

	1	2	3	4	5	6	7	8	
A	THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF INVENTEC CORPORATION AND SHALL NOT BE REPRODUCED, COPIED, OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION, INVENTEC CORPORATION 2009 ALL RIGHT RESERVED								A
B									B
C									C
D									D
E									E
F									F

ST145a - UMA

AMD PLATFORM

DB Build

2009/07/23

DRAWER	EE	DATE	POWER	DATE	INVENTEC			
DESIGN								
CHECK								
RESPONSIBLE								
TITLE					ST145a - DIS			
Project Name								
SIZE =	3	VER :			SIZE	CODE	DOC. NUMBER	REV
FILE NAME :	XXXX-XXXXXX-XX				A3	CS	Model No	X01
P/N	XXXXXXXXXXXX				SHEET	1	OF	53

Index Of Content

PAGE

01- Project Name
 02- Index
 03- Block Diagram
 04- Power Procedure
 05- NOTE
 06- DC & BATTERY CHARGER
 07- BATTERY CONN
 08- +V5A & +V3A & +V2.5S
 09- +V1.2A & +VCC_NB
 10- +VCC_CORE & +VCC_CORE_NB
 11- +V1.1S & +V1.1A & +V1.05S
 12- NOTE
 13- +V1.5 & +V1.8S
 14- POWER (SLEEP)
 15- CLK GEN-RTM880N
 16- CPU-1
 17- CPU-2
 18- CPU-3
 19- CPU-4
 20- FAN & THERMAL IC
 21- RS880M-1
 22- RS880M-2
 23- RS880M-3

PAGE

24- RS880M-4
 25- DDR3 DIMM0
 26- DDR3 DIMM1
 27- DDR3 SIDE-PORT
 28- SB820M-1
 29- SB820M-2
 30- SB820M-3
 31- SB820M-4
 32- SB820M-5
 33- CRT
 34- NOTE
 35- LCM
 36- HDMI
 37- KBC
 38- Keyboard CONN & Indicate LED
 39- Card reader
 40- SATA HDD & SATA ODD CONN
 41- Touch screen & FingerPrint CONN
 42- ESATA CONN & USB Board CONN
 43- LAN
 44- RJ45 CONN
 45- AUDIO CODEC & SPEAKER CONN
 46- HP JACK & MIC JACK
 47- NOTE
 48- WLAN & BLUETOOTH
 49- WWAN

PAGE

50- NOTE
 51- USB BOARD & BUTTON BOARD
 52- HDD Board & ODD Board

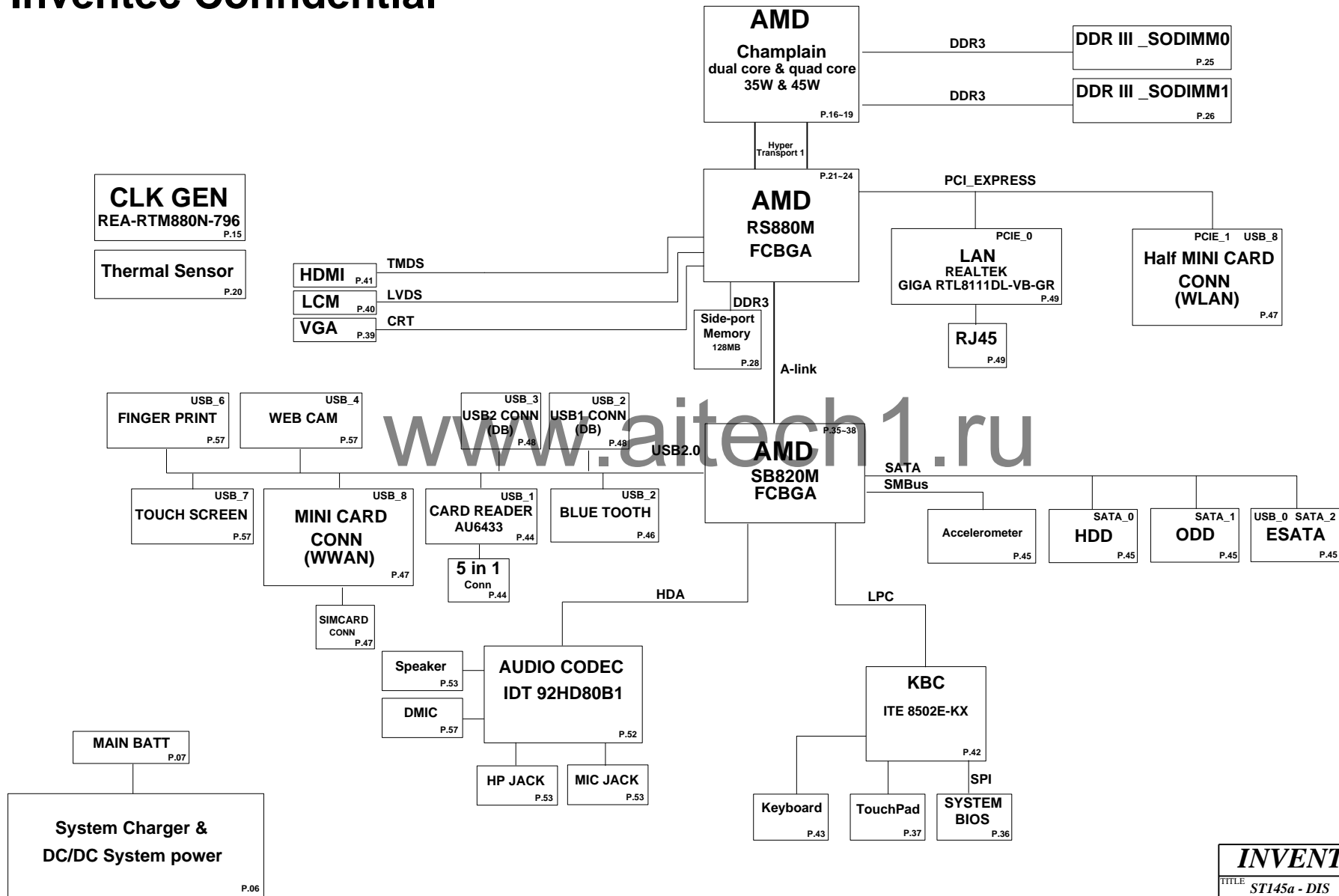
INVENTEC

TITLE			
ST145a - DIS			
Index			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01
SHEET		2	OF 53

CHANGE by Alan W 23-Jul-2009

8

Inventec Confidential

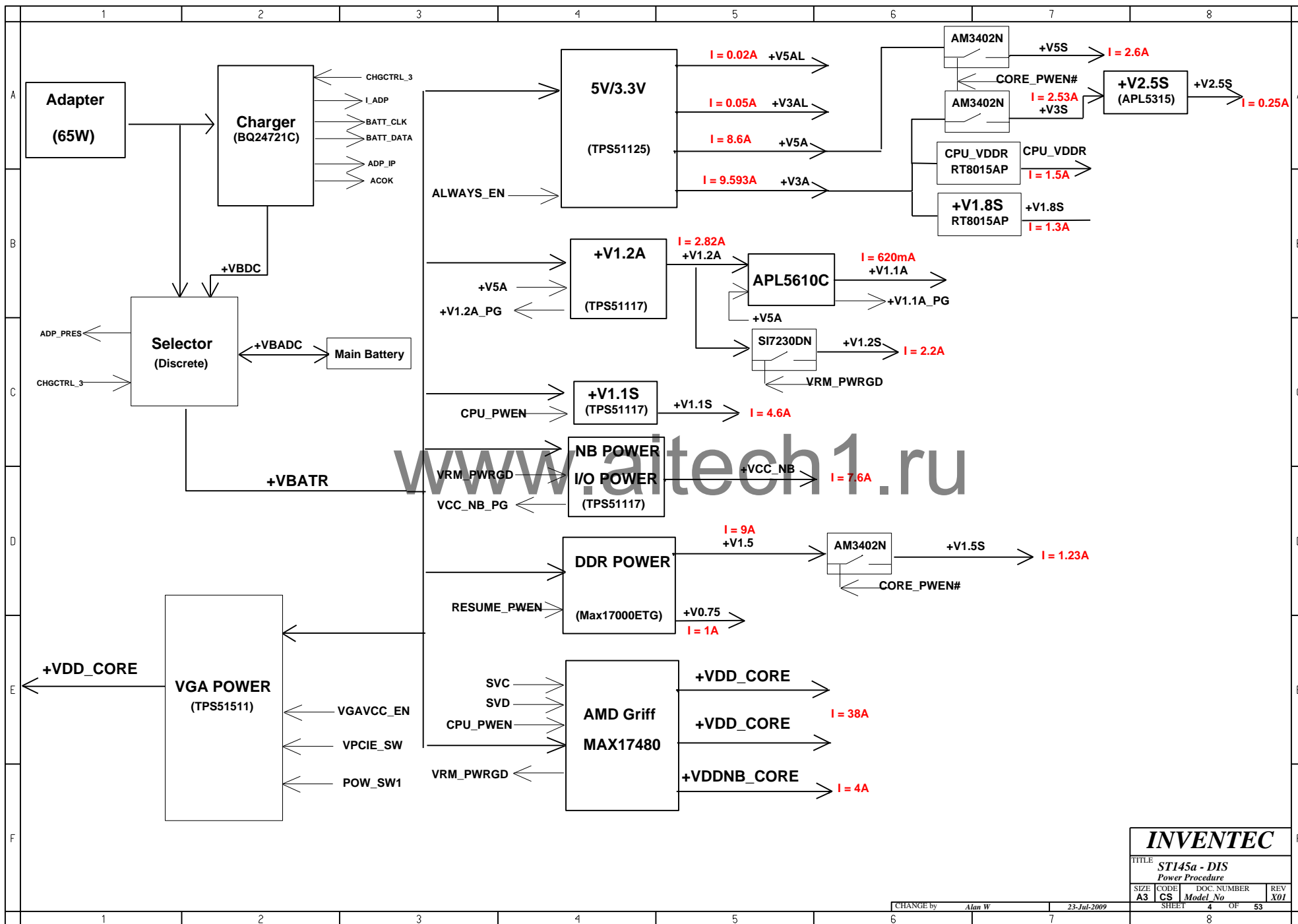


INVENTEC

TITLE			
ST145a - DIS			
Block Diagram			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

CHANGE by Alan W 23-Jul-2009

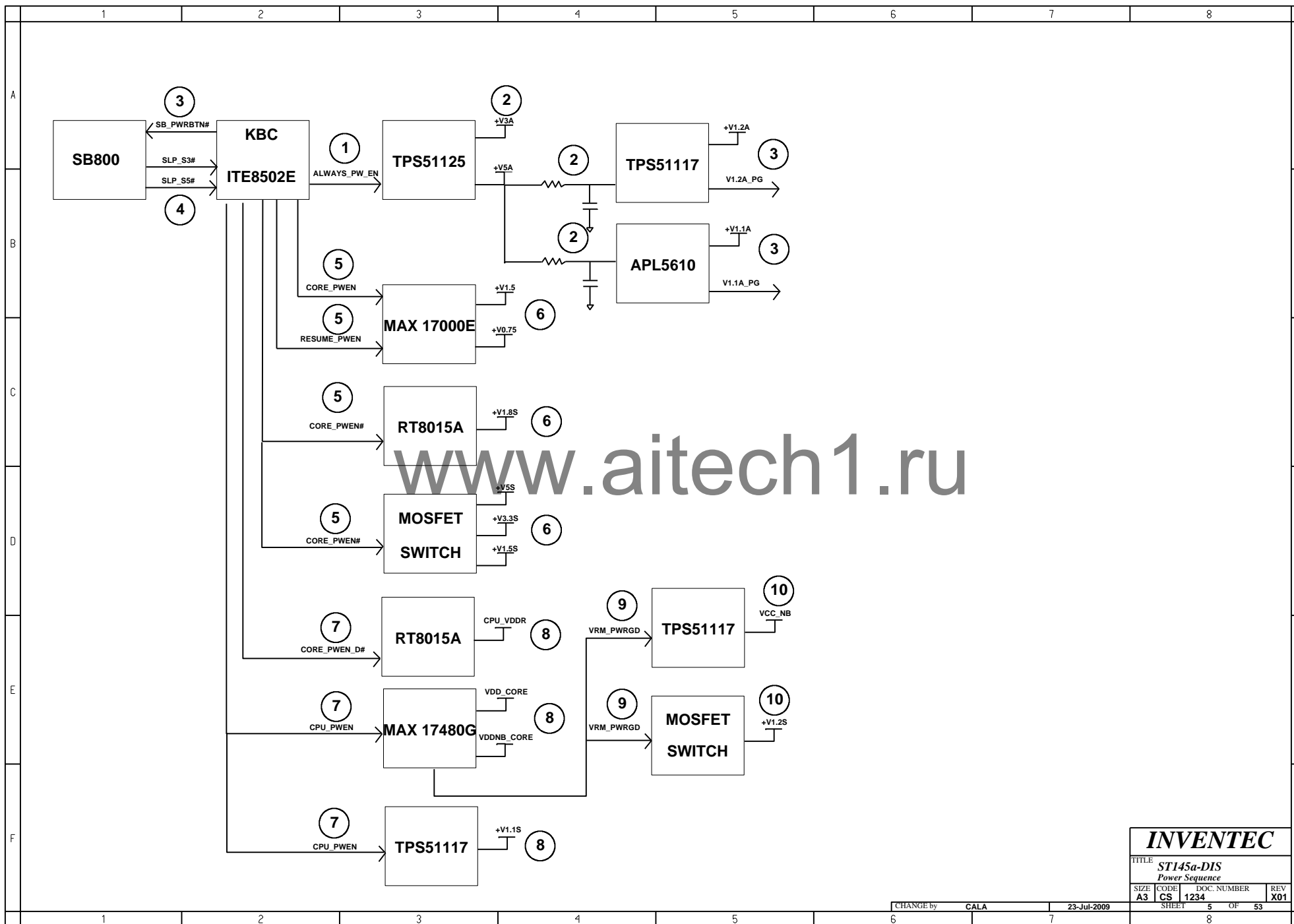
SHEET 3 OF 53



INVENTEC

TITLE			
ST145a - DIS			
Power Procedure			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01
SHEET		4	OF 53

CHANGE by Alan W 23-Jul-2009

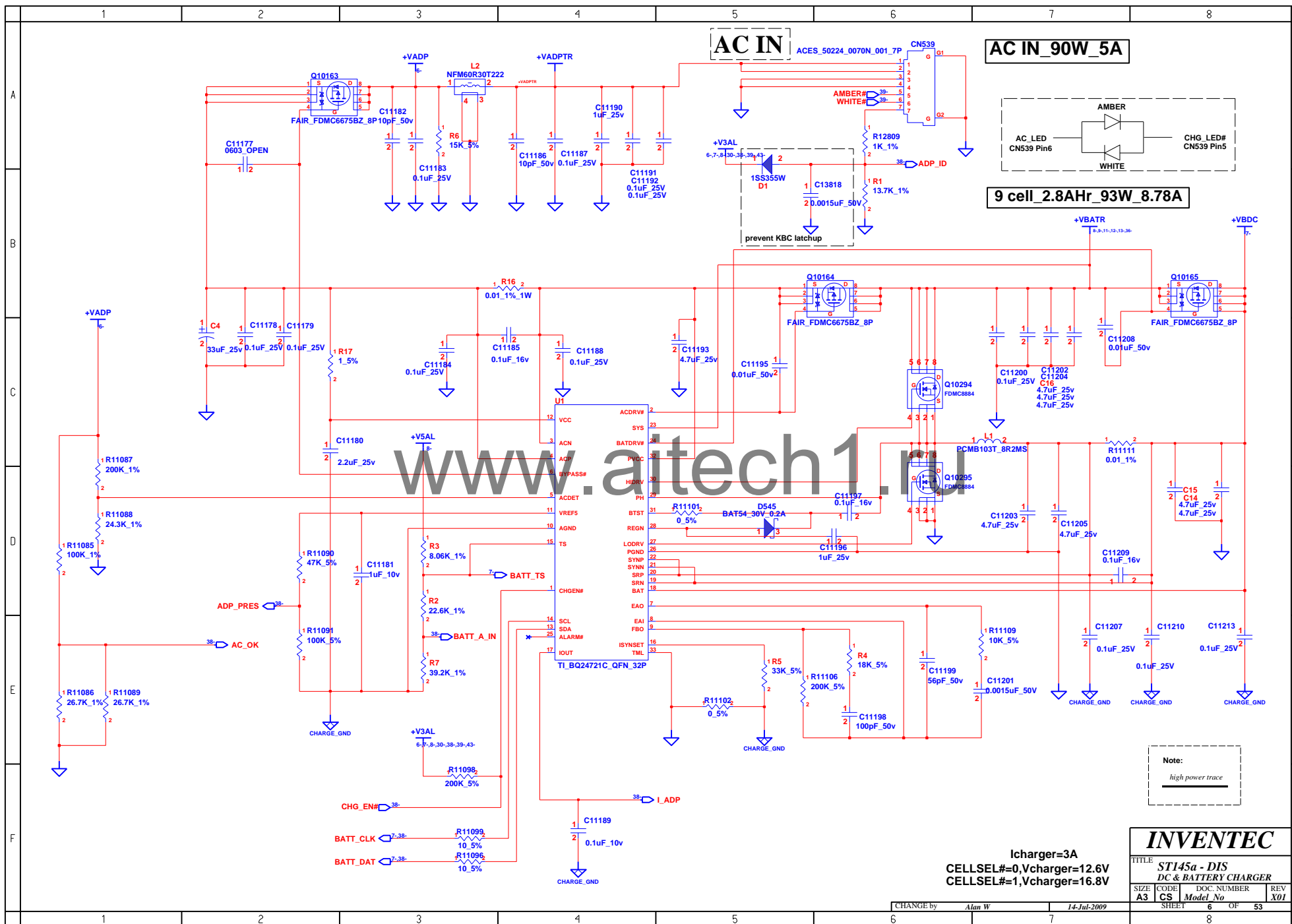


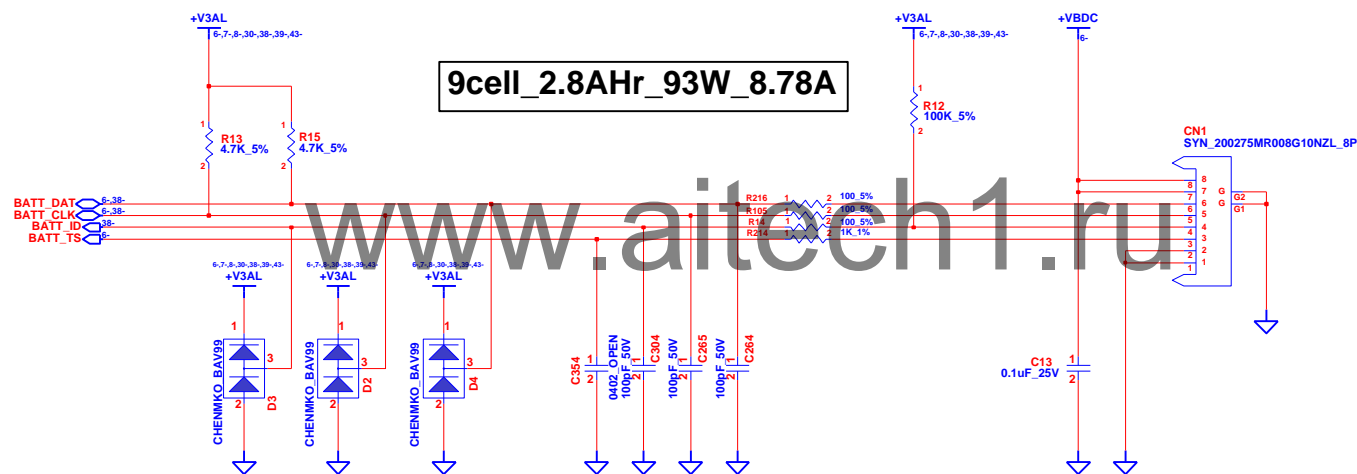
INVENTEC

TITLE			
ST145a-DIS			
Power Sequence			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	1234	X01

CHANGE by CALA 23-Jul-2009

SHEET 5 OF 53





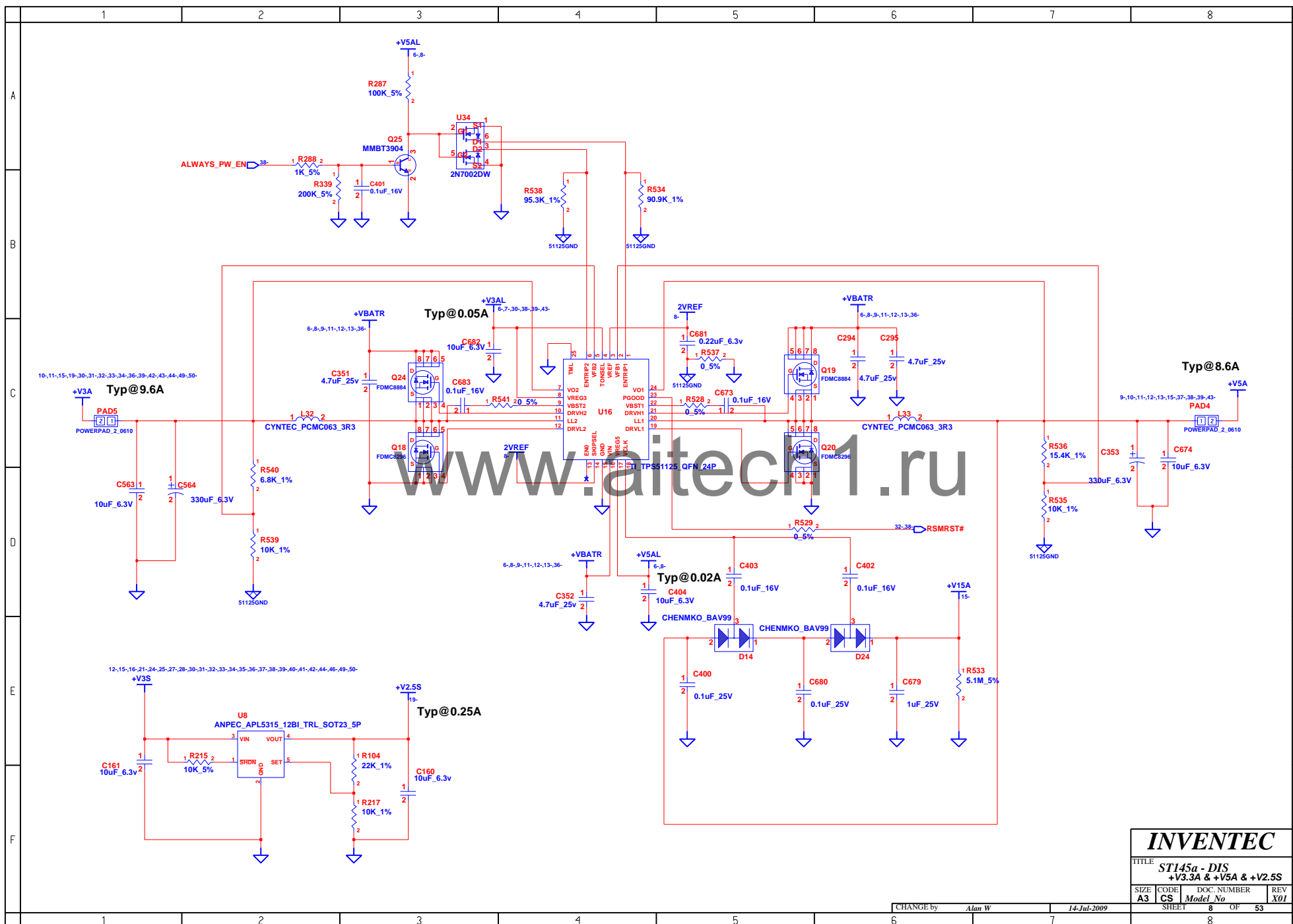
INVENTEC

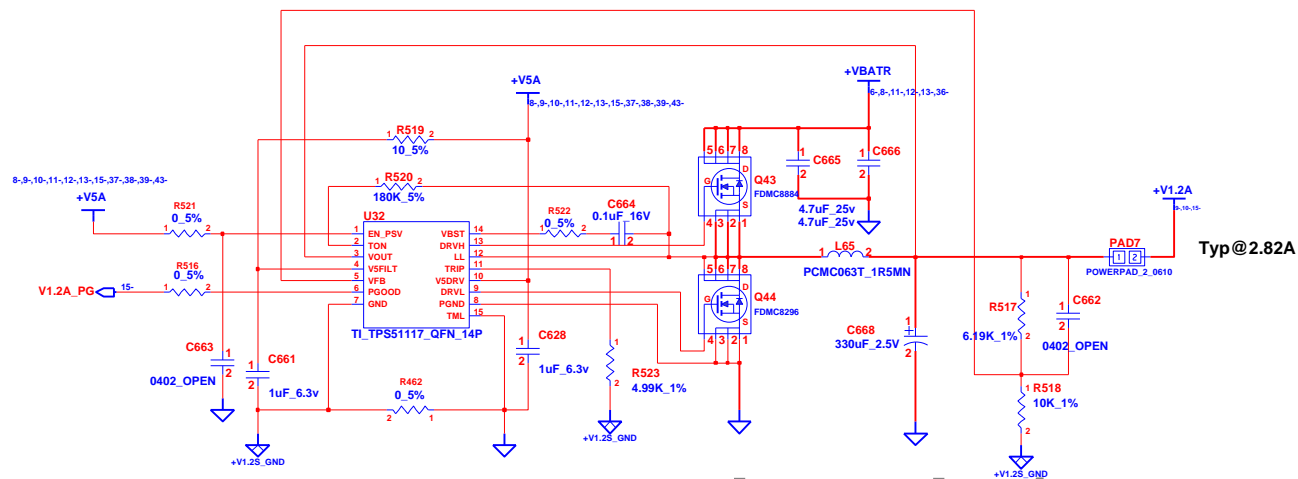
TITLE
**ST145a - DIS
BATTERY CONN**

SIZE A3	CODE CS	DOC. NUMBER <i>Model No</i>	REV X01
-------------------	-------------------	--------------------------------	-------------------

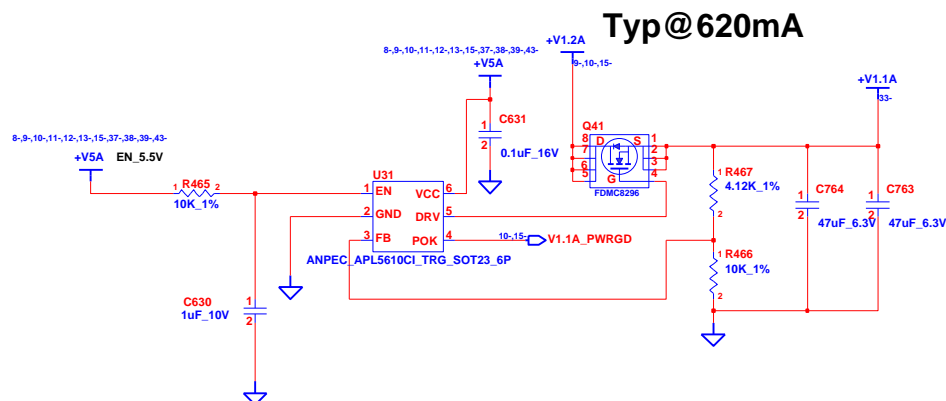
CHANGE by *Alan W* 14-Jul-2009

SHEET 7 OF 53





www.aitech1.ru



INVENTEC

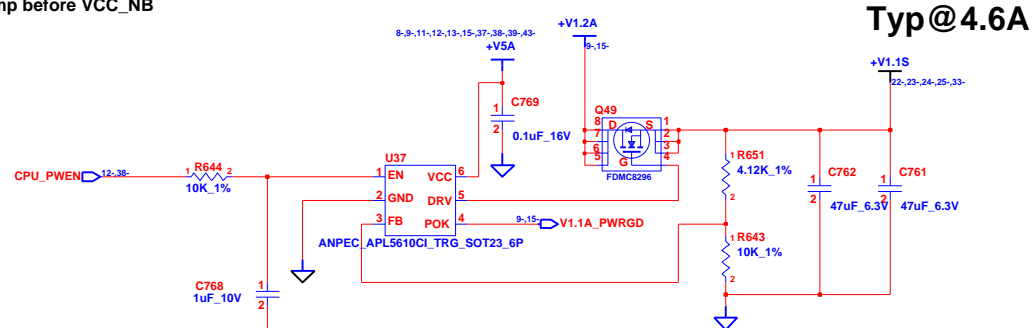
TITLE
ST145a - DIS
+V1.2A & VCC_NB

SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

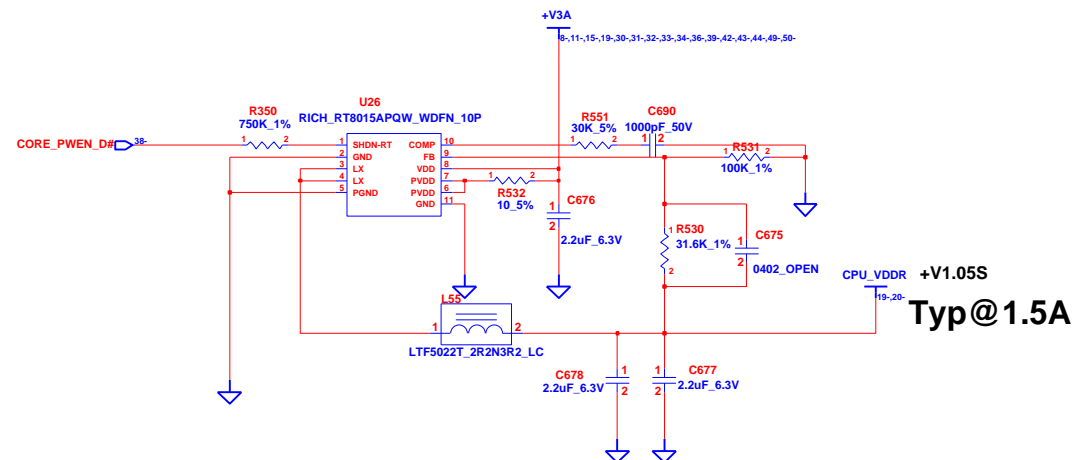
CHANGE by Alan W 14-Jul-2009

SHEET 9 OF 53

1. +V1.8S ramp before +V1.1S
2. +V3.3S ramp before +V1.1S
3. +V1.1S ramp before VCC_NB



www.aitech1.ru



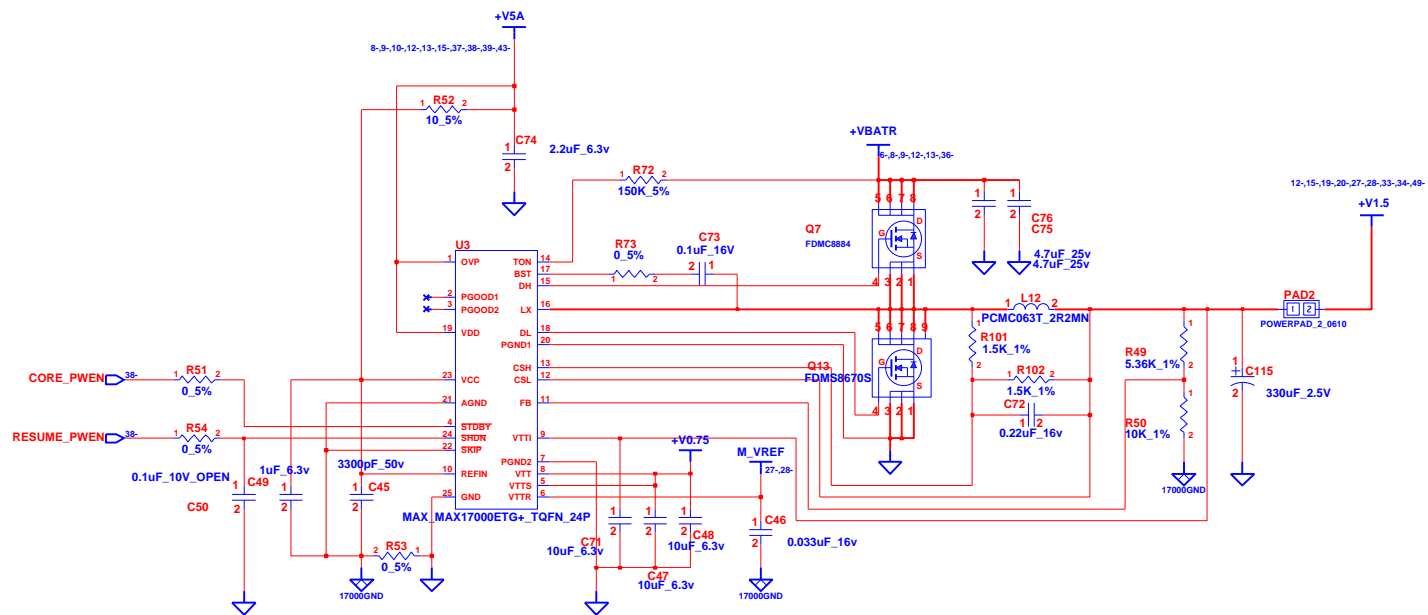
INVENTEC

TITLE **ST145a - DIS**
CPU_VDDR & +V1.1A & +V1.1S

SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

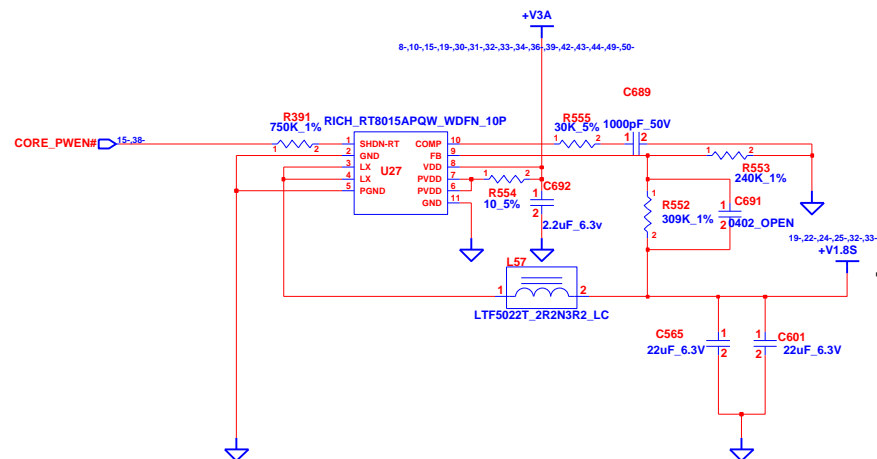
CHANGE by Alan W 14-Jul-2009

SHEET 10 OF 53



Typ@9A

www.aitech1.ru
NOTE: DDR3 REGULATOR



Typ@1.3A

INVENTEC

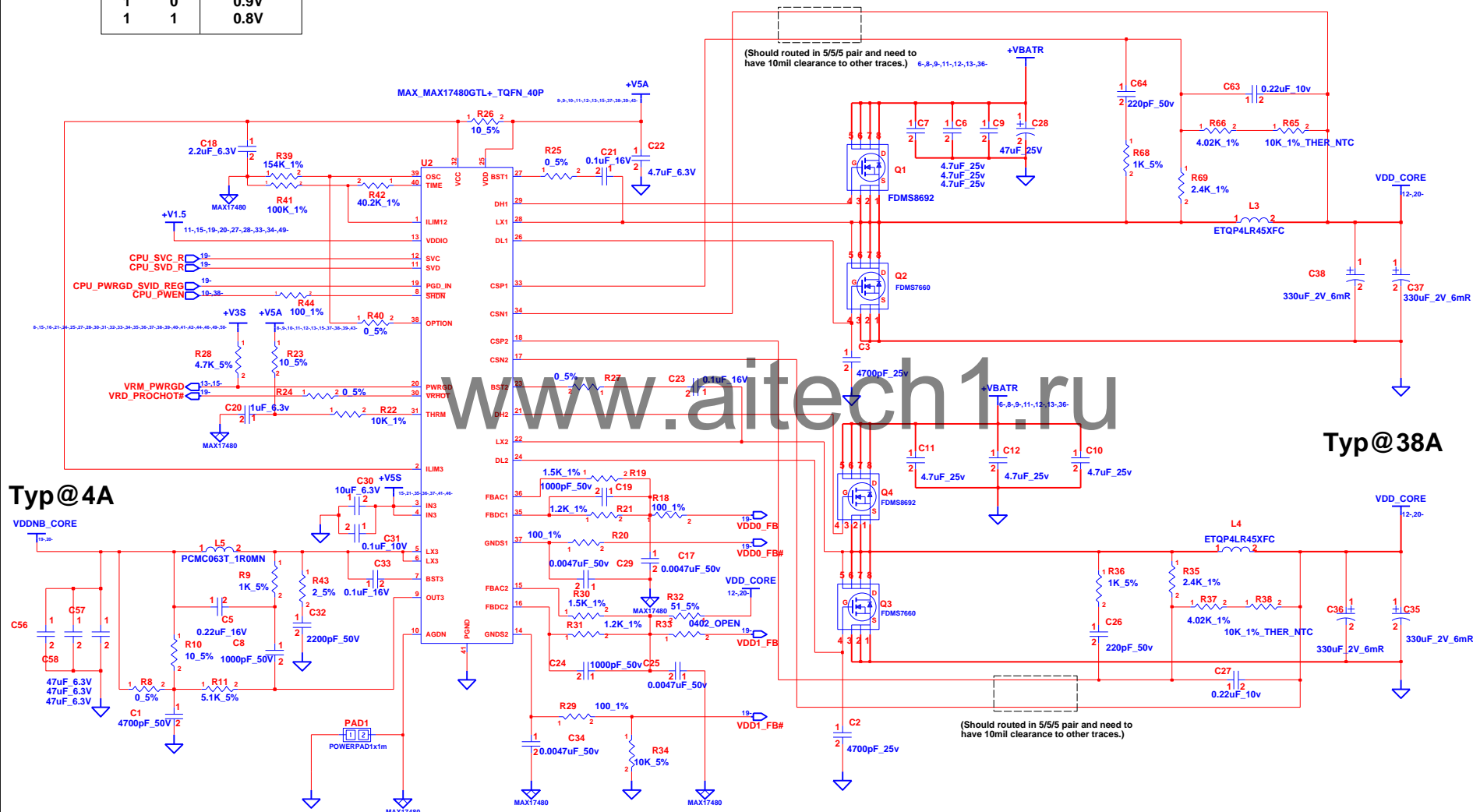
TITLE
ST145a - DIS
DDR3 POWER

SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

CHANGE by Alan W 14-Jul-2009

SHEET 11 OF 53

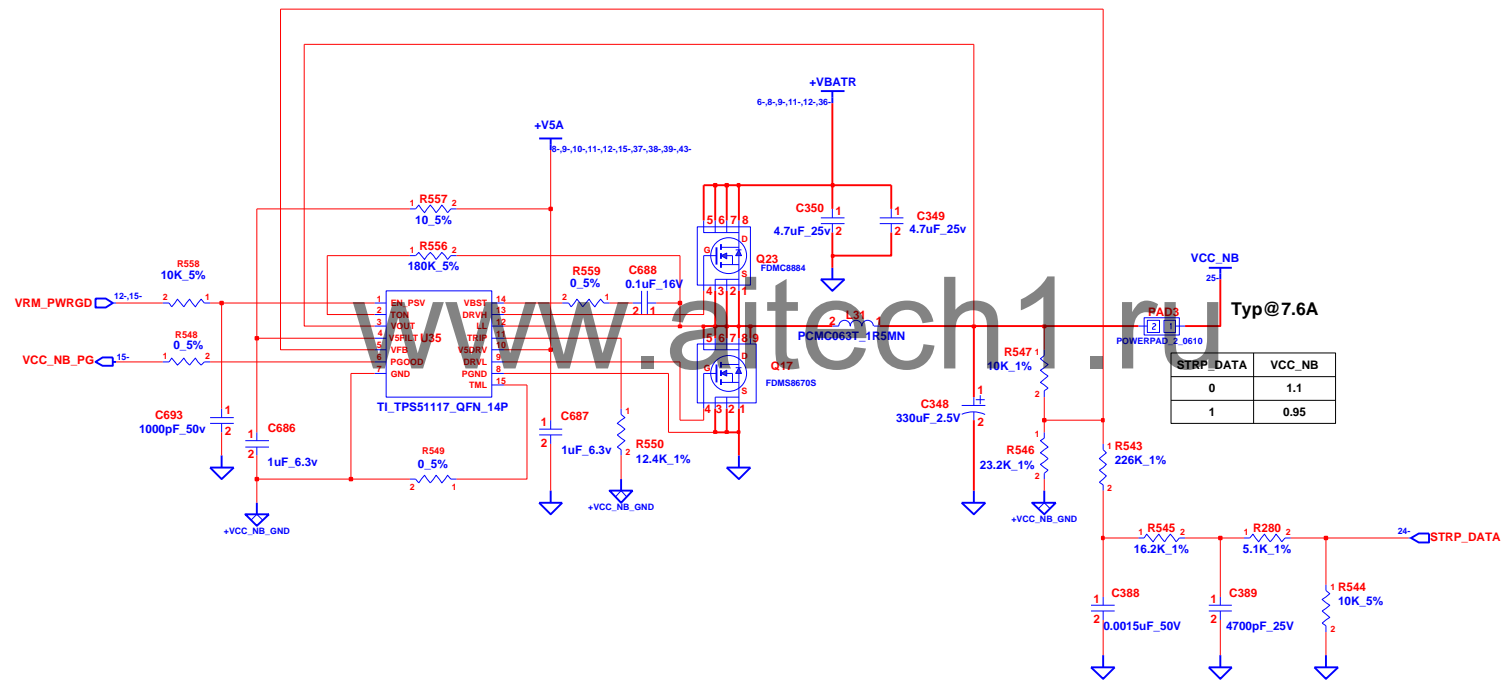
SVC	SVD	VDD_CORE
0	0	1.1V
0	1	1.0V
1	0	0.9V
1	1	0.8V



Typ@38A

Typ@4A

INVENTEC			
TITLE: ST145a - DIS +VCC_CORE & +VCC_CORE_NB			
SIZE: A3	CODE: CS	DOC. NUMBER: Model No	REV: X01
CHANGE by: Alan W		14-Jul-2009	
SHEET: 12		OF: 53	



INVENTEC

TITLE
ST145a - DIS

SIZE A3	CODE CS	DOC. NUMBER <i>Model No</i>	REV X01
-------------------	-------------------	--------------------------------	-------------------

CHANGE by *Alan W* 15-Jul-2009

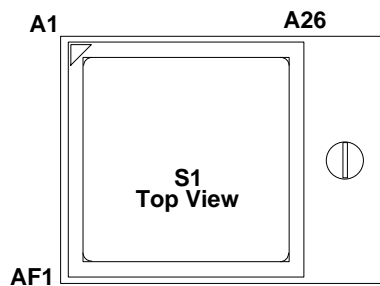
SHEET 13 OF 53

	1	2	3	4	5	6	7	8	
A									A
B									B
C									C
D									D
E									E
F									F
	1	2	3	4	5	6	7	8	

www.aitech1.ru

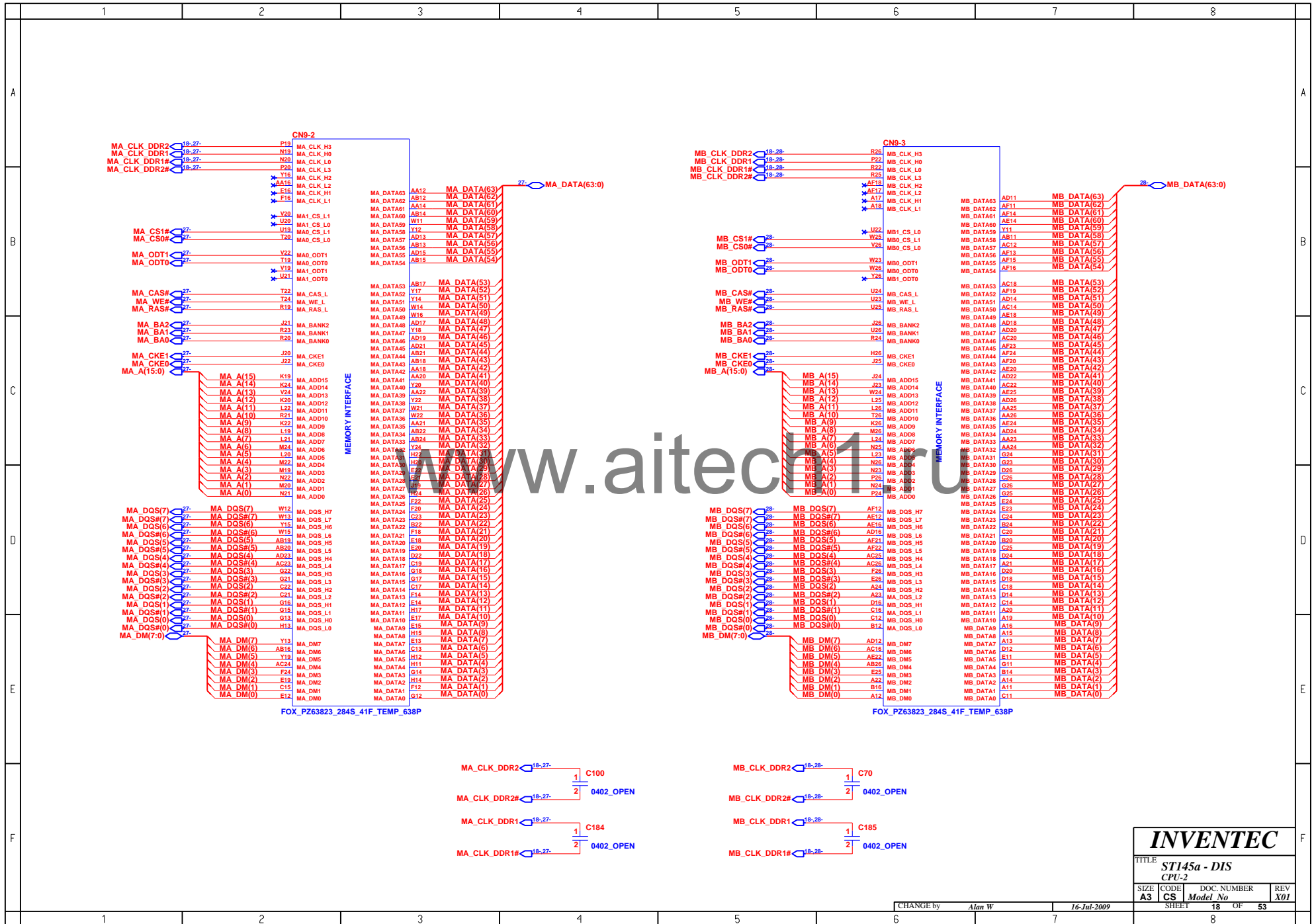
INVENTEC			
TITLE ST145a - DIS +VDD CORE & +VPCIE			
SIZE A3	CODE CS	DOC. NUMBER <i>Model No</i>	REV X01
SHEET		14	OF 53

CHANGE by *Alan W* 23-Jul-2009



Layout: Add stitching caps if crossing plane split.

INVENTEC			
TITLE <i>ST145a - DIS</i> <i>CPU-1</i>			
SIZE A3	CODE CS	DOC. NUMBER <i>Model No</i>	REV <i>X01</i>
SHEET 17		OF 53	
8			



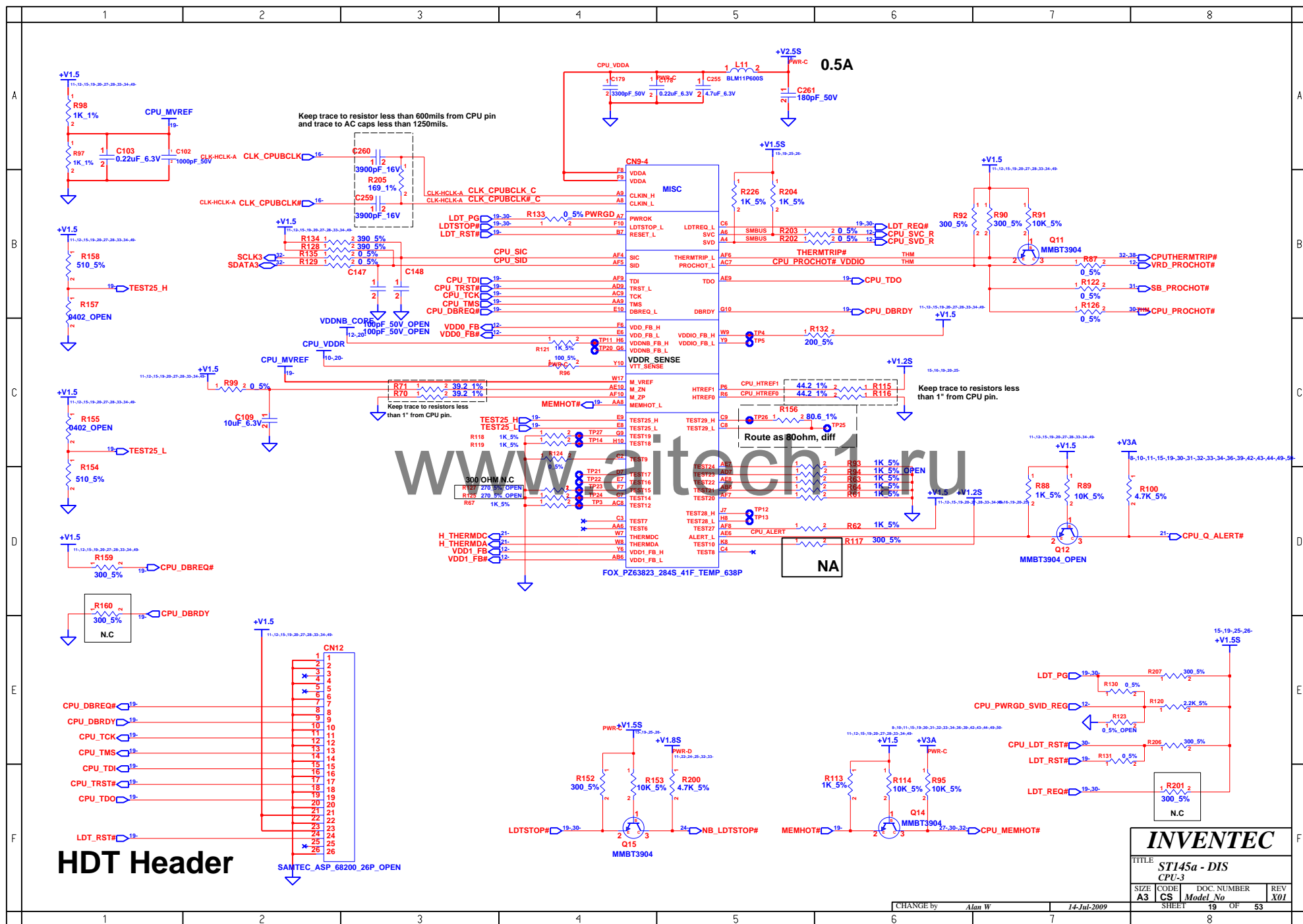
INVENTEC

TITLE
ST145a - DIS
CPU-2

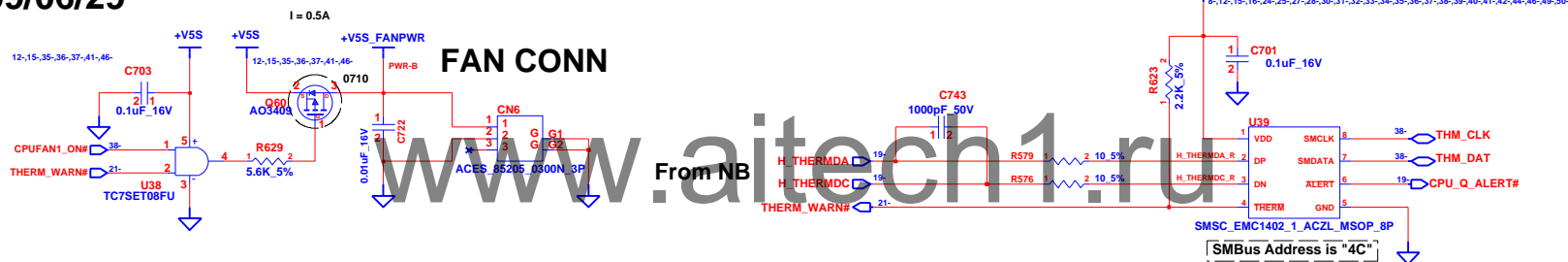
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

CHANGE by Alan W 16-Jul-2009

SHEET 18 OF 53



Circuit : Fixed 2009/06/29

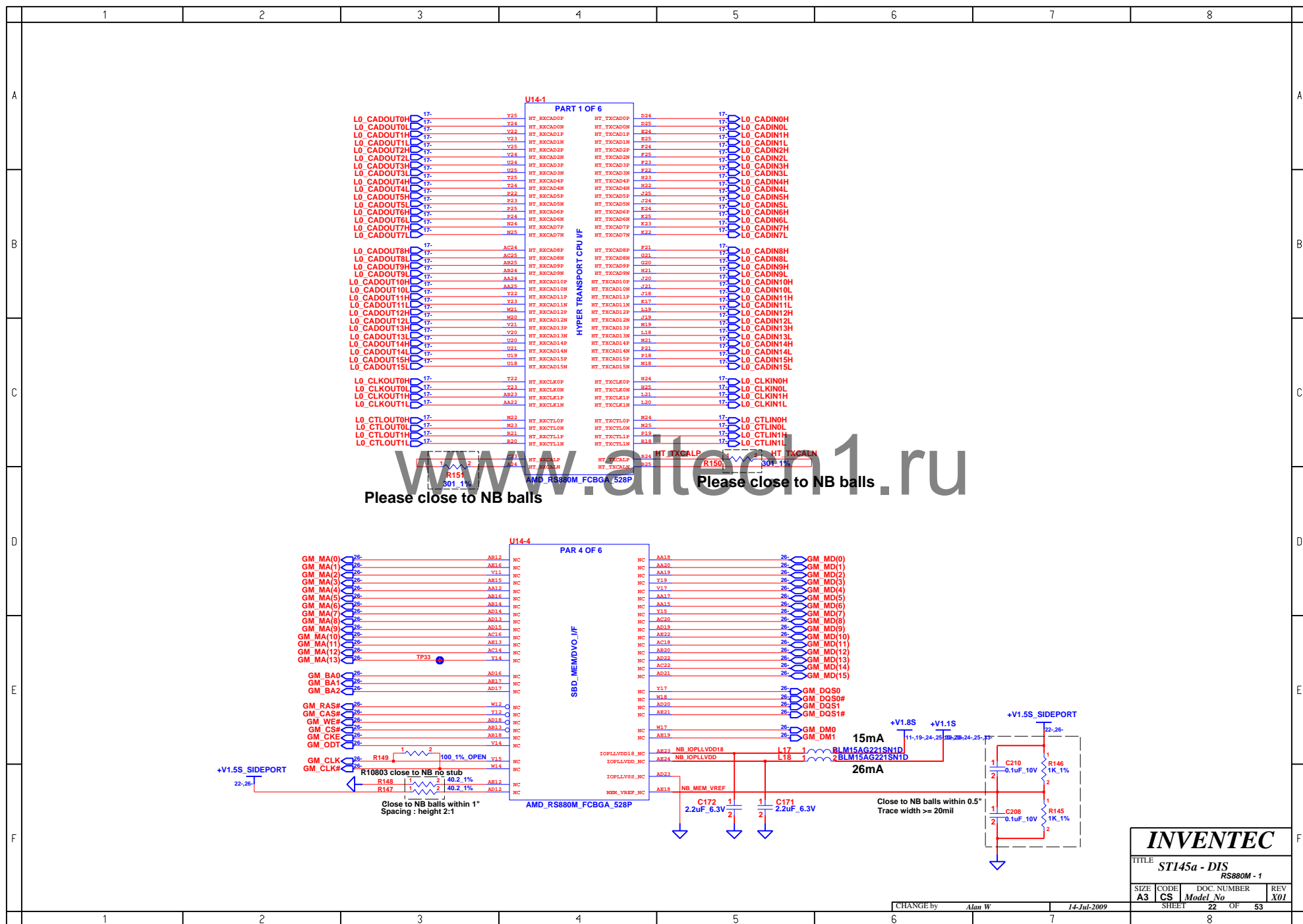


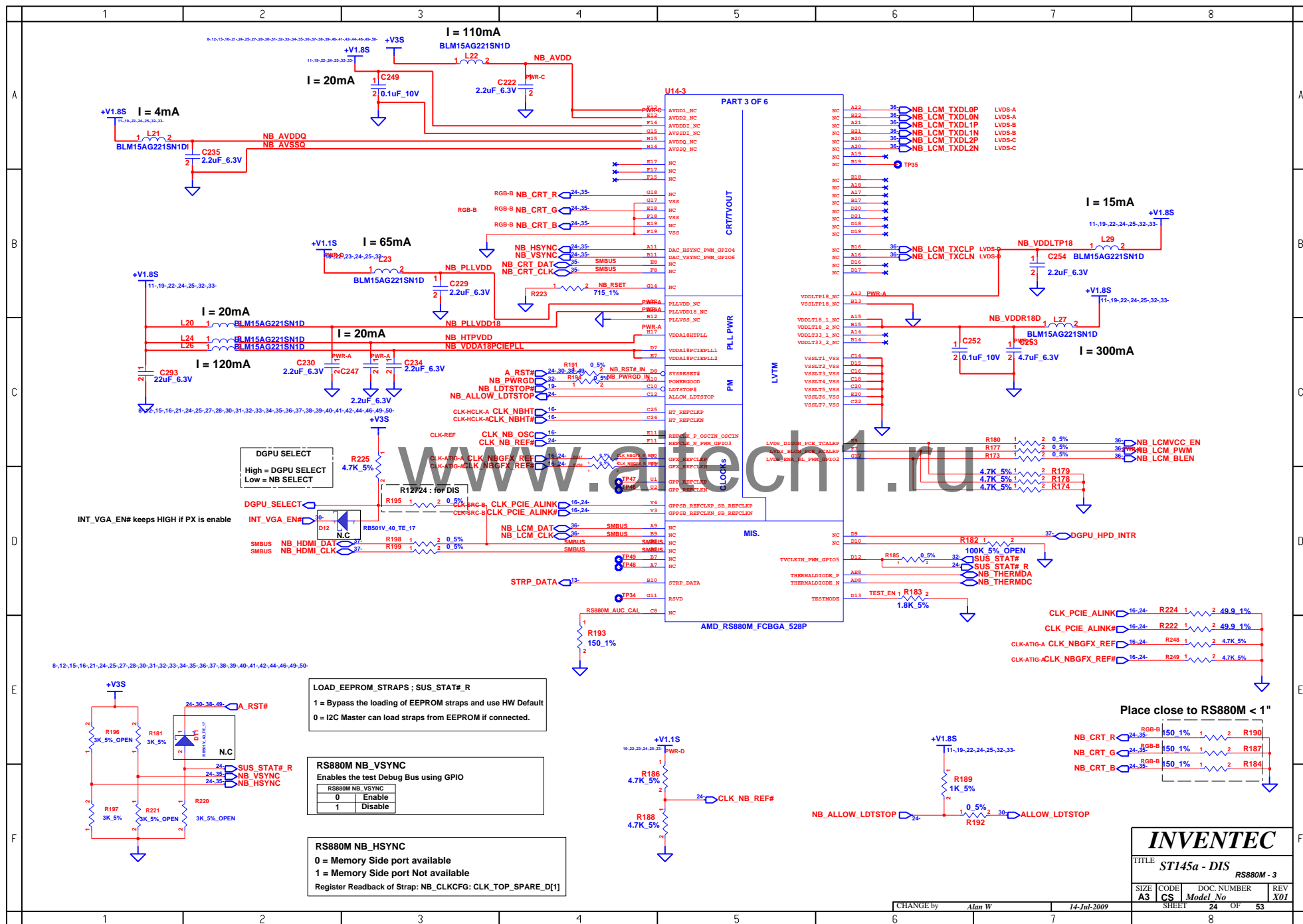
INVENTEC

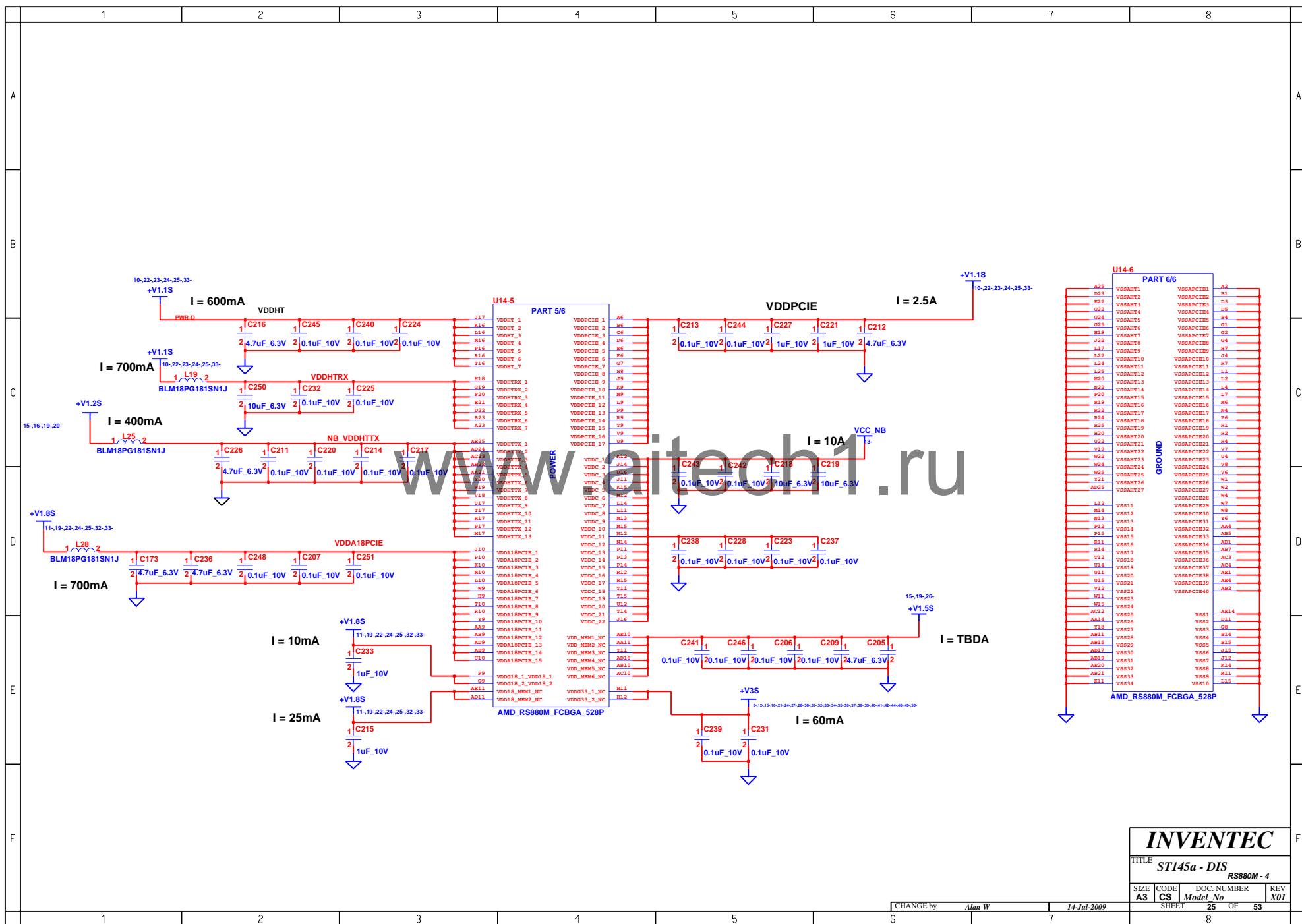
TITLE			
ST145a - DIS			
FAN & THERMAL			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

CHANGE by Alan W 14-Jul-2009

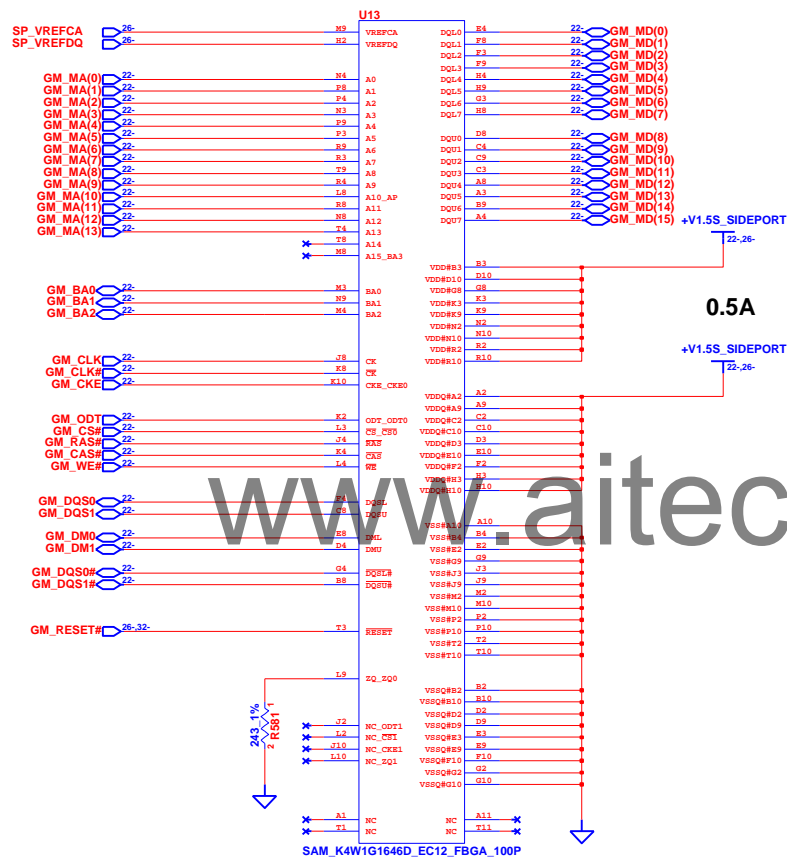
SHEET 21 OF 53



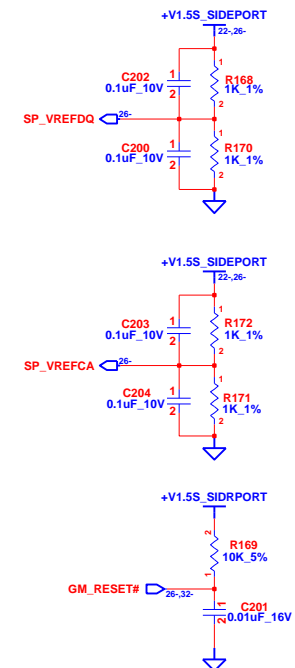
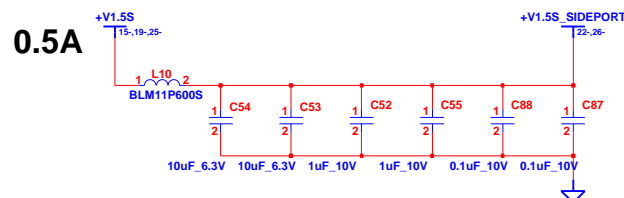




SIDE-PORT DDR III

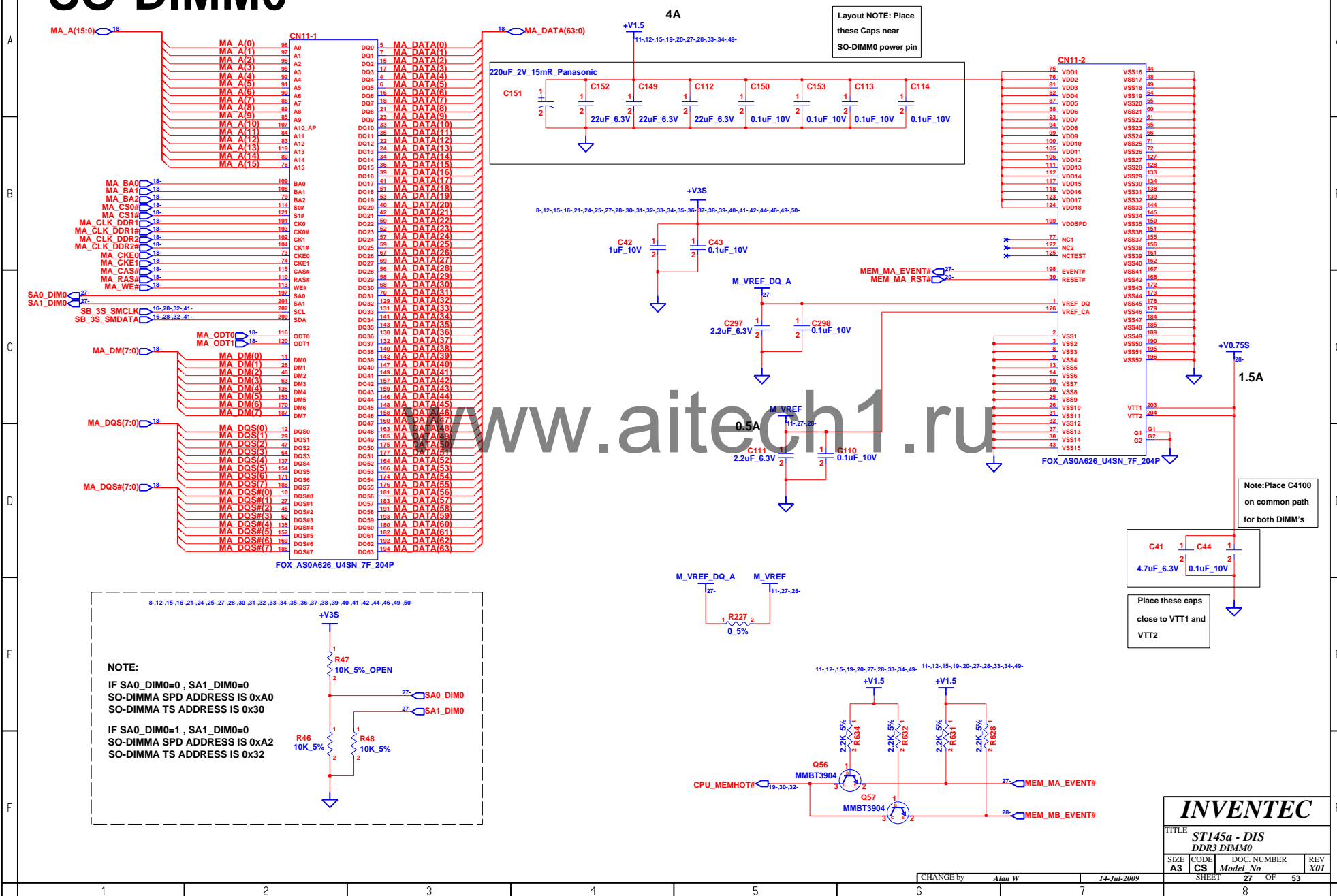


E Die P/N = 6019B0648501

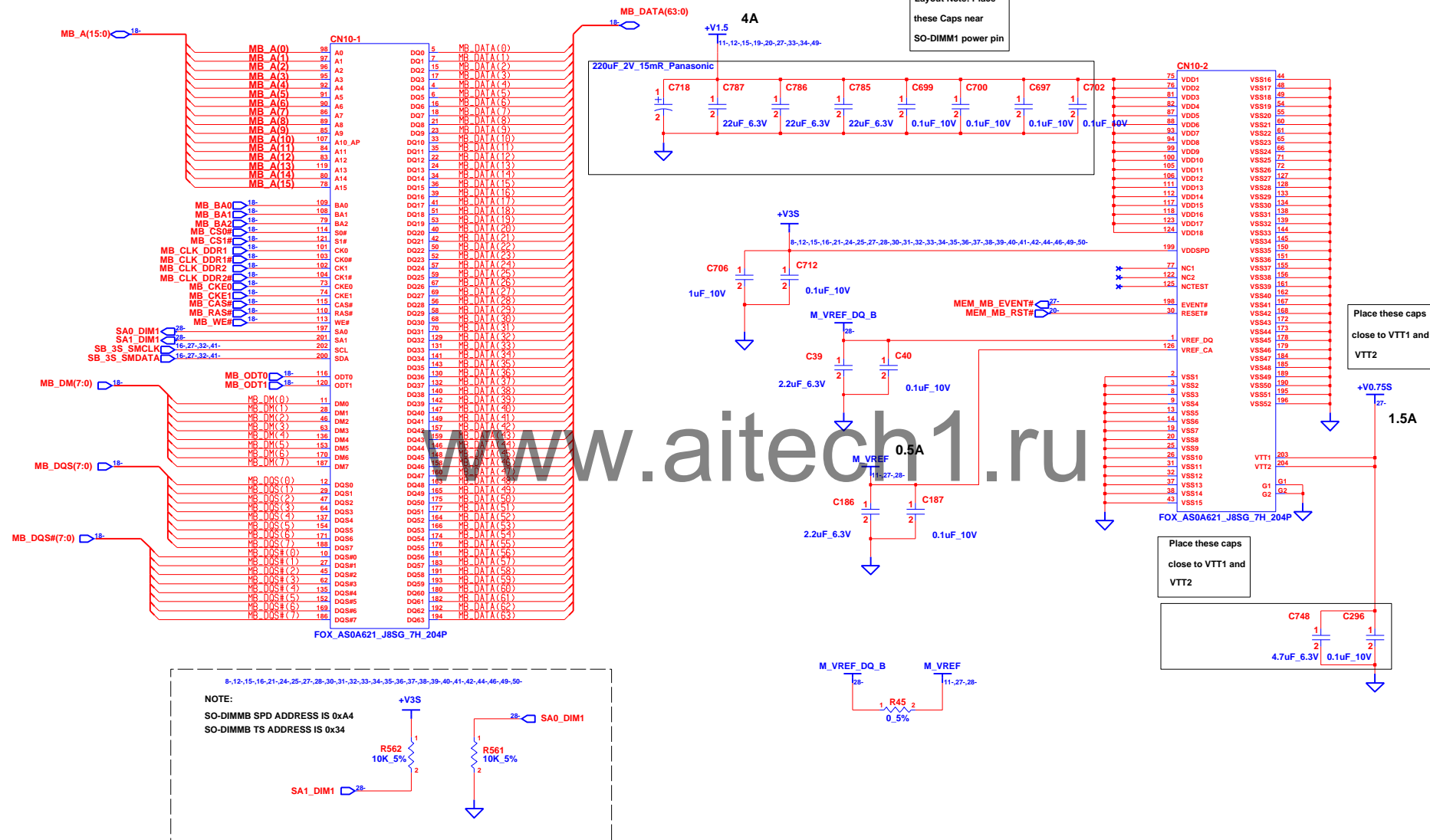


INVENTEC			
TITLE ST145a - DIS SIDE-PORT			
SIZE A3	CODE CS	DOC. NUMBER Model No	REV X01
CHANGE by Alan W		14-Jul-2009	
SHEET 26		OF 53	

SO-DIMM0



SO-DIMM1

**INVENTEC**

TITLE	<i>ST145a - DIS</i>
-------	---------------------

SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

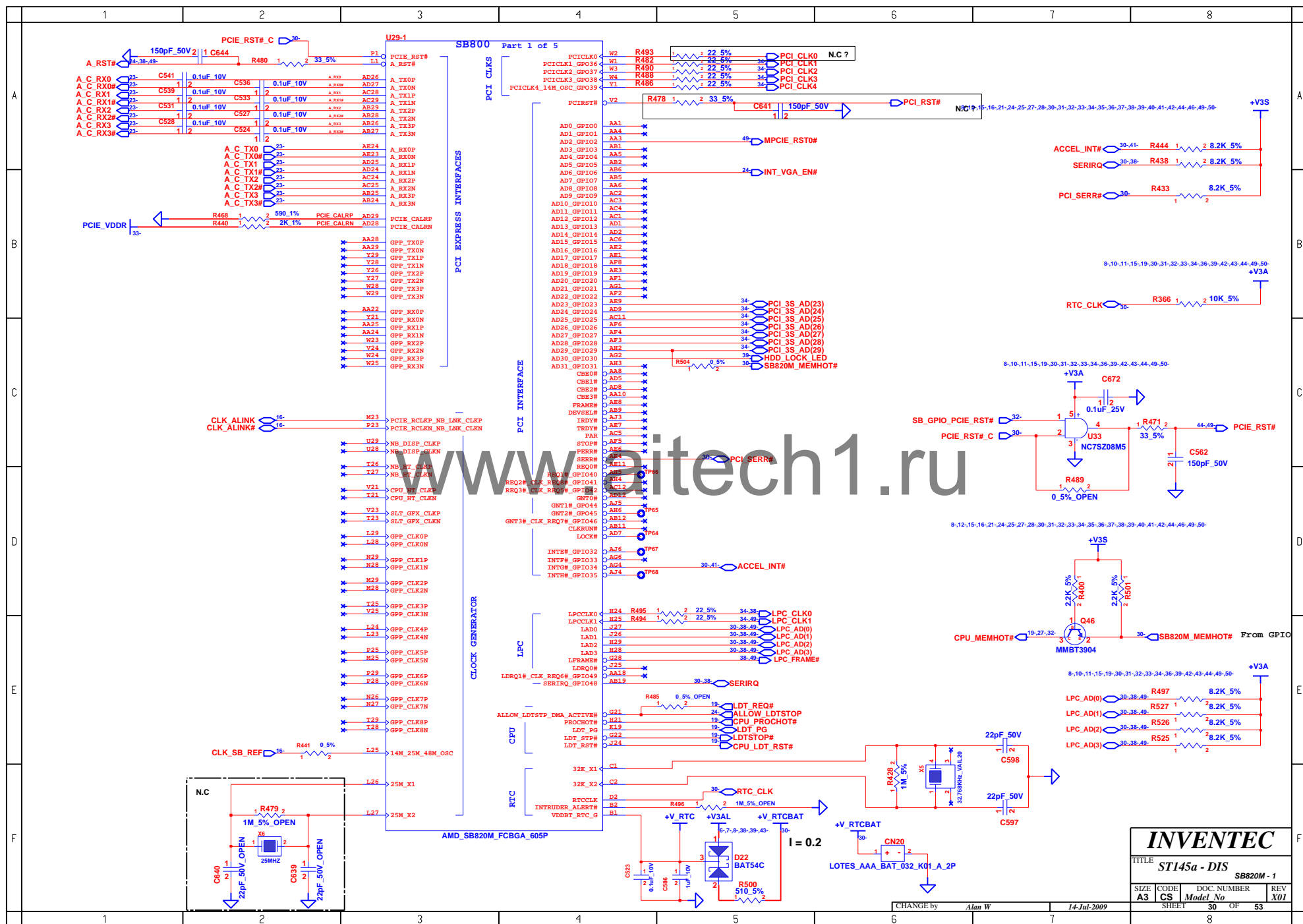
CHANGE by	Alan W	14-Jul-2009
-----------	--------	-------------

SHEET 28 OF 51

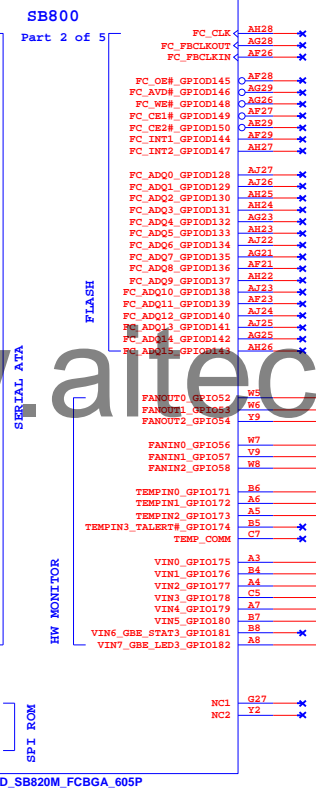
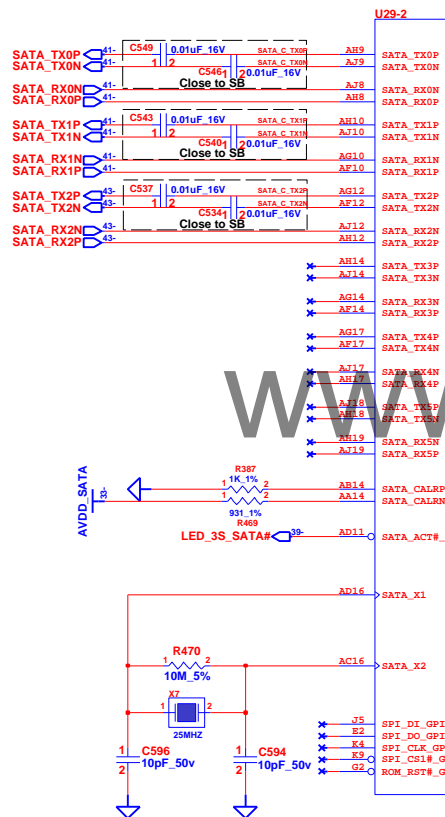
	1	2	3	4	5	6	7	8	
A									A
B									B
C									C
D									D
E									E
F									F
						CHANGE by <i>Alan W</i>		14-Jul-2009	
						6	7	8	

www.aitech1.ru

INVENTEC			
TITLE <i>ST145a - DIS</i> <i>DDR3 DAMPING</i>			
SIZE A3	CODE CS	DOC. NUMBER <i>Model No</i>	REV X01
SHEET		29	OF 53

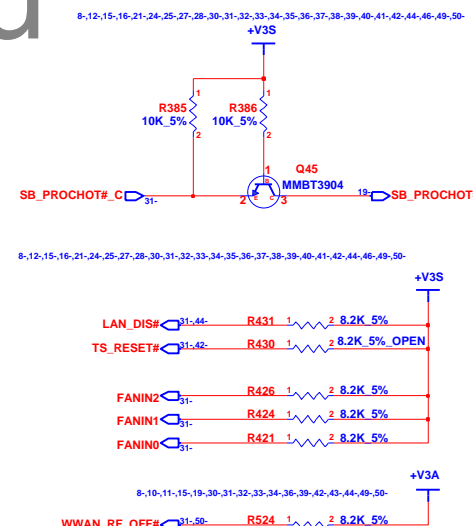
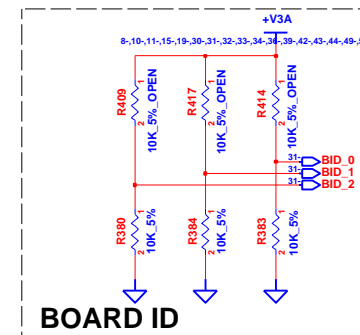


SATA_0 --- HDD
SATA_1 --- ODD
SATA_2 --- ESATA



	BID_1	BID_0
HYNIX	0	0
SAMSUNG	0	1
QIMONDA	1	0

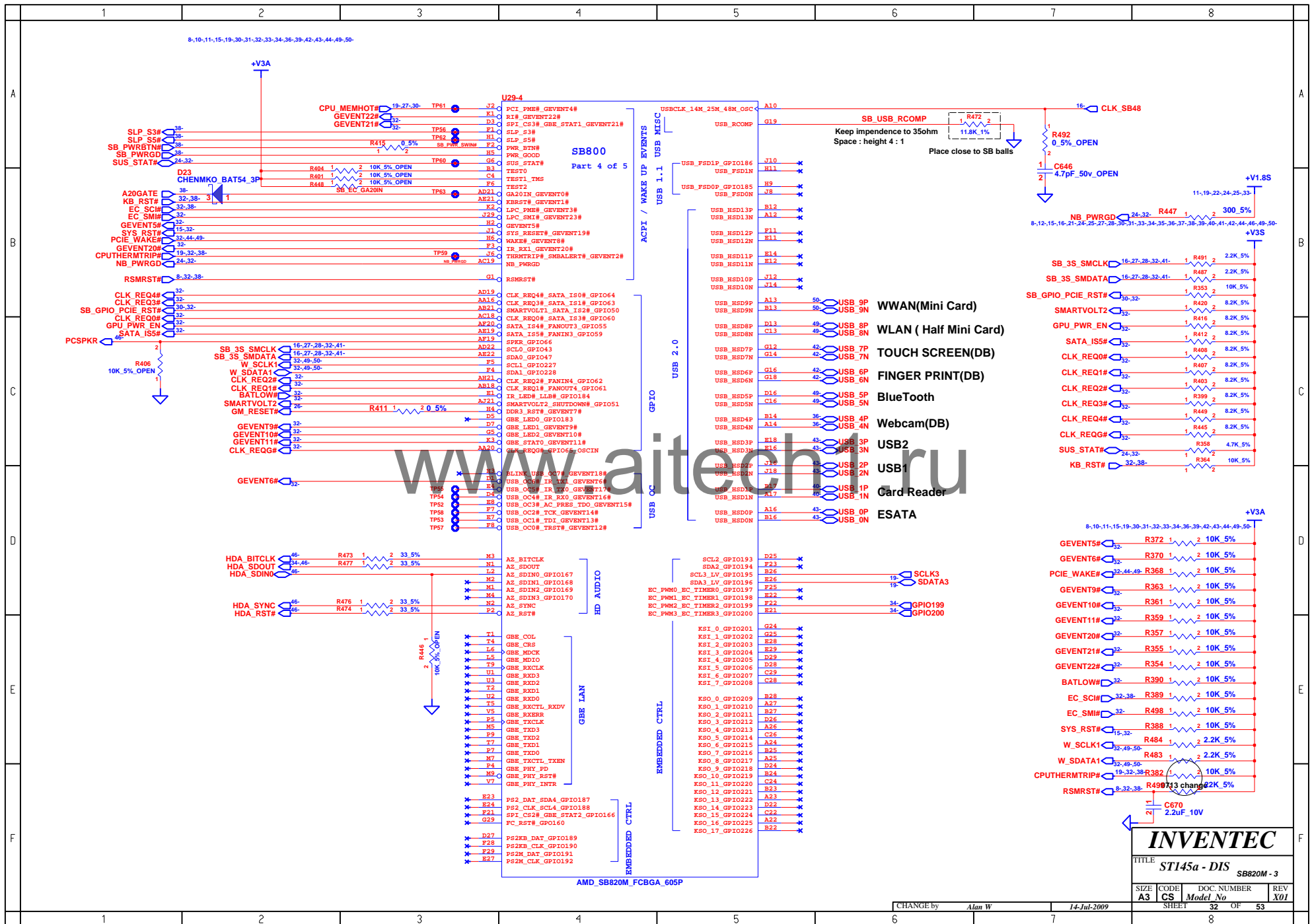
	BID_2
0	UMA
1	DIS

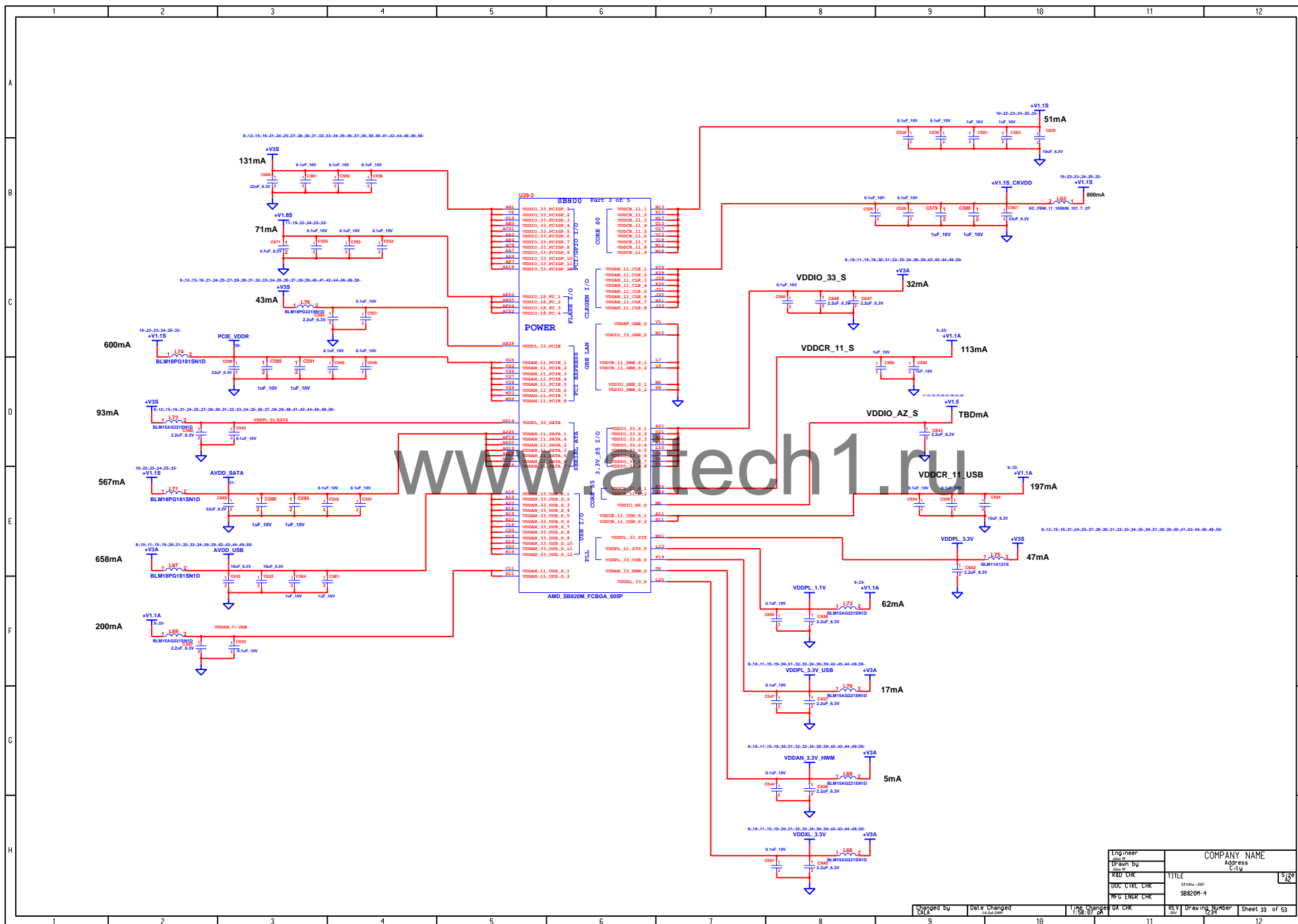


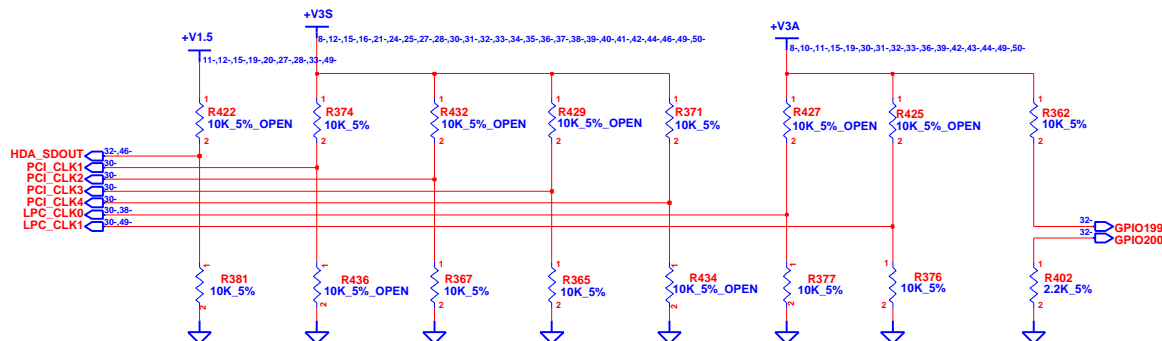
INVENTEC

TITLE			
ST145a - DIS			
SB820M-2			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01
SHEET		31	OF 53

CHANGE by Alan W 14-Jul-2009

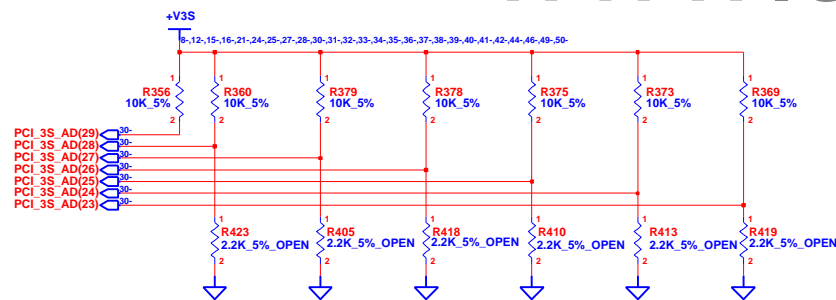






Required Straps:

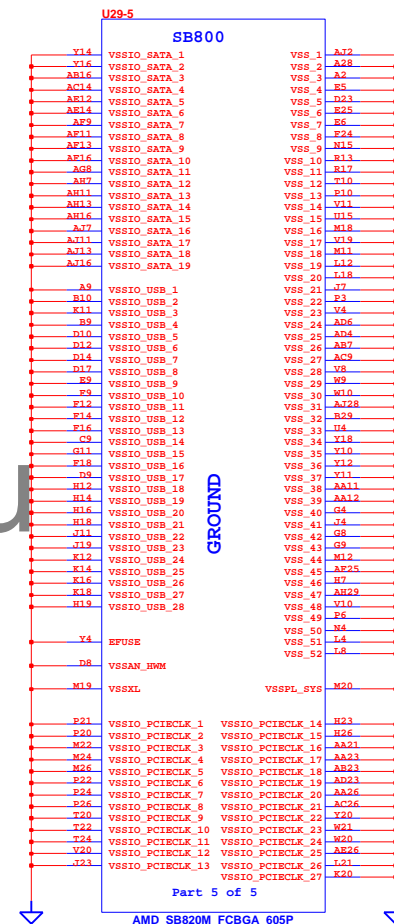
	HDA_SDOUT	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LPC_CLK1	GPIO200	GPIO199
PULL HIGH	LOW POWER MODE	ALLOW PCIE Gen2 (default)	Watchdog Timer Enabled	USE DEBUG STRAP	non_Fusion CLOCK MODE (default)	EC ENABLED	CLKGEN ENABLED	ROM TYPE H, H = Reserved L, H = LPC ROM (default)	
PULL LOW	PERFORMANCE MODE (default)	FORCE PCIE Gen1	Watchdog Timer Disabled (default)	IGNORE DEBUG STRAP (default)	FUSION CLOCK MODE	EC DISABLED (default)	CLKGEN DISABLED (default)		



Debug Straps

SB800 HAS 15K INTERNAL PU FOR PCI_AD[27:23]

	PCI_3S_AD(28)	PCI_3S_AD(27)	PCI_3S_AD(26)	PCI_3S_AD(25)	PCI_3S_AD(24)	PCI_3S_AD(23)
PULL HIGH		USE PCI PLL (default)	DISABLE ILA AUTORUN (default)	USE FC PLL (default)	USE DEFAULT PCIE STRAPS (default)	DISABLE PCI MEM BOOT (default)
PULL LOW		BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT



INVENTEC

TITLE
ST145a - DIS
SB820M-5

SIZE CODE DOC. NUMBER REV
A3 CS Model No 34 OF 53 X01

CHANGE by Alan W 14-Jul-2009

8

A

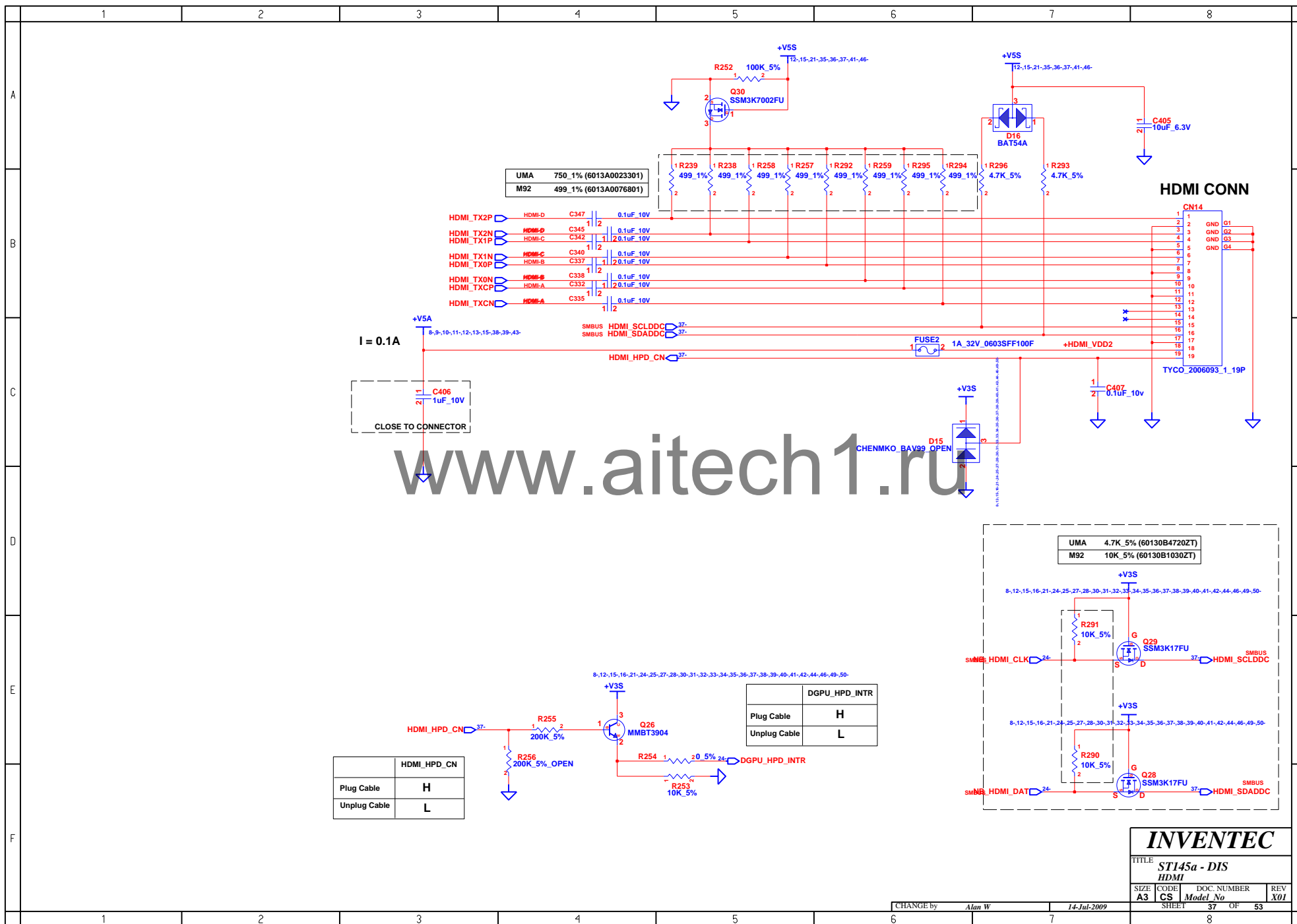
2

2

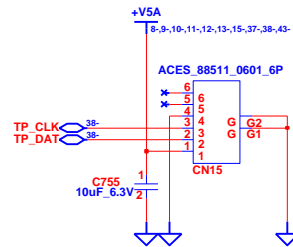
1

1

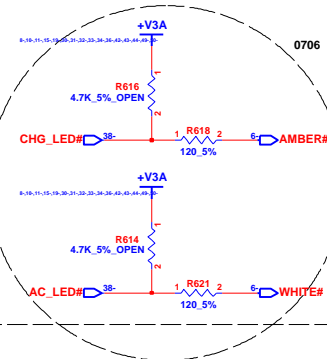
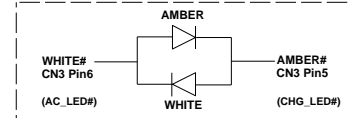
CHANGE by	Alan W	14-Jul-2009
-----------	--------	-------------



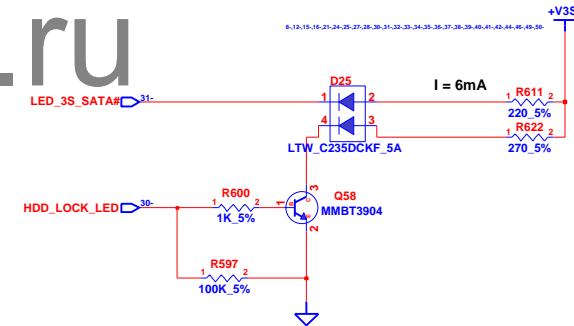
TouchPad Module CONN



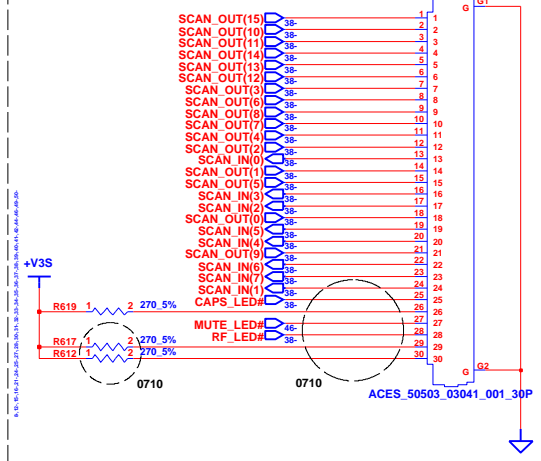
DC-JACK LED



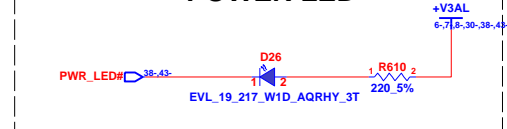
SATA LED & HDD-HALTED LED



KeyBoard CONN (30 pin)



POWER LED



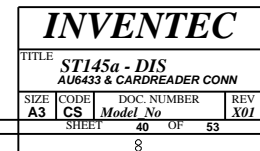
INVENTEC

TITLE			
ST145a - DIS			
KEYBOARD CONN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01
SHEET		39	OF 53

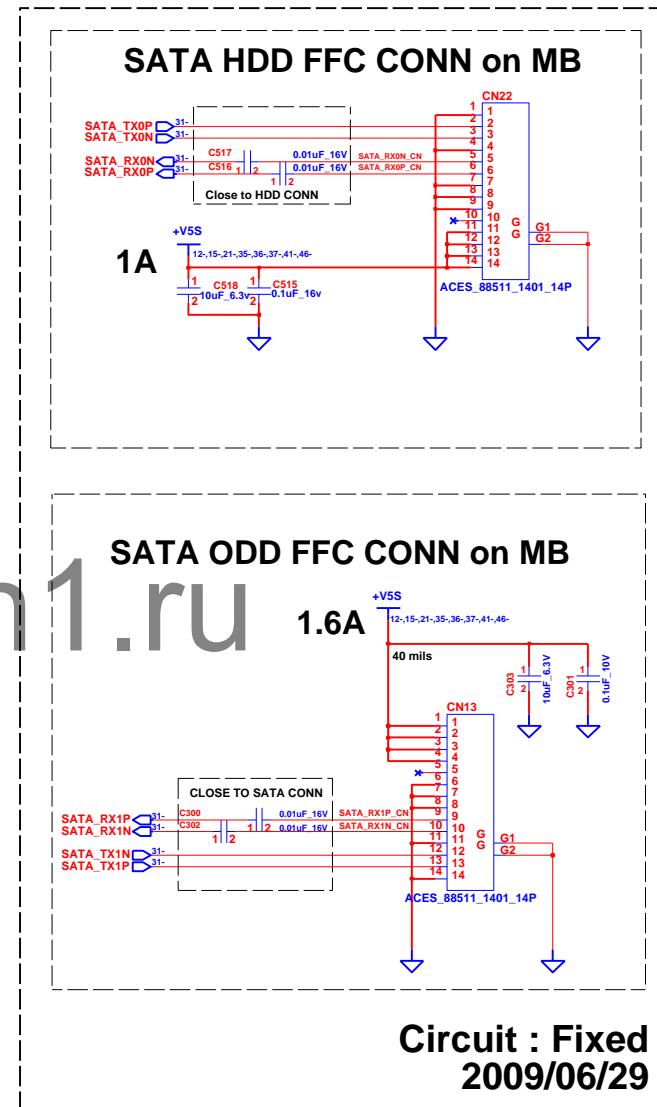
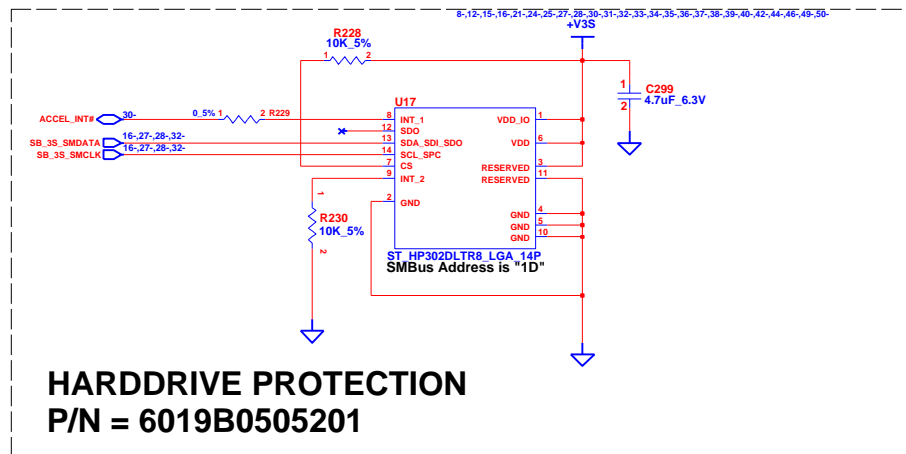
CHANGE by Alan W 14-Jul-2009

www.aitech1.ru

Card Reader CONN



www.aitech1.ru



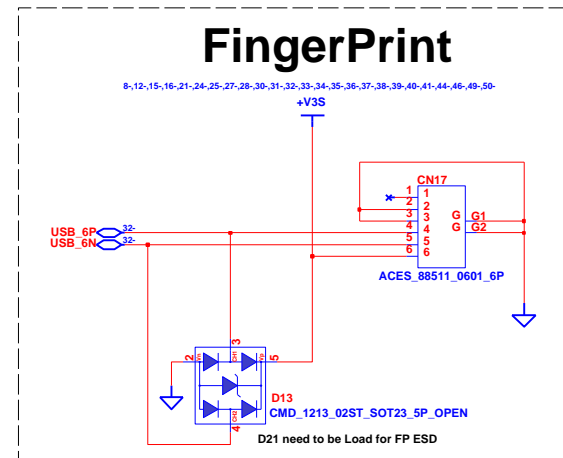
INVENTEC

TITLE
ST145a - DIS
SATA HDD & SATA ODD

SIZE CODE DOC. NUMBER REV
A3 CS Model No **41** OF **53** **X01**

CHANGE by Alan W 14-Jul-2009

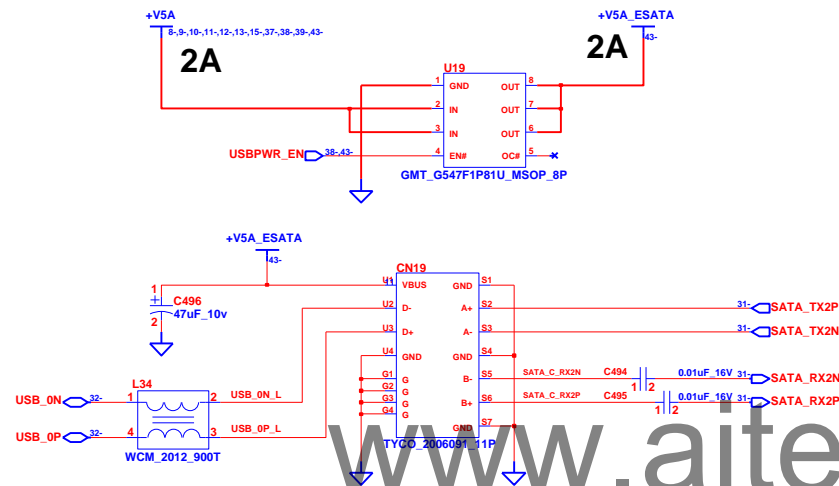
TOUCH SCREEN



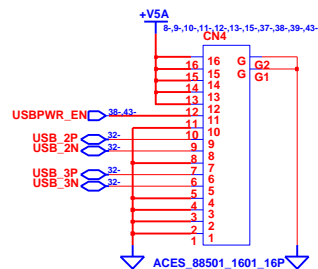
The timing diagram shows the relationship between several signals over time. The signals are: 10K, 5% OPEN, TS, RESET, TS_STOP, and CS0. The diagram illustrates the sequence of events during a reset operation, including the delay between the reset signal and the start of the next instruction.

INVENTEC			
TITLE <i>ST145a - DIS</i> <i>TOUXH SCREEN & FINGERPRINT</i>			
SIZE A3	CODE CS	DOC. NUMBER <i>Model No</i>	REV <i>X01</i>
SHEET 42		OF 53	
8			

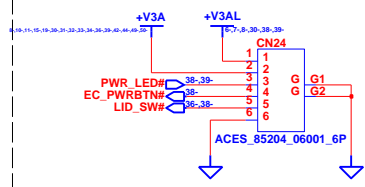
ESATA CONN (without Re-Driver chip)



USB BOARD Cable on MB



PBN Cable CN on MB



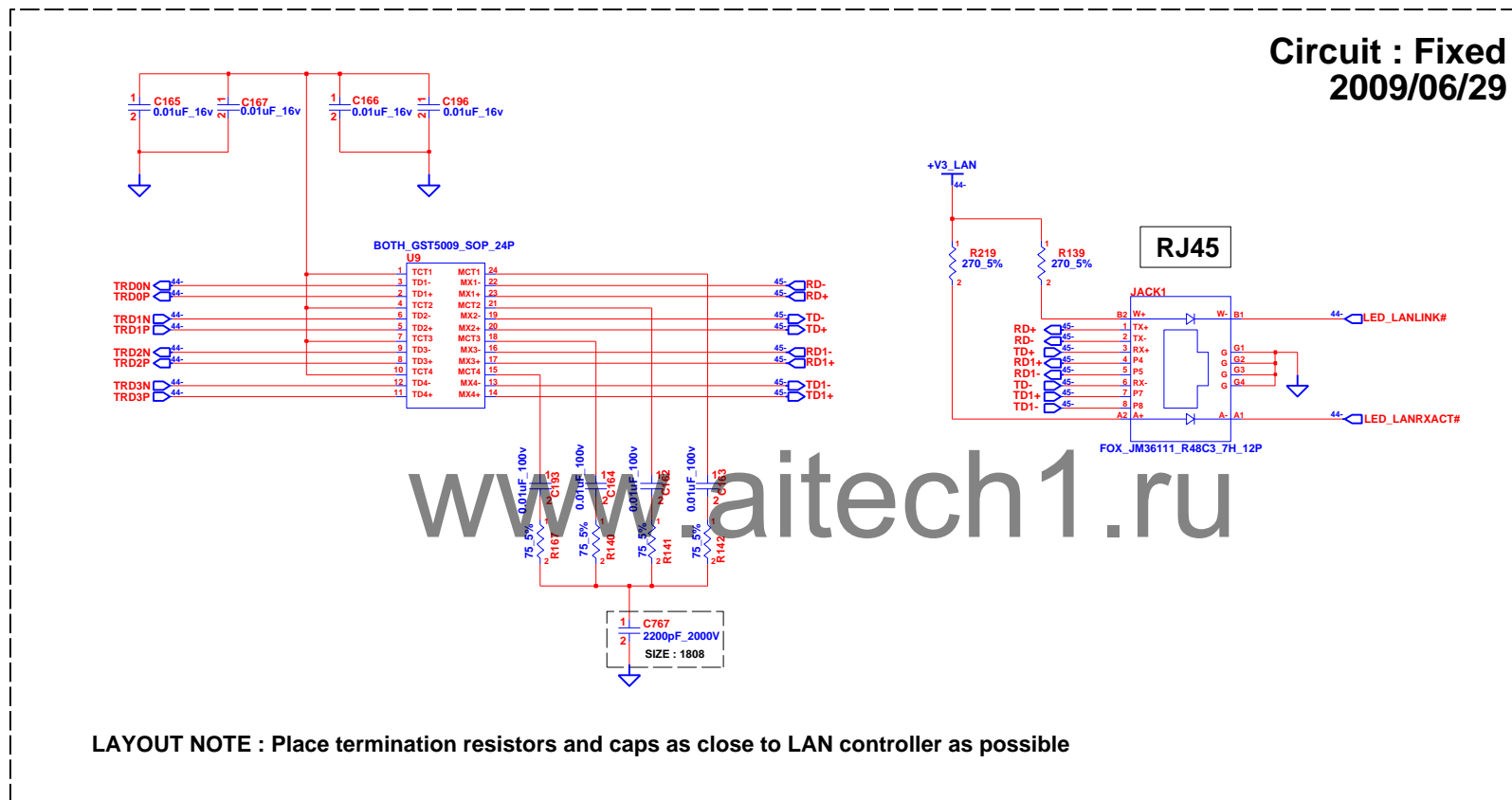
Circuit : Fixed
2009/06/29

INVENTEC

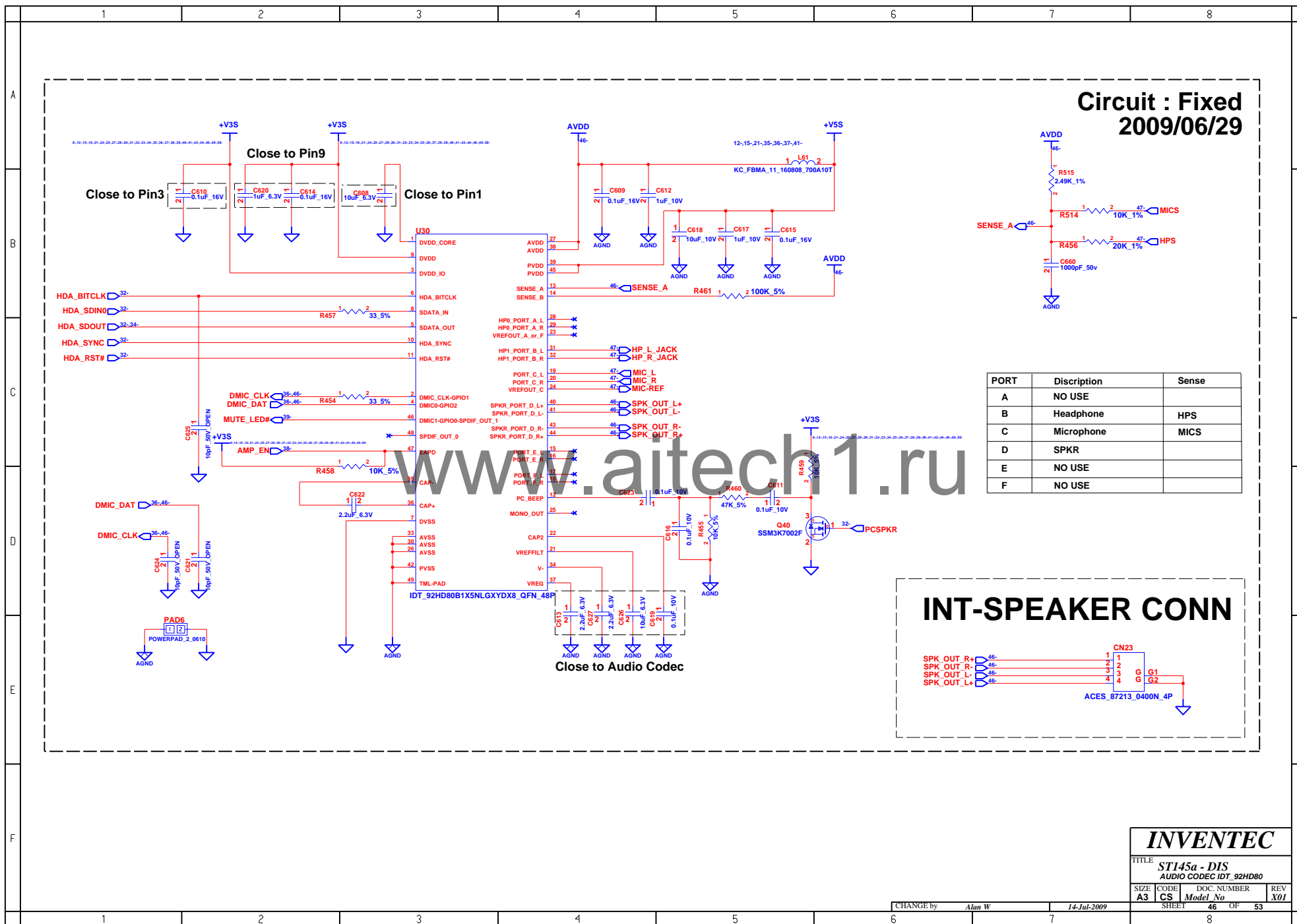
TITLE ST145a - DIS ESATA & USB BOARD CABLE			
SIZE A3	CODE CS	DOC. NUMBER Model No	REV X01
SHEET 43		OF 53	

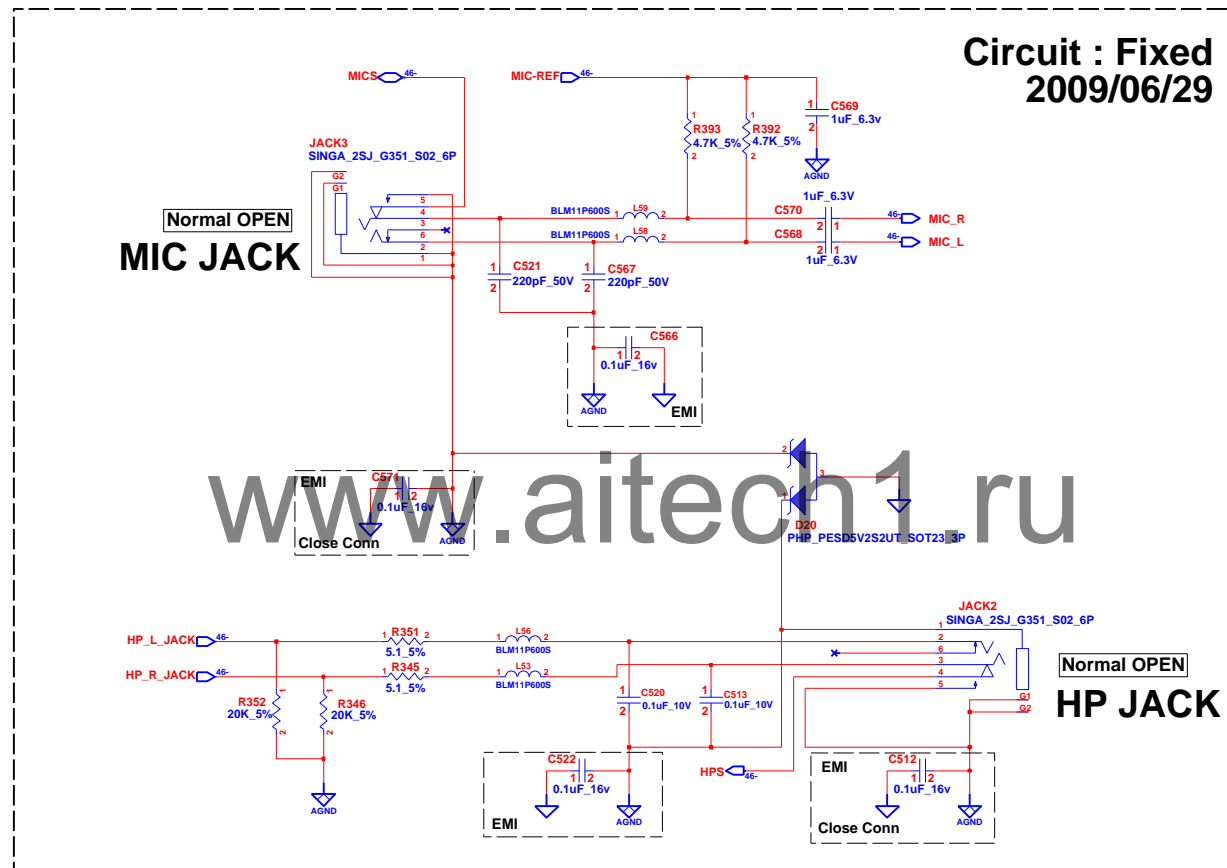
CHANGE by Alan W 14-Jul-2009

8

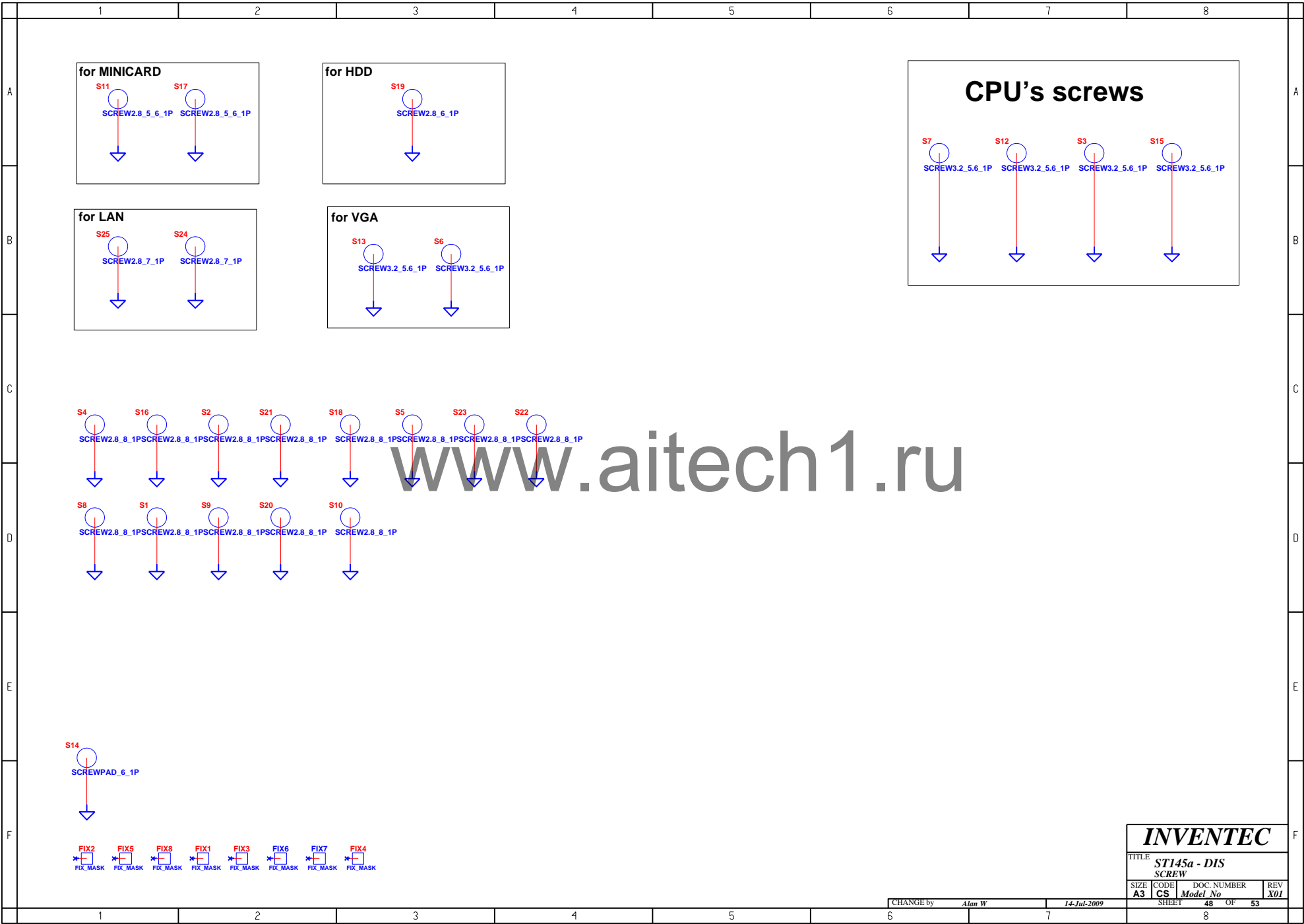


INVENTEC			
TITLE			
ST145a - DIS			
LAN & RJ45 CONN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01
CHANGE by		14-Jul-2009	
SHEET		45	OF 53
		8	

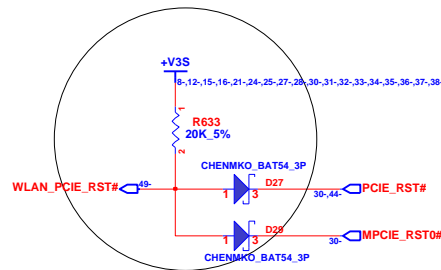
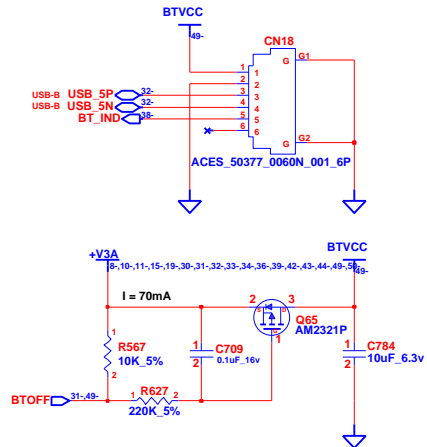




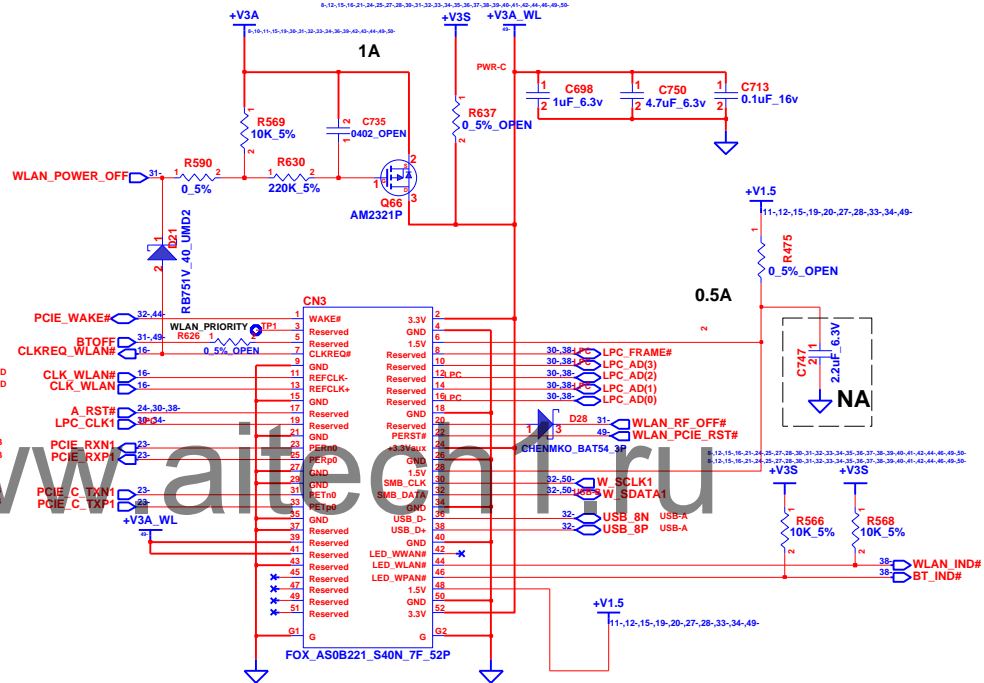
INVENTEC			
TITLE			
ST145a - DIS			
AUDIO JACK			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01
SHEET		47	OF 53
CHANGE by		Alan W	14-Jul-2009
		7	8



BLUETOOTH CONN



WLAN CONN (MINICARD)



	PCH	SB800/820
WLAN_RF_OFF#	GPIO57	GPIO12
WLAN_POWER_OFF	GPIO35	GPIO176

Circuit : Fixed
2009/06/29

INVENTEC

TITLE
ST145a - DIS
WLAN & BT CONN

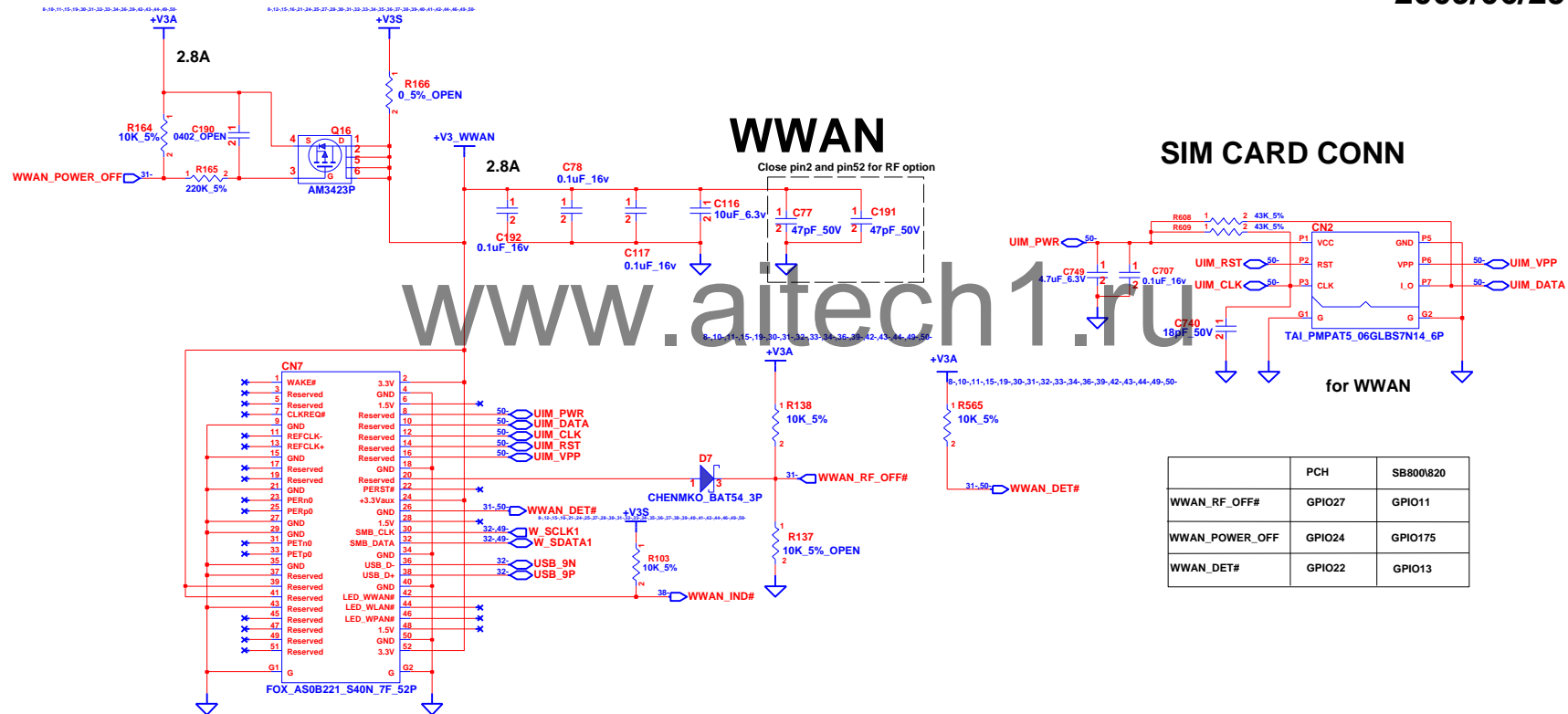
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01

CHANGE by Alan W 14-Jul-2009

SHEET 49 OF 53

OPTION PART

Circuit : Fixed
2009/06/29



INVENTEC

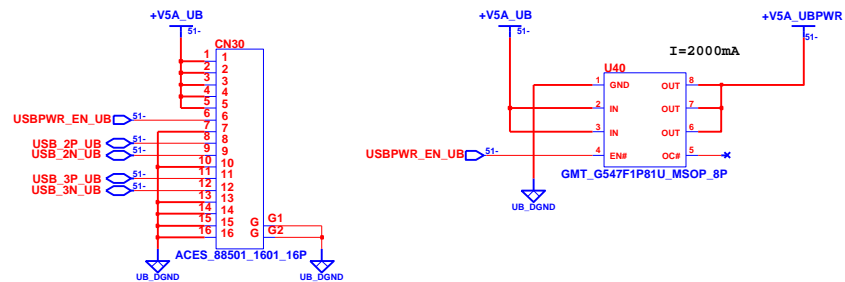
TITLE
ST145a - DIS
WWAN & SIM CARD CONN

SIZE CODE CS DOC. NUMBER REV
A3 Model No X01

CHANGE by Alan W 14-Jul-2009

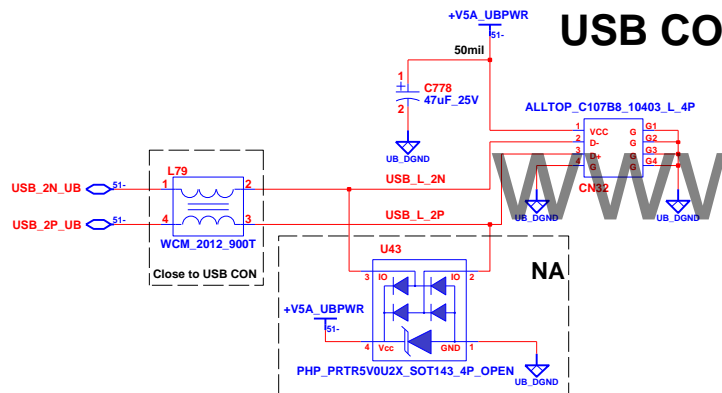
SHEET 50 OF 53

USB BOARD Cable ON UB

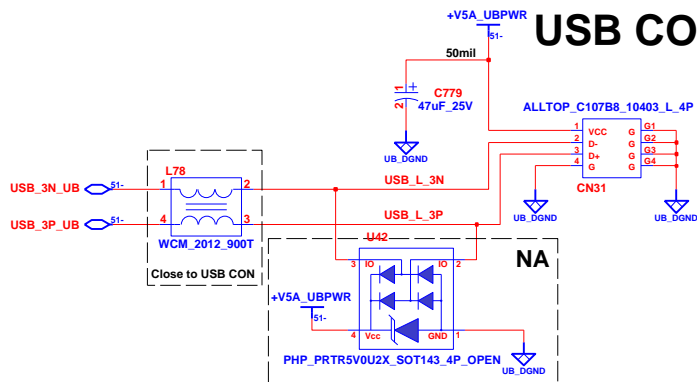


Circuit : Fixed
2009/06/29

USB CONN01



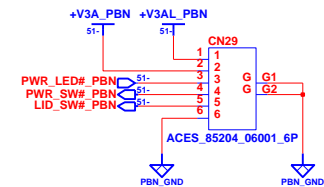
USB CONN02



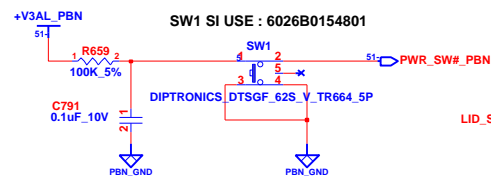
POWER LED



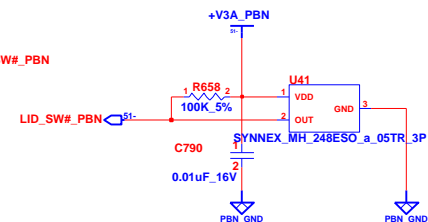
PBN Cable CN on PBN



POWER BUTTON



LID SWITCH



Circuit : Fixed
2009/06/29

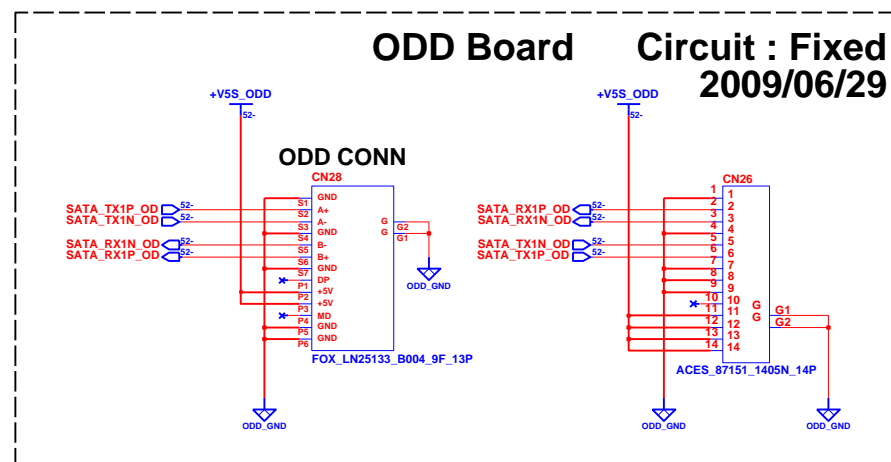
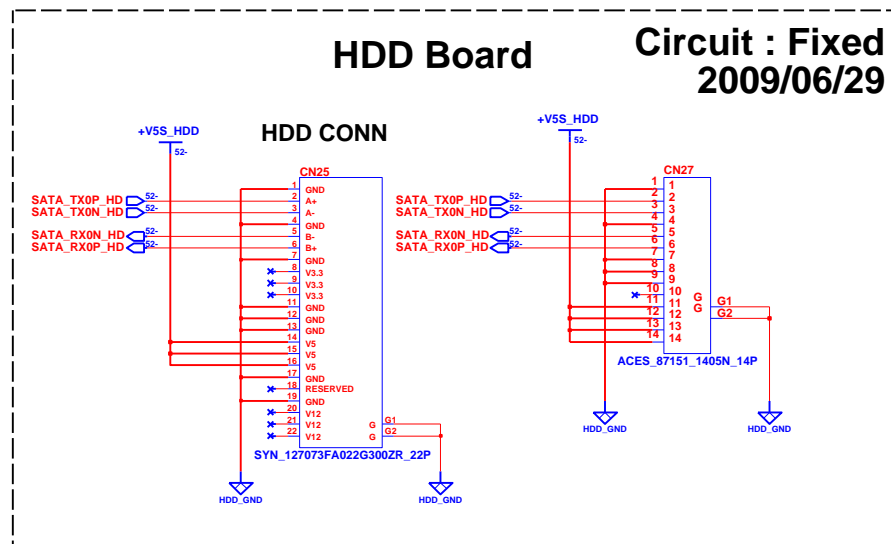
INVENTEC

TITLE
ST145a - DIS

SIZE CODE DOC. NUMBER REV
A3 CS Model No X01

CHANGE by Alan W 14-Jul-2009

SHEET 51 OF 53



www.aitech1.ru

INVENTEC			
TITLE			
ST145a - DIS			
Subwoofer AMP & CONN			
SIZE	CODE	DOC. NUMBER	REV
A3	CS	Model No	X01
SHEET		52	OF 53

CHANGE by Alan W 14-Jul-2009