



EXHIBIT 2B

S12000 EMC Report

Applicant: Northern Telecom Ltd.

For Certification on:

AB6S12000



TEST REPORT

**CFR 47 Part 15
and CFR 47 Part 24**

S12000 outdoor equipped with HePA 1900MHz

N°149019DK

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EMC TEST REPORT
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Written by : D.RAUD

21 November 2002

Identification : 149019DK

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APPENDIXES C1 TO C13

Applicant:

SANMINA SCI
(Patrick GALOPIN)
46 Rue Pierre Curie
PLAISIR
78376
FRANCE

Product description

Product: S12000 outdoor equipped with HePA 1900MHz

Manufacturer :

NORTEL NETWORKS
38, rue Paul Cézanne
Guyancourt
78928 Yvelines

Responsible of the equipment: (Patrick GALOPIN)

Product type: BTS S12000 OUTDOOR 1900 MHz in S2222 configuration

Code article : S12KOW-3-BTS101; Prototype N°: 212391

Power supply: 208V/60Hz , tested at 208 V 60 Hz. biphas

PRODUCT PICTURE:

Cabinet
Front view



cabinet
rear view



PRODUCT COMPOSITION:

- References E - DRX GSM1900
 - NTQA88PA 03 NNTM7503EIPE
 - NTQA88PA 03 NNTM7503EMOQ
 - NTQA88PA 03 NNTM7503EIZ8
 - NTQA88PA 03 NNTM7503EMOR
 - NTQA88PA 03 NNTM7503EMN5
 - NTQA88PA 03 NNTM7503EMNC
 - NTQA88PA 01 NNTM7503BQMM
 - NTQA88PA 01 NNTM7503BQMN

- References HePA PCS 1900
 - NTQA50RA D1 FORM01334278
 - NTQA50RA D1 FORM01334273
 - NTQA50RA D1 FORM01334279
 - NTQA50RA D1 FORM01334281
 - NTQA50RA D1 FORM01334294
 - NTQA50RA D1 FORM01334277



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NTQA50RA D1 FORM01334288
NTQA50RA D1 FORM01334274

- SPL PCS

NTQA10AA 03 NNTMES001QQA
NTQA10AA 03 NNTMES001QR0
NTQA10AA 03 NNTMES001QR5
NTQA10AA 03 NNTMES001QR6

- References PCS COMBINER H2D

NTQA51AA 01 NNTM6100JTUY
NTQA51AA 01 NNTM6100LPDD
NTQA51AA 07 MTECO223B115
NTQA51AA 03 FORM01295152

- References CPCMI T1 PCBA

NTQA66AA 05 NNTMES00FWFA
NTQA66AA 05 NNTMES00FWFV
NTQA66AA 05 NNTMES00FWH9

- References CMCF PCBA PHASE 2

NTQA66CB 05 NNTMES00FZ1Y
NTQA66CB 05 NNTMES00FZ27

- References RECAL PCBA

NTQA66DA 02 NNTMES00GGJS

- References TYPE F PSU

NTQA57AA 03 ADPL09002RGV
NTQA57AA 03 ADPL09003P77

- Reference AC MAIN BOX EUROPE

NTQA90BE 03 SNMN75004PSW

- References RECTIFIER SHELF 7

NTU47001 P1 SNMN750087C5

- References Rectifier 600W

NTQA91AA 01 PITS01150819
NTQA91AA 03 PITS01Z04242
NTQA91AA 01 PITS01077037
NTQA91AA 01 PITS01077753

- References Rectifier 680W



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NTQA91AA PITS01L00003
NTQA91AA PITS01L00004
NTQA91AA PITS01L00005

- Reference DACS S12000
NTU440AA P1 SNMN750086T6
- Reference COMICO S12000 OUT
NTU464AA P1 SNMN750086SU
- Reference MOD: DRXICO-6 A
NTU461AA P1 SNMN750086SI
- Reference MOD: DRXICO-6 B
NTU462AA P1 SNMN750086SO
- Reference S12000 PAICO
SA000115 P1 SNMN750085UH
- Reference USER-ICO
NTQA3131 01 SNMN75006G6Q
- Reference BARE CABINET
SA000209 01 GRLL49009VGY



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UTILISATION:

Base Transceiver Station

General test conditions**AUXILIARY EQUIPMENT:**

Attenuators and 50 ohms load

WORKING MODE FOR EMISSION TEST

Measurements are done in transmitter mode (all transmitters at maximum power , in BCCH mode without frequency hopping), and in receiver mode

Channels configuration for the test:

DRX#	CHANNE L #	FREQUENCY (MHz)
0	512	1930.2
1	539	1935.6
2	593	1946.4
3	647	1957.2
4	701	1968.0
5	728	1973.4
6	782	1984.2
7	810	1989.8

Reference standards choice

The product is information technology equipment . The product standard CFR47 Part 15 has to be used for emission (class B because of residential, commercial and light industry use).

The product is a personal communication service equipment

So, applicable standards are:

CFR47 Part 15 class B (2002)

CFR47 part 24 "Subpart E" (2000)



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Interpretation and remarks:

This equipment conforms to limits standards for EMC measurements.

IMPORTANT REMARK :

Since no emissions were detected in the prescan measurement, substitution method was not performed on S12000 Outdoor (HePA)

The EUT Plot on page 20 shows measured noise floor levels detected while testing the S12000

Test according to CFR 47 Part 15 Class B

Tests performed by Daniel RAUD at GYL Technologies laboratories, in November, 6 to 8 of 2002.

REFERENCE DOCUMENTATION:

FCC CFR 47 part 15, (2002)
ANSI C63.4 (2001).

CONDUCTED DISTURBANCE AT INPUT POWER ACCESS :

General measurement conditions.

Conforms to ANSI C63.4.
Measurement done in free field

Limit :

Class B of FCC standard regulation CFR 47 part 15 subpart B for conducted emission limit (§15.107 class B device).

Method of measurement.

Method of measurement and test installation according to Section 7 of the ANSI C63.4 measurement standard.



Test equipment used :

APPARATUS	MANUFACTURER	REFERENCE	Identification	Date of verification
EMI test receiver	Rohde & Schwarz	ESI 7	M02020	Dec-01
LISN (50µH / 5/50ohms)	Rohde & Schwarz	ESH2-Z5	M02034	Jun-02

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Highest lines. (CYAN colour trace = Average; GREEN colour = Peak trace)

Live 1

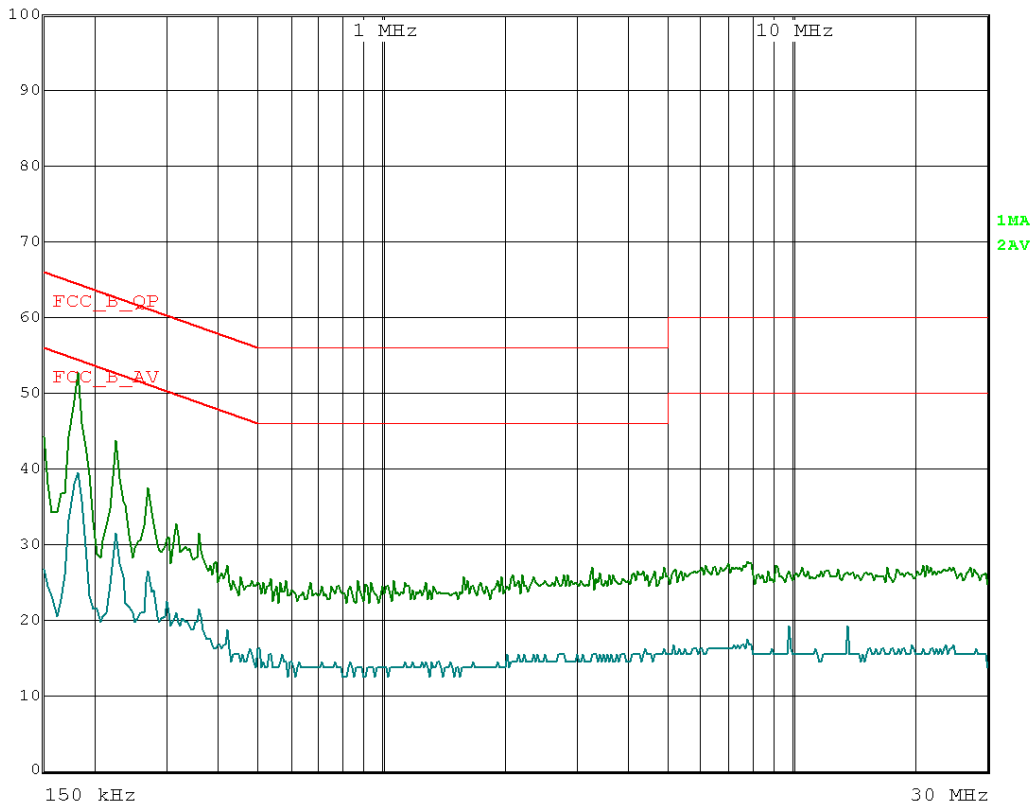
Frequency (MHz)	Quasi-peak (dBµV)	QP margin (dB)
0.150	38.1	-27.9
0.182	50.5	-13.9
0.226	41.8	-20.8
0.270	35.1	-26.0
3.258	17.4	-38.6
4.922	18.0	-38.0
17.190	18.0	-42.0
20.954	18.0	-42.0
21.354	18.5	-41.5

Frequency (MHz)	Average (dBµV)	AV. margin (dB)
0.182	38.7	-15.7
0.226	30.8	-21.8
0.270	25.6	-25.6
9.894	15.0	-35.0
13.722	16.3	-33.7



Att 30 dB
INPUT 2

Det QP Trd condsect
ResBW 9 kHz
Meas T 100 ms Unit dBµV



Date: 8.NOV.2002 11:49:28

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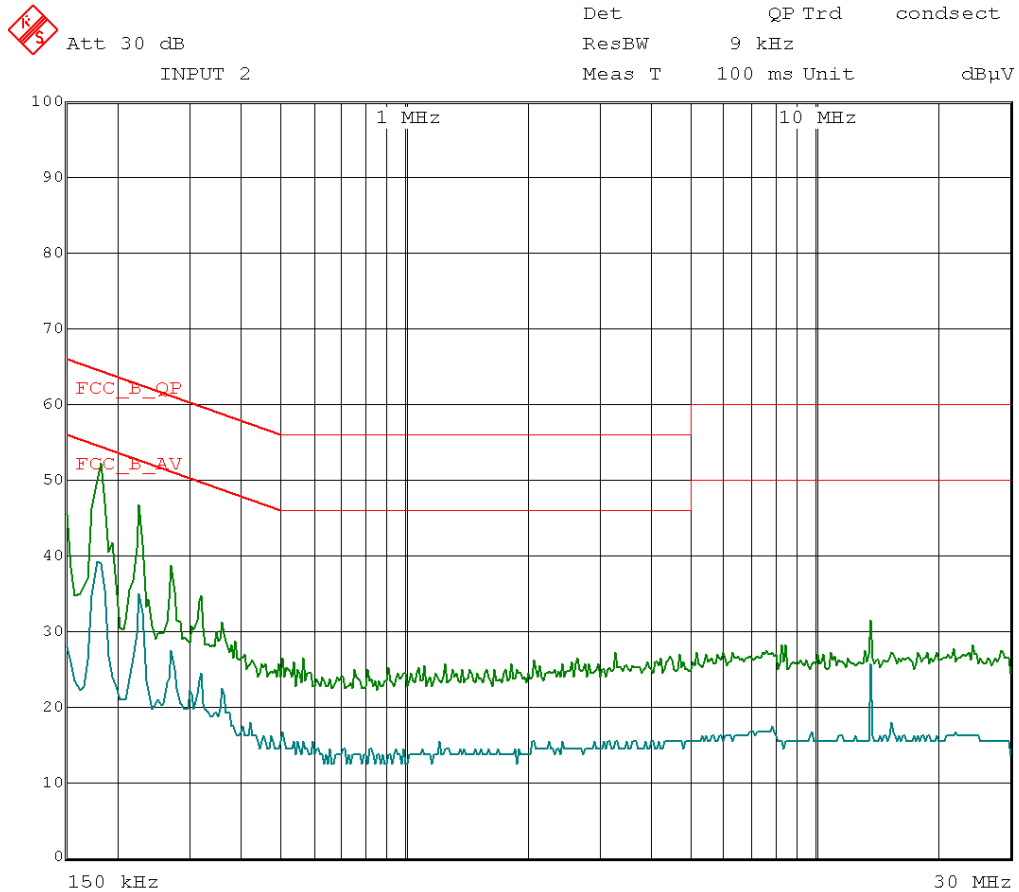
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Live 2

Frequency (MHz)	Quasi-peak (dBμV)	QP margin (dB)
0.150	41.0	-25.0
0.182	52.6	-11.8
0.226	43.5	-19.1
0.270	37.1	-24.0
0.318	30.6	-29.2
8.378	18.0	-42.0
8.486	18.0	-42.0
13.722	24.8	-35.2
22.026	18.0	-42.0

Frequency (MHz)	Average (dBμV)	AV. margin (dB)
0.178	40.7	-13.9
0.226	32.5	-20.1
0.270	27.1	-24.0
13.722	18.3	-31.7



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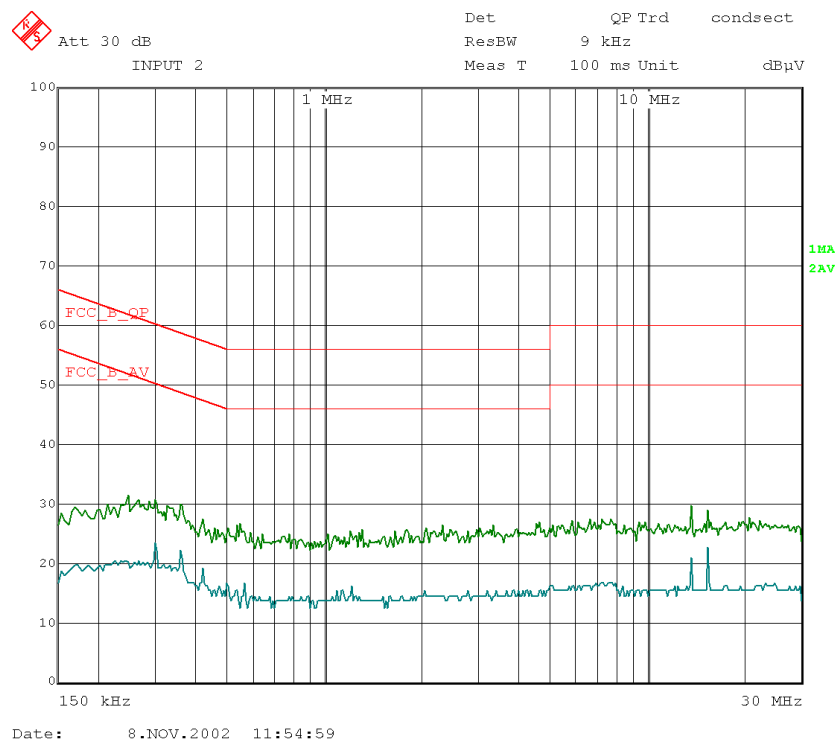
21 November 2002

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Neutral

Frequency (MHz)	Quasi-peak (dBµV)	QP margin (dB)
0.358	26.3	-32.5
4.634	18.5	-37.5
6.706	19.0	-41.0
9.470	18.0	-42.0
13.722	19.5	-40.5
15.486	24.8	-35.2
17.602	19.0	-41.0
20.842	19.0	-41.0
22.314	18.5	-41.5

Frequency (MHz)	Average (dBµV)	AV. margin (dB)
0.358	21.9	-26.9
13.722	16.6	-33.4
15.486	16.7	-33.3



INTERPRETATION AND REMARKS:

	Conform
	Conform but risk of exceeding the limit for an other serial product
	Not conform

RADIATED DISTURBANCE :

Limit :

Class B of FCC standard regulation CFR 47 part 15 subpart B for radiated emission limit (§15.109 class B device) for unintentional radiator

General measurement conditions.

Conforms to ANSI C63.4.

Diagram in 0° position, angles are positives in the reverse clock wise.

Equipment under test.

- Front view



- Rear view



Method of measurement.

Method of measurement and test installation according to Section 8 of the ANSI C63.4 measurement standard.

Measurement are done at 10m in a free area.

We try to obtain a maximum at all frequencies by moving the product orientation and antenna polarisation. The height of the antenna can vary from 1 m to 4 m.

Test equipment used :

APPARATUS	MANUFACTURER	REFERENCE	SERIAL NUMBER	Date of verification
Free field open area test site				Jul-02
Receiver	Rohde & Schwarz	ESI 7	834638/007	Dec-01
Bilog antenna	CHASE	CBL-6112	2434	Nov-01

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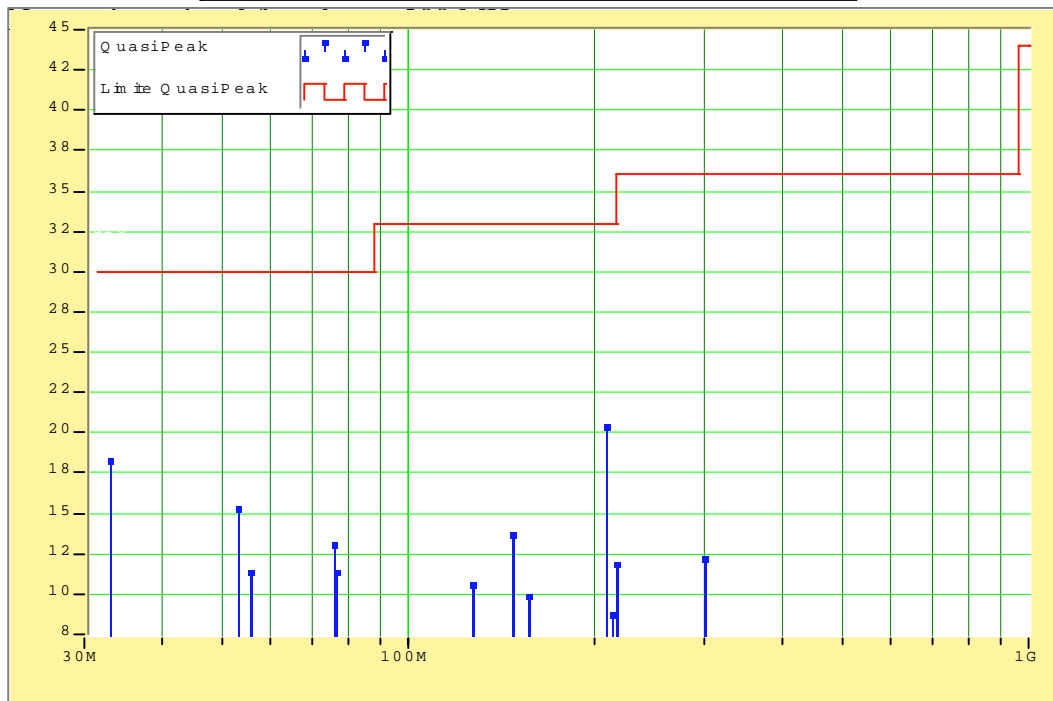
Identification : 149019DK

Results :

Highest lines table (spurious signals):

Frequency (MHz)	Quasi-peak (dB μ V/m)	Std limit (dB μ V/m)	Margin (dB)	Angle (Deg.)	hight (cm)	Polari-sation	Corr Fact.	Comment
33,028	18,35	30	-11,65	281	136	V	15,73	
53,292	15,37	30	-14,63	171	137	V	7,56	
55,559	11,30	30	-18,70	173	120	V	7,02	
75,654	13,14	30	-16,86	67	210	V	7,01	
76,433	11,32	30	-18,68	67	343	V	7,12	Broad band
126,972	10,64	33	-22,36	0	100	V	12,89	
147,465	13,76	33	-19,24	67	378	H	11,76	
155,671	9,81	33	-23,19	67	218	H	11,51	
207,999	20,39	33	-12,61	0	363	V	11,47	
212,989	8,76	33	-24,24	246	312	V	11,78	
217,097	11,86	36	-24,14	360	156	H	12,04	
300,000	13,14	36	-22,86	270	239	V	14,73	

Champ électrique (dB μ V/m) rayonné en fonction de la fréquence (Hz)



INTERPRETATION AND REMARKS:

Conform

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Measurement at transmitters frequencies (D=10m) for indicative level
transmitters output connected to resistive 50 ohms loads .

F (MHz)	Peak Level (dB μ V/m)	Antenna polarity	F (MHz)	Peak Level (dB μ V/m)	Antenna polarity
1930.2	29,08	V	1968.0	40,56	V
1935.6	27,34	V	1973.4	38,90	V
1946.4	44,38	V	1984.2	44,27	V
1957.2	34,15	V	1989.8	41,76	V

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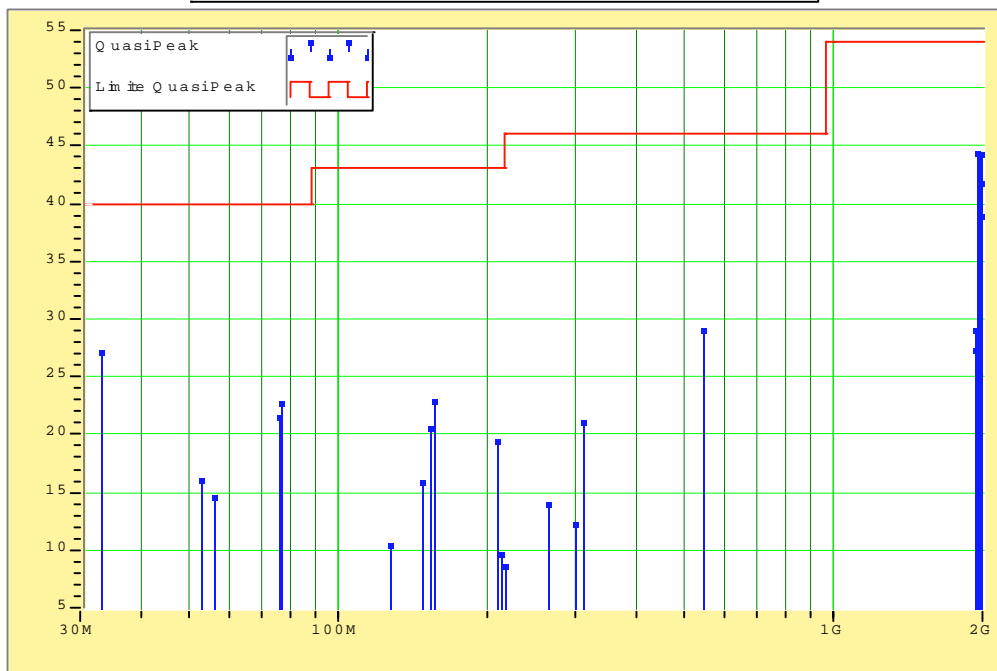
21 November 2002

Identification : 149019DK

Pre-Scan measurement to identify spurious emissions from EUT at D=3m:

F (MHz)	PK (dB μ V/m)	Marge (dB)	Pol	H(cm)	A(°)	FC(dB)	Comments
33,028	27,26	-12,74	V	100	0	15,73	
52,639	16,12	-23,88	V	115	361	7,72	Broad Band (BB)
55,750	14,59	-25,41	V	115	113	6,97	BB
75,656	21,62	-18,38	V	115	294	7,01	BB
76,433	22,73	-17,27	V	115	294	7,12	BB
126,972	10,51	-32,49	V	100	0	12,89	
147,463	15,99	-27,01	H	115	-2	11,76	
153,489	20,61	-22,39	H	115	165	11,53	
155,671	22,90	-20,10	H	115	95	11,51	
207,996	19,36	-23,64	V	100	0	11,47	
212,900	9,63	-33,37	V	100	0	11,78	
217,000	8,64	-37,36	V	100	0	12,03	
266,162	13,96	-32,04	H	115	361	14,28	BB
300,000	12,30	-33,70	V	100	-1	14,73	
312,012	21,12	-24,88	H	115	361	15,15	
543,335	29,03	-16,97	V	115	92	20,54	
1930,179	29,08	-24,92	V	100	0	5,69	Transmitter 1
1935,671	27,34	-26,66	V	100	0	5,70	Transmitter 2
1946,493	44,38	-9,62	V	100	0	5,71	Transmitter 3
1957,315	34,15	-19,85	V	100	0	5,73	Transmitter 4
1968,136	40,56	-13,44	V	100	0	5,75	Transmitter 5
1973,547	38,90	-15,10	V	100	0	5,76	Transmitter 6
1984,369	44,27	-9,73	V	100	0	5,77	Transmitter 7
1989,980	41,76	-12,24	V	100	0	5,78	Transmitter 8

Champ électrique (dB μ V/m) rayonné en fonction de la fréquence (Hz)



Test according to CFR 47 Part 24

Tests performed by Daniel RAUD at GYL Technologies laboratories, in November, 7 of 2002.

REFERENCE DOCUMENTATION:

CFR47 part 24 "Subpart E" (2000)
ANSI C63.4 (2001).

RADIATED DISTURBANCE :

General measurement conditions.

Conforms to Section 8 of the ANSI C63.4 measurement standard.
Diagram in 0° position, angles are positives in the reverse clock wise.

RADIATED DISTURBANCE :

General measurement conditions.

Conforms to Section 8 of the ANSI C63.4 measurement standard.
Equipment under test:



Method of measurement.

Method of measurement and test installation according ANSI C63.4.
Measurement are done at 1m in a free area.

We try to obtain a maximum at all frequencies by moving the product orientation and antenna polarisation. The height of the antenna can vary from 1 m to 4 m.

Measurements done in transmitter mode (all transmitters at maximum power 60 W, in BCCH mode without frequency hopping) and in receiver mode.

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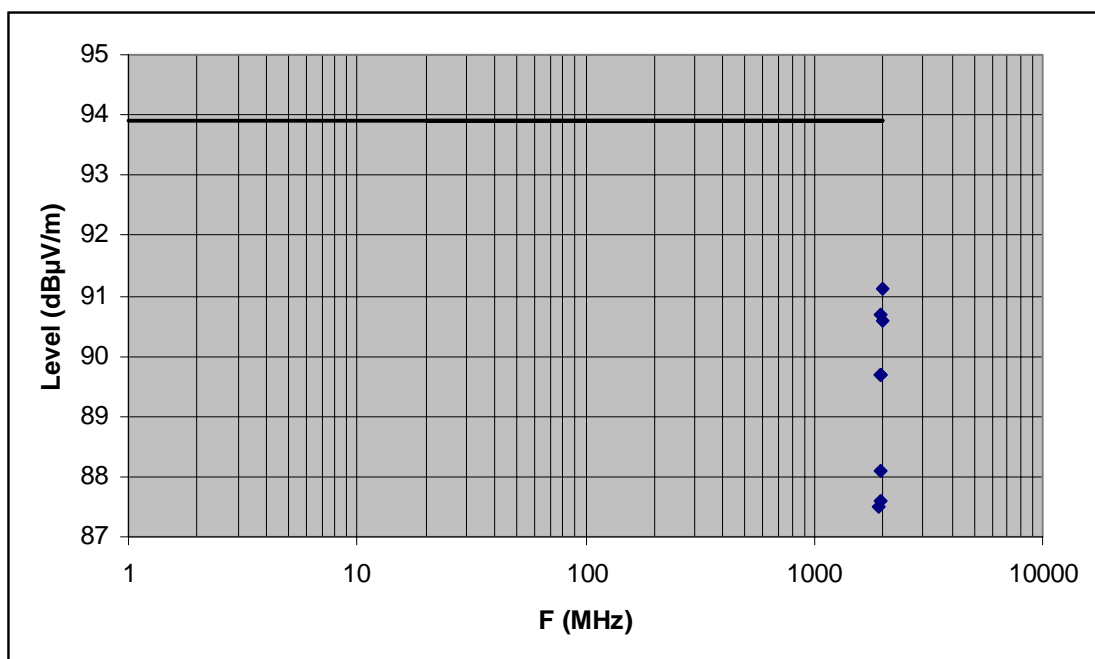
Test equipment used :

APPARATUS	MANUFACTURER	REFERENCE	SERIAL NUMBER	Date of verification
Free field open area test site				Jul-02
Horn antenna	EMCO	9504 - 4496	3115	Apr-01
Spectrum analyzer(20Hz-26.5GHz)	Rohde & Schwarz	FSEM30	107 985 00.30	Dec-01

Results :

1 - Measurement at transmitters frequencies for indicative level
transmitters output connected to resistive 50 ohms loads.

FREQUENCY (GHz)	Measure (dB μ V)	AF (A)	Loss cable (B)	Correc.Factor (A)+(B)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1						93.9	
1930.2	27.7	27.9	2	29.9	87.5	93.9	-6.4
1935.6	27.8	27.9	2	29.9	87.6	93.9	-6.3
1946.4	28.3	27.9	2	29.9	88.1	93.9	-5.8
1957.2	29.9	27.9	2	29.9	89.7	93.9	-4.2
1968	29.9	27.9	2	29.9	89.7	93.9	-4.2
1973.4	30.9	27.9	2	29.9	90.7	93.9	-3.2
1984.2	31.3	27.9	2	29.9	91.1	93.9	-2.8
1989.8	30.8	27.9	2	29.9	90.6	93.9	-3.3
20						93.9	



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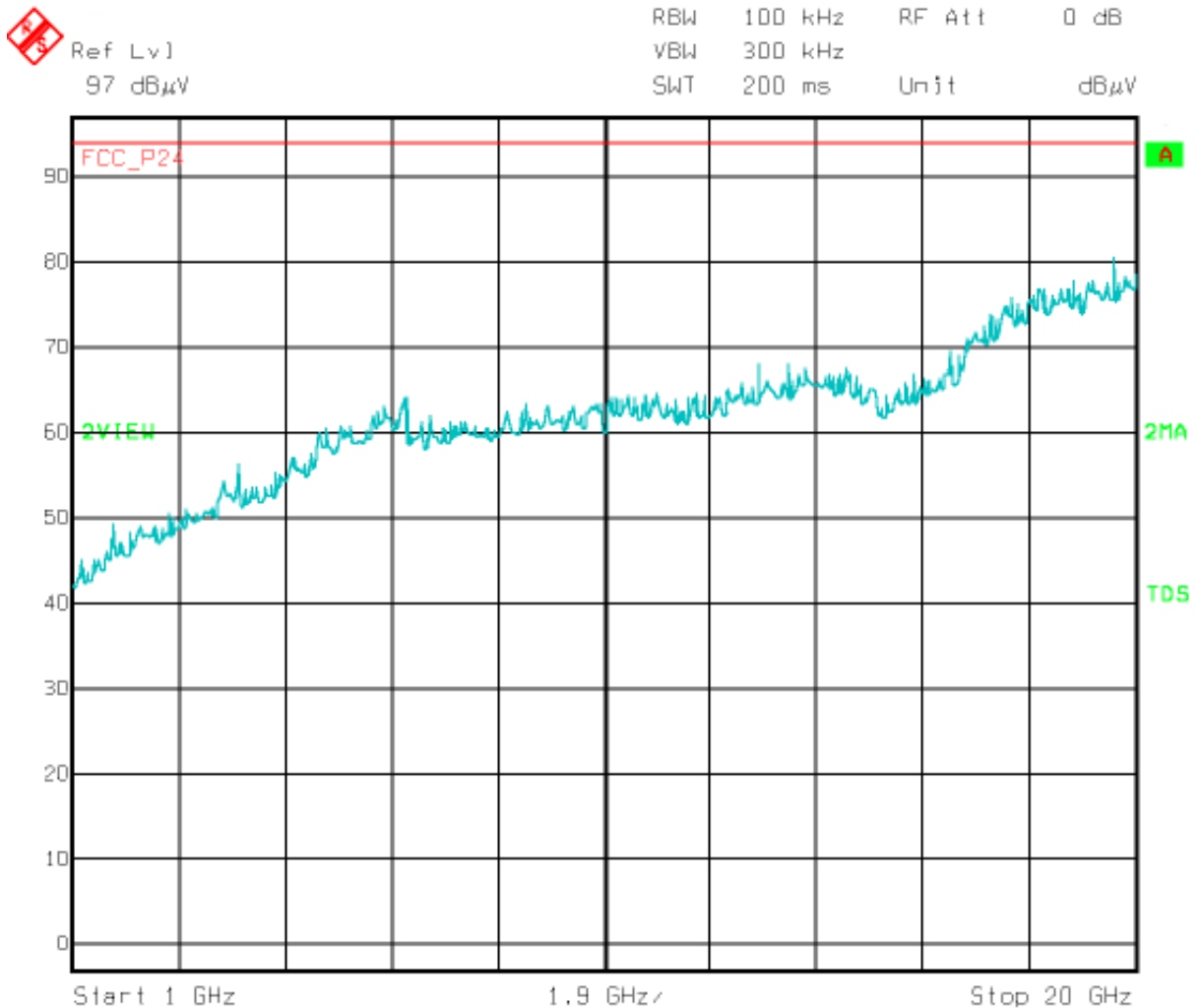
2 - Spurious emissions measurement.

No spurious emission found which level upper to noise level in 100KHz bandwidth (No harmonics of the transmitter's carrier frequencies were detected above the noise level).

INTERPRETATION AND REMARKS:

Conform

Spectrum of noise level from 1GHz to 20GHz including loss cable and antenna factors





SANMINA-SCI

EMC TEST PLAN for HePA OD 1900 MHz.

Reference: Nortel - STP - 00436

Version: 01 - en

Status: Approved

Date: 26/Sep/2002

Product Name: S8000 Indoor / Outdoor and S12000 Indoor / Outdoor

Frequency: PCS

Discipline: EMC

Author: P. GALOPIN

Verified by: T. LUCHINI

Approved by: C. CHANSARD

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PUBLICATION HISTORY

VERSION	DATE	AUTHOR	MODIFICATION
01 - en	26/09/02	P. GALOPIN	Creation of the document

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1. INTRODUCTION

1.1. OBJECT

This document presents the tests foreseen for the introduction of the HePA and a new H2D accepting a power until 60 W.

In order to qualify HePA and new H2D, EMC test must be performed. These new modules can be integrated in GSM 19000 BTS products (S8000 Indoor, S8000 Outdoor, S12000 Indoor and S12000 Outdoor BTS). Then, the base stations systems equipped with HePA must comply with the following standard :

- CRF 47 FCC part 15 Section 15.107 August 2002, Section 15.209 August 2002
- CFR 47 FCC part 24 Section 24.238 2000

This qualification will be realized on a **S12000 product**. The reason is that the number of PA is more important in this BTS than in S8000.

For the S8000 the number of HEPA is up to 6 for a maximum configuration, while in the S12000 the maximum configuration is up to 8.

So using a S12000 BTS fully equipped will cover S8000 products.

This qualification will be realized on an **Outdoor product**. The reason is that the outdoor products are powered in alternative current, and that the conducted emissions are applicable exclusively on the AC equipment.

Finally in order to cover the S8000 and S12000 products , we decide to realize the qualification on the S12000 Outdoor.

1.2. APPLICABILITY

Product	Applicability	Comment
S12000 Outdoor	FCC part 15 § 15.107 & 15.209 FCC part 24 § 24.238	Will be performed
S12000 Indoor	FCC part 15 & 15.209 FCC part 24 § 24.238	Will not be performed. No requirements for the conducted emissions . Conformity covered with tests performed on S12000 outdoor
S8000 Outdoor	FCC part 15 § 15.107 & 15.209 FCC part 24 § 24.238	Will not be performed. Conformity covered with tests performed on S12000 outdoor
S8000 Indoor	FCC part 15 & 15.209 FCC part 24 § 24.238	Will not be performed. No requirements for the conducted emissions . Conformity covered with tests performed on S12000 outdoor

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2. RELATED DOCUMENTS

2.1. APPLICABLES DOCUMENTS

- | | | |
|------|----------------|--|
| [A1] | CFR 47 Part 24 | Code of Federal Regulations - Part 24 PERSONAL COMMUNICATIONS SERVICES. Date : June 1996. |
| [A2] | CFR 47 Part 2 | Code of Federal Regulations - Part 2 - FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS. GENERAL RULES AND REGULATIONS Date : June 1996. |
| [A3] | CFR-47-Part15 | Code of federal Regulatory. Radio Frequency devices. |

2.2. REFERENCE DOCUMENTS

- | | | |
|------|-----------------|---|
| [R1] | PCS/BTS/DD/0101 | Technical specification for S8000 45W Edge / 60 W GSMK Power Amplifier. |
|------|-----------------|---|

3. TEST PLAN SUMMARY

Test	Required	Test specification	Reference Method
Radiated emissions	<input checked="" type="checkbox"/>	FCC part 15 sub Part 15 B Class B	section 15.109 (30 MHz to 10 GHz) H5
Conducted emissions on AC port AC – 60 Hz – 208 V	<input checked="" type="checkbox"/>	FCC part 15	Class B
Radiated emissions	<input checked="" type="checkbox"/>	FCC part 24 sub Part E	Section 24.238

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4. TEST PLAN

4.1. RADIATED EMISSIONS TESTS

Standard Coverage : FCC Part 15.109 & FCC Part 24.238

Intend :

- (a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonics and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of 2.989, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open filed measurements (e.g., a broadcast transmitter installed in a building) measurements will be acceptable of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from half-wave dipole antennas.
- (b) The measurements specified in paragraph (a) of this section shall be made for the following equipment :
 - (1) Those in which the spurious emission are required to be 60 dB or more below the mean power of the transmitter.
 - (2) All equipment operating on frequencies higher than 25 MHz.
 - (3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.
 - (4) Other types of equipment as required, when deemed necessary by the Commission.

Test Procedure :

Radiated emission measurement procedures shall be performed as outlined in Section 8 of the ANSI C63.4 measurement standard. The BTS will be tested to the applicable limits of the FCC rules. For radiated emission measurements the measurement distance between the center of the measurement antenna and the equipment under test shall be 3 meters (or less for frequencies above 1 GHz). In order to maximize all emission levels from the equipment, the emissions will be searched with the receive antenna at varied height levels. The equipment shall also be rotated a full 360 degrees on the turntable with the receive antenna at varying height levels (1 to 4 meters). Tests shall be made with the antenna positioned in both the horizontal and vertical planes of polarization. The BTS shall be placed on the turntable as per ANSI C63.4 measurement procedures. Please see the Part 15 test plan as Part 22 & 24 radiated requirements will be tested in conjunction with the Part 15 testing. The spectrum shall be searched to identify emissions. A complete scan of the applicable spectrum shall be completed (up to 10th harmonic of fundamental). The transmitter shall then be turned off, with the rest of the equipment powered on. A complete scan of the spectrum shall be done and referred to as "ambient" without the transmitter keyed on. Emissions emanating from the transmitter shall be identified from comparing these two scans. The identified emissions (from the transmitter) shall be measured and the levels recorded with the transmitter keyed on at full rated power output.

Important remark :

Substitution measurements must be made on all detected emissions given that the limits for the FCC are given in power measurements. If no emissions are detected, measurements should

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be made at the noise floor levels for each of the transmitter harmonic frequencies and a statement should be placed in the test report indicating that no emissions were detected.

The equipment was configured as shown in the next figure.

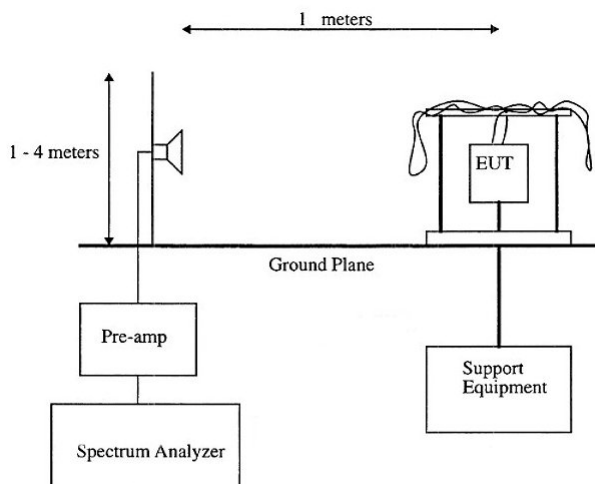


Figure 7 : Test configuration for Radiated Spurious emissions

The BTS was configured to transmit at maximum power (static level 0).
 Measurements were made according to the procedures outline in ANSI C63.4
 The emissions were investigated up to the tenth harmonic of the fundamental emission (20 GHz).
 The measured level of the emissions was recorded and compared to the limit.
 The reference level for spurious radiation was taken with reference to an ideal dipole antenna excited by the rated output power according to the following relationship :

$$E(V / m) = \frac{1}{R(m)} * \sqrt{30 * P_t * G}$$

Where,

- E = Field Strength in Volts/meter,
- R = Measurement distance in meters,
- P_t = Transmitter Rated Power in Watts (30 Watts),
- G = Gain of ideal Dipole (linear)

Therefore :

$$E(V / m) = \sqrt{30 * 60 * 1.64}$$

E = 54.33 V/m = 154.70 dBμV/m
 The spurious emissions must be attenuated by at least 43 + 10*Log(60) = 60.78 dB.
 Therefore the field strength limit at 1 meters is :
 E = 154.70 dBμV/m – 60.78 dB = 93.9 dBμV/m

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Spectrum Analyzer setting during measurements shall be as following :

Receiver Setting	Pre-Scan (to identify spurious emissions from EUT)	Final Measurements
Detector Type	Peak	Quasi-Peak (CISPR)
Mode	Max Hold	Not Applicable
Bandwidth	100 kHz or 1 MHz (for > 1GHz)	120 kHz*
Amplitude Range	60 dB	20 dB
Measurement Time	Not Applicable	> 1s
Observation Time	Not Applicable	> 15s
Step size	Continuous sweep	Not Applicable
Sweep Time	Coupled	Not Applicable
Measuring Distance	3m for 30 MHz - 1GHz 1m for 1GHz - 20GHz	10m for 30 MHz - 1GHz 1m for 1GHz - 20GHz

Pass / Fail criteria :

- For 30 MHz to 1 GHz :
Measurement distance : **10 m**
Limit : [30 MHz-88 MHz] **30 dB μ V/m**
 [88 MHz-216 MHz] **33.5 dB μ V/m**
 [216 MHz-960 MHz] **36 dB μ V/m**
 Above 960 MHz **43.5 dB μ V/m**
- For 1 GHz to 20 GHz :
Measurement distance : 1 m
Limit : **93.9 dB μ V/m**

S/W Configuration – Traffic data flow :

All transmitters in the EUT should be transmitting at full power.

The transmitters' operating frequencies should be selected by setting the Absolute Radio Frequency Channel Numbers (ARFCN) equally distributed over the BSS operating band, subject to any restrictions of the configuration of the EUT.

Transmit Power : All TX at 60 W

5. CONDUCTED EMISSIONS TESTS

Test case name : Conducted emissions AC

Standard Coverage : FCC Part 15.107 (0.150 MHz – 30 MHz)

Intend :

Measurement shall be made in the operational mode producing the largest emission in the frequency band being investigated consistent with normal applications.

Test procedure :

A measuring receiver shall be connected to each RSIL measurement port in turn and the conducted emission levels recorded. The RSIL measurement ports not being used for measurement shall be terminated with a 50 Ω (50 μ H) load.

Pass / Fail Criteria :

Limits for conducted emissions AC mode FCC Part 15 Subpart B (0.150 MHz – 30 MHz)

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

S/W Configuration – Traffic data flow :

All transmitters in the EUT should be transmitting at full power. The transmitters' operating frequencies should be selected by setting the Absolute Radio Frequency Channel Numbers (ARFCN) equally distributed over the BSS operating band, subject to any restrictions of the configuration of the EUT.

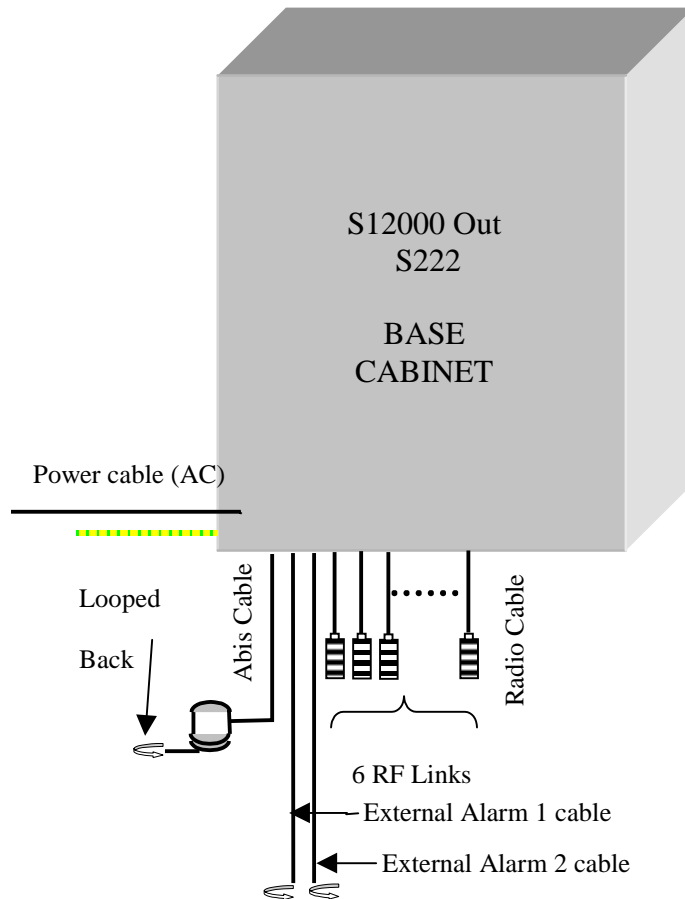
6. DOCUMENTATION DELIVERABLES

The report need to contain the minimum following information :

- all the information contained in this document, in order to identity precisely the configuration under test,
- photographs of the equipment under test (as many as different tests, showing open field test site...),
- any deviation from the test methods defined in the relevant standards,
- all calculation formula used during testing (for example, conversion for a test distance of 10m instead of field measurements),
- description of any modifications made to the EUT during testing which are required to acquire compliance,
- instrumentation and antennas calibration dates,
- for radiated and conducted emissions, a table giving the maximum emission levels in absolute and with respect to the limit (margin). Graphical presentation of the results (such as spectrum analyser plots) has to be incorporated.

6.1. INSTALLATION DIAGRAM

The drawing gives a representation of functional test bench.



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7. ABBREVIATIONS

BTS :	Base Transceiver Station
DC :	Direct Current
DCS :	Digital Cellular System
EMC :	Electromagnetic Compatibility
EN :	European Norm
ETS :	ETSI Standard
EUT :	Equipment Under Test
GSM :	Global System Mobile
IT :	Information Technology
N/A :	Not Applicable
RF :	Radio Frequency
TRX :	Transmitter/receiver

8. DEFINITIONS

FCC Part 2 - This part contains the Table of Frequency Allocations and special requirements in international regulations, recommendations, agreements, and treaties. This part also contains standards and procedures concerning the marketing and importation of radio frequency devices, and for obtaining equipment authorization.

FCC Part 15 - This part contains rules setting out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

FCC Part 24 - This part states the conditions under which portions of the radio spectrum are made available and licensed for PCS.

Effective Radiated Power (e.r.p.) (in a given direction) - The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

Equivalent Isotropically Radiated Power (e.i.r.p.) - The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Mean power (of a radio transmitter) - The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

∞END OF DOCUMENT∞

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