REPORT ON THE CERTIFICATION TESTING OF AN GN NETCOM A/S JABRA PRO 9400 SERIES HEADSET WIDEBAND AUDIO OPERATION WITH RESPECT TO FCC RULES CFR 47, PART 15D July 2008 INTENTIONAL RADIATOR SPECIFICATION

TEST REPORT NO: 8F1722WUS3

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REPORT ON THE CERTIFICATION TESTING OF AN
GN NETCOM A/S
JABRA PRO 9400 SERIES HEADSET
WIDEBAND AUDIO OPERATION
WITH RESPECT TO
FCC RULES CFR 47, PART 15D July 2008
INTENTIONAL RADIATOR SPECIFICATION

TEST DATE: 17th February – 16th July 2009

TESTED BY: Daniel Winstanley Digitally signed by Daniel Winstanley DN: CN = Daniel Winstanley, C = <n Reason: I am the author of this document Date: 2009.07.23 08:47:09 +01'00' D WINSTANLEY

APPROVED BY: Digitally signed by John Charters DN: CN = John Charters, C = GB, O = TRaC Telecoms & Radio Reason: I am approving this document Date: 2009.07.23 12:15:38 +01'00' J CHARTERS
RADIO PRODUCT MANAGER

DATE: 23rd July 2009

Distribution:

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2. FCC EVALUATION LABORATORIES
3. TRaC Telecoms & Radio

THIS DOCUMENT MAY BE REPRODUCED ONLY IN ITS ENTIRETY AND WITHOUT CHANGE

The results herein relate only to the sample tested. Full results are contained in the relevant works order file.

UP HOLLAND
Moss View, Nipe Lane, Up Holland, West Lancashire, WN8 9PY, UK.
T +44 (0)1695 556666 **F** +44 (0)1695 557077 **E** test@tracglobal.com
www.tracglobal.com

CONTENTS

Notes:

1. Component failure during test YES [ ] NO [X]
2. If Yes, details of failure:
3. The facilities used for the testing of the product contain in this report are FCC Listed.
4. The contents of the attached applicants declarations and other supplied information are not covered by the scope of this laboratory's UKAS or FCC accreditations' and is provided in good faith.

CERTIFICATE OF CONFORMITY & COMPLIANCE

FCC IDENTITY:	BCE-9400
PURPOSE OF TEST:	Certification
TEST SPECIFICATION:	FCC RULES CFR 47, Part 15D July 2008
TEST RESULT:	Compliant to Specification
EQUIPMENT UNDER TEST:	Jabra PRO 9400 series Headset
EQUIPMENT TYPE:	UPCS Transceiver
PRODUCT USE:	Personal communications
CARRIER POWER:	19.60 dBm (Conducted)
ANTENNA TYPE:	Integral
ALTERNATIVE ANTENNA:	Not Applicable
BAND OF OPERATION:	1920 MHz – 1930 MHz
CHANNEL SPACING:	1.728 MHz
NUMBER OF CHANNELS:	5 frequencies, 6 Double time slots per frequency giving 30 channels
FREQUENCY GENERATION:	SAW Resonator [ ] Crystal [ ] Synthesiser [X]
MODULATION METHOD:	Amplitude [ ] Digital [X] Angle [ ]
POWER SOURCE(s):	+3.7Vdc
TEST DATE(s):	17th February – 16th July 2009
ORDER No(s):	2009/06/12-TR001
APPLICANT:	GN Netcom A/S
ADDRESS:	Lautrupbjerg 7 DK-2750 Ballerup Denmark

TESTED BY: Daniel Winstanley

Digitally signed by Daniel Winstanley
DN: CN = Daniel Winstanley, C = <n
Reason: I am the author of this document
Date: 2009.07.23 08:46:52 +01'00'

D WINSTANLEY

APPROVED BY:

Digitally signed by John Charters
DN: CN = John Charters, C = GB, O = TRaC Telecoms & Radio
Reason: I am approving this document
Date: 2009.07.23 12:15:50 +01'00'

J CHARTERS
RADIO PRODUCT MANAGER

APPLICANT'S SUMMARY

EQUIPMENT UNDER TEST (EUT):	Jabra PRO 9400 series Headset		
EQUIPMENT TYPE:	UPCS Transceiver		
PURPOSE OF TEST:	Certification		
TEST SPECIFICATION(s):	FCC RULES CFR 47, Part 15D July 2008		
TEST RESULT:	COMPLIANT	Yes	[X]
		No	[ ]
APPLICANT'S CATEGORY:	MANUFACTURER		[X]
	IMPORTER		[ ]
	DISTRIBUTOR		[ ]
	TEST HOUSE		[ ]
	AGENT		[ ]
APPLICANT'S ORDER No(s):	2009/06/12-TR001		
APPLICANT'S CONTACT PERSON(s):	Mr Tom Ringtved		
E-mail address:	tringtved@gn.com		
APPLICANT:	GN Netcom A/S		
ADDRESS:	Lautrupbjerg 7 DK-2750 Ballerup Denmark		
TEL:	+45 45 75 88 88		
FAX:	+45 45 75 00 09		
TEST LABORATORY:	TRaC Telecoms & Radio, Up Holland		
TEST DATE(s):	17th February – 17th June 2009		
TEST REPORT No:	8F1722WUS3		

EQUIPMENT TEST / EXAMINATIONS REQUIRED

1.

TEST/EXAMINATION	RULE PART	APPLICABILITY
Coordination with Fixed Microwave Service	15.307 (b)	No Note 1
Cross reference to Subpart B	15.309 (b)	Yes
Labelling Requirements	15.311 15.19 (a)(3)	Yes
Measurement Procedures	15.313	Yes
Antenna Requirement	15.317 15.203	Yes
Modulation Techniques	15.319 (b)	Yes
Conducted AC Powerline	15.315 15.207	Yes Note 2
Emission Bandwidth	15.323 (a)	Yes
Peak Transmit Power	15.319 (c)	Yes
Power Spectral Density	15.319 (d)	Yes
Antenna Gain	15.319 (e)	Yes
Automatic Discontinuation of Transmission	15.319 (f)	Note 3
Radio Frequency Radiation Exposure	15.319 (i)	Note 3
Monitoring Thresholds	15.323 (c)(2) 15.323 (c)(9)	Note 3
Monitoring of Intended Transmit Window and Maximum Reaction Time	15.323 (c)(1)	Note 3
Monitoring Bandwidth	15.323 (c)(7)	Note 3
Access Criteria Functional Test	15.323 (c)(6)	Note 3
Duration of Transmission	15.323 (c)(3)	Note 3
Connection Acknowledgement	15.323 (c)(4)	Note 3
Lower threshold Selected Channel, Power Accuracy, Segment Occupancy	15.323 (c)(5)	Note 3
Monitoring Antenna	15.323 (c)(8)	Note 3
Duplex Connections	15.323 (c)(10)	Note 3
Alternative Monitoring Interval for Co-located Devices	15.323 (c)(11)	Note 3
Fair Access to Spectrum Related to (c)(10) & (c)(11)	15.323 (c)(12)	Note 3
Emission Inside and Outside the Sub-band	15.323 (d)	Yes
Frame Period	15.323 (e)	Yes
Frequency Stability	15.323 (f)	Yes

Note:
1. Requirement removed April 4th 2005 see public notice DX 05-1005.
2. The portable part connects indirectly via the fixed part see 8F1722WUS1 for results
3. The portable part realises a maximum 60 channels. Manufacture declares use of upper threshold. See Report 8F1722WUS1 for results.

2.	Product Use:	Personal Communications	
3.	Duty Cycle:		8.33%
4.	Transmitter bit or pulse rate and level:		2Mbps
5.	Temperatures:	Ambient (Tnom)	22°C
6.	Supply Voltages:	Vnom	+3.7Vdc

Note: Vnom voltages are as stated above unless otherwise shown on the test report page

7.	Equipment Category:	Single channel	[ ]
		Two channel	[ ]
		Multi-channel	[X]
8.	Channel spacing:	Narrowband	[ ]
		Wideband	[X]

9. System Description:

The system is made up of two parts, a fixed part and a portable part. The portable part is a cordless headset device. The portable part is capable of operating on a maximum of 60 channels (time spectrum windows). The fixed part is a desktop transmitters connected to an exchange.

The system operates in the 1920MHz -1930MHz band. The system use 5 different frequency channels 1.728MHz apart using MC/TDMA/TDD (Multi Carrier / Time Division Multiple Access / Time Division Duplex) using QPSK modulation.

The system employs a 10ms frame, divided into 24 equal timeslots, numbered 0-23. The system uses single-slots or double slots. The Base station always transmits in the first half of the frame, and the Portable always transmits on the duplex mate in the second half of the frame. A physical bearer is composed of a transmit single-slot and a receive single-slot. The two halves of a given bearer are always exactly half a frame (5ms, 12 slots) apart.

During the testing frequency administration was utilised to allow operation on only certain channels during the tests. The frequency administration was performed using a software interface. A portable part was supplied with a temporary antenna connector to allow conducted measurements where applicable.

.

CROSS REFERENCE TO SUBPART B – PART 15.309 (b)

The unit contains digital circuitry, which is not directly related to the radio transmitter. See emissions outside the sub-band for results.

LABELLING INFORMATION – PART 15.311 & 15.19 (a)(3)

This information is contained in a separate document. See attached exhibit.

ANTENNA REQUIREMENTS – PART 15.317

The unit employs an integral antenna arrangement.

MODULATION TECHNIQUES – PART 15.319 (b)

The GN Netcom A/S Jabra PRO 9400 series Headset is an isochronous device operating in the 1920 MHz – 1930 MHz frequency band.

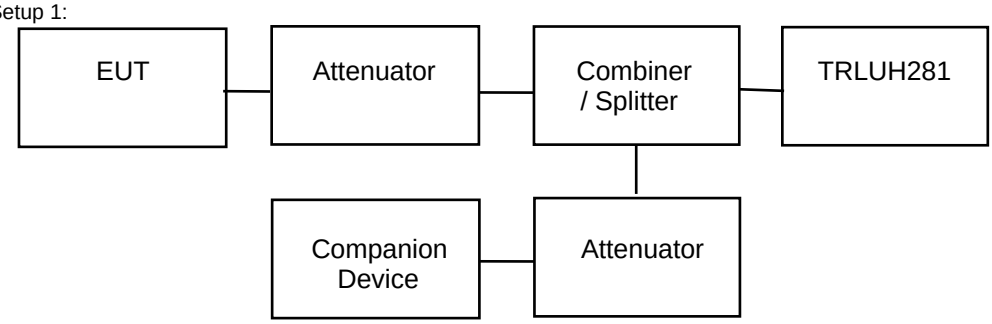
The GN Netcom A/S Jabra PRO 9400 series Headset modulation technique is based on DECT technology as described in European standards EN 300 175-2 and EN 300 175-3.

The GN Netcom A/S Jabra PRO 9400 series Headset modulation techniques are MC/TDMA/TDD (Multi Carrier / Time Division Multiple Access / Time Division Duplex) using QPSK modulation.

TRANSMITTER EMISSION BANDWIDTH – PART 15.323 (a)

The emission bandwidth is measured in accordance with ANSI C63.17 sub-clause 6.1.3 using the setup below

Test Setup 1:



f_x = 1921.536 MHz				
Δ P (dBc)	fl (MHz)	fh (MHz)	Δf (MHz)	Limit
-26	192.890167	1922.173821	1.2836	50kHz> Δf > 2.5MHz
12	Note 3			N/A
-6	Note 3			N/A

f_x = 1924.992 MHz				
Δ P (dBc)	fl (MHz)	fh (MHz)	Δf (MHz)	Limit
-26	1924.314574	1925.660728	1.3461	50kHz> Δf > 2.5MHz
12	Note 3			N/A
-6	Note 3			N/A

f_x = 1928.448 MHz				
Δ P (dBc)	fl (MHz)	fh (MHz)	Δf (MHz)	Limit
-26	1927.781090	1929.112821	1.3317	50kHz> Δf > 2.5MHz
-12	Note 3			N/A
-6	Note 3			N/A

Notes: 1 See emission bandwidth plots in Annex C.
2 Emission bandwidth rounded up.
3 -6 and -12dB points not recorded, requirement covered In results report in 8F1722WUS1.

ANTENNA GAIN – PART 15.319 (e)

Any directional gain of the antenna exceeding 3dBi has an effect on the limit applied to the measurements taken for the peak transmit power test. If the directional gain of the antenna is less than 3dBi it is not required to be taken into account.

Maximum Antenna Gain	Exceeds 3dBi by
+1.5dBi	N/A

Note: Statement by manufacturer declaring maximum antenna gain. See attached exhibit.

PEAK TRANSMIT POWER – PART 15.319 (c)

The peak transmit power is measured in accordance with ANSI C63.17 sub-clause 6.1.2 using test setup 1 (page 9).

The limit for Peak Transmit Power (PTP) is calculated using the following formula:

$$PTP = 5 \text{ Log}_{10} \text{ EBW} - 10 \text{ dBm}$$

This limit must be corrected to take into account any gain of the antenna greater than 3dBi.
Where: EBW is the transmitter emission bandwidth in Hz as determined in the previous test.

Limit

EBW = 1.442 MHz

$PTP = 5 \text{ Log}_{10}$ 1.3462MHz – 10 dBm

PTP = 20.64 dBm

Results

Frequency (MHz)	Peak Transmit Power (dBm)	Limit (dBm)
1921.536	19.20	20.64
1924.992	19.33	20.64
1928.448	19.60	20.64

Note: 1. Permanent antenna was replaced with temporary antenna connector to enable conducted measurement.
2. Antenna gain < 3dBi and so correction of the limit is not required.
3. See Annex D for Peak Transmit Power Plots.

POWER SPECTRAL DENSITY – PART 15.319 (d)

The power spectral density is measured using test setup 1, (page 9).

Limit

The power spectral density shall not exceed 3mW in any 3 kHz bandwidth as measured with a spectrum analyser having a resolution bandwidth of 3 kHz.

Results

Frequency (MHz)	Power Spectral Density (mW/3kHz)	Limit (mW/3kHz)
1921.536	-2.40	3
1924.992	-0.38	3
1928.448	-2.28	3

Note: 1. See Annex E for Power Spectral Density Plots.

EMISSIONS INSIDE AND OUTSIDE THE SUB-BAND – CONDUCTED – PART 15.323 (d)

RF carrier set to the lowest carrier defined by the EUT.

These measurements are carried out in accordance with ANSI C63.17 sub-clause 6.1.6.

Out-of-Band Emissions from UPCS bandedge	**FREQ. (MHz)**	**MEAS. Rx. (dBm)**	**CABLE & ATTEN. LOSS (dB)**	**EMISSION LEVEL (dBm)**	**LIMIT (dBm)**
> - 2.5MHz				Note 10	-39.5
- 1.25 MHz – 2.5 MHz				Note 10	-29.5
- 1.25 MHz				Note 10	-9.5
+ 1.25 MHz				Note 10	-9.5
+ 1.25 MHz – 2.5 MHz				Note 10	-29.5
> + 2.5MHz	3841.346 9608.248	-67.09 -78.00	25.3 26.1	-41.79 -51.90	-39.5 -39.5

Limits	**Out-of-Band Emissions From UPCS bandedge**	**Attenuation (dB) required below Reference power of 112mW**
	± 1.25MHz	30
	±1.25 MHz – 2.5 MHz	50
	> ±2.5MHz	60
	In band Emissions from centre of emission bandwidth	**Attenuation (dB) required below permitted peak power for the EUT**
	1B – 2B	30
	2B – 3B	50
	3B – UPCS band edge	60

Notes:
1 EUT fitted with temporary antenna connector.
2 Emissions were searched to: (**x**) 1000MHz inclusive, as per Part 15.33a.
3 New / Fully Charged batteries used for battery powered products.
4 See Annex F for out of band emissions compliance plots.
5 See Annex G for in band emissions compliance plots.
6 As per 15.323(g) attenuation to the requirements of 15.209 is not required.
7 Resolution bandwidth approximately 1% of emissions bandwidth.
8 Video bandwidth 3 x Resolution bandwidth.
9 Receiver detector = Peak detector, Max Hold Enabled.
10 Only emissions within 20 dB of the limit are recorded.

Test Method:
1 The EUT was connected to a spectrum analyser via suitable attenuation or filter.
2 The Spectrum analyser was tuned across the required frequency range in steps.
3 Any emissions found were measured with the required analyser settings.

EMISSIONS INSIDE AND OUTSIDE THE SUB-BAND – CONDUCTED – PART 15.323 (d)

RF carrier set to the highest carrier defined by the EUT.

These measurements are carried out in accordance with ANSI C63.17 sub-clause 6.1.6.

Out-of-Band Emissions from UPCS bandedge	FREQ. (MHz)	MEAS. Rx. (dBm)	CABLE & ATTEN. LOSS (dB)	EMISSION LEVEL (dBm)	LIMIT (dBm)
> - 2.5MHz				Note 10	-39.5
- 1.25 MHz – 2.5 MHz				Note 10	-29.5
- 1.25 MHz				Note 10	-9.5
+ 1.25 MHz				Note 10	-9.5
+ 1.25 MHz – 2.5 MHz				Note 10	-29.5
> + 2.5MHz	3856.886 9642.781	-66.10 -75.49	25.4 25.4	-40.70 -50.09	-39.5 -39.5

Limits	Out-of-Band Emissions from UPCS bandedge	Attenuation (dB) required below reference power of 112mW
	± 1.25MHz	30
	±1.25 MHz – 2.5 MHz	50
	> ±2.5MHz	60
	In band Emissions from centre of emission bandwidth	**Attenuation (dB) required below permitted peak power for the EUT**
	1B – 2B	30
	2B – 3B	50
	3B – UPCS band edge	60

Notes:
1 EUT fitted with temporary antenna connector.
2 Emissions were searched to: (**x**) 1000MHz inclusive, as per Part 15.33a.
3 New / Fully Charged batteries used for battery powered products.
4 See Annex F for out of band emissions compliance plots.
5 See Annex G for in band emissions compliance plots.
6 As per 15.323(g) attenuation to the requirements of 15.209 is not required.
7 Resolution bandwidth approximately 1% of emissions bandwidth.
8 Video bandwidth 3 x Resolution bandwidth.
9 Receiver detector = Peak detector, Max Hold Enabled.
10 Only emissions within 20 dB of the limit are recorded.

Test Method:
1 The EUT was connected to a spectrum analyser via suitable attenuation or filter.
2 The Spectrum analyser was tuned across the required frequency range in steps.
3 Any emissions found were measured with the required analyser settings.

EMISSIONS OUTSIDE THE SUB-BAND – RADIATED – PART 15.109 & PART 15.209

RF carrier set to the lowest carrier defined by the EUT.

These measurements are carried out in accordance with ANSI C63.17 sub-clause 6.1.6

	FREQ. (MHz)	MEAS. Rx. (dBµV)	CABLE LOSS (dB)	PRE AMP (dB)	ANT FACTOR	FIELD STRENGTH (dBµV/m)	FIELD STRENGTH (µV/m)	LIMIT (µV/m)
1.705MHz - 30MHz							Note 9	30
30MHz - 88MHz							Note 9	100
88MHz - 216MHz	140.86	11.89	0.6	-	11.3	23.8	15.48	150
	142.40	11.57	0.6	-	11.2	23.4	14.79	150
216MHz - 960MHz	331.66	18.05	0.9	-	14.0	33.0	44.66	200
	362.56	20.98	1.0	-	14.5	36.5	66.83	200
	368.56	17.45	1.0	-	14.8	33.3	46.24	200
	372.65	20.77	1.0	-	15.0	36.8	69.18	200
	421.11	13.34	1.0	-	16.8	31.1	35.89	200
	493.43	7.50	1.1	-	18.1	26.7	21.63	200
	534.33	6.65	1.2	-	19.0	26.9	22.13	200
	663.54	8.32	1.3	-	20.5	30.1	31.98	200
960MHz - 1GHz							Note 9	500
1GHz - 20GHz	2974.000	37.53	3.1	34.03	30.2	37.4	74.13	500
	3842.432	33.75	3.9	33.85	32.1	35.9	62.37	500
	4803.985	39.42	4.2	34.12	33.2	42.7	136.46	500
	5763.461	-2.1	8.3	-	34.5	40.7	108.39	500
	7687.465	-8.2	9.7	-	36.7	38.2	81.28	500
	9609.384	-7.9	10.9	-	37.9	40.9	110.92	500

Limits	1.705MHz to 30MHz	30µV/m @ 30m
	30MHz to 88MHz	100µV/m @ 3m
	88MHz to 216MHz	150µV/m @ 3m
	216MHz to 960MHz	200µV/m @ 3m
	960MHz to 1GHz	500µV/m @ 3m
	1GHz to 20GHz	500µV/m @ 3m

Notes:
1 Results quoted are extrapolated as indicated.
2 Emissions were searched to: (**x**) 1000MHz inclusive, as per Part 15.33a.
3 Emission due to digital circuitry not directly associated with the radio transmitter.
4 Measurements >1GHz @ 3m as per Part 15.31f(1).
5 Receiver detector <1GHz = CISPR, Quasi-Peak, 120kHz bandwidth.
6 Receiver detector >1GHz = Peak Hold, 1MHz resolution bandwidth.
7 New / Fully Charged batteries used for battery powered products.
8 See Annex H for scan plot 30MHz – 1GHz.
9 No significant emissions within 20 dB of the limit due to digital circuitry.

Test Method:
1 As per Radio – Noise Emissions, ANSI C63.4: 2003.
2 Measuring distances as Notes 1 to 4 above.
3 EUT 0.8 metre above ground plane.
4 Emissions maximised by rotation of EUT, on an automatic turntable.
Raising and lowering the receiver antenna between 1m & 4m.
Horizontal and vertical polarisations, of the receive antenna.
EUT orientation in three orthagonal planes.
Maximum results recorded.

The test equipment used for the Spurious Emissions – Radiated – Part 15.109 tests is shown overleaf:

EMISSIONS OUTSIDE THE SUB-BAND – RADIATED – PART 15.109 & PART 15.209

RF carrier set to the highest carrier defined by the EUT.

These measurements are carried out in accordance with ANSI C63.17 sub-clause 6.1.6

	FREQ. (MHz)	MEAS. Rx. (dBµV)	CABLE LOSS (dB)	PRE AMP (dB)	ANT FACTOR	FIELD STRENGTH (dBµV/m)	FIELD STRENGTH (µV/m)	LIMIT (µV/m)
1.705MHz - 30MHz							Note 9	30
30MHz - 88MHz							Note 9	100
88MHz - 216MHz	140.86 142.40	11.89 11.57	0.6 0.6	- -	11.3 11.2	23.8 23.4	15.48 14.79	150 150
216MHz - 960MHz	331.66 362.56 368.56 372.65 421.11 493.43 534.33 663.54	18.05 20.98 17.45 20.77 13.34 7.50 6.65 8.32	0.9 1.0 1.0 1.0 1.0 1.1 1.2 1.3	- - - - - - - -	14.0 14.5 14.8 15.0 16.8 18.1 19.0 20.5	33.0 36.5 33.3 36.8 31.1 26.7 26.9 30.1	44.66 66.83 46.24 69.18 35.89 21.63 22.13 31.98	200 200 200 200 200 200 200 200
960MHz - 1GHz							Note 9	500
1GHz - 20GHz	1652.997 2483.500 3856.163 4959.973 5748.139 7712.543 9643.845	41.83 13.90 32.83 33.55 1.50 -1.10 -0.70	1.72 2.0 3.2 3.4 7.3 8.3. 9.6	33.75 - 33.83 34.15 - - -	26.7 28.5 32.2 33.6 34.4 36.7 37.9	36.5 44.4 34.4 36.4 43.2 43.9 46.8	66.83 165.96 52.48 66.07 144.54 156.67 218.77	500 500 500 500 500 500 500
Limits	1.705MHz to 30MHz			30µV/m @ 30m				
	30MHz to 88MHz			100µV/m @ 3m				
	88MHz to 216MHz			150µV/m @ 3m				
	216MHz to 960MHz			200µV/m @ 3m				
	960MHz to 1GHz			500µV/m @ 3m				
	1GHz to 20GHz			500µV/m @ 3m				

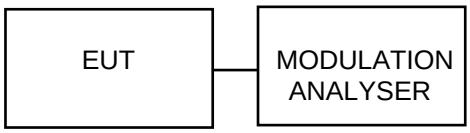
Notes:
1 Results quoted are extrapolated as indicated.
2 Emissions were searched to: (**x**) 1000MHz inclusive, as per Part 15.33a.
3 Emission due to digital circuitry not directly associated with the radio transmitter.
4 Measurements >1GHz @ 3m as per Part 15.31f(1).
5 Receiver detector <1GHz = CISPR, Quasi-Peak, 120kHz bandwidth.
6 Receiver detector >1GHz = Peak Hold, 1MHz resolution bandwidth.
7 New / Fully Charged batteries used for battery powered products.
8 See Annex H for scan plot 30MHz – 1GHz.
9 No significant emissions within 20 dB of the limit due to digital circuitry.

Test Method:
1 As per Radio – Noise Emissions, ANSI C63.4: 2003.
2 Measuring distances as Notes 1 to 4 above.
3 EUT 0.8 metre above ground plane.
4 Emissions maximised by rotation of EUT, on an automatic turntable.
Raising and lowering the receiver antenna between 1m & 4m.
Horizontal and vertical polarisations, of the receive antenna.
EUT orientation in three orthagonal planes.
Maximum results recorded.

The test equipment used for the Spurious Emissions – Radiated – Part 15.109 tests is shown overleaf:

FRAME PERIOD 15.323 (e)

Frame repetition stability is tested according with ANSI C63.17 sub-clause 6.2.2. Frame period and jitter are tested in accordance with ANSI C63.17 sub-clause 6.2.3. The test setup below is used for the above measurements.



Test Setup 3:

Frame Repetition Stability

This is the mean value of the frame repetition rate recorded over 1000 samples. For devices that divide access in time the repetition rate shall not exceed 10ppm.

Result

Frame Repetition Stability (ppm)	Limit (ppm)	Pass/Fail
0.01 ppm	10ppm	Pass

Frame Period and Jitter

Jitter is the difference in time between the rising edges of consecutive pulses.

Result

Maximum Jitter (µs)	3xSD Jitter (µs)	Frame period (ms)	Limit (µs)		Pass/Fail
			Frame Period (ms)	Jitter (µs)	
0.92	2.76	10.00276	2 or 10/X	12.5	Pass

Notes: 1. See Annex K for frame period plot.

The above measurements were performed with a wideband audio communications channel active between the fixed and portable parts. The fixed part was also in communications with the modulation analyser on a non-wideband audio channel. The modulation analyser makes frame repetition stability and jitter measurements on the non-wideband audio channel. As both wideband and non-wideband audio channels use the same timing reference the wideband audio channel is determined to meet the requirements

FREQUENCY STABILITY – PART 15.323 (e)

The frequency stability is tests are carried out according with ANSI C63.17 sub-clause 6.2.1 using test setup number 3(page 23). This testing is carried out with the following conditions over 5000 samples.

Results

Temperature (^{o}C)	Voltage (Vdc)	Fc (MHz)	offset (kHz)	offset (ppm)	Limit (ppm)
+20	Vnom	1924.992	0kHz	+0	±10ppm
-20	Vnom	1924.992	+8.0kHz	+4.2	±10ppm
+55	Vnom	1924.992	+3.0kHz	+1.5	±10ppm

Note: 1. The EUT is battery powered therefore voltage variations are not required.

ANNEX A

PHOTOGRAPHS

PHOTOGRAPH No. 1 **TOP OVERVIEW**

PHOTOGRAPH No. 2 **BOTTOM OVERVIEW**

ANNEX B

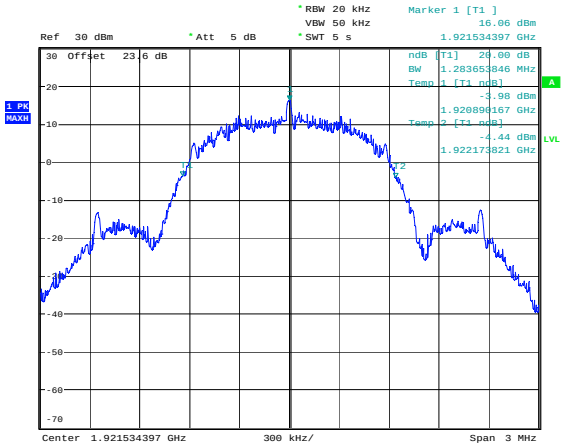
APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

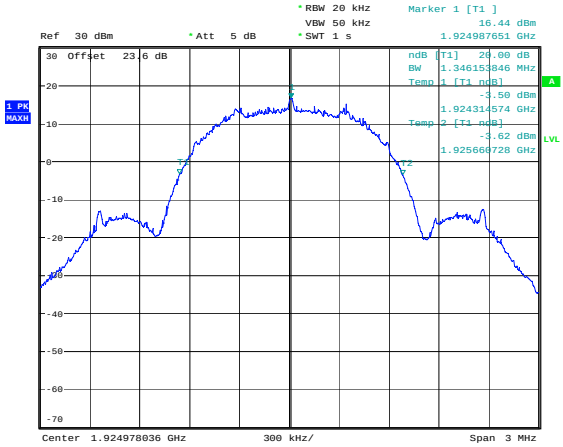
a.	TCB	-	APPLICATION	[X]
		-	FEE	[X]
b.	AGENT'S LETTER OF AUTHORISATION	-		[X]
c.	MODEL(s) vs IDENTITY	-		[ ]
d.	ALTERNATIVE TRADE NAME DECLARATION(s)	-		[ ]
e.	LABELLING	-	PHOTOGRAPHS	[ ]
		-	DECLARATION	[ ]
		-	DRAWINGS	[X]
f.	TECHNICAL DESCRIPTION	-		[X]
g.	BLOCK DIAGRAMS	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
h.	CIRCUIT DIAGRAMS	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
i.	COMPONENT LOCATION	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
j.	PCB TRACK LAYOUT	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
k.	BILL OF MATERIALS	-	Tx	[X]
		-	Rx	[ ]
		-	PSU	[ ]
		-	AUX	[ ]
l.	USER INSTALLATION / OPERATING INSTRUCTIONS	-		[X]

ANNEX C

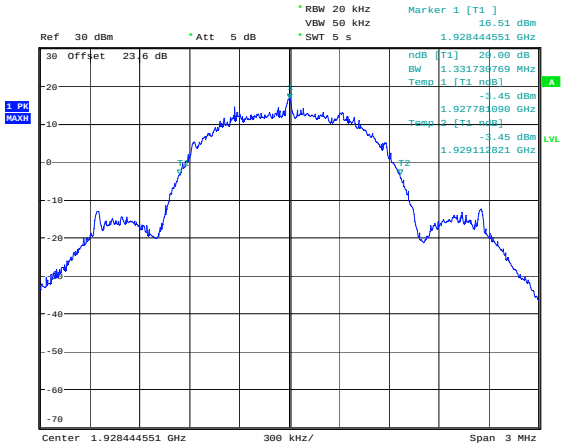
EMISSION BANDWIDTH



Date: 17.FEB.2009 12:25:05



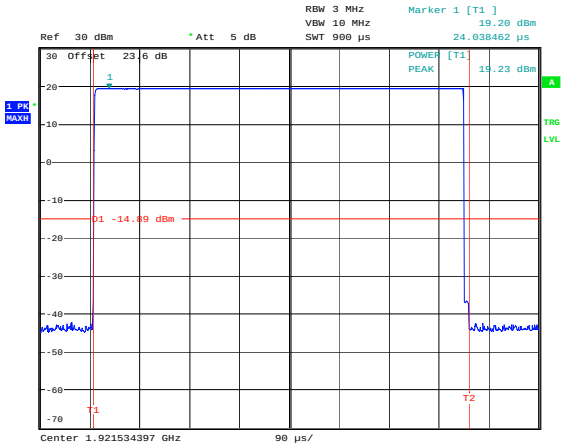
Date: 17.FEB.2009 12:13:14



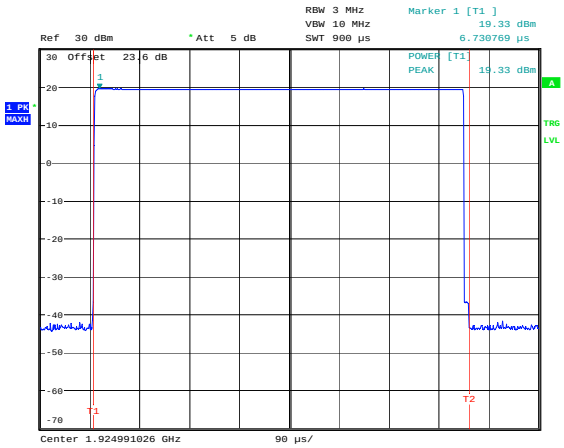
Date: 17.FEB.2009 12:35:49

ANNEX D

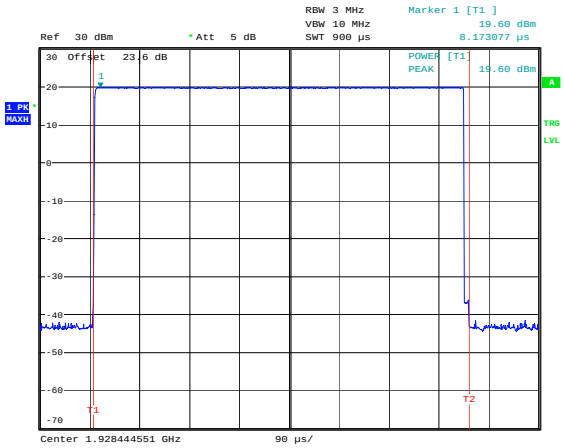
PEAK TRANSMIT POWER



Date: 17.FEB.2009 12:19:31



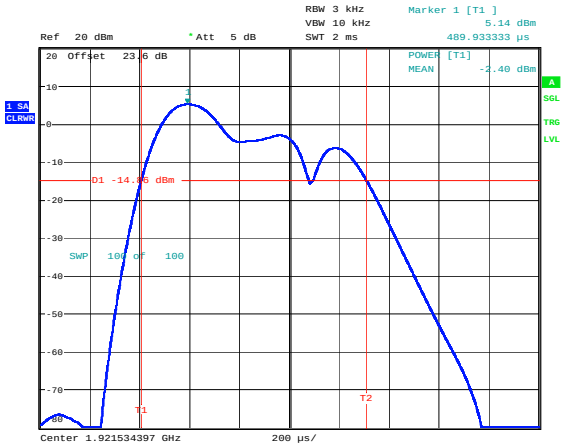
Date: 17.FEB.2009 12:28:12



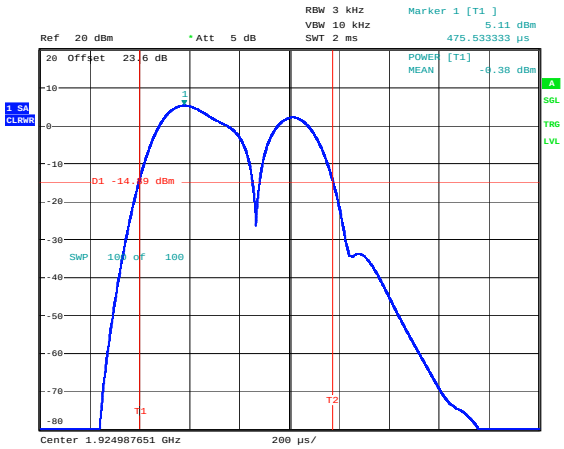
Date: 17.FEB.2009 12:37:15

ANNEX E

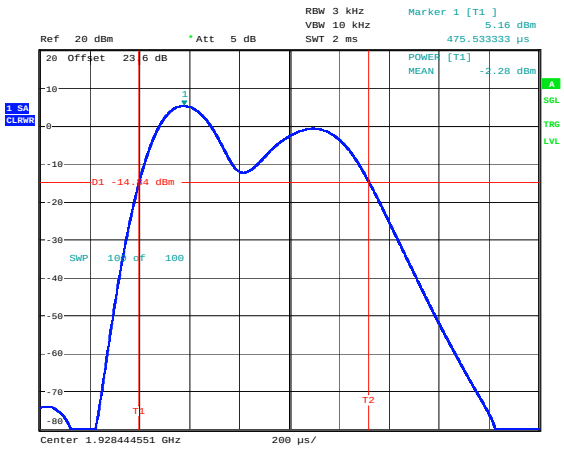
POWER SPECTRAL DENSITY



Date: 17.FEB.2009 12:22:52



Date: 17.FEB.2009 12:15:00

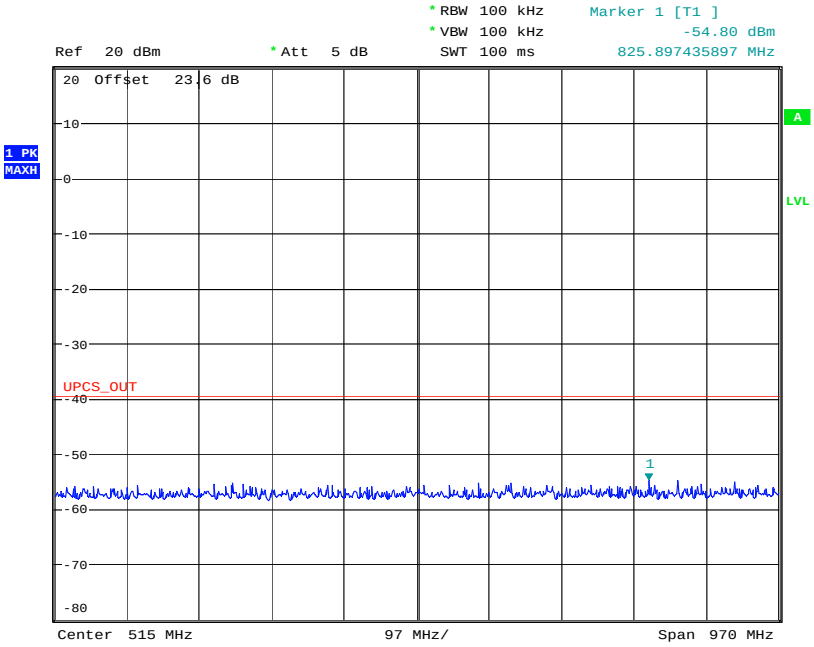


Date: 17.FEB.2009 12:39:17

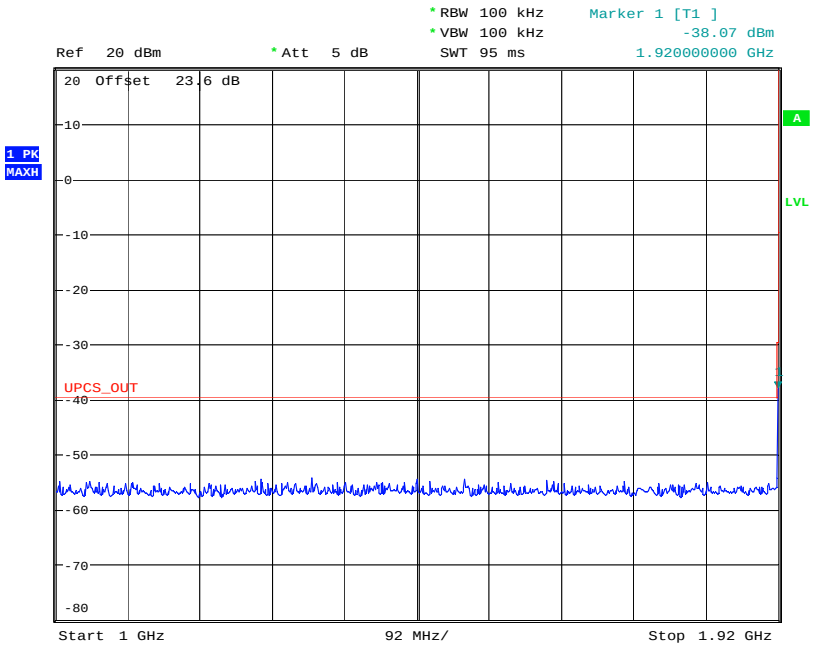
ANNEX F

EMISSIONS OUTSIDE THE SUB-BAND

RF carrier set to the lowest carrier defined by the EUT

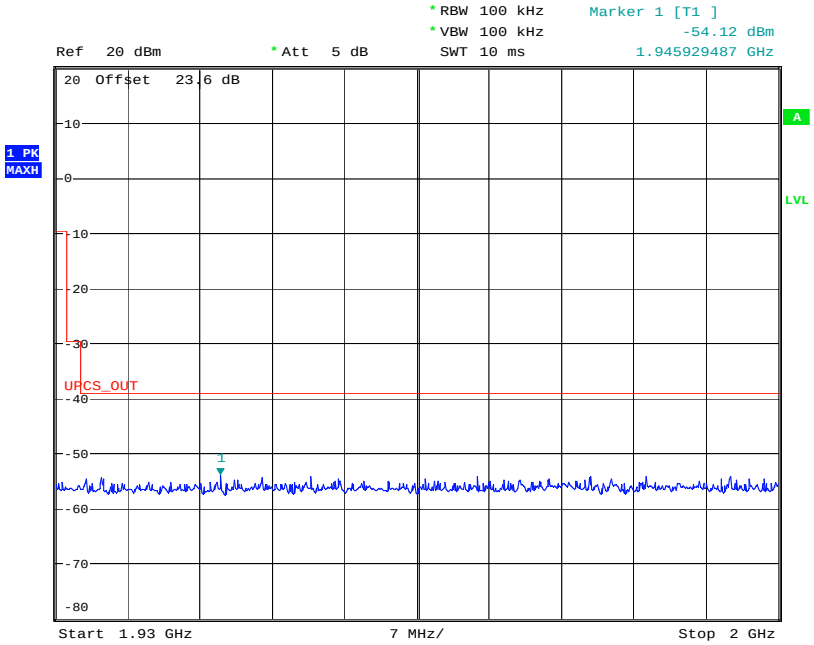


Date: 8.JUL.2009 11:00:23

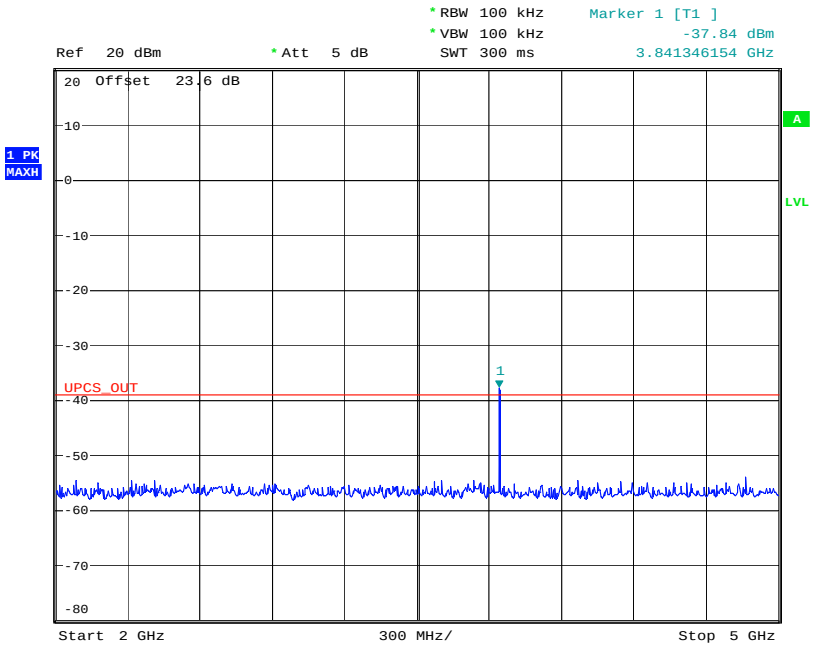


Date: 8.JUL.2009 11:00:48

RF carrier set to the lowest carrier defined by the EUT

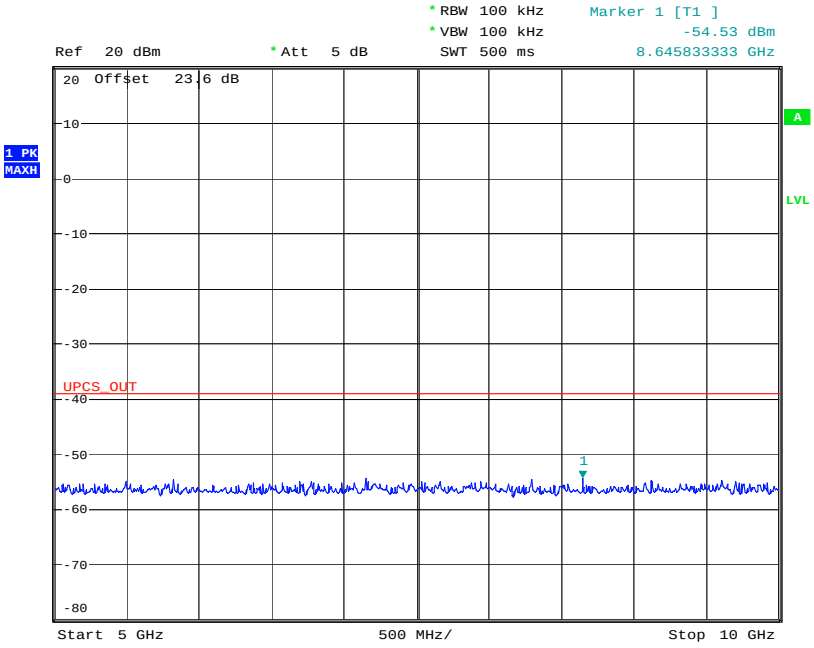


Date: 8.JUL.2009 11:06:32

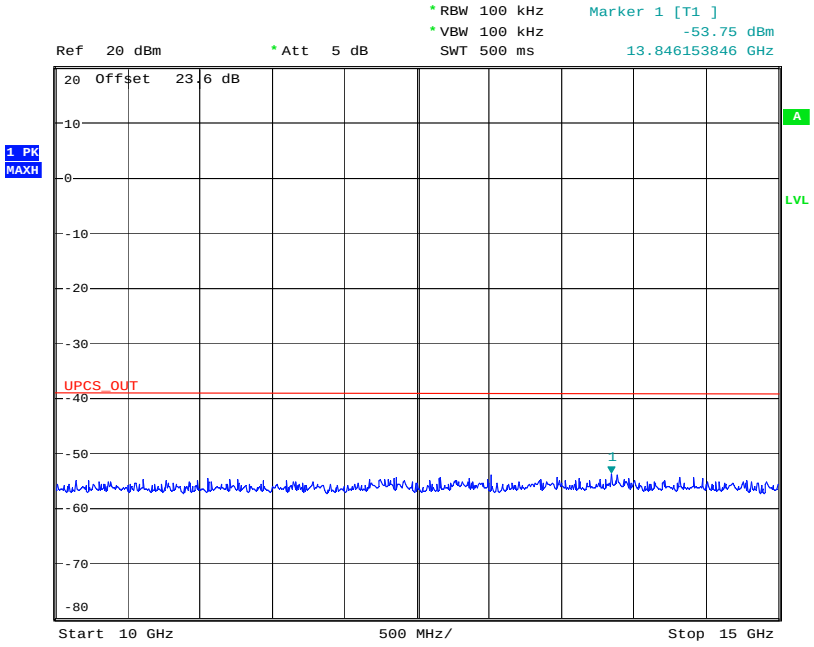


Date: 8.JUL.2009 11:06:44

RF carrier set to the lowest carrier defined by the EUT

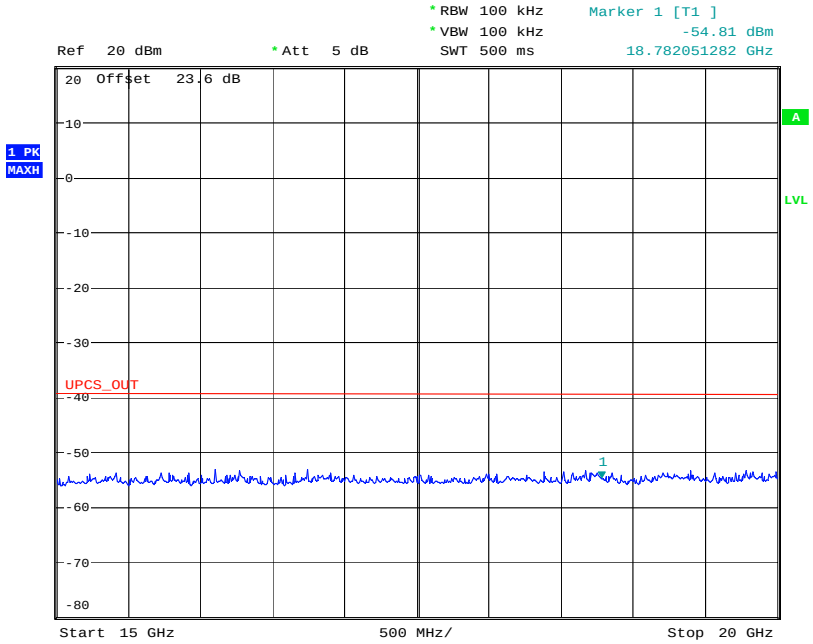


Date: 8.JUL.2009 11:07:05



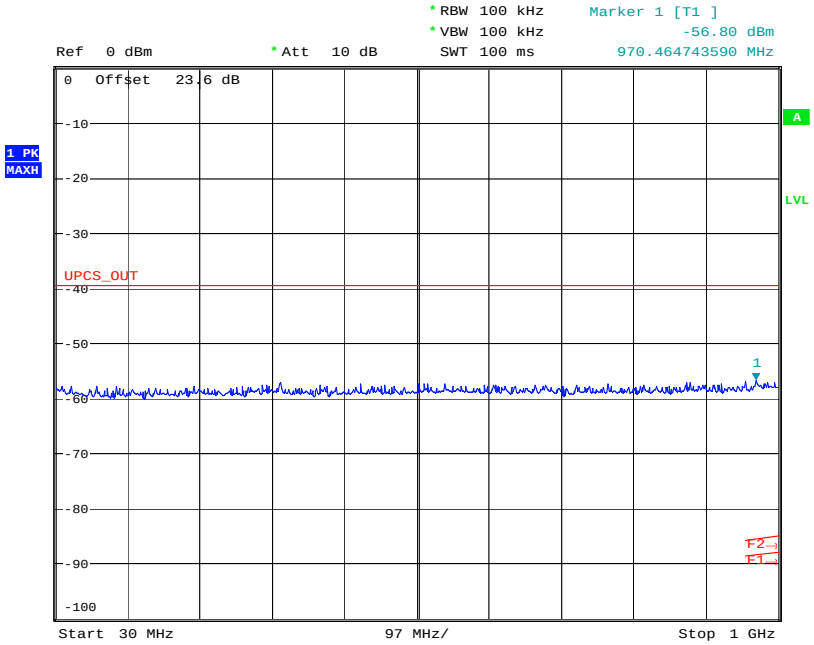
Date: 8.JUL.2009 11:07:30

RF carrier set to the lowest carrier defined by the EUT

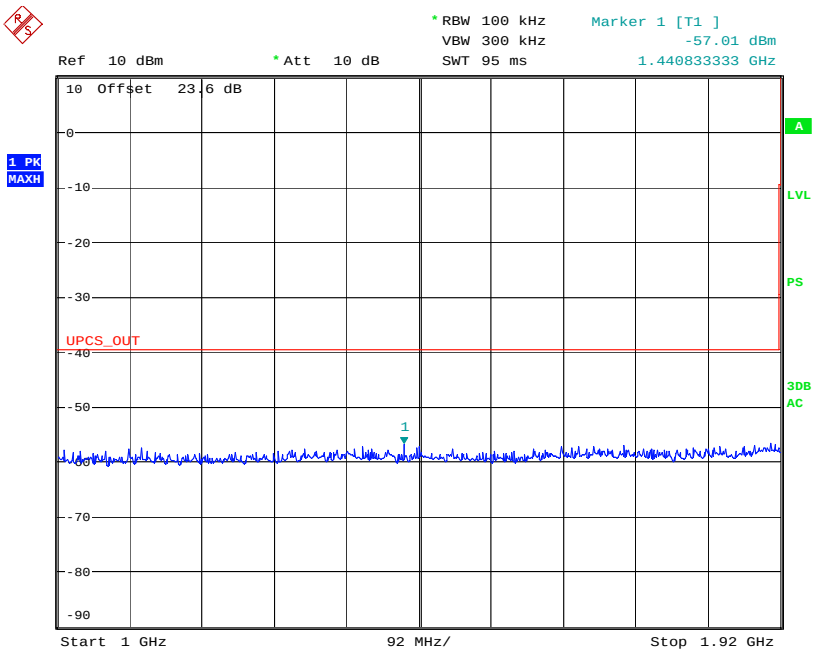


Date: 8.JUL.2009 11:09:59

RF carrier set to the highest carrier defined by the EUT



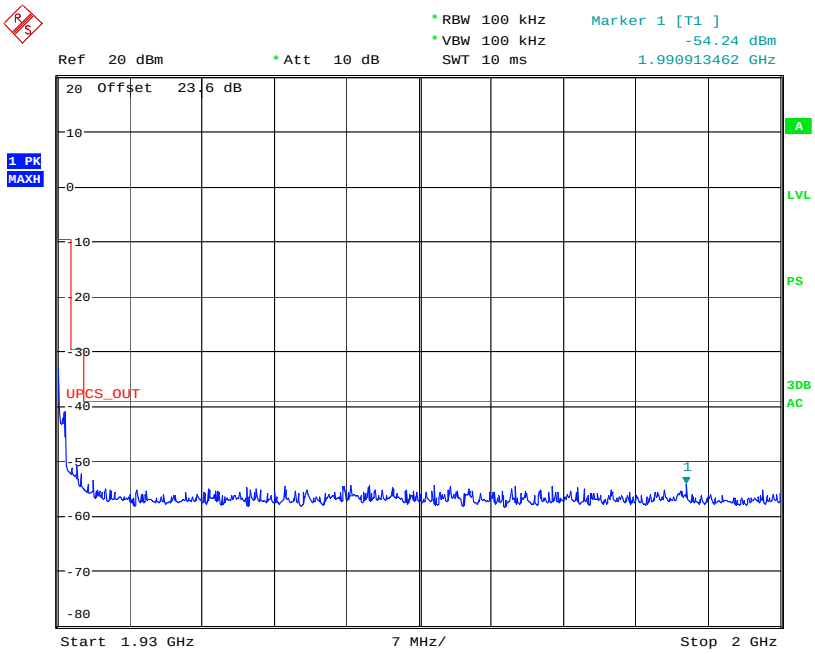
Date: 17.FEB.2009 15:14:37



TET TYU

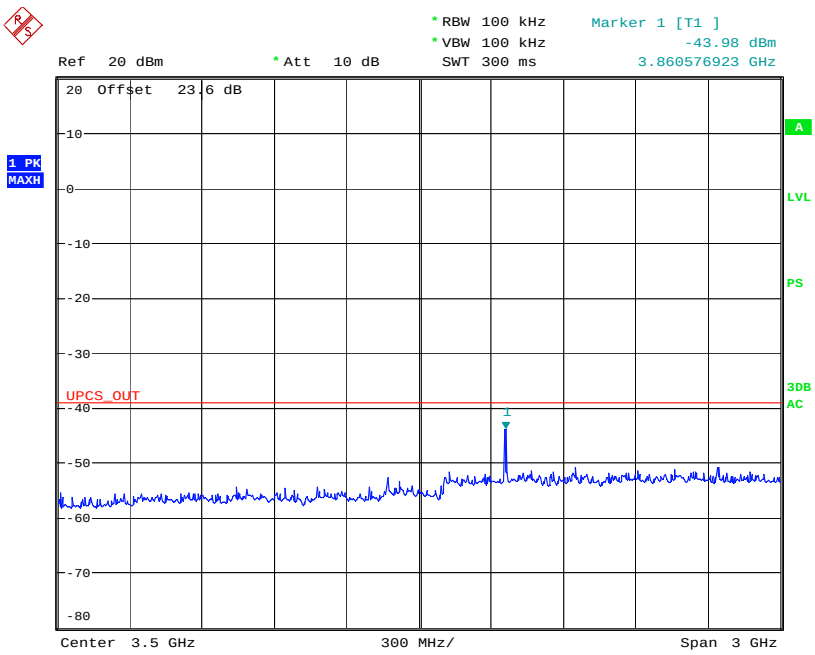
Date: 26.JUN.2009 14:16:33

RF carrier set to the highest carrier defined by the EUT



TET TYU

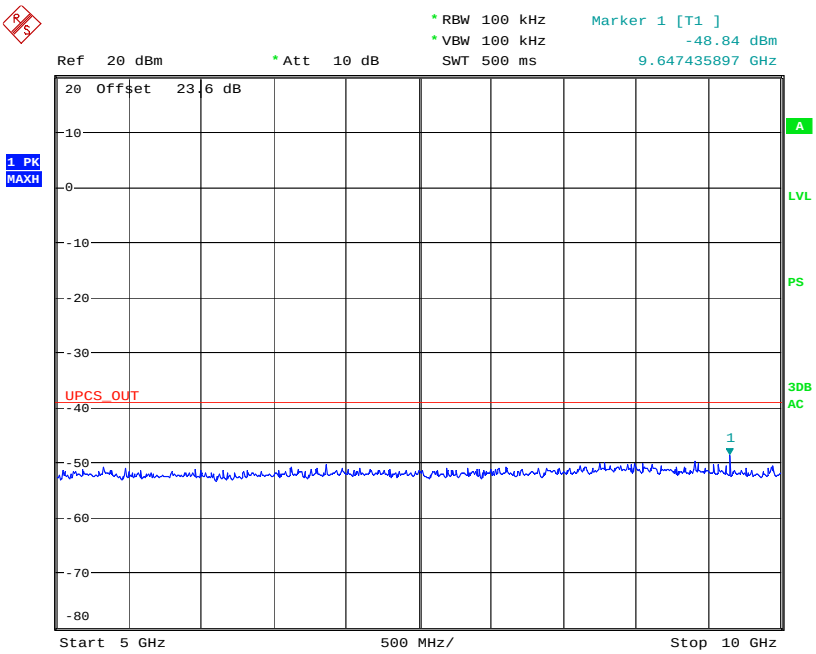
Date: 26.JUN.2009 14:19:58



TET TYU

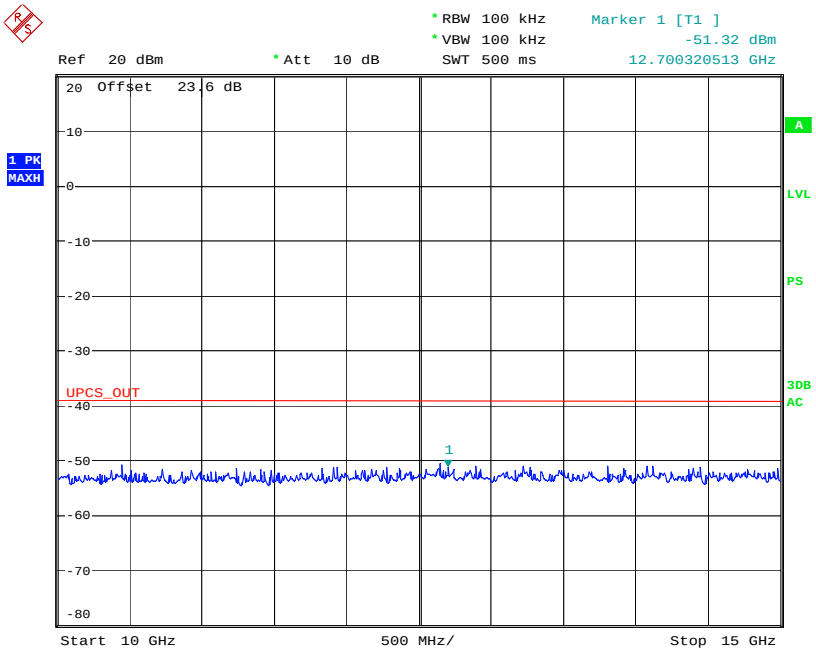
Date: 26.JUN.2009 14:20:28

RF carrier set to the highest carrier defined by the EUT



TET TYU

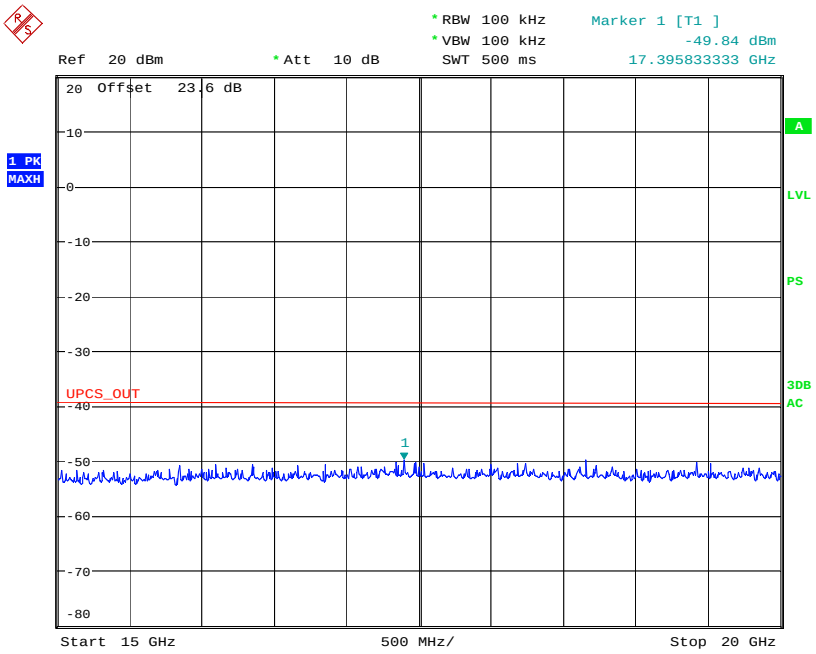
Date: 26.JUN.2009 14:23:44



TET TYU

Date: 26.JUN.2009 14:24:10

RF carrier set to the highest carrier defined by the EUT



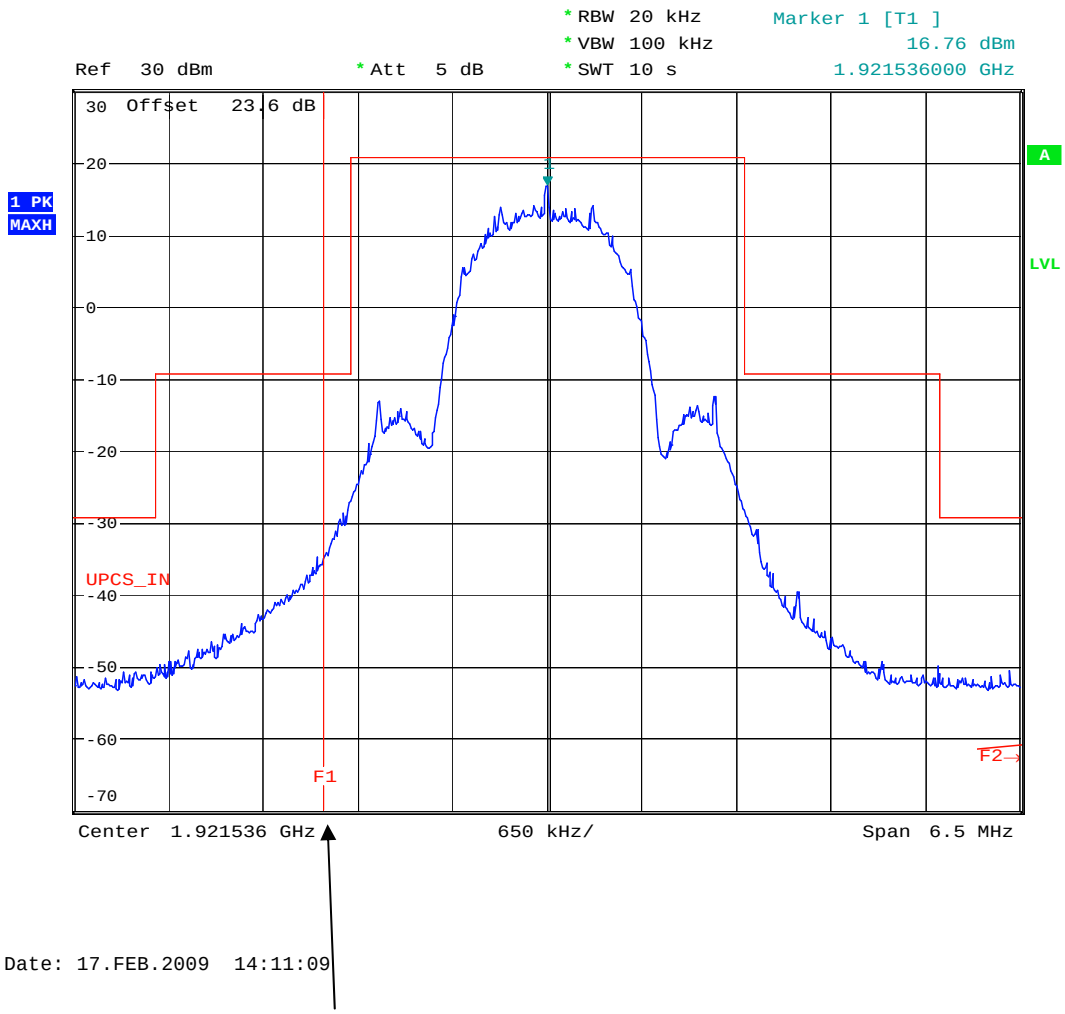
TET TYU

Date: 26.JUN.2009 14:24:30

ANNEX G

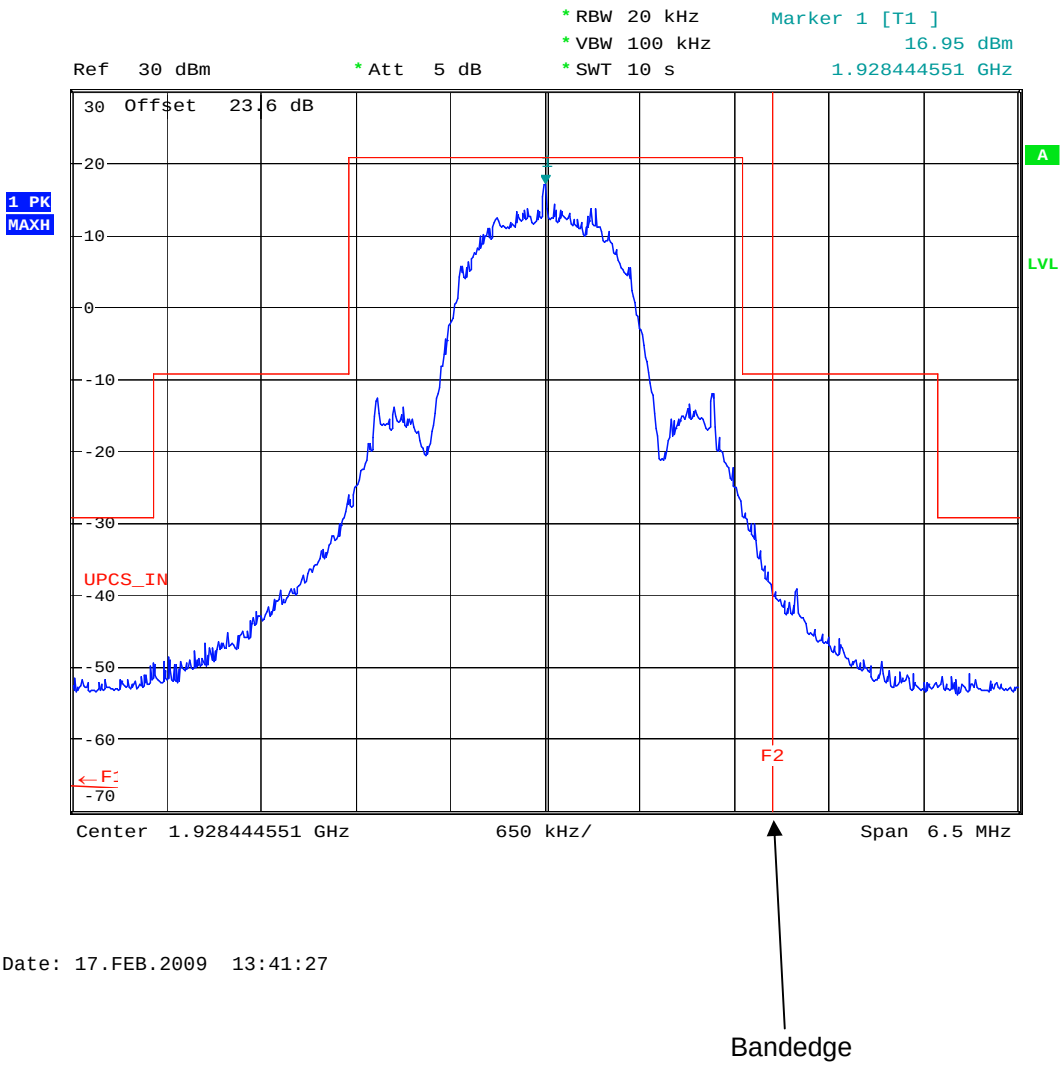
EMISSIONS INSIDE THE SUB-BAND – CONDUCTED

RF carrier set to the lowest carrier defined by the EUT



Bandedge

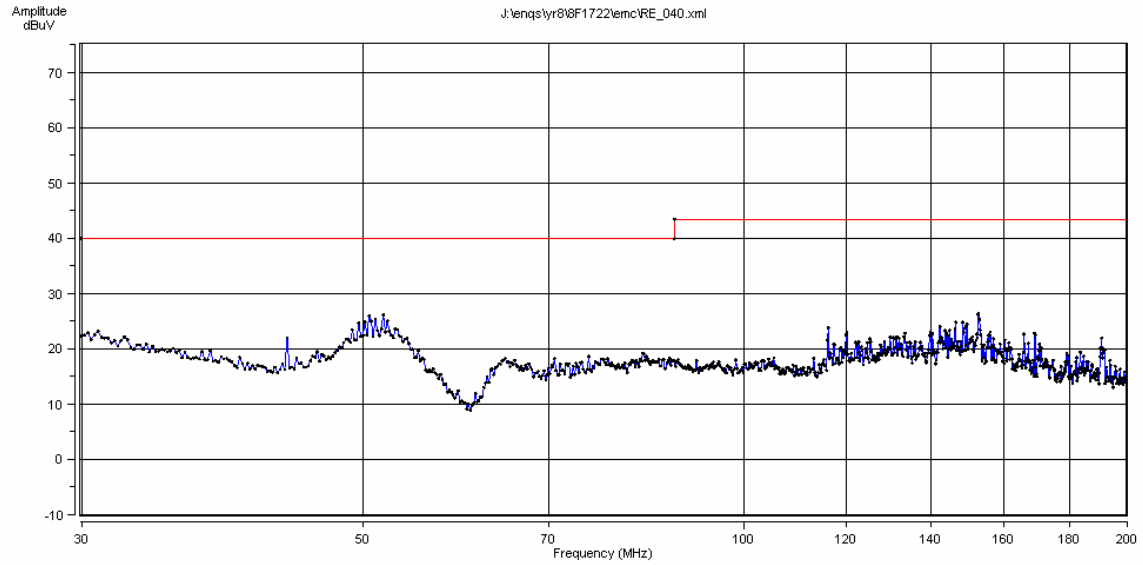
RF carrier set to the highest carrier defined by the EUT



ANNEX H

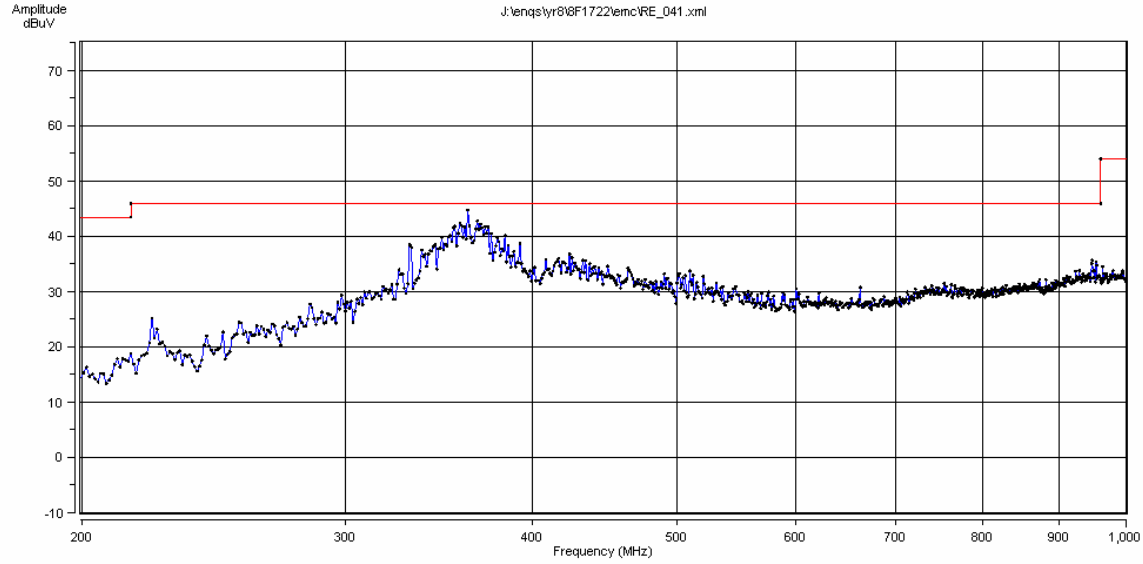
SPURIOUS EMISSIONS – RADIATED

KTL EMC Emissions Software - Radiated emissions



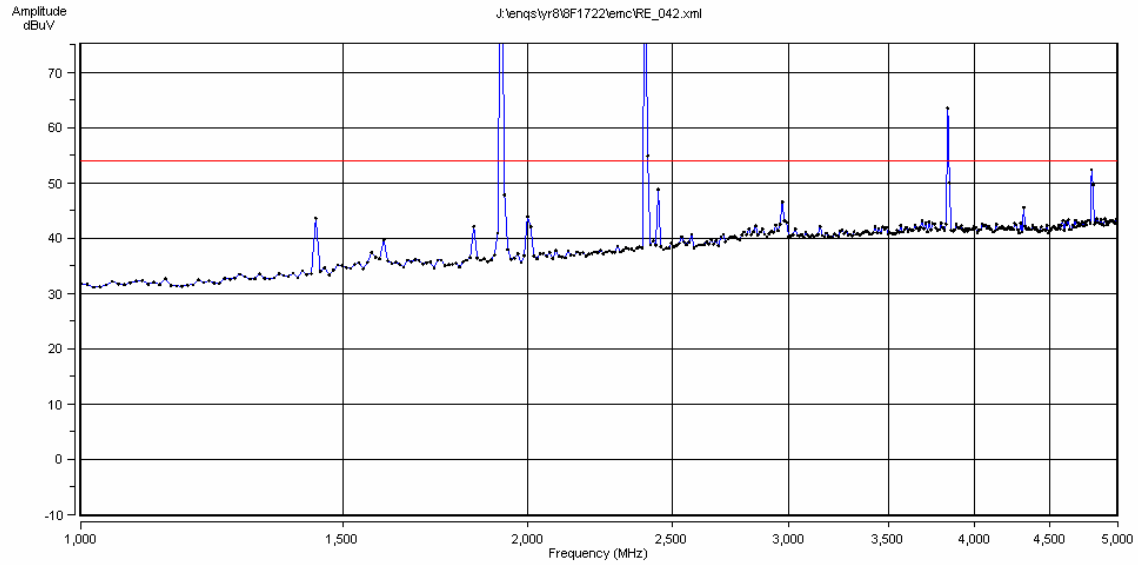
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2402MHz Bottom
Spec Distance (m):	3	**Mod State:**	DECT Double slot mode: TX 1921.53
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PS	**Date/Time:**	03/07/2009 15:46:00
Sample Numbers:	S02, S40 and S04	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions



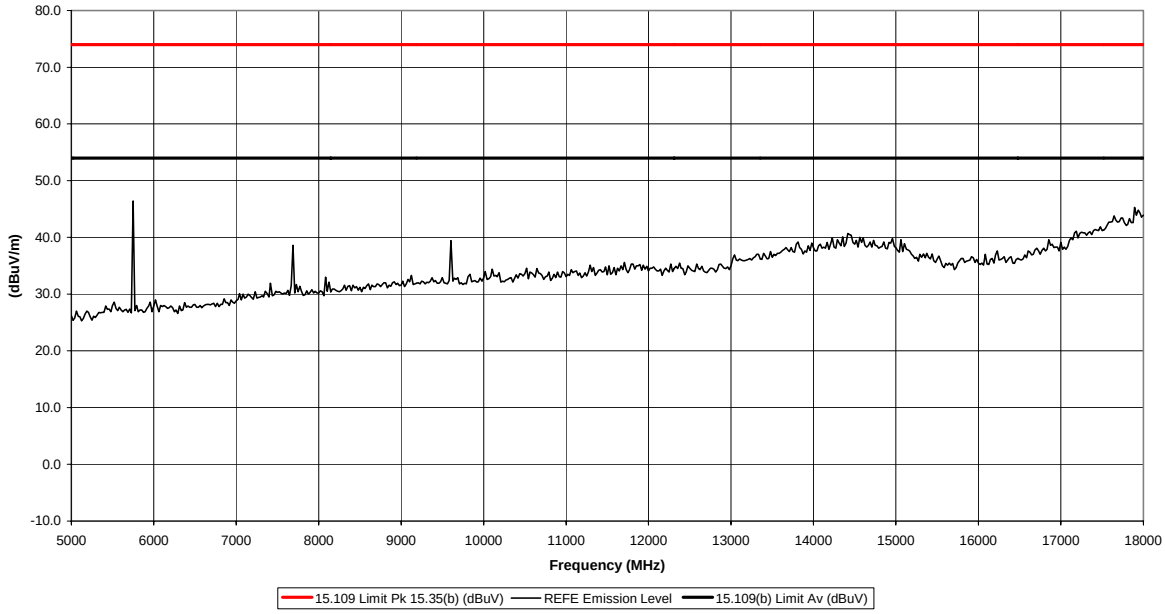
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2402MHz Bottom
Spec Distance (m):	3	**Mod State:**	DECT Double slot mode: TX 1921.53
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PS	**Date/Time:**	03/07/2009 16:13:47
Sample Numbers:	S02, S40 and S04	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions

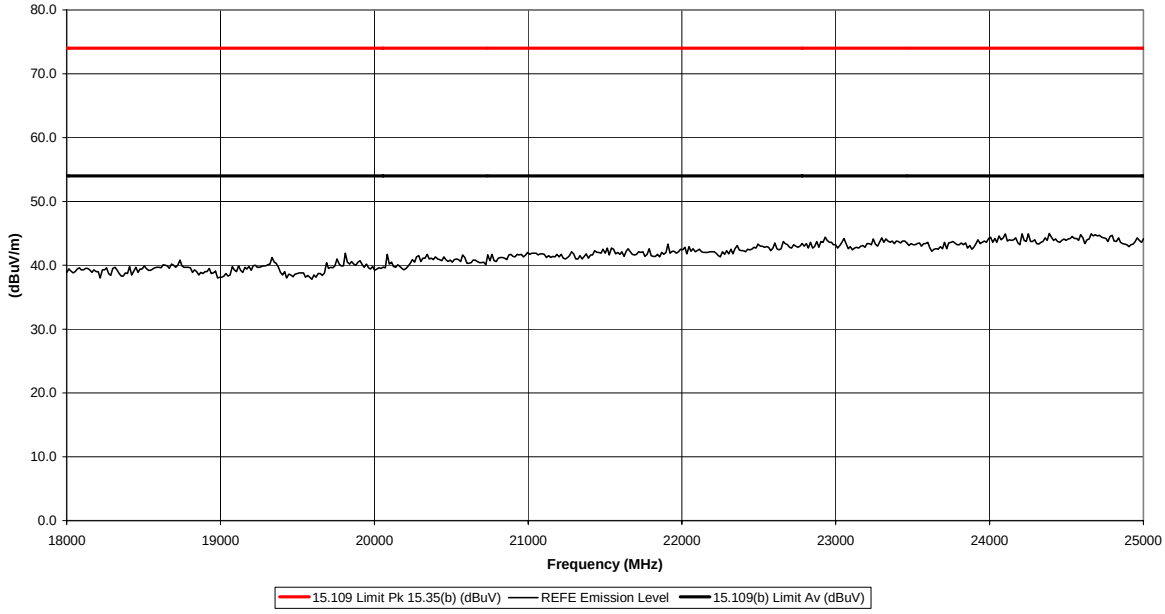


Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	E4407B (HP commands)	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2402MHz Bottom DECT Double slot mode: TX 1921.53
Spec Distance (m):	3	**Mod State:**	8
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PSU	**Date/Time:**	03/07/2009 17:20:36
Sample Numbers:	S02, S40 and S04	**Job Number:**	8F1722

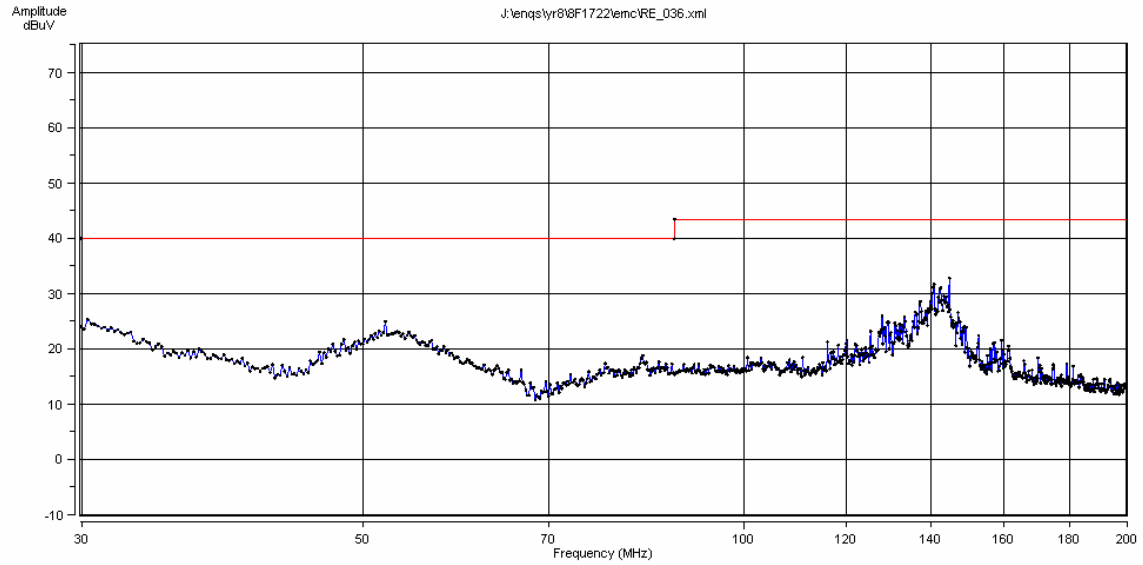
Peak Detector Preview Spurious Emissions (HOR/VER Pol) (REFE)
Job No. 8F1722 Sample No. S02, S40 and S04
TX Operating Mode:
TX Operating Mode: Bottom Channel: BT TX 2402MHz and DECT TX 1921.536MHz



Peak Detector Preview Spurious Emissions (HOR/VER Pol) (REFE)
Job No. 8F1722 Sample No. S02, S40 and S04
TX Operating Mode:
TX Operating Mode: Bottom Channel: BT TX 2402MHz and DECT TX 1921.536MHz

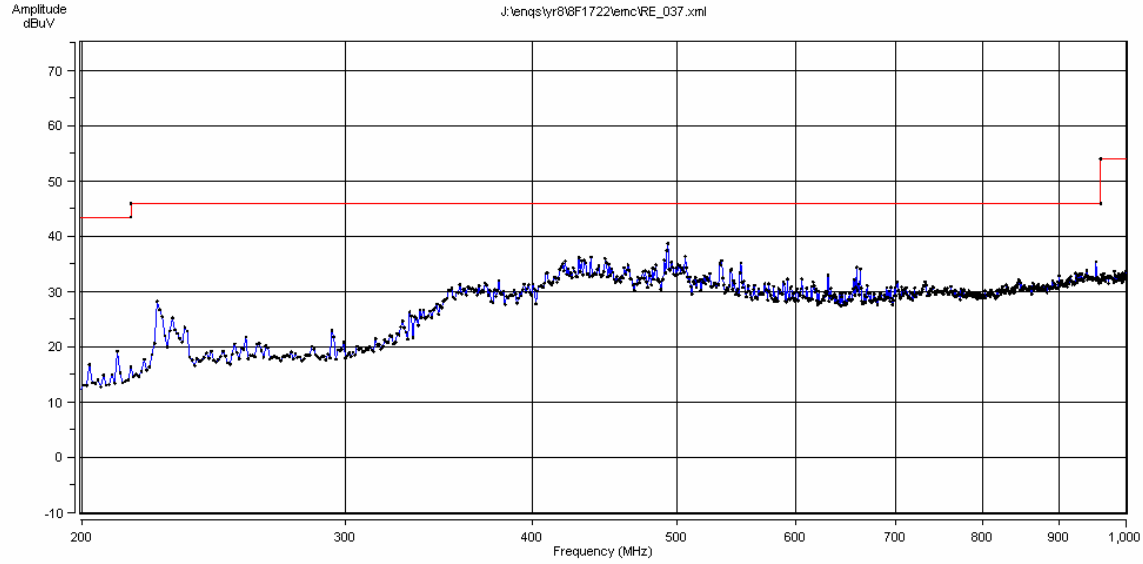


KTL EMC Emissions Software - Radiated emissions



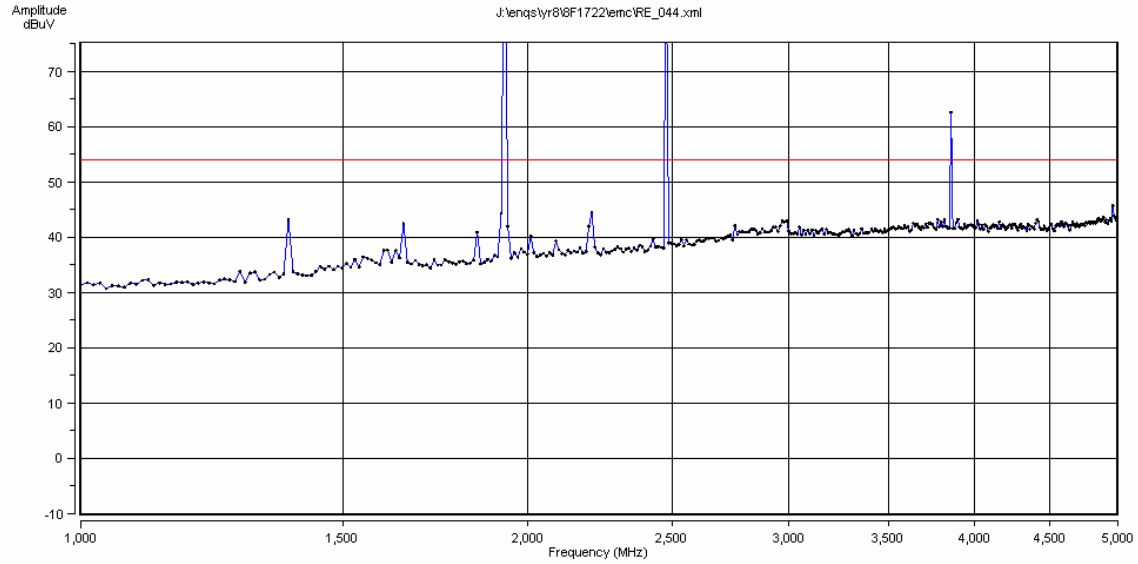
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2480MHz Top DECT Double slot mode: TX 1928.44
Spec Distance (m):	3	**Mod State:**	8
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PSU	**Date/Time:**	03/07/2009 12:50:53
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions



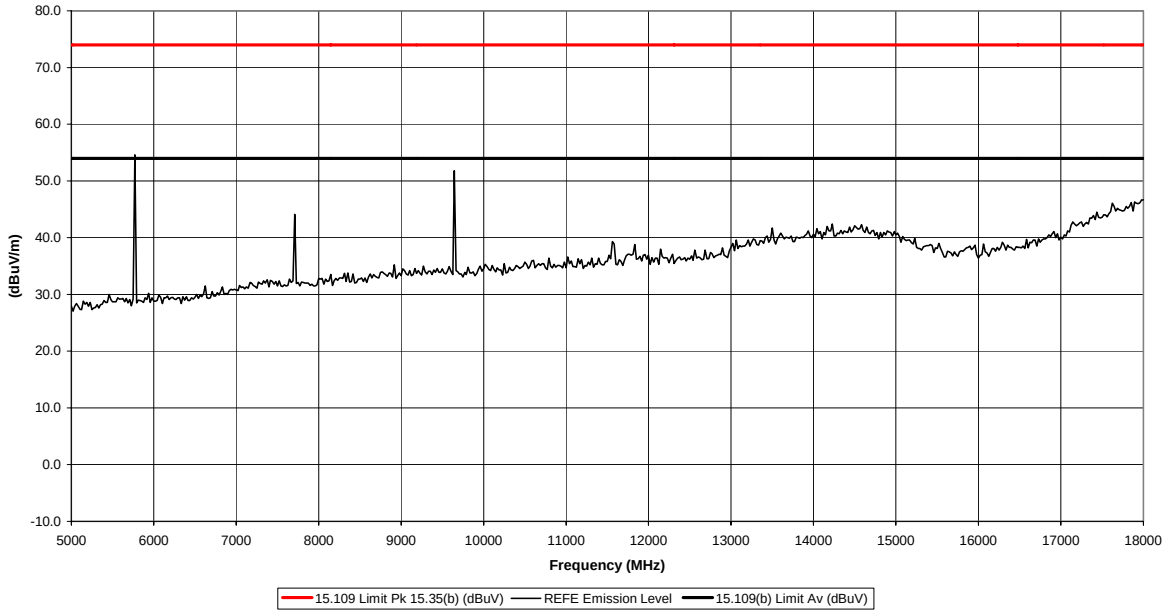
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2480MHz Top DECT Double slot mode: TX 1928.44
Spec Distance (m):	3	**Mod State:**	8
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PSU	**Date/Time:**	03/07/2009 13:02:53
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions

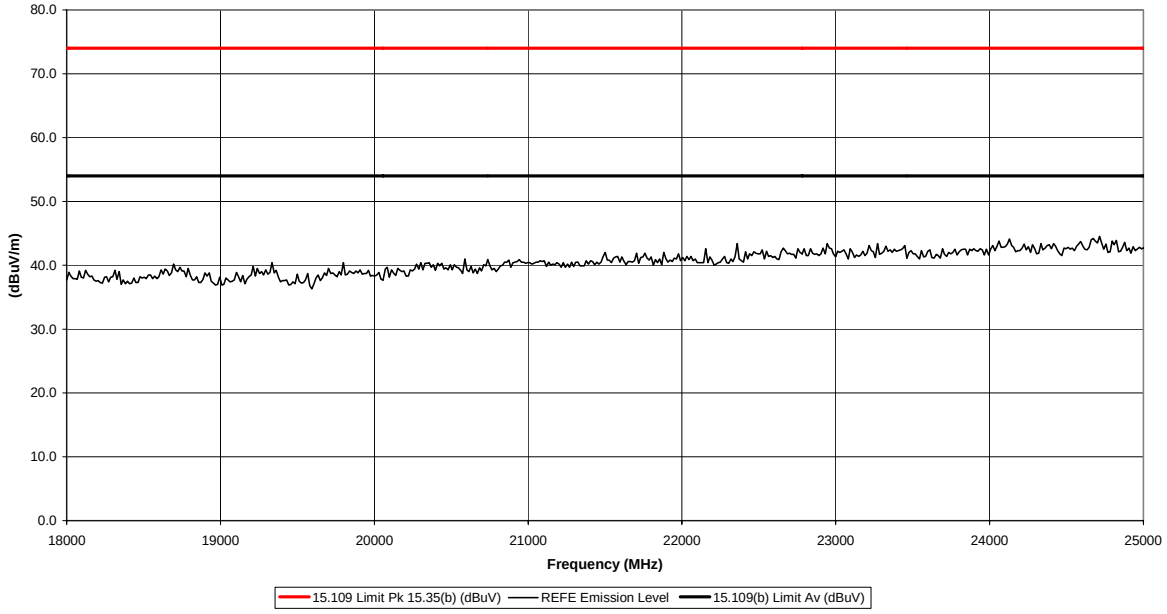


Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	E4407B (HP commands)	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2480MHz Top DECT Double slot mode: TX 1928.44
Spec Distance (m):	3	**Mod State:**	B
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PS	**Date/Time:**	03/07/2009 17:42:28
Sample Numbers:	S02, S40 and S04	**Job Number:**	8F1722

Peak Detector Preview Spurious Emissions (HOR/VER Pol) (REFE)
Job No. 8F1722 Sample No. S02, S40 and S04
TX Operating Mode:
Top Channels: BT TX 2480MHz and DECT TX 1928.448MHz

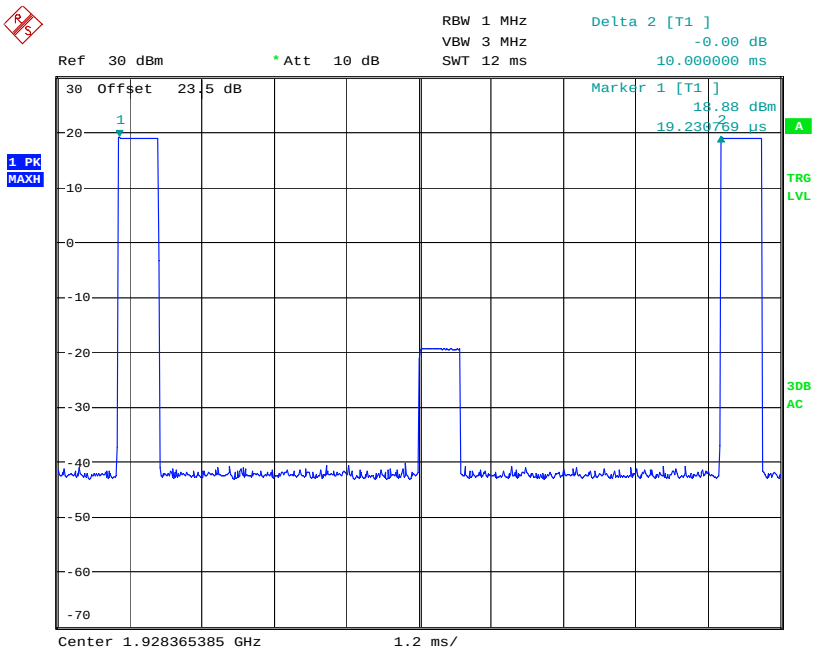


Peak Detector Preview Spurious Emissions (HOR/VER Pol) (REFE)
Job No. 8F1722 Sample No. S02, S40 and S04
TX Operating Mode:
Top Channels: BT TX 2480MHz and DECT TX 1928.448MHz



ANNEX I

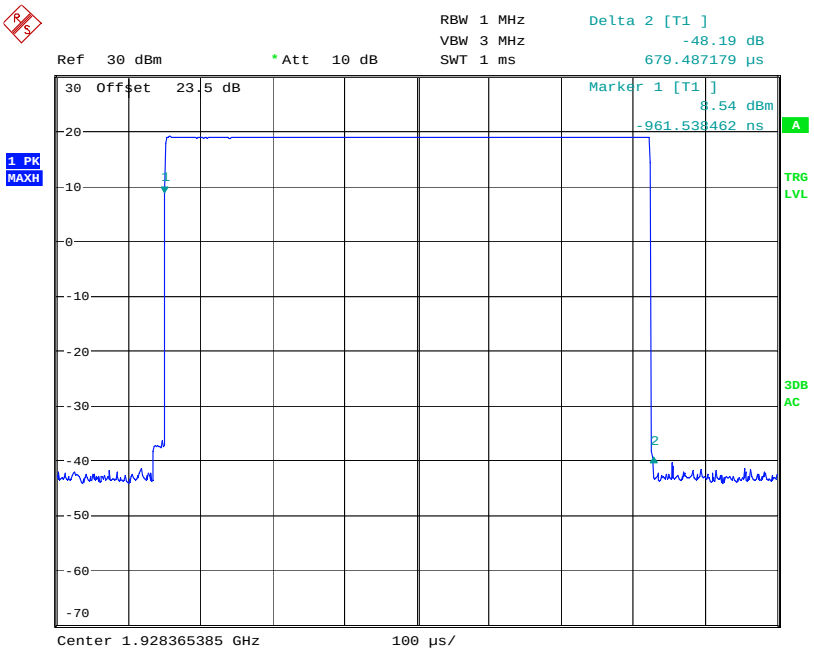
WIDEBAND FRAME PERIOD



TET TYU

Date: 26.JUN.2009 13:06:50

T_{Frame} = 10.0ms



TET TYU

Date: 26.JUN.2009 13:06:21

T_{on} = 697µs

ANNEX J

EQUIPMENT DETAILS & CALIBRATION

TYPE OF EQUIPMENT	MAKER/ SUPPLIER	MODEL No	SERIAL No	TRL No	ACTUAL EQUIPMENT USED
TEMPERATURE CHAMBER	SHARTREE	TCC 125-815P	CS 203	11	**X**
ATTENUATOR	BIRD	8302-060	N/A	106	**X**
ATTENUATOR	BIRD	8302-100	N/A	173	**X**
SIGNAL GENERATOR	MARCONI	2042	119388/080	176	**X**
ATTENUATOR	BIRD	8304-100-N	N/A	222	**X**
ATTENUATOR	BIRD	8304-0600-N	N/A	246	**X**
SIGNAL GENERATOR	MARCONI	2042	119562/021	254	**X**
TEMPERATURE INDICATOR	FLUKE	52 Series II	74700044	426	**X**
FUNCTION GENERATOR	WAVETEK	178	V644080	638	**X**
OSCILLOSCOPE	TEKTRONIX	TDS520B	B020491	UH122	**X**
FUNCTION GENERATOR	WAVETEK	271	C6841078	UH221	**X**
SPECTRUM ANALYSER	ROHDE & SCHWARZ	FSU 46	200034	UH281	**X**
POWER SPLITTER/COMBINER	HP	11667A	13723	UH303	**X**
POWER SPLITTER/COMBINER	HP	11667A	06690	UH305	**X**
POWER SPLITTER/COMBINER	HP	11667A	332	UH306	**X**
CRYSTAL DETECTOR	HP	8472A	1822A00897	UH307	**X**
MODULATION ANALYSER	ROHDE & SCHWARZ	CMD 60	N/A	N/A	**X**

TRL Number	Equipment Type	Manufacturer	Last Cal Calibration	Calibration Period	Due For Calibration
L011	Temperature chamber	Shartree	Use Calibrated Temperature Indicator		
L106	Attenuator	Bird	Calibrate in use		
L173	Attenuator	Bird	Calibrate in use		
L176	Signal Generator	Marconi	23/06/2009	12	23/06/2010
L222	Attenuator	Bird	Calibrate in use		
L246	Attenuator	Bird	Calibrate in use		
L254	Signal Generator	Marconi	25/02/09	12	25/02/10
L426	Temperature Indicator	Fluke	21/01/2009	12	21/01/2010
L638	Function Generator	Wavetek	Use Calibrated oscilloscope		
UH122	Oscilloscope	Tektronix	10/12/2007	24	10/12/2009
UH221	Function Generator	Wavetek	Use Calibrated oscilloscope		
UH281	Spectrum Analyser	R&S	24/07/2006	12	24/07/2007
UH303	Power Splitter/Combiner	HP	Calibrate in use		
UH305	Power Splitter/Combiner	HP	Calibrate in use		
UH306	Power Splitter/Combiner	HP	Calibrate in use		
UH307	Crystal Detector	HP	For information only		
	CMD 60	R&S			

ANNEX K

MEASUREMENT UNCERTAINTY

Radio Testing – General Uncertainty Schedule

All statements of uncertainty are expanded standard uncertainty using a coverage factor of 1.96 to give a 95% confidence where no required test level exists.

[1] Adjacent Channel Power

Uncertainty in test result = **1.86dB**

[2] Carrier Power

Uncertainty in test result (Equipment - TRLUH120) = **2.18dB**
Uncertainty in test result (Equipment – TRL05) = **1.08dB**
Uncertainty in test result (Equipment – TRL479) = **2.48dB**

[3] Effective Radiated Power

Uncertainty in test result = **4.71dB**

[4] Spurious Emissions

Uncertainty in test result = **4.75dB**

[5] Maximum frequency error

Uncertainty in test result (Equipment - TRLUH120) = **119ppm**
Uncertainty in test result (Equipment – TRL05) = **0.113ppm**
Uncertainty in test result (Equipment – TRL479) = **0.265ppm**

[6] Radiated Emissions, field strength OATS 14kHz-18GHz Electric Field

Uncertainty in test result (14kHz – 30MHz) = **4.8dB**, Uncertainty in test result (30MHz – 1GHz) = **4.6dB**, Uncertainty in test result (1GHz-18GHz) = **4.7dB**

[7] Frequency deviation

Uncertainty in test result = **3.2%**

[8] Magnetic Field Emissions

Uncertainty in test result = **2.3dB**

[9] Conducted Spurious

Uncertainty in test result (Equipment TRL479) Up to 8.1GHz = **3.31dB**
Uncertainty in test result (Equipment TRL479) 8.1GHz – 15.3GHz = **4.43dB**
Uncertainty in test result (Equipment TRL479) 15.3GHz – 21GHz = **5.34dB**
Uncertainty in test result (Equipment TRLUH120) Up to 26GHz = **3.14dB**

[10] Channel Bandwidth

Uncertainty in test result = **15.5%**

[11] Amplitude and Time Measurement – Oscilloscope

Uncertainty in overall test level = **2.1dB**, Uncertainty in time measurement = **0.59%,** Uncertainty in Amplitude measurement = **0.82%**

[11] Power Line Conduction

Uncertainty in test result = **3.4dB**

[12] Spectrum Mask Measurements

Uncertainty in test result = **2.59% (frequency)**
Uncertainty in test result = **1.32dB (amplitude)**

[13] Adjacent Sub Band Selectivity

Uncertainty in test result = **1.24dB**

[14] Receiver Blocking – Listen Mode, Radiated

Uncertainty in test result = **3.42dB**

[15] Receiver Blocking – Talk Mode, Radiated

Uncertainty in test result = **3.36dB**

[16] Receiver Blocking – Talk Mode, Conducted

Uncertainty in test result = **1.24dB**

[17] Receiver Threshold

Uncertainty in test result = **3.23dB**

[18] Transmission Time Measurement

Uncertainty in test result = **7.98%**