EMC COMPLIANCE TEST REPORT

REPORT NO.: 20100728-1

PRODUCT: Notebook computer

BRAND NAME: acer, emachines

MODEL NO.: ZQAA, ZQDA, ZQAB, ZQDB, ZQDC, Aspire 4252, Aspire 4552, Aspire 4552G, Aspire 4252G, eMachines D442, eMachines D642, eMachines D442G, eMachines D642G

ISSUED DATE: Jul. 28, 2010

ISSUED BY: Compliance Laboratory of Tech - Front (Shanghai) Computer Co, Ltd

LAB ADDRESS: No. 68, Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P. R. China

COMPLIANCE STANDARDS:

FCC 47CFR Part 15, Subpart B, Class B; ANSI C63.4:2003
ICES-003
CISPR 22: 2006
CISPR 24:1997+A1:2001+A2:2002
AS/NZS CISPR 22:2006, Class B
V-3/2009.04
V-4/2009.04
ETSI EN 301 489-1 v1.8.1: 2008
ETSI EN 301 489-17 v1.3.2:2008
EN 61000-3-2: 2006+A1:2007, Class D
EN 61000-3-3:1995+A1:2001+A2:2005
EN 55024:1998+A1:2001+A2:2003
EN 61000-4-2:2009
EN 61000-4-3:2006
EN 61000-4-4:2004
EN 61000-4-5:2006
EN 61000-4-6:2009
EN 61000-4-8:1993+A1:2001
EN 61000-4-11:2004
EN 55022:2006+A1:2007, Class B

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Appendix: EUT Assembly photos

Applicant: acer Incorporated

Manufacturer: acer Incorporated

Product: Notebook computer

Brand Name: acer, emachines

Model Number: ZQAA, ZQDA, ZQAB, ZQDB, ZQDC, Aspire 4252, Aspire 4552, Aspire 4552G, Aspire 4252G, eMachines D442, eMachines D642, eMachines D442G, eMachines D642G

Test Date: Jul. 14-Jul. 23, 2010

COMPLIANCE STANDARDS:

FCC 47CFR Part 15, Subpart B, Class B; ANSI C63.4:2003
ICES-003
CISPR 22: 2006
CISPR 24:1997+A1:2001+A2:2002
AS/NZS CISPR 22:2006, Class B
V-3/2009.04
V-4/2009.04
ETSI EN 301 489-1 v1.8.1: 2008
ETSI EN 301 489-17 v1.3.2:2008
EN 61000-3-2: 2006+A1: 2007, Class D
EN 61000-3-3:1995+A1:2001+A2:2005
EN 55024:1998+A1:2001+A2:2003
EN 61000-4-2:2009
EN 61000-4-3:2006
EN 61000-4-4:2004
EN 61000-4-5:2006
EN 61000-4-6:2009
EN 61000-4-8:1993+A1:2001
EN 61000-4-11:2004
EN 55022:2006+A1:2007, Class B

Approved By

Herculus Hsu/ EMC manager:

Reviewed By

Bill Bo/ Senior engineer

Section 1: General Information

1.1 Introduction

Product	Notebook Computer		
Trade Name	acer, emachines		
Model Name	ZQAA, ZQDA, ZQAB, ZQDB, ZQDC, Aspire 4252, Aspire 4552, Aspire 4552G, Aspire 4252G, eMachines D442, eMachines D642, eMachines D442G, eMachines D642G		
Housing Type	Plastic		
AC Power Adapter	DELTA	Model	ADP-65VH BA
			ADP-65JH DB
			ADP-90CD DB
	LITE-ON	Model	PA-1650-22
			PA-1650-69
			PA-1900-34
	HIPRO	Model	HP-A0652R3B
			HP-A0904A3
	Chicony	Model	CPA09-A065N1
AC Power Adapter Rating	I/P: 100-240Vac 1.5A/1.6A/1.7A O/P: 19Vdc, 3.42A/4.74A		
AC Power Core Type	Non-shielded AC 3-pin (1.8m)		
DC Power Cable Type	Non-shielded DC (1.8m) with one ferrite core		
CPU	AMD	Model	P940 (1.7GHz)
			P840 (1.9GHz)
			N930 (2.0GHz)
			N950 (2.1GHz)
			N830 (2.1GHz)
			P320 (2.1GHz)
			N850 (2.2GHz)
			P340 (2.2GHz)
			V140 (2.3GHz)
			P540 (2.4GHz)
			N350 (2.4GHz)
Memory Capacity	1GB / 2GB/ 4GB		
14" LCD Panel	LPL	Model	LP140WH1-TLA2

	SAMSUNG	Model	LTN140AT01-G03
			LTN140AT01-G04
	CMI	Model	BT140GW01
	AUO	Model	B140XW01
HDD	TOSHIBA	Model	MK1665GSX (160GB)
			MK2565GSX (250GB)
			MK3265GSX (320GB)
			MK5065GSX (500GB)
			MK6465GSX (640GB)
	HGST	Model	HTS545016B9A300 (160GB)
			HTS545025B9A300 (250GB)
			HTS545032B9A300 (320GB)
			HTS545050B9A300 (500GB)
	WD	Model	WD1600BEVT-22A23T0 (160GB)
			WD2500BEVT-22A23T0 (250GB)
			WD3200BPVT-22ZEST0 (320GB)
			WD5000BEVT-22A0RT0 (500GB)
			WD6400BEVT-22A0RT0 (640GB)
			WD7500BPVT-22HXZT1 (750GB)
	Seagate	Model	ST9160314AS (160GB)
			ST9250315AS (250GB)
			ST9320310AS (320GB)
			ST9500325AS (500GB)
ODD	SONY	Model	AD-7585H
	PLDS	Model	DS-8A5SH
	TOSHIBA	Model	TS-L633F
	HLDS	Model	GT32N
Battery	SANYO	Model	AS10D31
	SONY	Model	AS10D41
	PANASONIC	Model	AS10D51
	SAMSUNG	Model	AS10D61
	SIMPLO	Model	AS10D71
			AS10D75

			AS10D73
Wireless LAN	Atheros (Foxconn)	Model	AR5B97 (T77H167.07)
			AR5B95 (T77H121.10)
	Broadcomm (Foxconn)	Model	BCM43225 (T77H103.00)
	Atheros (Liteon)	Model	AR5B97 (WN6603AH)
Camera	Chicony	Model	CH9665SN (CNF9157)
	Suyin	Model	SY9665SN
	Liteon	Model	LT9665AL (09P2SF119)
Bluetooth	Broadcom (Foxconn)	Model	BCM92045NMD (T60H928.33)
			BCM92070MD (T77H114.01)
	Atheros (Foxconn)	Model	AR3011 (T77H056.00)

I/O Port of Notebook PC:

IO Port Types	Quantity
Headphone port	1
MIC port	1
LAN port	1
USB port	3
HDMI port	1
VGA port	1
card reader	1

1.2 Test Procedure

The EUT was tested using special test software called BurnIn test V6.0, which exercises all external I/O ports as well as the internal storage media by writing and reading (if applicable) a continuous stream of “H” characters in font 9. A pattern of continuous stream-scrolling black “H” on a white background was written to display. To exercise the optical drive, a DVD disc was put into the optical drive and played through the internal audio while the EMC testing was being done. The measurements were made while the system was exercised in this manner.

Section 2: Test Facility and Procedure

2.1 Test Facility Used for Emission Testing

Conducted Emissions Facilities: Conducted Emissions were performed at Compliance Laboratory of Tech-Front (Shanghai) Computer Co., Ltd. of No.68 Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P. R. China

FCC Registration No. 602285
VCCI Registration No. C-2529/ T-1836

Radiated Emissions Facilities: Radiated Emissions measurements were performed at Compliance Laboratory of Tech-Front (Shanghai) Computer Co., Ltd. of No.68 Sanzhuang Road, Songjiang Export Processing Zone, Shanghai, P. R. China

FCC Registration No. 602285
VCCI Registration No. R-2319/ G-191

2.1.1 Measurement Uncertainty

The measurement uncertainty has been determined to be the following:

AC Conducted Emissions = 2.4 dB
Telecom Conducted Emissions = 2.8 dB
Radiated Emissions (30MHz~1000MHz) = 3.9 dB
Radiated Emissions (1000MHz~18000MHz) = 4.0 dB

The equipment conforms to the requirement of CISPR 16-1, CISPR 16-4-2, ANSI C63.2 and other required standards.

Calibration of all test and measurement, including any accessories that may effect such calibration, is checked frequently to ensure the accuracy. Adjustments are made and correction factors are applied in accordance with the instructions contained in the respective manual.

2.1.2 Lab Accreditations

Coverage	Agency	Scope of Accreditation	Logo
USA	FCC	3/10 meter chamber and conducted test chamber to perform FCC Part 15/18 measurements	602285
Japan	VCCI	3/10 meter chamber and conducted test chamber to perform radiated / conducted measurements	R-2320 / R-2319/ G-191 C-2529/ T-1836
ISO/IEC 17025	CNAS	FCC 47CFR Part 15; CISPR22; AS/NZS CISPR 22; V-3/2008.04; V-4/2007.04; CNS13438; GB9254; GB17625.1; EN55022; EN61000-3-2; EN 61000-3-3; CISPR24; EN55024; EN61000-4-2; EN61000-4-3; EN61000-4-4; EN61000-4-5; EN61000-4-6; EN61000-4-8; EN61000-4-11	TESTING CNAS L2894

2.1.3 Software to Exercise EUT

The EUT was tested using special test software called Burnln test V6.0, which exercises all external I/O ports as well as the internal storage media by writing and reading (if applicable) a continuous stream of “H” characters in font 9. A pattern of continuous stream-scrolling black “H” on a white background was written to display. To exercise the optical drive, a DVD disc was put into the optical drive and played through the internal audio while the EMC testing was being done. The measurements were made while the system was exercised in this manner.

2.1.4 Special Accessories

There were no special accessories used during these tests.

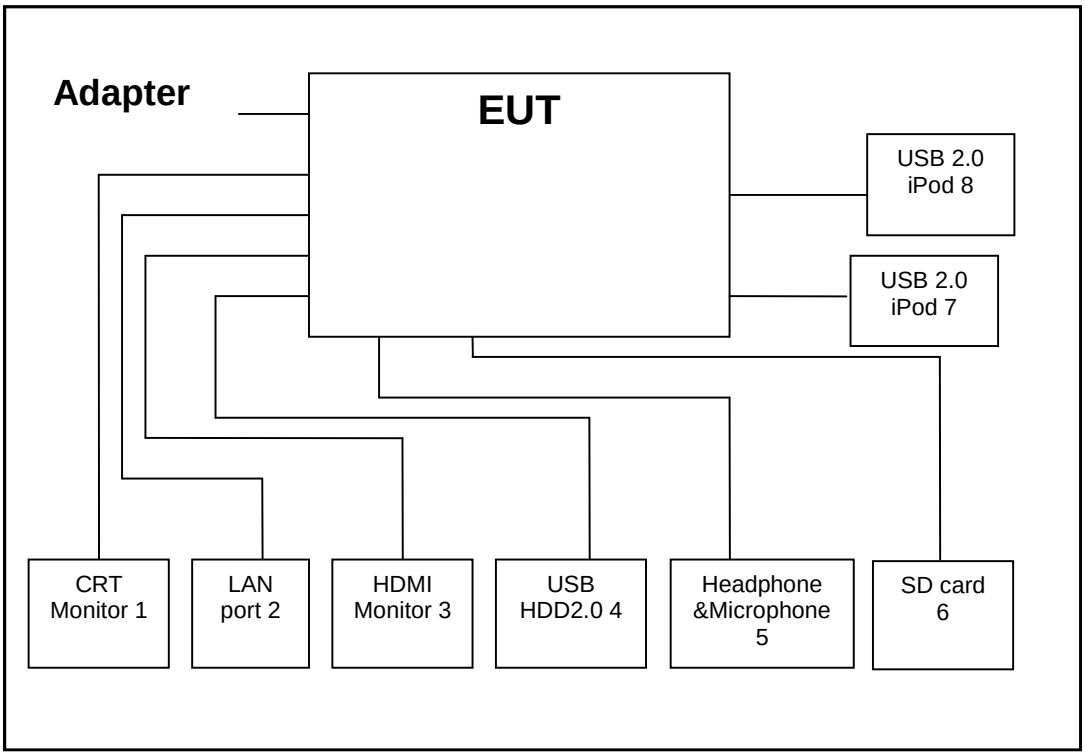
2.1.5 Equipment Modifications and Deviations

There is no EUT modification or test standard deviation.

2.1.6 Test Configuration

The EUT was configured as a worst case system configuration as a result from pre-testing as described below:

Arrangement Block Diagram



Associated Equipments

	Description	Model
1	CRT Monitor	DELL U2408WFPb
2	LAN server PC	Gateway E-475
3	HDMI Monitor	DELL U2709Wb
4	USB HDD	TOSHIBA MK2565GSX (250GB)
5	Headphone / microphone	Philips SBC HM385
6	SD card Transcend	Sandisk BE0934314559D (2GB)
7	USB 2.0	Apple iPod A1285
8	USB 2.0	Apple iPod A1285

Pre-test configuration

Prior to taking the formal emissions data collected in this report many hours of pre-testing have been performed. The selection of the worst case system documented in this report was based upon this pre-testing.

Mode	CPU	LCD Panel	Memory	HDD	ODD	Wireless LAN	Bluetooth	Camera	Battery	Adapter
1	AMD V140 (2.3GHz)	SAMSUNG LTN140AT01-G03	1GB*2	SEAGATE ST9250315AS (250GB)	HLDS GT32N	Foxconn T77H167.0	Foxconn T77H056.00	Suyin SY9665SN	SONY AS10D41	HIPRO HP-A0652 R3B
2	AMD N850 (2.2GHz)	LPL LP140WH1 -TLA2	1GB*2	SEAGATE ST9320310AS (320GB)	HLDS GT32N	Liteon WN6603AH	Foxconn T77H114.01	Liteon LT9665AL	PANASONIC AS10D51	DELTA ADP-65VH BA
3	AMD N950 (2.1GHz)	CMI BT140GW01 V6	1GB*2	SEAGATE ST9500325AS (500GB)	SONY AD-7585H	Foxconn T77H121.10	Foxconn T77H114.01	Suyin SY9665SN	SAMSUNG AS10D61	DELTA ADP-90CD DBH
4	AMD N350 (2.4GHz)	LPL LP140WH1 -TLA2	1GB*2	TOSHIBA MK1655GSX (160GB)	HLDS GT32N	Foxconn T77H103.00	Foxconn T77H114.01	Liteon LT9665AL	PANASONIC AS10D51	LITEON PA-1650-69AW
5	AMD P940 (1.7GHz)	SAMSUNG LTN140AT01-G04	2GB*2	TOSHIBA MK2565GSX (250GB)	PLDS DS-8A5SH	Liteon WN6603AH	Foxconn T60H928.33	Chicony CH9665SN	PANASONIC AS10D51	HIPRO HP-A0904 A3B
6	AMD P540 (2.4GHz)	AUO B140XW01	2GB*2	TOSHIBA MK3265GSX (320GB)	TOSHIBA TS-L633F	Foxconn T77H121.10	Foxconn T77H056.00	Suyin SY9665SN	SIMPLO AS10D75	LITEON PA-1650-69AW
7	AMD N350 (2.4GHz)	SAMSUNG LTN140AT01-G04	2GB*2	TOSHIBA MK5065GSX (500GB)	TOSHIBA TS-L633F	Liteon WN6603AH	Foxconn T77H056.00	Suyin SY9665SN	SIMPLO AS10D71	Chicony CPA09-A065N1
8	AMD N930 (2.0GHz)	LPL LP140WH1 -TLA2	2GB*2	TOSHIBA MK6465GSX (640GB)	HLDS GT32N	Foxconn T77H121.10	Foxconn T77H056.00	Liteon LT9665AL	SAMSUNG AS10D61	LITEON PA-1900-34AR
9	AMD N830 (2.1GHz)	LPL LP140WH1 -TLA2	2GB*2	WD WD1600BEVT-22A23T0 (160GB)	PLDS DS-8A5SH	Liteon WN6603AH	Foxconn T60H928.33	Chicony CH9665SN	SANYO AS10D31	LITE-On PA-1650-22AC
10	AMD P540 (2.4GHz)	AUO B140XW01	1GB*2	WD WD2500BEVT-22A23T0 (250GB)	SONY AD-7585H	Foxconn T77H103.00	Foxconn T77H114.01	Liteon LT9665AL	SANYO AS10D31	DELTA ADP-65VH BA
11	AMD P840 (1.9GHz)	SAMSUNG LTN140AT01-G04	2GB*2	WD WD3200BEVT-22ZEST0 (320GB)	TOSHIBA TS-L633F	Liteon WN6603AH	Foxconn T60H928.33	Suyin SY9665SN	SONY AS10D41	LITEON PA-1650-69AW
12	AMD P340 (2.2GHz)	CMI BT140GW01 V6	2GB*2	WD WD5000BETV-22A0RT0 (500GB)	PLDS DS-8A5SH	Foxconn T77H121.10	Foxconn T77H056.00	Chicony CH9665SN	SIMPLO AS10D75	LITEON PA-1900-34AR
13	AMD P320 (2.1GHz)	SAMSUNG LTN140AT01-G03	2GB*2	WD WD7500BPTV-22HXZT1 (750GB)	TOSHIBA TS-L633F	Foxconn T77H167.0	Foxconn T77H056.00	Suyin SY9665SN	SONY AS10D41	HIPRO HP-A0904 A3B
14	AMD N850 (2.2GHz)	AUO B140XW01	1GB*2	HGST HTS545016B9A300 (160GB)	TOSHIBA TS-L633F	Foxconn T77H121.10	Foxconn T77H056.00	Suyin SY9665SN	SONY AS10D41	DELTA ADP-65JH DB
15	AMD N950 (2.1GHz)	SAMSUNG LTN140AT01-G04	2GB*2	HGST HTS545025B9A300 (250GB)	HLDS GT32N	Foxconn T77H167.0	Foxconn T60H928.33	Chicony CH9665SN	SANYO AS10D31	DELTA ADP-65JH DB
16	AMD N950 (2.1GHz)	SAMSUNG LTN140AT01-G03	1GB*2	HGST HTS545032B9A300 (320GB)	PLDS DS-8A5SH	Liteon WN6603AH	Foxconn T60H928.33	Chicony CH9665SN	SANYO AS10D31	DELTA ADP-65JH DB
17	AMD P540 (2.4GHz)	AUO B140XW01	4GB*2	HGST HTS545050B9A300 (500GB)	TOSHIBA TS-L633F	Foxconn T77H121.10	Foxconn T77H056.00	Chicony CH9665SN	SANYO AS10D31	DELTA ADP-65JH DB
18	AMD N850 (2.2GHz)	AUO B140XW01	1GB*2	SEAGATE ST9160314AS (160GB)	TOSHIBA TS-L633F	Foxconn T77H121.10	Foxconn T77H056.00	Suyin SY9665SN	SIMPLO AS10D73	DELTA ADP-65JH DB
19	AMD P540 (2.4GHz)	SAMSUNG LTN140AT01-G03	2GB*2	WD WD6400BEVT-22A0RT0 (640GB)	TOSHIBA TS-L633F	Foxconn T77H121.10	Foxconn T77H056.00	Suyin SY9665SN	SIMPLO AS10D73	LITEON PA-1900-34AR

Worst Case for Final Testing (Mode 4 chosen)

Component	Vendor	Part Number
Power Adapter	LITEON	PA-1650-69
Battery	PANASONIC	AS10D51
Optical Drive	HLDS	GT32N
CPU	AMD	N350 (2.4GHz)
Hard Disk Drive	TOSHIBA	MK1655GSX (160GB)
LCD Module	LPL	LP140WH1-TLA2
Bluetooth	Foxconn	T77H114.01
Wireless LAN	Foxconn	T77H103.00
Memory	HYNIX	HMT112S6TFR8C-H9 (2GB)
Camera	LITEON	LT9665AL

2.1.7 Cable Description and Information

Cable Type	Shielded	Ferrite
Monitor cable	YES	YES
LAN cable (Remote)	NO	NO
Headphone/SPDIF cable	NO	NO
MIC cable	NO	NO
HDMI cable	YES	NO
USB 2.0 HDD cable	YES	NO

2.2 Measurement Equipment

N/A is an abbreviation for Not Applicable. All equipments are traceable to CNAS calibration standards.

2.2.1 Conducted Emissions

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
Test Receiver	Rohde & Schwarz	ESCI	100167	5/24/2011
LISN	Schwarz beck	NSLK8127	8127433	5/24/2011
LISN	Schwarz beck	NSLK8128	8128229	5/24/2011
TLISN	FCC	F-071115	092062	1/21/2011
TLISN	FCC	FCC-TLISN-T4-02	20581	5/24/2011
TLISN	FCC	FCC-TLISN-T8-02	20445	5/24/2011
Probe	FCC	F-33-4	57	5/30/2011
Probe	FCC	F35	507	5/30/2011
Software	ADT	ADT_Cond_V7.3.4	N/A	N/A

2.2.2 Radiated Emissions

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
Test Receiver	Rohde & Schwarz	ESCI	100166	5/24/2011
Test Receiver	Rohde & Schwarz	ESIB26	100307	5/24/2011
Bilog Antenna	Schwarz beck	VULB9168	9168-198	5/30/2011
Bilog Antenna	Schwarz beck	VULB9168	9168-195	5/30/2011
Horn Antenna	Schwarz beck	BBHA 9120D	409	5/30/2011
Spectrum Analyzers	Agilent	E7405A	MY45104985	5/24/2011
Preamplifier	Agilent	8447D	2944A10848	5/24/2011
Preamplifier	Agilent	8447D	2944A10847	5/24/2011
Preamplifier	Agilent	8449B	3008A02145	5/24/2011
Preamplifier	Agilent	8449B	3008A02146	5/24/2011
Software	ADT	ADT_Radiated_V7	N/A	N/A
Antenna Mast	Inn-co	MA4000	MA4000/101/9770 405/L	N/A
Antenna Mast	Inn-co	MA4000	MA4000/104/9770 405/L	N/A
Turn Table	Inn-co	DT3000-1T-C	DT3000-1T-C/22	N/A
Controller	Inn-co	CO2000	CO2000/218/9770 405/L	N/A

2.2.3 Power Harmonics and Voltage Fluctuation/Flicker

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
AC Power Source	EMTest	ACS 500	V0523100459	5/24/2011
Harmonics & Flicker Analyzer	EMTest	DPA 500	V0523100458	5/24/2011
Software	EMTest	EMTest software	N/A	N/A

2.2.4 Electrostatic Discharge (ESD) Immunity

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
ESD Simulator	EMTest	ESD 30C	V0523100460	5/30/2011
ESD Simulator	Noiseken	ESS-2002	ESS0423758	5/30/2011

2.2.5 Radiated Electromagnetic Field Immunity

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
Amplifier	Amplifier Research	150W1000	312368	N/A
Amplifier	Amplifier Research	60S1G3 (M1)	312416	N/A
Antenna	Amplifier Research	AT5080	312113	N/A
Antenna Tripod	Evergo	TP1000A	N/A	N/A
Field Monitoring	Amplifier Research	IF4000A	310906	N/A
Probe	Amplifier Research	FP6001	307201	5/24/2011
Power Meter	Boonton	4232A	142402	5/24/2011
Power Sensor	Boonton	51011EMC	33838	5/24/2011
Power Sensor	Boonton	51011EMC	33839	5/24/2011
Double-coupling	Amplifier Research	DC6180A	312192	N/A
Double-coupling	Amplifier Research	DC7144A	311989	N/A
Controller	Amplifier Research	SC1000M1	312477	N/A
Signal Generator	Rohde& Schwarz	SML03	102270	5/24/2011
Software	ADT	ADT_RS_V7	N/A	N/A

2.2.6 Fast Transient/Burst Immunity

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
EFT Generator	EMTest	EFT500	V0523100450	5/24/2011
Clamp	EMTest	HFK	0605-08	N/A
Software	EMTest	EMTest Software	N/A	N/A

2.2.7 Surge Immunity

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
Telecom surge generator	EMTest	TSS 500 M10	0523100456	5/24/2011
Impulse Generator	EMTest	VCS 500 M10	V0523100451	5/24/2011
CDN	EMTest	CNV504 S4	V054221000813	N/A
CDN	EMTest	CNV504 S1	V0523100455	N/A
Software	EMTest	EMTest Software	N/A	N/A

2.2.8 Conducted Disturbance/Induced Radio-Frequency Field Immunity

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
Continuous Wave Simulator	EMTest	CWS 500C	V053100457	5/24/2011
Attenuator	EMTest	ATT 6/75	1104-13	5/24/2011
CDN	EMTest	CDN-M2/M3	0705-02	5/24/2011
CDN	EMTest	CDN-T2	0705-01	5/24/2011
CDN	EMTest	CDN-T4	0705-01	5/24/2011
EM Clamp	EMTest	EM Clamp	35737	5/24/2011
CA M2/M3/AF3	EMTest	CA M2/M3/AF3	N/A	N/A
Coupling clamp	EMTest	HFK (-4)	0605-08	N/A
CDN	EMTest	CDN-M1	0705-01	N/A
CDN	EMTest	CDN-AF4	0705-01	N/A
Software	EMTest	EMTest Software	N/A	N/A

2.2.9 Power Frequency Magnetic Field Immunity

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
Current transformer	EMTest	MC 2630 (-8)	0705-04	N/A
Motorized Variation	EMTest	MV 2616 (-8)	V0523100453	N/A
Power Fail Simulator	EMTest	UCS500M4-PFS	V0523100452	5/24/2011
Coil	EMTest	MS100	0605-1	5/24/2011
Software	EMTest	EMTest Software	N/A	N/A

2.2.10 Voltage Dips and Short Interruptions

Description	Manufacturer	Model No.	Serial No.	Calibrated Until
Power Fail Simulator	EMTest	UCS500M4-PFS	V0523100452	5/24/2011
Software	EMTest	EMTest Software	N/A	N/A

Section: 3 Electromagnetic Emissions Test

3.1 Emission

3.1.1 Line Conducted Emissions Test

- Measurement Procedures Utilized for Conducted Emissions

The EUT was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per EN 55022.

Associated equipment, if needed, was placed as per EN 55022.

All I/O cables were positioned to simulate typical actual usage as per EN 55022.

The test equipment EUT installed received AC power through a Line Impedance Stabilization Network (LISN), which supplied power source and was grounded to the ground plane.

All associated equipment received power from a second LISN.

For conducted emission test on telecommunication ports, a telecommunication port is connected by its signal cable to an impedance stabilization network (ISN). During the testing, the LAN utilization is in excess of 10 % and sustains that level for a minimum of 250 ms. the traffic rate is monitored by the program of NetSpeed.

The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150K Hz to 30MHz for emissions in each of the test modes.

During the above scans under battery charging mode, the emissions were maximized by cable manipulation.

The EUT configuration and cable configuration of the above highest emission level were recorded for reference of the final test.

- Conducted Emissions Test Data

The following data was collected with an EMC receiver in Quasi-peak and Average detection mode.

Test date: 07/ 22/ 2010
Temperature: 22℃
Rel. Humidity: 54%

120 Vac 60 Hz Mains

Live Line

Frequency	Correction factor	Reading dB(µV)		Emission dB(µV)		Limit dB(µV)		Margins Db	
MHz	Db	QP	AV	QP	AV	QP	AV	QP	AV
0.15410	12.10	40.57	12.37	52.67	24.47	65.78	55.78	-13.11	-31.31
0.19010	11.48	39.11	23.45	50.59	34.93	64.04	54.04	-13.45	-19.11
0.26609	11.10	32.27	19.11	43.37	30.21	61.24	51.24	-17.87	-21.03
0.46208	10.32	23.24	12.44	33.56	22.76	56.66	46.66	-23.10	-23.90
3.71385	10.36	24.40	17.92	34.76	28.28	56.00	46.00	-21.24	-17.72
13.49716	10.57	29.33	23.78	39.90	34.35	60.00	50.00	-20.10	-15.65

Neutral Line

Frequency	Correction factor	Reading dB(µV)		Emission dB(µV)		Limit dB(µV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.15010	12.17	41.29	13.52	53.46	25.69	66.00	56.00	-12.54	-30.31
0.18610	11.55	36.84	15.99	48.39	27.54	64.21	54.21	-15.82	-26.67
0.20210	11.30	36.57	23.35	47.87	34.65	63.53	53.53	-15.66	-18.88
0.26609	11.10	30.85	17.84	41.95	28.94	61.24	51.24	-19.29	-22.30
2.55393	10.38	27.57	17.88	37.95	28.26	56.00	46.00	-18.05	-17.74
13.20918	10.57	29.26	23.41	39.83	33.98	60.00	50.00	-20.17	-16.02

Note: Conducted Emissions data was also taken at 100Vac, 50Hz. This data was found to be equivalent or lower than the data listed above.

230 Vac 50 Hz Mains

Live Line

Frequency	Correction factor	Reading dB(µV)		Emission dB(µV)		Limit dB(µV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.15410	12.10	37.20	10.53	49.30	22.63	65.78	55.78	-16.48	-33.15
0.19410	11.41	44.88	30.02	56.29	41.43	63.86	53.86	-7.57	-12.43
0.25809	11.13	36.50	20.13	47.63	31.26	61.50	51.50	-13.87	-20.24
0.33409	10.79	28.57	13.68	39.36	24.47	59.35	49.35	-19.99	-24.88
12.50123	10.58	29.42	21.80	40.00	32.38	60.00	50.00	-20.00	-17.62
16.24097	10.69	31.83	24.80	42.52	35.49	60.00	50.00	-17.48	-14.51

Neutral Line

Frequency	Correction factor	Reading dB(µV)		Emission dB(µV)		Limit dB(µV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.19410	11.41	42.68	28.73	54.09	40.14	63.86	53.86	-9.77	-13.72
0.25409	11.14	34.00	14.87	45.14	26.01	61.63	51.63	-16.49	-25.62
0.32209	10.87	26.93	12.04	37.80	22.91	59.65	49.65	-21.85	-26.74
0.45408	10.33	23.74	14.24	34.07	24.57	56.80	46.80	-22.73	-22.23
2.49793	10.38	27.91	18.38	38.29	28.76	56.00	46.00	-17.71	-17.24
16.65694	10.73	32.48	25.79	43.21	36.52	60.00	50.00	-16.79	-13.48

Note: Conducted Emissions data was also taken at 240Vac, 50Hz. This data was found to be equivalent or lower than the data listed above.

230 VAC 50 Hz Telecommunication

RJ45 Line (10 Mbps)

Frequency	Correction factor	Reading dB(μV)		Emission dB(μV)		Limit dB(μV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
1.65399	19.13	41.57	29.00	60.70	48.13	74.00	64.00	-13.30	-15.87
1.96997	19.10	42.69	30.19	61.79	49.29	74.00	64.00	-12.21	-14.71
2.35394	19.12	44.08	33.99	63.20	53.11	74.00	64.00	-10.80	-10.89
2.79791	19.13	41.69	31.85	60.82	50.98	74.00	64.00	-13.18	-13.02
9.40145	19.24	30.95	24.51	50.19	43.75	74.00	64.00	-23.81	-20.25
12.49723	19.34	36.80	29.85	56.14	49.19	74.00	64.00	-17.86	-14.81

RJ45 Line (100 Mbps)

Frequency	Correction factor	Reading dB(μV)		Emission dB(μV)		Limit dB(μV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.53807	19.22	39.11	26.21	58.33	45.43	74.00	64.00	-15.67	-18.57
1.71399	19.12	40.86	27.71	59.98	46.83	74.00	64.00	-14.02	-17.17
1.96997	19.10	42.95	30.79	62.05	49.89	74.00	64.00	-11.95	-14.11
2.34995	19.12	44.30	33.98	63.42	53.10	74.00	64.00	-10.58	-10.90
2.72992	19.13	43.34	32.98	62.47	52.11	74.00	64.00	-11.53	-11.89
16.22897	19.43	35.09	32.79	54.52	52.22	74.00	64.00	-19.48	-11.78

RJ45 Line (1000Mbps)

Frequency	Correction factor	Reading dB(μV)		Emission dB(μV)		Limit dB(μV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.53807	19.22	39.06	25.96	58.28	45.18	74.00	64.00	-15.72	-18.82
1.64999	19.13	41.80	29.17	60.93	48.30	74.00	64.00	-13.07	-15.70
2.02997	19.10	43.78	31.05	62.88	50.15	74.00	64.00	-11.12	-13.85
2.40994	19.12	43.75	33.39	62.87	52.51	74.00	64.00	-11.13	-11.49
2.72992	19.13	43.08	33.19	62.21	52.32	74.00	64.00	-11.79	-11.68
2.96190	19.14	41.26	30.75	60.40	49.89	74.00	64.00	-13.60	-14.11

Note: Conducted Emissions data was also taken at 240Vac, 50Hz. This data was found to be equivalent or lower than the data listed above.

100 VAC 50 Hz Telecommunication

RJ45 Line (10 Mbps)

Frequency	Correction factor	Reading dB(μV)		Emission dB(μV)		Limit dB(μV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.57007	19.19	29.03	15.66	48.22	34.85	74.00	64.00	-25.78	-29.15
2.21395	19.10	36.50	25.00	55.60	44.10	74.00	64.00	-18.40	-19.90
2.74992	19.12	38.26	27.13	57.38	46.25	74.00	64.00	-16.62	-17.75
3.28988	19.22	38.00	29.17	57.22	48.39	74.00	64.00	-16.78	-15.61
3.62586	19.32	37.54	30.18	56.86	49.50	74.00	64.00	-17.14	-14.50
9.99741	19.22	48.81	29.29	68.03	48.51	74.00	64.00	-5.97	-15.49

RJ45 Line (100 Mbps)

Frequency	Correction factor	Reading dB(μV)		Emission dB(μV)		Limit dB(μV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.79405	19.24	27.94	15.50	47.18	34.74	74.00	64.00	-26.82	-29.26
2.48594	19.11	37.50	26.31	56.61	45.42	74.00	64.00	-17.39	-18.58
3.09389	19.16	36.91	27.29	56.07	46.45	74.00	64.00	-17.93	-17.55
3.48987	19.28	38.47	30.43	57.75	49.71	74.00	64.00	-16.25	-14.29
3.76585	19.36	36.61	29.64	55.97	49.00	74.00	64.00	-18.03	-15.00
16.22897	19.43	37.41	34.79	56.84	54.22	74.00	64.00	-17.16	-9.78

RJ45 Line (1000 Mbps)

Frequency	Correction factor	Reading dB(μV)		Emission dB(μV)		Limit dB(μV)		Margins dB	
MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV
0.58207	19.18	28.11	17.62	47.29	36.80	74.00	64.00	-26.71	-27.20
1.10603	19.19	28.57	14.21	47.76	33.40	74.00	64.00	-26.24	-30.60
2.32195	19.12	35.23	22.92	54.35	42.04	74.00	64.00	-19.65	-21.96
2.77392	19.13	35.67	24.45	54.80	43.58	74.00	64.00	-19.20	-20.42
3.36587	19.25	38.39	29.92	57.64	49.17	74.00	64.00	-16.36	-14.83
3.68185	19.34	37.37	30.43	56.71	49.77	74.00	64.00	-17.29	-14.23

Note: Conducted Emissions data was also taken at 120Vac, 60Hz. This data was found to be equivalent or lower than the data listed above.

3.1.2 Radiated Emissions Test

- Measurement Procedures Utilized for Radiated Emissions

The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane.

Associated equipment, if needed, was placed as per EN 55022.

All I/O cables were positioned to simulate typical usage as per EN 55022.

The EUT received AC power source, from the outlet socket under the turntable. All associated equipment received power from another socket under the turntable.

Mains cables, telephone lines or other connections to auxiliary equipment located outside the test are shall drape to the floor. No extension cords shall be used to mains receptacle.

The antenna was placed at 10 meter away from the EUT as stated in EN 55022. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.

The analyzer/receiver scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned under battery charging mode and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both vertical and horizontal polarization, to maximize the emission reading level.

The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The height of antenna can be varied from one meter to four meters; the height of adjustment depends on the EUT height and the antenna 3dB beam width both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz

The test mode(s) described in Item 2.1.6 were scanned during the preliminary test:

After the preliminary scan, we found the test mode described in Item 2.1.6 producing the highest emission level.

The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.

FCC Part 15 measurements below 1 GHz were performed at an EUT to antenna distance of 10 meters. Measurements taken above 1GHz were taken at an EUT to antenna distance of 3 meters. CISPR 22 measurements were performed at an EUT to antenna distance of 10 meters.

- Radiated Emissions Test Data

Radiated Emissions measurements were performed at QSMC Compliance Laboratory. The data lists the worst case emission frequencies, measured levels, antenna, cable and amplifier corrections, the corrected field strength, and the limit. The data was collected at 10 meters and compared to the CISPR 22 Class B limits.

Test date: 07/22/2010
Temperature: 23℃
Rel. Humidity: 58%

120 Vac 60 Hz Mains

Vertical Polarization

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
124.99 (QP)	14.29	11.37	25.66	30.00	-4.34	150	159
250.00 (QP)	14.07	13.29	27.36	37.00	-9.64	100	234
344.06 (QP)	16.38	9.70	26.08	37.00	-10.92	100	222
662.46 (QP)	23.26	-3.06	20.20	37.00	-16.80	250	210
799.83 (QP)	24.73	-1.95	22.78	37.00	-14.22	244	36
992.29 (QP)	26.92	-1.66	25.26	37.00	-11.74	150	335

Horizontal Polarization

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	Deg
165.91 (QP)	15.32	8.87	24.19	30.00	-5.81	295	69
255.03 (QP)	13.70	10.58	24.28	37.00	-12.72	389	84
368.64 (QP)	16.50	11.83	28.33	37.00	-8.67	297	316
600.12 (QP)	21.33	-6.27	15.06	37.00	-21.94	100	184
796.33 (QP)	24.49	-4.14	20.35	37.00	-16.65	150	83
993.97 (QP)	26.21	-2.37	23.84	37.00	-13.16	139	72

Note: Radiated Emissions data was also taken at 100Vac, 50Hz. This data was found to be equivalent or lower than the data listed above.

230 Vac 50 Hz Mains

Vertical Polarization

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
126.19 (QP)	14.31	11.29	25.60	30.00	-4.40	100	333
170.73 (QP)	15.07	7.61	22.68	30.00	-7.32	150	288
344.07 (QP)	16.25	11.37	27.62	37.00	-9.38	100	346
480.01 (QP)	19.33	10.07	29.40	37.00	-7.60	100	182
665.55 (QP)	23.41	2.74	26.15	37.00	-10.85	200	226
895.34 (QP)	26.25	-0.15	26.10	37.00	-10.90	100	270

Horizontal Polarization

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
165.76 (QP)	15.40	6.92	22.32	30.00	-7.68	400	293
200.69 (QP)	11.75	11.57	23.32	30.00	-6.68	350	194
250.00 (QP)	13.86	13.40	27.26	37.00	-9.74	400	137
344.46 (QP)	16.26	14.36	30.62	37.00	-6.38	400	197
480.00 (QP)	19.22	8.69	27.91	37.00	-9.09	400	191
672.26 (QP)	23.30	1.82	25.12	37.00	-11.88	300	329

Note: Radiated Emissions data was also taken at 240Vac, 50Hz. This data was found to be equivalent or lower than the data listed above.

120 Vac 60 Hz Mains

Vertical Polarization (above 1GHz to 5th harmonics)

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
1605.00 (AV)	29.66	11.86	41.52	54.00	-12.48	100	126
2677.50 (AV)	34.94	6.79	41.73	54.00	-12.27	100	189
4795.00(AV)	39.95	-3.20	36.75	54.00	-17.25	150	212
7187.50 (AV)	47.35	-5.67	41.68	54.00	-12.32	100	18
9167.50 (AV)	52.26	-3.40	48.86	54.00	-5.14	150	360
10900.00 (AV)	54.02	-4.50	49.52	54.00	-4.48	142	318

Horizontal Polarization (above 1GHz to 5th harmonics)

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
1550.00(AV)	29.67	10.17	39.84	54.00	-14.16	120	186
2677.50(AV)	34.94	-4.65	30.29	54.00	-23.71	150	16
6995.00(AV)	46.63	-6.19	40.44	54.00	-13.56	100	124
7545.00(AV)	47.78	-3.86	43.92	54.00	-10.08	100	316
9140.00(AV)	51.98	-4.32	47.66	54.00	-6.34	100	360
11065.00(AV)	54.35	-5.47	48.88	54.00	-5.12	150	322

Note: Radiated Emissions data was also taken at 100Vac, 50Hz. This data was found to be equivalent or lower than the data listed above.

240 Vac 50 Hz Mains

Vertical Polarization (1GHz to 6GHz)

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
1337.50(AV)	29.65	2.61	32.26	50.00	-17.74	100	193
1500.00(AV)	29.69	9.73	39.42	50.00	-10.58	128	37
1600.00(AV)	29.65	16.22	45.87	50.00	-4.13	124	170
2675.00(AV)	34.92	7.61	42.53	50.00	-7.47	100	163
3200.00(AV)	36.80	-0.84	35.96	54.00	-18.04	100	166
4775.00(AV)	39.94	-0.32	39.62	54.00	-14.38	150	42

Horizontal Polarization (1GHz to 6GHz)

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
1487.50(AV)	29.69	9.99	39.68	50.00	-10.32	100	360
1600.00(AV)	29.65	16.04	45.69	50.00	-4.31	107	115
1725.00(AV)	29.94	6.94	36.88	50.00	-13.12	100	158
1862.50(AV)	30.82	1.61	32.43	50.00	-17.57	126	360
2700.00(AV)	35.11	-2.29	32.82	54.00	-17.18	100	88
4425.00(AV)	40.07	-2.15	37.92	54.00	-16.08	100	348

Note: Radiated Emissions data was also taken at 230Vac, 50Hz. This data was found to be equivalent or lower than the data listed above.

100 Vac 50 Hz Mains

Vertical Polarization (1GHz to 6GHz)

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	deg
1600.00	29.65	9.89	39.54	54.00	-14.46	100	169
2000.00	31.50	5.84	37.34	54.00	-16.66	100	259
2187.50	33.68	0.83	34.51	54.00	-19.49	100	188
3200.00	36.80	4.63	41.43	54.00	-12.57	121	229
3337.50	35.98	3.89	39.87	54.00	-14.13	110	360
4762.50	39.93	-2.50	37.43	54.00	-16.57	110	143

Horizontal Polarization (1GHz to 6GHz)

Frequency	Factor	Reading	Emission	Limit	Margin	Mast Height	Turn Table
MHz	dB/m	dB(μV)	dB(μV/m)	dB(μV/m)	dB	cm	Deg
1600.00	29.65	5.22	34.87	54.00	-19.13	100	210
1787.50	30.23	5.92	36.15	54.00	-17.85	100	235
2000.00	31.50	1.47	32.97	54.00	-21.03	100	108
2200.00	33.85	1.44	35.29	54.00	-18.71	150	329
3187.50	36.74	0.70	37.44	54.00	-16.56	120	103
4762.50	39.93	-6.53	33.40	54.00	-20.60	100	189

Note: Radiated Emissions data was also taken at 120Vac, 60Hz. This data was found to be equivalent or lower than the data listed above.

3.1.3 Power Harmonics Measurement

The product with power less than 75 Watt was no met the requirements specified in EN 61000-3-2: 2006+A1: 2007

3.1.4 Power Voltage Fluctuation/ Flicker Measurement

The product was tested and met the requirements specified in EN 61000-3-3: 1995 + A1:2001+ A2:2005

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-3-3
Test Operator	Jane
Date of Test	7/23/10
Relative Humidity	50%
Temperature	23℃
Atmospheric Pressure	101KPa

Test Results

	EUT Values	Limit	Result	Remark
P_{st}	0.028	1.00	Pass	P_{st} means short-term flicker indicator
P_{lt}	0.028	0.65	Pass	P_{lt} means long-term flicker indicator
d_c [%]	0.008	3.30	Pass	d_c means relative steady-state voltage change
d_{max} [%]	0.085	4.00	Pass	d_{max} means maximum relative voltage change
d_t [s]	0.000	0.50	Pass	T_{dt} means maximum time that dt exceeds 3.3%

3.2 Electromagnetic Immunity Report

EN55024:1998+A1:2001+A2:2003

3.2.1 Electrostatic Discharge (ESD) Immunity Measurement

The product was tested and met the requirements specified in EN 61000-4-2: 2009

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-4-2
Test Operator	Jane
Date of Test	07/22/10
Relative Humidity	48%
Temperature	24℃
Atmospheric Pressure	101KPa

Test Results

Amount of Discharge	Voltage	Coupling	Performance Criteria	Result (Pass/Fail)
10 /Point	± 2 kV	Air Discharge	B	Pass
10 /Point	± 4 kV	Air Discharge	B	Pass
10 /Point	± 8 kV	Air Discharge	B	Pass
25 /Point	± 2 kV	Contact Discharge	B	Pass
25 /Point	± 4 kV	Contact Discharge	B	Pass
25 /Point	± 2 kV	Indirect Discharge HCP	B	Pass
25 /Point	± 4 kV	Indirect Discharge HCP	B	Pass
25 /Point	± 2kV	Indirect Discharge VCP (Right)	B	Pass
25 /Point	± 4 kV	Indirect Discharge VCP (Right)	B	Pass
25 /Point	± 2 kV	Indirect Discharge VCP (Left)	B	Pass
25 /Point	± 4 kV	Indirect Discharge VCP (Left)	B	Pass

3.2.2 Radiated Electromagnetic Field Immunity Test

The product was tested and met the requirements specified in EN 61000-4-3:2006

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-4-3
Test Operator	Jane
Date of Test	07/20/10
Relative Humidity	50%
Temperature	24℃
Atmospheric Pressure	101KPa

Test Results

Test level: 3V/m

Steps: 1 % of fundamental

Dwell Time: 3 sec

Range (MHz)	Field	Modulation	Polarity	Position	Performance Criteria	Result (Pass/Fail)
80-1000	3V/m	Yes	H	B/F/L/R	A	Pass
80-1000	3V/m	Yes	V	B/F/L/R	A	Pass
1400-2700	3V/m	Yes	H	B/F/L/R	A	Pass
1400-2700	3V/m	Yes	V	B/F/L/R	A	Pass

3.2.3 Fast Transient/Burst Immunity Test

The product was tested and met the requirements specified in EN 61000-4-4:2004

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-4-4
Test Operator	Jane
Date of Test	07/14/10
Relative Humidity	50%
Temperature	24℃
Atmospheric Pressure	101KPa

Test Results

Inject Line	Voltage	Inject Method	Performance Criteria	Result (Pass/Fail)
L	± 1 KV	Direct	A	Pass
N	± 1 KV	Direct	A	Pass
PE	± 1 KV	Direct	A	Pass
L + N	± 1 KV	Direct	A	Pass
L + PE	± 1 KV	Direct	A	Pass
N + PE	± 1 KV	Direct	A	Pass
L + N + PE	± 1 KV	Direct	A	Pass
RJ45 Port (LAN Cable)	± 0.5 KV	Clamp	A	Pass

3.2.4 Surge Immunity Test

The product was tested and met the requirements specified in EN 61000-4-5:2006

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-4-5
Test Operator	Jane
Date of Test	07/22/10
Relative Humidity	58%
Temperature	22℃
Atmospheric Pressure	101KPa

Test Results

Coupling Line	Voltage	Polarity	Coupling Method	Performance Criteria	Result (Pass/Fail)
L1-L2	1 KV	Positive	Capacitive	A	Pass
L1-PE	2 KV	Positive	Capacitive	A	Pass
L2-PE	2 KV	Positive	Capacitive	A	Pass
L1-L2	1 KV	Negative	Capacitive	A	Pass
L1-PE	2 KV	Negative	Capacitive	A	Pass
L2-PE	2 KV	Negative	Capacitive	A	Pass
T, R to Ground	1 KV	Positive	Capacitive	A	Pass
T, R to Ground	1 KV	Negative	Capacitive	A	Pass

3.2.5 Conducted Disturbance, Induced Radio-Frequency Field

The product was tested and met the requirements specified in EN 61000-4-6:2009

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-4-6
Test Operator	Jane
Date of Test	07/22/10
Relative Humidity	51%
Temperature	23℃
Atmospheric Pressure	101KPa

Test Results

Frequency Step: 1% of fundamental

Dwell Time: 3 sec

Test Ports: mains, RJ-45

Range (MHz)	Field	Modulation	Performance Criteria	Result (Pass/Fail)
0.15-80	3V	Yes	A	Pass

3.2.6 Power Frequency Magnetic Field Immunity Test

The product was tested and met the requirements specified in EN 61000-4-8: 1993+A1:2001

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-4-8
Test Operator	Jane
Date of Test	07/23/10
Relative Humidity	51%
Temperature	24℃
Atmospheric Pressure	101KPa

Test Results

Power Freq.: 50Hz

Orientation	Field	Performance Criteria	Result (Pass/Fail)
X	1A/m	A	Pass
Y	1A/m	A	Pass
Z	1A/m	A	Pass

3.2.7 Voltage Dips / Short Interruptions and Interruptions Test

The product was tested and met the requirements specified in EN 61000-4-11:2004

Test Condition

Equipment Tested	Notebook
Test Software	BurnIn test V6.0
Test Standard	EN 61000-4-11
Test Operator	Jane
Date of Test	07/23/10
Relative Humidity	52%
Temperature	24℃
Atmospheric Pressure	101KPa

Test Results

The duration with a sequence of three dips/interruptions with interval of 10s minimum (Between each test event)

Power Freq.: 50Hz

Voltage Dips:

Test Level % U_T	Reduction	Duration (periods)	Performance Criteria	Result (Pass/Fail)
0	> 95%	0.5	A	Pass
70	30%	25	A	Pass

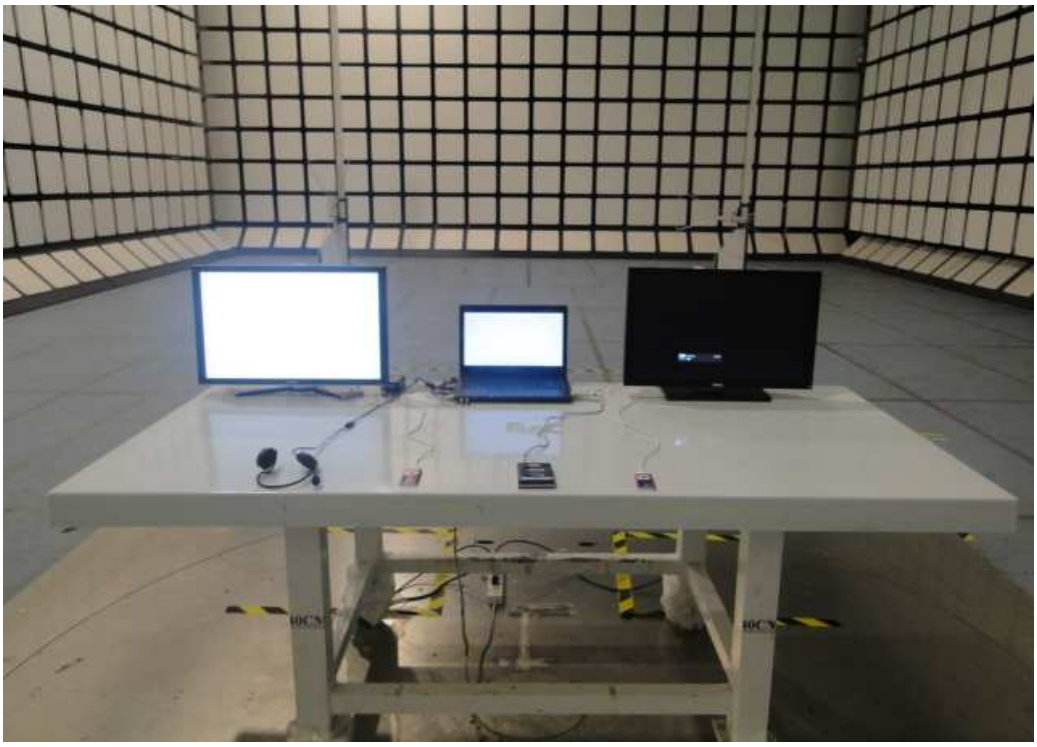
Voltage Interruptions:

Test Level % U_T	Reduction	Duration (periods)	Performance Criteria	Result (Pass/Fail)
0	> 95%	250	C	Pass

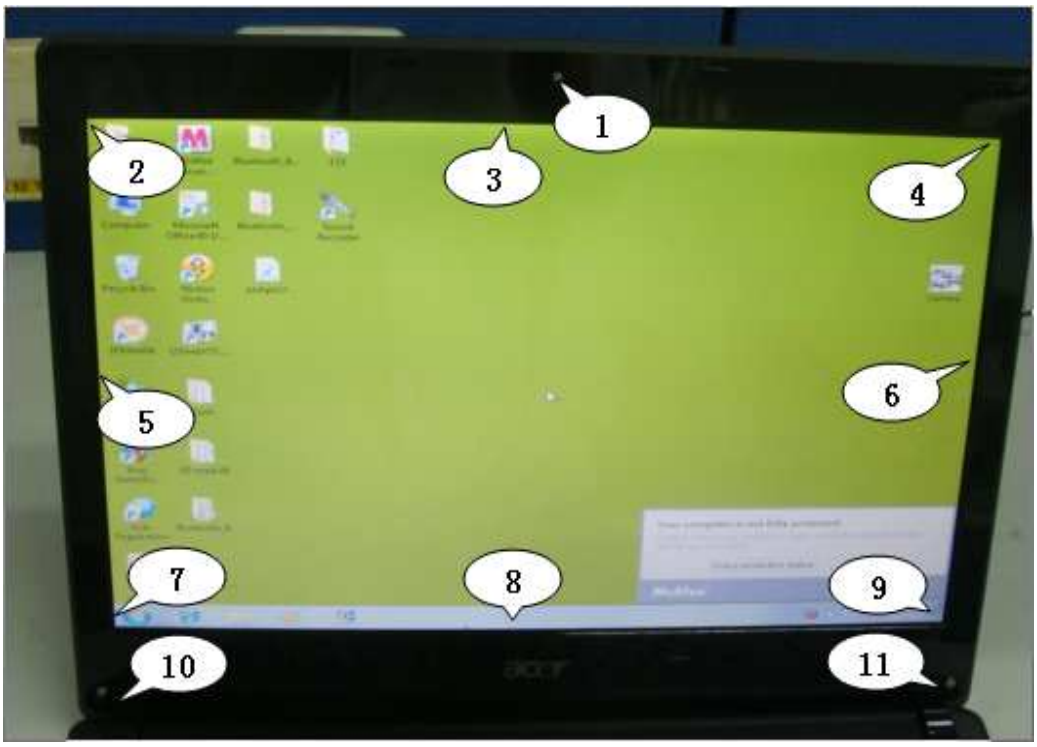
SECTION 4: Test Arrangement Photos

4.1 Conducted Emissions

4.2 Radiated Emissions



4.4 Electrostatic Discharge (ESD)

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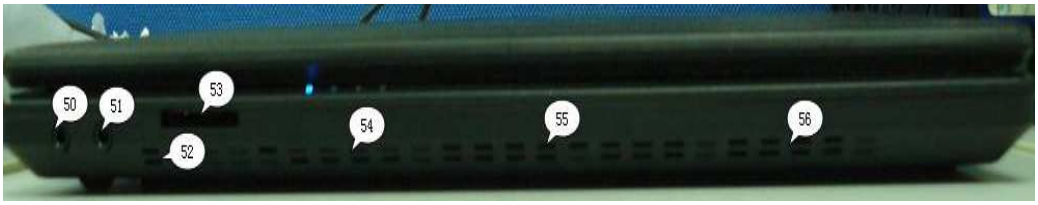
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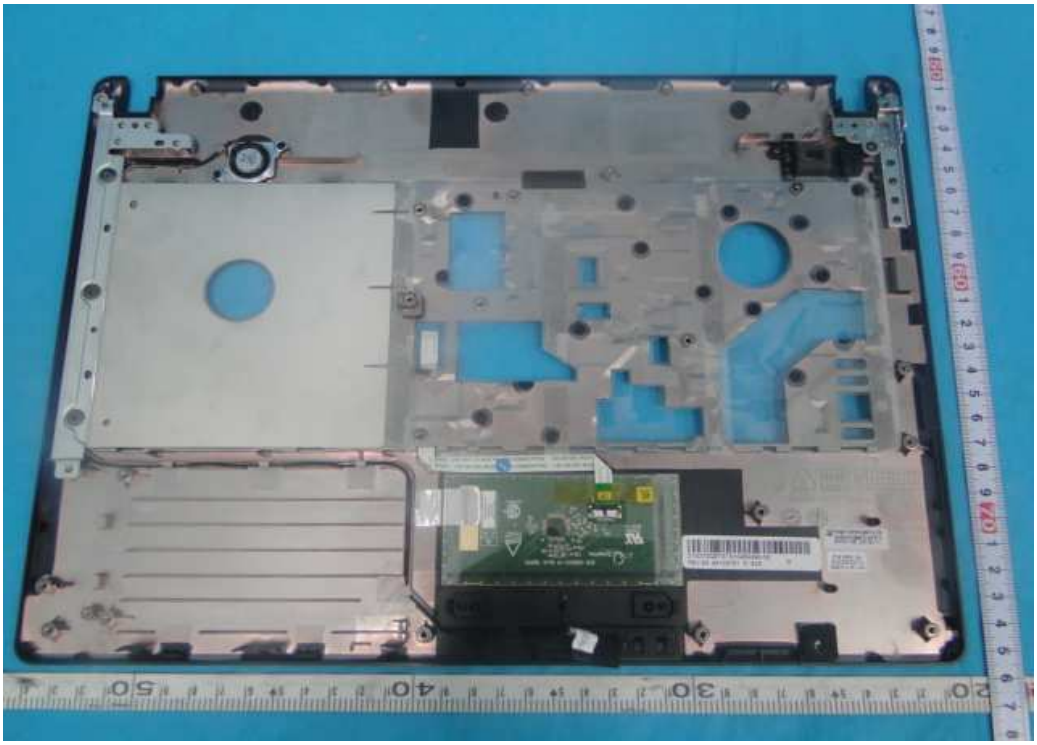
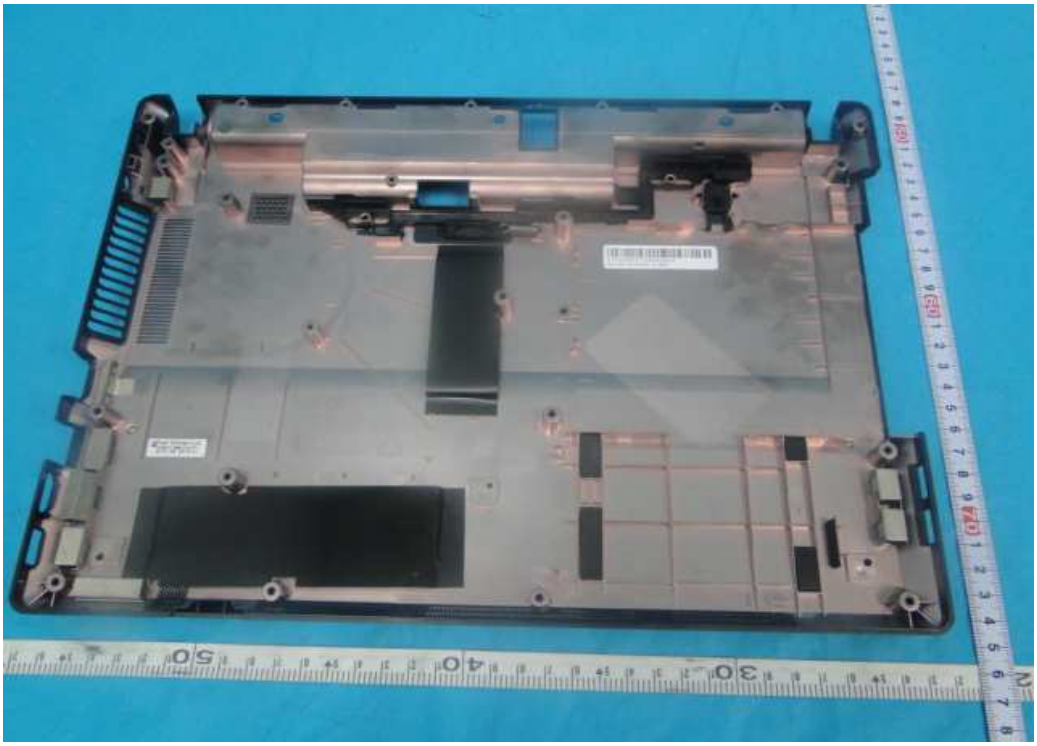
Appendix: EUT Internal Photos

EUT





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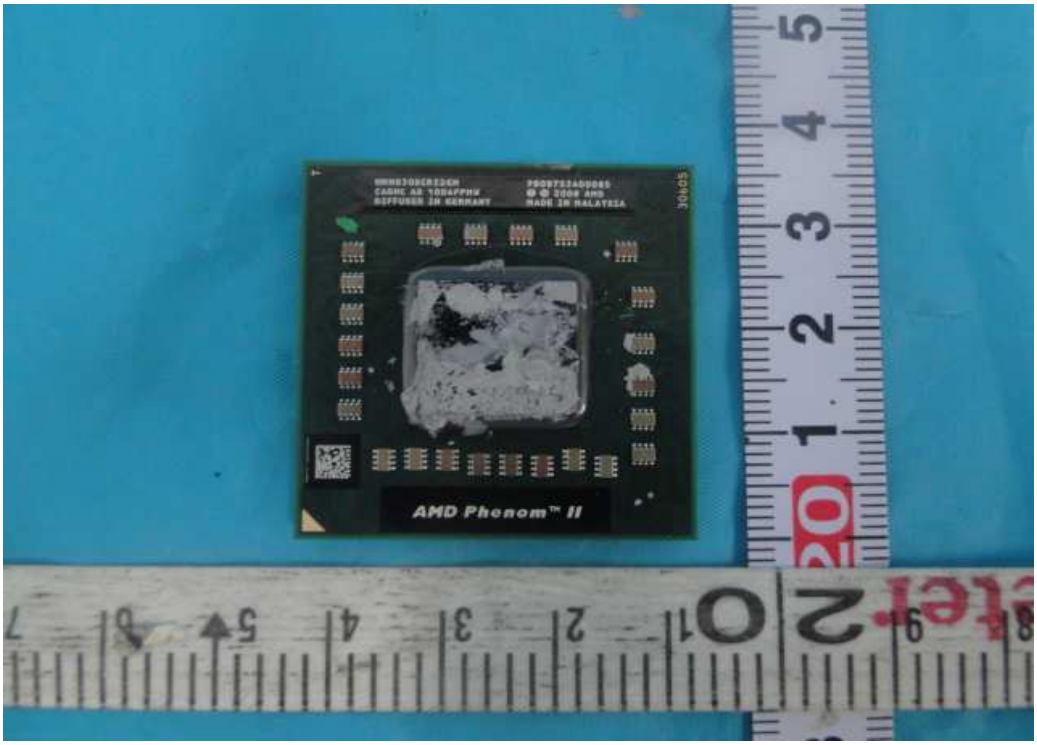


HDD:

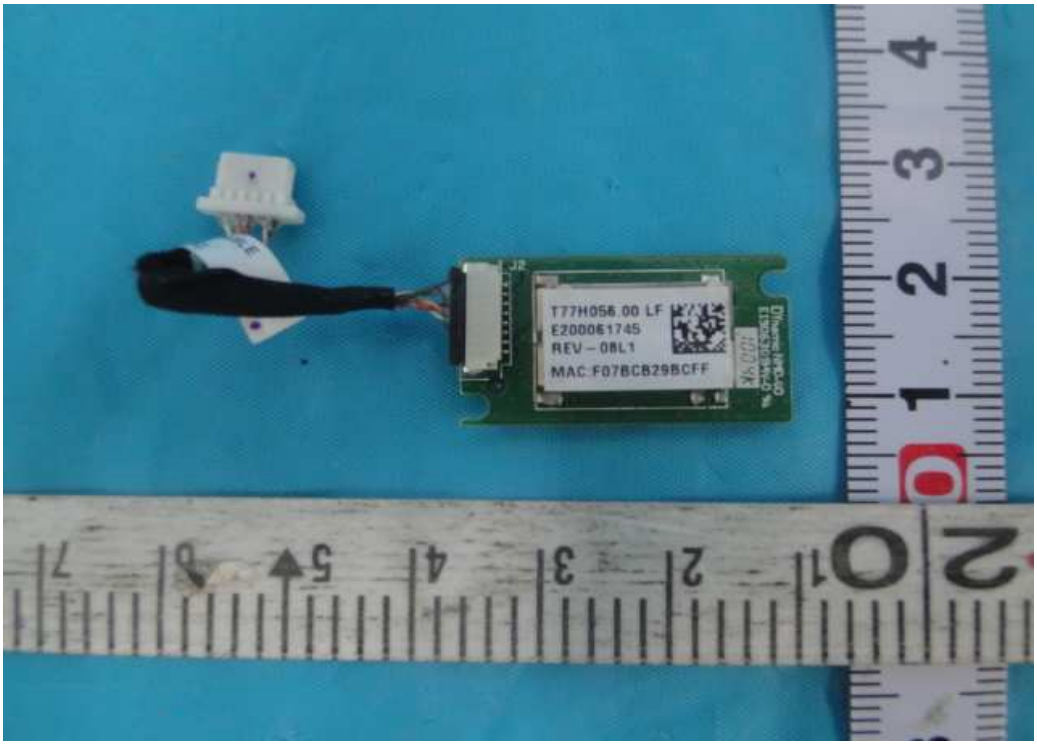
RAM


MT8JSF25664HZ-1G4D1 1025
2GB 1RX8 PC3-10600S-9-10-B1
PRODUCT OF CHINA DPAABW5002

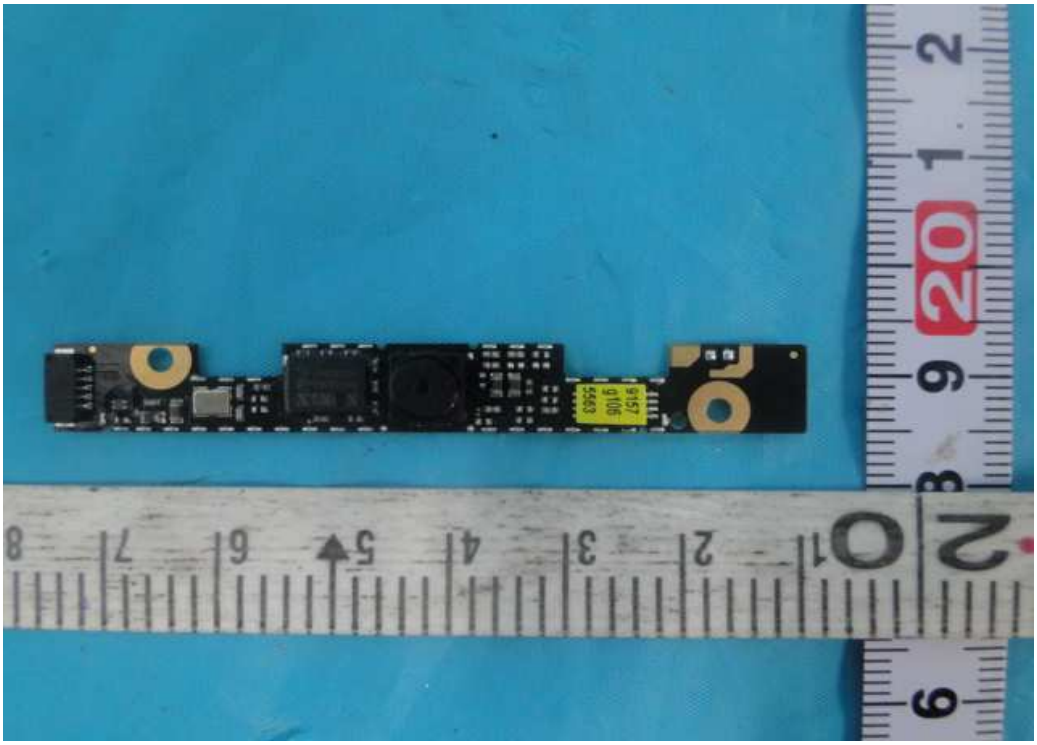
Adapter:

Battery:

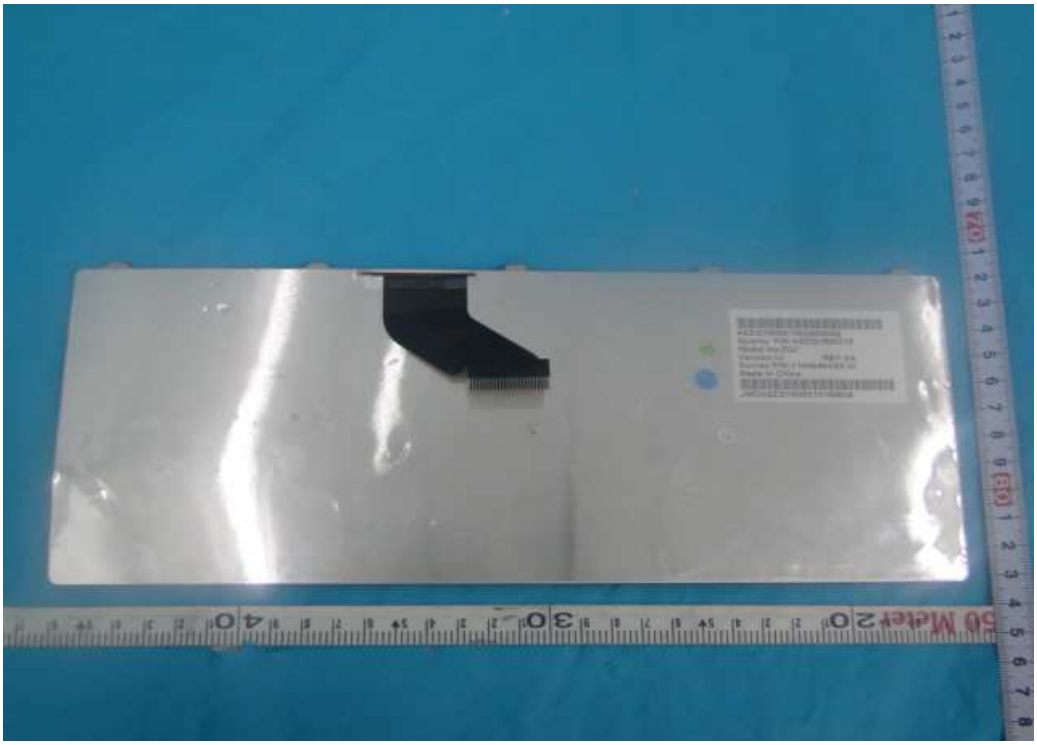
Bluetooth:



Camera:



Key board:



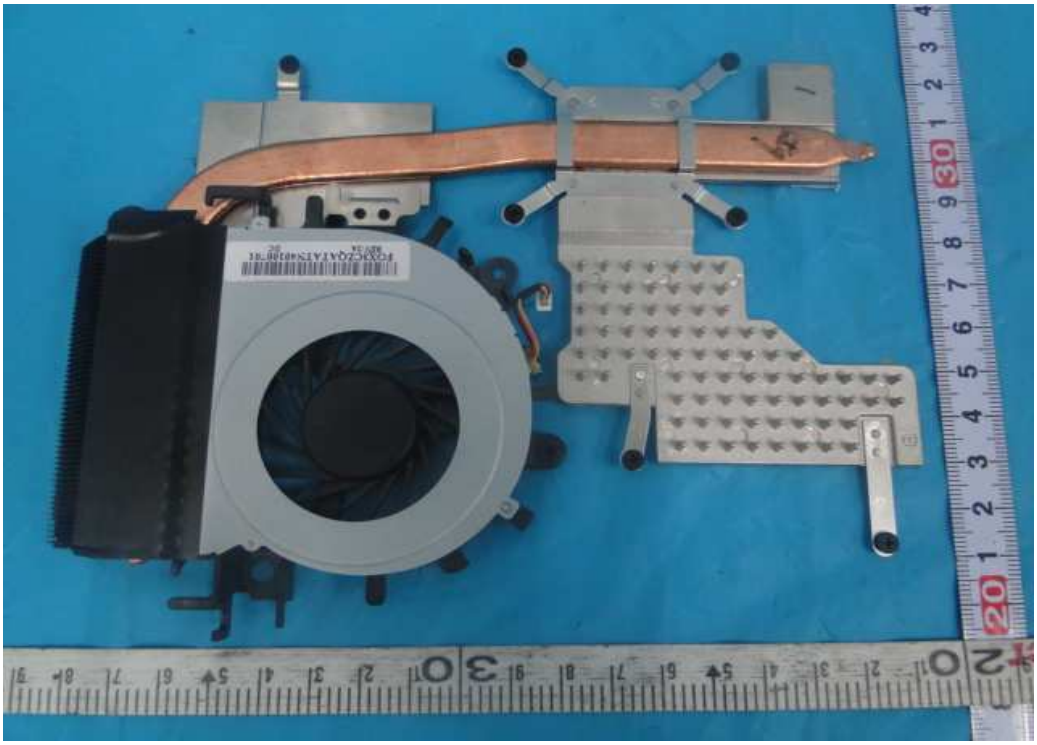
ODD:

Pannel:

NB-1:

NB-2:

Thermal:

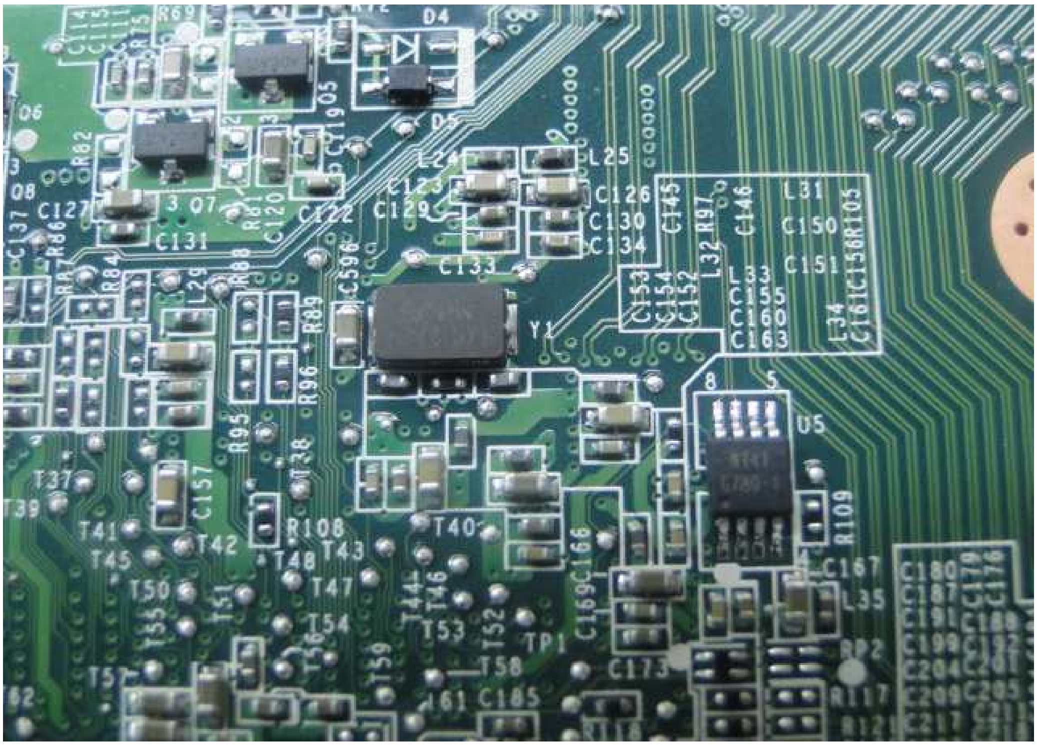


Wireless:

All parts:

:

Y1: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C130
C134
C145
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L31
C150
C151
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C131
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U5
R109
C157
R108
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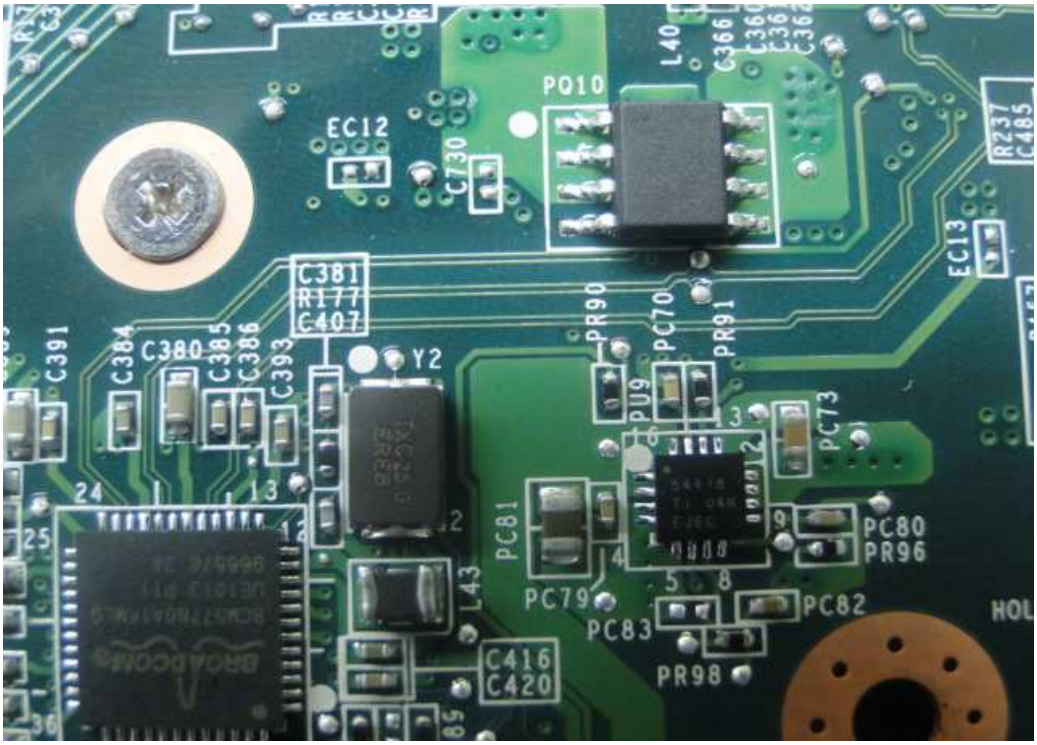
T50
T53
T58
TP1
C173
C185
L35

Y2: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EC13
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C407
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C384
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C385
C386
C393
Y2
PR90
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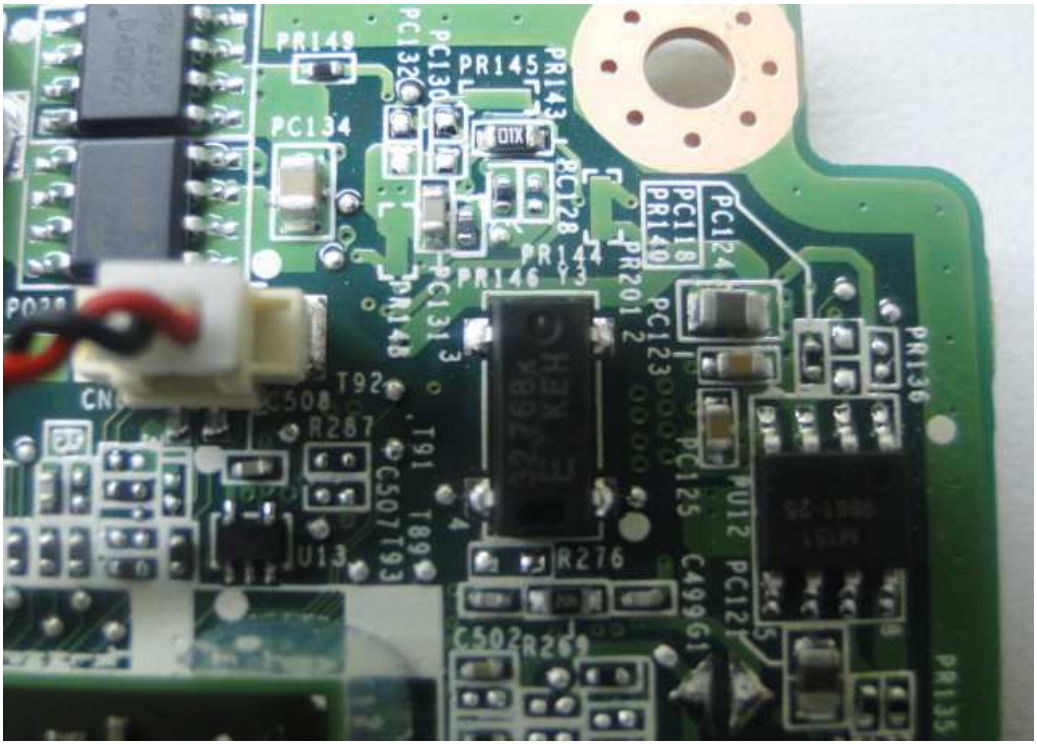
L43
C416
C420

Y3: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T92
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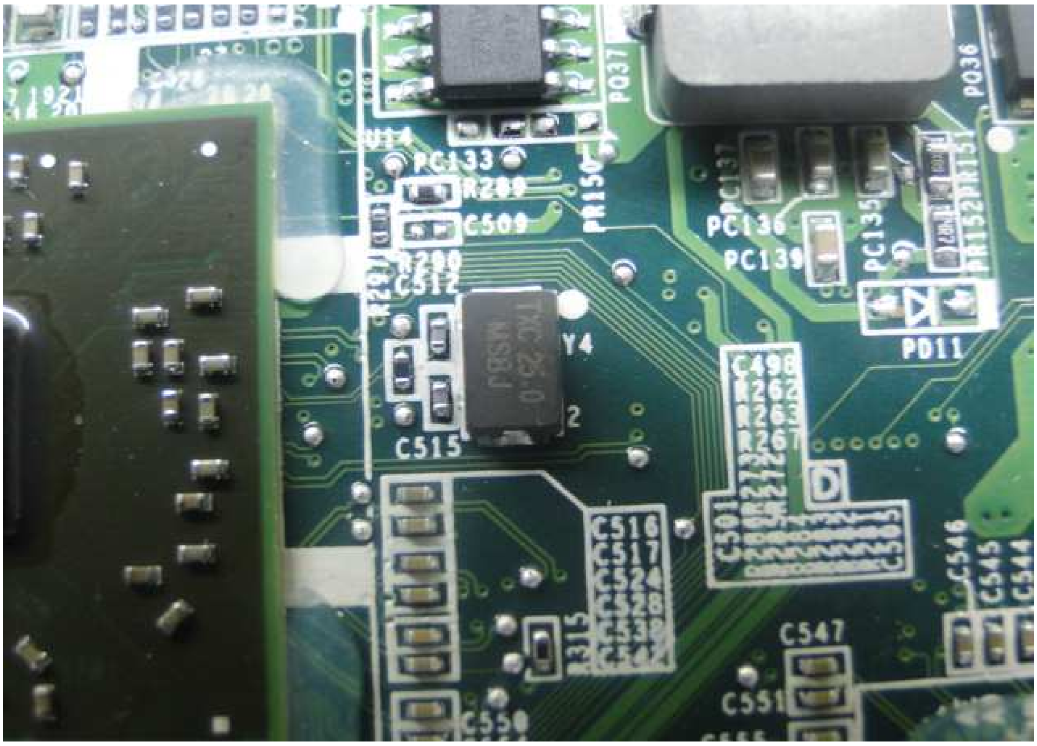
PC121

Y4: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C512
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C515
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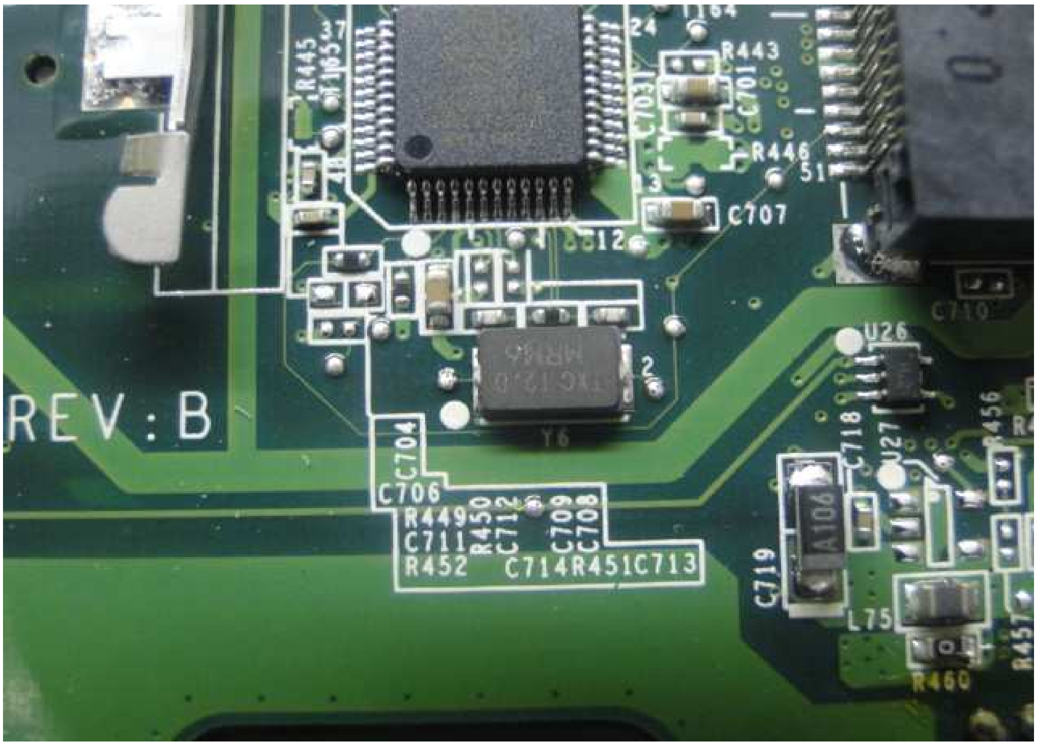
C528
C547
C551

Y6: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