

FCC TEST REPORT

Authorized under **D**eclaration of **C**onformity

According to

47 CFR, Part 15, Subpart C

Equipment : SpeedTouch 585 v6

Model No. : DSLBB683 TK

Filing Type : Declaration of Conformity

Applicant : **Thomson Telecom Belgium**
Prins Boudewijnlaan 47
B-2650 Edegem
Belgium

The test result refers exclusively to the presented test model / sample.

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Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.



Lab Code: 200079-0

SPORTON International Inc.

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SPORTON International Inc.

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CERTIFICATE OF COMPLIANCE

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According to

47 CFR, Part 15, Subpart C


Equipment : SpeedTouch 585 v6

Model No. : DSLBB683 TK

Applicant : **Thomson Telecom Belgium**
Prins Boudewijnlaan 47
B-2650 Edegem
Belgium

I **HEREBY** CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2003** and the energy emitted by this equipment were **passed CISPR PUB. 22 and FCC Part 15 subpart C, 15.207, 15.209** in both radiated and conducted emission **Class B** limits. Testing was carried out on June 24, 2005 at **SPORTON International Inc. LAB.**



Wayne Hsu

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. General Description of Equipment under Test

1.1 Applicant

Thomson Telecom Belgium
 Prins Boudewijnlaan 47
 B-2650 Edegem
 Belgium

1.2 Manufacturer

Thomson Telecom Belgium
 Prins Boudewijnlaan 47
 B-2650 Edegem
 Belgium

1.3 Basic Description of Equipment under Test

Trade Name : Thomson
 Power Supply : Manufacturer OEM
 Outstanding Electronic Manufacturer Co., Ltd.
 3F, No. 541 Chung-Cheng Road, Hsin-Tien, Taipei Taiwan.
 : Type ADS18A-B 220082
 : Input rating 100-240Vac 50/60Hz 500mA Max
 : Output rating 22Vdc 818mA
 : AC Power Cord Wall-mount, 2pin
 Hardware Version : PEM 2

The table below shows the interface ports that are equipped on the models:

Equipment	Model number	AC	ADSL	Ethernet	WLAN
SpeedTouch 585 v6	DSLBB683 TK	1	1	2	0
SpeedTouch 585 v6	DSLBB883 TK	1	1	2	0

The tested model is listed in bold on the table.

1.4 Features of Equipment under Test

Please refer to user manual.

1.5 Information Provided by the Manufacturer

The following product that existed at the same time of qualification is identical to SpeedTouch 585 v6 DSLBB683 TK and can be covered by this report.

SpeedTouch 585 v6 DSLBB883 TK

1.6 Table of Carrier Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412 MHz	5	2432 MHz	9	2452 MHz
2	2417 MHz	6	2437 MHz	10	2461 MHz
3	2422 MHz	7	2442 MHz	11	2462 MHz
4	2427 MHz	8	2447 MHz		

2. Test Configuration of Equipment under Test

2.1 Test Manner

- a. The EUT has been associated with personal computer and peripherals pursuant to ANSI C63.4-2003 and the configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The following test mode was set to measure Conducted emission on the AC power port:

Test Item	ADSL Operation Mode
CE	ADSL2+ Annex A

- c. The following test mode was set to measure Radiated emission:

Test Item	ADSL Operation Mode
RE	ADSL2+ Annex A

- d. Frequency range investigated:

Conducted emission: 150 kHz to 30 MHz, Radiated emission: 30 MHz to 25000 MHz.

2.2 Description of Test Supporting Units

Support Unit 1. -- Notebook (DELL) – for local workstation

FCC ID : N/A
 Model No. : D400
 Power Supply Type : Switching
 Power Cord : Non-Shielded
 Serial No. : SP0006
 Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 2. --ADSL DSLAM (ALCATEL) – for remote workstation

FCC ID : N/A
 Model No. : 7300UD

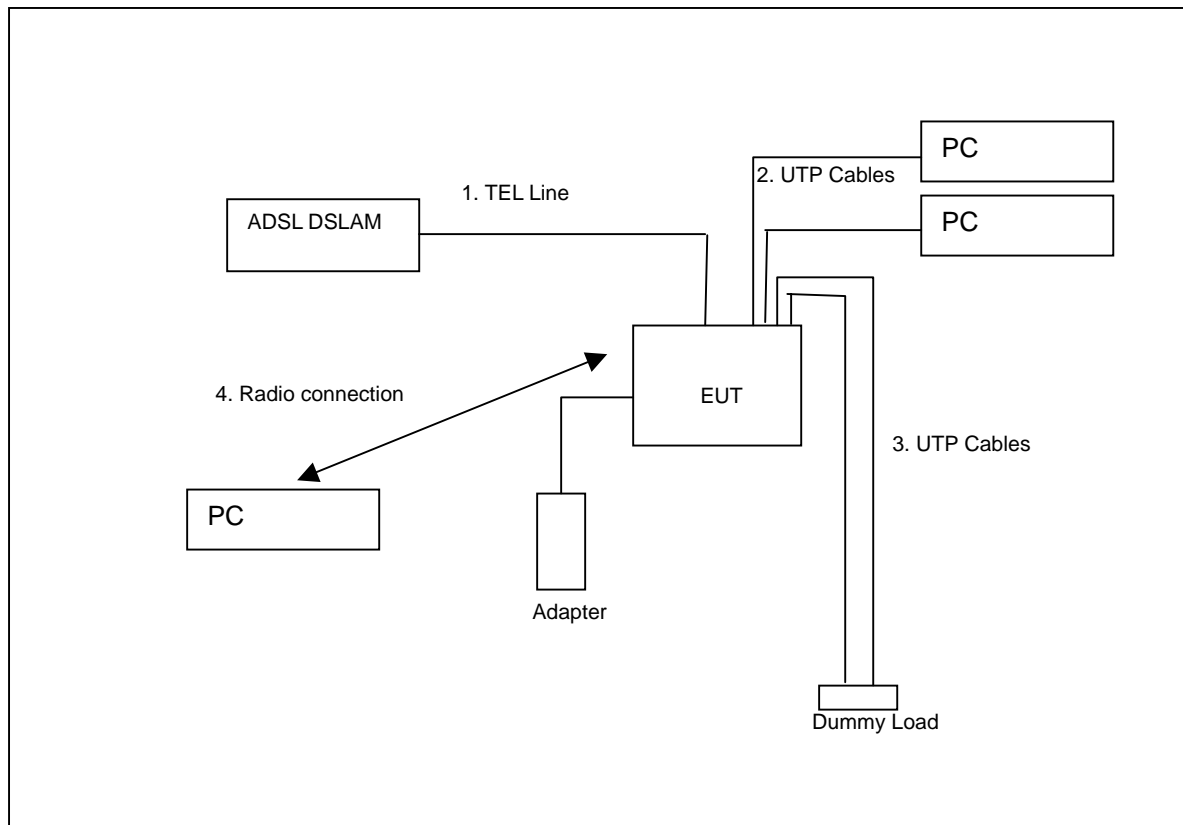
Support Unit 3. -- Personal Computer (COMPAQ) – for remote workstation

FCC ID : N/A
 Model No. : Evo D380mx
 Power Supply Type : Switching
 Power Cord : Non-Shielded
 Serial No. : SP0002
 Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 4. -- Personal Computer (HP) – for remote workstation

FCC ID	: N/A
Model No.	: DTPC-22
Power Supply Type	: Switching
Power Cord	: Non-Shielded
Serial No.	: SP0001
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

2.3 Connection Diagram of Test System



1. The telephone line was connected between the EUT and the ADSL DSLAM.
2. Two Ethernet cable were connected between the EUT and the support units.
3. Two Ethernet cables were connected between the EUT and the dummy load.
4. The radio connection was established between the EUT and the support unit.

3. Test Software

The "Telnet" command was executed to link to the modem. After that, the "adsl info" command was executed to check the connection status from the ADSL link.

Data traffic was sent from PC through the Ethernet ports of the EUT and wireless connection to a Notebook by means of sending continuous "PING" command. The Notebook is equipped with a 2.4GHz radio device – complying with IEEE 802.11.

4. General Information of Test

4.1 Test Facility

Test Site Location : No. 30-2, Line 6, Ding-Fwn Tsuen, Lin-Kou Hsiang,
Taipei Hsien, Taiwan, R.O.C.
TEL : 886-2-2603-5367
FAX : 886-2-2661-1695

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.
TEL : 886-3-327-3456
FAX : 886-3-318-0055

Test Site No. : CO04-HY, OS02-LK

4.2 Test Voltage

110V/60Hz

4.3 Standard for Methods of Measurement

ANSI C63.4-2003

The test configuration, test mode and test software used in this test report are designated by the applicant.

4.4 Test in Compliance with

CISPR PUB. 22 and FCC Part 15 subpart C

4.5 Frequency Range Investigated

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 1000 MHz

4.6 Test Distance

The test distance of radiated emission from antenna to EUT is 10 meters (from 30 MHz to 1000 MHz).
The test distance of radiated emission from antenna to EUT is 3 meters (from 1000 MHz to 25000 MHz).

5. Test of Conducted Powerline

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a non-metallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positions were varied within the limits of the typical use to determine the positions producing maximum conducted emissions.

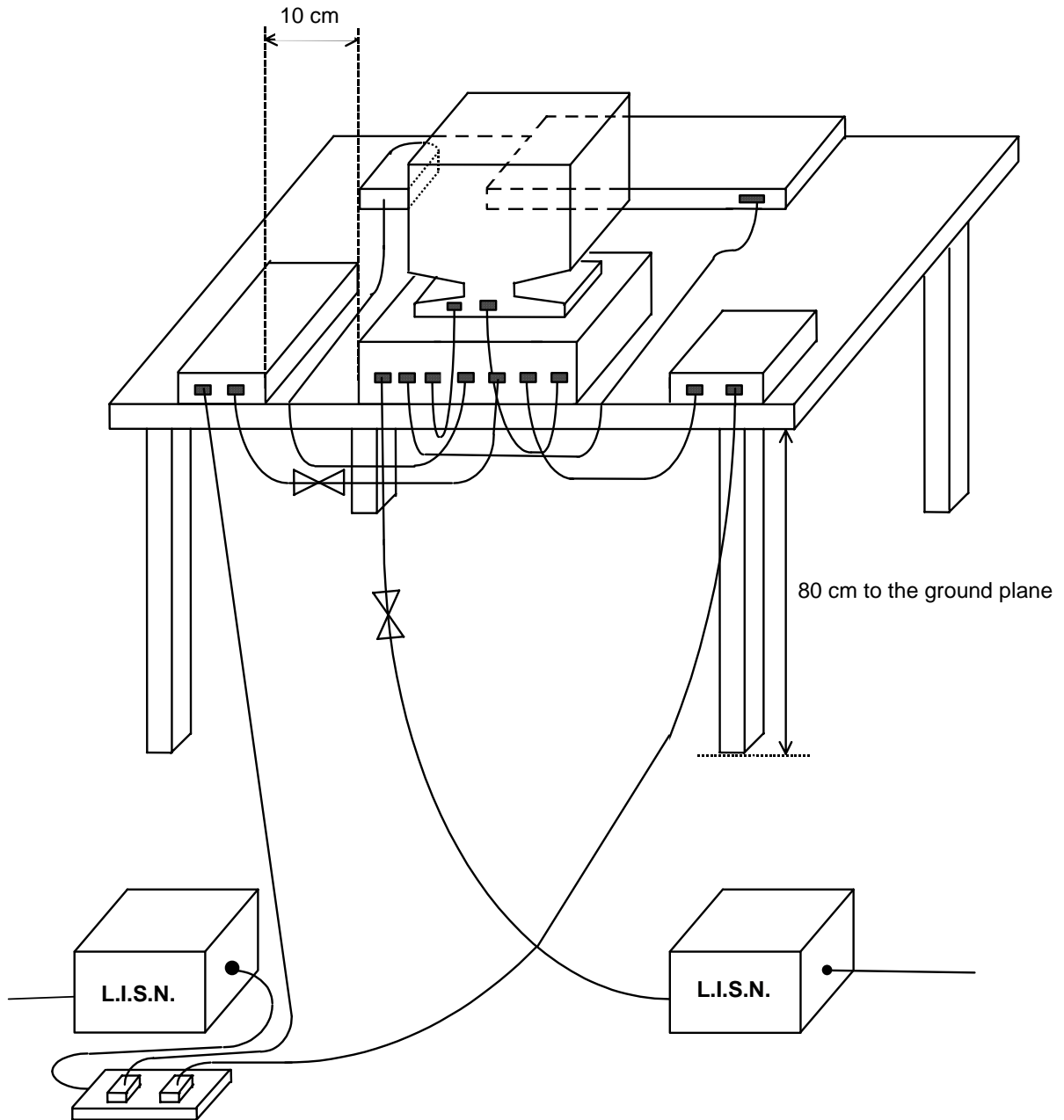
5.1 Description of Major Test Instruments

• Test Receiver	(R&S ESCS 30)
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

5.2 Test Procedures

- a. The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
- b. Connection of the EUT to the AC mains power was done through a Line Impedance Stabilization Network (LISN).
- c. All the support units were connected to the other LISN's.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The CISPR states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was investigated.
- h. The test-receiver system was set in its Peak Detect Function and specified bandwidth with Maximum Hold Mode.

5.3 Typical Test Setup Layout of Conducted Powerline

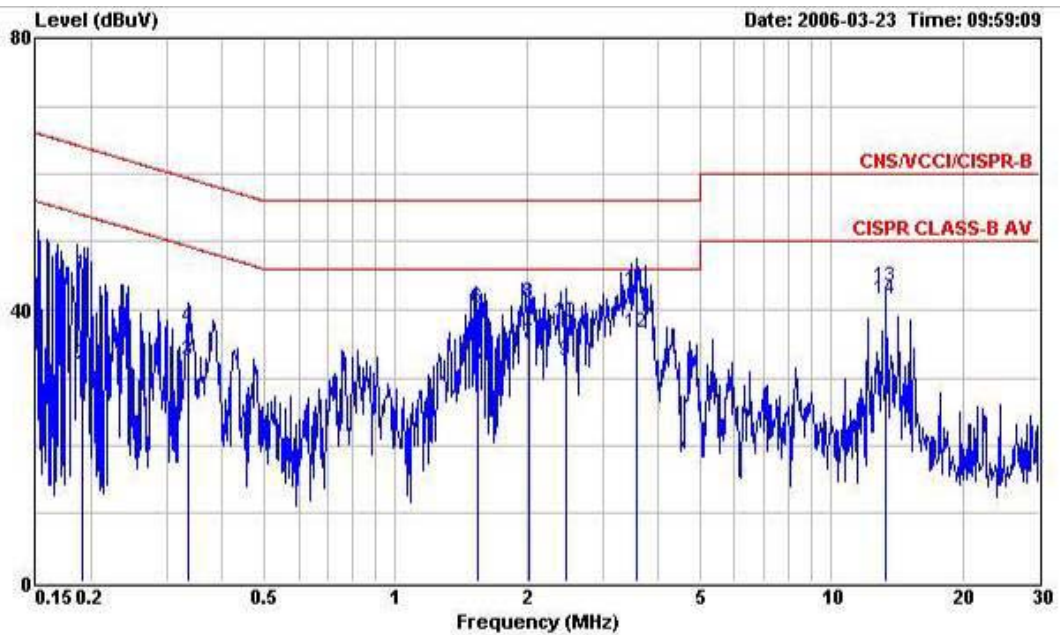


5.4 Test Result of AC Powerline Conducted Emission

5.4.1 Tested port:

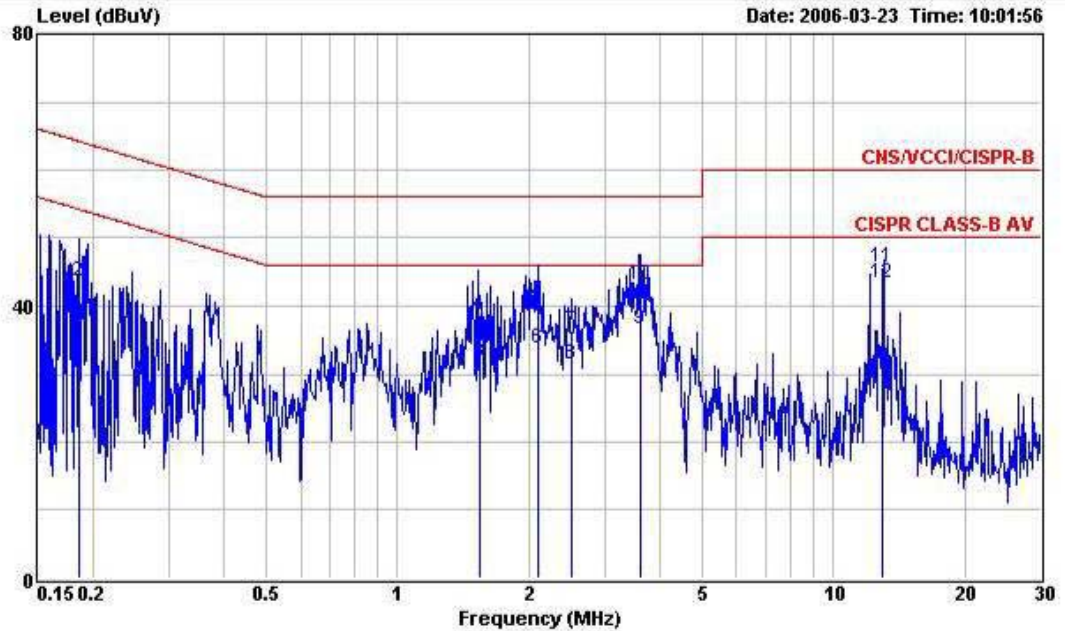
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 24 °C
- Relative Humidity: 46 %

■ The minimum margin at which the test passed is indicated by the frame in the following table(s)



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200505 LINE
 EUT : ST585v6
 Power : 230V/50Hz
 Model : LAN 10/100Mbps 60/35dB
 TEST PORT : AC PORT
 ADSL mode : ADSL 2+ ANNEX A 100Mbps
 Loop Length : 3000 ft
 : 11Mbps

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.191	45.11	-18.88	63.99	44.93	0.06	0.12	QP
2	0.191	32.05	-21.94	53.99	31.87	0.06	0.12	Average
3	0.336	32.43	-16.87	49.30	32.29	0.06	0.08	Average
4	0.336	37.35	-21.95	59.30	37.21	0.06	0.08	QP
5	1.540	31.66	-14.34	46.00	31.42	0.11	0.13	Average
6	1.540	40.36	-15.64	56.00	40.12	0.11	0.13	QP
7	2.030	35.16	-10.84	46.00	34.91	0.11	0.14	Average
8	2.030	41.00	-15.00	56.00	40.75	0.11	0.14	QP
9	2.460	32.35	-13.65	46.00	32.06	0.14	0.15	Average
10	2.460	38.09	-17.91	56.00	37.80	0.14	0.15	QP
11	3.580	42.77	-13.23	56.00	42.41	0.19	0.17	QP
12	3.580	36.75	-9.25	46.00	36.39	0.19	0.17	Average
13	13.320	43.31	-16.69	60.00	42.79	0.21	0.31	QP
14	13.320	41.52	-8.48	50.00	41.00	0.21	0.31	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL
 EUT : ST585v6
 Power : 230V/50Hz
 Model : LAN 10/100Mbps 60/35dB
 TEST PORT : AC PORT
 ADSL mode : ADSL 2+ ANNEX A 100Mbps
 Loop Length : 3000 ft
 : 11Mbps

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.186	29.25	-24.96	54.21	29.02	0.11	0.12	Average
2	0.186	43.72	-20.49	64.21	43.49	0.11	0.12	QP
3	1.540	31.72	-14.28	46.00	31.36	0.23	0.13	Average
4	1.540	38.62	-17.38	56.00	38.26	0.23	0.13	QP
5	2.100	39.95	-16.05	56.00	39.58	0.23	0.14	QP
6	2.100	33.86	-12.14	46.00	33.49	0.23	0.14	Average
7	2.500	36.33	-19.67	56.00	35.95	0.23	0.15	QP
8	2.500	31.30	-14.70	46.00	30.92	0.23	0.15	Average
9	3.620	36.66	-9.34	46.00	36.26	0.23	0.17	Average
10	3.620	43.02	-12.98	56.00	42.62	0.23	0.17	QP
11	13.013	45.68	-14.32	60.00	45.04	0.33	0.31	QP
12	13.013	43.37	-6.63	50.00	42.73	0.33	0.31	Average

Test Engineer : Neil Huang
 Neil Huang

5.5 Photographs of Test Set-up of Conducted Emission on the AC Power Port

- The photographs show the configuration that generates the maximum emission.

FRONT VIEW

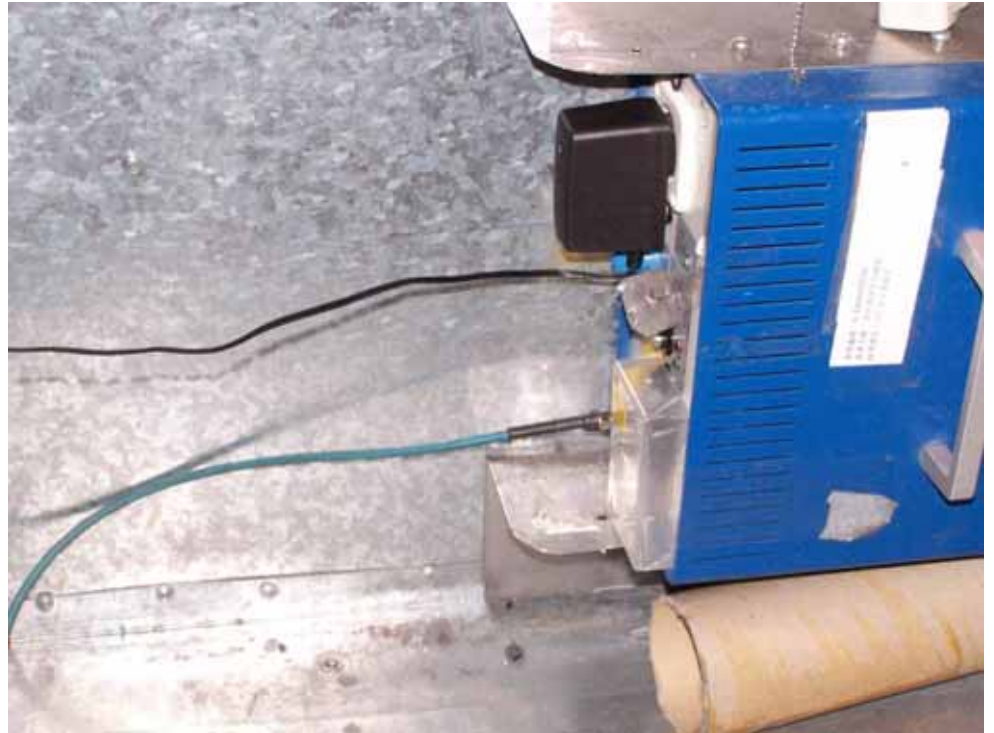


REAR VIEW



SIDE VIEW





5.6 Detailed Test Set-up of the EUT.

Peripherals

- ADSL DSLAM (Alcatel 7300UD)
- PC1 with 10/100 Ethernet LAN port
- PC2 with 802.11 b/g WLAN port

Connection

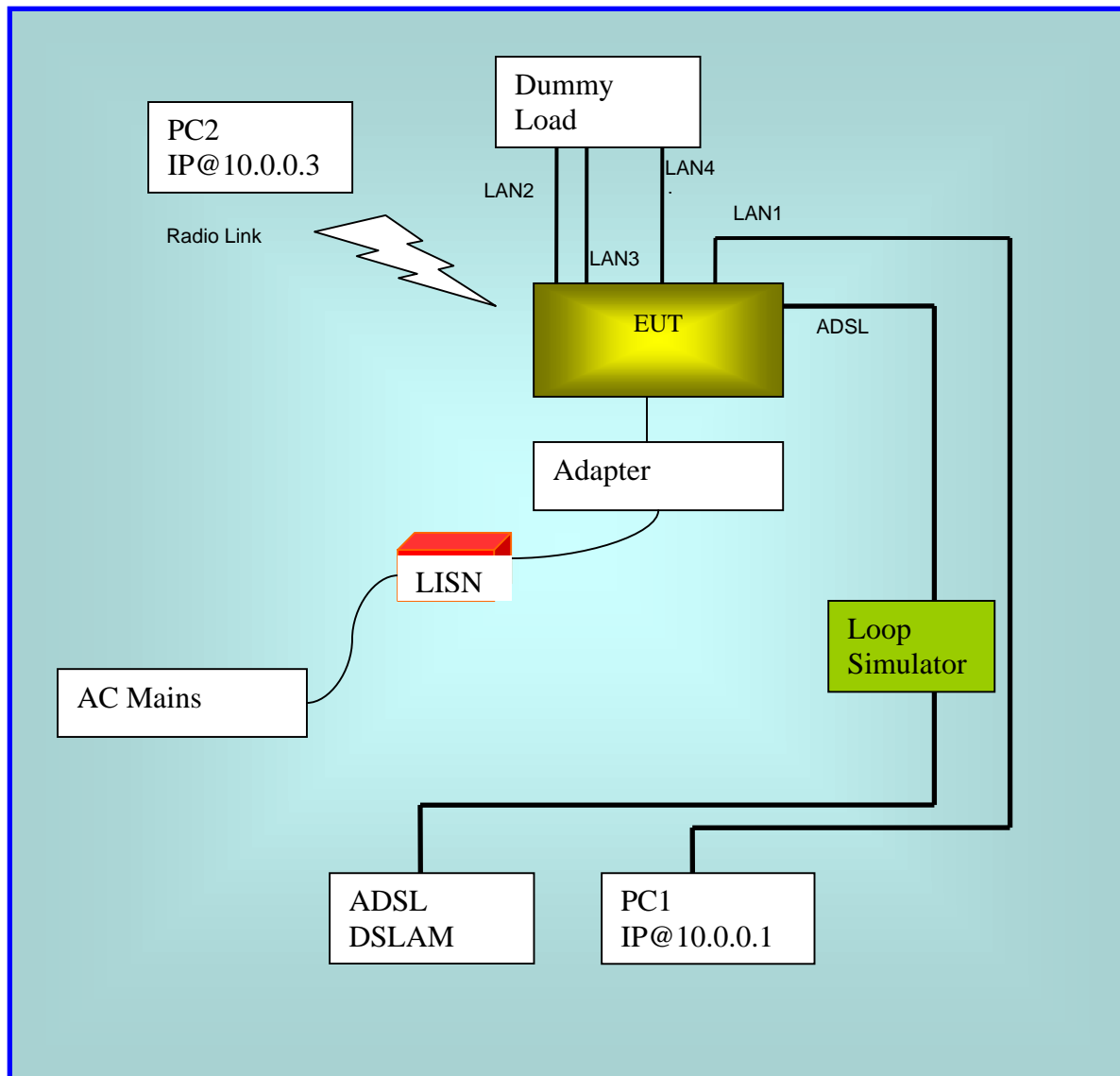
- The connection between the DSLAM and the modem were established.
- A loop simulator was connected between the DSLAM and the EUT.
- The line-length of the loop simulator for the ADSL operational modes was set as below:
 - ADSL2+ Annex A: 3 kfeet.
- One 13-meter long twisted-pair Cat-5 cable was connected to the LAN1 port of the EUT.
- One 13-meter long flat cable was connected between the ADSL port of the EUT and the ADSL DSLAM.
- The LAN2, LAN3 and LAN4 ports of the EUT were connected to a dummy load with three 1-meter Cat-5 cables.
- A LISN was connected between the AC mains and the AC Adapter.
- PC1 (IP@10.0.0.1) connected to the LAN port of the EUT.
- PC2 (IP@10.0.0.3) connected to the WLAN port of the EUT.

Testing was done with the interface ports set in the following modes:

	AC	ADSL	Ethernet	Wireless
SpeedTouch 585 v6	Power ON	ADSL2+ Annex A ADSL2 Annex A FAST mode	100 Mbps	54 Mbps

Operating procedures

- All interfaces were activated during testing and functions were maintained.
- Data traffic was sent from PC1 through the wireless connection and the Ethernet ports by means of sending continuous "PING" commands.



6. Test of Radiated Emission

Radiated emissions from 30 MHz to 25000 MHz were measured with a bandwidth of 120 kHz according to the methods defined in ANSI C63.4-2003. The EUT was placed on a non-metallic stand, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within the limits of the typical use to determine the positions producing maximum radiated emissions.

6.1 Major Measuring Instruments

- Amplifier (SCHAFFNER CPA9231A)
 - RF Gain 30 dB
 - Signal Input 9 kHz -2 GHz

- Spectrum Analyzer (R&S FSP40)
 - Attenuation 10 dB
 - Start Frequency 1 GHz
 - Stop Frequency 18 GHz
 - Resolution Bandwidth 1 MHz
 - Signal Input 9KHz – 40 GHz

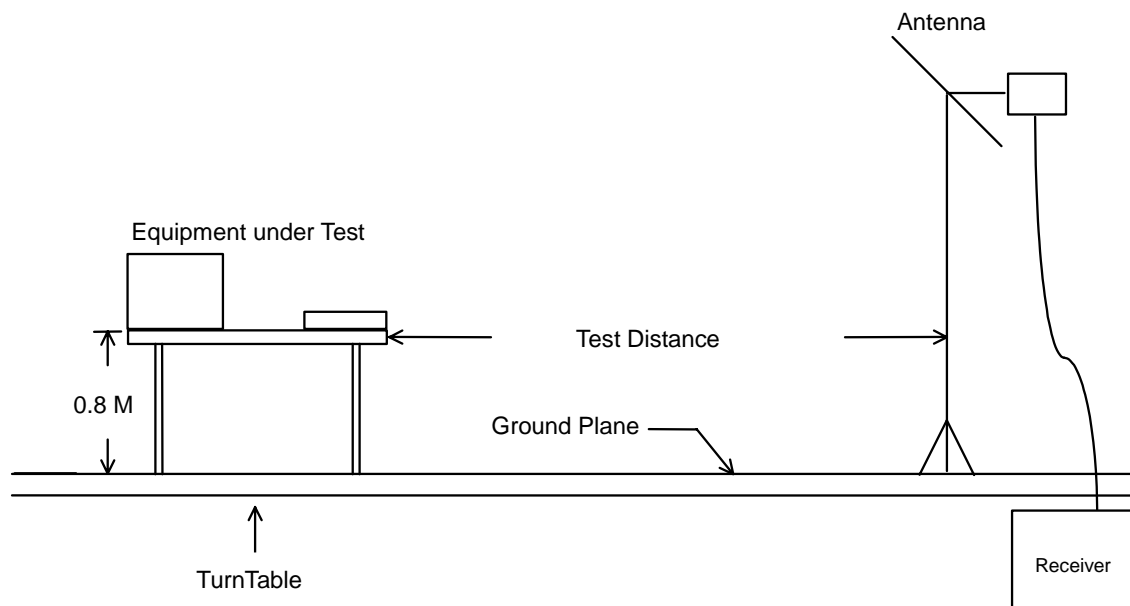
- Test Receiver (R&S ESCS 30)
 - Resolution Bandwidth 120 KHz
 - Frequency Band 9 K – 2.75 GHz
 - Quasi-Peak Detector ON for Quasi-Peak Mode
OFF for Peak Mode

- Amplifier (MITEQ AFS44)
 - RF Gain 40 dB
 - Signal Input 100 MHz -26.5 GHz

6.2 Test Procedures

- a. The EUT was placed on a table 0.8 meter above the ground reference plane which is constituted by a turn-table.
- b. The EUT was set 3 or 10 meters from the interference-receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. The test-receiver system was set in its Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of the EUT will be reported, otherwise, the emissions which do not have a 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1 GHz, the emission level of the EUT in peak limit was 20dB higher than the average limit. The emissions were measured in both average and peak modes and reported.

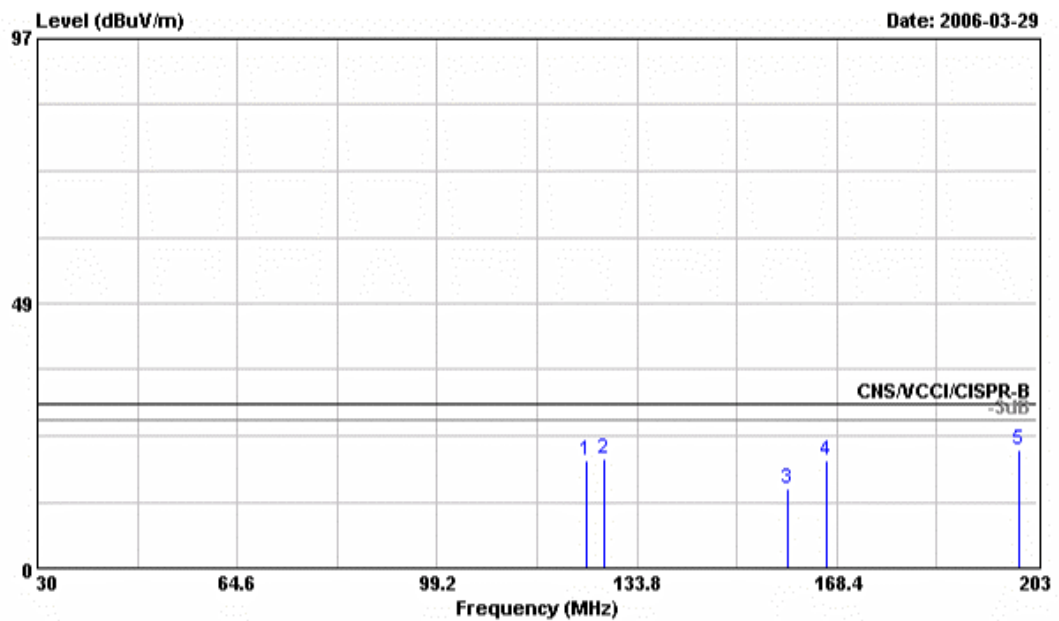
6.3 Typical Test Setup Layout of Radiated Emission



6.4 Test Result of Radiated Emission

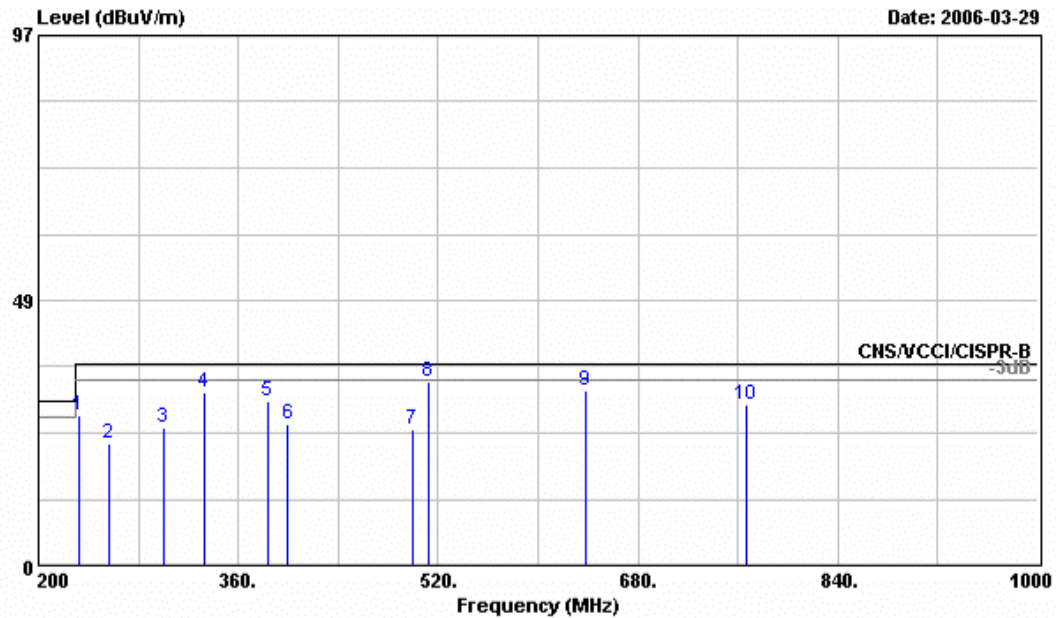
- ADSL operational mode: ADSL2+ Annex A
- Test Distance: 3M
- Temperature: 29
- Relative Humidity: 53%
- Test Engineer: Chu
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

■ The minimum margin at which the test passed is indicated by the frame in the following table(s)



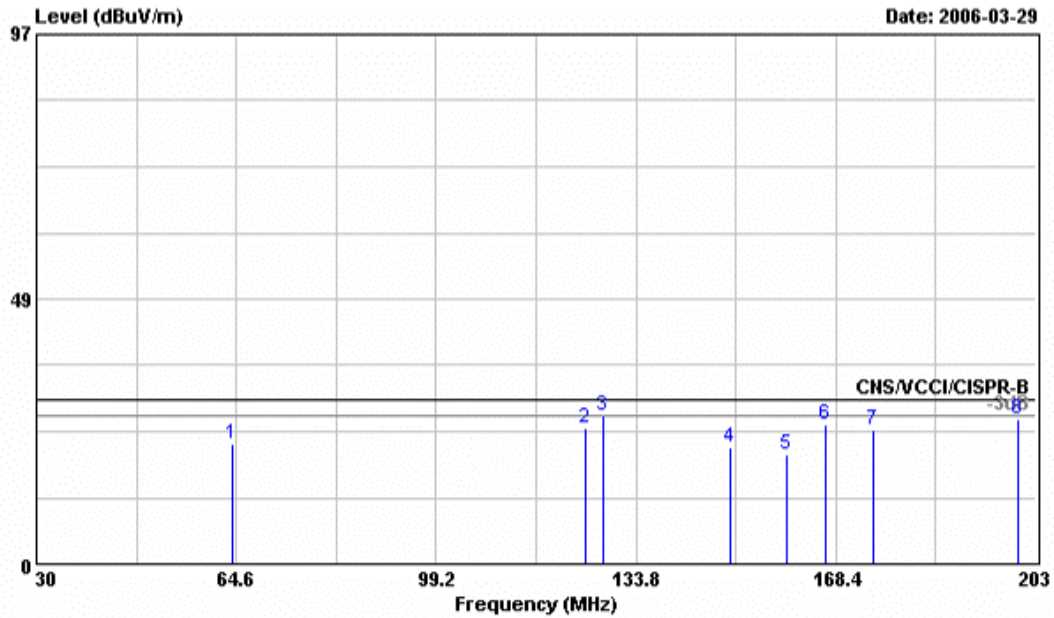
Site : OS02-LK
 Condition : CNS/VCCI/CISPR-B 10m CBL6111C.2715.940924 HORIZONTAL
 EUT : ST585v6
 POWER : 230VAC
 MEMO : DC power supply: 22Vdc

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm
1 @	125.000	19.77	-10.23	30.00	29.61	12.26	1.39	23.49	Peak	---	---
2 @	128.000	20.11	-9.89	30.00	29.69	12.47	1.44	23.49	Peak	---	---
3 @	160.000	14.49	-15.51	30.00	25.65	10.78	1.50	23.44	Peak	---	---
4 @	166.660	19.83	-10.17	30.00	31.33	10.40	1.53	23.43	Peak	---	---
5 @	200.000	21.67	-8.33	30.00	34.03	9.30	1.70	23.36	Peak	---	---



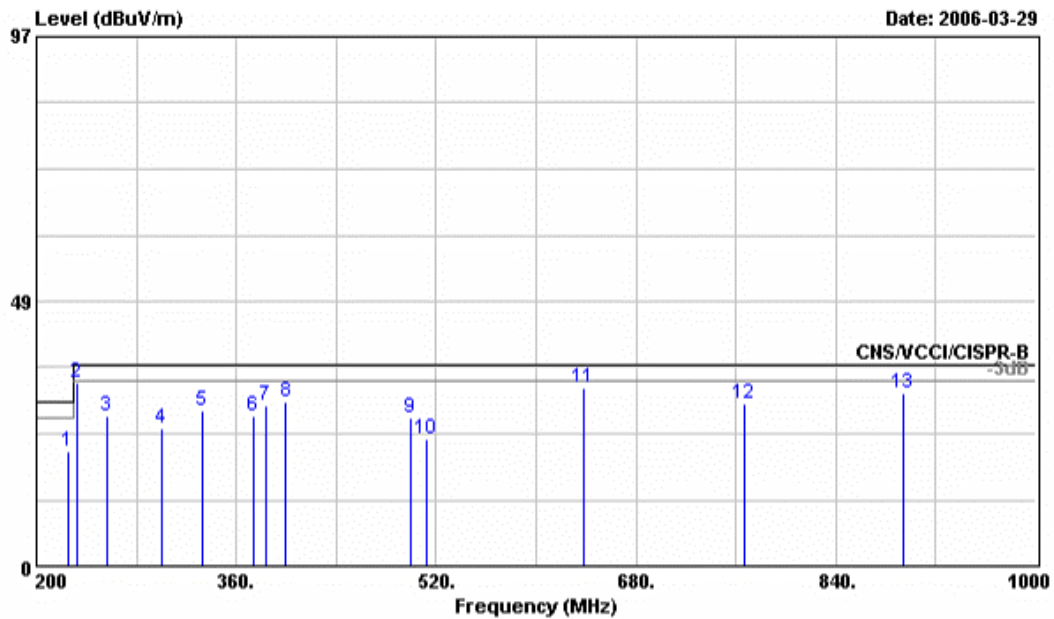
Site : OS02-LK
 Condition : CNS/VCCI/CISPR-B 10m CBL6111C.2715.940924 HORIZONTAL
 EUT : ST585v6
 POWER : 230VAC
 MEMO : DC power supply: 22Vdc

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Remark	Table	Ant
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		Pos	Pos
									deg	cm
1 @	232.800	27.40	-9.60	37.00	38.33	10.59	1.83	23.35 Peak	---	---
2 @	256.000	22.44	-14.56	37.00	32.32	11.52	1.94	23.34 Peak	---	---
3 @	300.000	25.14	-11.86	37.00	32.86	13.36	2.20	23.28 Peak	---	---
4 @	332.800	31.62	-5.38	37.00	37.67	14.89	2.33	23.27 Peak	---	---
5 @	384.000	30.00	-7.00	37.00	33.49	17.29	2.47	23.25 Peak	---	---
6 @	400.000	25.93	-11.07	37.00	28.67	18.01	2.50	23.25 Peak	---	---
7 @	500.000	24.76	-12.24	37.00	27.67	17.48	2.90	23.29 Peak	---	---
8 @	512.000	33.56	-3.44	37.00	36.17	17.71	2.97	23.29 Peak	---	---
9 @	638.400	32.01	-4.99	37.00	32.33	19.38	3.53	23.23 Peak	---	---
10 @	766.400	29.54	-7.46	37.00	27.16	21.54	4.00	23.16 Peak	---	---



Site : OS02-LK
 Condition : CNS/VCCI/CISPR-B 10m CBL6111C.2715.940924 VERTICAL
 EUT : ST585v6
 POWER : 230VAC
 MEMO : DC power supply: 22Vdc

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp		Table	Ant
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	Remark	Pos	Pos
					dBuV	dB	dB		deg	cm
1 @	64.000	22.12	-7.88	30.00	38.54	6.27	1.00	23.69 Peak	---	---
2 @	125.000	24.77	-5.23	30.00	34.61	12.26	1.39	23.49 Peak	---	---
3 @	128.000	27.12	-2.88	30.00	36.70	12.47	1.44	23.49 QP	147	100
4 @	150.000	21.50	-8.50	30.00	35.72	7.75	1.49	23.46 Peak	---	---
5 @	160.000	19.99	-10.01	30.00	31.15	10.78	1.50	23.44 Peak	---	---
6 @	166.660	25.49	-4.51	30.00	36.99	10.40	1.53	23.43 QP	---	---
7 @	175.000	24.55	-5.45	30.00	36.42	9.97	1.57	23.41 Peak	---	---
8 @	200.000	26.64	-3.36	30.00	39.00	9.30	1.70	23.36 QP	---	---



Site : OS02-LK
 Condition : CNS/VCCI/CISPR-B 10m CBL6111C.2715.940924 VERTICAL
 EUT : ST585v6
 POWER : 230VAC
 MEMO : DC power supply: 22Vdc

	Freq	Level	Limit	Over Limit	ReadAntenna	Cable	Preamplifier	Remark	Table	Ant	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	Pos	Pos	
									deg	cm	
1 @	224.800	20.90	-9.10	30.00	32.17	10.28	1.80	23.35	Peak	---	---
2 @	232.800	33.57	-3.43	37.00	44.50	10.59	1.83	23.35	QP	---	---
3 @	256.000	27.61	-9.39	37.00	37.49	11.52	1.94	23.34	Peak	---	---
4 @	300.000	25.14	-11.86	37.00	32.86	13.36	2.20	23.28	Peak	---	---
5 @	333.330	28.50	-8.50	37.00	34.50	14.94	2.33	23.27	Peak	---	---
6 @	374.400	27.36	-9.64	37.00	31.33	16.84	2.45	23.26	Peak	---	---
7 @	384.000	29.33	-7.67	37.00	32.82	17.29	2.47	23.25	Peak	---	---
8 @	400.000	30.09	-6.91	37.00	32.83	18.01	2.50	23.25	Peak	---	---
9 @	500.000	27.09	-9.91	37.00	30.00	17.48	2.90	23.29	Peak	---	---
10 @	512.000	23.23	-13.77	37.00	25.84	17.71	2.97	23.29	Peak	---	---
11 @	638.400	32.51	-4.49	37.00	32.83	19.38	3.53	23.23	Peak	---	---
12 @	767.200	29.66	-7.34	37.00	27.25	21.57	4.00	23.16	Peak	---	---
13 @	894.400	31.81	-5.19	37.00	28.67	22.02	4.28	23.16	Peak	---	---

Test Engineer : Carr
 Carr Chuang

6.5 Detailed Test Set-up of the EUT.

- The photographs show the configuration that generates the maximum emission.

FRONT VIEW



REAR VIEW



Peripherals

- ADSL DSLAM (Alcatel 7300UD)
- PC1 with 10/100 Ethernet LAN port
- PC2 with 10/100 Ethernet LAN port
- PC3 with 802.11b/g WLAN port

Connection

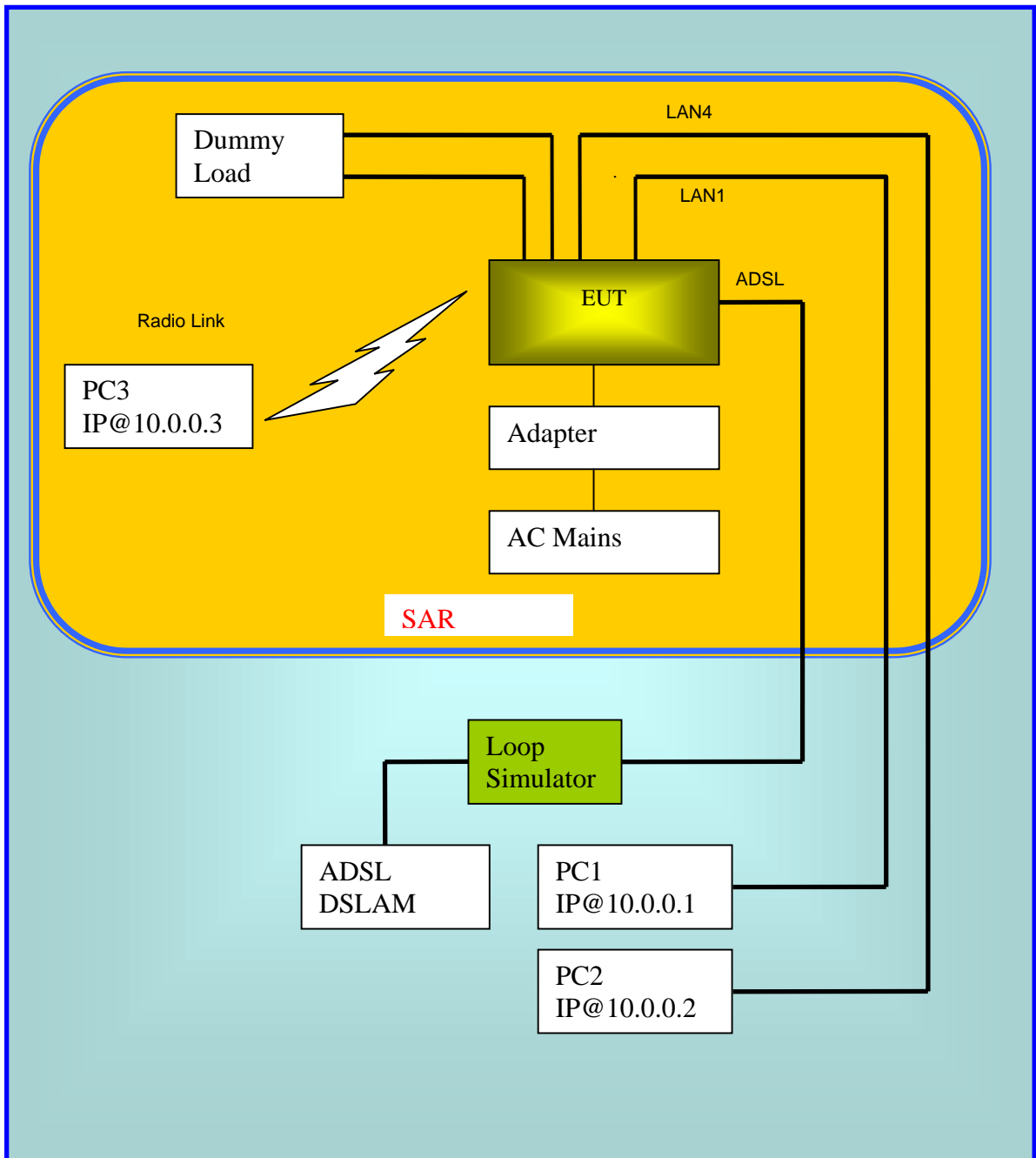
- The EUT was placed in the SAR.
- The ADSL DSLAM was connected to the ADSL port of the EUT.
- A loop simulator which was set to 3 kfeet was connected between the DSLAM and the ADSL port of the EUT.
- Two 13-meter long twisted-pair Cat-5 cables were connected to the LAN1 and LAN4 ports of the EUT.
- The LAN2 and LAN3 ports of the EUT were connected to a dummy load.
- One 13- meter long flat cable was connected to the ADSL port of the EUT.
- PC1 (IP@10.0.0.1) connected to the LAN1 port of the EUT.
- PC2 (IP@10.0.0.2) connected to the LAN4 port of the EUT.
- PC3 (IP@10.0.0.3) connected to the WLAN port of the EUT.

Testing was done with the interface ports set in the following modes:

AC	ADSL	Ethernet	Wireless
Power ON	ADSL2+ Annex A FAST mode	100 Mbps	54 Mbps

Operating procedures

- All interfaces were activated during testing and functions were maintained.
- Data traffic was sent from PC1 through the wireless connection and the Ethernet ports by means of sending continuous "PING" commands.



7. List of Measuring Equipment Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Oct. 19, 2005	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Apr. 26, 2005	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Apr. 20, 2005	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 22, 2005	Conduction (CO01-HY)
Open Area Test Site	SPORTON	OATS-10	OS02-LK	30 MHz - 1 GHz 10m, 3m	Aug. 27. 2005	Radiation (OS02-LK)
Amplifier	HP	87405A	3950M00135	10 MHz - 3 GHz	Jan. 24, 2006	Radiation (OS02-LK)
Spectrum Analyzer	HP	8560E	3728A03185	9 kHz - 2.9 GHz	Oct. 19, 2005	Radiation (OS02-LK)
Receiver	R&S	ESCS 30	847793/003	9 kHz - 2.75 GHz	Aug. 11, 2005	Radiation (OS02-LK)
Bilog Antenna	CHASE	CBL6111C	2715	30 MHz - 1 GHz	Sep. 24, 2005	Radiation (OS02-LK)
Turn Table	EMCO	2080	9711-1090	0 - 360 degree	N/A	Radiation (OS02-LK)
Antenna Mast	EMCO	2075	9711-2114	1 m - 4 m	N/A	Radiation (OS02-LK)
RF Cable-R10m	BELDEN	RG8/U	CB007	30 MHz - 1 GHz	Jan. 30, 2006	Radiation (OS02-LK)
RF Cable-R03m	BELDEN	RG8/U	CB008	30 MHz - 1 GHz	Jan. 30, 2006	Radiation (OS02-LK)

Calibration Interval of instruments listed above is one year.

8. Uncertainty of Test Site

Uncertainty of Conducted Emission Measurement

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

9. Certificate of NVLAP Accreditation

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:1999

NVLAP LAB CODE: 200079-0

Sporton International, Inc. Hwa Ya EMC Laboratory
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ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

2006-01-01 through 2006-12-31
Effective dates



H. P. Walsh
For the National Institute of Standards and Technology

NVLAP-01C (REV. 2005-05-19)