

Test report no. : 104353-14

Item tested : DH3

Type of equipment : UPCS Handset

FCC ID : BXZDH3

Client : Ascom Sweden AB

Parts of FCC Part 15, subpart D

Isochronous UPCS Device
1920 - 1930 MHz

Parts of Industry Canada RSS-213, Issue 2

2 GHz Licence-exempt Personal
Communications Service Devices
(LE-PCS)

30 May 2008

Authorized by : 

Egil Hauger
Technical Verificator

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1 GENERAL INFORMATION

1.1 Testhouse Info

Name : Nemko AS
Address : Nemko Comlab
Gåsevikveien 8, Box 96
N-2027 Kjeller, NORWAY
Telephone : +47 64 84 57 00
Fax : +47 64 84 57 05
E-mail: comlab@nemko.com
FCC test firm
registration # : 994405
IC OATS
registration # : 2040D-1
Total Number
of Pages: 14

1.2 Client Information

Name : Ascom Sweden AB
Address : P.O. Box 8783, SE-402 76 Gothenburg, Sweden
Telephone : +46 31 559 432

Contact:

Name : Tania Ottebrink
Telephone : +46 31 559 432
E-mail : Tania.ottebrink@ascom.se

1.3 Manufacturer (if other than client)

Name : /
Address : /
Telephone : /
E-mail : /

2 Test Information

2.1 Tested Item

Name :	ASCOM
FCC ID :	BXZDH3
Industry Canada ID :	3724B-DH3
Model/version :	DH3
Serial number :	T26103JL7 (DUT #13)
Hardware identity and/or version:	PB1
Software identity and/or version :	2.4.2
Frequency Range :	1921.536 – 1928.448 MHz
Number of Channels :	5 RF Channels, 5x12 = 60 TDMA Duplex Channels
Type of Modulation :	Digital (GFSK)
User Frequency Adjustment :	None
Rated Output Power :	85 mW Peak Power, 4 mW Time Averaged Power
Type of Power Supply :	Secondary Battery (3.7 V Li-Ion battery)
Antenna Connector :	None
Antenna Diversity Supported :	Yes
Number of Antennas :	2
Desktop Charger :	DC3

Description of Tested Device(s)

The tested equipment is a DECT handset which complies with ETSI EN 300 175. The frequencies have been reprogrammed, the output power reduced and the software updated to comply with the FCC requirements to an Isochronous UPCS device after FCC Part 15D.

The EUT is an initiating device as described in ANSI C63.17 and is designed to operate together with a DECT fixed part (i.e. a base station), which is then the responding device.

Exposure Evaluation

The EUT is a portable device and is designed to be held to ear or worn in a belt clip when used. A test reports with the measured SAR values for both configurations are submitted with the application. The SAR values are also included in the user manual.

The EUT is exempted from RF Exposure Evaluation to Industry Canada SAR requirements since the output power is below the limit in RSS-102 Issue 2, clause 2.5.1 for General Public Use.

2.2 Test Environment

Temperature:	22 – 24 °C
Relative humidity:	30 – 40 %
Normal test voltage:	3.7 V DC

The values are the limit registered during the test period.

2.3 Test Period

Item received date:	2008-04-28
Test period :	from 2008-04-28 to 2008-05-16

2.4 Test Engineer(s)

Frode Sveinsen

2.5 Test Equipment

See list of test equipment in clause 6.

2.6 Other Comments

The radio part of this model is identical to the model DH4 (FCC ID: BXZDH4) except for the Antennas, and that the DH3 does NOT have Bluetooth module.

This test report covers only Antenna Gain and Output Power, all other parameters for DH3 are covered by the test report for DH4 (FCC ID: BXZDH4).

3 TEST REPORT SUMMARY

3.1 General

Manufacturer: Ascom Sweden AB
Model No.: DH3
Serial No.: /

All measurements are traceable to national standards.

The tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC CFR47 Part 15D for Isochronous UPCS Devices and Industry Canada RSS-213 Issue 2.

The conducted test methods have been in accordance with ANSI C63.17-2006 where applicable.

Radiated tests were conducted in accordance with ANSI C63.4-2003. Radiated emissions are made in a 10m semi-anechoic chamber. A description of the test facility is on file with the FCC and Industry Canada.

- | | |
|---|---|
| <input checked="" type="checkbox"/> New Submission | <input checked="" type="checkbox"/> Production Unit |
| <input type="checkbox"/> Class II Permissive Change | <input type="checkbox"/> Pre-production Unit |
| PUE Equipment Code | <input type="checkbox"/> Family Listing |

THIS TEST REPORT APPLIES ONLY TO THE ITEM(S) AND CONFIGURATIONS TESTED.

Deviations from, additions to, or exclusions from the test specifications are described in "Summary of Test Data".



TEST REPORT NO: 104353-14

TESTED BY : Frode Sveinsen
Frode Sveinsen, Chief Engineer

DATE: 19 May 2008

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3.2 Test Summary

Name of test	FCC CFR 47 Paragraph #	IC RSS-213 Paragraph #	Verdict
Peak transmit Power	15.319(c)(e), 15.31(e)	6.5	Complies

4 TEST RESULTS

4.1 Peak Power Output

Test Method:

ANSI C63.17, clause 6.1.2.

Test Results: Complies

Measurement Data:

Channel No.	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Maximum Radiated Output Power (dBm)	Maximum Antenna Gain (dBi)
4	1921.536	19.2	21.7	2.5
2	1924.992	19.3	21.4	2.1
0	1928.448	19.4	21.3	1.9

The EIRP is measured with correction factors programmed in the Spectrum analyzer.

Limit:

Conducted: $100 \mu\text{W} \times \text{SQRT}(B)$ where B is the measured Emission Bandwidth in Hz

FCC 15.319(c)(e): 20.9 dBm (122 mW)

RSS-213, Issue 2: 20.6 dBm (115 mW)

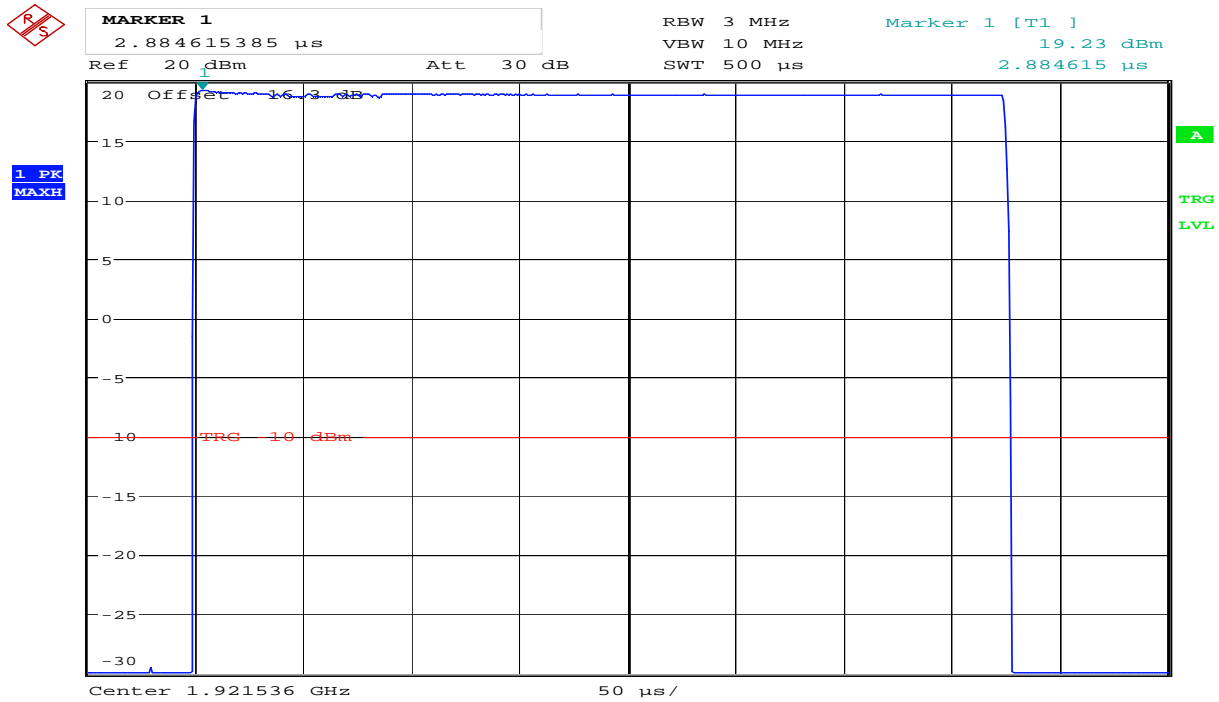
The antenna gain is below 3 dBi, no reduction in transmit power is necessary.

Requirements, FCC 15.319(c)(e), RSS-213, Issue 2

Peak transmit power shall not exceed 100 microwatts multiplied by the square root of the emission bandwidth in Hertz.

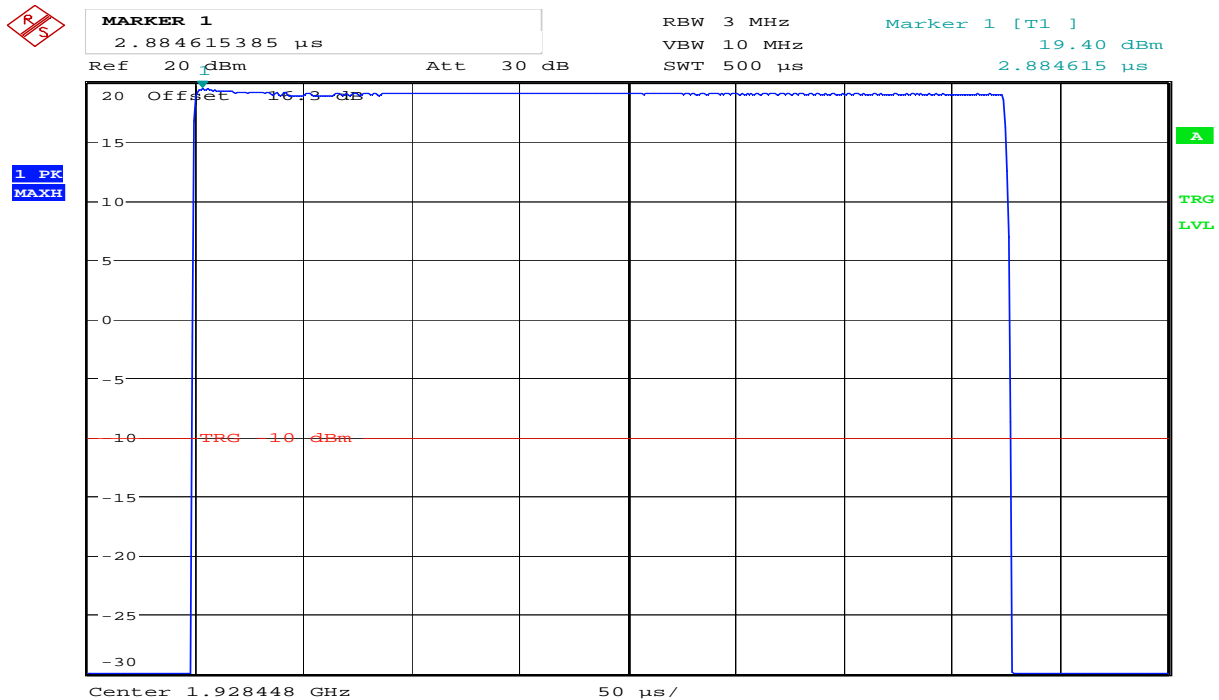
The peak transmit power shall be reduced by the amount in decibels that the maximum directional gain of the antenna exceeds 3 dBi.

Conducted Peak Output Power



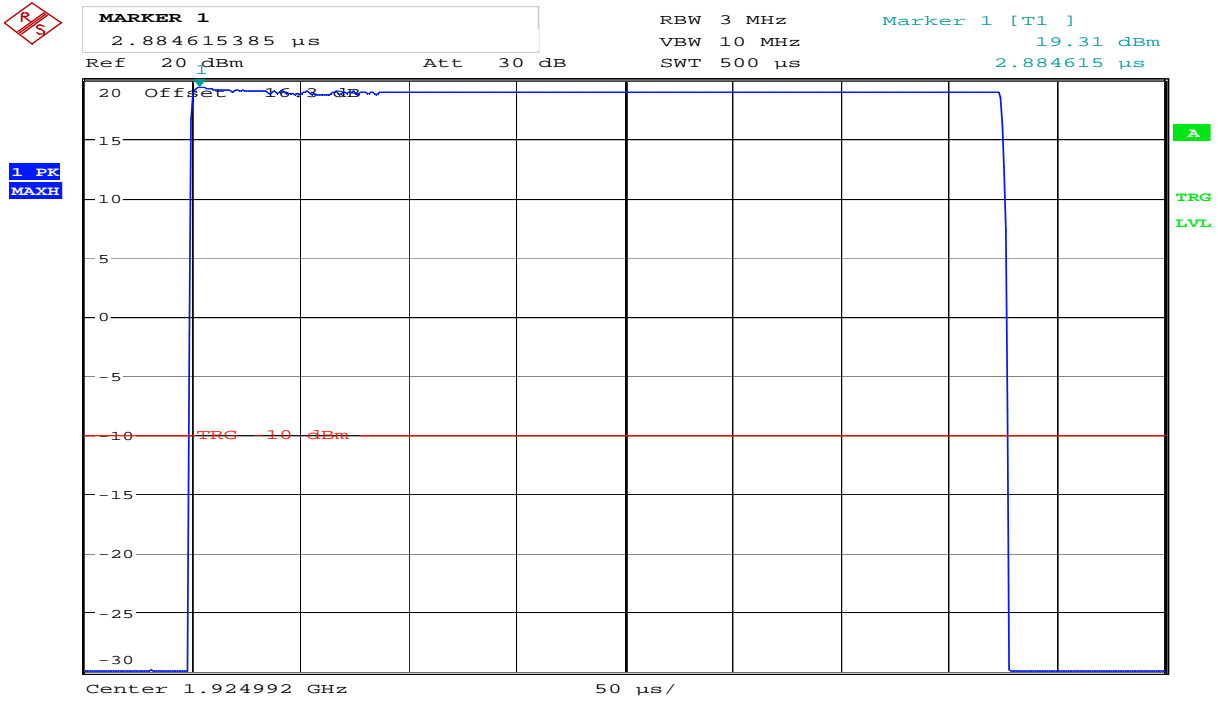
Date: 16.MAY.2008 16:09:33

Lower Channel



Date: 16.MAY.2008 16:08:55

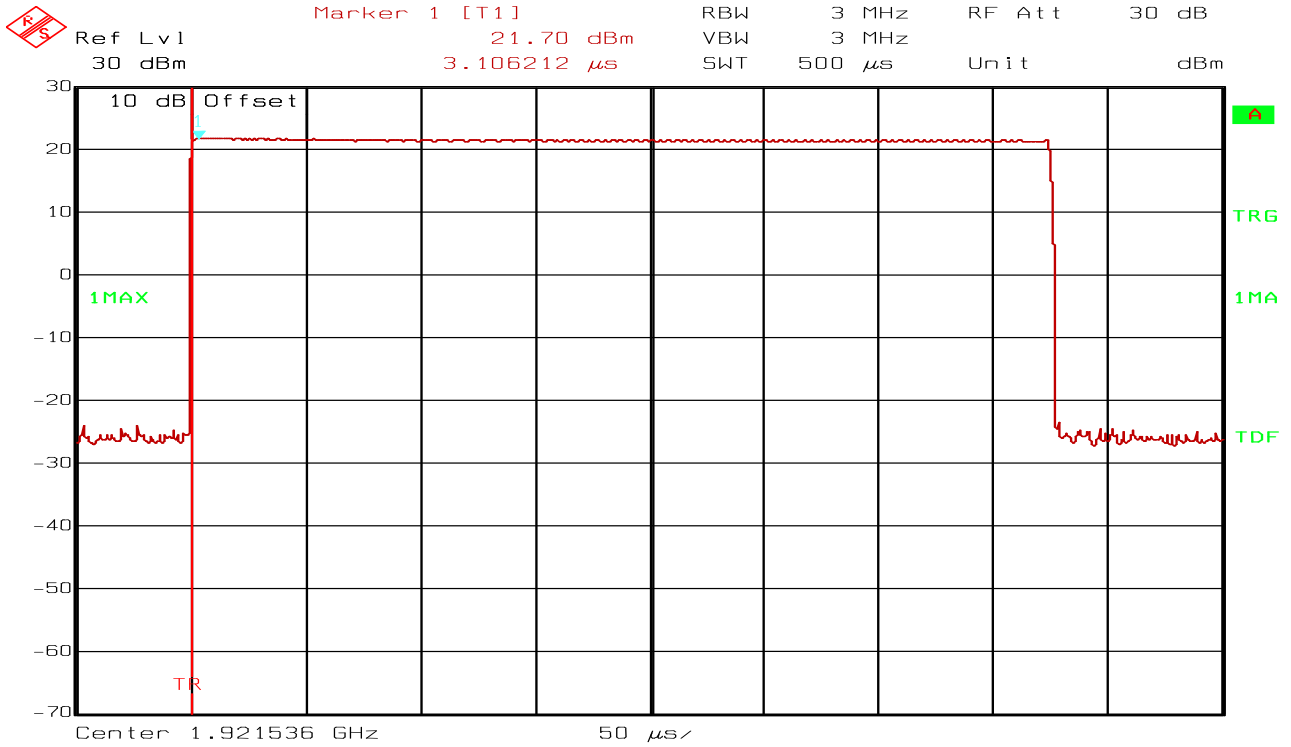
Upper Channel



Date: 16.MAY.2008 16:07:25

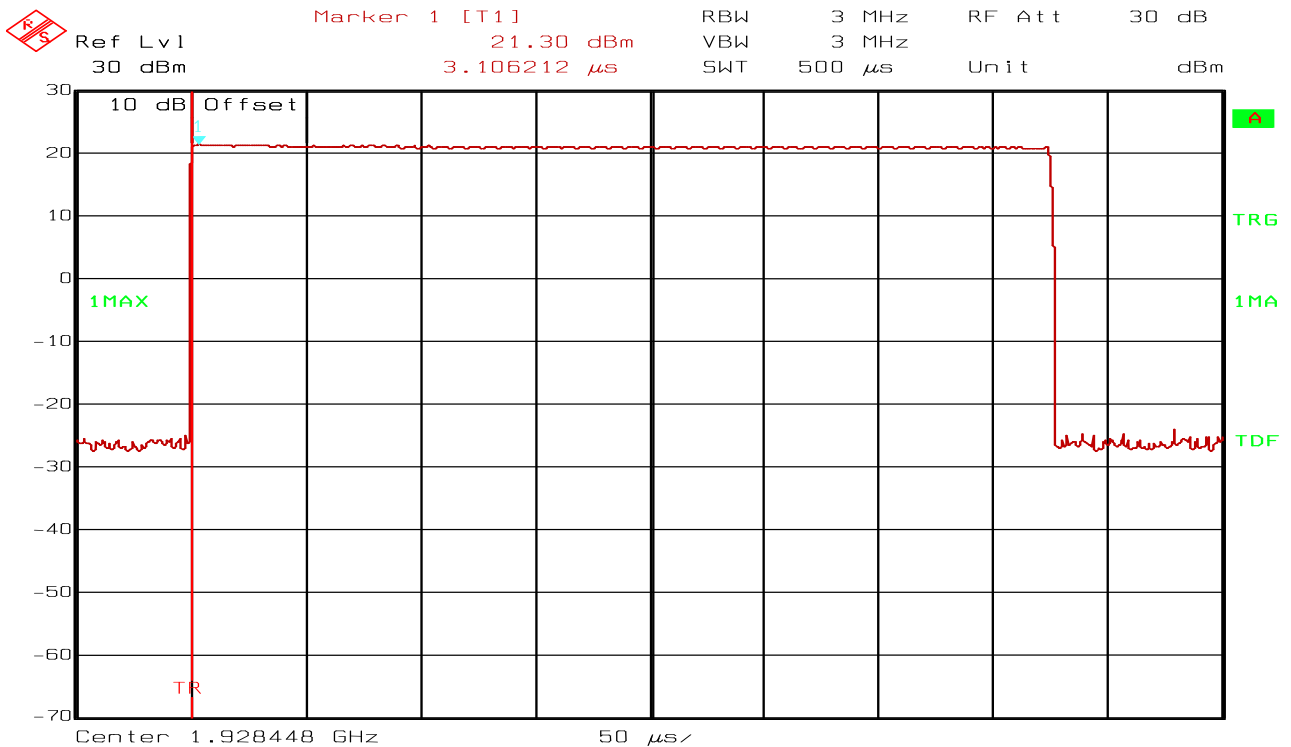
Middle Channel

Radiated Peak Output Power



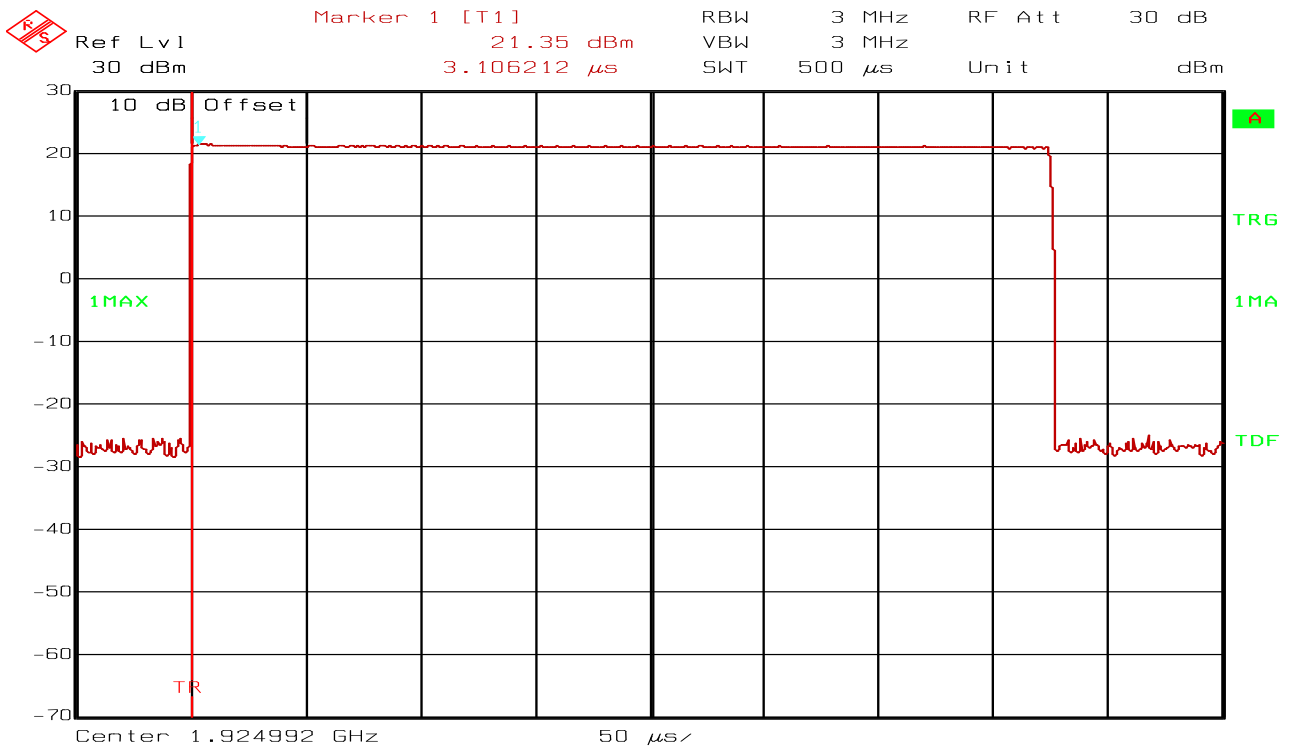
Date: 30.APR.2008 8:06:41

Lower Channel (Max: Ant 1, EUT H, HP)



Date: 30.APR.2008 8:05:22

Upper Channel (Max: Ant 1, EUT H, HP)

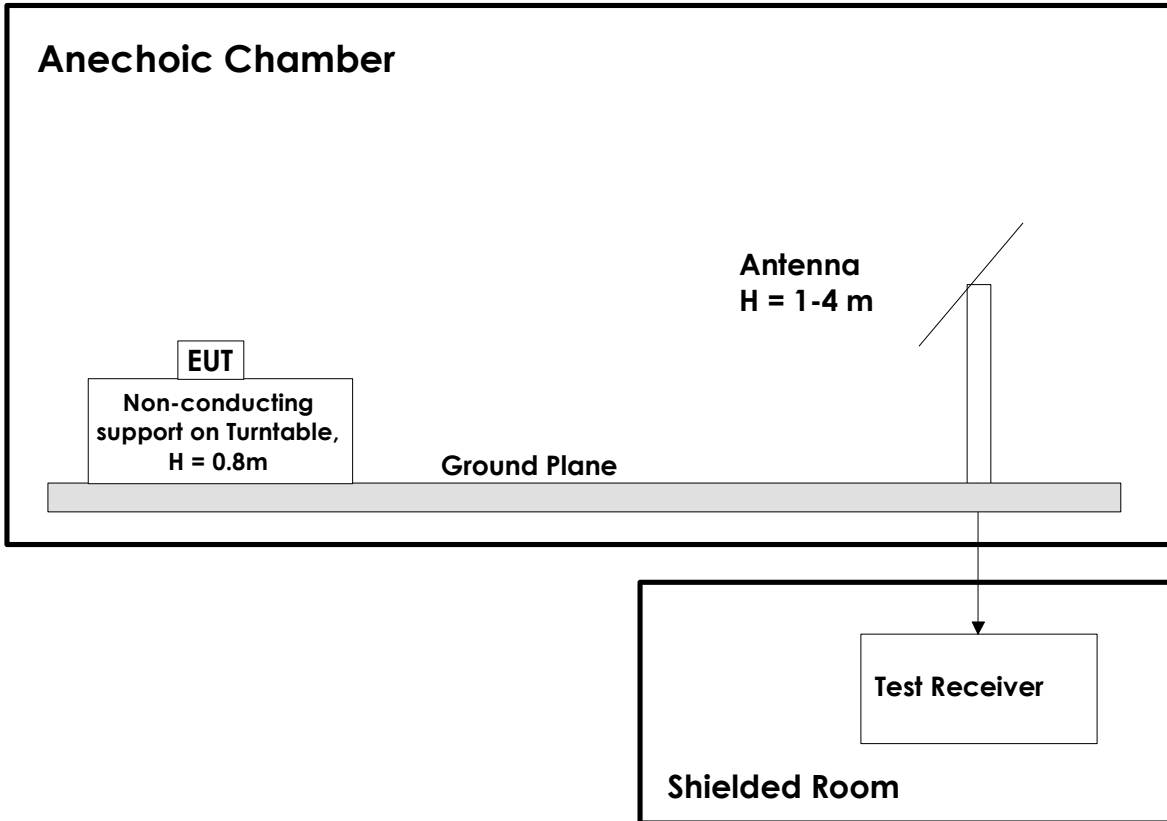


Date: 30.APR.2008 7:59:09

Middle Channel (Max: Ant 1, EUT H, HP)

5 Test Setups

5.1 Radiated Emissions Test



Test equipment: 1, 8, 9, 10, 11, 20, 21, 22, 23, 24, 25, 26

Test Set-Up 4

This test setup is used for all radiated emissions tests. For frequencies below 30 MHz the measuring distance is 10 m, for all other frequencies it is 3m or 1m. Emissions above 1 GHz were measured with a Spectrum Analyzer and Horn Antenna and with the preamplifier after the antenna. For measurements above 18 GHz the test receiver is moved inside the anechoic chamber and located next to the antenna to minimize the cable loss.

6 Test Equipment Used

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Testhouse.

No.	Instrument/ancillary	Type of instrument/ancillary	Manufacturer	Ref. no.
1	FSEK30	Spectrum Analyzer	Rohde & Schwarz	LR 1337
2	SME03	Signal generator	Rohde & Schwarz	LR 1238
3	CMD60	DECT Tester	Rohde & Schwarz	LR 1335
4	SMP22	Signal generator	Rohde & Schwarz	LR 1287
5	53310A	Modulation Domain Analyzer	Hewlett Packard	LR 1483
6	81104A	Pulse-/ Pattern Generator	Agilent	LR 1502
7	8470B	Crystal Detector	Hewlett Packard	LR 1207
8	8449B	Preamplifier	Hewlett Packard	LR 1322
9	4HC3000/18000	High-pass filter	Trilithic	S.No.: 9849045
10	ESVS30	Measuring Receiver	Rohde & Schwarz	LR 1101
11	ESN	Measuring Receiver	Rohde & Schwarz	LR 1237
12	ESAI	Measuring Receiver	Rohde & Schwarz	LR 1090
13	6810.17B	Attenuator	Narda	LR1212
14	745-69	Step Attenuator	Narda	LR 1442
15	WE 1506A	Power Splitter	Weinchel	LR 244
16	WE 1506A	Power Splitter	Weinchel	LR 245
17	H-9	Hybrid	Anzac	LR 86
18	H-9	Hybrid	Anzac	LR 257
19	S212DS	RF Switch	Narda	LR 1244
20	3115	Horn Antenna	EMCO	LR 1226
21	PM7320-X	Horn Antenna	Sivers Lab	LR 102
22	DBF-520-20	Horn Antenna	Systron Donner	LR 100
23	638	Horn Antenna	Narda	LR 1480
24	HL223	Log-period Antenna	Rohde & Schwarz	LR 1261
25	HK116	Biconical Antenna	Rohde & Schwarz	LR 1260
26	HFH2-Z2	Loop Antenna	Rohde & Schwarz	LR 285
27	ESH3-Z5	Two Line V-Network	Rohde & Schwarz	LR 1076
28	80S	Signal Generator	Powertron	LT 502
29	FSU26	Spectrum Analyzer	Rohde & Schwarz	LR 1504
30	6812B	AC Power Source	Agilent	LR 1515