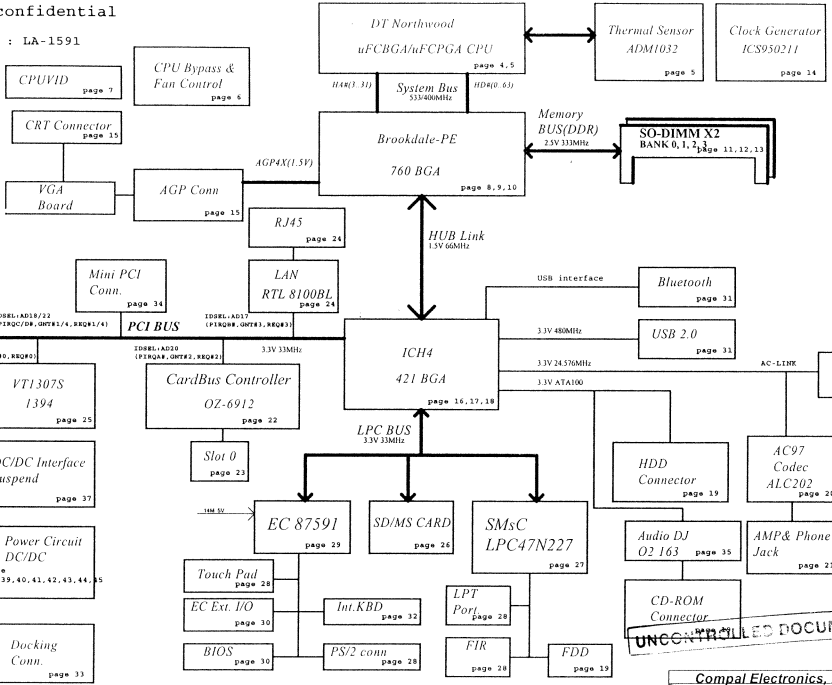
Compal confidential

File Name : LA-1591



Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591	
Size	Document Number	Rev
Custom	401235	2A
Date	星期 二 10 19, 2003	Sheet 2 of 41

SCHEMATICS VERSION LIST

VERSION	ISSUE DATE	REMARK
0.00		FIRST PREVIEW
0.01		
0.02		

Power Managment table

Signal / State	+3VALW +5VALW +12VALW	+3V +5V +2.5V	+3VS +5VS +1.5VS +1.2VP +CPU_CORE +1.25VS
S0	ON	ON	ON
S1	ON	ON	ON
S3	ON	ON	OFF
S5 S4/AC	ON	OFF	OFF
S5 S4/AC don't exist	OFF	OFF	OFF

	PCB Rev	CHIPS Rev
SST-Build	0.1	
PT-Build		
ST-Build		
QT-Build		

Ceramic Capacitor Spec Guide:

Temperature Characteristics:

Symbol	0	1	2	3	4	5	6	7
CODE	Z5U	Z5V	Z5P	Y5U	Y5V	Y5P	X5R	X7R

8	9	A	B	C	D	E	F	G
NP0	C0G		BJ	CH	CJ	CK	SH	SJ

H	I	J	
UJ	UK	SL	

Tolerance:

Symbol	A	B	C	D	F	G	H	J
CODE	+-0.05PF	+-0.1PF	+-0.25PF	+-0.5PF	+-1PF	+-2%	+-3%	+-5%

K	M	N	P	Q	V	X	Z	
+-10%	+-20%	+-30%	+100,-0%	+30,-10%	+20,-10%	+40,-20%	+80,-20%	

SMBUS Control Table

	SOURCE	INVERTER	BATT	SERIAL EEPROM	THERMAL SENSOR (U43)	THERMAL SENSOR (U91)	SODIMM	CLK CHIP	MINI PCI
SMB_EC_CK1 SMB_EC_DA1	NS 87591	√	√	√ (1210)	X	X	X	X	X
SMB_EC_CK2 SMB_EC_DA2	NS 87591	X	X	X	√	√	X	X	X
SMB_CLK SMB_DATA	ICH4	X	X	X	X	X	√	√	√

NOTE1:

@XX : Depopm component

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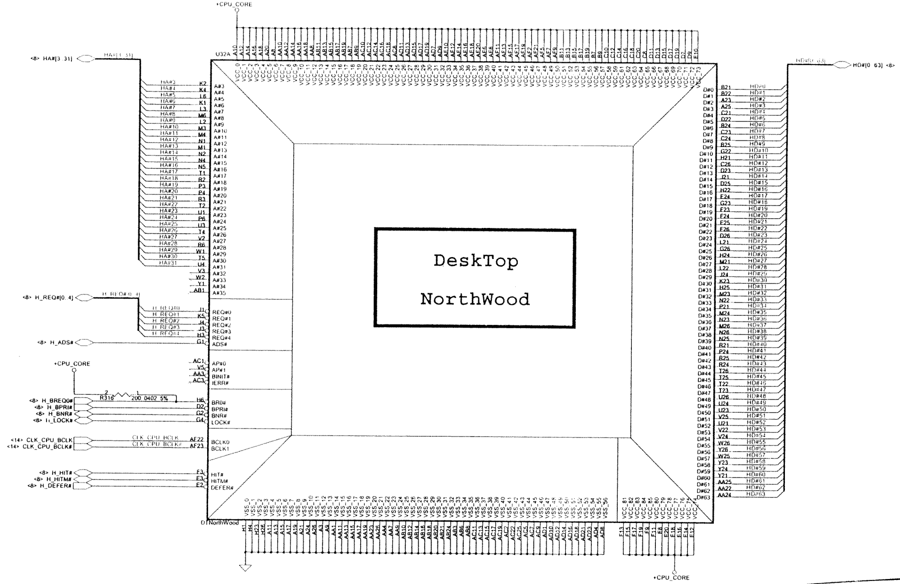
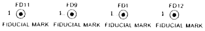
Title	SCHEMATIC, M/B LA-1591	
Size	Document Number 401235	Rev 2A
Date	日期: 月 19, 2003	Sheet 3 of 47





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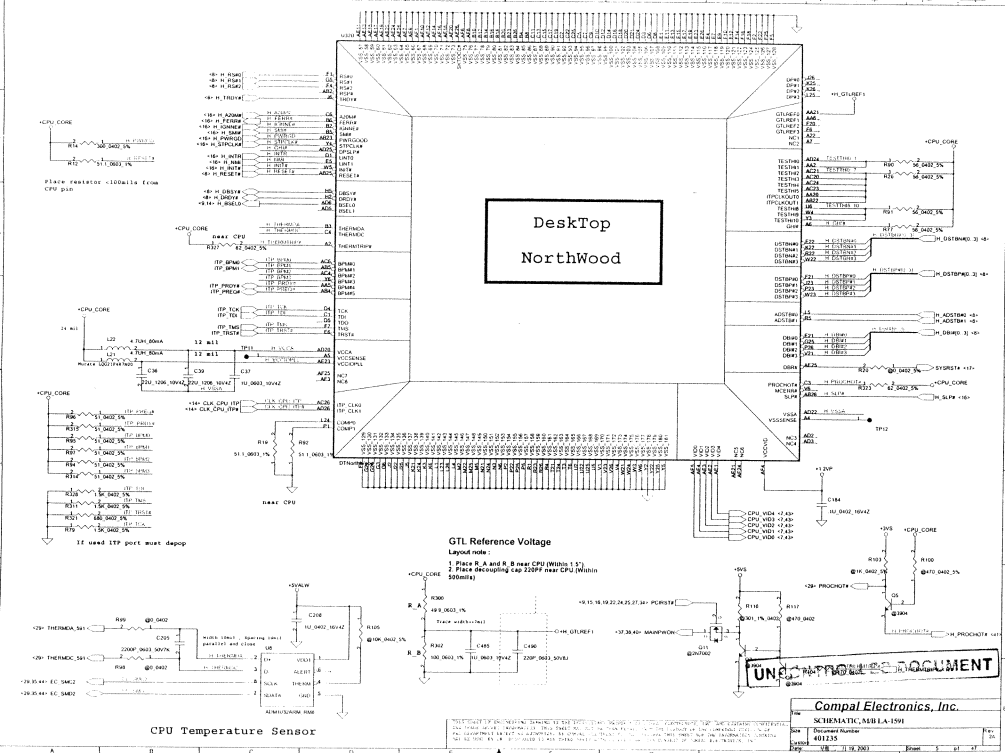
Title	SCHEMATIC, M/B LA-1591	
Size: Custom	Document Number: 401235	Rev: 2A
Date: 星期三, [illegible] 19, 2003	Sheet 4 of 47	


DeskTop
NorthWood
GTL Reference Voltage
Layout note :
1. Place R_A and R_B near CPU (Within 1 ")
2. Place decoupling cap 220PF near CPU (Within 500mils)
CPU Temperature Sensor
UNOFFICIAL DOCUMENT
Compal Electronics, Inc.
SCHEMATIC,MBLA-1591
401235
Wednesday, July 16, 2003

Layout note :

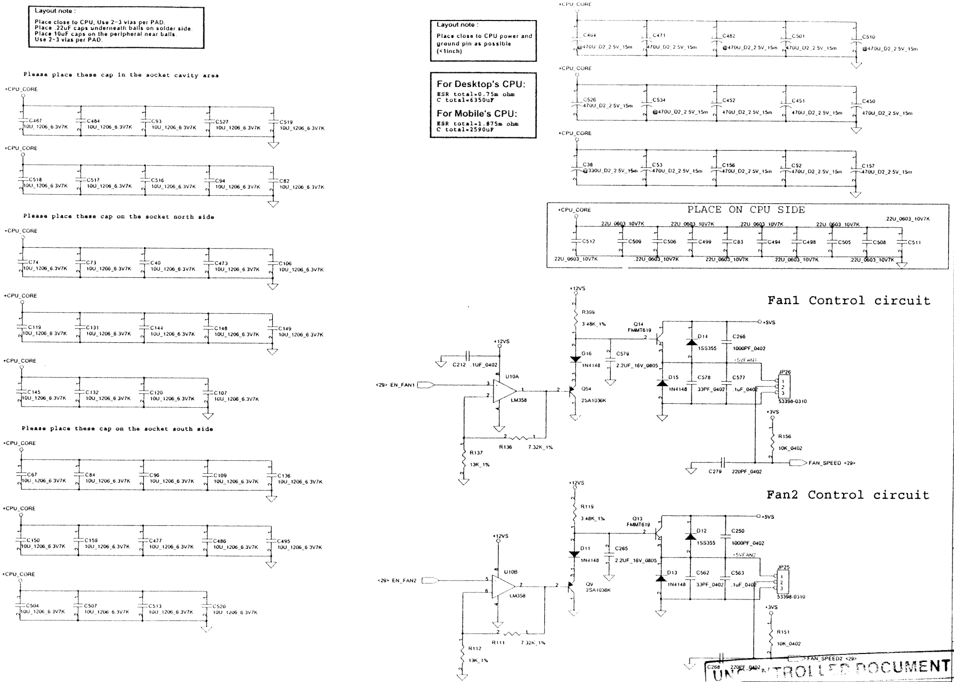
Place close to CPU, Use 2~3 vias per PAD.
Place .22uF caps underneath balls on solder side.
Place 10uF caps on the peripheral near balls.
Use 2~3 vias per PAD.

Layout note :

Place close to CPU power and ground pin as possible (<1inch)

For Desktop's CPU:
ESR total=0.75m ohm
C total=6350uF

For Mobile's CPU:
ESR total=1.875m ohm
C total=2590uF



Please place these cap in the socket cavity area
Please place these cap on the socket north side
Please place these cap on the socket south side
+CPU_CORE
C487 C484 C93 C527 C519 10U_1206_6.3V7K
C518 C517 C516 C94 C82 10U_1206_6.3V7K
C74 C73 C40 C473 C106 10U_1206_6.3V7K
C119 C131 C144 C148 C149 10U_1206_6.3V7K
C145 C132 C120 C107 10U_1206_6.3V7K
C67 C84 C96 C109 C136 10U_1206_6.3V7K
C150 C159 C477 C486 C495 10U_1206_6.3V7K
C504 C507 C513 C520 10U_1206_6.3V7K
C464 C471 C482 C501 C510 470U_D2_2.5V_15m
C526 C534 C452 C451 C450 470U_D2_2.5V_15m
C38 @330U_D2_2.5V_15m
C53 C156 C52 C157 470U_D2_2.5V_15m
PLACE ON CPU SIDE
C512 C509 C506 C499 C83 C494 C498 C505 C508 C511 22U_0603_10V7K
Fan1 Control circuit
Fan2 Control circuit
+12VS
+5VS
+3VS
R399 3.48K_1%
Q14 FMMT619
D14 1SS355
C266 1000PF_0402
D16 1N4148
C579 2.2UF_16V_0805
+5VFAN1
C212 .1UF_0402
U10A LM358
<29> EN_FAN1
D15 1N4148
C578 33PF_0402
C577 .1uF_0402
JP26 53398-0310
Q54 2SA1036K
R136 7.32K_1%
R137 13K_1%
R156 10K_0402
C279 220PF_0402
FAN_SPEED <29>
R119 3.48K_1%
Q13 FMMT619
D12 1SS355
C250 1000PF_0402
D11 1N4148
C265 2.2UF_16V_0805
+5VFAN2
U10B LM358
<29> EN_FAN2
D13 1N4148
C562 33PF_0402
C563 .1uF_0402
JP25 53398-0310
QV 2SA1036K
R111 7.32K_1%
R112 13K_1%
R151 10K_0402
C268 220PF_0402
FAN_SPEED2 <29>

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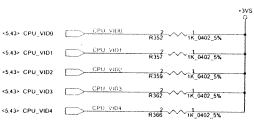
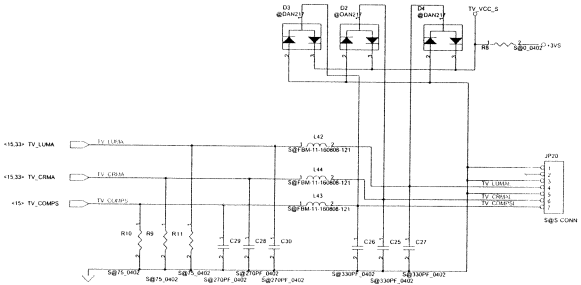
Compal Electronics, Inc.		
Title	SCHEMATIC, M/B LA-1591	
Size Custom	Document Number 401235	Rev 2A
Date:	11 19, 2003	Sheet 6 of 47

MO/DT_CPU	Mobile CPU					Desktop CPU				
	1					0				
VID	4	3	2	1	0	4	3	2	1	0
VCC										
1.750V	0	0	0	0	0	0	0	1	0	0
1.700V	0	0	0	0	1	0	0	1	1	0
1.650V	0	0	0	1	0	0	1	0	0	0
1.600V	0	0	0	1	1	0	1	0	1	0
1.550V	0	0	1	0	0	0	1	1	0	0
1.500V	0	0	1	0	1	0	1	1	1	0
1.450V	0	0	1	1	0	1	0	0	0	0
1.400V	0	0	1	1	1	1	0	0	1	0
1.350V	0	1	0	0	0	1	0	1	0	0
1.300V	0	1	0	0	1	1	0	1	1	0
1.250V	0	1	0	1	0	1	1	0	0	0
1.200V	0	1	0	1	1	1	1	0	1	0
1.150V	0	1	1	0	0	1	1	1	0	0
1.100V	0	1	1	0	1	1	1	1	1	0
1.050V	0	1	1	1	0	X	X	X	X	X
1.000V	0	1	1	1	1	X	X	X	X	X
0.975V	1	0	0	0	0	X	X	X	X	X
0.950V	1	0	0	0	1	X	X	X	X	X
0.925V	1	0	0	1	0	X	X	X	X	X
0.900V	1	0	0	1	1	X	X	X	X	X
0.875V	1	0	1	0	0	X	X	X	X	X
0.850V	1	0	1	0	1	X	X	X	X	X
0.825V	1	0	1	1	0	X	X	X	X	X
0.800V	1	0	1	1	1	X	X	X	X	X
0.775V	1	1	0	0	0	X	X	X	X	X
0.750V	1	1	0	0	1	X	X	X	X	X
0.725V	1	1	0	1	0	X	X	X	X	X
0.700V	1	1	0	1	1	X	X	X	X	X
0.675V	1	1	1	0	0	X	X	X	X	X
0.650V	1	1	1	0	1	X	X	X	X	X
0.625V	1	1	1	1	0	X	X	X	X	X
0.600V	1	1	1	1	1	X	X	X	X	X
VRM output off						1	1	1	1	1



TV_OUT CONNECTOR



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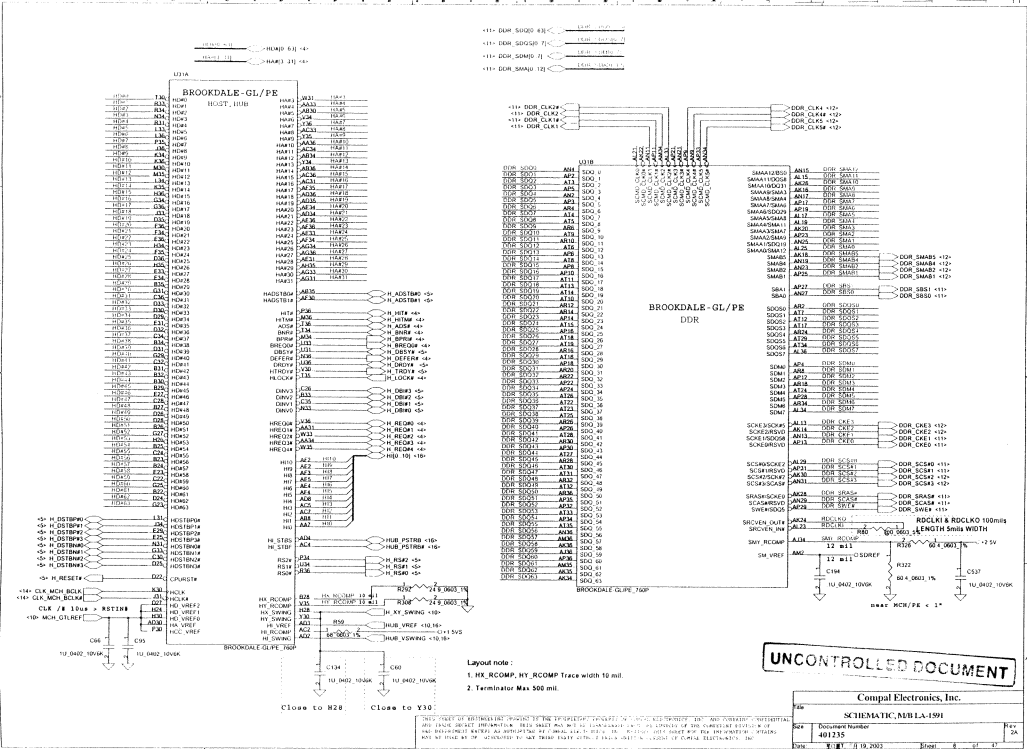
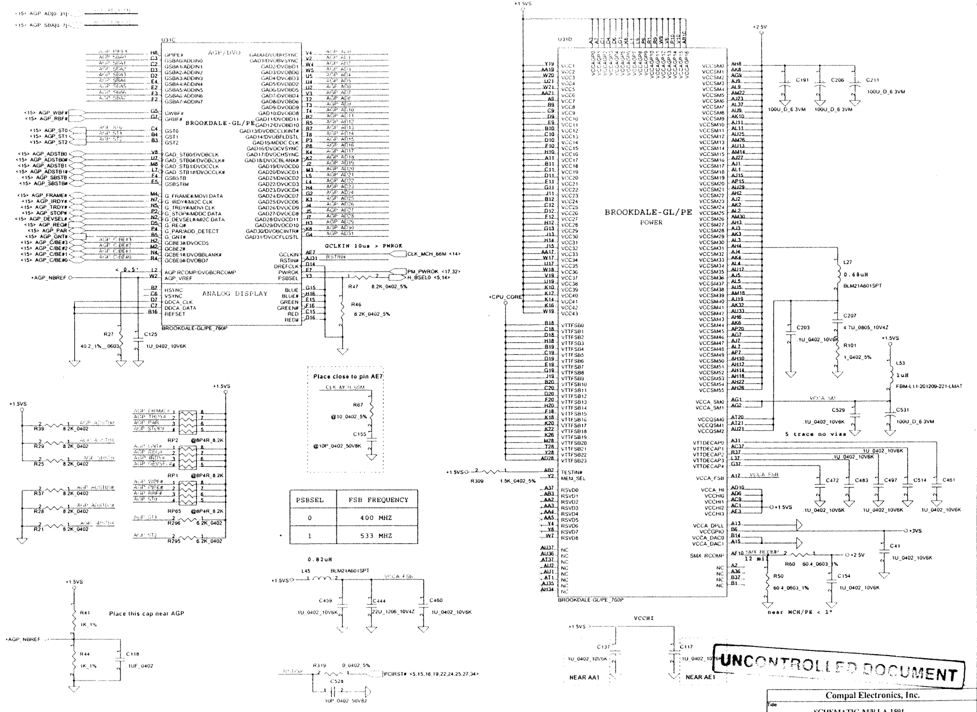
SCHEMATIC, M/B LA-1591

Size	Document Number	Rev
Custom	401235	2A
Date:	星期二, 九月 16, 2003	Sheet 7 of 47


U31A
BROOKDALE-GL/PE
HOST, HUB
U31B
BROOKDALE-GL/PE
DDR
BROOKDALE-GLPE_760P
Layout note :
1. HX_RCOMP, HY_RCOMP Trace width 10 mil.
2. Terminator Max 500 mil.
Close to H28
Close to Y30
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC,MB LA-1591
Document Number
401235
Rev
2A
Date
Sheet
of



PSBSEL	FSB FREQUENCY
0	400 MHZ
1	533 MHZ

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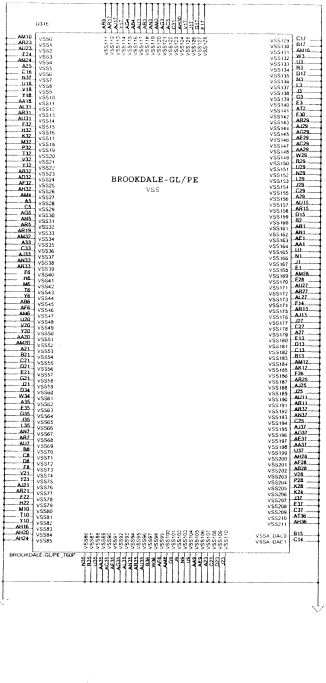
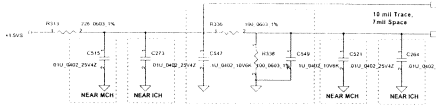
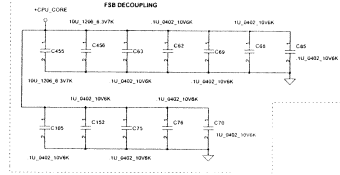
Title: SCHEMATIC, M/B LA-1591

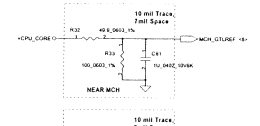
Size | Document Number: 401235 | Rev: 2A

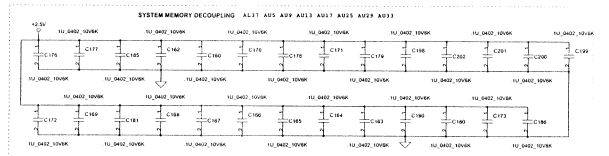
Date: 11 19, 2003 | Sheet 9 of 47

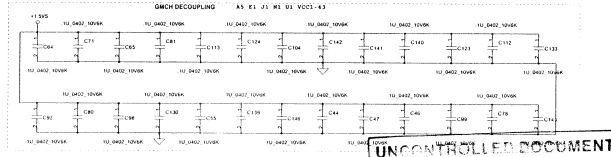






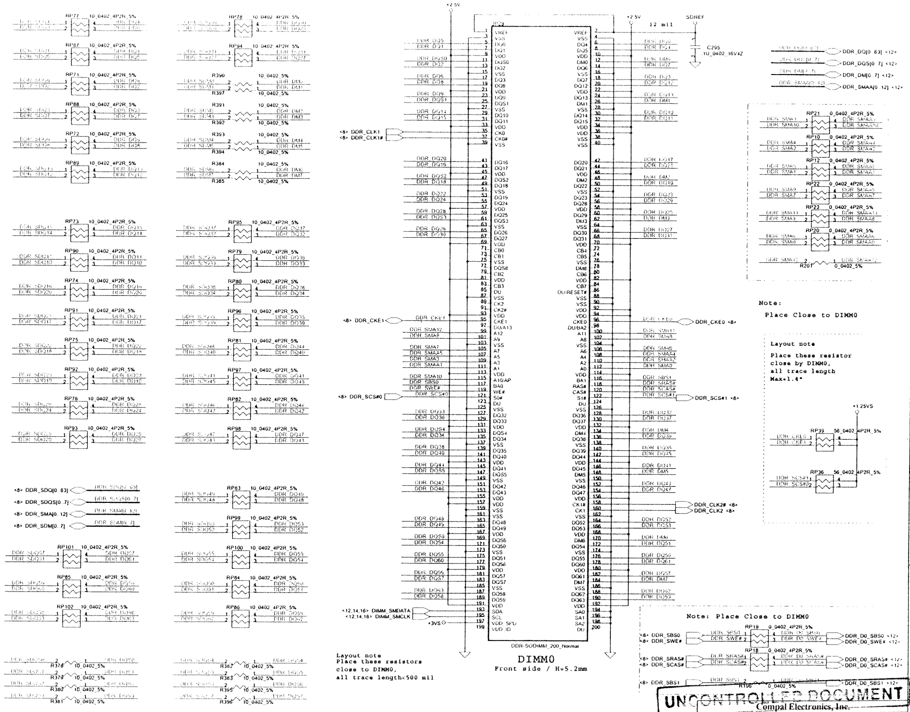






Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591	
Size	Document Number	Rev
	401235	1A
Date	Sheet 10 of 47	



DIMM0
Front side / H=5.2mm
DDR-SODIMM_200_Normal
Layout note
Place these resistors close to DIMM0, all trace length<500 mil
Note:
Place Close to DIMM0
Layout note
Place these resistor close by DIMM0, all trace length Max=1.4"
Note: Place Close to DIMM0
12 mil
C295
1U_0402_16V4Z
SDREF
+2.5V
+1.25VS
+3VS
<8> DDR_CLK1
<8> DDR_CLK1#
<8> DDR_CKE1
<8> DDR_SCS#0
DDR_CKE0 <8>
DDR_SCS#1 <8>
DDR_CLK2# <8>
DDR_CLK2 <8>
<12,14,16> DIMM_SMDATA
<12,14,16> DIMM_SMCLK
DDR_DQ[0..63] <12>
DDR_DQS[0..7] <12>
DDR_DM[0..7] <12>
DDR_SMAA[0..12] <12>
<8> DDR_SDQ[0..63]
<8> DDR_SDQS[0..7]
<8> DDR_SMA[0..12]
<8> DDR_SDM[0..7]
<8> DDR_SBS0
<8> DDR_SWE#
<8> DDR_SRAS#
<8> DDR_SCAS#
<8> DDR_SBS1
DDR_D0_SBS0 <12>
DDR_D0_SWE# <12>
DDR_D0_SRAS# <12>
DDR_D0_SCAS# <12>
DDR_D0_SBS1 <12>
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Title	SCHEMATIC, M/B LA-1591
Size / Document Number	401235
Rev	2A
Date	11 19, 2003
Sheet	11 of 47

UNCONTROLLED DOCUMENT

Compal Electronics, Inc.

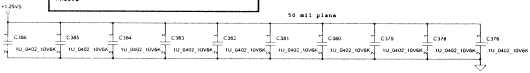
Title	SCHEMATIC, M/B LA-1591	
Size	Document Number: 401235	Rev: 2A
Date: Tue, Jul 19, 2005	Sheet 12 of 47	

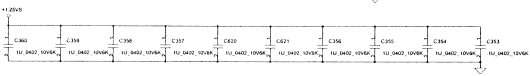
Layout note :
Distribute as close as possible to DDR-SODIMM0

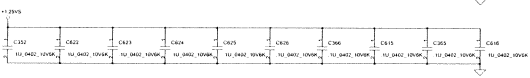
Layout note :
Distribute as close as possible to DDR-SODIMM1

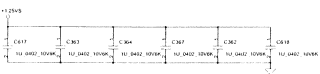
Layout note :
Place one cap close to every 2 pull up resistors termination to +1.25VS

50 mil plane









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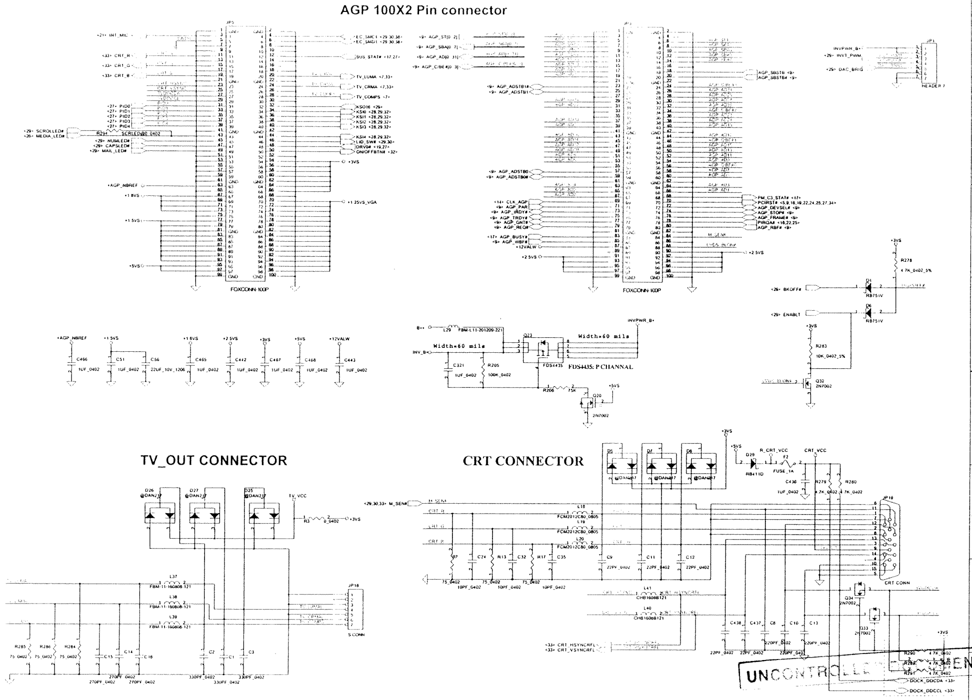
Title	SCHEMATIC, MB LA-1591	
Size	Document Number	Rev
	401235	2A
Date:	Sheet 13 of 47	

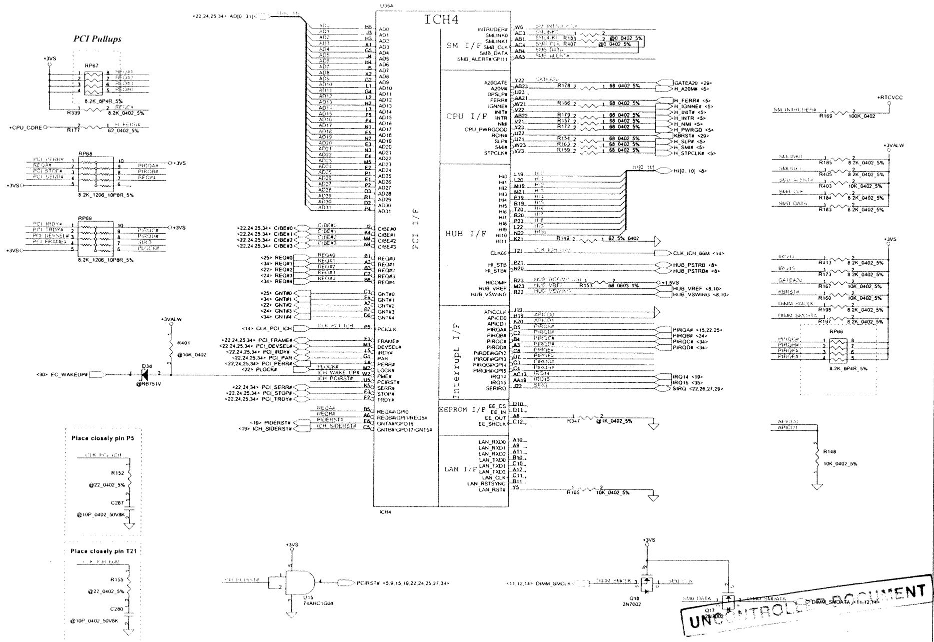
CPU Frequency Select Table

SEL[2:0]	CK-408 Speed
001	100 MHZ
011	133 MHZ



Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591
Size C	Document Number 401235
Rev	2A
Date	7, 19, 2003
Sheet	15 of 47



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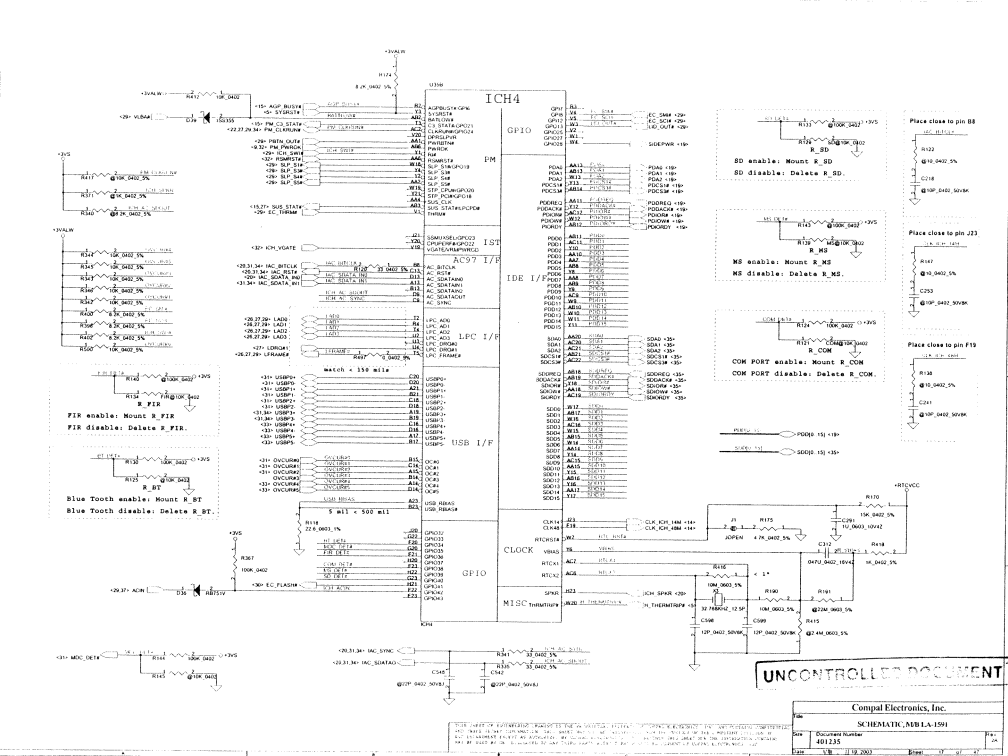
Title: SCHEMATIC, M/B LA-1591

Size | Document Number: 401235 | Rev: 2A

Date: ... 19, 2003 | Sheet 16 of 47



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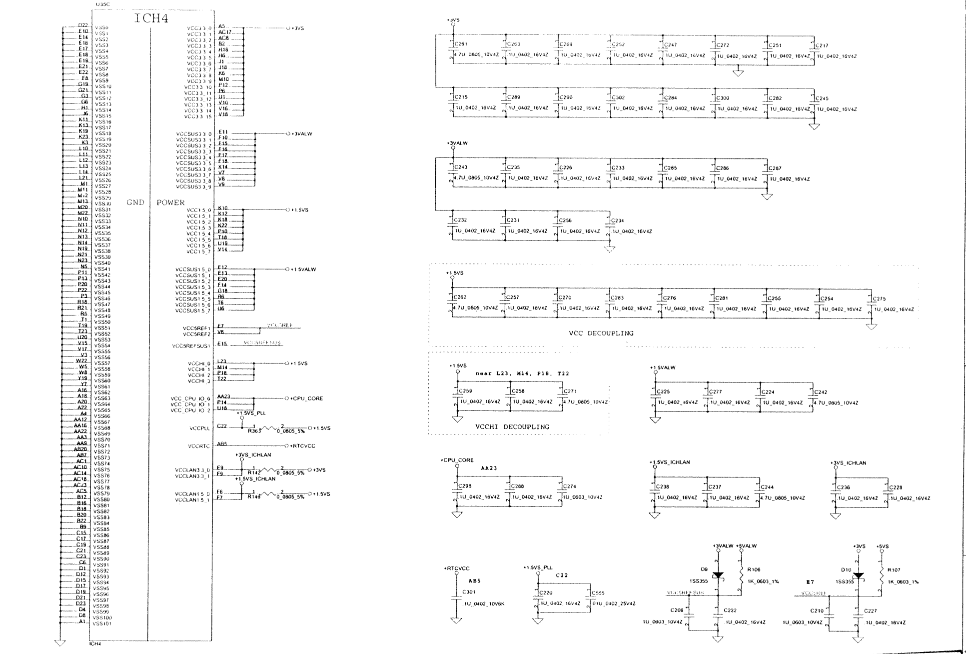
Title: SCHEMATIC,MB LA-1591

Size: A3 | Document Number: 401235 | Rev: A

Date: Tuesday, July 22, 2003 | Sheet: 17 of 47



A4 A1 H1 T1 AC10 AC18 A22 AC5 K23 C23 A16 AC1 A16 T23 N23

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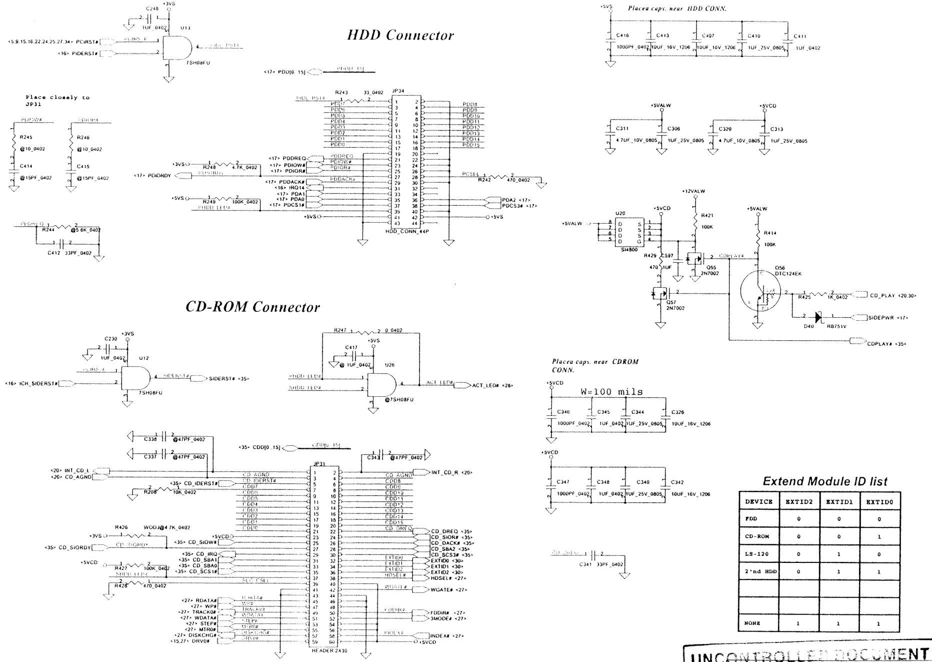
	Compal Electronics, Inc.
Title	SCHEMATIC, M/B LA-1591
Size / Document Number	401235
Rev	2A
Date	11 19, 2003
Sheet	18 of 47



Extend Module ID list

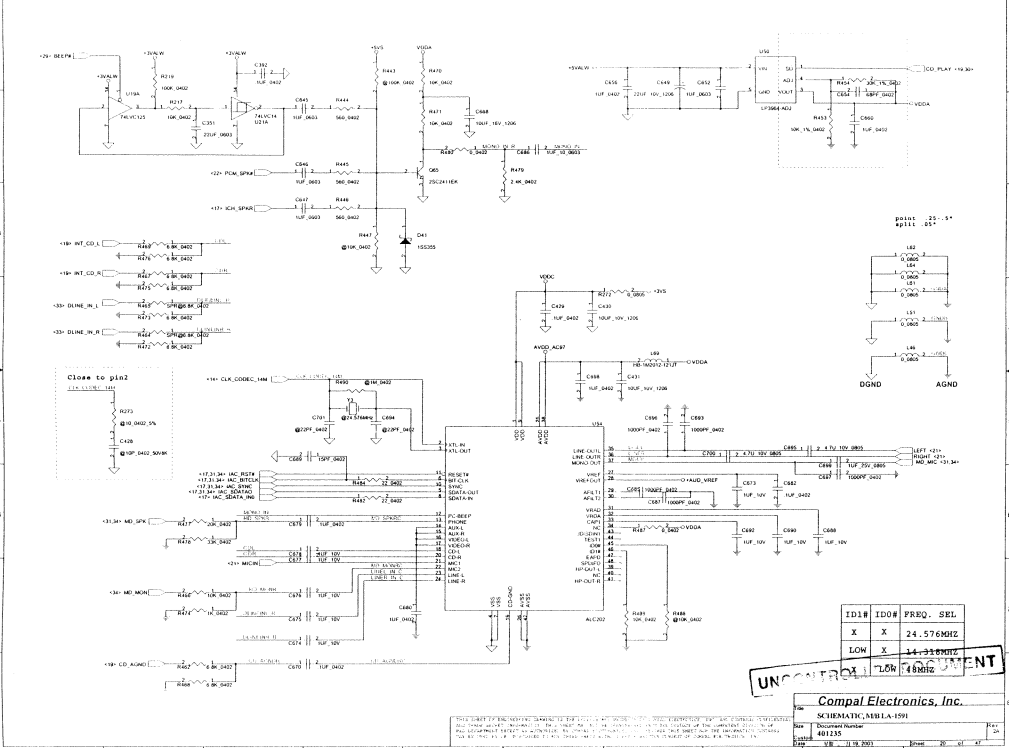
DEVICE	EXTID2	EXTID1	EXTID0
FDD	0	0	0
CD-ROM	0	0	1
LS-120	0	1	0
2'nd HDD	0	1	1
NONE	1	1	1

Compal Electronics, Inc.

Title: SCHEMATIC, M/B LA-1591

Size: Custom | Document Number: 401235 | Rev: 2A

Date: ... 19, 2003 | Sheet 19 of 47



ID1#	ID0#	FREQ. SEL
X	X	24.576MHZ
LOW	X	14.318MHZ
X	LOW	48MHZ

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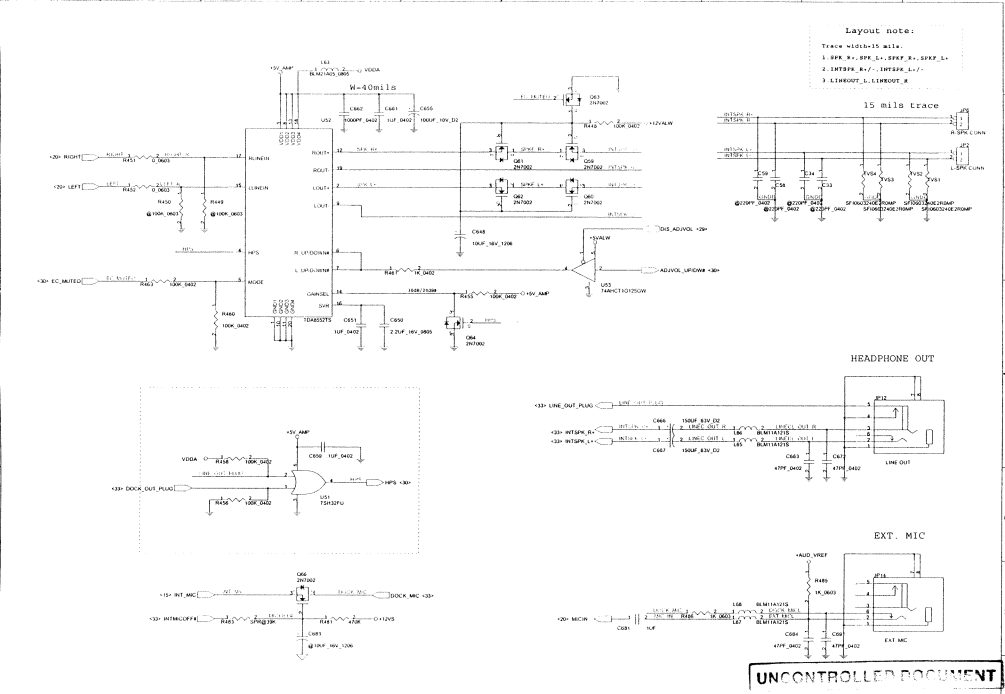
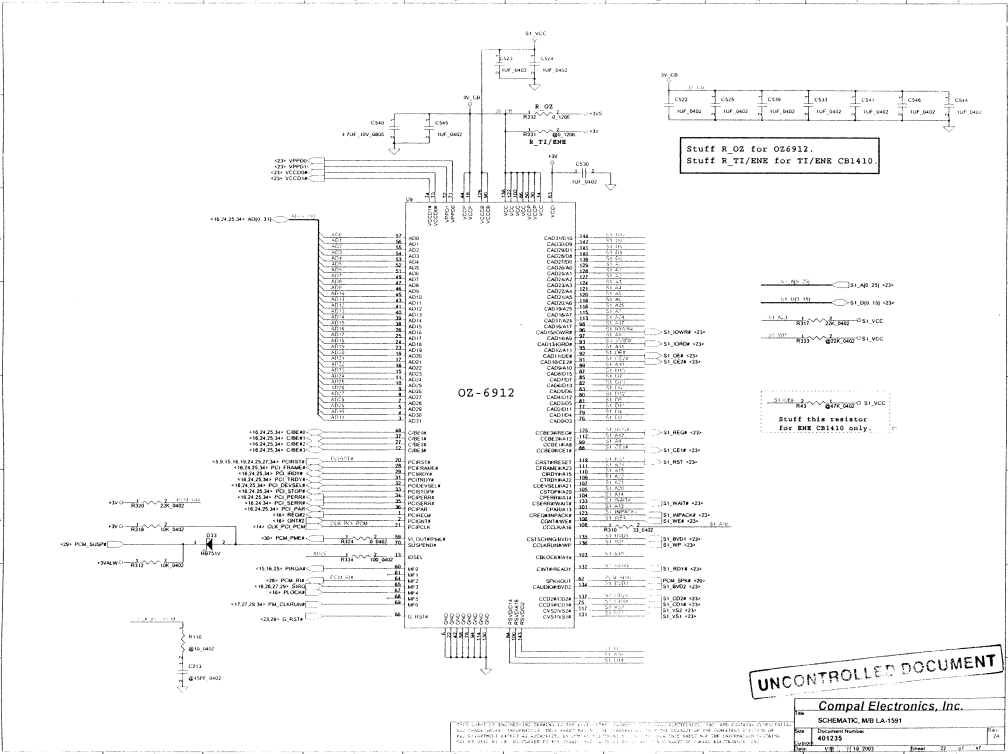
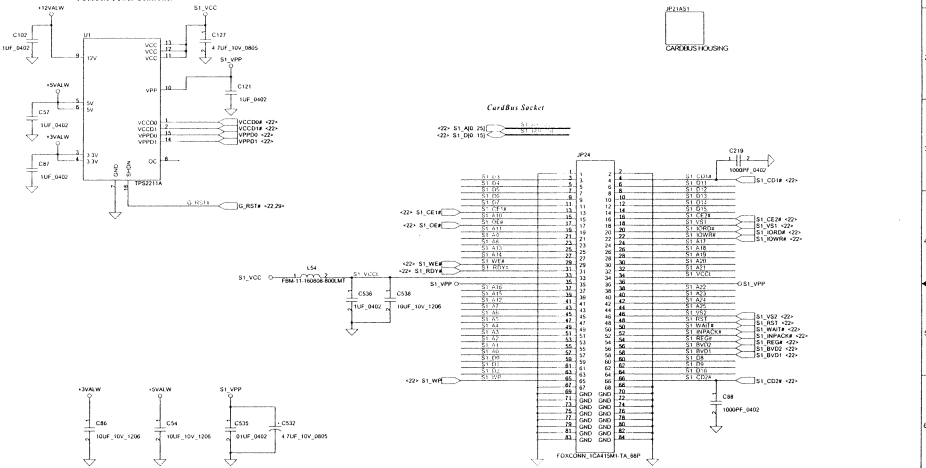
Title	SCHEMATIC,MBLA-1591
Size	Document Number: 401235
Custom	Rev: 2A
Date: VIII 19, 2003	Sheet 20 of 47


Layout note:
Trace width=15 mils.
1.SPK_R+,SPK_L+,SPKF_R-,SPKF_L-
2.INTSPK_R+/-,INTSPK_L+/-
3.LINROUT_L,LINROUT_R
15 mils trace
W=40mils
HEADPHONE OUT
EXT. MIC
LINE OUT
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC,MB LA-1591
Document Number
401235
Rev
2A
Date
Sheet
of


OZ-6912
Stuff R_OZ for OZ6912.
Stuff R_TI/ENE for TI/ENE CB1410.
Stuff this resistor for ENE CB1410 only.
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC, M/B LA-1591
Document Number
401235
Rev
Date
Sheet 22 of 47



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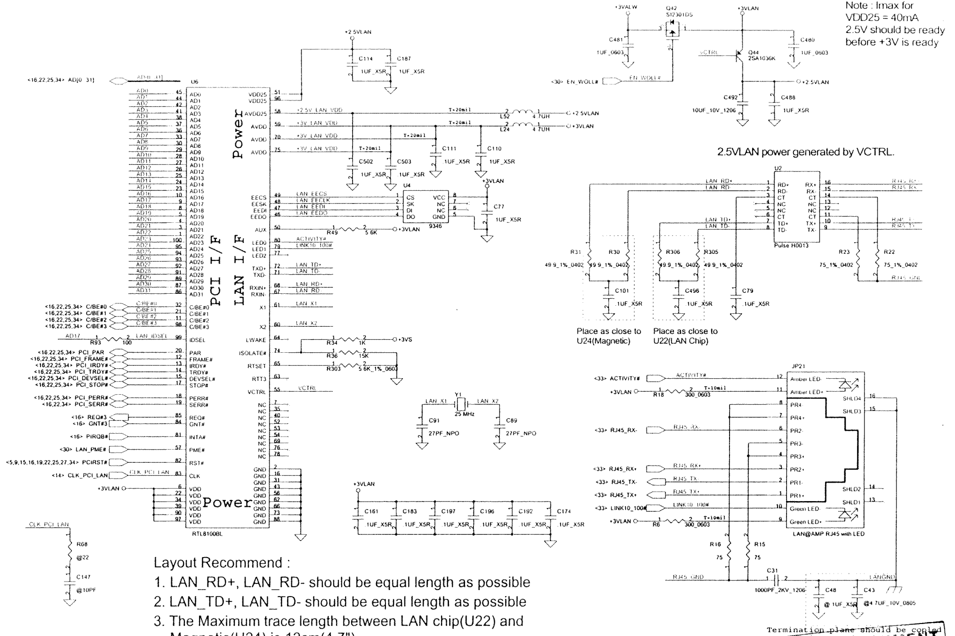
SCHEMATIC, M/B LA-1591

Size	Document Number	Rev
Custom	401235	1A
Date:	Sheet 23 of 47	



Layout Recommend :

1. LAN_RD+, LAN_RD- should be equal length as possible
2. LAN_TD+, LAN_TD- should be equal length as possible
3. The Maximum trace length between LAN chip(U22) and Magnetic(U24) is 12cm(4.7")
4. The distance between RJ45(Conn.) and Magnetic(U24) should be as short as possible

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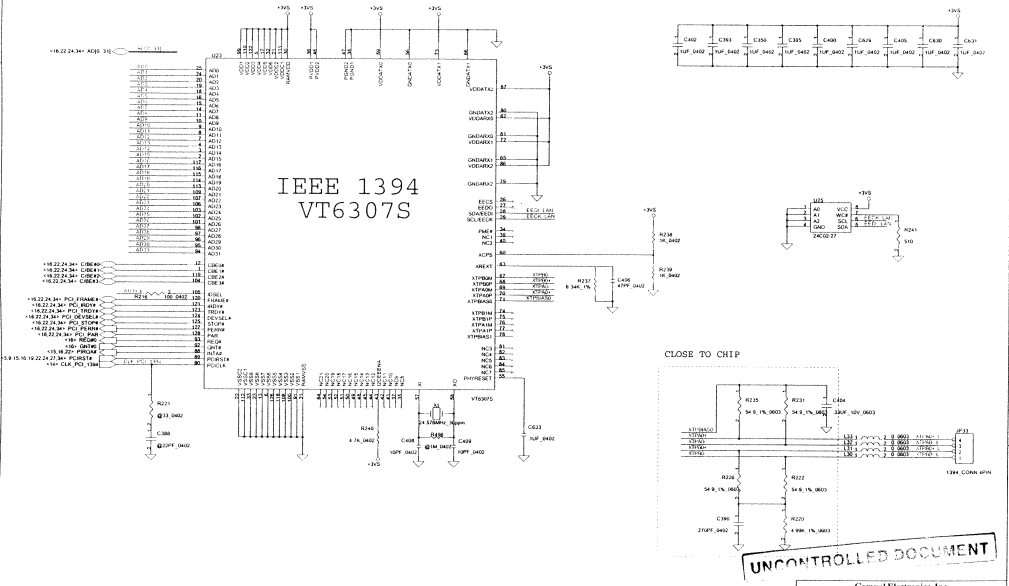
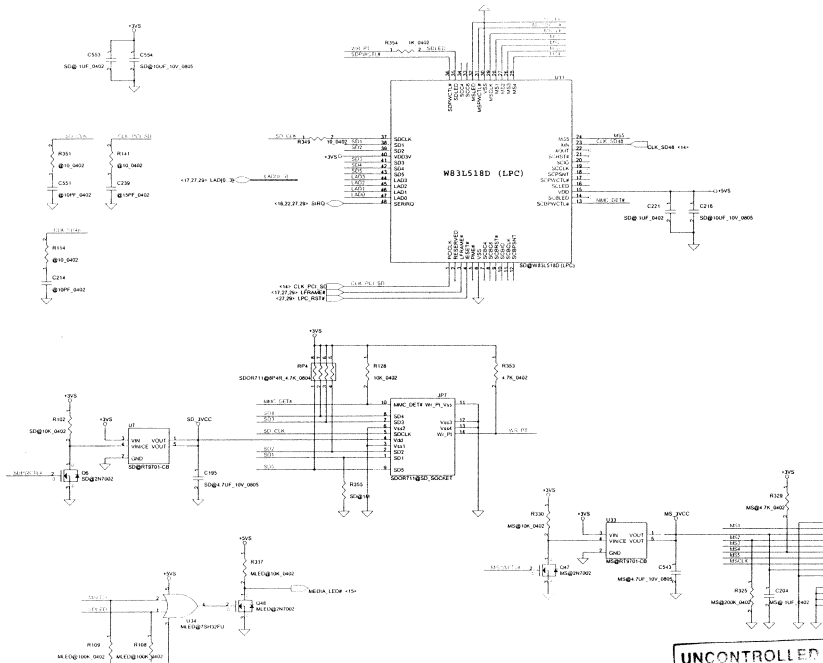
Compal Electronics, Inc.		
Title: SCHEMATIC, M/B LA-1591		
Size: B	Document Number: 401235	Rev: 2A
Date: 19, 2003	Sheet 24 of 47	



Compal Electronics, Inc.

Title	SCHEMATIC,MB LA-1591	
Size	Document Number	Rev
	401235	2A
Date: 11 19, 2003	Sheet 25 of 47	



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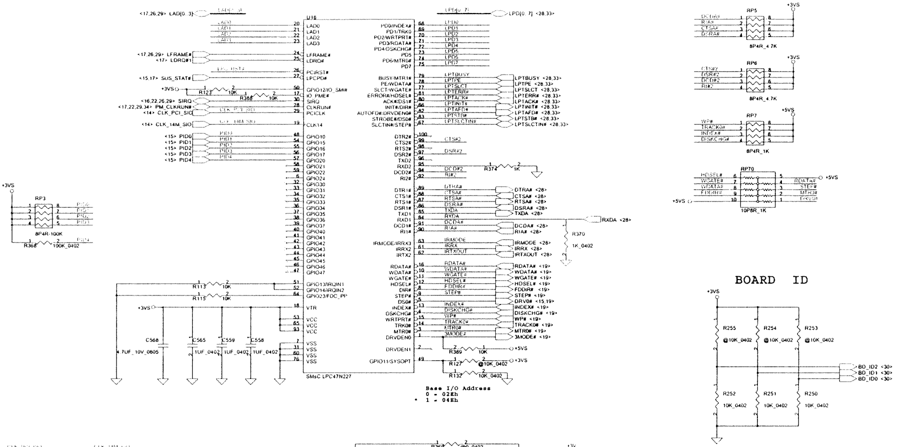
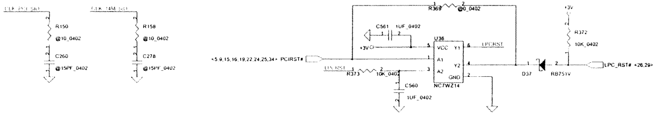
Compal Electronics, Inc.

Title	SCHEMATIC,MB LA-1591	
Size	Document Number	Rev
LA1591	401235	2A
Date:	Sheet 25 of 47	

SUPER I/O SMsC FDC47N227

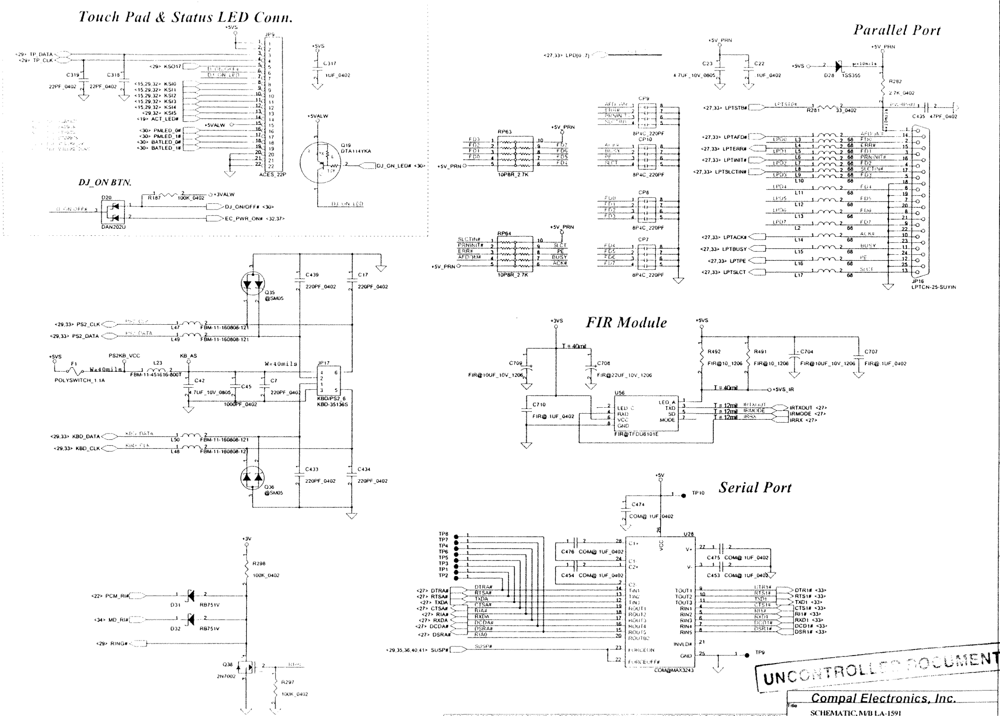




	BD_ID2	BD_ID1	BD_ID0
SST	0	0	0
PT	0	0	1
ST	0	1	0
QT	0	1	1

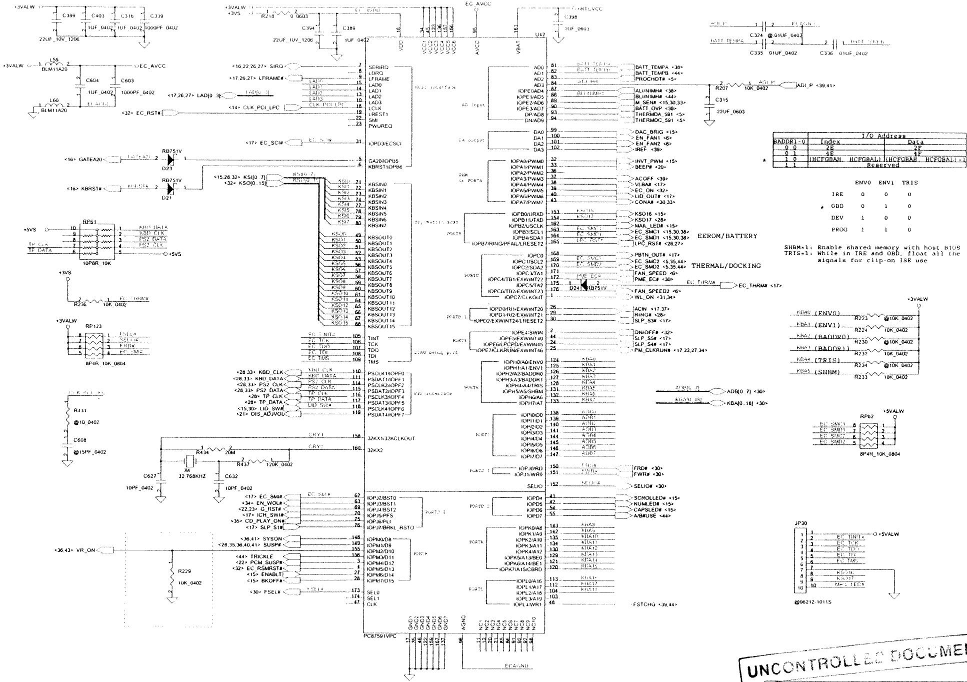
Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591
Size: Custom	Document Number: 401235
Rev	2A
Date	11 19, 2003
Sheet	27 of 47



Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591
Size / Document Number	401235
Rev	2A
Date	11 19, 2003
Sheet	28 of 47



BADDR1-0	I/O Address Index	Data
0 0	2E	2F
0 1	4E	4F
* 1 0	(HCFGBAH, HCFGBAL)	(HCFGBAH, HCFGBAL)+1
1 1	Reserved	

	ENV0	ENV1	TRIS
IRE	0	0	0
* OBD	0	1	0
DEV	1	0	0
PROG	1	1	0

SHBM=1: Enable shared memory with host BIOS
TRIS=1: While in IRE and OBD, float all the signals for clip-on ISE use

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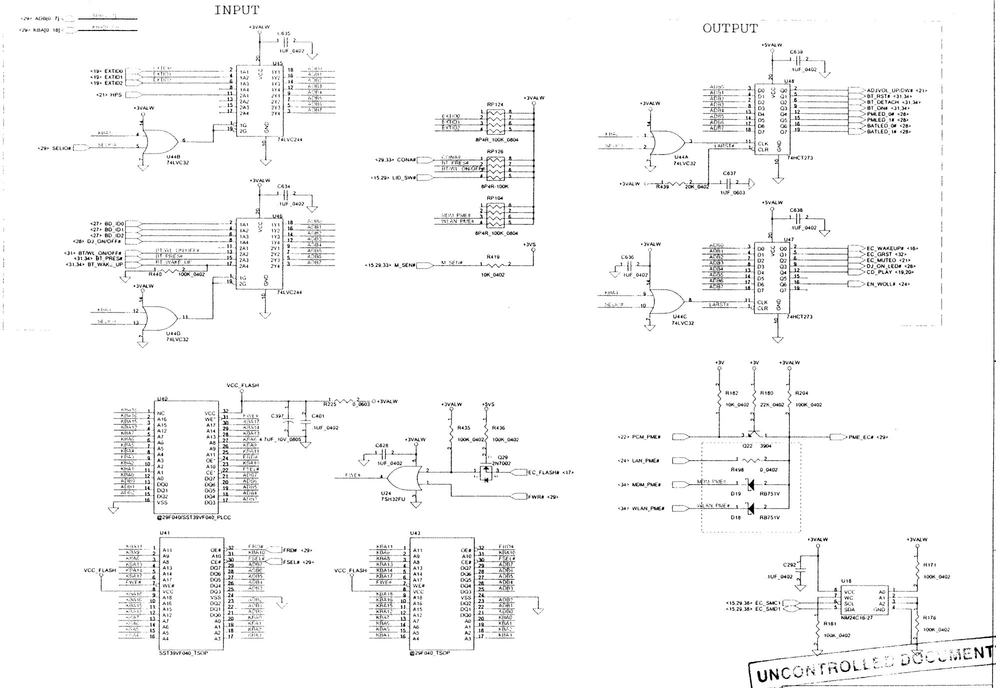
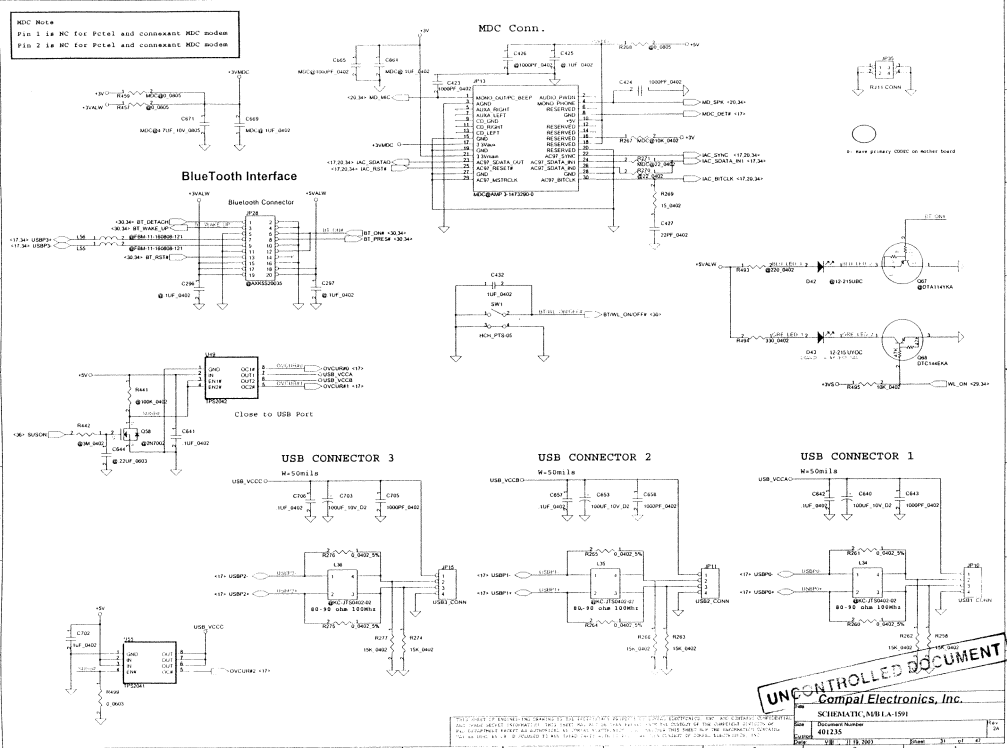
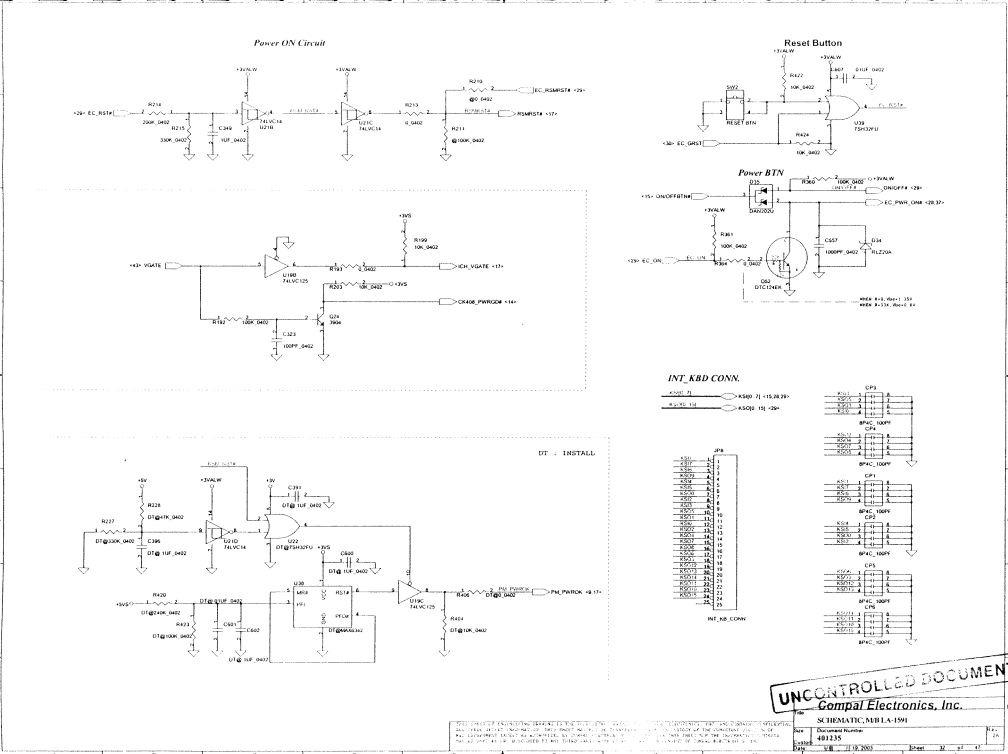
Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591
Size / Document Number	401235
Rev	2A
Date	1, 19, 2003
Sheet	29 of 47

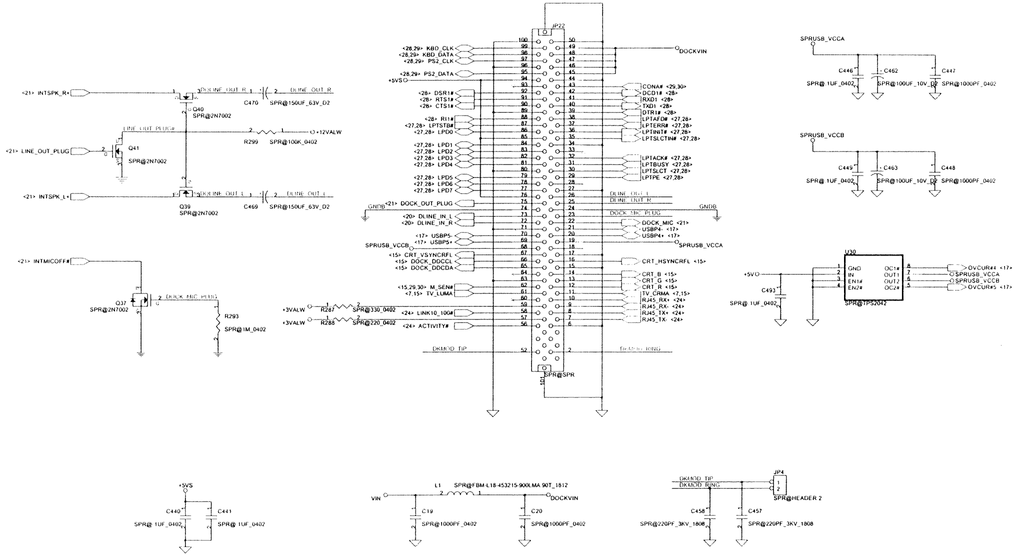


	Compal Electronics, Inc.
Title	SCHEMATIC, M/B LA-1591
Size: Custom	Document Number: 401235 — Rev 2A
Date: 11 19, 2003	Sheet 30 of 47


MDC Note
Pin 1 is NC for Pctel and connexant MDC modem
Pin 2 is NC for Pctel and connexant MDC modem
MDC Conn.
BlueTooth Interface
Bluetooth Connector
Close to USB Port
USB CONNECTOR 3
USB CONNECTOR 2
USB CONNECTOR 1
W=50mils
80-90 ohm 100MHz
USB3 CONN
USB2 CONN
USB1 CONN
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC,MBLA-1591
Document Number
401235
Rev
Date
Sheet
of


Power ON Circuit
Reset Button
Power BTN
INT_KBD CONN.
DT : INSTALL
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC,MB LA-1591

DOCKING 204 PIN



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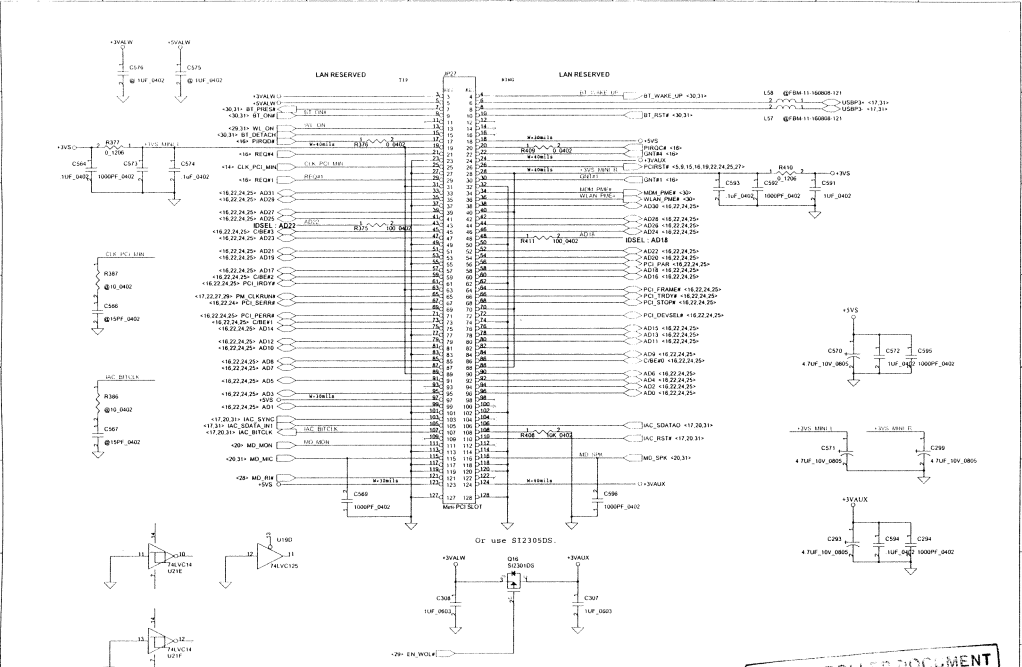
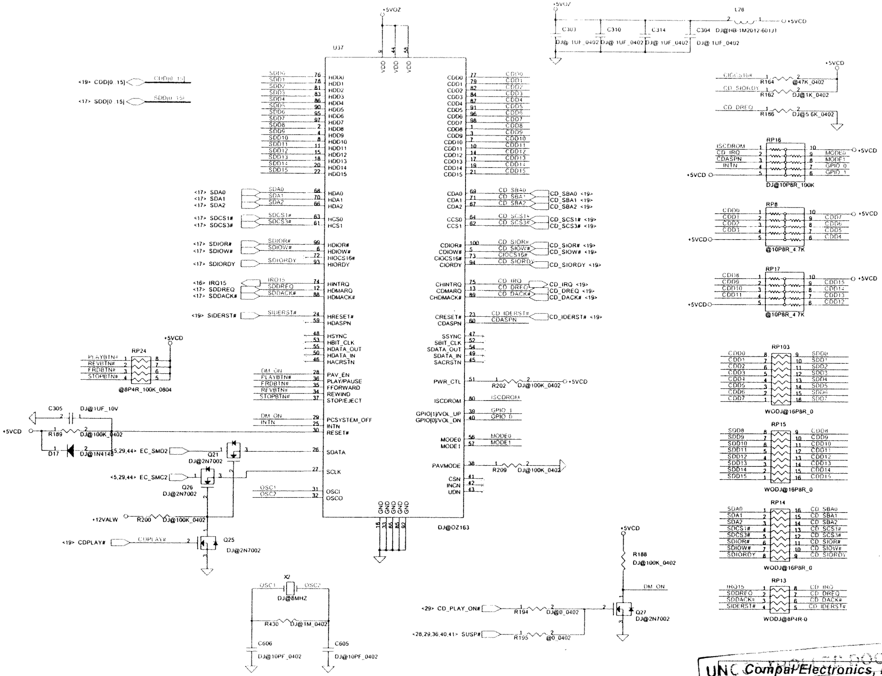
Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591
Size: Custom	Document Number: 401235
Rev	2A
Date	19, 2003
Sheet	33 of 47


LAN RESERVED
LAN RESERVED
Or use ST2305DS.
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC, M/B LA-1591
Document Number
401235
Rev
2A
Date: Tuesday, July 29, 2003
Sheet 34 of 47

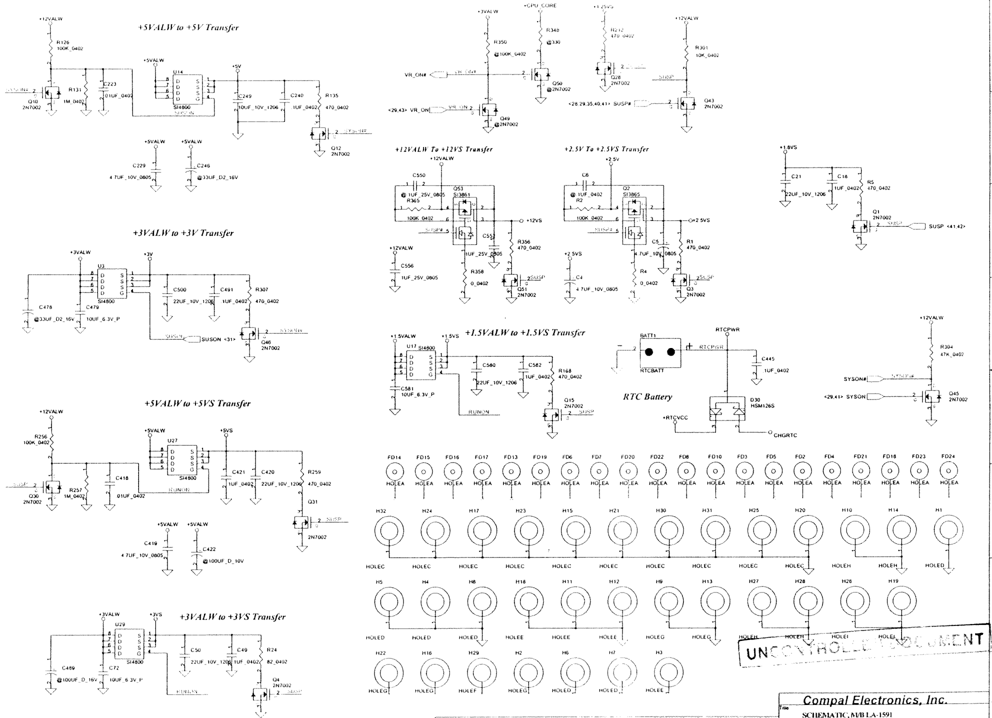


U37
DJ@OZ163
+5VOZ
+5VCD
+12VALW
L28
DJ@HB-1M2012-601JT
C303
C310
C314
C304
DJ@.1UF_0402
<19> CDD[0..15]
<17> SDD[0..15]
<17> SDA0
<17> SDA1
<17> SDA2
<17> SDCS1#
<17> SDCS3#
<17> SDIOR#
<17> SDIOW#
<17> SDIORDY
<16> IRQ15
<17> SDDREQ
<17> SDDACK#
<19> SIDERST#
CD_SBA0 <19>
CD_SBA1 <19>
CD_SBA2 <19>
CD_SCS1# <19>
CD_SCS3# <19>
CD_SIOR# <19>
CD_SIOW# <19>
CD_SIORDY <19>
CD_IRQ <19>
CD_DREQ <19>
CD_DACK# <19>
CD_IDERST# <19>
HSYNC
HBIT_CLK
HDATA_OUT
HDATA_IN
HACRSTN
SSYNC
SBIT_CLK
SDATA_OUT
SDATA_IN
SACRSTN
PAV_EN
PLAY/PAUSE
FFORWARD
REWIND
STOP/EJECT
PCSYSTEM_OFF
INTN
RESET#
SDATA
SCLK
OSCI
OSCO
PWR_CTL
ISCDROM
GPIO[1]/VOL_UP
GPIO[0]/VOL_DN
MODE0
MODE1
PAVMODE
CSN
INCN
UDN
R202 DJ@100K_0402
R209 DJ@100K_0402
R164 @47K_0402
R162 DJ@1K_0402
R186 DJ@5.6K_0402
RP16 DJ@10P8R_100K
RP8 @10P8R_4.7K
RP17 @10P8R_4.7K
RP103 WODJ@16P8R_0
RP15 WODJ@16P8R_0
RP14 WODJ@16P8R_0
RP13 WODJ@8P4R-0
RP24 @8P4R_100K_0804
PLAYBTN#
REVBTN#
FRDBTN#
STOPBTN#
C305 DJ@1UF_10V
R189 DJ@100K_0402
D17 DJ@1N4148
<5,29,44> EC_SMD2
<5,29,44> EC_SMC2
Q21 DJ@2N7002
Q26 DJ@2N7002
R200 DJ@100K_0402
<19> CDPLAY#
Q25 DJ@2N7002
X2 DJ@8MHZ
R430 DJ@1M_0402
C606 DJ@10PF_0402
C605 DJ@10PF_0402
R188 DJ@100K_0402
DM_ON
<29> CD_PLAY_ON#
R194 DJ@0_0402
<28,29,36,40,41> SUSP#
R195 @0_0402
Q27 DJ@2N7002

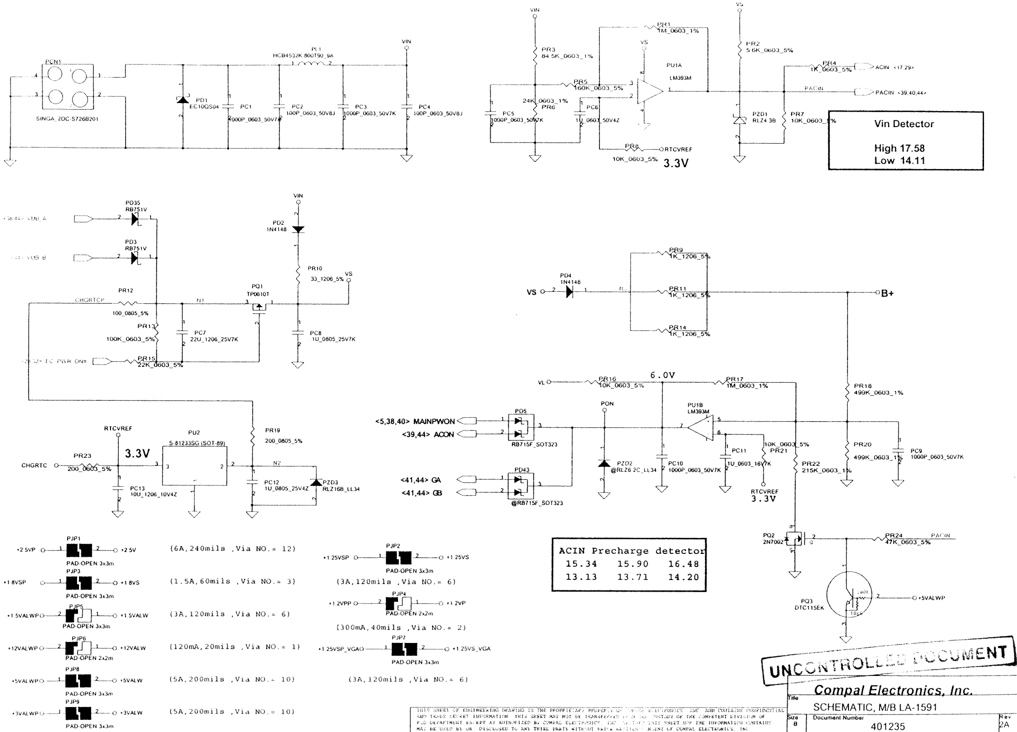
UNCONTROLLED DOCUMENT

Compal Electronics, Inc.

Title		
SCHEMATIC, M/B LA-1591		
Size B	Document Number 401235	Rev 2A
Date: 19, 2003	Sheet 35 of 47	


+5VALW to +5V Transfer
+3VALW to +3V Transfer
+5VALW to +5VS Transfer
+3VALW to +3VS Transfer
+12VALW To +12VS Transfer
+2.5V To +2.5VS Transfer
+1.5VALW to +1.5VS Transfer
RTC Battery
+12VALW
+5VALW
+5V
+3VALW
+3V
+5VS
+3VS
+12VS
+2.5V
+2.5VS
+1.5VALW
+1.5VS
+1.8VS
+CPU_CORE
+1.25VS
RTCPWR
+RTCVCC
CHGRTC
BATT1
RTCBATT
D30
HSM126S
SI4800
SI3861
SI3865
2N7002
VR_ON#
<29,43> VR_ON
<28,29,35,40,41> SUSP#
SUSP <41,42>
SUSON <31>
SYSON#
<29,41> SYSON
SUSON
SUSP
RUNON
HOLEA
HOLEC
HOLED
HOLEE
HOLEF
HOLEG
HOLEH
HOLEI
UNCONTROLLED DOCUMENT

	Compal Electronics, Inc.
Title	SCHEMATIC, M/B LA-1591
Size / Custom	Document Number: 401235 — Rev 2A
Date	Jul 19, 2003 — Sheet 36 of 47

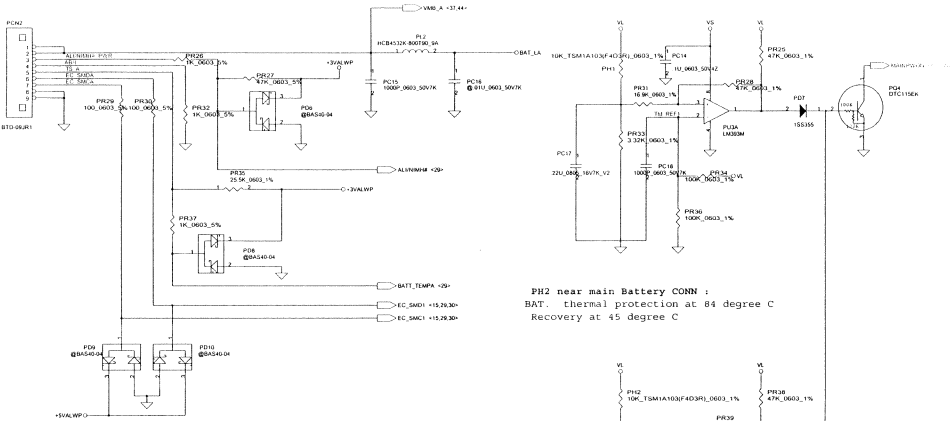


PCN1
SINGA_2DC-S726B201
PD1
EC10QS04
PC1
1000P_0603_50V7K
PL1
HCB4532K-800T90_9A
PC2
100P_0603_50V8J
PC3
1000P_0603_50V7K
PC4
100P_0603_50V8J
VIN
PR1
1M_0603_1%
PR3
84.5K_0603_1%
PR5
160K_0603_5%
PU1A
LM393M
PR6
24K_0603_1%
PC5
1000P_0603_50V7K
PC6
1U_0603_50V4Z
PR8
10K_0603_5%
RTCVREF
3.3V
VS
PR2
5.6K_0603_5%
PR4
1K_0603_5%
ACIN <17,29>
PACIN
PACIN <39,40,44>
PZD1
RLZ4.3B
PR7
10K_0603_1%
Vin Detector
High 17.58
Low 14.11
PD35
RB751V
PD3
RB751V
PD2
1N4148
PR10
33_1206_5%
PQ1
TP0610T
CHGRTCP
PR12
100_0805_5%
N1
PR13
100K_0603_5%
PC7
22U_1206_25V7K
PC8
.1U_0805_25V7K
EC_PWR_ON#
PR15
22K_0603_5%
PD4
1N4148
PR9
1K_1206_5%
PR11
1K_1206_5%
PR14
1K_1206_5%
B+
VL
PR16
10K_0603_5%
6.0V
PR17
1M_0603_1%
PR18
499K_0603_1%
PON
PU1B
LM393M
<5,38,40> MAINPWON
<39,44> ACON
PD5
RB715F_SOT323
PZD2
@RLZ6.2C_LL34
PC10
1000P_0603_50V7K
PC11
1U_0603_16V7K
PR21
10K_0603_5%
PR20
499K_0603_1%
PC9
1000P_0603_50V7K
PR22
215K_0603_1%
<41,44> GA
<41,44> GB
PD43
@RB715F_SOT323
RTCVREF
3.3V
PU2
S-81233SG (SOT-89)
PR19
200_0805_5%
CHGRTC
PR23
200_0603_5%
PC13
10U_1206_10V4Z
N2
PC12
1U_0805_25V4Z
PZD3
RLZ16B_LL34
PQ2
2N7002
PR24
47K_0603_5%
PACIN
PQ3
DTC115EK
+5VALWP
ACIN Precharge detector
15.34 15.90 16.48
13.13 13.71 14.20
PJP1 +2.5VP +2.5V PAD-OPEN 3x3m (6A,240mils ,Via NO.= 12)
PJP3 +1.8VSP +1.8VS PAD-OPEN 3x3m (1.5A,60mils ,Via NO.= 3)
PJP5 +1.5VALWP +1.5VALW PAD-OPEN 3x3m (3A,120mils ,Via NO.= 6)
PJP6 +12VALWP +12VALW PAD-OPEN 2x2m (120mA,20mils ,Via NO.= 1)
PJP8 +5VALWP +5VALW PAD-OPEN 3x3m (5A,200mils ,Via NO.= 10)
PJP9 +3VALWP +3VALW PAD-OPEN 3x3m (5A,200mils ,Via NO.= 10)
PJP2 +1.25VSP +1.25VS PAD-OPEN 3x3m (3A,120mils ,Via NO.= 6)
PJP4 +1.2VPP +1.2VP PAD-OPEN 2x2m (300mA,40mils ,Via NO.= 2)
PJP7 +1.25VSP_VGA +1.25VS_VGA PAD-OPEN 3x3m (3A,120mils ,Via NO.= 6)
UNCONTROLLED DOCUMENT

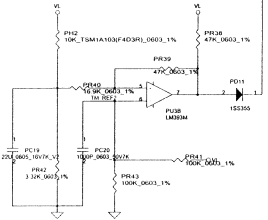
Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591	
Size B	Document Number 401235	Rev 2A
Date 星期二, 二月 19, 2003	Sheet 37 of 47	

PH1 under CPU botten side :
CPU thermal protection at 84 degree C
Recovery at 45 degree C

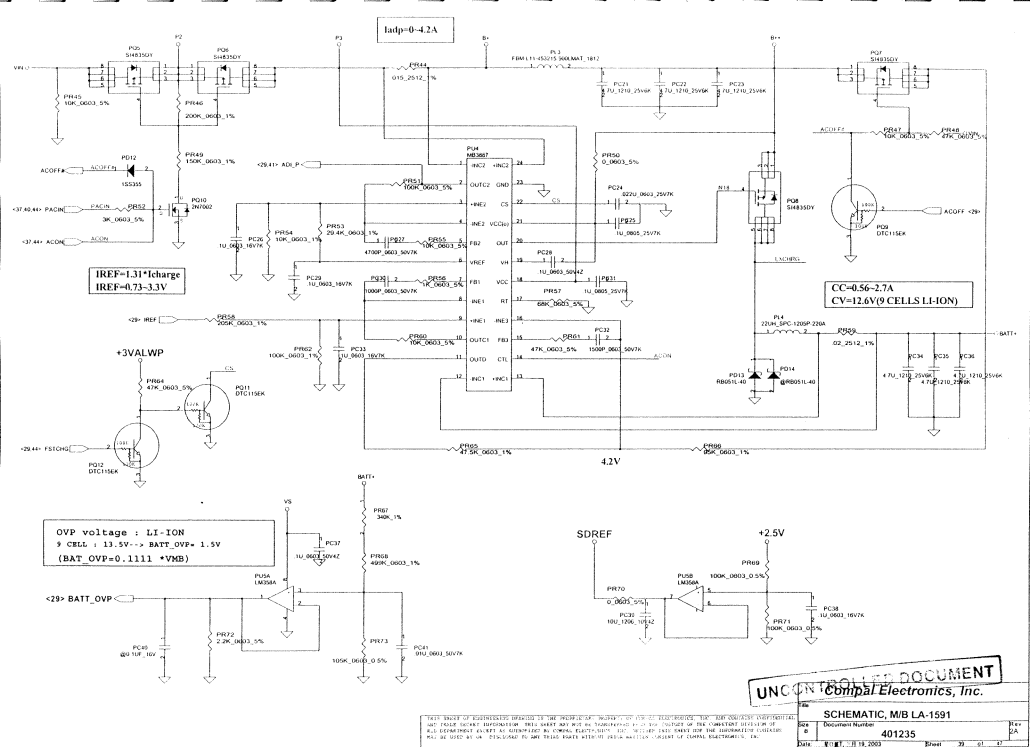


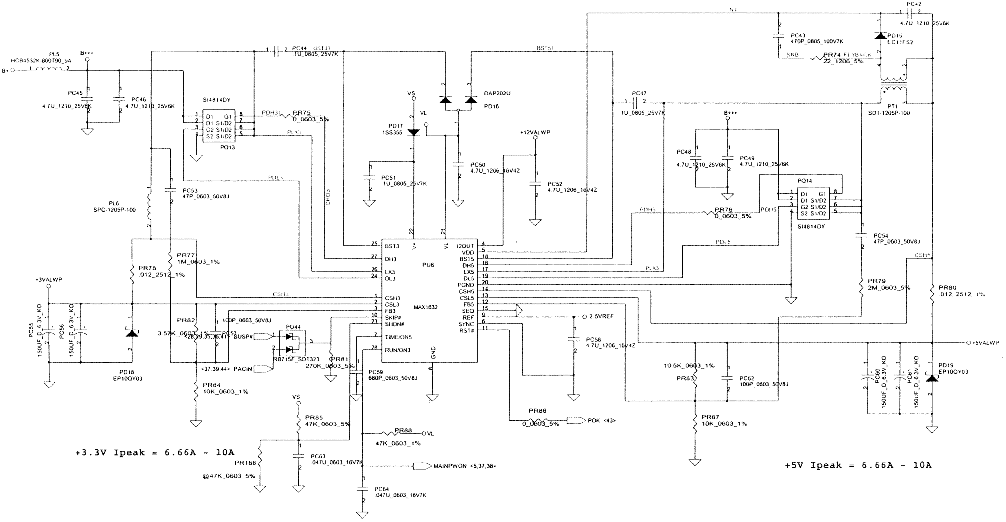
PH2 near main Battery CONN :
BAT. thermal protection at 84 degree C
Recovery at 45 degree C



Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591	
Size: B	Document Number: 401235	Rev: 2A
Date: 星期一 八月 19, 2013	Sheet 38 of 47	


Iadp=0~4.2A
IREF=1.31*Icharge
IREF=0.73~3.3V
CC=0.56~2.7A
CV=12.6V(9 CELLS LI-ION)
+3VALWP
4.2V
OVP voltage : LI-ION
9 CELL : 13.5V--> BAT_OVP= 1.5V
(BAT_OVP=0.1111 *VMB)
SDREF
+2.5V
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC, M/B LA-1591
Document Number
401235



Compal Electronics, Inc.

Title: SCHEMATIC, M/B LA-1591

Size	Document Number	Rev
B	401235	2A

Date: [illegible] 19, 2003 Sheet 40 of 47

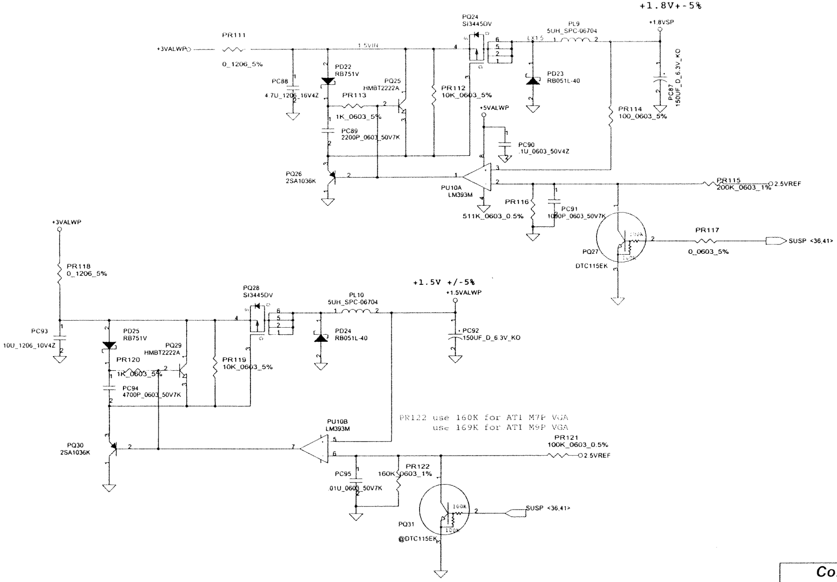
UNCONTROLLED DOCUMENT

Compal Electronics, Inc.

Title: SCHEMATIC, M/B LA-1591

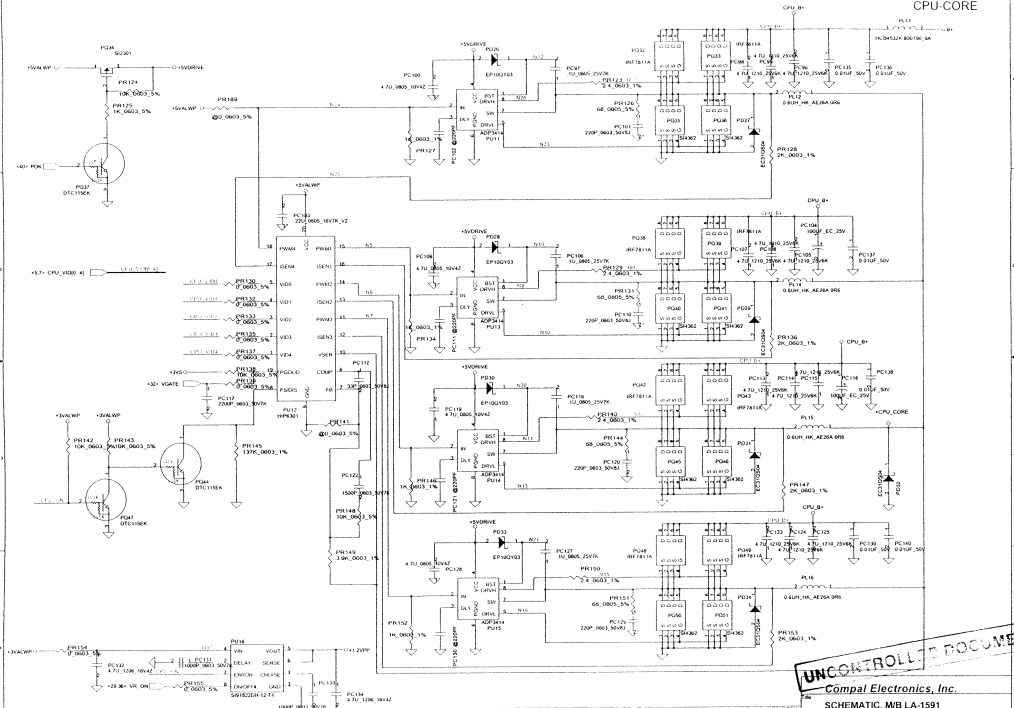
Size: B | Document Number: 401235 | Rev: 2A

Date: 星期二, 八月 19, 2003 | Sheet: 41 of 47



Compal Electronics, Inc.

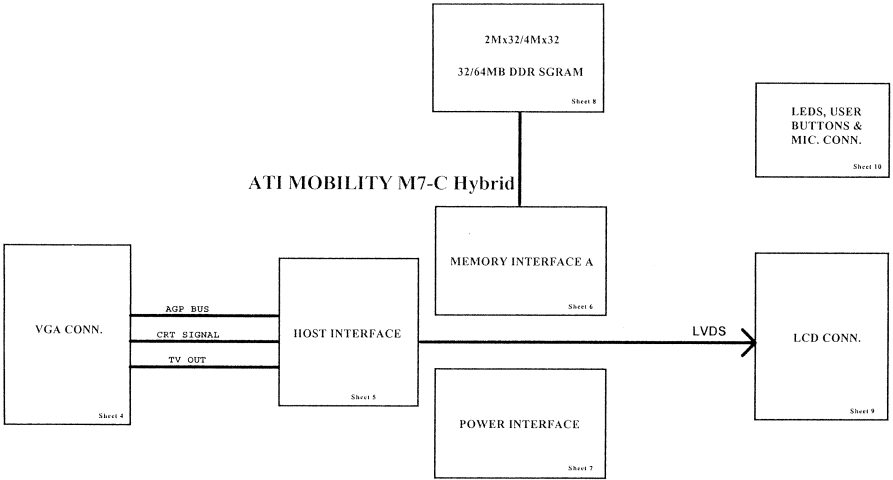
Title	SCHEMATIC, M/B LA-1591	
Size B	Document Number 401235	Rev 2A
Date: 19, 2003	Sheet 42 of 47	



Compal Electronics, Inc.

Title	SCHEMATIC, M/B LA-1591	
Size B	Document Number 401235	Rev 2A
Date: ... 19, 2003	Sheet 43 of 47	

BLOCK DIAGRAM



Compal Electronics, Inc.

Title	SCHEMATIC, VGA/B LS-1593	
Size	Document Number	Rev
	405628	1A
Date	Wednesday, January 15, 2003	Sheet 2 of 13

Capacitor Naming Note

Ceramic Capacitors :

0.1U_0402_XX

- Temperature Characteristics
- Rated Voltage
- Package Size

Tantalum or Polymer Capacitors :

10U_D2_XX_R45

- Low ESR Mark : 45 m ohm
- Tolerance
- Rated Voltage
- Package Size

Rated Voltage :

Symbol	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	I	J	K
W.V.	2	2.5	3	3.15	4	5.5	6	6.15	6.3	8	10	12	12.5	15	16	20	25	30	35	40	50

Symbol	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	a	b
W.V.	63	90	100	110	125	160	200	250	400	500	630	1K	2K	2.5K	3K	5K

Temperature Characteristics :

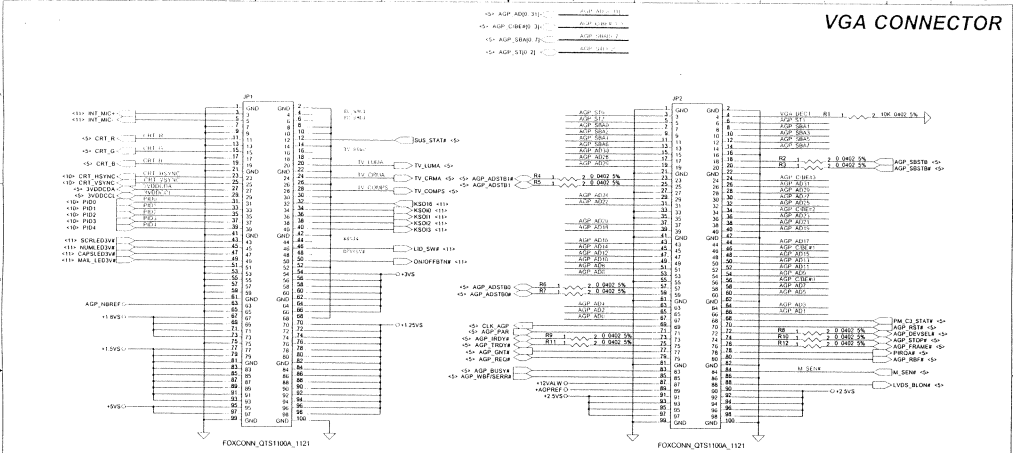
Symbol	0	1	2	3	4	5	6	7	8	9	A
Code	NPO	X5R	X7R	Y5V	Y5P	Y5U	Z5V	Z5P	Z5U	T2M	COG

Tolerance :

Symbol	A	B	C	D	F	G	H	J	K	M	N
Tolerance	+-0.05PF	+-0.1PF	+-0.25PF	+-0.5PF	+-1%	+-2%	+-3%	+-5%	+-10%	+-20%	+-30%

Symbol	P	Q	V	X	Z
Tolerance	+100,-0%	+30,-10%	+20,-10%	+40,-20%	+80,-20%

VGA CONNECTOR



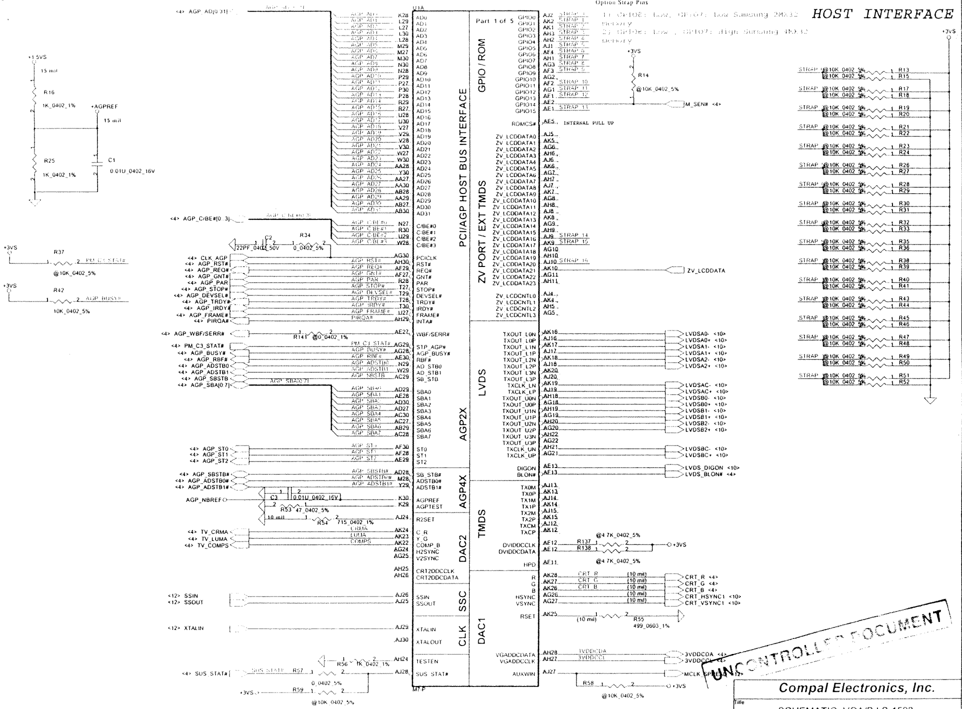
Compal Electronics, Inc.

Title: SCHEMATIC, VGA/B LS-1593

Size: Document Number: 405628 Rev: 1A

Date: Wednesday, JULY 17, 2002 Sheet 4 of 53

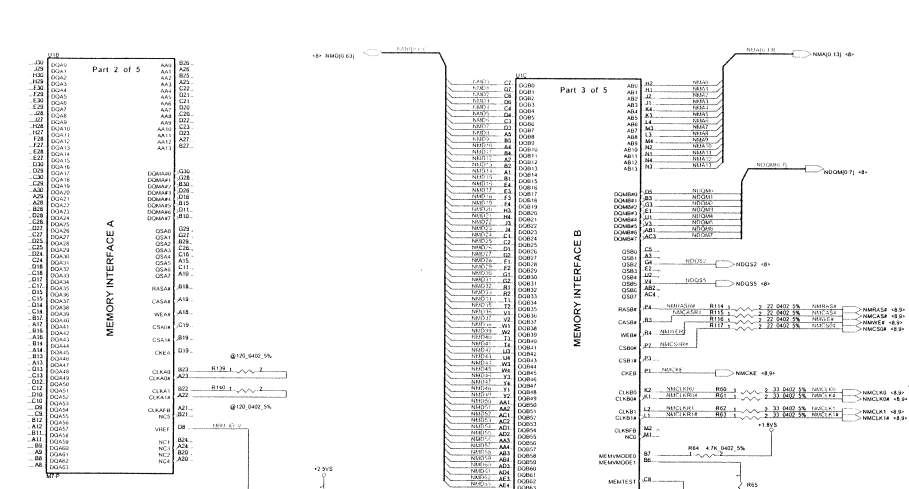
HOST INTERFACE



Divider circuit for 1.8Vdc XTALIN from 3.3Vdc OSC out

Compal Electronics, Inc.

Title	SCHEMATIC, VGA/B LS-1593	
Size: Custom	Document Number: 405628	Rev: 1A
Date: 11 17, 2002	Sheet 5 of 13	

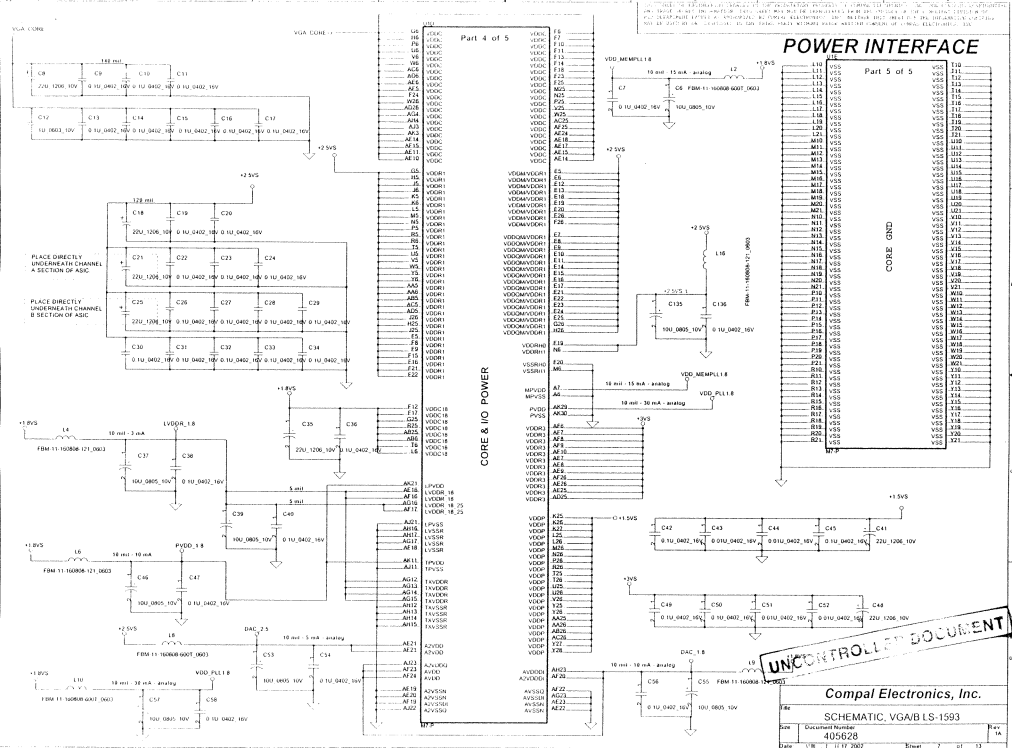


Compal Electronics, Inc.

Title: SCHEMATIC, VGA/B LS-1593

Size	Document Number	Rev
Custom	405628	1A

Date: Wednesday, November 13, 2002 | Sheet 6 of 13


POWER INTERFACE
CORE & I/O POWER
CORE GND
Part 4 of 5
Part 5 of 5
UNCONTROLLED DOCUMENT
Compal Electronics, Inc.
SCHEMATIC, VGA/B LS-1593
Document Number
405628
Rev
1A
Date
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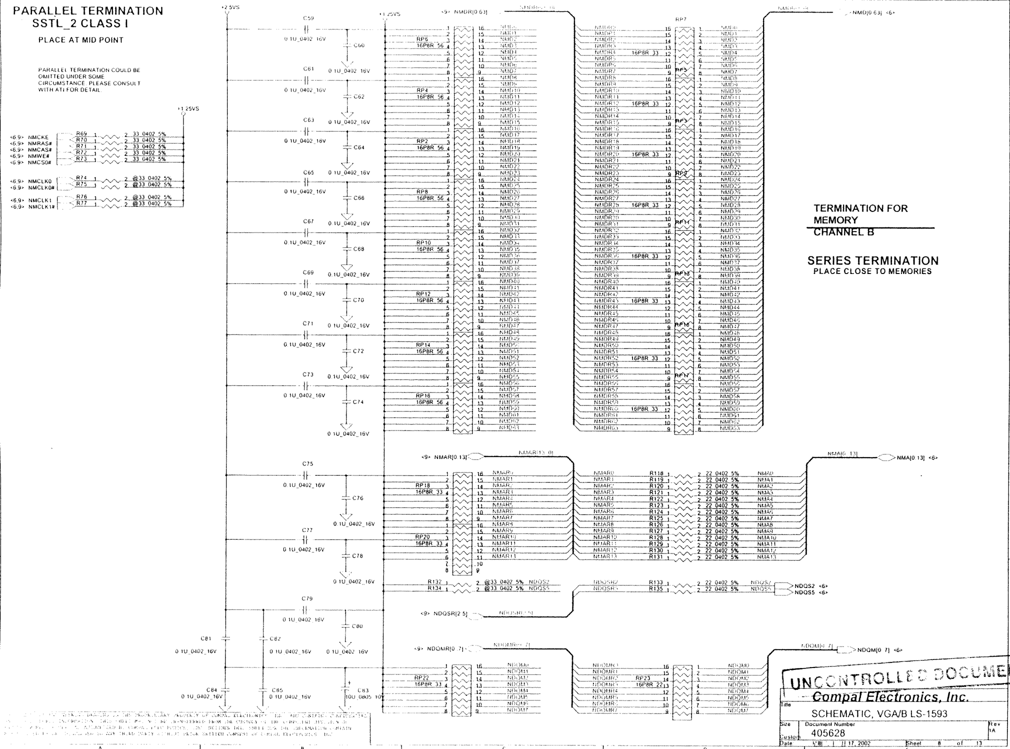
of


PARALLEL TERMINATION
SSTL_2 CLASS I
PLACE AT MID POINT
PARALLEL TERMINATION COULD BE OMITTED UNDER SOME CIRCUMSTANCE. PLEASE CONSULT WITH ATI FOR DETAIL.
+2.5VS
+1.25VS
NMCKE
NMRAS#
NMCAS#
NMWE#
NMCS0#
NMCLK0
NMCLK0#
NMCLK1
NMCLK1#
NMDR[0..63]
NMD[0..63]
NMAR[0..13]
NMA[0..13]
NDQSR[2..5]
NDQS2
NDQS5
NDQMR[0..7]
NDQM[0..7]
16P8R_56
16P8R_33
16P8R_22
0.1U_0402_16V
10U_0805_10V
33_0402_5%
@33_0402_5%
22_0402_5%
TERMINATION FOR MEMORY CHANNEL B
SERIES TERMINATION
PLACE CLOSE TO MEMORIES
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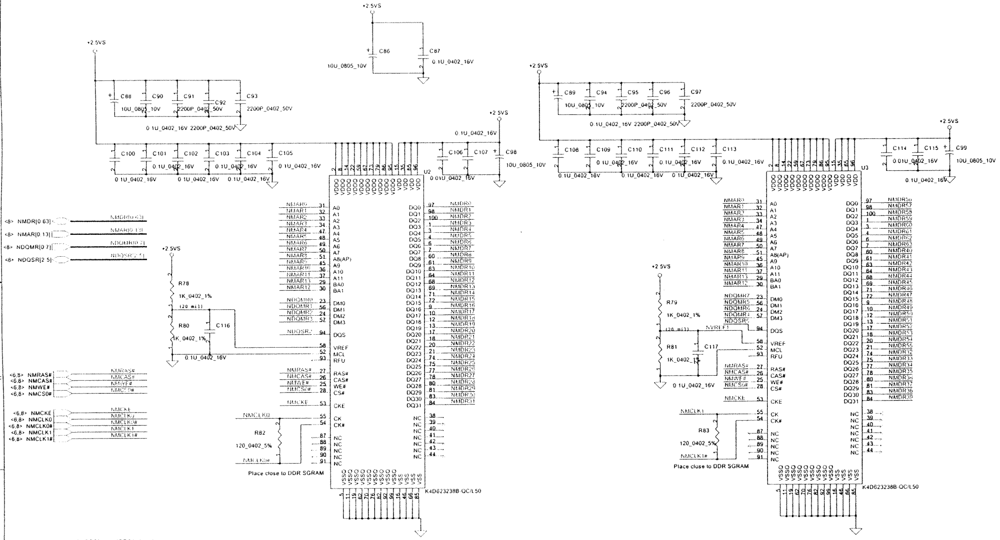
SCHEMATIC, VGA/B LS-1593
Size
Document Number
405628
Rev
1A
Custom
Date
17, 2002
Sheet 8 of 13

NOTE : MA11 CONNECTION REQUIRED
FOR 4Mx32 DDR SGRAM ONLY



NOTE Resistors of NDQS0 and NDQS4 closed to the 94 pin of every DDR SGRAM

16/32MB DDR 2/4MX32 SGRAM

16MB 64 BIT INTERFACE WITH TWO PIECES 2MX32

32MB 64 BIT INTERFACE WITH TWO PIECES 4MX32

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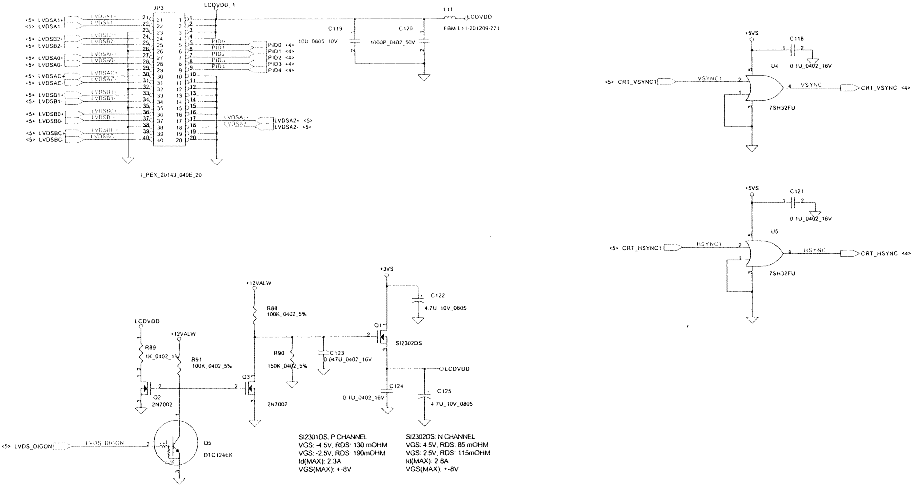
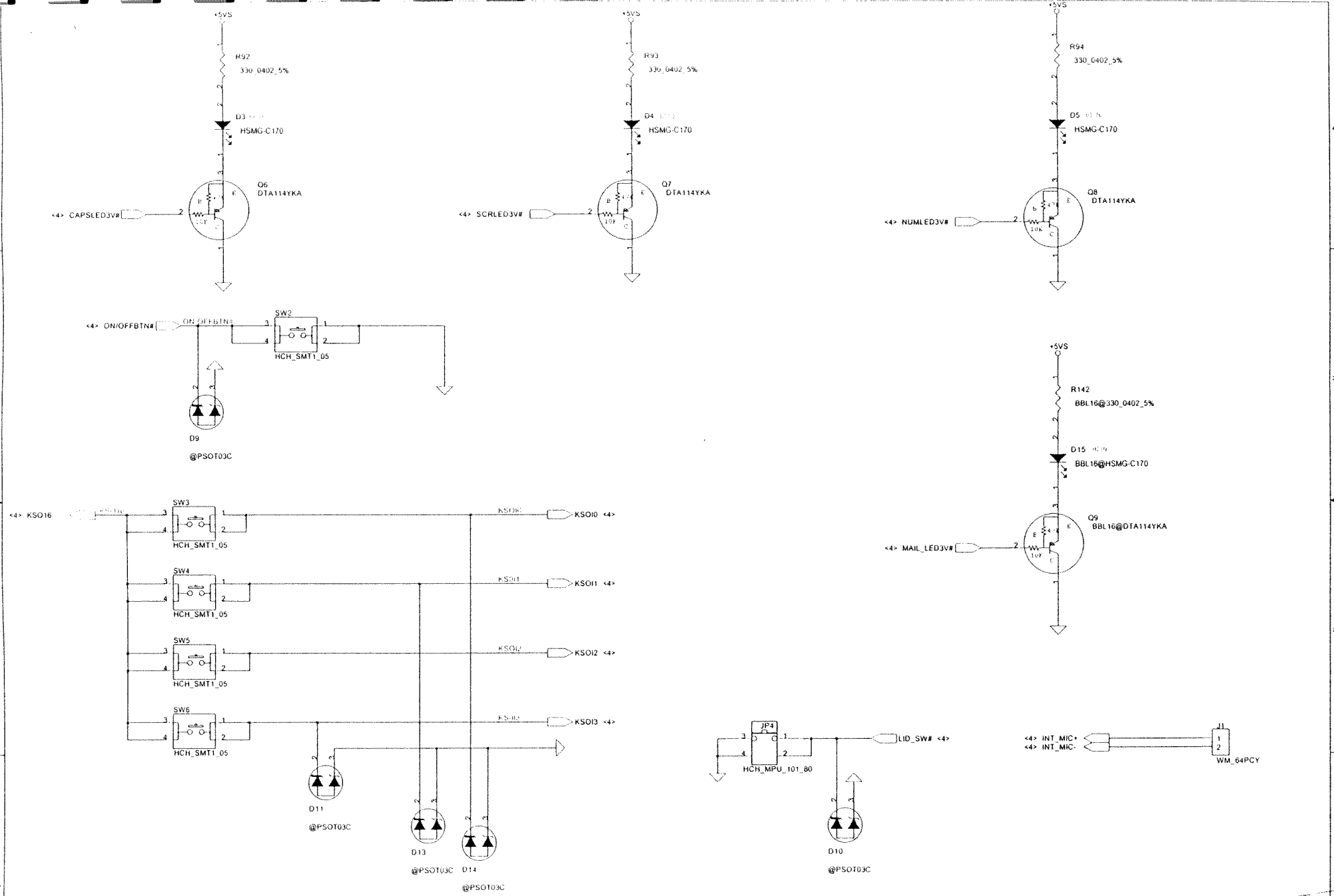
Title: SCHEMATIC, VGA/B LS-1593		
Size: Custom	Document Number: 405628	Rev: 1A
Date: 5月 17, 2002	Sheet 9 of 13	

LCD Panel Connector

The cap.'s colsely to LCD CONN.



Title	Compal Electronics, Inc. — SCHEMATIC, VGA/B LS-1593	
Size	Document Number: 405628	Rev: 1A
Date	[illegible] 17, 2002	Sheet 10 of 13



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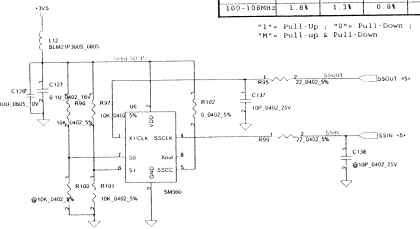
Title: SCHEMATIC, VGA/B LS-1593

Size: | Document Number: 405628 | Rev: 1A

Date: [illegible] 17, 2002 | Sheet 11 of 13

SST Ratio Selection Table For SM560				
Input Freq Range	S1=1 S0=M	S1=0 S0=1	S1=1 S0=1	S1=M S0=1
	2.5%	1.9%	1.2%	1.0%
60-70MHz	2.4%	1.8%	1.1%	0.9%
70-80MHz	2.3%	1.6%	1.1%	0.9%
80-100MHz	2.0%	1.4%	1.0%	0.8%
100-108MHz	1.8%	1.3%	0.8%	0.6%

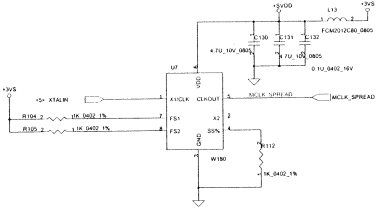
"1"= Pull-Up ; "0"= Pull-Down ;
"M"= Pull-up & Pull-Down



SM560 Schematic for 50MHz - 108MHz

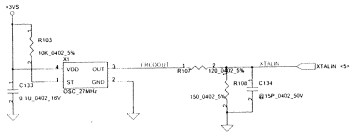
SST Ratio selection table for W180

Modulation setting	SST Ratio
SS%	
0	1.25%
1	3.75%



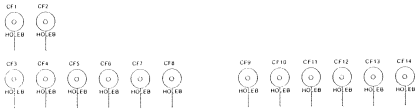
Note :Input Freq = 27MHz , FS2=1 , FS1=1

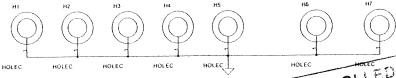
W180 Schematic for 27MHz



Divider circuit for 3.3V& XTALIN from 3.3V& OSC out

EMI Clip PAD for Memory Door





SCHEMATIC, VGA/B LS-1593

Size	Document Number	Rev
	405628	1A
Date:	Sheet 12 of 13	