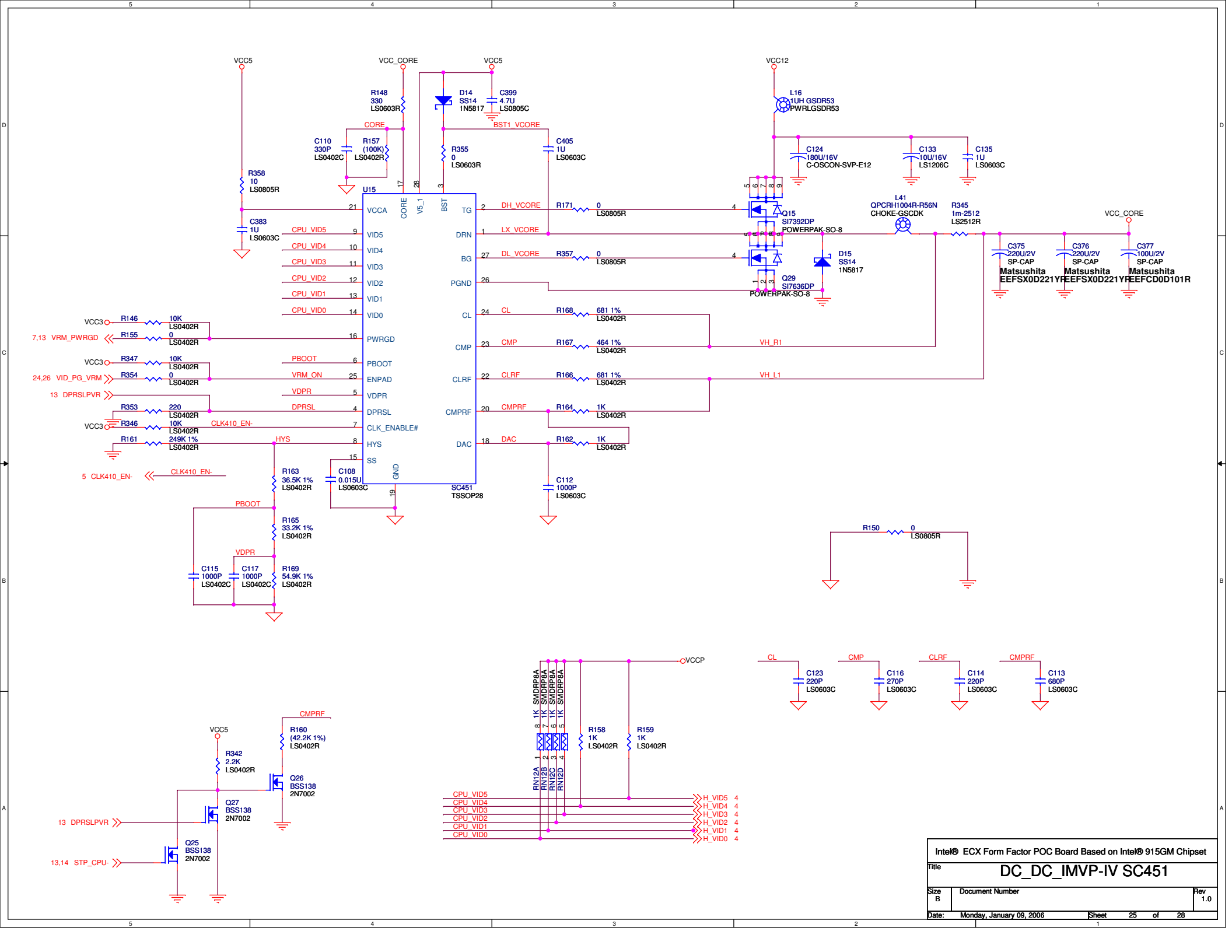








Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset		
Title: PRT,RESET,H/W MONITOR		
Size: B	Document Number	Rev: 1.0
Date: Monday, January 09, 2006	Sheet 24 of 28	


VCC5
VCC_CORE
VCC5
VCC12
R148 330 LS0603R
D14 SS14 1N5817
C399 4.7U LS0805C
L16 1UH GSDR53 PWRLGSDR53
CORE
BST1_VCORE
C110 330P LS0402C
R157 (100K) LS0402R
R355 0 LS0603R
C405 1U LS0603C
C124 180U/16V C-OSCON-SVP-E12
C133 10U/16V LS1206C
C135 1U LS0603C
R358 10 LS0805R
U15
VCCA
CORE
V5_1
BST
TG
DRN
BG
PGND
DH_VCORE
LX_VCORE
DL_VCORE
R171 0 LS0805R
R357 0 LS0805R
Q15 SI7392DP POWERPAK-SO-8
Q29 SI7636DP POWERPAK-SO-8
D15 SS14 1N5817
L41 QPCRH1004R-R56N CHOKE-GSCDK
R345 1m-2512 LS2512R
VCC_CORE
C375 220U/2V SP-CAP Matsushita EEFSX0D221YR
C376 220U/2V SP-CAP Matsushita EEFSX0D221YR
C377 100U/2V SP-CAP Matsushita EEFCD0D101R
C383 1U LS0603C
CPU_VID5
CPU_VID4
CPU_VID3
CPU_VID2
CPU_VID1
CPU_VID0
VID5
VID4
VID3
VID2
VID1
VID0
PWRGD
PBOOT
ENPAD
VDPR
DPRSL
CLK_ENABLE#
HYS
SS
GND
CL
CMP
CLRF
CMPRF
DAC
SC451 TSSOP28
R146 10K LS0402R
R155 0 LS0402R
7,13 VRM_PWRGD
R168 681 1% LS0402R
R167 464 1% LS0402R
R166 681 1% LS0402R
R164 1K LS0402R
R162 1K LS0402R
VH_R1
VH_L1
R347 10K LS0402R
R354 0 LS0402R
24,26 VID_PG_VRM
VRM_ON
13 DPRSLPVR
R353 220 LS0402R
R346 10K LS0402R
CLK410_EN-
R161 249K 1% LS0402R
HYS
5 CLK410_EN-
R163 36.5K 1% LS0402R
C108 0.015U LS0603C
C112 1000P LS0603C
PBOOT
R165 33.2K 1% LS0402R
VDPR
C115 1000P LS0402C
C117 1000P LS0402C
R169 54.9K 1% LS0402R
R150 0 LS0805R
VCCP
SMDRP8A
RN12A
RN12B
RN12C
RN12D
1K
R158 1K LS0402R
R159 1K LS0402R
CPU_VID5
CPU_VID4
CPU_VID3
CPU_VID2
CPU_VID1
CPU_VID0
H_VID5 4
H_VID4 4
H_VID3 4
H_VID2 4
H_VID1 4
H_VID0 4
CL
CMP
CLRF
CMPRF
C123 220P LS0603C
C116 270P LS0603C
C114 220P LS0603C
C113 680P LS0603C
VCC5
CMPRF
R160 (42.2K 1%) LS0402R
R342 2.2K LS0402R
Q26 BSS138 2N7002
Q27 BSS138 2N7002
13 DPRSLPVR
Q25 BSS138 2N7002
13,14 STP_CPU-
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
DC_DC_IMVP-IV SC451
Size B
Document Number
Rev 1.0
Date: Monday, January 09, 2006
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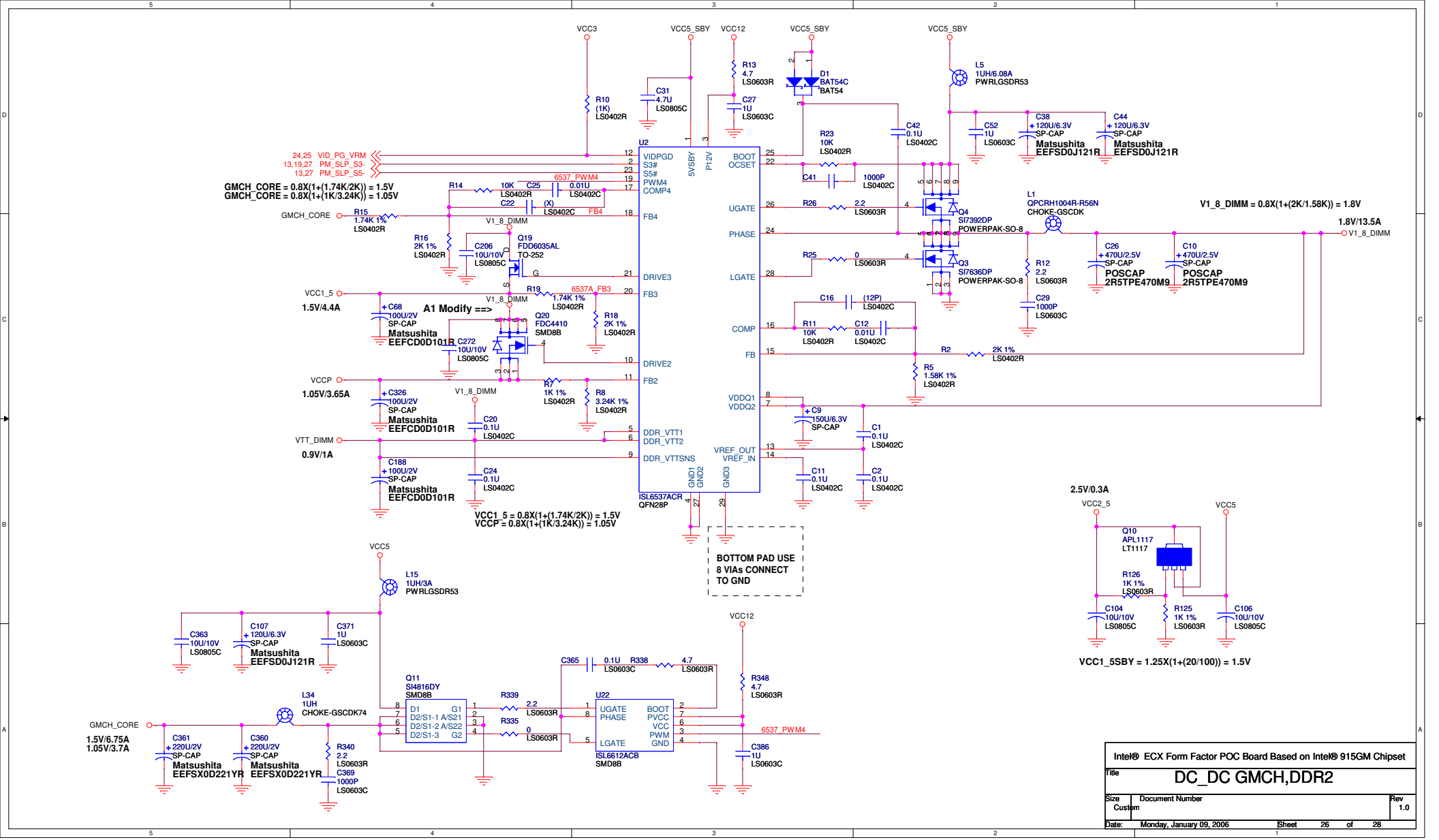
VCC3
VCC5_SBY
VCC12
VCC5_SBY
VCC5_SBY
R10 (1K) LS0402R
C31 4.7U LS0805C
R13 4.7 LS0603R
C27 1U LS0603C
D1 BAT54C BAT54
L5 1UH/6.08A PWRLGSDR53
C42 0.1U LS0402C
C52 1U LS0603C
C38 120U/6.3V SP-CAP Matsushita EEFSD0J121R
C44 120U/6.3V SP-CAP Matsushita EEFSD0J121R
U2
24,25 VID_PG_VRM
13,19,27 PM_SLP_S3-
13,27 PM_SLP_S5-
VIDPGD
S3#
S5#
PWM4
COMP4
5VSBY
P12V
BOOT
OCSET
R23 10K LS0402R
C41 1000P LS0402C
GMCH_CORE = 0.8X(1+(1.74K/2K)) = 1.5V
GMCH_CORE = 0.8X(1+(1K/3.24K)) = 1.05V
R14 10K LS0402R
C25 0.01U LS0402C
6537_PWM4
C22 (X) LS0402C
FB4
GMCH_CORE
R15 1.74K 1% LS0402R
V1_8_DIMM
UGATE
R26 2.2 LS0603R
Q4 SI7392DP POWERPAK-SO-8
L1 QPCRH1004R-R56N CHOKE-GSCDK
V1_8_DIMM = 0.8X(1+(2K/1.58K)) = 1.8V
1.8V/13.5A
V1_8_DIMM
PHASE
R16 2K 1% LS0402R
C206 10U/10V LS0805C
Q19 FDD6035AL TO-252
R25 0 LS0603R
Q3 SI7636DP POWERPAK-SO-8
R12 2.2 LS0603R
C26 470U/2.5V SP-CAP POSCAP 2R5TPE470M9
C10 470U/2.5V SP-CAP POSCAP 2R5TPE470M9
LGATE
VCC1_5
1.5V/4.4A
R19 1.74K 1% LS0402R
6537A_FB3
V1_8_DIMM
A1 Modify ==>
C68 100U/2V SP-CAP Matsushita EEFCD0D101R
Q20 FDC4410 SMD8B
R18 2K 1% LS0402R
C272 10U/10V LS0805C
C16 (12P) LS0402C
C29 1000P LS0603C
COMP
R11 10K LS0402R
C12 0.01U LS0402C
FB
R2 2K 1% LS0402R
R5 1.58K 1% LS0402R
VCCP
1.05V/3.65A
C326 100U/2V SP-CAP Matsushita EEFCD0D101R
V1_8_DIMM
R7 1K 1% LS0402R
R8 3.24K 1% LS0402R
C20 0.1U LS0402C
VDDQ1
VDDQ2
C9 150U/6.3V SP-CAP
C1 0.1U LS0402C
VTT_DIMM
0.9V/1A
DDR_VTT1
DDR_VTT2
DDR_VTTSNS
VREF_OUT
VREF_IN
C188 100U/2V SP-CAP Matsushita EEFCD0D101R
C24 0.1U LS0402C
C11 0.1U LS0402C
C2 0.1U LS0402C
GND1
GND2
GND3
ISL6537ACR
QFN28P
VCC1_5 = 0.8X(1+(1.74K/2K)) = 1.5V
VCCP = 0.8X(1+(1K/3.24K)) = 1.05V
BOTTOM PAD USE
8 VIAs CONNECT
TO GND
2.5V/0.3A
VCC2_5
VCC5
Q10 APL1117 LT1117
R126 1K 1% LS0603R
C104 10U/10V LS0805C
R125 1K 1% LS0603R
C106 10U/10V LS0805C
VCC1_5SBY = 1.25X(1+(20/100)) = 1.5V
VCC5
L15 1UH/3A PWRLGSDR53
C363 10U/10V LS0805C
C107 120U/6.3V SP-CAP Matsushita EEFSD0J121R
C371 1U LS0603C
VCC12
C365 0.1U LS0603C
R338 4.7 LS0603R
R348 4.7 LS0603R
Q11 SI4816DY SMD8B
R339 2.2 LS0603R
R335 0 LS0603R
U22
UGATE
PHASE
BOOT
PVCC
VCC
PWM
GND
LGATE
ISL6612ACB SMD8B
6537_PWM4
C386 1U LS0603C
L34 1UH CHOKE-GSCDK74
GMCH_CORE
1.5V/6.75A
1.05V/3.7A
C361 220U/2V SP-CAP Matsushita EEFSX0D221YR
C360 220U/2V SP-CAP Matsushita EEFSX0D221YR
R340 2.2 LS0603R
C369 1000P LS0603C
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
DC_DC GMCH,DDR2
Size Custom
Document Number
Rev 1.0
Date: Monday, January 09, 2006
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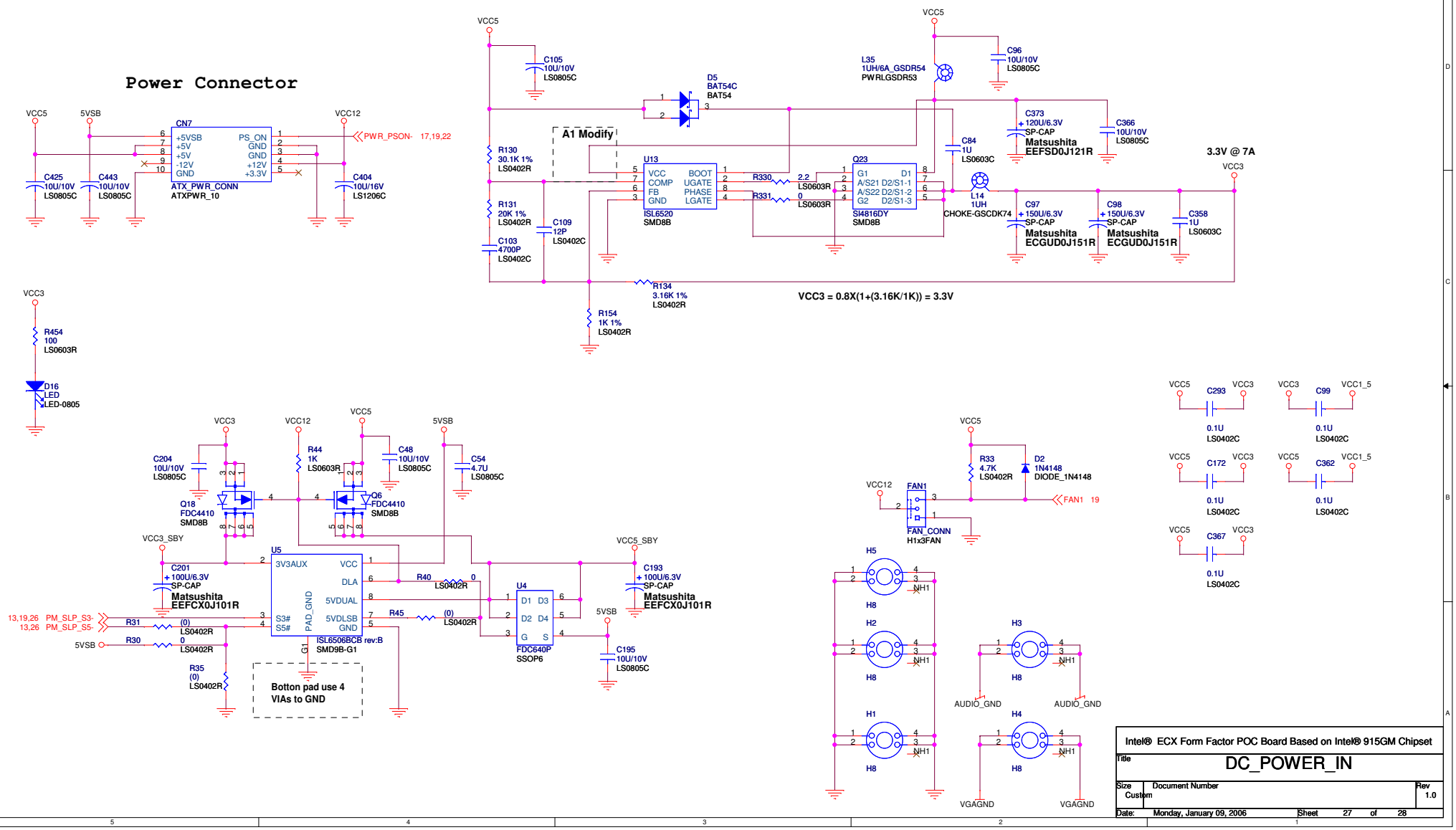
Power Connector
CN7
ATX_PWR_CONN
ATXPWR_10
PWR_PSON- 17,19,22
C425 10U/10V LS0805C
C443 10U/10V LS0805C
C404 10U/16V LS1206C
C105 10U/10V LS0805C
D5 BAT54C BAT54
A1 Modify
R130 30.1K 1% LS0402R
R131 20K 1% LS0402R
C109 12P LS0402C
C103 4700P LS0402C
U13 ISL6520 SMD8B
R330 2.2 LS0603R
R331 0 LS0603R
Q23 SI4816DY SMD8B
L35 1UH/6A_GSDR54 PWRLGSDR53
C96 10U/10V LS0805C
C373 120U/6.3V SP-CAP Matsushita EEFSD0J121R
C366 10U/10V LS0805C
C84 1U LS0603C
L14 1UH CHOKE-GSCDK74
C97 150U/6.3V SP-CAP Matsushita ECGUD0J151R
C98 150U/6.3V SP-CAP Matsushita ECGUD0J151R
C358 1U LS0603C
3.3V @ 7A
R134 3.16K 1% LS0402R
R154 1K 1% LS0402R
VCC3 = 0.8X(1+(3.16K/1K)) = 3.3V
R454 100 LS0603R
D16 LED LED-0805
C204 10U/10V LS0805C
R44 1K LS0603R
C48 10U/10V LS0805C
C54 4.7U LS0805C
Q18 FDC4410 SMD8B
Q6 FDC4410 SMD8B
U5 ISL6506BCB rev:B SMD9B-G1
C201 100U/6.3V SP-CAP Matsushita EEFCX0J101R
C193 100U/6.3V SP-CAP Matsushita EEFCX0J101R
R31 (0) LS0402R
R30 0 LS0402R
R35 (0) LS0402R
R40 0 LS0402R
R45 (0) LS0402R
U4 FDC640P SSOP6
C195 10U/10V LS0805C
Botton pad use 4 VIAs to GND
R33 4.7K LS0402R
D2 1N4148 DIODE_1N4148
FAN1
FAN_CONN H1x3FAN
FAN1 19
H5
H8
H2
H1
H3
H4
AUDIO_GND
VGAGND
C293 0.1U LS0402C
C99 0.1U LS0402C
C172 0.1U LS0402C
C362 0.1U LS0402C
C367 0.1U LS0402C
Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset
Title
DC_POWER_IN
Size Custom
Document Number
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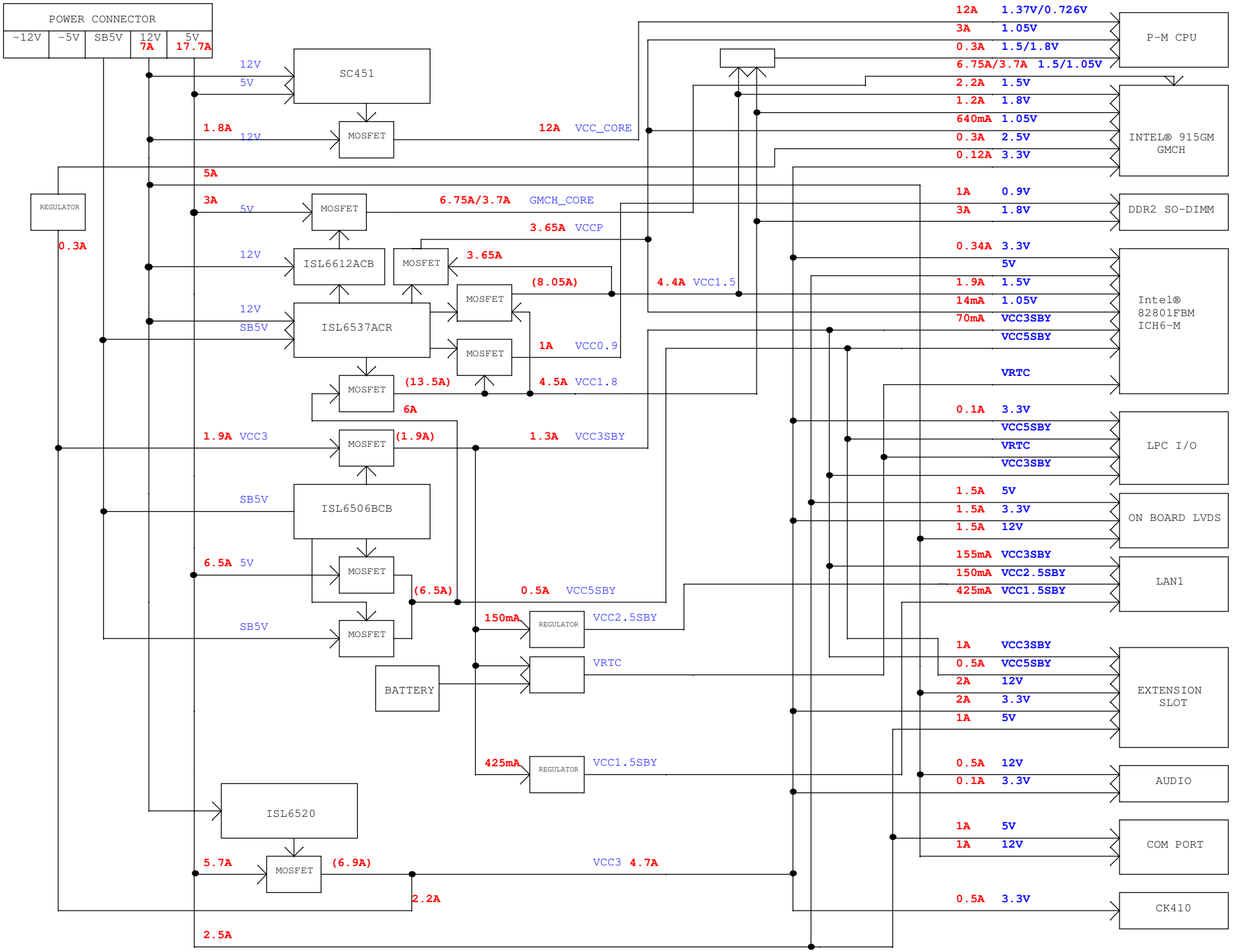

Intel® ECX Form Factor POC Board Based on Intel® 915GM Chipset

Title: POWER DIAGRAM

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