ECS ELITEGROUP

(P4 LGA775P Processor with DDR1 SDRAM Mainboard)

915GV-M5 1.0

Schematics Version History Table :

Circuit Ver.	PCB Ver.	Total Page	Modified Page(s)	Date
A	A	36		08/03/" 04
B	B	36		09/01/" 04
1.0	1.0	36		10/04/" 04

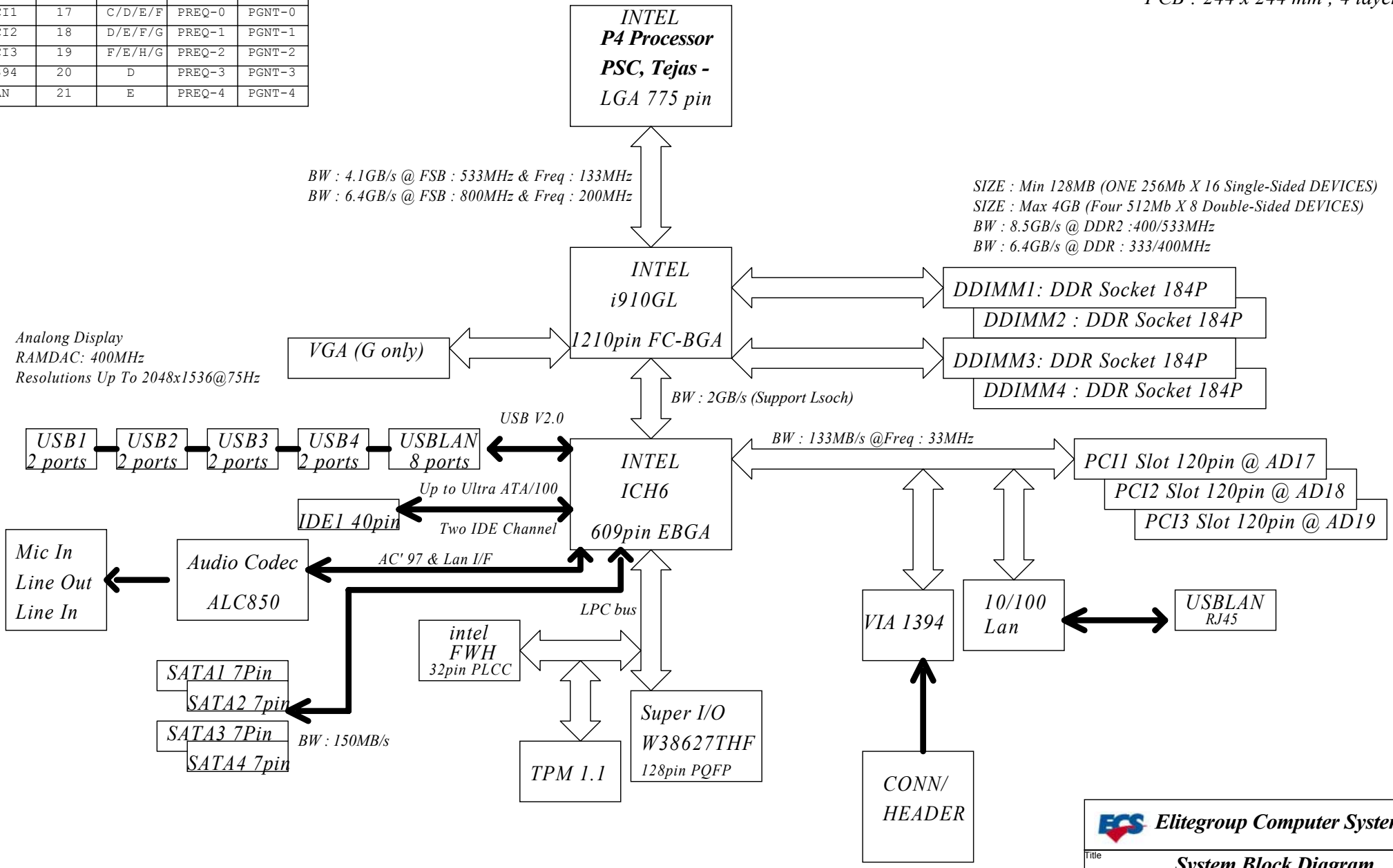
Page Title of Schematic :

ECS Elitegroup Computer Systems

Title: Cover Sheet		
Size: Custom	Document Number: 915GV-M5	Rev: 1.0
Date: Monday, October 04, 2004	Sheet 1 of 36	

DEVICE	IDSEL	INT#	REQ#	GNT#
PCI1	17	C/D/E/F	PREQ-0	PGNT-0
PCI2	18	D/E/F/G	PREQ-1	PGNT-1
PCI3	19	F/E/H/G	PREQ-2	PGNT-2
1394	20	D	PREQ-3	PGNT-3
LAN	21	E	PREQ-4	PGNT-4

PCB : 244 x 244 mm ; 4 layers

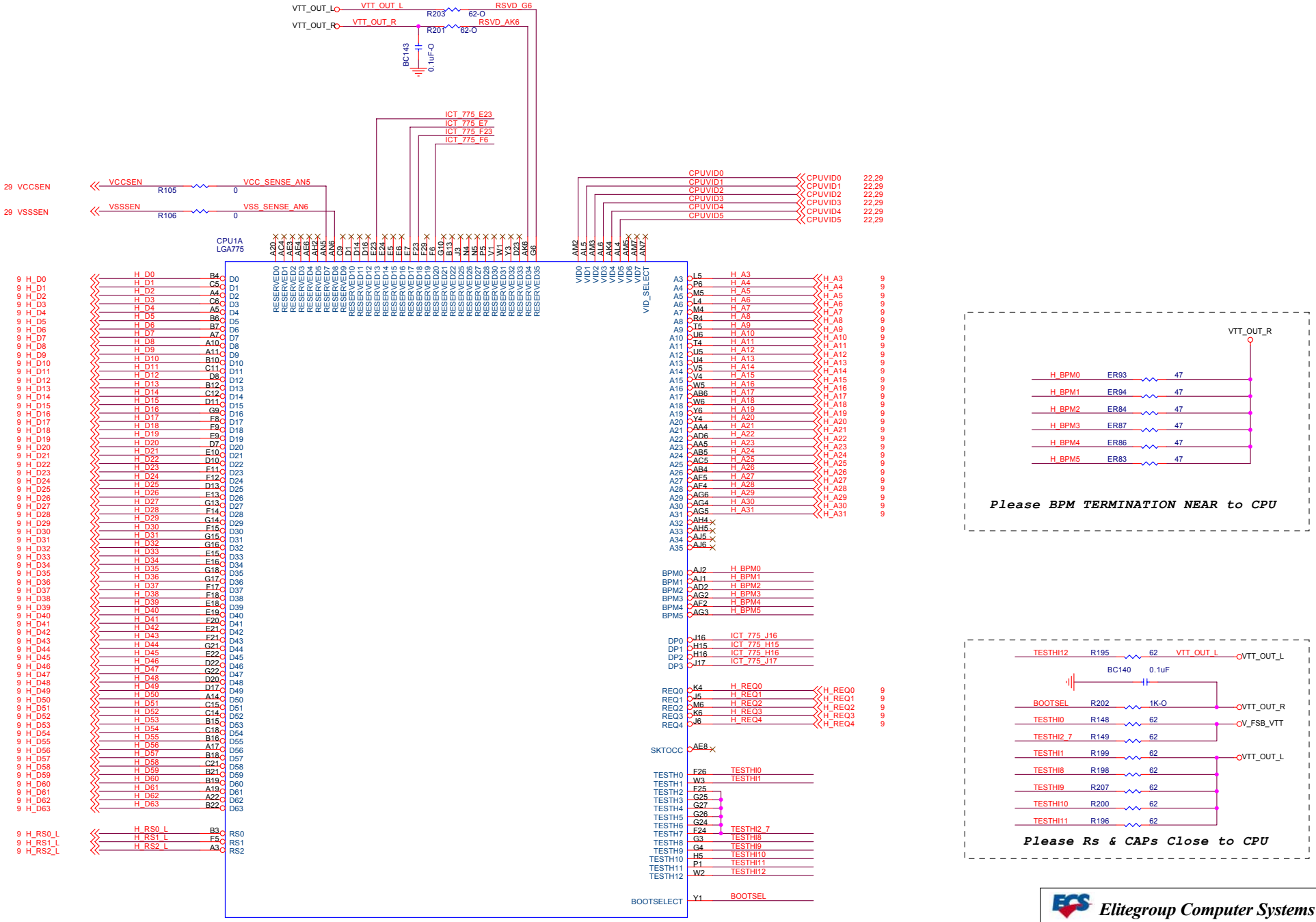


Elitegroup Computer Systems

Title: System Block Diagram

Size: B | Document Number: 915GV-M5 | Rev: 1.0

Date: Monday, October 04, 2004 | Sheet 2 of 36



Elitegroup Computer Systems

Title: P4 LGA775P Part A

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Date: Monday, October 04, 2004 | Sheet 3 of 36

Place componets as close as possible to Processor socket
trace width to cap must be no smaller than 12 Mils

Close CPU H1 pin

GTLREF= 0.67 * VTT = 0.8V

GTLREF GENERATION CIRCUITS

CPU1B

LGA775

LL= LOAD LINE for load line select

CPU SIGNAL CLOSE TO TERMINATION CPU

BSEL resistors can be removed IF ONLY TEJAS AND CEDAR MILL ARE SUPPORTED

PLACE TDO TERMINATION NEAR CONNECTOR

PLACE TCK/TDI/TMS TERMINATION NEAR CPU WITHIN 1.5" OF CPU, IDEALLY NEXT TO IT.

PLACE TRST_L TERMINATION ANYWHERE ON ROUTE

Layout need closed CPU

Place outside Socket Cavity

2N3904S

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Title	P4 LGA775P Part B	
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Elitegroup Computer Systems	
Title	P4 LGA775P Part C
Size: Custom	Document Number: 915GV-M5
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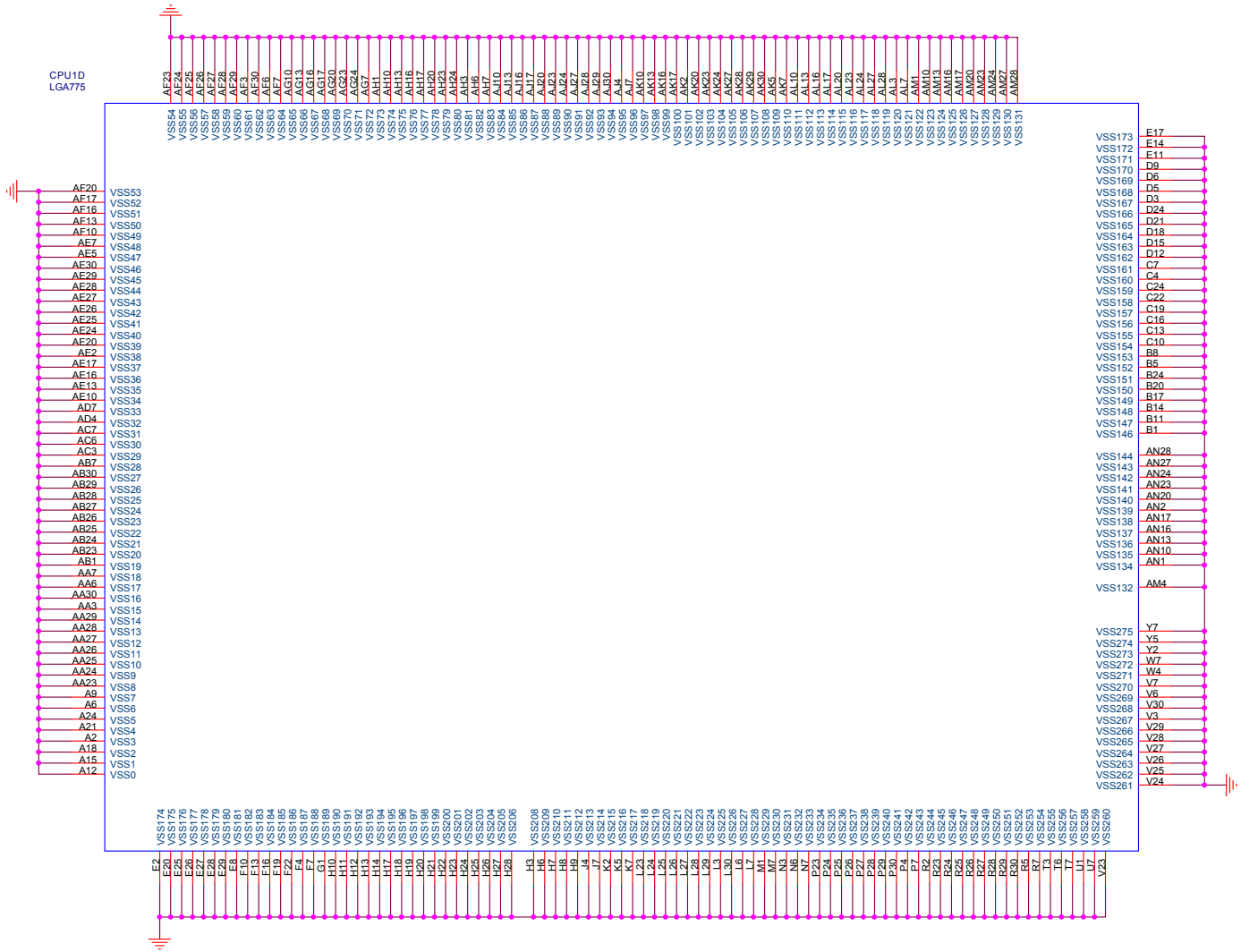
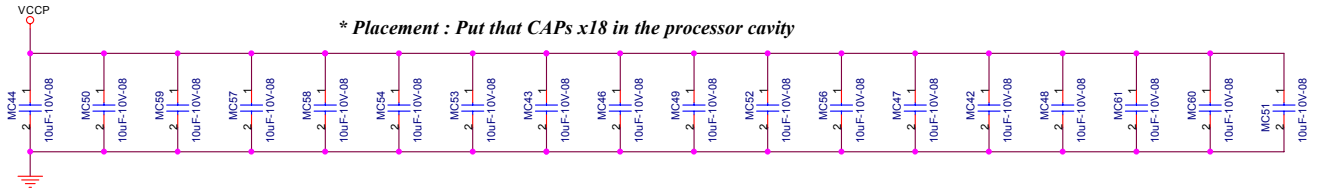
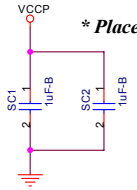
Date: Monday, October 04, 2004	Sheet 5 of 36

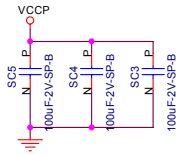


litegroup Computer Systems

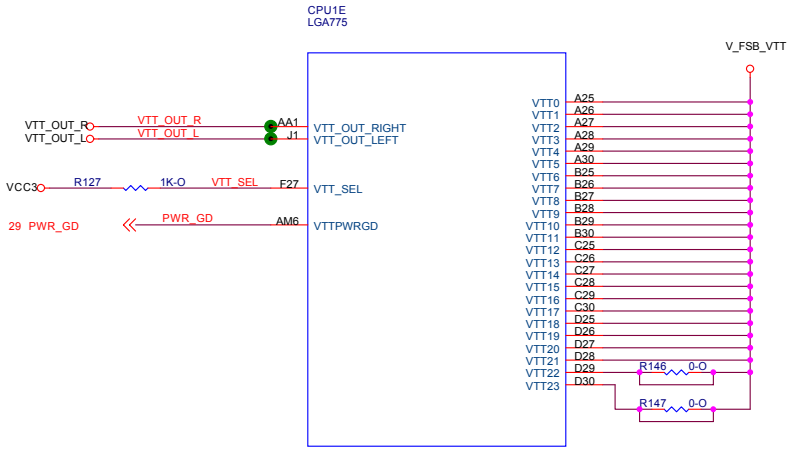
Title	P4 LGA775P Part D	
Size: Custom	Document Number: 915GV-M5	Rev: 1.0
Date: Monday, October 04, 2004	Sheet 6 of 36	





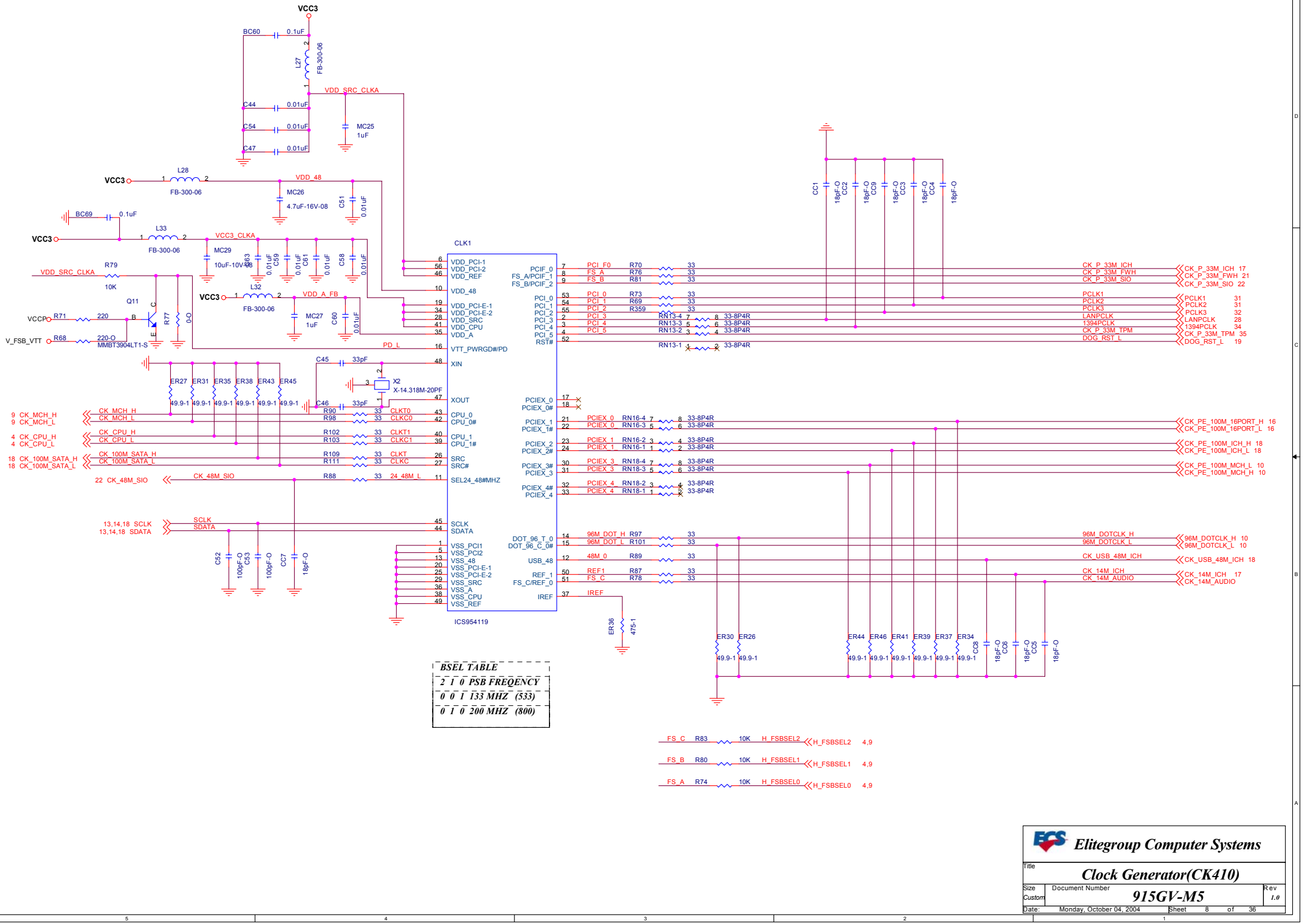


VTT_SEL=0 for the Tejas processor



Elitegroup Computer Systems

Title	P4 LGA775P Part E	
Size: Custom	Document Number: 915GV-M5	Rev: 1.0
Date: Monday, October 04, 2004	Sheet 7 of 36	

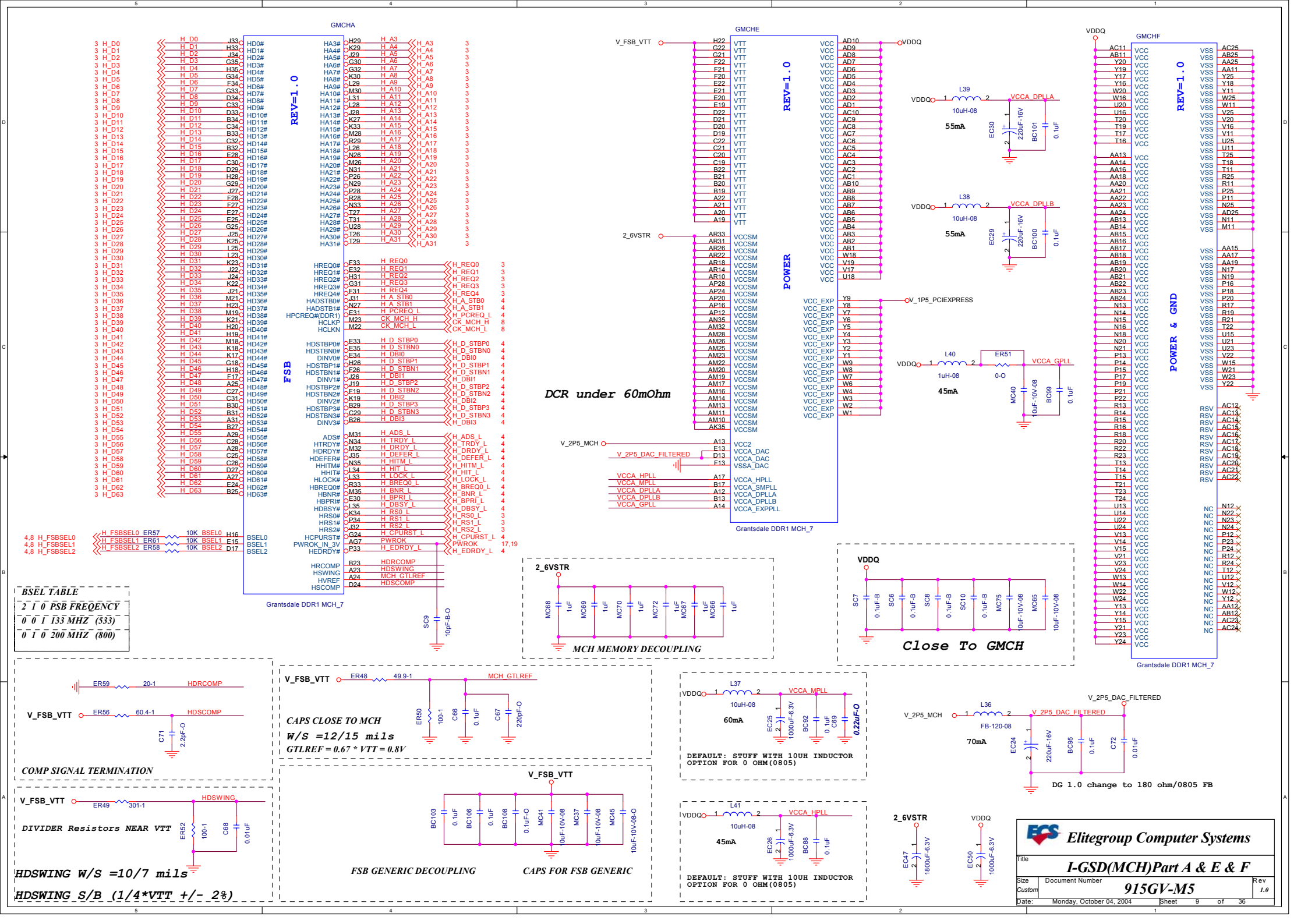


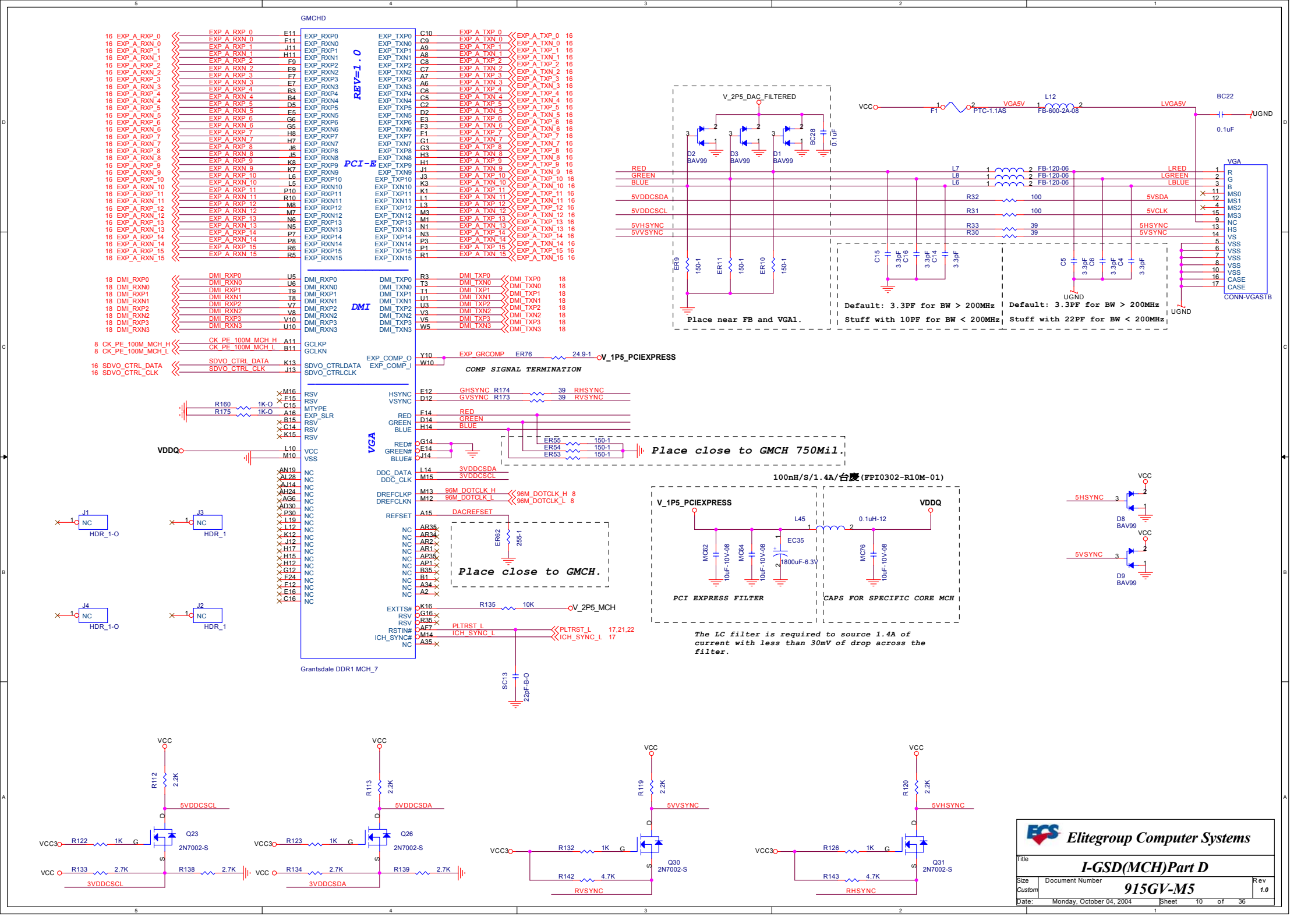
Elitegroup Computer Systems

Title: Clock Generator(CK410)

Size: Custom | Document Number: 915GV-M5 | Rev: 1.0

Date: Monday, October 04, 2004 | Sheet 8 of 36


GMCHA
REV=1.0
FSB
Grantsdale DDR1 MCH_7
GMCHE
REV=1.0
POWER
Grantsdale DDR1 MCH_7
GMCHF
REV=1.0
POWER & GND
Grantsdale DDR1 MCH_7
DCR under 60mOhm
BSEL TABLE
2 1 0 PSB FREQENCY
0 0 1 133 MHZ (533)
0 1 0 200 MHZ (800)
MCH MEMORY DECOUPLING
Close To GMCH
COMP SIGNAL TERMINATION
CAPS CLOSE TO MCH
W/S =12/15 mils
GTLREF = 0.67 * VTT = 0.8V
DIVIDER Resistors NEAR VTT
HDSWING W/S =10/7 mils
HDSWING S/B (1/4*VTT +/- 2%)
FSB GENERIC DECOUPLING
CAPS FOR FSB GENERIC
DEFAULT: STUFF WITH 10UH INDUCTOR OPTION FOR 0 OHM(0805)
DEFAULT: STUFF WITH 10UH INDUCTOR OPTION FOR 0 OHM(0805)
DG 1.0 change to 180 ohm/0805 FB
Elitegroup Computer Systems
I-GSD(MCH)Part A & E & F
915GV-M5
Monday, October 04, 2004


GMCHD
REV=1.0
PCI-E
DMI
VGA
Grantsdale DDR1 MCH_7
V_2P5_DAC_FILTERED
Place near FB and VGA1.
Default: 3.3PF for BW > 200MHz
Stuff with 10PF for BW < 200MHz
Default: 3.3PF for BW > 200MHz
Stuff with 22PF for BW < 200MHz
CONN-VGASTB
COMP SIGNAL TERMINATION
Place close to GMCH 750Mil.
Place close to GMCH.
100nH/S/1.4A/台慶(FPI0302-R10M-01)
PCI EXPRESS FILTER
CAPS FOR SPECIFIC CORE MCH
The LC filter is required to source 1.4A of current with less than 30mV of drop across the filter.
Elitegroup Computer Systems
I-GSD(MCH)Part D
915GV-M5
Monday, October 04, 2004
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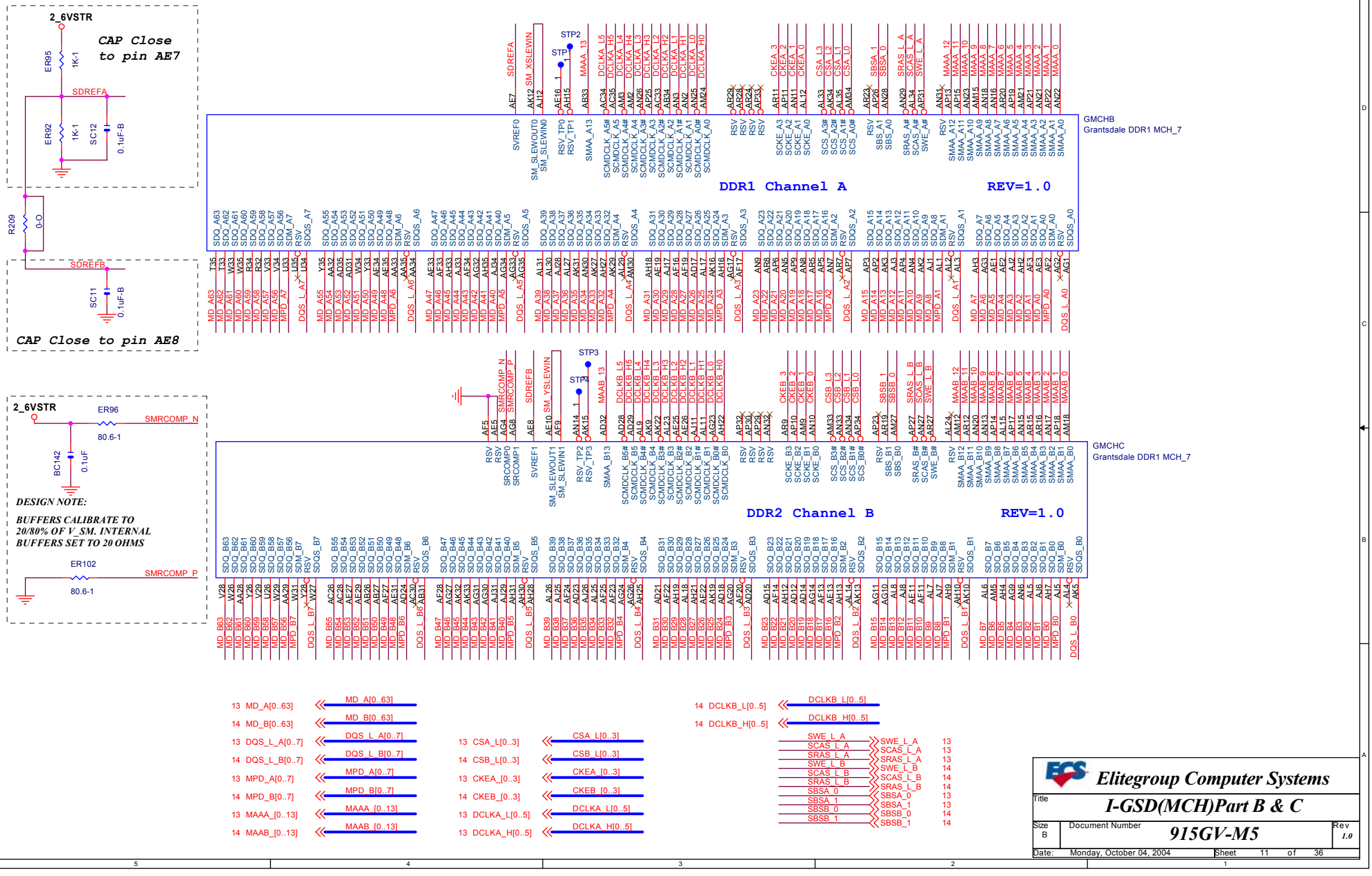
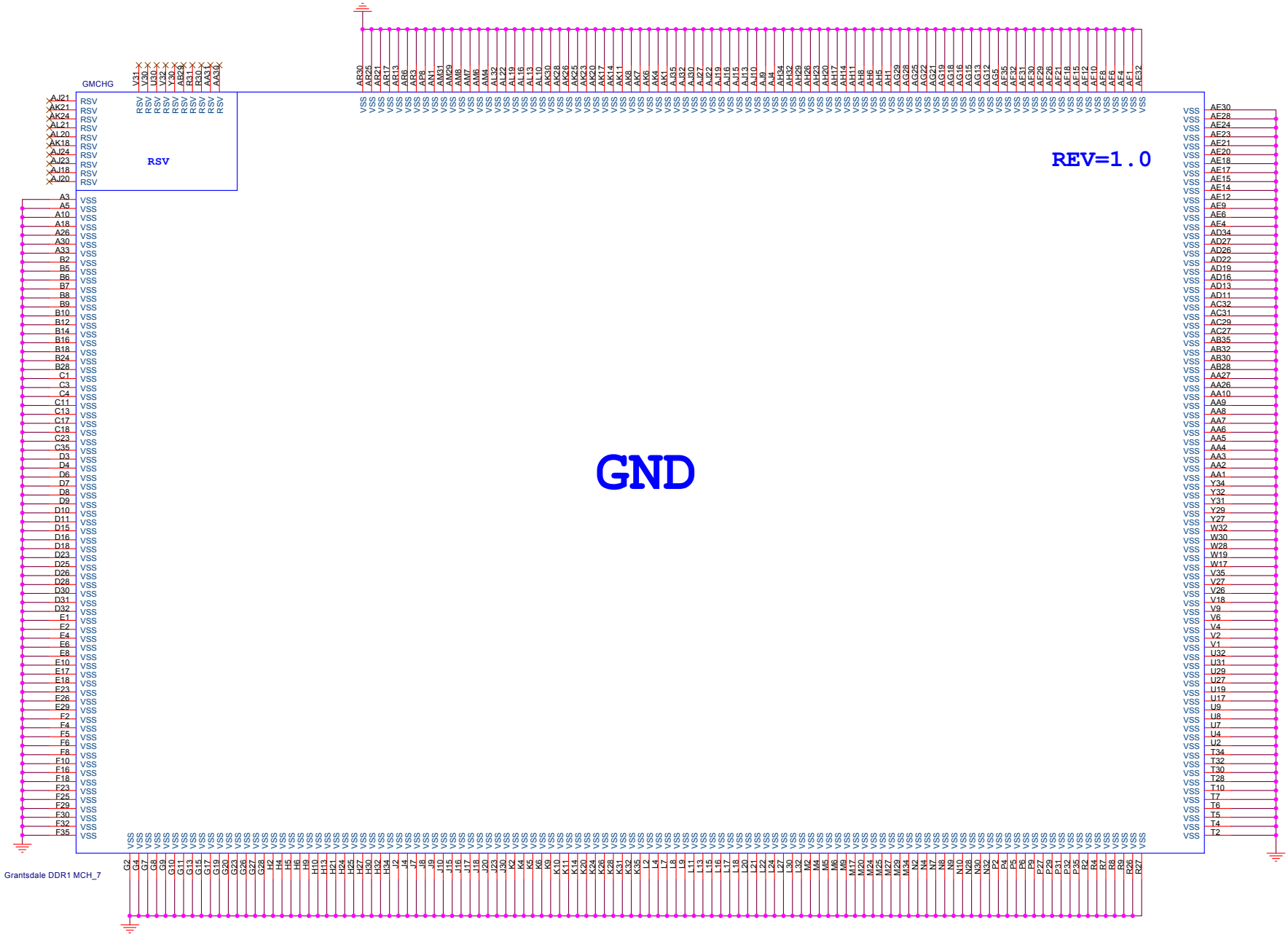
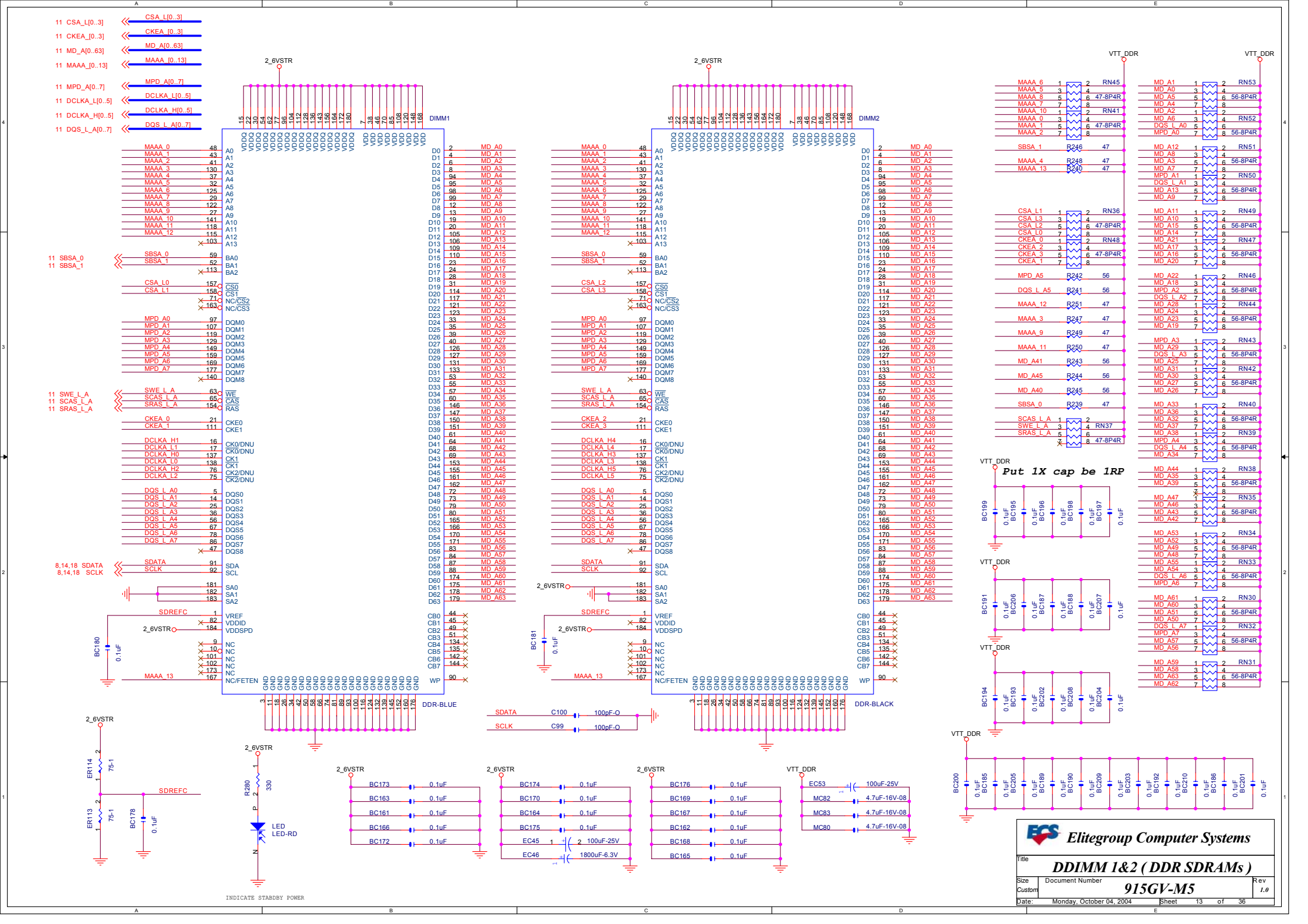

2_6VSTR
CAP Close to pin AE7
ER95
1K-1
SDREFA
ER92
1K-1
SC12
0.1uF-B
R209
0-O
SDREFB
SC11
0.1uF-B
CAP Close to pin AE8
2_6VSTR
ER96
SMRCOMP_N
80.6-1
BC142
0.1uF
DESIGN NOTE:
BUFFERS CALIBRATE TO 20/80% OF V_SM. INTERNAL BUFFERS SET TO 20 OHMS
ER102
SMRCOMP_P
80.6-1
DDR1 Channel A
REV=1.0
GMCHB
Grantsdale DDR1 MCH_7
DDR2 Channel B
REV=1.0
GMCHC
Grantsdale DDR1 MCH_7
13 MD_A[0..63]
14 MD_B[0..63]
13 DQS_L_A[0..7]
14 DQS_L_B[0..7]
13 MPD_A[0..7]
14 MPD_B[0..7]
13 MAAA_[0..13]
14 MAAB_[0..13]
13 CSA_L[0..3]
14 CSB_L[0..3]
14 CKEA_[0..3]
13 CKEB_[0..3]
13 DCLKA_L[0..5]
13 DCLKA_H[0..5]
14 DCLKB_L[0..5]
14 DCLKB_H[0..5]
Elitegroup Computer Systems
Title
I-GSD(MCH)Part B & C
Size B
Document Number
915GV-M5
Rev 1.0
Date: Monday, October 04, 2004
Sheet 11 of 36



Elitegroup Computer Systems	
Title	Schematic Change History
Size: Custom	Document Number: 915GV-M5
Rev: 1.0	
Date: Monday, October 04, 2004	Sheet 12 of 36


11 CSA_L[0..3]
CSA_L[0..3]
11 CKEA_[0..3]
CKEA_[0..3]
11 MD_A[0..63]
MD_A[0..63]
11 MAAA_[0..13]
MAAA_[0..13]
11 MPD_A[0..7]
MPD_A[0..7]
11 DCLKA_L[0..5]
DCLKA_L[0..5]
11 DCLKA_H[0..5]
DCLKA_H[0..5]
11 DQS_L_A[0..7]
DQS_L_A[0..7]
2_6VSTR
DIMM1
DIMM2
DDR-BLUE
DDR-BLACK
11 SBSA_0
11 SBSA_1
11 SWE_L_A
11 SCAS_L_A
11 SRAS_L_A
8,14,18 SDATA
8,14,18 SCLK
BC180
BC181
SDATA C100 100pF-O
SCLK C99 100pF-O
VTT_DDR
Put 1X cap be 1RP
BC199
BC191
BC194
BC200
RN45
RN53
RN41
RN52
RN36
RN51
RN48
RN49
RN37
RN46
RN44
RN43
RN42
RN40
RN38
RN35
RN34
RN33
RN30
RN32
RN31
47-8P4R
56-8P4R
R246
R248
R240
R242
R241
R251
R247
R249
R250
R243
R244
R245
R239
ER114
ER113
75-1
SDREFC
BC178
R280
330
LED
LED-RD
INDICATE STABDBY POWER
BC173
BC163
BC161
BC166
BC172
BC174
BC170
BC164
BC175
EC45 100uF-25V
EC46 1800uF-6.3V
BC176
BC169
BC167
BC162
BC168
BC165
EC53 100uF-25V
MC82 4.7uF-16V-08
MC83 4.7uF-16V-08
MC80 4.7uF-16V-08
0.1uF
Elitegroup Computer Systems
Title
DDIMM 1&2 (DDR SDRAMs)
Size
Custom
Document Number
915GV-M5
Rev
1.0
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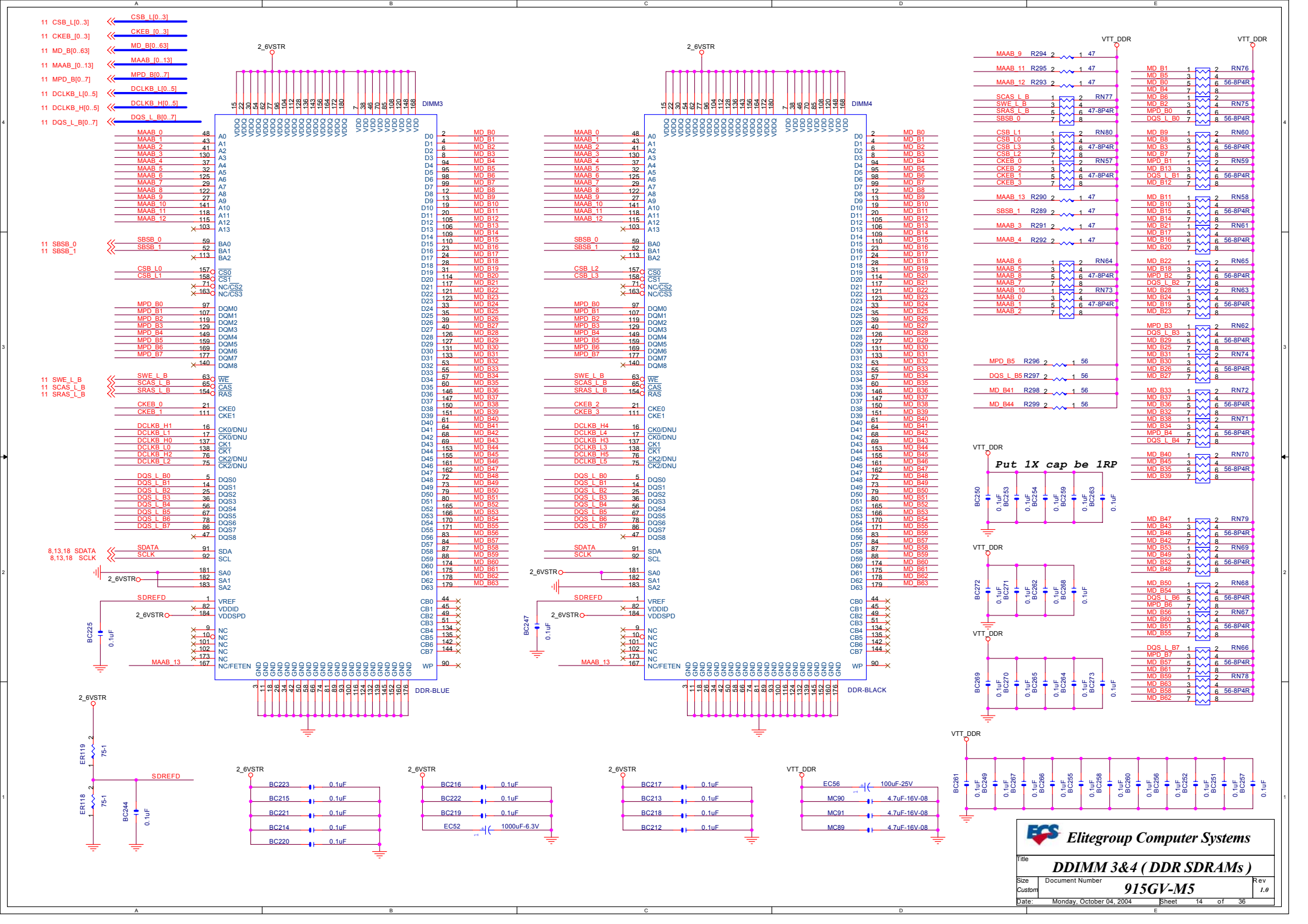
11 CSB_L[0..3]
11 CKEB_[0..3]
11 MD_B[0..63]
11 MAAB_[0..13]
11 MPD_B[0..7]
11 DCLKB_L[0..5]
11 DCLKB_H[0..5]
11 DQS_L_B[0..7]
2_6VSTR
DIMM3
DIMM4
DDR-BLUE
DDR-BLACK
VTT_DDR
Put 1X cap be 1RP
Elitegroup Computer Systems
DDIMM 3&4 (DDR SDRAMs)
915GV-M5
Custom
1.0
Monday, October 04, 2004
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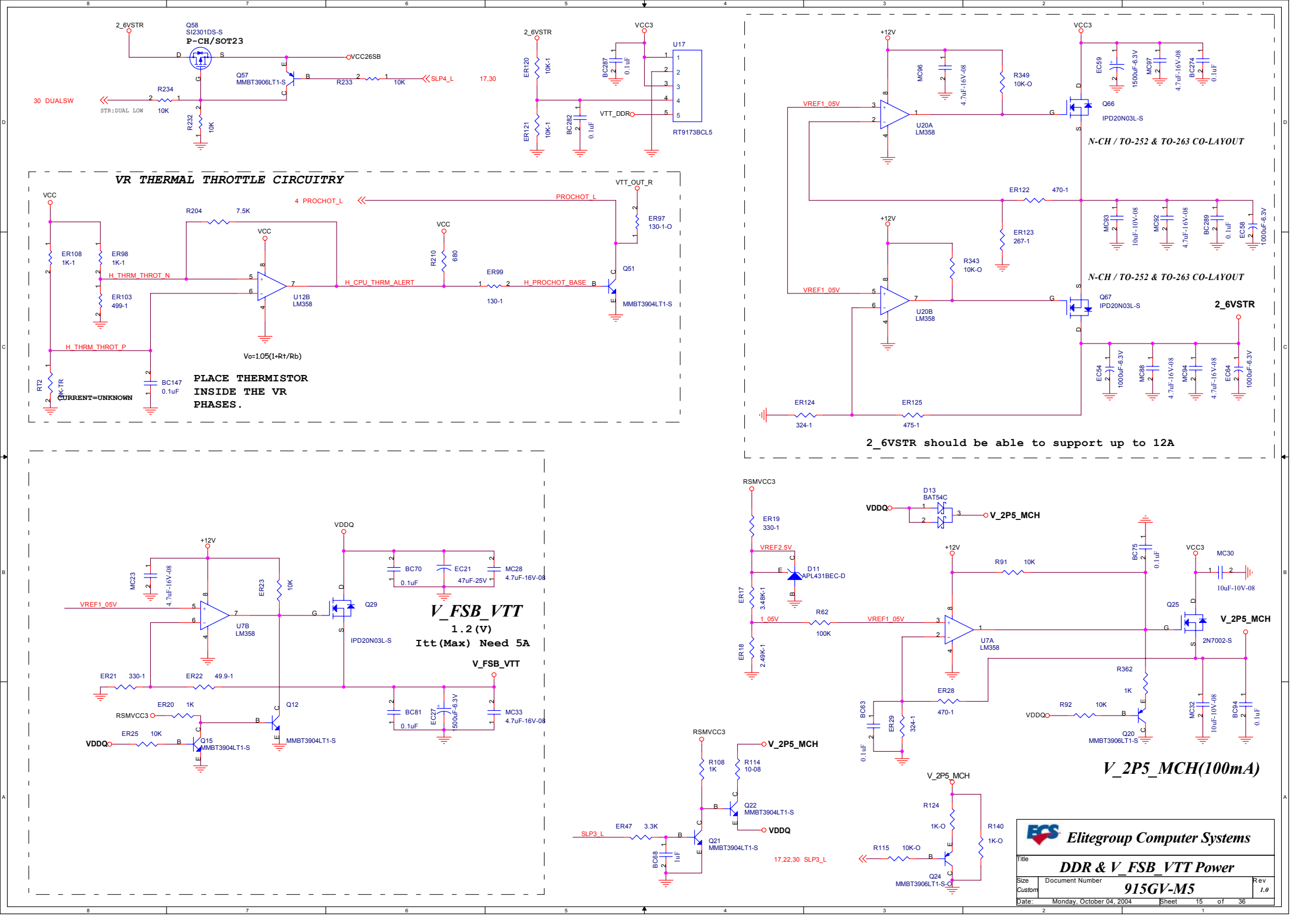
2_6VSTR
Q58
SI2301DS-S
P-CH/SOT23
VCC26SB
Q57
MMBT3906LT1-S
R234
10K
R232
10K
R233
10K
SLP4_L
17,30
30 DUALSW
STR:DUAL LOW
2_6VSTR
ER120
10K-1
ER121
10K-1
BC287
0.1uF
BC282
0.1uF
VCC3
U17
VTT_DDR
RT9173BCL5
VR THERMAL THROTTLE CIRCUITRY
VCC
ER108
1K-1
ER98
1K-1
ER103
499-1
H_THRM_THROT_N
H_THRM_THROT_P
RT2
10K-TR
CURRENT=UNKNOWN
BC147
0.1uF
R204
7.5K
4 PROCHOT_L
PROCHOT_L
VTT_OUT_R
ER97
130-1-O
R210
680
ER99
130-1
H_CPU_THRM_ALERT
H_PROCHOT_BASE
Q51
MMBT3904LT1-S
U12B
LM358
Vo=1.05(1+Rt/Rb)
PLACE THERMISTOR
INSIDE THE VR
PHASES.
+12V
VREF1_05V
U20A
LM358
MC96
4.7uF-16V-08
R349
10K-O
Q66
IPD20N03L-S
EC59
1500uF-6.3V
MC97
4.7uF-16V-08
BC274
0.1uF
N-CH / TO-252 & TO-263 CO-LAYOUT
ER122
470-1
ER123
267-1
R343
10K-O
U20B
LM358
Q67
IPD20N03L-S
MC93
10uF-10V-08
MC92
4.7uF-16V-08
BC289
0.1uF
EC58
1000uF-6.3V
N-CH / TO-252 & TO-263 CO-LAYOUT
2_6VSTR
EC54
1000uF-6.3V
MC88
4.7uF-16V-08
MC94
4.7uF-16V-08
EC64
1000uF-6.3V
ER124
324-1
ER125
475-1
2_6VSTR should be able to support up to 12A
VDDQ
MC23
4.7uF-16V-08
ER23
10K
VREF1_05V
U7B
LM358
Q29
IPD20N03L-S
BC70
0.1uF
EC21
47uF-25V
MC28
4.7uF-16V-08
V_FSB_VTT
1.2(V)
Itt(Max) Need 5A
V_FSB_VTT
ER21
330-1
ER22
49.9-1
ER20
1K
RSMVCC3
Q12
MMBT3904LT1-S
ER25
10K
Q15
MMBT3904LT1-S
BC81
0.1uF
EC27
500uF-6.3V
MC33
4.7uF-16V-08
RSMVCC3
ER19
330-1
VREF2.5V
D11
APL431BEC-D
ER17
3.48K-1
1_05V
ER18
2.49K-1
R62
100K
D13
BAT54C
VDDQ
V_2P5_MCH
R91
10K
U7A
LM358
BC75
0.1uF
VCC3
MC30
10uF-10V-08
Q25
2N7002-S
V_2P5_MCH
R362
1K
ER28
470-1
BC63
0.1uF
ER29
324-1
R92
10K
Q20
MMBT3906LT1-S
MC32
10uF-10V-08
BC94
0.1uF
V_2P5_MCH(100mA)
RSMVCC3
R108
1K
R114
10-08
Q22
MMBT3904LT1-S
V_2P5_MCH
VDDQ
ER47
3.3K
SLP3_L
Q21
MMBT3904LT1-S
BC68
1uF
17,22,30 SLP3_L
V_2P5_MCH
R124
1K-O
R140
1K-O
R115
10K-O
Q24
MMBT3906LT1-S-O
Elitegroup Computer Systems
Title
DDR & V_FSB_VTT Power
Size
Custom
Document Number
915GV-M5
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1.0
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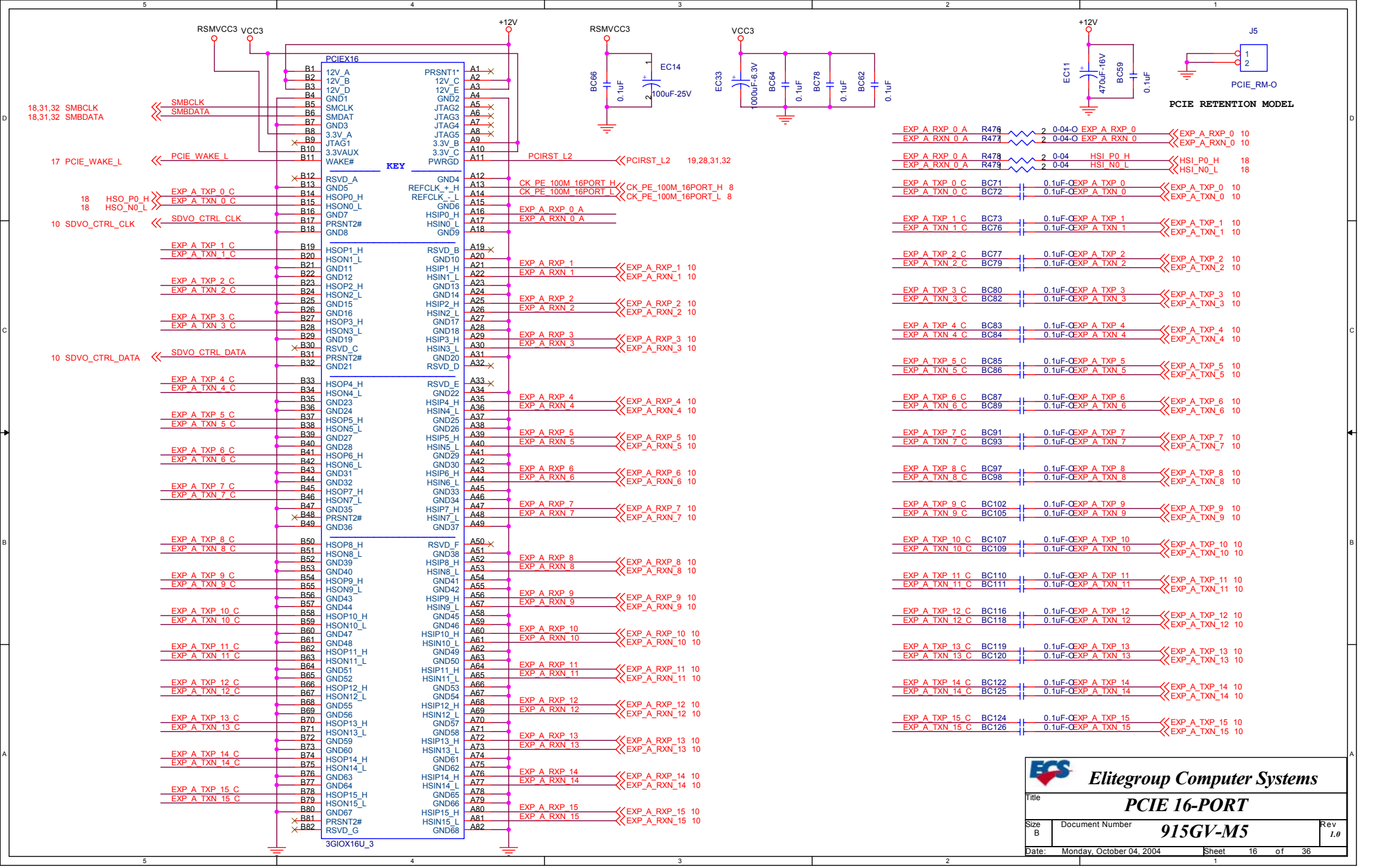

Company	Elitegroup Computer Systems
Title	PCIE 16-PORT
Size	B
Document Number	915GV-M5
Rev	1.0
Date:	Monday, October 04, 2004
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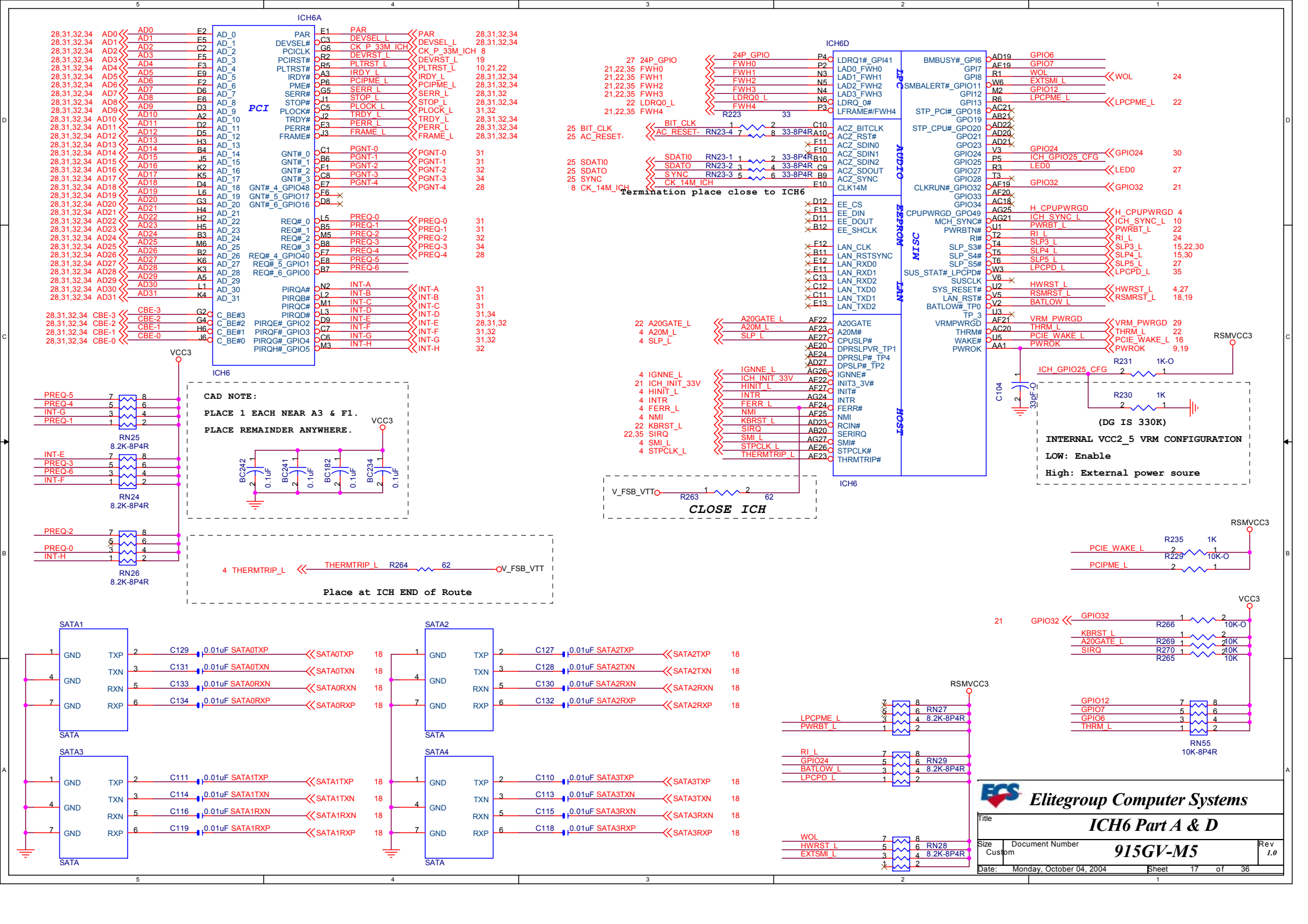
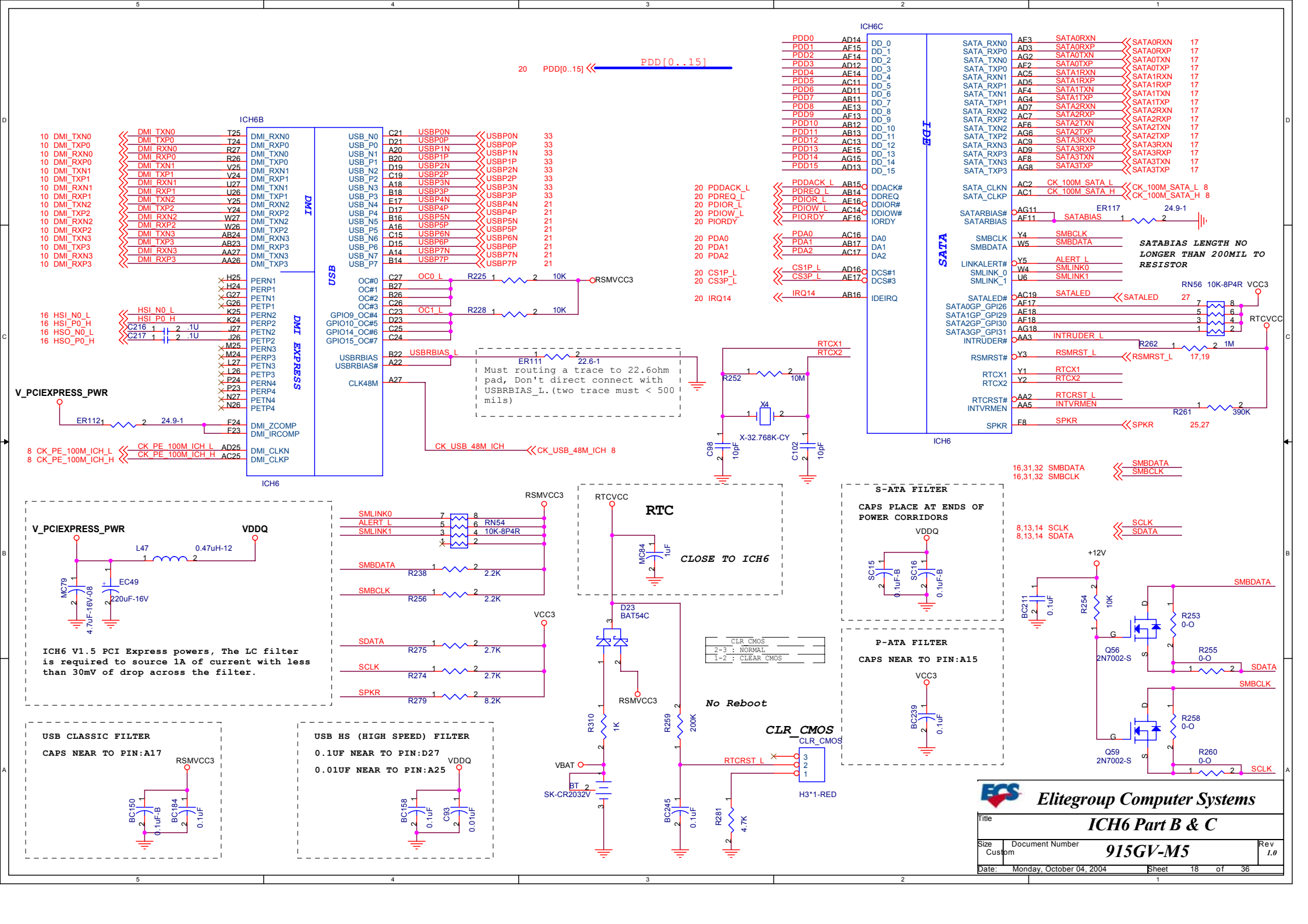
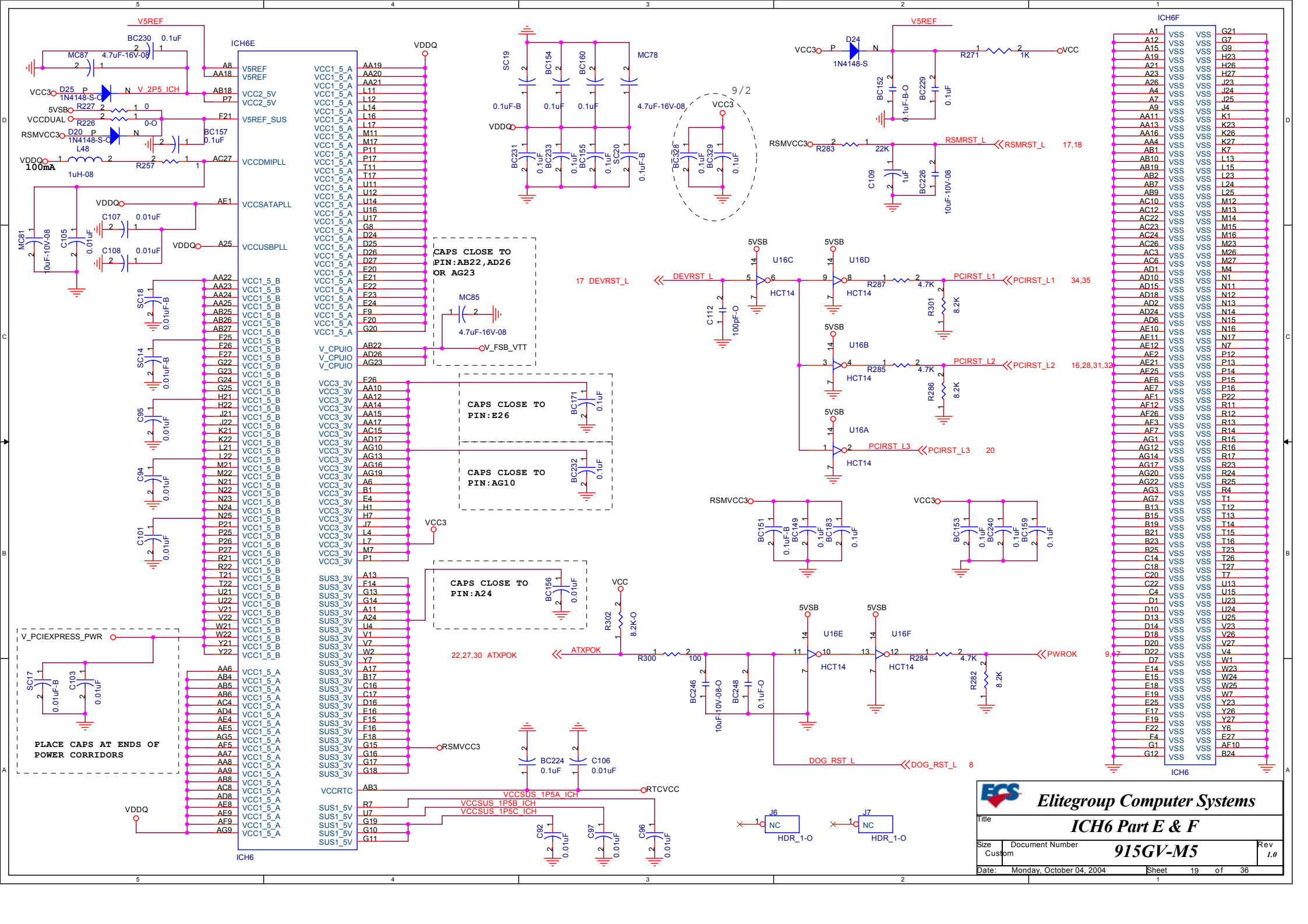
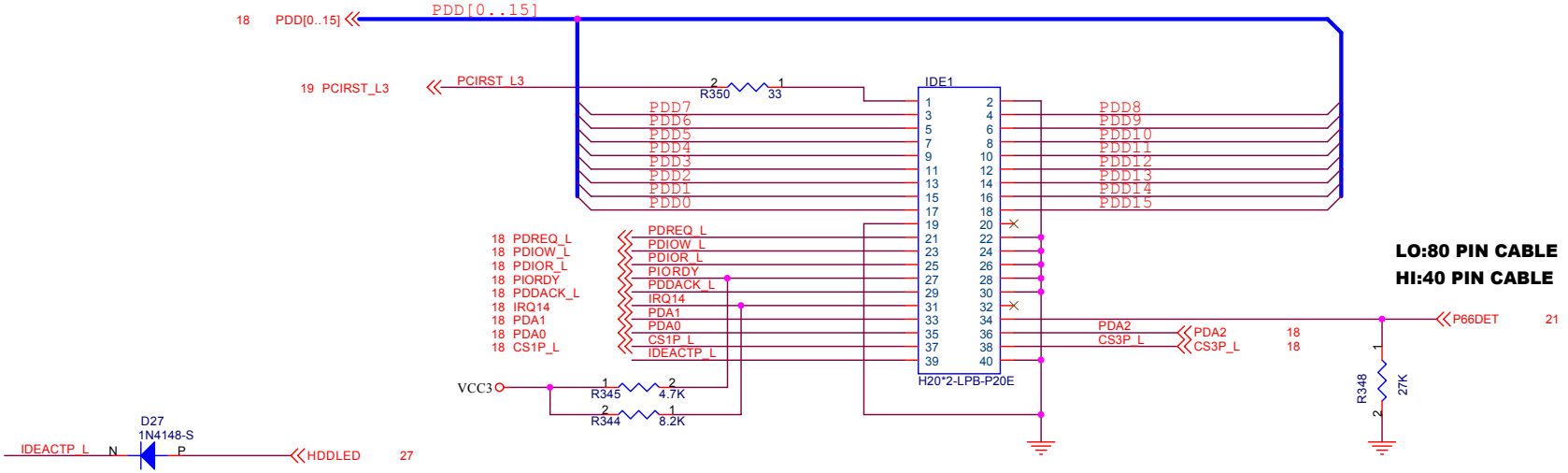

ICH6A
PCI
ICH6
ICH6D
LPC
AUDIO
EEPROM
MISC
LAN
HOST
Termination place close to ICH6
CAD NOTE:
PLACE 1 EACH NEAR A3 & F1.
PLACE REMAINDER ANYWHERE.
CLOSE ICH
Place at ICH END of Route
(DG IS 330K)
INTERNAL VCC2_5 VRM CONFIGURATION
LOW: Enable
High: External power soure
SATA1
SATA2
SATA3
SATA4
SATA
Elitegroup Computer Systems
ICH6 Part A & D
915GV-M5
Monday, October 04, 2004


ICH6C
PDD[0..15]
20 PDD[0..15]
ICH6B
DMI
DMI EXPRESS
USB
ICH6
SATA
ICH6
V_PCIEXPRESS_PWR
Must routing a trace to 22.6ohm pad, Don't direct connect with USBRBIAS_L.(two trace must < 500 mils)
SATABIAS LENGTH NO LONGER THAN 200MIL TO RESISTOR
RTC
CLOSE TO ICH6
S-ATA FILTER
CAPS PLACE AT ENDS OF POWER CORRIDORS
P-ATA FILTER
CAPS NEAR TO PIN:A15
ICH6 V1.5 PCI Express powers, The LC filter is required to source 1A of current with less than 30mV of drop across the filter.
USB CLASSIC FILTER
CAPS NEAR TO PIN:A17
USB HS (HIGH SPEED) FILTER
0.1UF NEAR TO PIN:D27
0.01UF NEAR TO PIN:A25
No Reboot
CLR_CMOS
Elitegroup Computer Systems
ICH6 Part B & C
915GV-M5
Monday, October 04, 2004


ICH6E
ICH6
ICH6F
V5REF
VDDQ
VCC3
VCC
5VSB
V_PCIEXPRESS_PWR
CAPS CLOSE TO PIN:AB22,AD26 OR AG23
CAPS CLOSE TO PIN:E26
CAPS CLOSE TO PIN:AG10
CAPS CLOSE TO PIN:A24
PLACE CAPS AT ENDS OF POWER CORRIDORS
V_FSB_VTT
RSMVCC3
RTCVCC
VCCSUS_1P5A_ICH
VCCSUS_1P5B_ICH
VCCSUS_1P5C_ICH
ATXPOK
DEVRST_L
RSMRST_L
PCIRST_L1
PCIRST_L2
PCIRST_L3
PWROK
DOG_RST_L
HCT14
HDR_1-O
Elitegroup Computer Systems
ICH6 Part E & F
915GV-M5
Monday, October 04, 2004



MAX TRACE LENGTH IS 8"

DATA LINES SHOULD BE MATCHED TO STROBES (XDIOR_L , XIORDY_L) WITHIN +/- 250 MIL, STROBES SHOULD BE MATCHED TO THEIR COMPLEMENT WITHIN +/- 10MIL.

Elitegroup Computer Systems		
Title: IDE Connector		
Size: Custom	Document Number: 915GV-M5	Rev: 1.0
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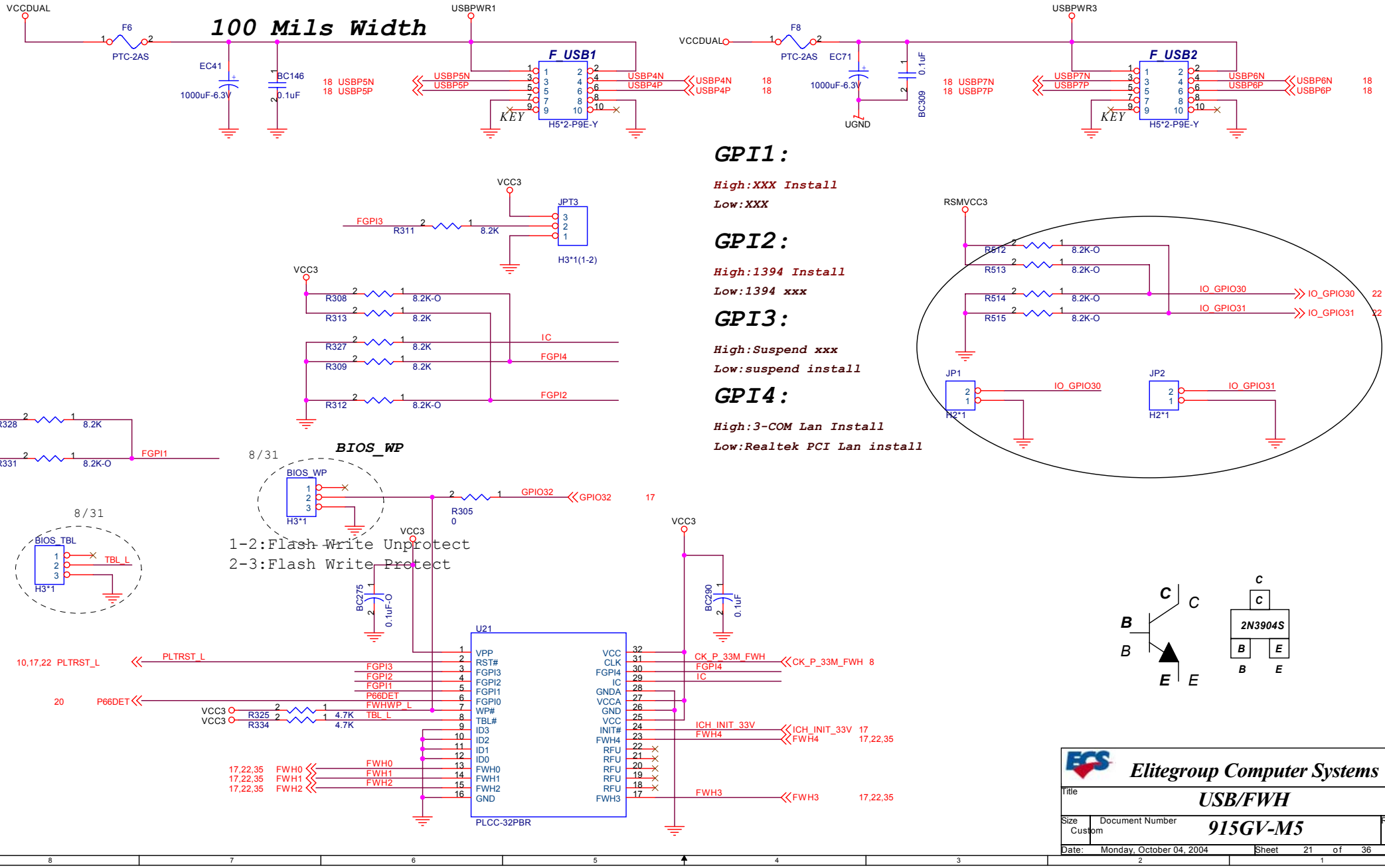
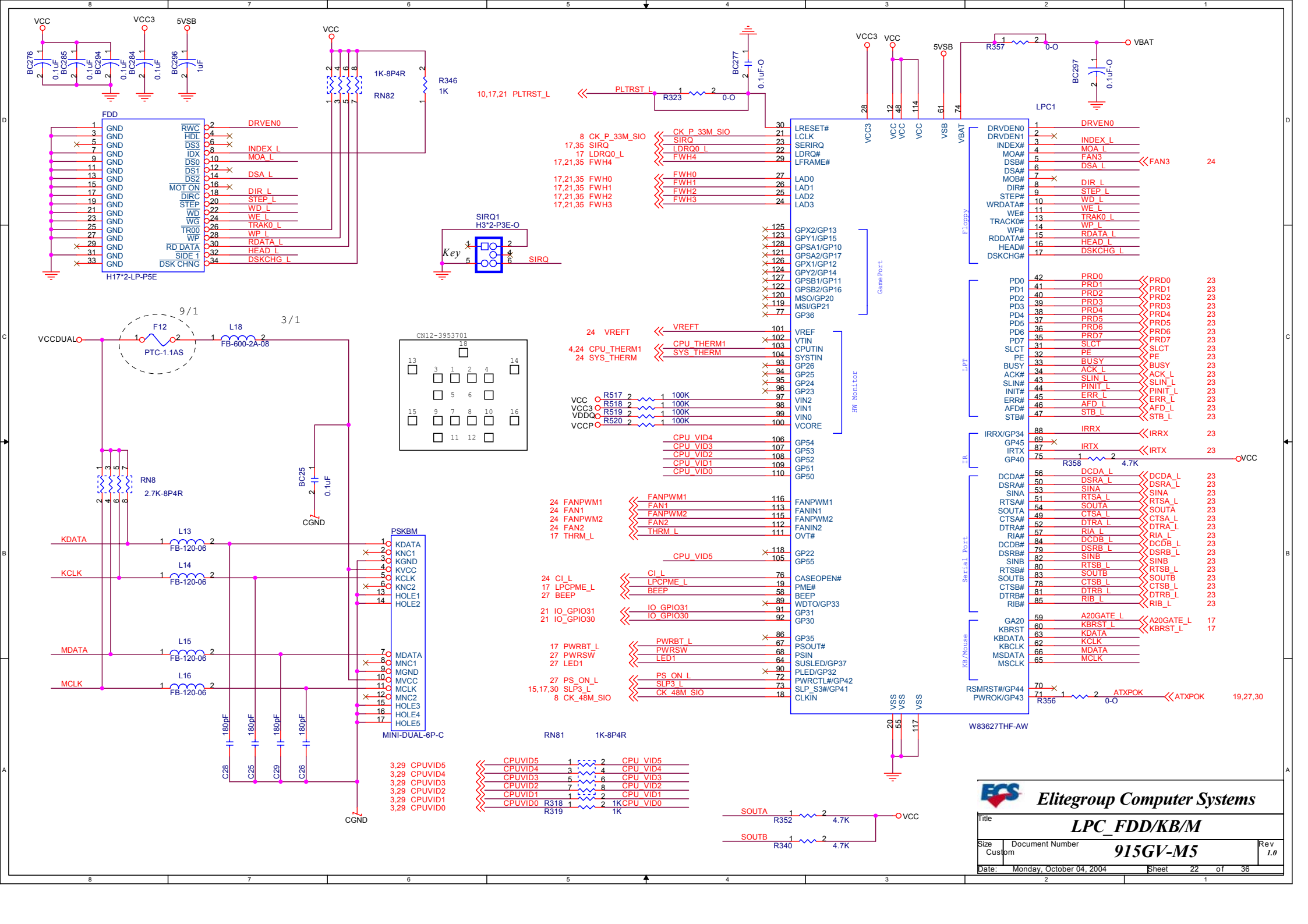
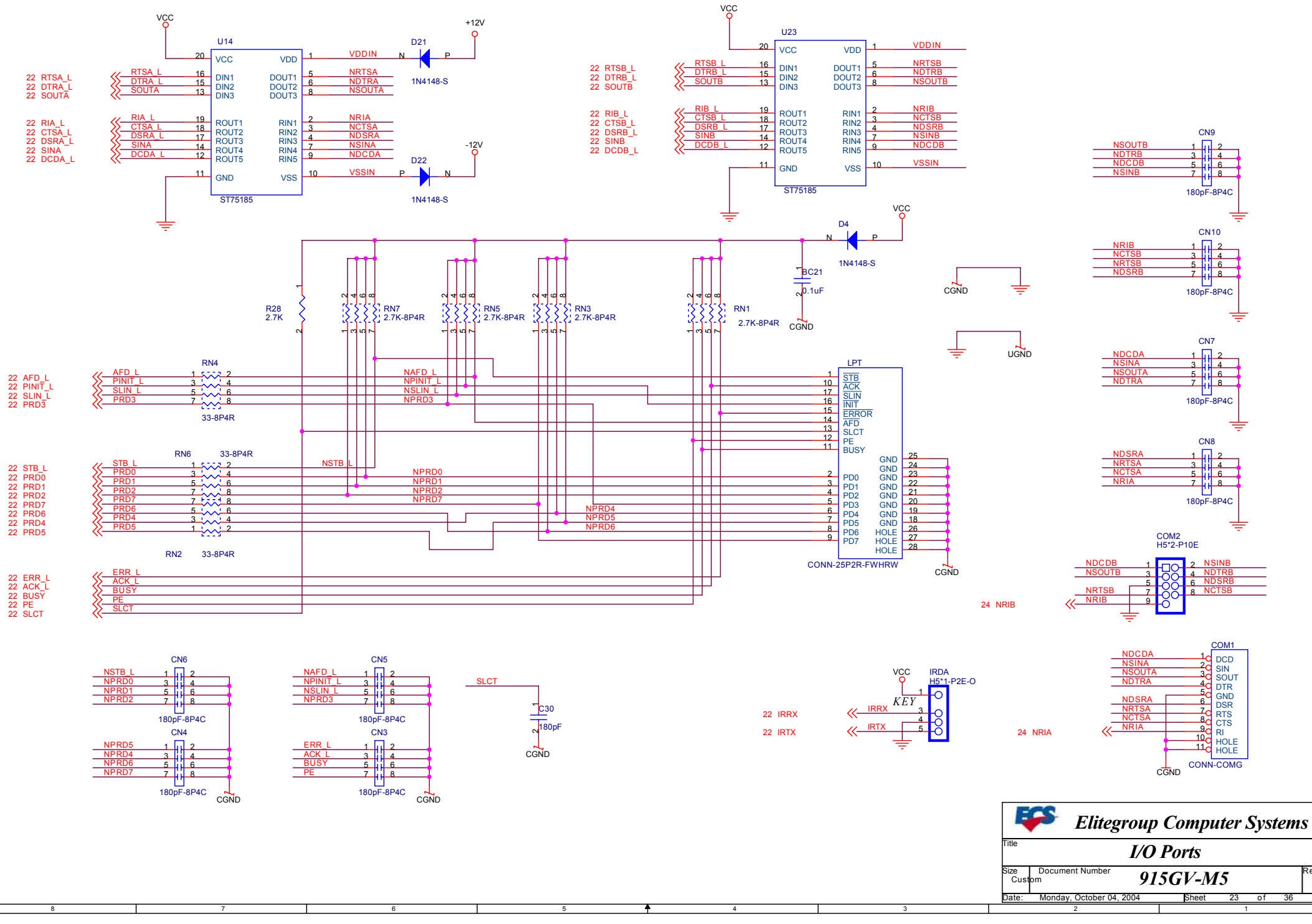
USB PORT INTERFACE



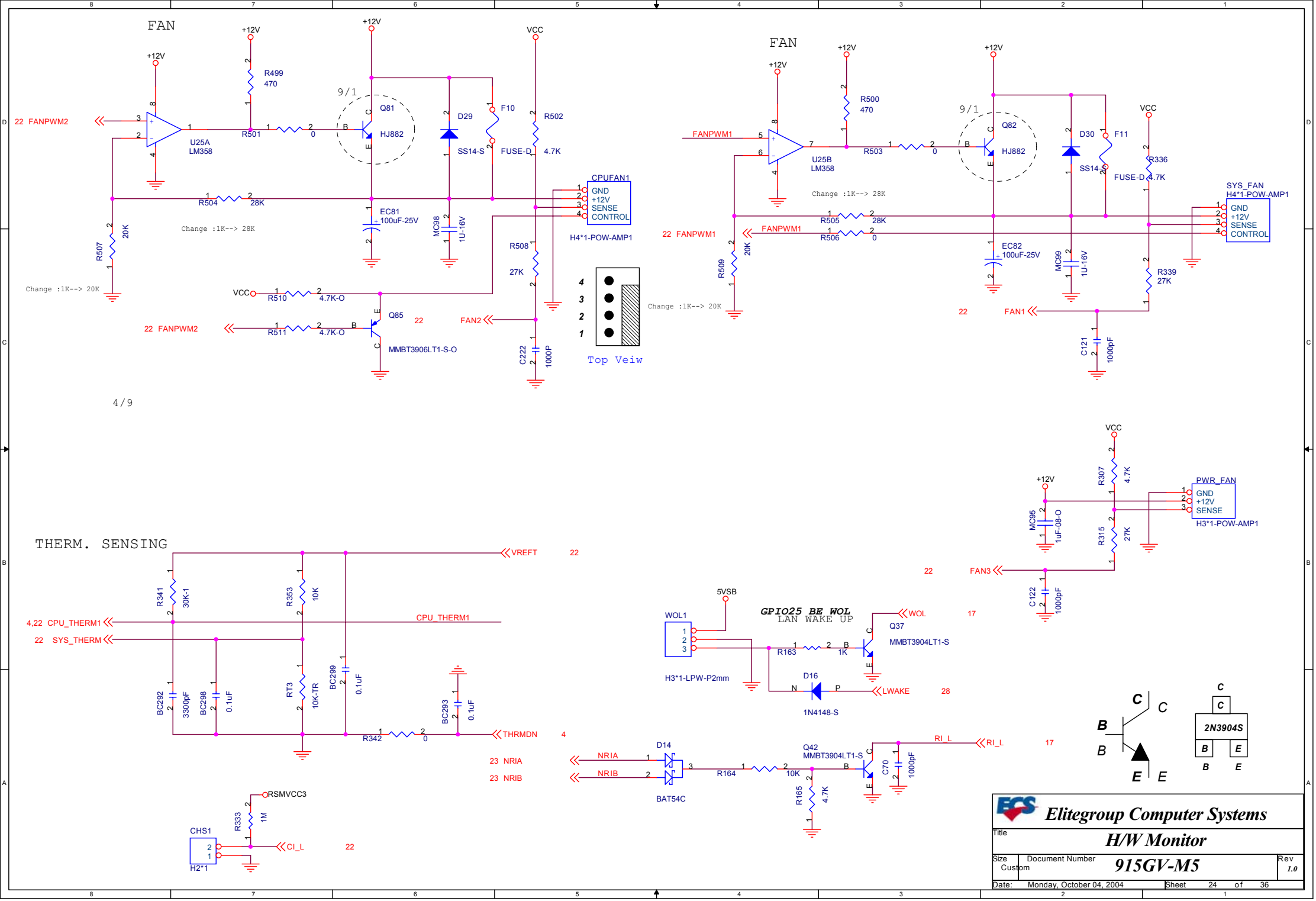
Elitegroup Computer Systems		
Title	USB/FWH	
Size: Custom	Document Number: 915GV-M5	Rev: 1.0
Date: Monday, October 04, 2004	Sheet 21 of 36	



Company	Elitegroup Computer Systems
Title	LPC_FDD/KB/M
Size	Custom
Document Number	915GV-M5
Rev	1.0
Date	Monday, October 04, 2004
Sheet	22 of 36



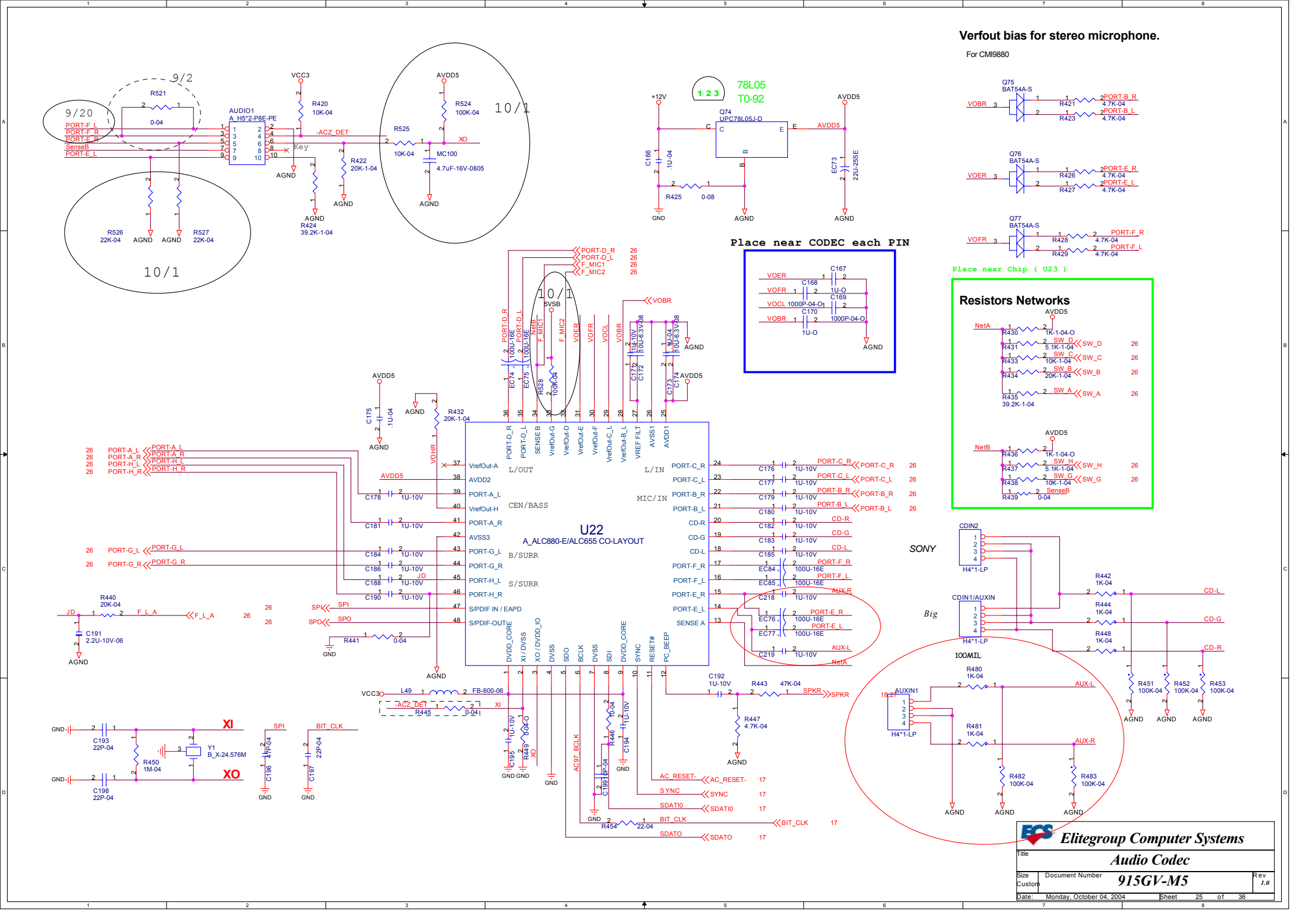
Elitegroup Computer Systems		
Title: I/O Ports		
Size: Custom	Document Number: 915GV-M5	Rev: 1.0
Date: Monday, October 04, 2004	Sheet 23 of 36	



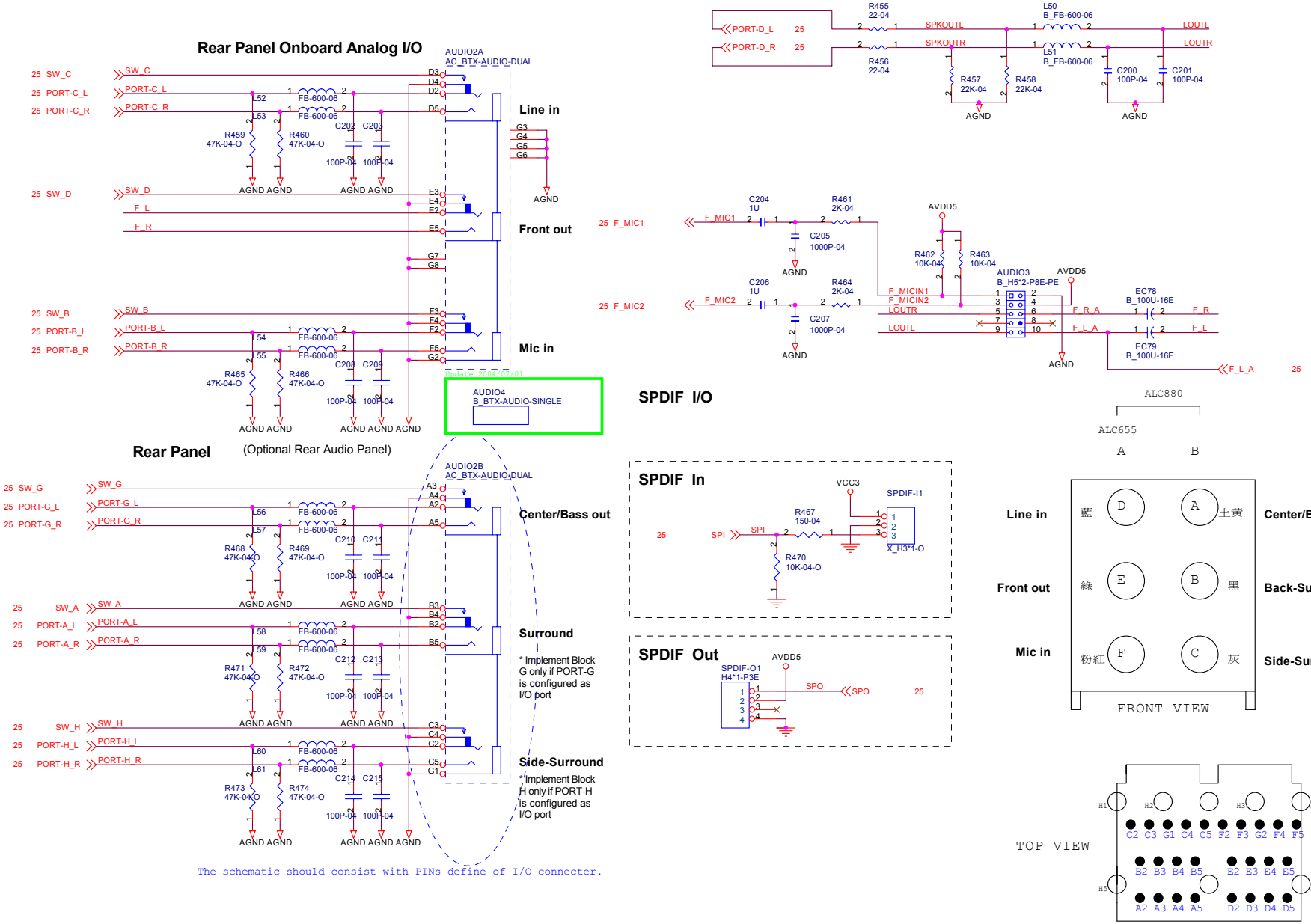
ECS	Elitegroup Computer Systems	
Title	H/W Monitor	
Size: Custom	Document Number: 915GV-M5	Rev: 1.0
Date: Monday, October 04, 2004	Sheet 24 of 36	

Verfout bias for stereo microphone.

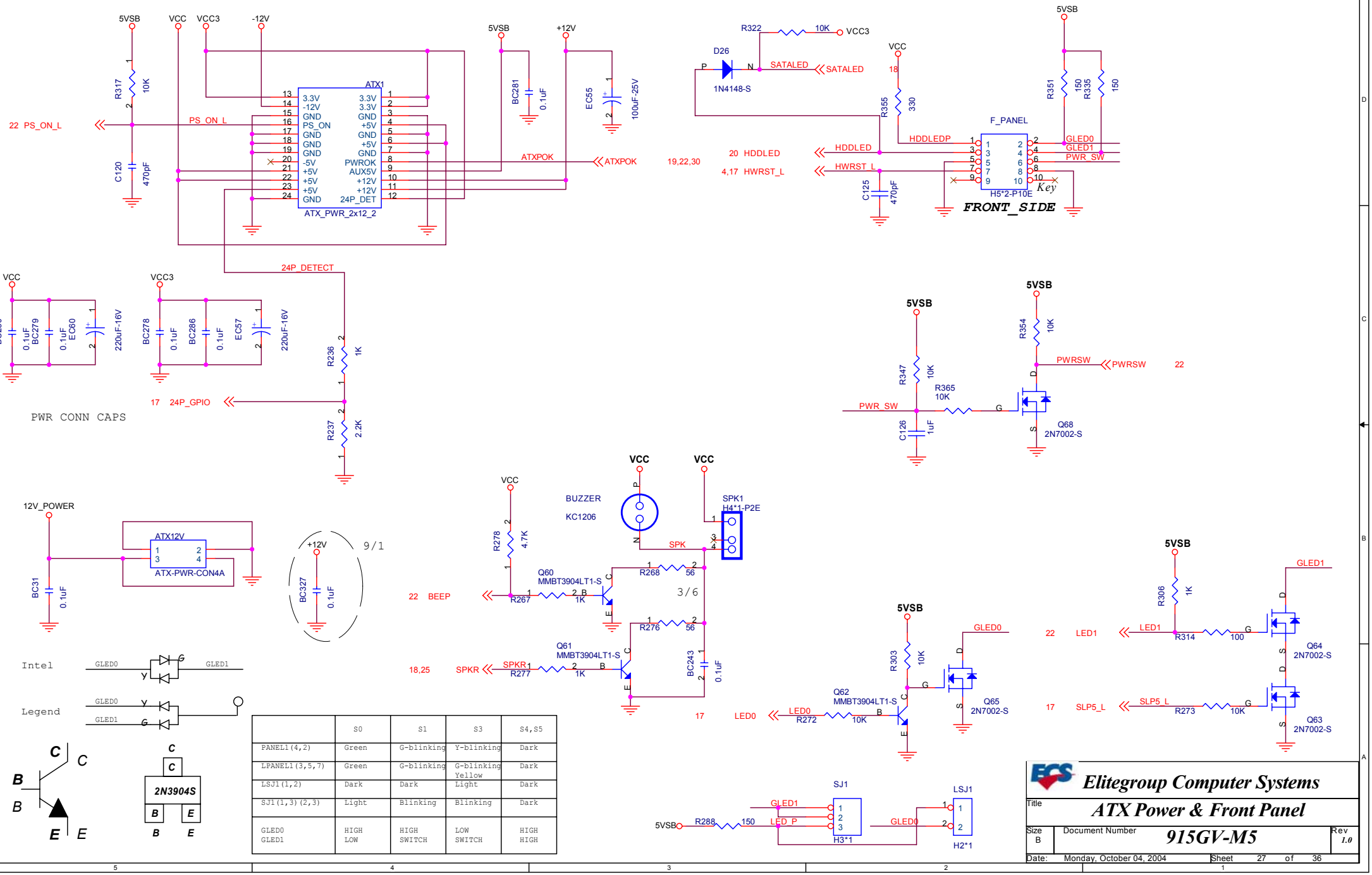
For CMI9880



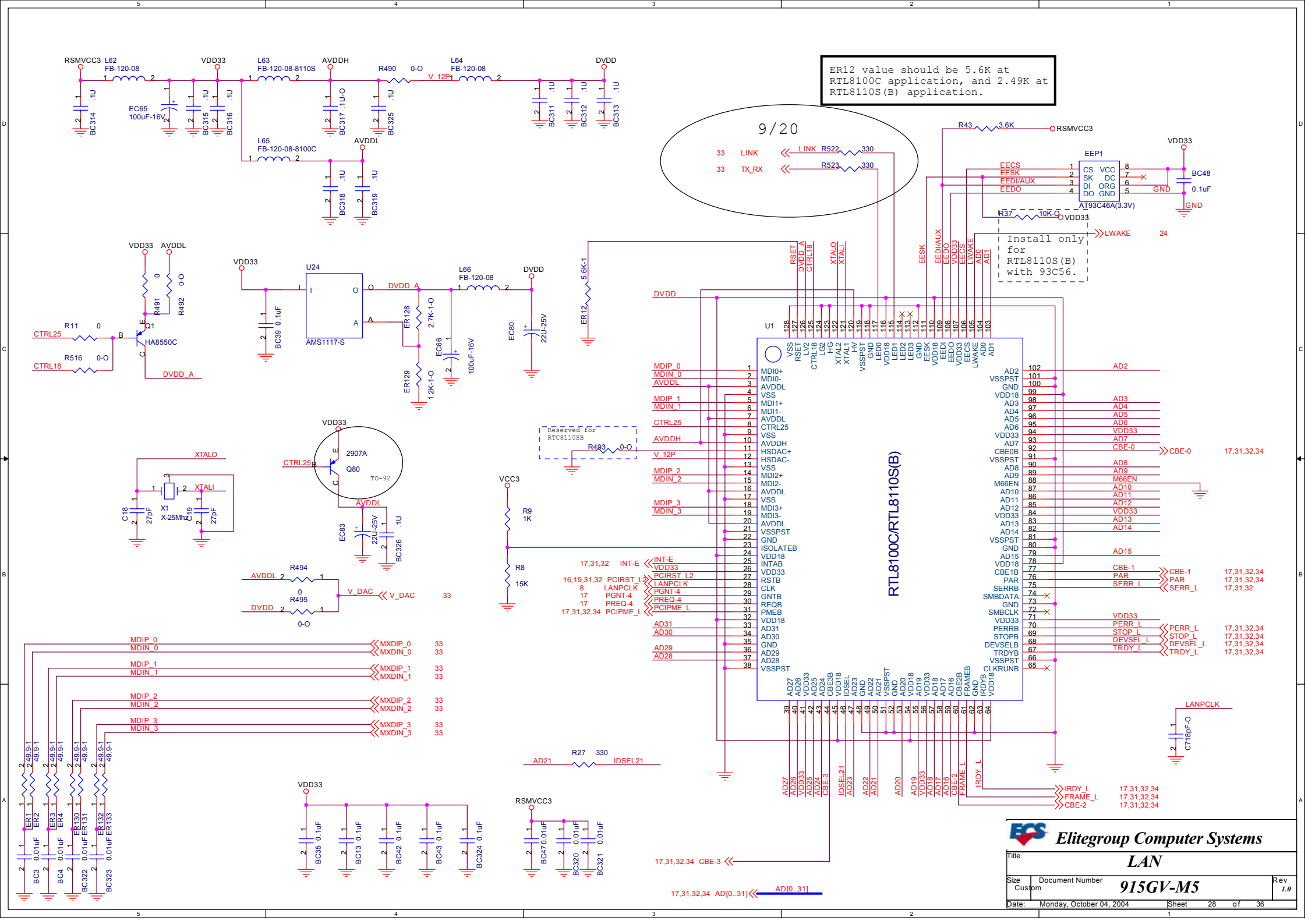
Elitegroup Computer Systems			
Title	Audio Codec		
Size: Custom	Document Number: 915GV-M5		Rev: 1.0
Date: Monday, October 04, 2004	Sheet 25 of 36		



Company	Elitegroup Computer Systems
Title	Audio Interface
Size	Custom
Document Number	915GV-M5
Rev	1.0
Date	Monday, October 04, 2004
Sheet	26 of 36



	S0	S1	S3	S4,S5
PANEL1(4,2)	Green	G-blinking	Y-blinking	Dark
LPANEL1(3,5,7)	Green	G-blinking	G-blinking Yellow	Dark
LSJ1(1,2)	Dark	Dark	Light	Dark
SJ1(1,3)(2,3)	Light	Blinking	Blinking	Dark
GLED0 GLED1	HIGH LOW	HIGH SWITCH	LOW SWITCH	HIGH HIGH


ER12 value should be 5.6K at RTL8100C application, and 2.49K at RTL8110S(B) application.
9/20
Install only for RTL8110S(B) with 93C56.
RTL8100C/RTL8110S(B)
U1
AMS1117-S
U24
AT93C46A(3.3V)
EEP1
Reserved for RTC8110SB
RSMVCC3
VDD33
AVDDL
DVDD
DVDD_A
AVDDH
V_12P
XTALO
XTALI
X1 X-25Mhz
Q1 HA8550C
Q80 2907A TO-92
V_DAC
LWAKE
LANPCLK
IDSEL21
AD[0..31]
Elitegroup Computer Systems
LAN
915GV-M5
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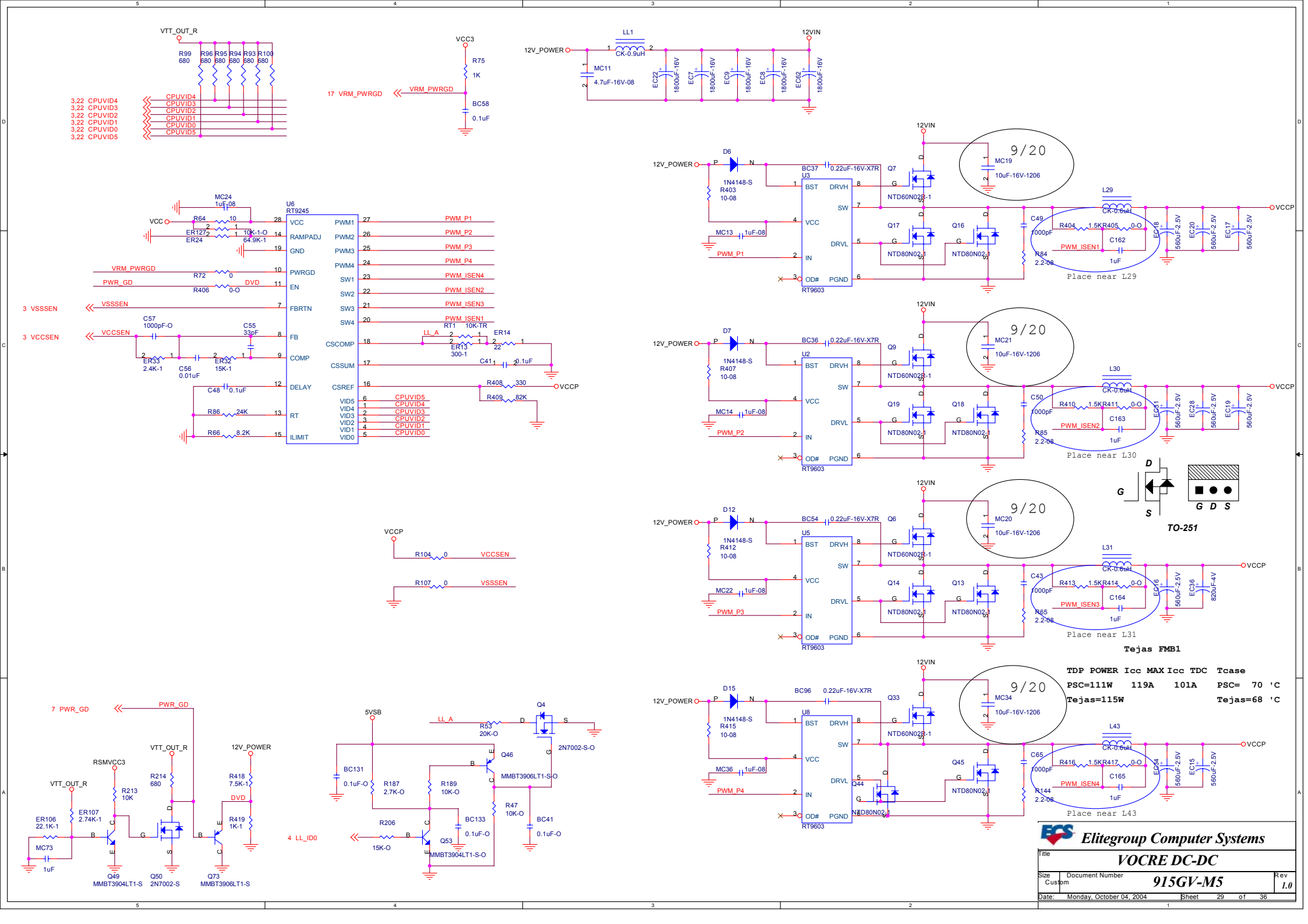
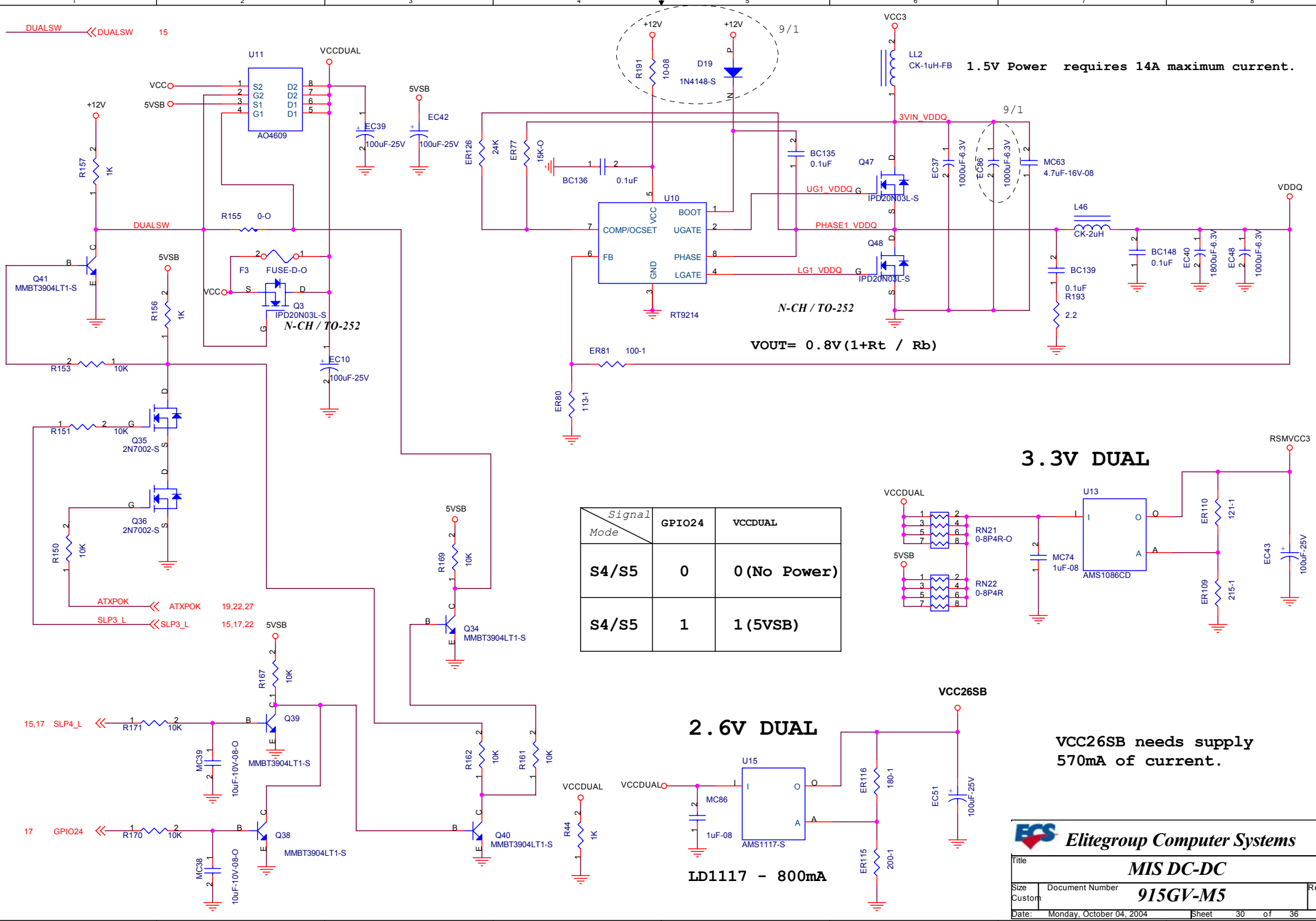
Monday, October 04, 2004
Sheet 28 of 36


VTT_OUT_R
R99 680
R96 680
R95 680
R94 680
R93 680
R100 680
3,22 CPUVID4
3,22 CPUVID3
3,22 CPUVID2
3,22 CPUVID1
3,22 CPUVID0
3,22 CPUVID5
CPUVID4
CPUVID3
CPUVID2
CPUVID1
CPUVID0
CPUVID5
VCC3
R75 1K
17 VRM_PWRGD
VRM_PWRGD
BC58 0.1uF
12V_POWER
LL1
CK-0.9uH
MC11 4.7uF-16V-08
EC22 1800uF-16V
EC7 1800uF-16V
EC3 1800uF-16V
EC8 1800uF-16V
EC62 1800uF-16V
12VIN
MC24 1uF-08
U6
RT9245
VCC
RAMPADJ
GND
PWRGD
EN
FBRTN
FB
COMP
DELAY
RT
ILIMIT
PWM1
PWM2
PWM3
PWM4
SW1
SW2
SW3
SW4
CSCOMP
CSSUM
CSREF
VID5
VID4
VID3
VID2
VID1
VID0
R64 10
ER127 10K-1-O
ER24 64.9K-1
VRM_PWRGD
R72 0
PWR_GD
DVD
R406 0-O
3 VSSSEN
VSSSEN
3 VCCSEN
VCCSEN
C57 1000pF-O
C55 33pF
ER33 2.4K-1
C56 0.01uF
ER32 15K-1
C48 0.1uF
R86 24K
R66 8.2K
PWM_P1
PWM_P2
PWM_P3
PWM_P4
PWM_ISEN4
PWM_ISEN2
PWM_ISEN3
PWM_ISEN1
LL_A
RT1 10K-TR
ER13 300-1
ER14 22
C41 0.1uF
R408 330
R409 82K
VCCP
VCCP
R104 0
VCCSEN
R107 0
VSSSEN
D6
1N4148-S
R403 10-08
BC37 0.22uF-16V-X7R
Q7
NTD60N02R-1
Q17
Q16
NTD80N02-1
MC13 1uF-08
PWM_P1
U3
RT9603
BST
DRVH
SW
VCC
DRVL
IN
OD#
PGND
MC19 10uF-16V-1206
9/20
L29
CK-0.6uH
C49 1000pF
R404 1.5K
R405 0-O
C162 1uF
PWM_ISEN1
R84 2.2-08
EC18 560uF-2.5V
EC20 560uF-2.5V
EC17 560uF-2.5V
Place near L29
D7
1N4148-S
R407 10-08
BC36 0.22uF-16V-X7R
Q9
NTD60N02R-1
Q19
Q18
NTD80N02-1
MC14 1uF-08
PWM_P2
U2
RT9603
MC21 10uF-16V-1206
9/20
L30
CK-0.6uH
C50 1000pF
R410 1.5K
R411 0-O
C163 1uF
PWM_ISEN2
R85 2.2-08
EC21 560uF-2.5V
EC28 560uF-2.5V
EC19 560uF-2.5V
Place near L30
D12
1N4148-S
R412 10-08
BC54 0.22uF-16V-X7R
Q6
NTD60N02R-1
Q14
Q13
NTD80N02-1
MC22 1uF-08
PWM_P3
U5
RT9603
MC20 10uF-16V-1206
9/20
L31
CK-0.6uH
C43 1000pF
R413 1.5K
R414 0-O
C164 1uF
PWM_ISEN3
R65 2.2-08
EC16 560uF-2.5V
EC36 820uF-4V
Place near L31
D15
1N4148-S
R415 10-08
BC96 0.22uF-16V-X7R
Q33
NTD60N02R-1
Q44
Q45
NTD80N02-1
MC36 1uF-08
PWM_P4
U8
RT9603
MC34 10uF-16V-1206
9/20
L43
CK-0.6uH
C65 1000pF
R416 1.5K
R417 0-O
C165 1uF
PWM_ISEN4
R144 2.2-08
EC14 560uF-2.5V
EC15 560uF-2.5V
Place near L43
D
G
S
G D S
TO-251
Tejas FMB1
TDP POWER Icc MAX Icc TDC Tcase
PSC=111W 119A 101A PSC= 70 'C
Tejas=115W Tejas=68 'C
7 PWR_GD
PWR_GD
VTT_OUT_R
12V_POWER
RSMVCC3
R213 10K
R214 680
R418 7.5K-1
DVD
R419 1K-1
ER106 22.1K-1
ER107 2.74K-1
MC73 1uF
Q49 MMBT3904LT1-S
Q50 2N7002-S
Q73 MMBT3906LT1-S
4 LL_ID0
5VSB
LL_A
R53 20K-O
Q4
2N7002-S-O
BC131 0.1uF-O
R187 2.7K-O
R189 10K-O
Q46
MMBT3906LT1-S-O
R47 10K-O
BC133 0.1uF-O
BC41 0.1uF-O
R206 15K-O
Q53 MMBT3904LT1-S-O
Elitegroup Computer Systems
Title
VOCRE DC-DC
Size Custom
Document Number 915GV-M5
Rev 1.0
Date: Monday, October 04, 2004
Sheet 29 of 36


DUALSW
DUALSW 15
U11
AO4609
VCCDUAL
VCC
5VSB
+12V
EC39 100uF-25V
EC42 100uF-25V
R157 1K
R155 0-O
F3 FUSE-D-O
Q3 IPD20N03L-S
N-CH / TO-252
Q41 MMBT3904LT1-S
R156 1K
R153 10K
EC10 100uF-25V
R151 10K
Q35 2N7002-S
Q36 2N7002-S
R150 10K
ATXPOK
ATXPOK 19,22,27
SLP3_L
SLP3_L 15,17,22
R169 10K
Q34 MMBT3904LT1-S
R167 10K
15,17 SLP4_L
R171 10K
Q39 MMBT3904LT1-S
MC39 10uF-10V-08-O
17 GPIO24
R170 10K
Q38 MMBT3904LT1-S
MC38 10uF-10V-08-O
R162 10K
R161 10K
Q40 MMBT3904LT1-S
R44 1K
9/1
R191 10-08
D19 1N4148-S
VCC3
LL2 CK-1uH-FB
1.5V Power requires 14A maximum current.
3VIN_VDDQ
ER126 24K
ER77 15K-O
BC136 0.1uF
BC135 0.1uF
U10
VCC
BOOT
UGATE
PHASE
LGATE
COMP/OCSET
FB
GND
RT9214
UG1_VDDQ
PHASE1_VDDQ
LG1_VDDQ
Q47 IPD20N03L-S
Q48 IPD20N03L-S
N-CH / TO-252
EC37 1000uF-6.3V
EC86 1000uF-6.3V
MC63 4.7uF-16V-08
VDDQ
L46 CK-2uH
BC148 0.1uF
EC40 1800uF-6.3V
EC48 1000uF-6.3V
BC139 0.1uF
R193 2.2
ER81 100-1
ER80 113-1
VOUT= 0.8V(1+Rt / Rb)
3.3V DUAL
RSMVCC3
VCCDUAL
RN21 0-8P4R-O
5VSB
RN22 0-8P4R
U13
AMS1086CD
MC74 1uF-08
ER110 121-1
ER109 215-1
EC43 100uF-25V
Signal / Mode
GPIO24
VCCDUAL
S4/S5 0 0(No Power)
S4/S5 1 1(5VSB)
2.6V DUAL
VCC26SB
VCCDUAL
MC86 1uF-08
U15
AMS1117-S
ER116 180-1
ER115 200-1
EC51 100uF-25V
LD1117 - 800mA
VCC26SB needs supply 570mA of current.
Elitegroup Computer Systems
Title MIS DC-DC
Size Custom
Document Number 915GV-M5
Rev 1.0
Date: Monday, October 04, 2004
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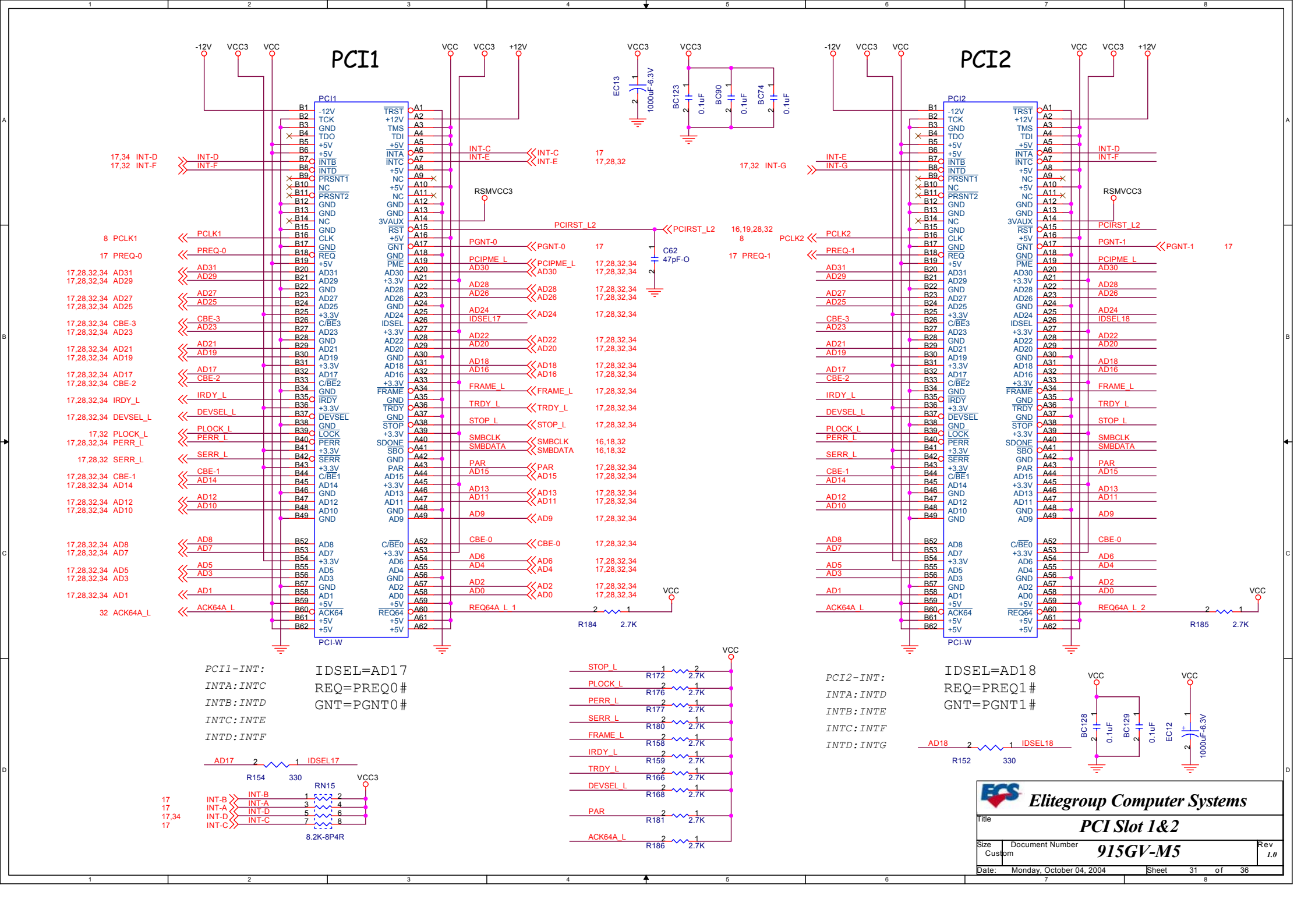
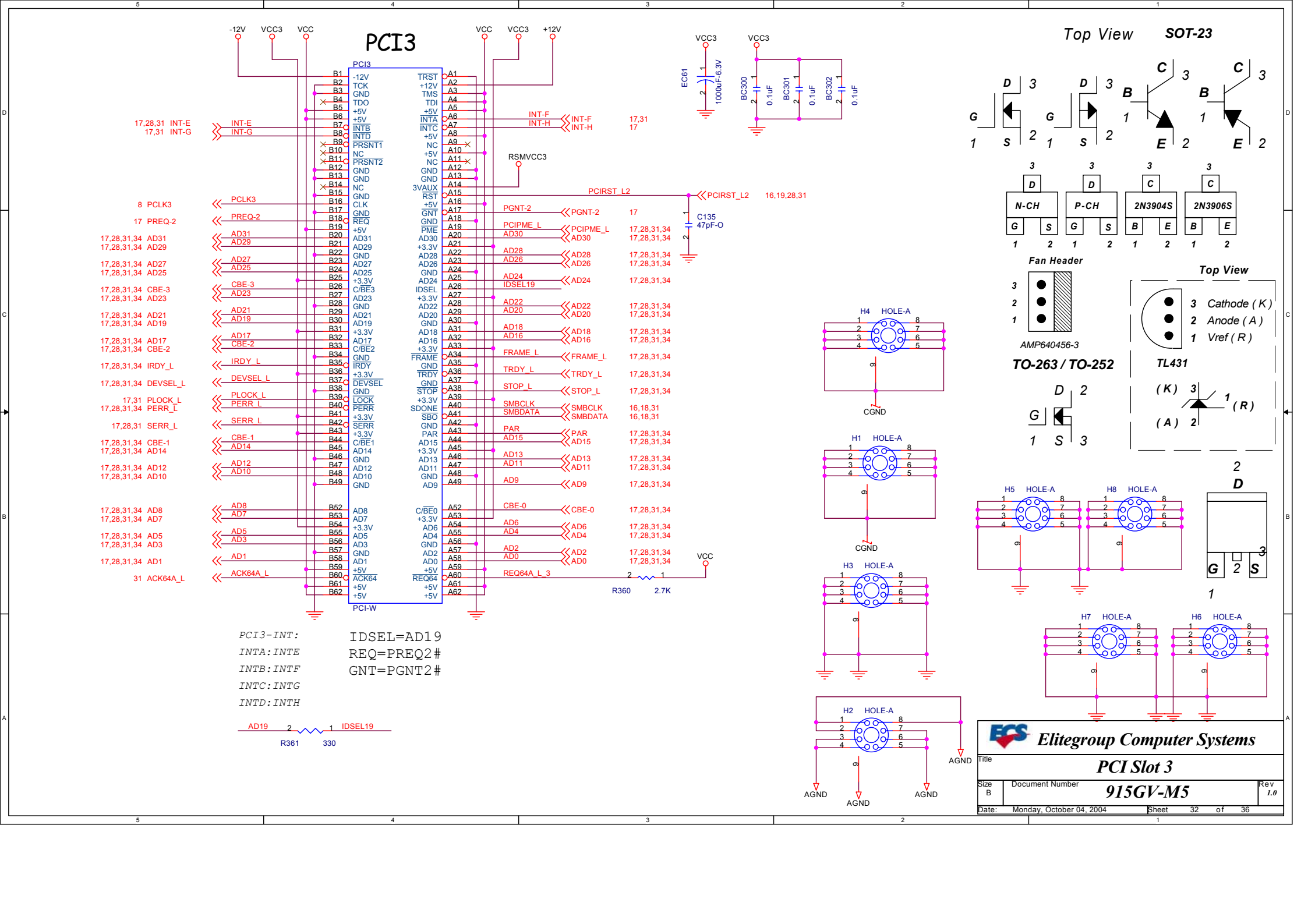

PCI1
PCI2
PCI-W
PCI-W
PCI1-INT:
INTA:INTC
INTB:INTD
INTC:INTE
INTD:INTF
IDSEL=AD17
REQ=PREQ0#
GNT=PGNT0#
PCI2-INT:
INTA:INTD
INTB:INTE
INTC:INTF
INTD:INTG
IDSEL=AD18
REQ=PREQ1#
GNT=PGNT1#
8.2K-8P4R
Elitegroup Computer Systems
PCI Slot 1&2
915GV-M5
Custom
Monday, October 04, 2004
Sheet 31 of 36
1.0


PCI3
-12V VCC3 VCC
VCC VCC3 +12V
PCI3
PCI-W
B1 -12V
B2 TCK
B3 GND
B4 TDO
B5 +5V
B6 +5V
B7 INTB
B8 INTD
B9 PRSNT1
B10 NC
B11 PRSNT2
B12 GND
B13 GND
B14 NC
B15 GND
B16 CLK
B17 GND
B18 REQ
B19 +5V
B20 AD31
B21 AD29
B22 GND
B23 AD27
B24 AD25
B25 +3.3V
B26 C/BE3
B27 AD23
B28 GND
B29 AD21
B30 AD19
B31 +3.3V
B32 AD17
B33 C/BE2
B34 GND
B35 IRDY
B36 +3.3V
B37 DEVSEL
B38 GND
B39 LOCK
B40 PERR
B41 +3.3V
B42 SERR
B43 +3.3V
B44 C/BE1
B45 AD14
B46 GND
B47 AD12
B48 AD10
B49 GND
B52 AD8
B53 AD7
B54 +3.3V
B55 AD5
B56 AD3
B57 GND
B58 AD1
B59 +5V
B60 ACK64
B61 +5V
B62 +5V
A1 TRST
A2 +12V
A3 TMS
A4 TDI
A5 +5V
A6 INTA
A7 INTC
A8 +5V
A9 NC
A10 +5V
A11 NC
A12 GND
A13 GND
A14 3VAUX
A15 RST
A16 +5V
A17 GNT
A18 GND
A19 PME
A20 AD30
A21 +3.3V
A22 AD28
A23 AD26
A24 GND
A25 AD24
A26 IDSEL
A27 +3.3V
A28 AD22
A29 AD20
A30 GND
A31 AD18
A32 AD16
A33 +3.3V
A34 FRAME
A35 GND
A36 TRDY
A37 GND
A38 STOP
A39 +3.3V
A40 SDONE
A41 SBO
A42 GND
A43 PAR
A44 AD15
A45 +3.3V
A46 AD13
A47 AD11
A48 GND
A49 AD9
A52 C/BE0
A53 +3.3V
A54 AD6
A55 AD4
A56 GND
A57 AD2
A58 AD0
A59 +5V
A60 REQ64
A61 +5V
A62 +5V
17,28,31 INT-E
17,31 INT-G
INT-E
INT-G
INT-F
INT-H
INT-F 17,31
INT-H 17
8 PCLK3
PCLK3
17 PREQ-2
PREQ-2
17,28,31,34 AD31
17,28,31,34 AD29
AD31
AD29
17,28,31,34 AD27
17,28,31,34 AD25
AD27
AD25
17,28,31,34 CBE-3
17,28,31,34 AD23
CBE-3
AD23
17,28,31,34 AD21
17,28,31,34 AD19
AD21
AD19
17,28,31,34 AD17
17,28,31,34 CBE-2
AD17
CBE-2
17,28,31,34 IRDY_L
IRDY_L
17,28,31,34 DEVSEL_L
DEVSEL_L
17,31 PLOCK_L
17,28,31,34 PERR_L
PLOCK_L
PERR_L
17,28,31 SERR_L
SERR_L
17,28,31,34 CBE-1
17,28,31,34 AD14
CBE-1
AD14
17,28,31,34 AD12
17,28,31,34 AD10
AD12
AD10
17,28,31,34 AD8
17,28,31,34 AD7
AD8
AD7
17,28,31,34 AD5
17,28,31,34 AD3
AD5
AD3
17,28,31,34 AD1
AD1
31 ACK64A_L
ACK64A_L
RSMVCC3
PCIRST_L2
PCIRST_L2 16,19,28,31
PGNT-2
PGNT-2 17
PCIPME_L
AD30
PCIPME_L 17,28,31,34
AD30 17,28,31,34
AD28
AD26
AD28 17,28,31,34
AD26 17,28,31,34
AD24
IDSEL19
AD24 17,28,31,34
AD22
AD20
AD22 17,28,31,34
AD20 17,28,31,34
AD18
AD16
AD18 17,28,31,34
AD16 17,28,31,34
FRAME_L
FRAME_L 17,28,31,34
TRDY_L
TRDY_L 17,28,31,34
STOP_L
STOP_L 17,28,31,34
SMBCLK
SMBDATA
SMBCLK 16,18,31
SMBDATA 16,18,31
PAR
AD15
PAR 17,28,31,34
AD15 17,28,31,34
AD13
AD11
AD13 17,28,31,34
AD11 17,28,31,34
AD9
AD9 17,28,31,34
CBE-0
CBE-0 17,28,31,34
AD6
AD4
AD6 17,28,31,34
AD4 17,28,31,34
AD2
AD0
AD2 17,28,31,34
AD0 17,28,31,34
REQ64A_L_3
VCC
2 1
R360 2.7K
VCC3
EC61
1000uF-6.3V
BC300
0.1uF
BC301
0.1uF
BC302
0.1uF
C135
47pF-O
PCI3-INT:
INTA:INTE
INTB:INTF
INTC:INTG
INTD:INTH
IDSEL=AD19
REQ=PREQ2#
GNT=PGNT2#
AD19 2 1 IDSEL19
R361 330
H4 HOLE-A
CGND
H1 HOLE-A
CGND
H3 HOLE-A
H2 HOLE-A
AGND
AGND
AGND
AGND
H5 HOLE-A
H8 HOLE-A
H7 HOLE-A
H6 HOLE-A
Top View
SOT-23
N-CH
P-CH
2N3904S
2N3906S
Fan Header
AMP640456-3
TO-263 / TO-252
Top View
3 Cathode (K)
2 Anode (A)
1 Vref (R)
TL431
(K)
(R)
(A)
D
G
S
2
1
Elitegroup Computer Systems
Title
PCI Slot 3
Size B
Document Number
915GV-M5
Rev 1.0
Date: Monday, October 04, 2004
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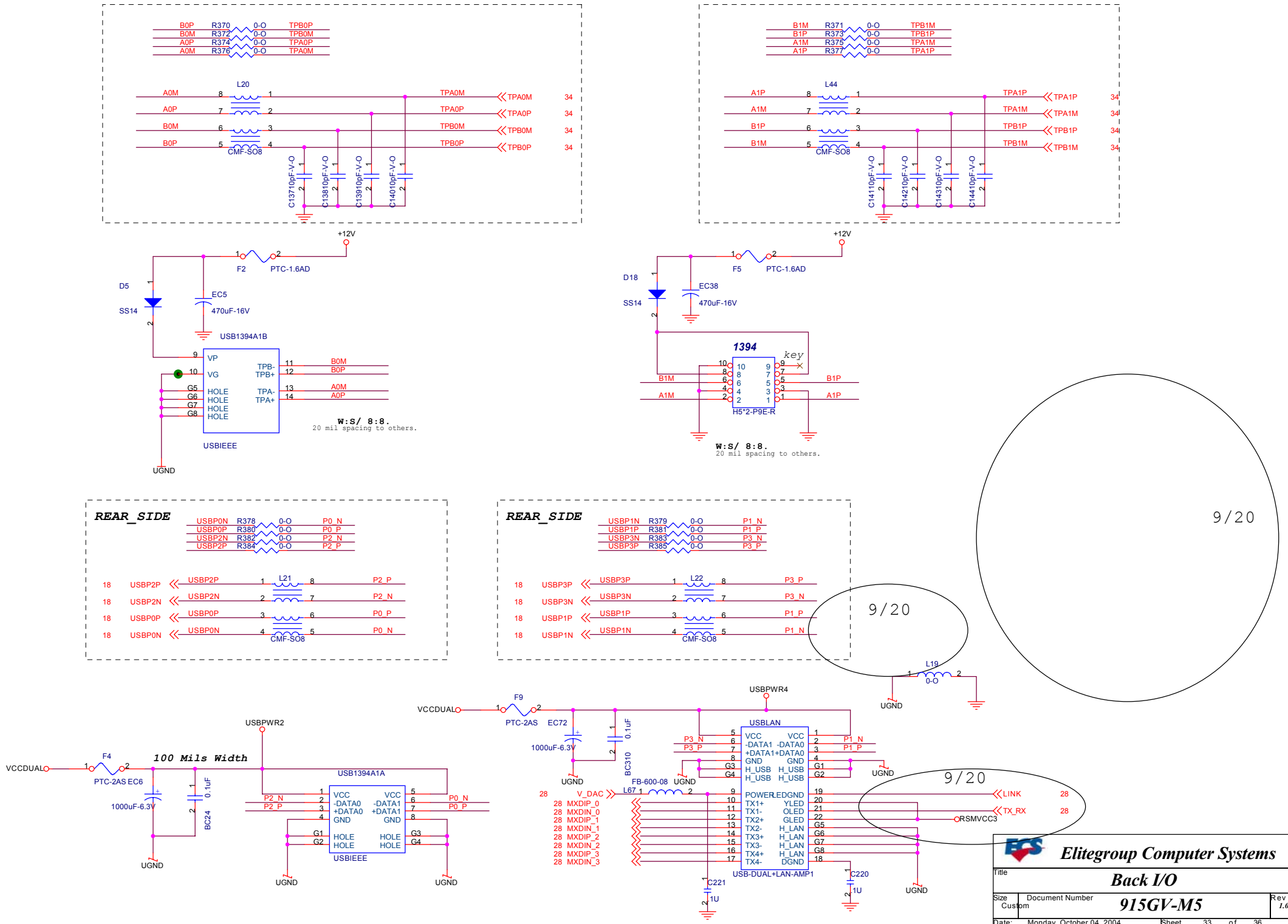
B0P R370 0-O TPB0P
B0M R372 0-O TPB0M
A0P R374 0-O TPA0P
A0M R376 0-O TPA0M
L20
A0M
A0P
B0M
B0P
CMF-SO8
TPA0M
TPA0P
TPB0M
TPB0P
C13710pF-V-O
C13810pF-V-O
C13910pF-V-O
C14010pF-V-O
B1M R371 0-O TPB1M
B1P R373 0-O TPB1P
A1M R375 0-O TPA1M
A1P R377 0-O TPA1P
L44
A1P
A1M
B1P
B1M
C14110pF-V-O
C14210pF-V-O
C14310pF-V-O
C14410pF-V-O
+12V
F2 PTC-1.6AD
D5
SS14
EC5
470uF-16V
USB1394A1B
VP
VG
HOLE
TPB-
TPB+
TPA-
TPA+
B0M
B0P
A0M
A0P
W:S/ 8:8.
20 mil spacing to others.
USBIEEE
UGND
F5 PTC-1.6AD
D18
EC38
1394
key
H5*2-P9E-R
REAR_SIDE
USBP0N R378 0-O P0_N
USBP0P R380 0-O P0_P
USBP2N R382 0-O P2_N
USBP2P R384 0-O P2_P
L21
CMF-SO8
USBP1N R379 0-O P1_N
USBP1P R381 0-O P1_P
USBP3N R383 0-O P3_N
USBP3P R385 0-O P3_P
L22
9/20
L19
F4
100 Mils Width
PTC-2AS EC6
1000uF-6.3V
0.1uF
BC24
USBPWR2
USB1394A1A
USBIEEE
F9
PTC-2AS
EC72
BC310
USBPWR4
USBLAN
FB-600-08
L67
V_DAC
MXDIP_0
MXDIN_0
MXDIP_1
MXDIN_1
MXDIP_2
MXDIN_2
MXDIP_3
MXDIN_3
POWER
LED
TX1+
TX1-
TX2+
TX2-
TX3+
TX3-
TX4+
TX4-
YLED
OLED
GLED
H_LAN
DGND
LINK
TX_RX
RSMVCC3
USB-DUAL+LAN-AMP1
C221
C220
1U
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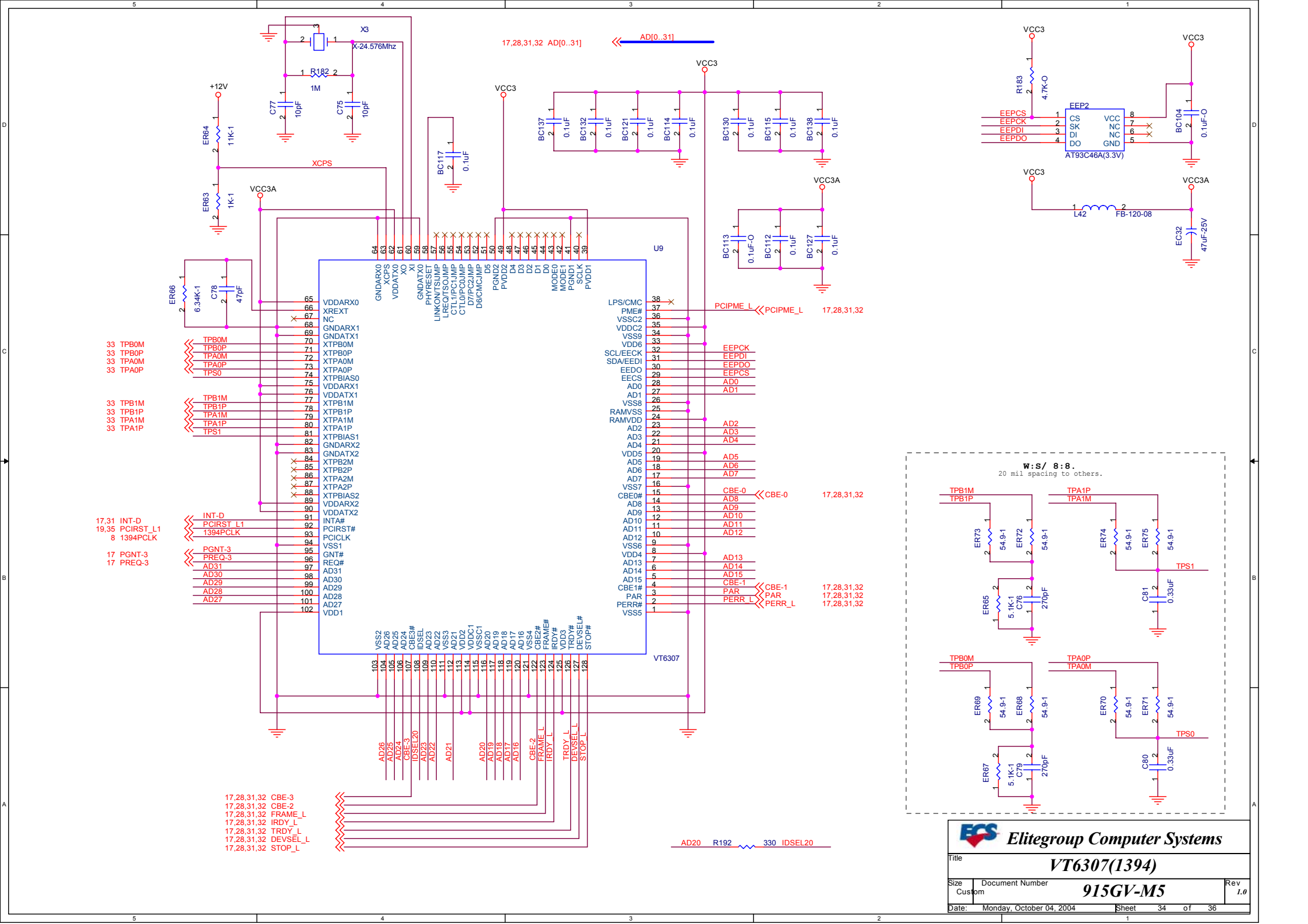
X3
X-24.576Mhz
R182
1M
C77
10pF
C75
10pF
+12V
ER64
11K-1
ER63
1K-1
XCPS
VCC3A
BC117
0.1uF
17,28,31,32 AD[0..31]
AD[0..31]
VCC3
BC137
BC132
BC121
BC114
BC130
BC115
BC138
0.1uF
U9
VT6307
GNDARX0
XCPS
VDDATX0
XO
XI
GNDATX0
PHYRESET
LINKON/TSMP
LREQ/TSOMP
CTL1/PC1MP
CTL0/PC0MP
D7/PC2MP
D6/CMCMP
D5
PGND2
PVDD2
D4
D3
D2
D1
D0
MODE0
MODE1
PGND1
SCLK
PVDD1
VDDARX0
XREXT
NC
GNDARX1
GNDATX1
XTPB0M
XTPB0P
XTPA0M
XTPA0P
XTPBIAS0
VDDARX1
VDDATX1
XTPB1M
XTPB1P
XTPA1M
XTPA1P
XTPBIAS1
GNDARX2
GNDATX2
XTPB2M
XTPB2P
XTPA2M
XTPA2P
XTPBIAS2
VDDARX2
VDDATX2
INTA#
PCIRST#
PCICLK
VSS1
GNT#
REQ#
AD31
AD30
AD29
AD28
AD27
VDD1
LPS/CMC
PME#
VSSC2
VDDC2
VSS9
VDD6
SCL/EECK
SDA/EEDI
EEDO
EECS
AD0
AD1
VSS8
RAMVSS
RAMVDD
AD2
AD3
AD4
VDD5
AD5
AD6
AD7
VSS7
CBE0#
AD8
AD9
AD10
AD11
AD12
VSS6
VDD4
AD13
AD14
AD15
CBE1#
PAR
PERR#
VSS5
VSS2
AD26
AD25
AD24
CBE3#
IDSEL
AD23
AD22
VSS3
AD21
VDD2
VDDC1
VSSC1
AD20
AD19
AD18
AD17
AD16
VSS4
CBE2#
FRAME#
IRDY#
VDD3
TRDY#
DEVSEL#
STOP#
PCIPME_L
EEPCK
EEPDI
EEPDO
EEPCS
AD0
AD1
AD2
AD3
AD4
AD5
AD6
AD7
CBE-0
AD8
AD9
AD10
AD11
AD12
AD13
AD14
AD15
CBE-1
PAR
PERR_L
17,28,31,32
33 TPB0M
33 TPB0P
33 TPA0M
33 TPA0P
TPB0M
TPB0P
TPA0M
TPA0P
TPS0
33 TPB1M
33 TPB1P
33 TPA1M
33 TPA1P
TPB1M
TPB1P
TPA1M
TPA1P
TPS1
17,31 INT-D
19,35 PCIRST_L1
8 1394PCLK
INT-D
PCIRST_L1
1394PCLK
17 PGNT-3
17 PREQ-3
PGNT-3
PREQ-3
ER66
6.34K-1
C78
47pF
AD26
AD25
AD24
CBE-3
IDSEL20
AD23
AD22
AD21
AD20
AD19
AD18
AD17
AD16
CBE-2
FRAME_L
IRDY_L
TRDY_L
DEVSEL_L
STOP_L
17,28,31,32 CBE-3
17,28,31,32 CBE-2
17,28,31,32 FRAME_L
17,28,31,32 IRDY_L
17,28,31,32 TRDY_L
17,28,31,32 DEVSEL_L
17,28,31,32 STOP_L
AD20 R192 330 IDSEL20
VCC3
R183
4.7K-O
EEP2
EEPCS
EEPCK
EEPDI
EEPDO
CS
SK
DI
DO
VCC
NC
NC
GND
AT93C46A(3.3V)
BC104
0.1uF-O
VCC3A
L42
FB-120-08
EC32
47uF-25V
W:S/ 8:8.
20 mil spacing to others.
TPB1M
TPB1P
TPA1P
TPA1M
ER73
54.9-1
ER72
54.9-1
ER74
54.9-1
ER75
54.9-1
TPS1
ER65
5.1K-1
C76
270pF
C81
0.33uF
TPB0M
TPB0P
TPA0P
TPA0M
ER69
54.9-1
ER68
54.9-1
ER70
54.9-1
ER71
54.9-1
TPS0
ER67
5.1K-1
C79
270pF
C80
0.33uF
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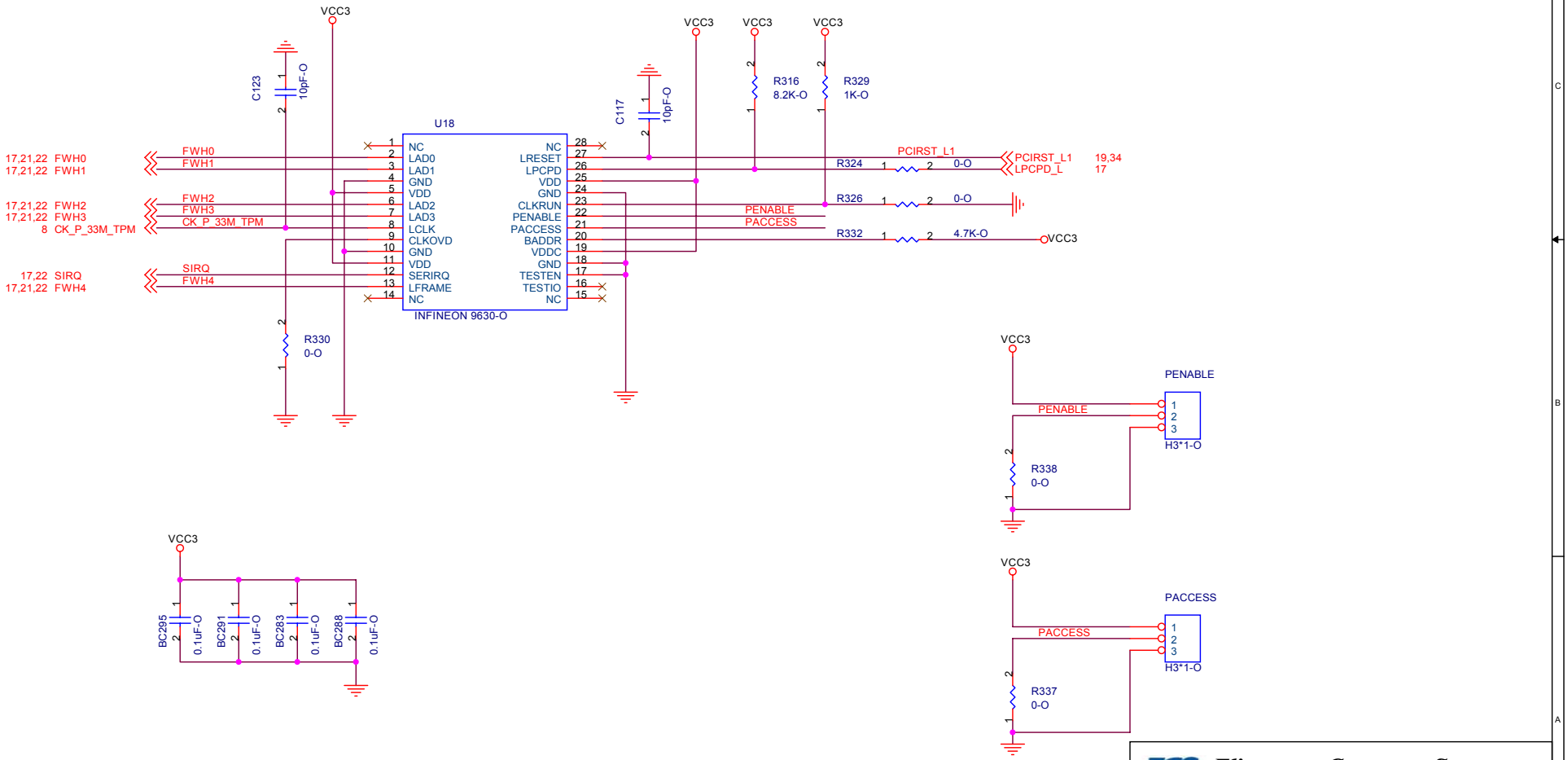

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Revision A to Revision B

1. R105 & R106 change from Open to 0 ohm 0603, C85 change from Open to 0.01uF 0603, ER89 change from Open to 47 ohm 0603 for system can not boot issue.
2. RN21 change from 0 ohm 8P4R to Open, RN22 change from Open to 0 ohm 8P4R for system can not boot issue.
3. Add R362 1K ohm 0603 for 2.5V power control issue.
4. Add SMI1 header for Legend specifications.
5. Add F_USB1 and F_USB2 header for Legend specifications.
6. Add I2C header for Legend specifications.
7. Add SIRQ1 header for Legend specifications.
8. Add JPT2 and JPT3 header for Legend specifications.
9. Add IRDA header for Legend specifications.
10. Change SYSFAN header for Legend specifications.
11. Add CDIN2 header for Legend specifications.
12. Add F_AUDIO header for Legend specifications.
13. Add F_PANEL and PSW1 header for Legend specifications.
14. Add JP3 and JP4 header for Legend specifications.
15. Remove PCIEx1 and CNR slots and replace with PCI3 for Legend specifications.
16. Add F_1394 header and V-port capacitors C137~C144 for Legend specifications.
17. R10, R17, Q1 change to Open, ER16 change to 1.3K-1% ohm 0603 for giga lan fail issue.
18. R86 change to 270K ohm 0603, C57 change to 1000pF 0603 & C40 change to 5600pF 0603 for VCCP PWM gate jittering issue.
19. EC2 & EC3 change to 6mm for PCI card installation mechanical issue.

Revision B to Revision 1.0

1. EC25 & EC26 change from 470uF 25V to 1000uF 6.3V, EC35 & EC40 change from 1000uF 6.3V to 1800uF 6.3V for 3DMark 2003 hang issue.
2. EC46 & EC47 change from 1000uF 6.3V to 1800uF 6.3V for S3/S4 can not burn in issue.
3. Add ER126 24K ohm 0603, delete R194, R197, BC134, R188, ER79, C84, ER78, C82, C83, Change ER77 from 7.5K to Open, D17 from 1N4148 to Open, R190 from 10 ohm 0805 to open, D19 from Open to 1N4148 and R191 from Open to 10 ohm 0805 for RT9214 support.
4. Change common mode choke RN9, RN10, RN11 AND RN19 to single R370 ~ R385 for SMT issue.

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