FCC CFR47 PART 22 SUBPART H PART 24 E
CLASS II PERMISSIVE CHANGE
CERTIFICATION TEST REPORT

FOR

GSM/GPRS Class 10/EDGE/HSDPA/HSUPA/WCDMA Module Installed In a LENOVO X300/ X301 Series ThinkPad Laptop

MODEL NUMBER: F3507g

FCC ID: VV7-MBMF3507G-L

REPORT NUMBER: 08U11753-1

ISSUE DATE: APRIL 17, 2008

Prepared for

ERICSSON AB
LINDHOLMSPIREN 11
SE-417 56 GOTHENBURG
SWEDEN

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	04/22/08	Initial Issue	T. Chan

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: ERICSSON AB
LINDHOLMSPIREN 11
SE-417 56 GOTHENBURG
SWEDEN

EUT DESCRIPTION: GSM/GPRS Class 10/EDGE/HSDPA/HSUPA/WCDMA Module Installed In a LENOVO X300/ X301 Series ThinkPad Laptop

MODEL: F3507g

SERIAL NUMBER: C37000069X

DATE TESTED: APRIL 16, 2008

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22 SUBPART H	No Non-Compliance Noted
FCC PART 24 SUBPART E	No Non-Compliance Noted

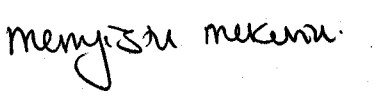
Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All expressions of Pass/Fail in this report are opinions expressed by CCS based on interpretations of the test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:



MEMGISTU MEMKURIA
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603C (2004), FCC CFR 47 Part 2, FCC CFR 47 Part 22H, 24E.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Radiated Emission, Above 2000 MHz	+/- 4.3 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/GPRS Class 10/EDGE/HSDPA/HSUPA/WCDMA Module installed in a LENOVO X300/ X301 Series ThinkPad Laptop.

5.2. DESCRIPTION OF CLASS II CHANGE

The change filed under this application is adding a LENOVO X300/ X301 Series ThinkPad Laptop with Nissei Electric Co. Ltd. Antennas.

5.3. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

GSM/GPRS/EGPRS

GPRS 824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 824.2	GPRS	32.5	1778.3	32.6	1819.7
Mid CH - 836.6		32.6	1819.7	32.7	1862.1
High CH - 848.8		32.6	1819.7	32.7	1862.1

GPRS 1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 1850.2	GPRS	30.3	1071.5	30.4	1086.4
Mid CH - 1880		30.3	1066.6	30.3	1078.9
High CH - 1909.8		30.4	1083.9	30.4	1099.0

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Planner Inverted F antenna manufactured by Nissei Electric Co., Ltd with maximum gain of -0.04 and 3.92dBi for cell and PCS band respectively.

5.5. SOFTWARE AND FIRMWARE

The EUT is linked with Communication Test Set.

5.6. WORST-CASE CONFIGURATION AND MODE

The following setting is used to configure the CMU200 to establish the link

Service selection ➔ Test Mode A – Auto Slot Config. ➔ off

Main Service ➔ Packet Data

Network Support ➔ GSM+GPRS

Slot Config ➔ 33 dBm for GSM850/EGSM900 and 30 dBm for GSM1800

27 dBm for GSM850 EPRS and 26 dBm for GSM1800 EGPRS

Conducted power:

Application	Rev, License
WCDMA Mobile Test	A.09.06

WCDMA

The following settings were used to configure the Radio Communication Tester, CMU200.

- Connection
  - Dedicated Chan (CS): RMC
  - Band Select:
    - Band V for US Cell Band
    - Band II for US PCS Band
    - Band I for 2100MHz band
- Network
  - Requested UE Data
    - Authentication: Off
    - Security: Off
    - IMEI: ON
    - RLC Reestablish: Off
- BS Signal
  - Node –B Setting
    - RF Channel Downlink
      - Band V: 4357 / 4407 / 4458
      - Band II: 9662 / 9800 / 9938
      - Band I: 10562 / 10700 / 10838
  - Circuit Switched

- RMC Setting
  - Reference Channel Type: 12.2Kbps
  - Test Mode: Loop Mode 1 RLC TM
  - Channel Data Source DTCH: All One
- Signaling RAB Setting
  - SRB Cell DCH: 13.6 Kbps

- HSDPA HS-DSCH
  - Fixed Reference Channel

H-Set Selection: H-Set 1 QPSK

- UE Signal
  - Analyzer Setting
    - RF Channel Uplink:
      - Band V: 4132 / 4182 / 4233
      - Band II: 9262 / 9400 / 9538
      - Band I; 9612 / 9750 / 9888

    - UE power Control
      - Max Allowed UE Power: 25

GSM Mode

- To reset the Agilent 8960 to default all values > Shift & Preset
- To adjust Input/Output offset, press SYSTEM CONFIG button above the control knob

  > RF IN/OUT Amptd Offset

  > RF IN/OUT Amptd Offset Setup

  > Enter frequencies to be tested and corresponding offsets (enter negative values for offset, i.e.-35 is greater than -30).

Control

- Operating Mode > Active Cell (GSM)
- Connection Type > Auto (For Voice Mode)

Call Parms

- BCH Parameters > Cell Power > adjust to (~ -50dBm) to maintain strong link OTA

  > Cell Band > PCS or GSM850 (US band)

- TCH Parameters > Timeslot >1

  > Traffic Channel > PCS Channel 512 / 661 / 810

  > GSM850 Channel 128 / 190 / 251

  > MS TX Level > 1 (for both PCS or GSM850)

  > Timeslot > 1

  > Speech Setup > Speech Source > Echo (Default)
- Press “Originate Call”

GPRS Mode

- To reset the Agilent 8960 to default all values > Shift & Preset
- To adjust Input/Output offset, press SYSTEM CONFIG button above the control knob

  > RF IN/OUT Amptd Offset

  > RF IN/OUT Amptd Offset Setup

  > Enter frequencies to be tested and corresponding offsets (enter negative values for offset, i.e.-35 is greater than -30).

Control

· Operating Mode > Active Cell (GPRS)

· Connection Type > ETSI Type A (For Data Mode)

Call Parms

· BCH Parameters > Cell Power > adjust to (~ -50dBm) to maintain strong link OTA
> Cell Band > PCS or GSM850 (US band)

· TCH Parameters > Traffic Channel > PCS Channel 512 / 661 / 810
> GSM850 Channel 128 / 190 / 251

> MS TX Level > 3 (33dBm for Cell band); 3 (30dBm for PCS band)

· PDTCH > Multislot Config > 1 Down, 2 Up

> MS TX Level > 5 (33dBm Cell band); 1 (30dBm PCS band)

> Coding Scheme > CS-4

· After the 8960 attaches to the EUT, then press “Start Data Connection”

EGPRS Mode

· To reset the Agilent 8960 to default all values > Shift & Preset

· To adjust Input/Output offset, press SYSTEM CONFIG button above the control knob
> RF IN/OUT Amptd Offset
> RF IN/OUT Amptd Offset Setup
> Enter frequencies to be tested and corresponding offsets (enter negative values for offset, i.e.-35 is greater than -30).

Control

· Operating Mode > Active Cell (EGPRS)

· Connection Type > ETSI Type A (For Data Mode)

Call Parms

· BCH Parameters > Cell Power > adjust to (~ -50dBm) to maintain strong link OTA
> Cell Band > PCS or GSM850 (US band)

· TCH Parameters > Traffic Band > PCS Channel 512 / 661 / 810
> GSM850 Channel 128 / 190 / 251

> MS TX Level > 6 (27 dBm Cell band); 5 (26 dBm PCS band)

· PDTCH > Multislot Config > 1 Down, 2 Up

> MS TX Level > 6 (27dBm Cell band); 5 (26dBm PCS band)

> Modulation Coding Scheme
> Uplink Modulation Coding Scheme > MCS 9

· After the 8960 attaches to the EUT, then press “Start Data Connection”

Based on the above results from the different modulations, GPRS is the worst-case scenario for all measurements.

The worst-case channel is determined as the channel with the highest output power. The highest measured output power was at mid channel for Cell and PCS bands.

GSM/GPRS

GPRS 824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 824.2	GPRS	32.5	1778.3	32.6	1819.7
Mid CH - 836.6		32.6	1819.7	32.7	1862.1
High CH - 848.8		32.6	1819.7	32.7	1862.1

GPRS 1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 1850.2	GPRS	30.3	1071.5	30.4	1086.4
Mid CH - 1880		30.3	1066.6	30.3	1078.9
High CH - 1909.8		30.4	1083.9	30.4	1099.0

GSM/EGPRS

GPRS 824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 824.2	EGPRS	27.4	549.5	30.4	1096.5
Mid CH - 836.6		27.7	588.8	30.2	1047.1
High CH - 848.8		27.2	524.8	30.2	1047.1

GPRS 1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 1850.2	EGPRS	26.2	416.9	29.9	977.2
Mid CH - 1880		26.2	416.9	30.3	1078.9
High CH - 1909.8		26.2	416.9	29.9	977.2

WCDMA

WCDMA 824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 826.4	WCDMA	22.85	192.75	25.75	375.84
Mid CH - 836.4		23.49	223.36	26.37	433.51
High CH - 846.6		23.10	204.17	26.00	398.11

WCDMA 1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
Low CH - 1852.4	WCDMA	23.52	224.91	26.48	444.63
Mid CH - 1880		23.59	228.56	26.52	448.75
High CH - 1907.6		23.43	220.29	26.24	420.73

WCDMA_HSDPA

WCDMA+HSDPA 824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
SUB TEST 1					
Low CH - 826.4	WCDMA+HSDPA	23.40	218.78	26.25	421.70
Mid CH - 836.4		23.62	230.14	26.50	446.68
High CH - 846.6		23.52	224.91	26.28	424.62
SUB TEST 2					
Low CH - 826.4	WCDMA+HSDPA	22.22	166.72	25.74	374.97
Mid CH - 836.4		22.52	178.65	26.06	403.65
High CH - 846.6		22.36	172.19	25.92	390.84
SUB TEST 3					
Low CH - 826.4	WCDMA+HSDPA	22.21	166.34	25.92	390.84
Mid CH - 836.4		22.50	177.83	26.14	411.15
High CH - 846.6		22.29	169.43	26.01	399.02
SUB TEST 4					
Low CH - 826.4	WCDMA+HSDPA	21.29	134.59	25.30	338.84
Mid CH - 836.4		21.41	138.36	25.88	387.26
High CH - 846.6		21.24	133.05	25.55	358.92

WCDMA+HSDPA 1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
SUB TEST 1					
Low CH - 1852.4	WCDMA+HSDPA	23.80	239.88	26.70	467.74
Mid CH - 1880		23.80	239.88	26.72	469.89
High CH - 1907.6		23.70	234.42	26.30	426.58
SUB TEST 2					
Low CH - 1852.4	WCDMA+HSDPA	22.74	187.93	26.25	421.70
Mid CH - 1880		22.76	188.80	26.35	431.52
High CH - 1907.6		22.73	187.50	26.20	416.87
SUB TEST 3					
Low CH - 1852.4	WCDMA+HSDPA	22.76	188.80	26.54	450.82
Mid CH - 1880		22.70	186.21	26.50	446.68
High CH - 1907.6		22.72	187.07	26.48	444.63
SUB TEST 4					
Low CH - 1852.4	WCDMA+HSDPA	21.67	146.89	26.09	406.44
Mid CH - 1880		21.56	143.22	25.98	396.28
High CH - 1907.6		21.70	147.91	25.90	389.05

WCDMA+HSUPA

WCDMA+HSUPA 824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
SUB TEST 1					
Low CH - 826.4	WCDMA+HSUPA	23.20	208.93	26.21	417.83
Mid CH - 836.4		23.60	229.09	26.48	444.63
High CH - 846.6		23.45	221.31	26.12	409.26
SUB TEST 2					
Low CH - 826.4	WCDMA+HSUPA	23.33	215.28	26.24	420.73
Mid CH - 836.4		23.62	230.14	26.46	442.59
High CH - 846.6		23.37	217.27	26.18	414.95
SUB TEST 3					
Low CH - 826.4	WCDMA+HSUPA	23.21	209.41	26.20	416.87
Mid CH - 836.4		23.63	230.67	26.49	445.66
High CH - 846.6		23.39	218.27	26.18	414.95
SUB TEST 4					
Low CH - 826.4	WCDMA+HSUPA	23.38	217.77	26.10	407.38
Mid CH - 836.4		23.60	229.09	26.51	447.71
High CH - 846.6		23.24	210.86	26.18	414.95
SUB TEST 5					
Low CH - 826.4	WCDMA+HSUPA	23.34	215.77	26.20	416.87
Mid CH - 836.4		23.69	233.88	26.52	448.75
High CH - 846.6		23.56	226.99	26.23	419.76

WCDMA+HSUPA 1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Average Power (dBm)	Conducted Average Power (mW)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)
SUB TEST 1					
Low CH - 1852.4	WCDMA+HSUPA	23.83	241.55	27.00	501.19
Mid CH - 1880		23.85	242.66	27.00	501.19
High CH - 1907.6		23.81	240.44	26.75	473.15
SUB TEST 2					
Low CH - 1852.4	WCDMA+HSUPA	23.82	240.99	26.90	489.78
Mid CH - 1880		23.79	239.33	26.85	484.17
High CH - 1907.6		23.72	235.50	26.65	462.38
SUB TEST 3					
Low CH - 1852.4	WCDMA+HSUPA	23.83	241.55	26.89	488.65
Mid CH - 1880		23.85	242.66	26.86	485.29
High CH - 1907.6		23.79	239.33	26.66	463.45
SUB TEST 4					
Low CH - 1852.4	WCDMA+HSUPA	23.81	240.44	26.89	488.65
Mid CH - 1880		23.81	240.44	26.87	486.41
High CH - 1907.6		23.71	234.96	26.50	446.68
SUB TEST 5					
Low CH - 1852.4	WCDMA+HSUPA	23.80	239.88	26.82	480.84
Mid CH - 1880		23.76	237.68	26.70	467.74
High CH - 1907.6		23.70	234.42	26.33	429.54

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	Lenovo	92P1156	11S92P1156Z1ZDXN81NGES	DoC
Laptop	Lenovo	X300 Series	ZZJ2110	DoC
Communications Test	R & S	CMU200	106291	NA
Horn 1-18GHz	EMCO	3115	NA	NA

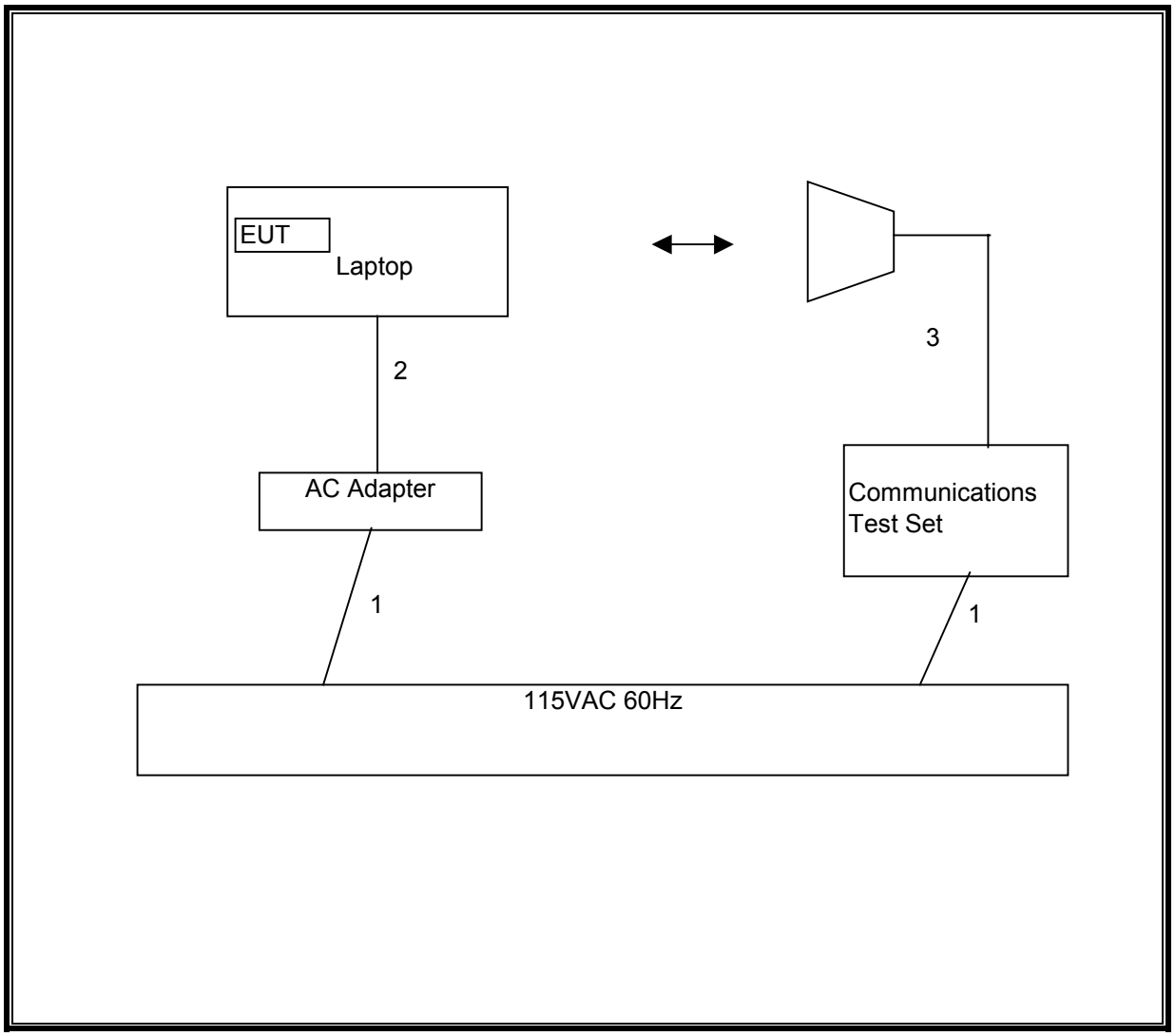
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identica Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	2	115VAC	Un-shielded	1m	NA
2	DC	1	DC	Un-shielded	2m	NA
3	RF IN/OUT	1	Horn Antenna	Un-shielded	2m	NA

TEST SETUP

The EUT is installed in a Laptop Host during the tests. Communication test set exercised the EUT.

SETUP DIAGRAM FOR TESTS



5.8. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	9/27/2008
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	9/29/08
Horn 1-18GHz	EMCO	3115	C00945	04/22/09
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	8/7/08
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689`	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Horn	EMCO	3115	C00872	05/15/08
Dipole	Speag	D900V2	NA	11/16/08
Signal Generator	R & S	SMP04	C00953	02/16/09
Communication Test Set	R & S	CMU200	C001131	4/16/09
Communications Test Set	Agilent / HP	E5515C	C01086	06/29/08

5.8.1. OUTPUT POWER

LIMITS

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(b) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17

RESULTS

No non-compliance noted

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low CH - 824.2	GPRS	30.7	1174.9
Mid CH - 836.5		31.7	1479.1
High CH - 848.8		29.9	977.2

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low CH - 1850	GPRS	31.2	1318.3
Mid CH - 1880		32.1	1621.8
High CH - 1909		31.9	1548.8

GSM, GPRS Output Power (ERP)

High Frequency Substitution Measurement
Compliance Certification Services, Fremont 5m Chamber

Company: ERICSSON AB
Project #: 08U11753
Date: 4/16/2008
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE (X300 SERIES)
Mode: TX, CELL GPRS MODE

Test Equipment:
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081003

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	103.6	V	31.2	0.5	0.0	30.7	38.5	-7.7	
824.20	104.8	H	29.9	0.5	0.0	29.4	38.5	-9.1	
836.50	103.5	V	32.3	0.6	0.0	31.7	38.5	-6.8	
836.50	104.4	H	30.2	0.6	0.0	29.6	38.5	-8.8	
848.80	101.8	V	30.3	0.7	0.0	29.6	38.5	-8.8	
848.80	104.7	H	30.6	0.7	0.0	29.9	38.5	-8.5	

Rev. 1.24.7

GSM, GPRS Output Power (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services, Fremont 5m Chamber Site

Company: ERICSSON AB
Project #: 08U11753
Date: 4/16/2008
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE (X300 SERIES)
Mode: TX, PCS GPRS MODE

Test Equipment:
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT) Thanh Cable
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002, Thanh cable

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1.850	91.9	V	19.7	0.9	8.3	27.1	33.0	-5.9	
1.850	97.1	H	23.8	0.9	8.3	31.2	33.0	-1.8	
Mid Ch									
1.880	91.7	V	19.6	0.9	8.3	27.0	33.0	-6.0	
1.880	97.3	H	24.7	0.9	8.3	32.1	33.0	-0.9	
High Ch									
1.909	92.4	V	20.1	0.9	8.4	27.6	33.0	-5.4	
1.909	96.6	H	24.4	0.9	8.4	31.9	33.0	-1.1	

Rev. 1.24.7

5.8.2. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (e) and §24.238(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

§24.238 (a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b), FCC 24.238 (b

RESULTS

GSM, GPRS Spurious & Harmonic (ERP)

High Frequency Substitution Measurement
Compliance Certification Services, Fremont 5m B-Chamber

Company: ERICSSON AB
Project #: 08U11753
Date: 4/16/2008
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE (X300 SERIES)
Mode: TX, CELL GPRS MODE

Test Equipment:

EMCO Horn 1-18GHz: T73; S/N: 6717 @3m
Horn > 18GHz:
Limit: FCC 22
High Pass Filter: ☑
Hi Frequency Cables: ☐ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)
Pre-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch. (824.2 MHz)										
1.648	61.9	H	-45.1	3.8	8.0	5.8	-43.1	-13.0	-30.1	
2.473	60.2	H	-43.2	4.9	9.5	7.4	-40.7	-13.0	-27.7	
1.648	59.0	V	-48.7	3.8	8.0	5.8	-46.7	-13.0	-33.7	
2.473	58.6	V	-45.0	4.9	9.5	7.4	-42.5	-13.0	-29.5	
Mid Ch. (836.6 MHz)										
1.673	56.7	H	-50.2	3.9	8.0	5.9	-48.2	-13.0	-35.2	
2.510	60.6	H	-42.6	4.9	9.6	7.4	-40.1	-13.0	-27.1	
1.673	59.8	V	-47.7	3.9	8.0	5.9	-45.7	-13.0	-32.7	
2.510	59.7	V	-43.8	4.9	9.6	7.4	-41.3	-13.0	-28.3	
Hi Ch. (848.8 MHz)										
1.698	55.1	H	-51.7	3.9	8.1	5.9	-49.6	-13.0	-36.6	
2.546	61.3	H	-41.8	4.9	9.6	7.4	-39.3	-13.0	-26.3	
1.698	58.5	V	-48.9	3.9	8.1	5.9	-46.9	-13.0	-33.9	
2.546	61.4	V	-41.9	4.9	9.6	7.4	-39.4	-13.0	-26.4	
1.740	54.1	H	-52.4	4.0	8.2	6.0	-50.3	-13.0	-37.3	
1.957	83.7	H	-21.7	4.2	8.7	6.6	-19.4	-13.0	-6.4	
1.740	48.7	V	-58.6	4.0	8.2	6.0	-56.5	-13.0	-43.5	
1.957	74.0	V	-32.1	4.2	8.7	6.6	-29.8	-13.0	-16.8	

Rev. 4.12.7

GSM, GPRS Spurious & Harmonic (EIRP)

High Frequency Substitution Measurement
Compliance Certification Services, Fremont 5m B-Chamber

Company: ERICSSON AB
Project #: 08U11753
Date: 4/16/2008
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE (X300 SERIES)
Mode: TX, CELL PCS MODE

Test Equipment:

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Horn > 18GHz:
Limit: FCC 24
High Pass Filter: ☑
Hi Frequency Cables: ☐ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)
Pre-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch. (1850.2 MHz)										
3.700	43.8	H	-53.6	5.9	9.7	7.6	-49.8	-13.0	-36.8	
5.551	41.4	H	-49.9	7.4	11.3	9.1	-46.0	-13.0	-33.0	
3.700	43.3	V	-54.1	5.9	9.7	7.6	-50.4	-13.0	-37.4	
5.551	44.0	V	-48.3	7.4	11.3	9.1	-44.4	-13.0	-31.4	
Mid Ch. (1880.0 MHz)										
3.760	45.3	H	-51.8	6.0	9.7	7.6	-48.0	-13.0	-35.0	
5.640	42.6	H	-49.0	7.4	11.5	9.3	-44.9	-13.0	-31.9	
3.760	43.2	V	-53.9	6.0	9.7	7.6	-50.2	-13.0	-37.2	
5.640	44.1	V	-48.5	7.4	11.5	9.3	-44.4	-13.0	-31.4	
Hi Ch. (1909.8 MHz)										
3.820	43.2	H	-53.5	6.0	9.7	7.5	-49.8	-13.0	-36.8	
5.729	42.0	H	-49.8	7.5	11.7	9.5	-45.6	-13.0	-32.6	
3.820	42.5	V	-54.3	6.0	9.7	7.5	-50.7	-13.0	-37.7	
5.729	45.0	V	-47.7	7.5	11.7	9.5	-43.6	-13.0	-30.6	

Rev. 4.12.7