REPORT ON THE CERTIFICATION TESTING OF AN GN NETCOM A/S JABRA PRO 9470 BASE STATION & SSA-5W-09 UK 075065F SIL SWITCHING ADAPTER WITH RESPECT TO FCC RULES CFR 47, PART 15D July 2008 INTENTIONAL RADIATOR SPECIFICATION

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REPORT ON THE CERTIFICATION TESTING OF AN GN NETCOM A/S JABRA PRO 9470 BASE STATION & SSA-5W-09 UK 075065F SIL SWITCHING ADAPTER WITH RESPECT TO FCC RULES CFR 47, PART 15D July 2008 INTENTIONAL RADIATOR SPECIFICATION

TEST DATE: 17th February – 22nd May 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: 2009.07.09 10:54:06 +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 12:14:24 +01'00' J CHARTERS RADIO PRODUCT MANAGER

DATE: 9th July 2009

Distribution:

GN NETCOM A/S

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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 9470 Base Station
EQUIPMENT TYPE:	UPCS Transceiver
PRODUCT USE:	Personal communications
CARRIER POWER:	20.41 dBm (Conducted)
ANTENNA TYPE:	Integral
BAND OF OPERATION:	1920 MHz – 1930 MHz
CHANNEL SPACING:	1.728 MHz
NUMBER OF CHANNELS:	5 frequencies, 12 single time slots per frequency giving 60 channels
FREQUENCY GENERATION:	SAW Resonator [ ] Crystal [ ] Synthesiser [X]
MODULATION METHOD:	Amplitude [ ] Digital [X] Angle [ ]
POWER SOURCE(s):	+110 Vac
TEST DATE(s):	17th February – 22nd May 2009
ORDER No(s):	2008/11/18-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: 2009.07.09 10:53:35 +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 12:14:45 +01'00' — RADIO PRODUCT MANAGER

APPLICANT'S SUMMARY

EQUIPMENT UNDER TEST (EUT):	Jabra PRO 9470 Base Station		
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):	2008/11/18-TR001		
APPLICANT'S CONTACT PERSON(s):	Mr Tom Ringtved		
E-mail address:	tringtved@gn.com		
APPLICANT:	GN Netcom A/S		
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FAX:	+45 45 75 00 09		
TEST LABORATORY:	TRaC Telecoms & Radio, Up Holland		
TEST DATE(s):	17th February – 22nd May 2009		
TEST REPORT No:	8F1722WUS2		

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
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)	Yes
Radio Frequency Radiation Exposure	15.319 (i)	Yes
Monitoring Thresholds	15.323 (c)(2) 15.323 (c)(9)	Yes
Monitoring of Intended Transmit Window and Maximum Reaction Time	15.323 (c)(1)	Yes
Monitoring Bandwidth	15.323 (c)(7)	Yes
Access Criteria Functional Test	15.323 (c)(6)	Yes
Duration of Transmission	15.323 (c)(3)	Yes
Connection Acknowledgement	15.323 (c)(4)	Yes
Lower threshold Selected Channel, Power Accuracy, Segment Occupancy	15.323 (c)(5)	Yes
Monitoring Antenna	15.323 (c)(8)	Yes
Duplex Connections	15.323 (c)(10)	Yes
Alternative Monitoring Interval for Co-located Devices	15.323 (c)(11)	No Note 3
Fair Access to Spectrum Related to (c)(10) & (c)(11)	15.323 (c)(12)	Yes
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. Not utilized by this EUT as devices will not be co-located within 1m of each other.

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	+110 Vac

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. 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.

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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(s).

ANTENNA REQUIREMENTS – PART 15.317

The units employ an integral antenna arrangement.

MODULATION TECHNIQUES – PART 15.319 (b)

The GN NETCOM A/S Jabra PRO 9470 Base Station is an isochronous device operating in the 1920 MHz – 1930 MHz frequency band.

The GN NETCOM A/S Jabra PRO 9470 Base Stations 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 9470 Base Stations modulation techniques are MC/TDMA/TDD (Multi Carrier / Time Division Multiple Access / Time Division Duplex) using QPSK modulation.

TRANSMITTER CONDUCTED EMISSIONS – AC POWER LINE PART 15.315

SIGNIFICANT EMISSIONS

FREQUENCY (MHz)	MEASUREMENT RECEIVER READING (dBµV)	DETECTOR	CONDUCTOR (L or N)	Limit (dBµV)
1.388	37.7	Quasi Peak	Live	56.0
4.409	36.6	Quasi Peak	Live	56.0

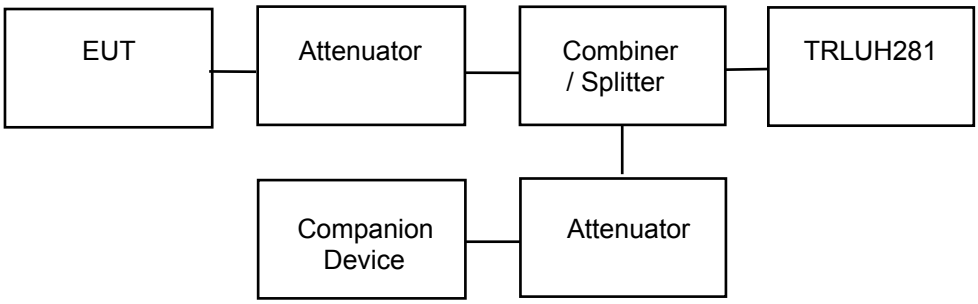
Notes:
1 See Annex C for powerline plot.
2 Emissions that are 20 dB's or more below the limit are not necessarily recorded.
3 The EUT was tested transmitting a dummy bearer and traffic bearer simultaneously.
4 Closest emissions to the applicable limit are recorded.

Test Method:
1 As per Radio – Noise Emissions, ANSI C63.4: 2003.

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	1920.791679	1922.233987	1.442	50kHz> Δf > 2.5MHz
-12	1920.907604	1922.113795	1.206	N/A
-6	1921.051295	1921.983987	0.933	N/A

f_x = 1924.992 MHz				
Δ P (dBc)	fl (MHz)	fh (MHz)	Δf (MHz)	Limit
-26	1924.242788	1925.675481	1.433	50kHz> Δf > 2.5MHz
-12	1924.358173	1925.569712	1.212	N/A
-6	1924.502404	1925.430228	0.927	N/A

f_x = 1928.448 MHz				
Δ P (dBc)	fl (MHz)	fh (MHz)	Δf (MHz)	Limit
-26	1927.698000	1929.154731	1.456	50kHz> Δf > 2.5MHz
-12	1927.823000	1929.020115	1.197	N/A
-6	1927.943192	1928.809308	0.947	N/A

Notes: 1. See emission bandwidth plots in Annex D.
2. Emission bandwidth Δf rounded up.
3. Emission bandwidth measured with an active communications channel.

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 12).

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 = 1.456MHz

PTP = 5 Log_{10} 1.456MHz – 10 dBm

PTP = 20.81 dBm

Results

Frequency (MHz)	Peak Transmit Power (dBm)	Limit (dBm)
1921.536	19.93	20.81
1924.992	20.41	20.81
1928.448	18.95	20.81

Note:
1. A connection was made to the antenna connector to enable conducted measurements.
2. Antenna gain < 3dBi and so correction of the limit is not required.
3. See Annex E for Peak Transmit Power Plots.

POWER SPECTRAL DENSITY – PART 15.319 (d)

The power spectral density is measured using test setup 1, (page 12).

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	0.55	3
1924.992	1.53	3
1928.448	1.09	3

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

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
+2dBi	N/A

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

AUTOMATIC DISCONTINUATION OF TRANSMISSION – PART 15.319 (f)

Automatic discontinuation of transmission means break off of transmissions that are not control and signalling information.

This test is monitored using the test setup 1(page 10) as per transmitter emission bandwidth and an active channel.

The BCE-9400 is a fixed part and as such transmits control and signalling information the counter part device is a portable part device and so does not transmit control and signalling information.

Part	Transmits Control and Signaling Information	Equipment Under Test
Fixed Part	X	X
Portable Part		

Results

The following tests were performed after a connection had been established with the counter part device

Number	Test	Reaction of EUT	Pass / Fail
1	Power removed from EUT	A	Pass
2	Power Removed From Companion Device	B	Pass
3	Companion Device powered Down	B	Pass
4	EUT Mounted on Companion device	B	Pass

A – Connection breakdown, Cease of all transmissions.
B – Connection breakdown, EUT transmits control and signalling information.
C – Connection breakdown, Counterpart transmits control and signalling information.

RADIO FREQUENCY RADIATION EXPOSURE – PART 15.319 (i)

This information is contained is a separate document

MONITORING THRESHOLDS – PART 15.323 (c)(2); (c)(9)

The monitoring threshold calculations are carried out in accordance with ANSI C63.17 sub-clause 7.2.1 using the calculations laid out in ANSI C63.17 sub-clauses 4.3.3 and 4.3.4

Calculation of monitoring threshold limits for isochronous devices:

Lower threshold: $T_L = -174 + 10Log_{10}B + M_U + P_{MAX} - P_{EUT}$ (dBm)

Upper threshold: $T_U = -174 + 10Log_{10}B + M_U + P_{MAX} - P_{EUT}$ (dBm)

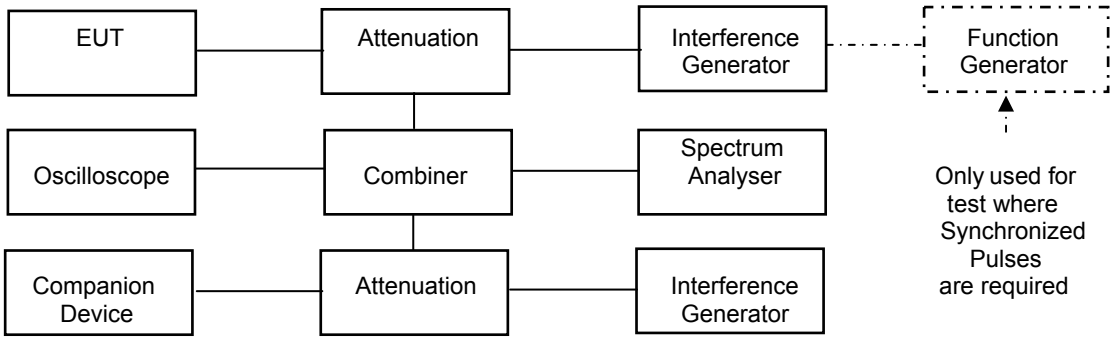
Where: B = Emission bandwidth (Hz)
M_U = dBs the threshold may exceed thermal noise (30 for T_L & 50 for T_U)
P_{MAX} = Output Power Limit (dBm)
P_{EUT} = Transmitted power (dBm)

Monitor Threshold	B (MHz)	M_U (dB)	P_{MAX} (dBm)	P_{EUT} (dBm)	Threshold (dBm)
T_L	1.456	30	20.81	20.41	-61.9
T_U	1.456	50	20.81	20.41	-81.9

Note: 1. The upper threshold (T_U) is only applicable for systems with a minimum of 40 channels.

The monitoring threshold tests are carried out in accordance with ANSI C63.17 sub-clause 7.3 using the test setup 2. The upper threshold level was determined following the procedure as laid out in ANSI C63.17 sub-clause 7.3.2 (a) Frequency administration was used to allow operation on the carrier closest to the centre of the band.

Test Setup 2:



Limits

The EUT must not transmit until the interference level is less than or equal to:

Measured Threshold Level ≤ $T_U + U_M$

Where: T_U = Calculated Upper threshold level
U_M = Margin of uncertainty in threshold measurements (6dB)

Results

Monitor threshold	Measured Threshold Level	Limit	Pass/Fail
Lower Threshold (dBm)	N/A	N/A	Pass
Upper threshold (dBm)	--63.0	-56.0	Pass

Notes: 1. The upper threshold is applicable as the EUT utilizes more than 40 system channels.

MONITORING OF INTENDED TRANSMIT WINDOW AND MAXIMUM REACTION TIME – PART 15.323 (c)(1)

The monitoring of intended transmit window was carried out in accordance with ANSI C63.17 sub-clause 7.5 using test setup 2 (page 13).

The EUT was frequency administered to only one operating frequency channel and only one of the interference generators in the test setup was utilized. The interference generator was fed pulses from the function generator to produce a pulsed carrier of the specified time length and the output of the interference generator was set to the required level. The pulse generator and EUT were synchronized so the position of the pulses corresponded to the time-slot pattern in the frame of the EUT. The test is performed with the unit frequency administered to operate only on bottom, middle or top frequency.

For each of the required tests the pulse width and interference level are as below:

Test c)

With the interference generator output set at the calculated threshold level (upper) plus measurement uncertainty (U_M) and the width of the pulse interference exceeds the largest of 50μs and $50\sqrt{1.25/B}$ μs verify that the EUT does not establish a connection.

Test d)

With the interference generator output set at 6dB above the calculated threshold level (upper) plus measurement uncertainty (U_M) and the width of the pulse interference exceeds the largest of 35μs and $35\sqrt{1.25/B}$ μs verify that the EUT does not establish a connection.

Where B = Emission bandwidth of the EUT in MHz

Results

Test Equation (μs)	Pulse Width (μs)	Interferer Level (dBm)	Connection Made			Pass/Fail
			F_L	F_M	F_H	
$50\sqrt{1.25/B}$	50	$T_U + U_m$	No	No	No	Pass
$35\sqrt{1.25/B}$	35	$T_U + U_m + 6$	No	No	No	Pass

Notes:
1. T_U is the calculated upper threshold.
2. U_M is Margin of uncertainty in threshold measurements (6dB).

ACCESS CRITERIA FUNCTIONAL TEST– PART 15.323 (c)(6)

The access criteria test interval tests were carried out in accordance with ANSI C63.17 sub-clause 8.1.1 and 8.1.2 using test setup 2 (page 13). These tests are only applied to a EUT capable of transmitting control and signaling information. ANSI C63.17 sub-clause 8.1.3 is not applicable the random waiting interval option is not implemented.

The EUT was frequency administered to only one operating frequency. The interference generator was fed pulses from the function generator to produce a pulsed carrier of the specified time length and the output of the interference generator was set to the required level. The pulse generator and EUT were synchronized so the position of the pulses corresponded to the time-slot pattern in the frame of the EUT. The tests were performed to find the following:

ANSI C63.17 sub-clause 8.1.1

Test b)
The interference generator was setup to introduce interference on all but one time slot (single slot). The free slot was set to coincide with slot 4. The transmissions if any should occur on the free time slot. Verify that the access criteria are checked not less frequently than every 30 seconds

Results

Test	Test Data Required	Test Result	Limit	Pass/Fail
Access Criteria Selection of Channel,	Any transmissions and on which time slot	Transmissions occurred on time slot 4	Transmit on time slot 4	Pass
Repetition of Access Criteria (note 1)	Interval Between Access Criteria	1.282 seconds	<30 Seconds	Pass

Note: 1. The interval between access criteria test is checked 5 times.
2. See Annex G for plots of the access criteria test interval.

ANSI C63.17 sub-clause 8.1.2

f1 = 1924.992 MHz
f2 = 1926.720 MHz

Test b)
With no interference on, the EUT must transmit on f1 or f2. The interference is then applied to the channel used by the EUT at the appropriate level. Verify that after the application of interference the EUT transmits on the open channel after the next pause.

Results

Test	Before interference applied EUT transmits on	After interference applied on f1 EUT transmits on	Limit	Pass/Fail
8.1.2 Test b	f1	f2	Change channel after application of interference	Pass

Notes: 1. See Annex H for timing plots of access criteria functional test.
2. 47CFR15.323(c)(6) Random Waiting Interval option not implemented.

MONITORING BANDWIDTH – PART 15.323 (c)(7)

The monitoring bandwidth test was carried out in accordance with ANSI C63.17 sub-clause 7.4.

ANSI C63.17 sub-clause 7.4 states that if the monitoring is made through the radio receiver used by the EUT for communication the intended bandwidth requirements for the monitoring system are met.

As declared by the manufacturer, the EUT uses the radio receiver used for communication for monitoring therefore the intended bandwidth requirements of ANSI C63.17 sub-clause 7.4 for the monitoring system are met.

DURATION OF TRANSMISSION – PART 15.323 (c)(3)

The duration of transmission test was carried out in accordance with ANSI C63.17 sub-clause 8.2.2 using test setup 2.(page 13) (No interference generators were active during this test).

The time/spectrum window occupied by the connection was monitored using a spectrum analyzer for the spectrum window and an oscilloscope for the time slot. The connection was watched over a period of over 3 hours during this time the access criteria was repeated several times.

Result

Repetition of Access Criteria	Maximum Transmission Time	Maximum Transmission Time Limit	Pass/Fail
Period	<3.5 Hours	<8 Hours	Pass

Notes: 1. The portable part is the initiating device that repeats the access criteria.

CONNECTION ACKNOWLEDGEMENT – PART 15.323 (c)(4)

The connection acknowledgement test was carried out in accordance with ANSI C63.17 sub-clause 8.2.1 using test setup 2. (Page 13)(No interference generators were active during this test).

The test was carried out in two parts. The first was to verify that with the companion device off the EUT does not transmit on the same time/spectrum window for more than the limit. The second was to verify that after a connection is broken the EUT terminates its transmission on the current communication channel within 30 seconds or less.

Result

Test	Time Taken (seconds)	Limit (seconds)	Pass/Fail
Transmission on communications channel no acknowledgement received (note 1)	<1 (note 2)	1	Pass
Established communication channel termination, acknowledgements blocked during communication	4.416	<30	Pass

Note:
1. The Companion device is off for this test.
2. The EUT will not transmit a communication channel with the companion device off.
3. See Annex I Acknowledgement plots.

UPPER THRESHOLD SELECTED CHANNEL, POWER ACCURACY, SEGMENT OCCUPANCY – PART 15.323 (c)(5)

Least interfered Channel

The EUT utilizes more than 40 channels the least interfered channel testing is applicable. This test was carried out in accordance with ANSI C63.17 sub-clause 7.3.3 using test setup 2 (page 13).

The EUT was frequency administered to operating on two frequencies only, f1 and f2.

f1 = 1924.992 MHz
f2 = 1926.720 MHz

Test b)
Interference on f1 was set at $T_L + U_M$ + 7dB and at $T_L + U_M$ on f2. Initiate communication. The EUT should transmit on f2. Repeat 5 times. If the EUT transmits on f1 the test is failed.

Test c)
Interference on f1 was set at $T_L + U_M$ and at $T_L + U_M$ + 7dB on f2. Initiate communication. The EUT should transmit on f1. Repeat 5 times. If the EUT transmits on f2 the test is failed.

Test d)
Interference on f1 was set at $T_L + U_M$ + 1dB and at $T_L + U_M$ - 6dB on f2. Initiate communication. The EUT should transmit on f2. Repeat 5 times. If the EUT transmits on f1 the test is failed.

Test e)
Interference on f1 was set at $T_L + U_M$ - 6dB and at $T_L + U_M$ + 7dB on f2. Initiate communication. The EUT should transmit on f1. Repeat 5 times. If the EUT transmits on f2 the test is failed.

Result

Test	Transmit on f1	Transmit on f2	Wanted Transmit Channel	Pass/Fail
b	No	Yes	f2	Pass
c	Yes	No	f1	Pass
d	No	Yes	f2	Pass
e	Yes	No	f1	Pass

Note: 1. All tests were repeated 5 times.

Selected Channel Confirmation

This test was carried out in accordance with ANSI C63.17 sub-clause 7.3.4 using test setup 2 (page 13).
The test is to ensure the EUT monitors the time/spectrum window immediately prior to transmission.

The EUT was frequency administered to operating on two frequencies only, f1 and f2.

f1 = 1924.992 MHz
f2 = 1926.720 MHz

Test a)
Interference is applied on f1 at a level of $T_U + U_M$. Verify a connection is established on f2.

Any connection is terminated.

Test b)
Interference is applied on f2 at a level of $T_U + U_M$ and immediately removed from f1 and the EUT is immediately caused to attempt transmission. In this case the EUT should transmit on f1

Result

Test	Transmit on f1	Transmit on f2	Wanted Transmit Channel	Pass/Fail
a	No	Yes	f2	Pass
b	Yes	No	f1	Pass

Power Accuracy

The power measurement resolution for the previous comparison must be accurate to within 6dB. The monitoring threshold test covered in Part 15.323 (c)(2) automatically proves that this requirement is met.

Segment Occupancy

This section is not applicable as no units will be located within 1 metre of each other.

MONITORING ANTENNA – PART 15.323 (c)(8)

The antenna of the EUT used for transmitting is the same antenna that is used for monitoring.

DUPLEX CONNECTIONS – PART 15.323 (c)(10)

The tests laid out in this section verify that two devices communicating over a duplex connection meet the access criteria. For the purpose of this testing the initiating device is under test and the companion is the responding device used in conjunction with the Initiating device. These tests are carried out in accordance with ANSI C63.17 sub-clause 8.3.2 using test setup 2 (page 13). The Radio Base is the responding device; results are recorded for information only. Before all tests are carried out any connection is terminated.

Test b)
The system is restricted to operation on one frequency (1924.992 MHz) using administration. Verify that a connection between the EUT and its companion device can be made.

Test c) & d)
Apply interference at a level $T_L + U_M$ to all transmit time slots except one which has interference at least 10dB below T_L. Apply interference at a level $T_L + U_M + 7dB$ to all receive time slots except one which has interference at least 10dB below T_L. The interference free receive timeslot should not be the duplex mate of the interference free transmit timeslot. The EUT should establish a connection on the interference free receive slot and its duplex mate.

Test e) & f)
Apply interference at a level $T_L + U_M$ to all receive time slots except one which has interference at least 10dB below T_L. Apply interference at a level $T_L + U_M + 7dB$ to all transmit time slots except one which has interference at least 10dB below T_L. The interference free transmit timeslot should not be the duplex mate of the interference free receive timeslot. The EUT should establish a connection on the interference free transmit slot and its duplex mate.

Test g)
Apply interference at a level $T_U + U_M$ to all receive and transmit time slots except one which has interference at least 10dB below T_L. The interference free transmit and receive time slots shall not constitute a duplex pair. The EUT should not transmit or establish a connection.

Result

Test	Connection Made	Time Slot Selected	Required Time Slot	Pass/Fail
b	Yes	N/A	Any	Pass
c & d	Yes	Interference Free Receive Slot and Duplex Mate	Interference Free Receive Slot and Duplex Mate	Pass
e & f	Yes	Interference Free Transmit Slot and Duplex Mate	Interference Free Transmit Slot and Duplex Mate	Pass
g	No	None	None	Pass

ALTERNATIVE MONITORING INTERVAL FOR CO-LOCATED DEVICES – PART 15.323 (c)(11)

This test is carried out in accordance with ANSI C63.17 sub-clause 8.4.

The manufacturer declares that this provision is not utilized by the EUT.

FAIR ACCESS TO SPECTRUM RELATED TO (c)(10) & (c)(11) – PART 15.323 (c)(12)

The provisions of (c)(10) & (c)(11) shall not be used to extend the range of spectrum occupied over space or time for the purposes of denying fair access to the spectrum to other devices.

The manufacturer declares that this device does not work in a mode which denies fair access to the spectrum to others.

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	3842.317 5765.641 9605.740	-73.67 -70.63 -68.99	24.9 25.9 26,4	-48.77 -44.73 -42.95	-39.5 -39.5 -39.5

	Out-of-Band Emissions From UPCS bandedge	**Attenuation (dB) required below Reference power of 112mW**
Limits	± 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 The EUT was connected via a cable and attenuator.
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 J for out of band emissions compliance plots.
5 See Annex K 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	3856.105 5768.365 9640.256	-71.20 -66.75 -69.90	24.9 25.9 26.8	-46.30 -40.85 -43.10	-39.5 -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 J for out of band emissions compliance plots.
5 See Annex K 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.
Bluetooth 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

Channels Bluetooth – Lowest UPCS – Lowest	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 11	30
30MHz - 88MHz							Note 11	100
88MHz - 216MHz							Note 11	150
216MHz - 960MHz							Note 11	200
960MHz - 1GHz							Note 11	500
1GHz - 25GHz	1653.050	40.23	2.2	33.75	26.7	35.4	58.88	500
	1917.500	13.67	2.6	-	27.8	44.1	160.32	500
	1932.500	13.49	2.4	-	27.8	43.7	153.11	500
	2400.000	18.10	2.7	-	28.4	49.2	288.40	500
	2974.000	42.78	3.1	34.03	30.2	42.1	127.35	500
	4804.191	37.10	4.2	34.20	33.2	40.4	104.71	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 25GHz			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 J for scan plot 30MHz – 1GHz.
9 UPCS Device operating on lowest frequency.
10 Bluetooth device operating on lowest frequency.
11 Only Emissions within 20 db of the limit are recorded.

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.

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

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

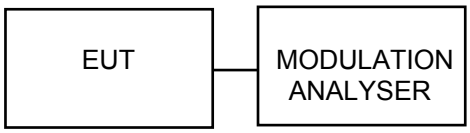
Channels Bluetooth – Highest UPCS – Highest	FREQ. (MHz)	MEAS. Rx. (dBµV)	CABLE LOSS (dB)	PRE AMP (dB)	ANT FACTOR	FIELD STRENGTH (dBµV/m)	FIELD STRENGTH (µV/m)	LIMIT (µV/m)
1.705MHz - 30MHz							Note 11	30
30MHz - 88MHz							Note 11	100
88MHz - 216MHz							Note 11	150
216MHz - 960MHz							Note 11	200
960MHz - 1GHz							Note 11	500
1GHz - 25GHz	1653.050 2483.500 4959.833	41.20 6.25 31.24	2.2 2.6 4.3	33.75 - 34.15	26.7 28.5 33.6	36.40 37.40 35.00	66.07 74.13 56.23	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 25GHz			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 J for scan plot.
9 UPCS Device operating on lowest frequency.
10 Bluetooth device operating on lowest frequency.
11 Only Emissions within 20 db of the limit are recorded.

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.

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
1.12 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)	
-0.01	0.03	10.00003	2 or 10/X	25	Pass

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

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 29). This testing is carried out with the following conditions over 5000 samples.

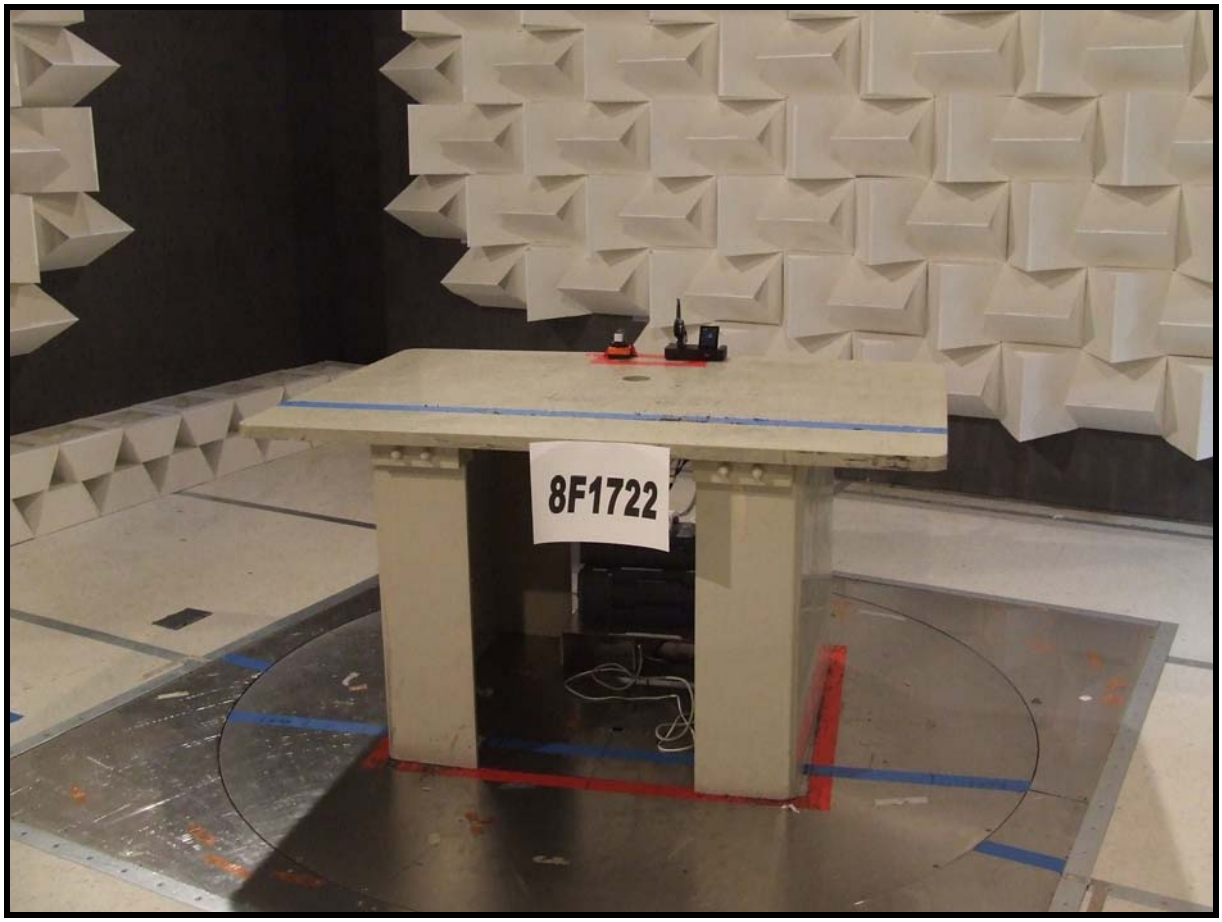
Results

Temperature (°C)	Voltage (Vdc)	Fc (MHz)	offset (kHz)	offset (ppm)	Limit (ppm)
+20	Vnom	1924.992	0	0.0	±10
+20	85% Vnom	1924.992	-3	-1.5	±10
+20	115% Vnom	1924.992	+1	+0.5	±10
-20	Vnom	1924.992	17	+8.8	±10
+55	Vnom	1924.992	19	+9.8	±10

ANNEX A

PHOTOGRAPHS

PHOTOGRAPH No. 1 **RADIATED TEST SETUP**



PHOTOGRAPH No. 2 **POWERLINE CONDUCTION TEST SETUP**

PHOTOGRAPH No. 3 TOP **OVERVIEW DISPLAY DOWN**

PHOTOGRAPH No. 4 TOP **OVERVIEW DISPLAY UP**

PHOTOGRAPH No. 5 **BOTTOM / CONNECOTR OVERVIEW**

8F1722

ANNEX B

APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

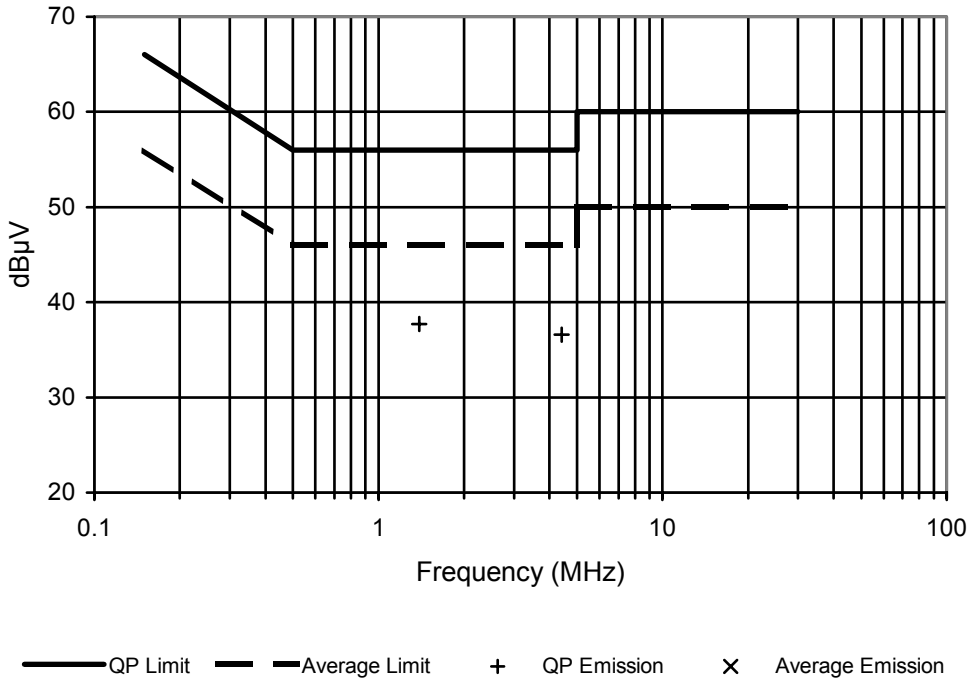
APPLICANT'S SUBMISSION OF DOCUMENTATION LIST

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

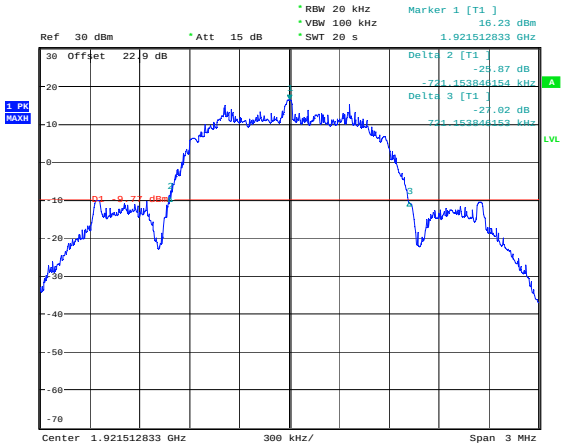
AC POWERLINE CONDUCTION

AC Powerline Conduction
(Levels below the limit are only displayed if
within 20dB of the limit)



ANNEX D

EMISSION BANDWIDTH



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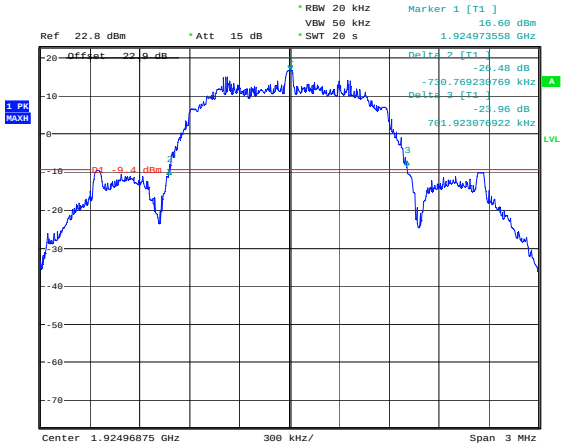

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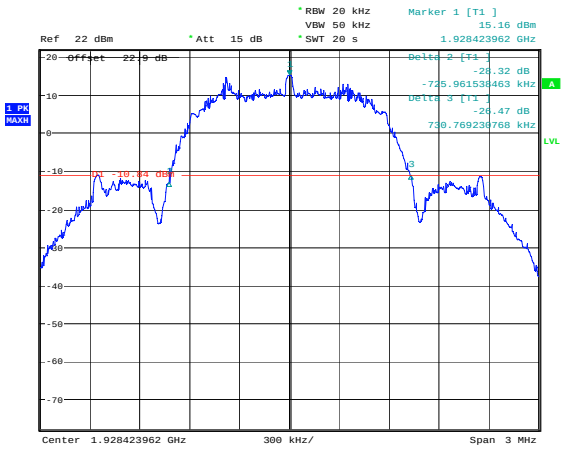
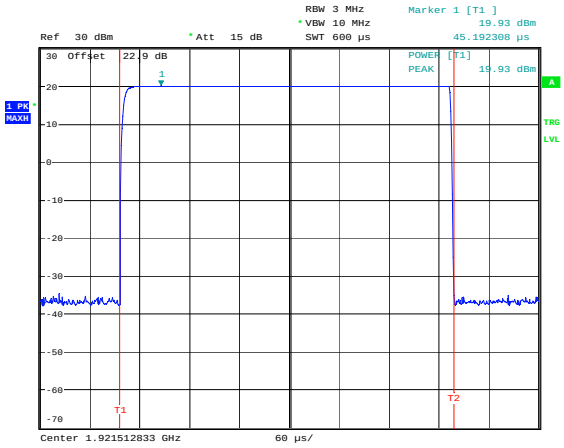


Date: 9.MAR.2009 11:25:11

ANNEX E

PEAK TRANSMIT POWER



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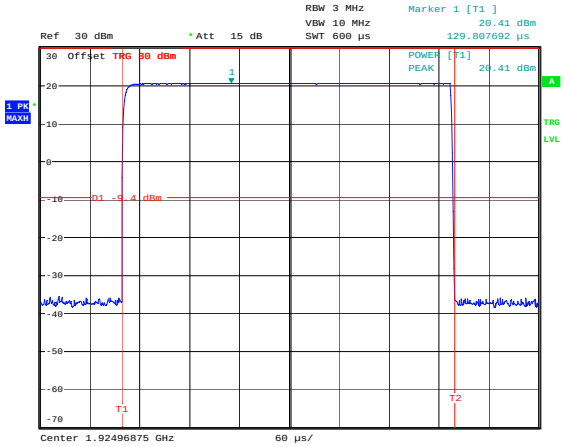

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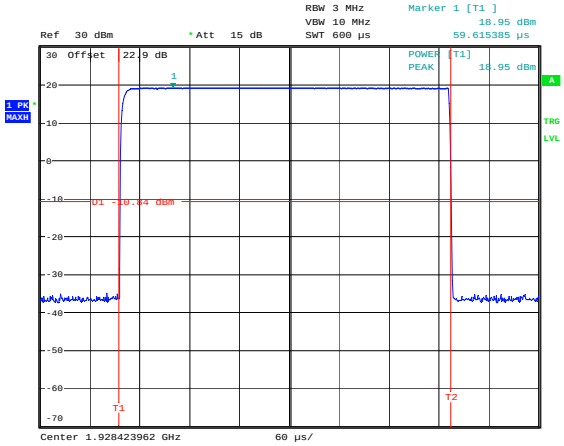
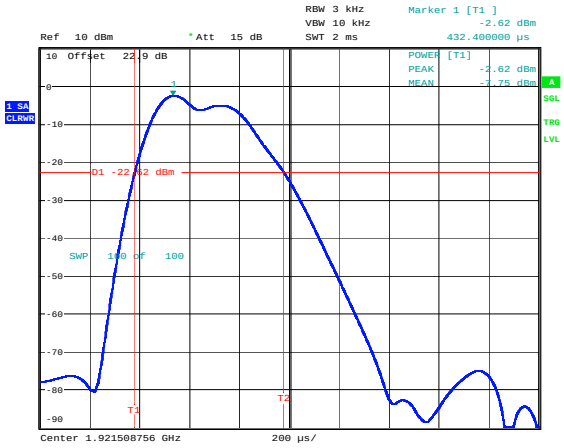


Date: 9.MAR.2009 11:30:00

ANNEX F

POWER SPECTRAL DENSITY



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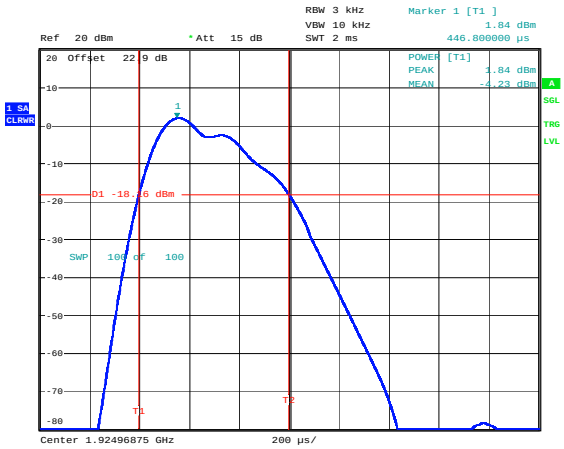

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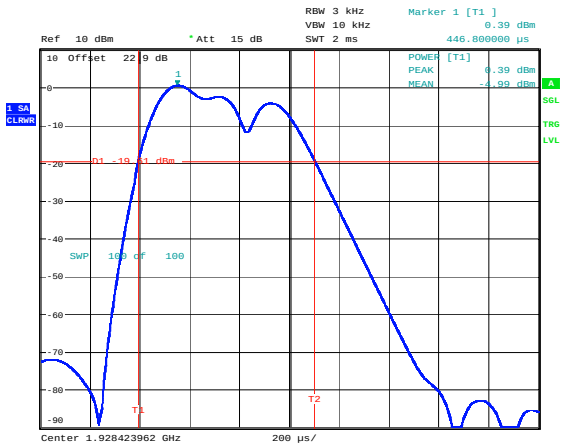

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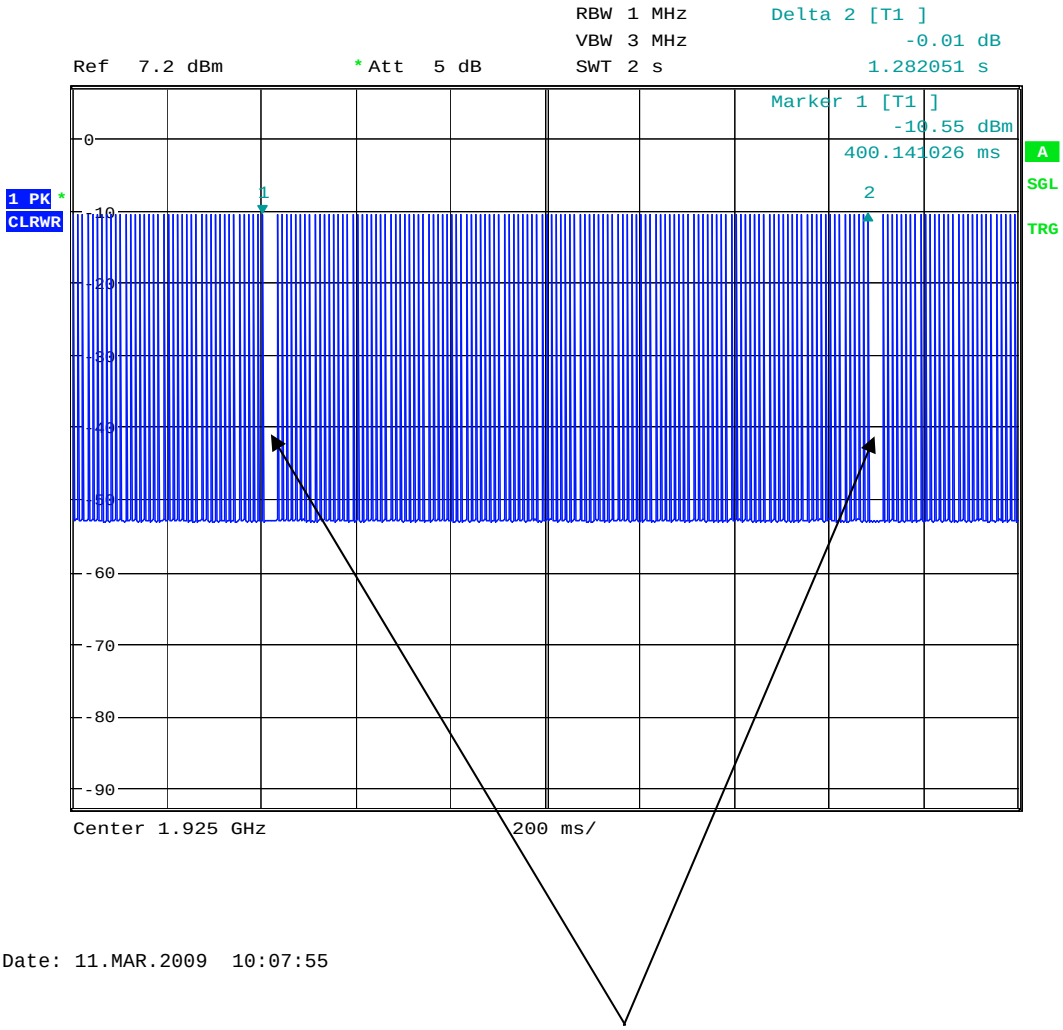
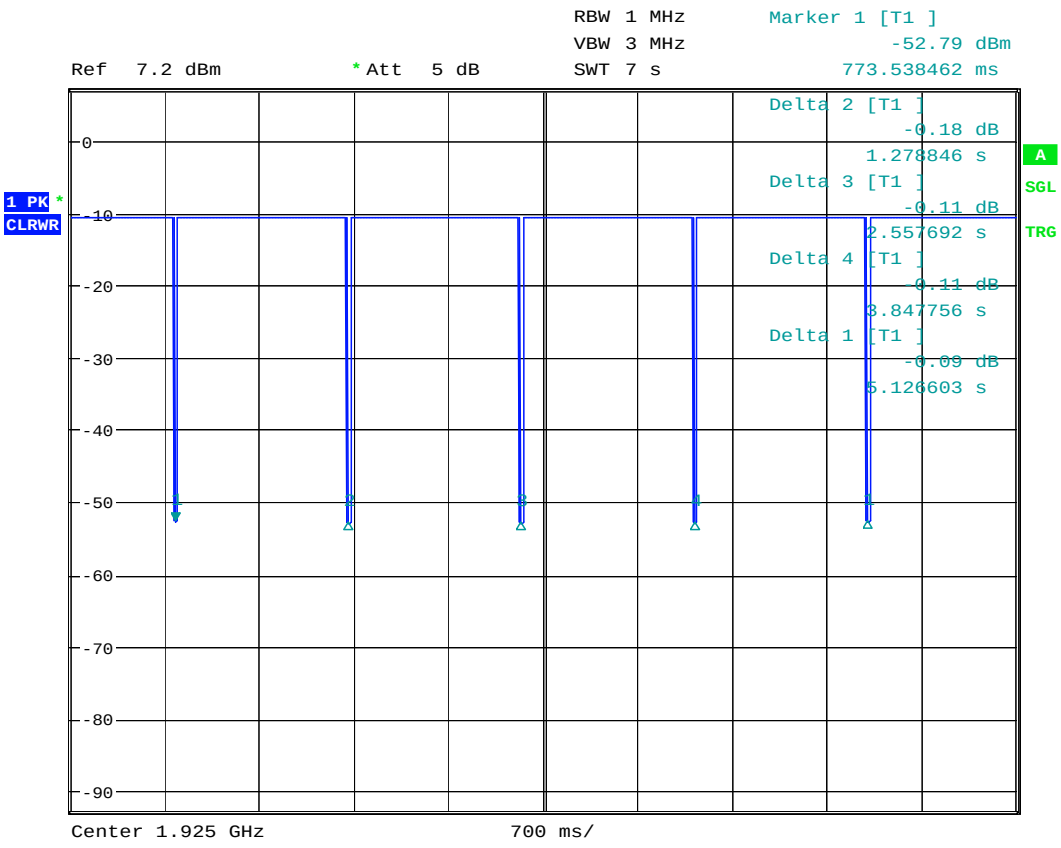
ANNEX G

ACCESS CRITERIA TEST INTERVAL



ACCESS CRITERIA PERFORMED

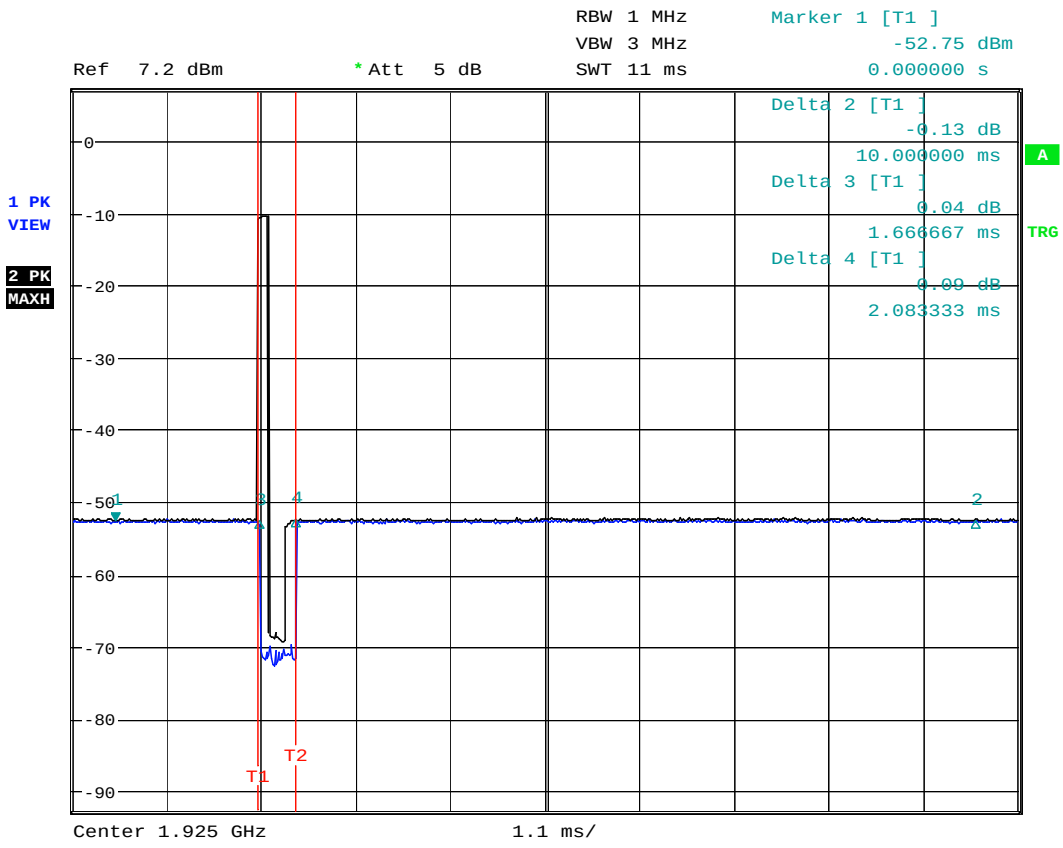


Date: 11.MAR.2009 10:10:36

5 REPETITIONS OF ACCESS CRITERIA

ANNEX H

ACCESS CRITERIA FUNCTIONAL TEST



f2

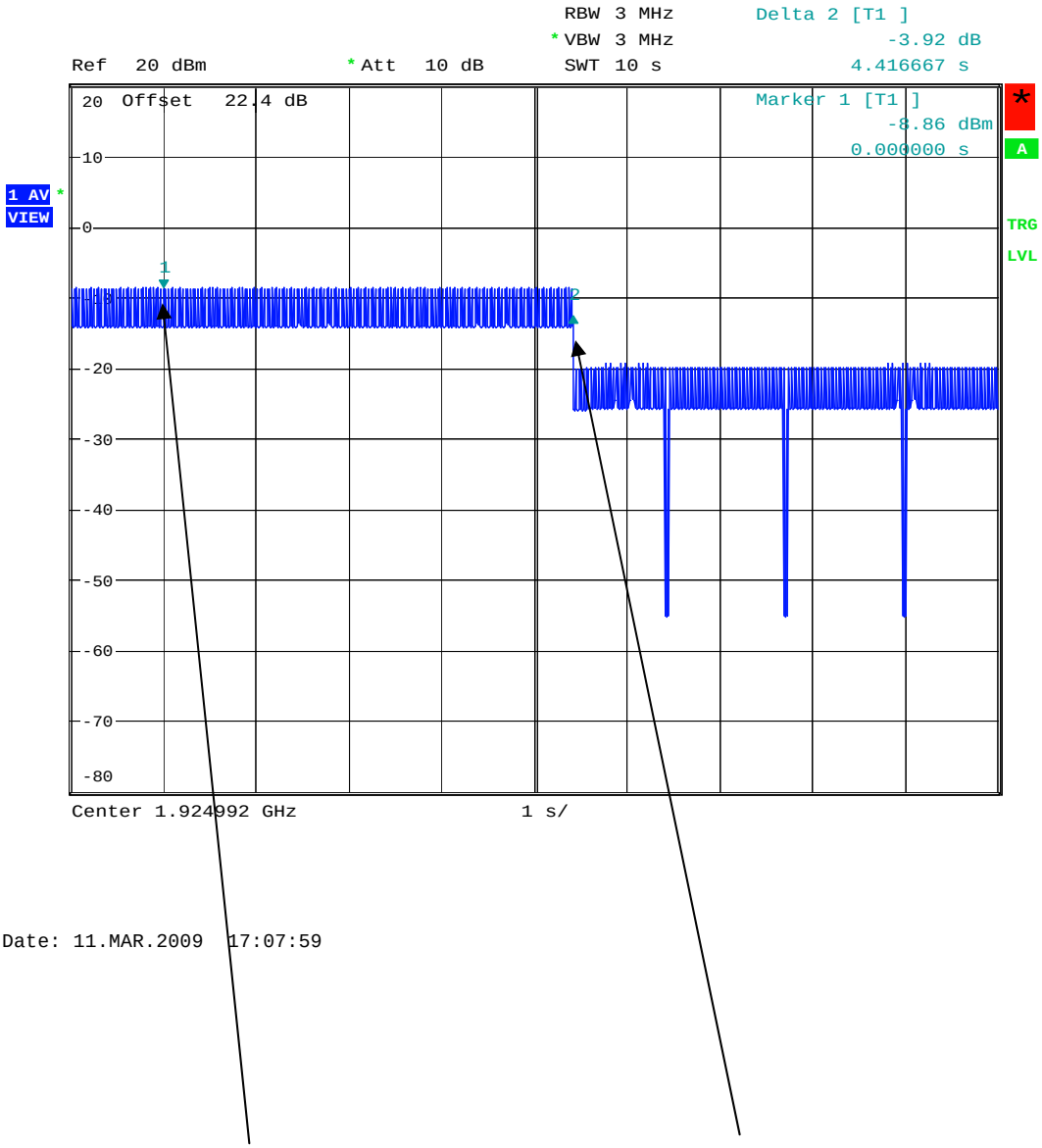
Date: 11.MAR.2009 10:01:38

Mk1 – Start of Frame
Mk2 – End of Frame
Mk3 – Start of Slot 4
Mk4 – End of Slot 4
Trace 1 (Blue) – Showing Interference free time slot 4
Trace 2 (Black) –Showing transmission occurring on interference free time slot 4

ANNEX I

ACKNOWLEDGEMENTS

Cease of Transmissions on Communications Channel
Acknowledgements Blocked



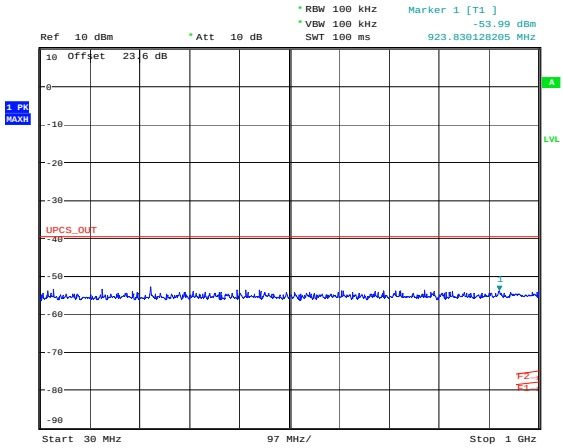
Acknowledgements Blocked

Cease of transmissions on communications Channel

ANNEX J

EMISSIONS OUTSIDE THE SUB-BAND

RF carrier set to the lowest carrier defined by the EUT



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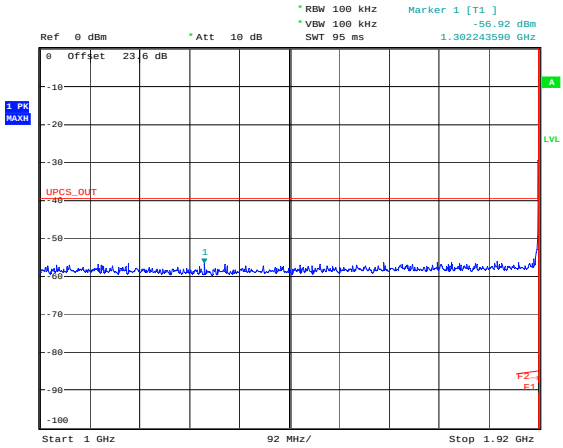

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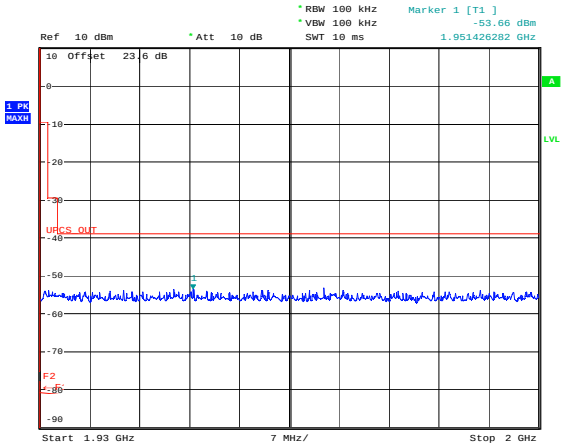

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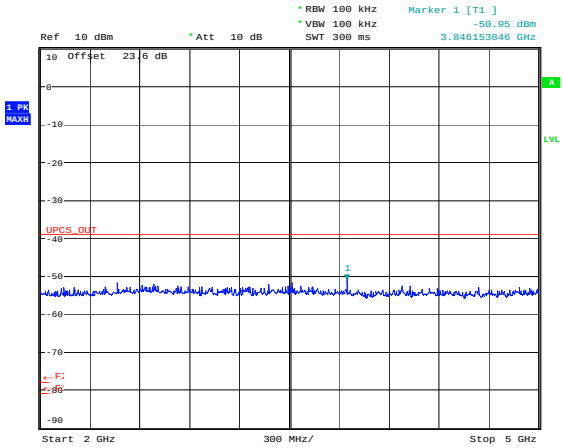
RF carrier set to the lowest carrier defined by the EUT



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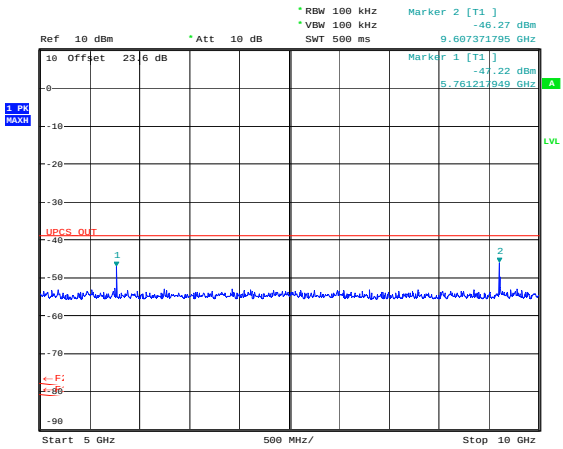

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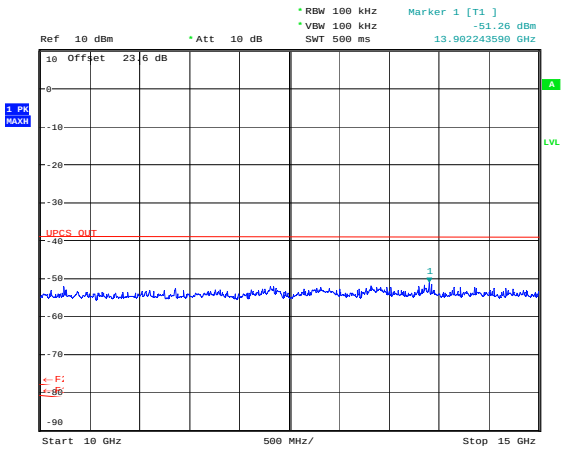

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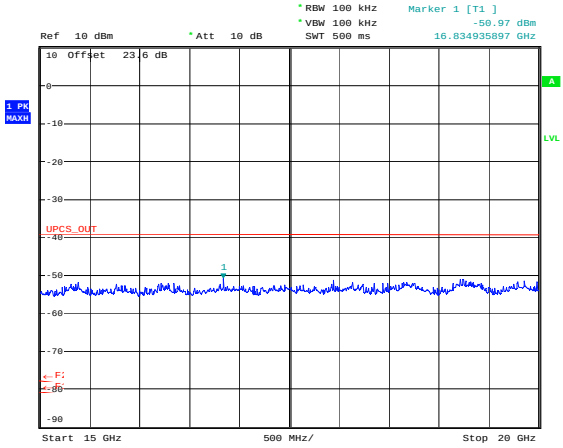
RF carrier set to the lowest carrier defined by the EUT



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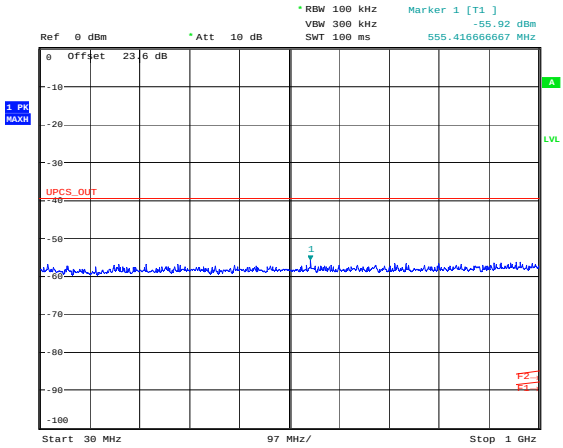
RF carrier set to the highest carrier defined by the EUT



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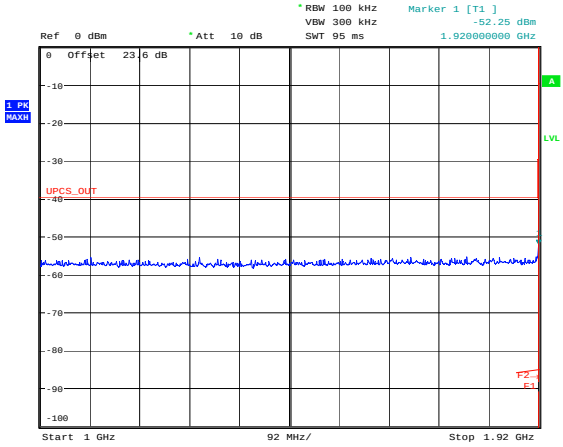

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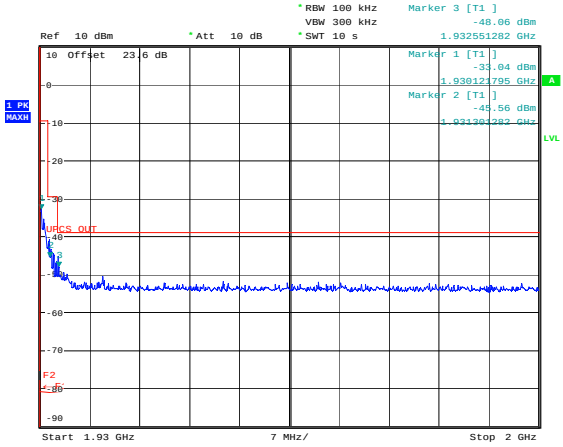
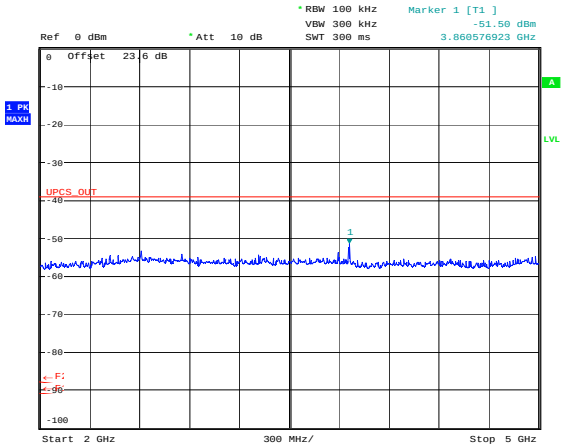


Date: 17.FEB.2009 15:56:44

RF carrier set to the highest carrier defined by the EUT



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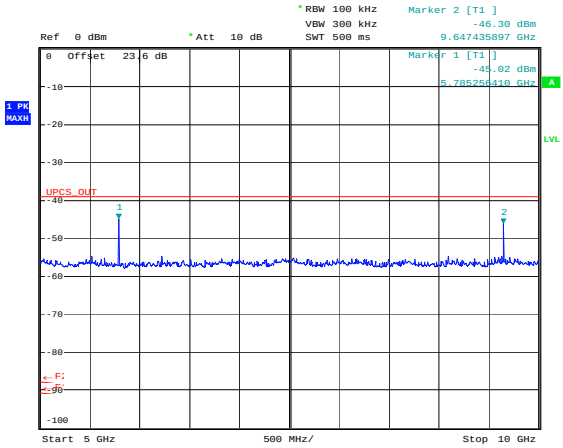

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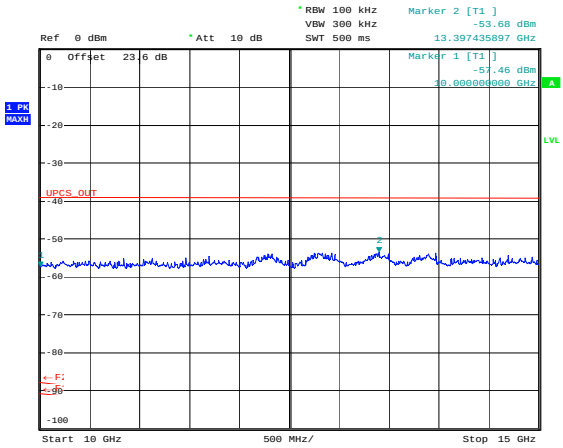
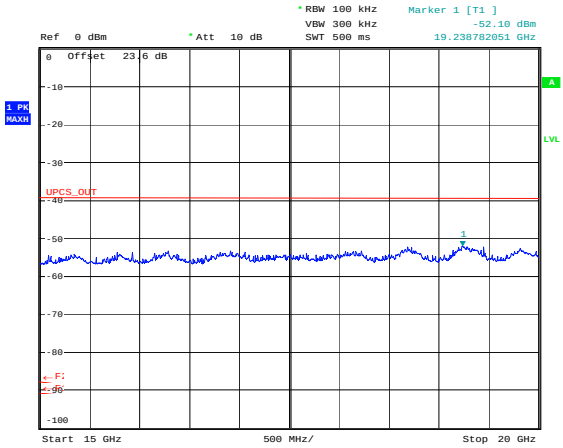


Date: 17.FEB.2009 16:16:02

RF carrier set to the highest carrier defined by the EUT

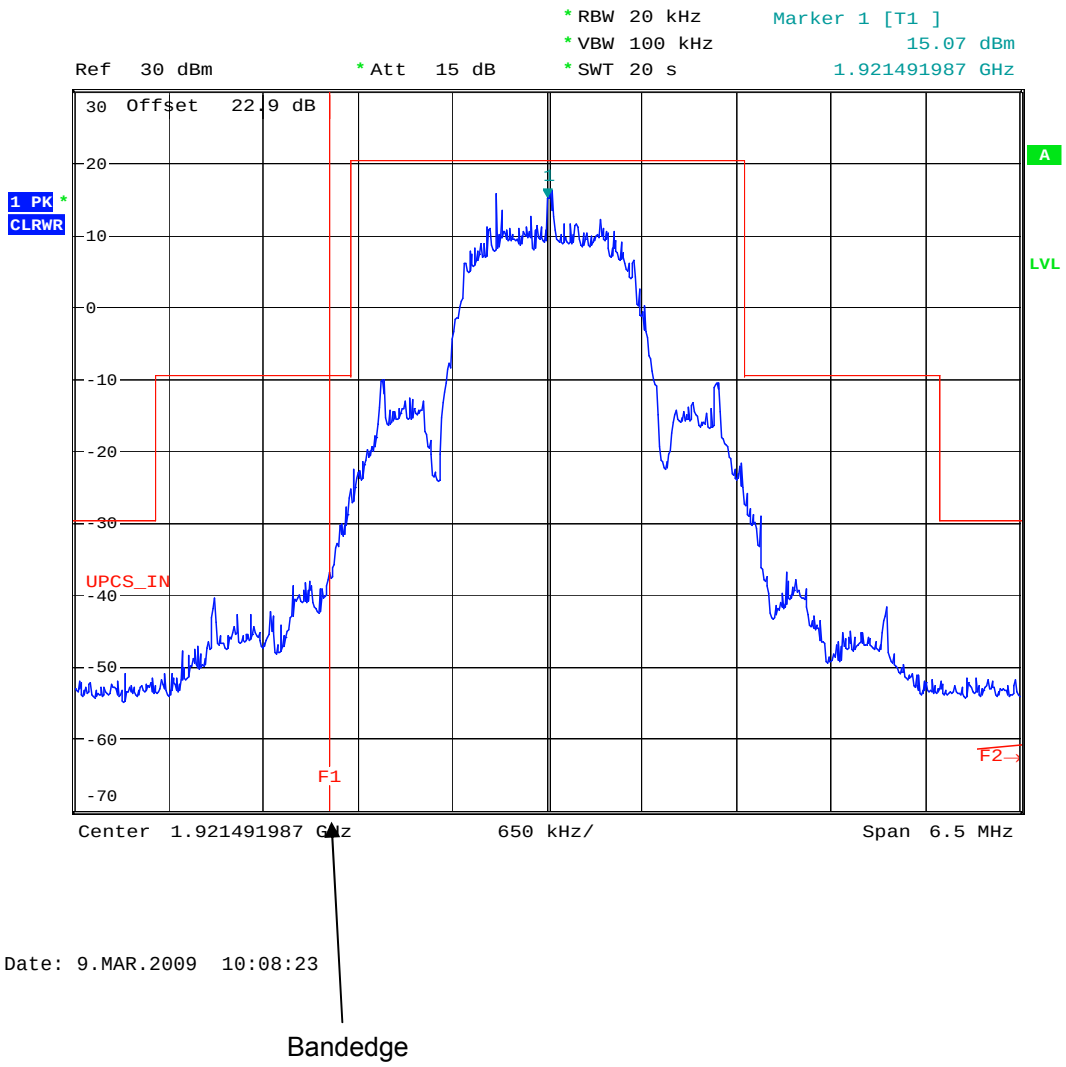


Date: 17.FEB.2009 16:20:16

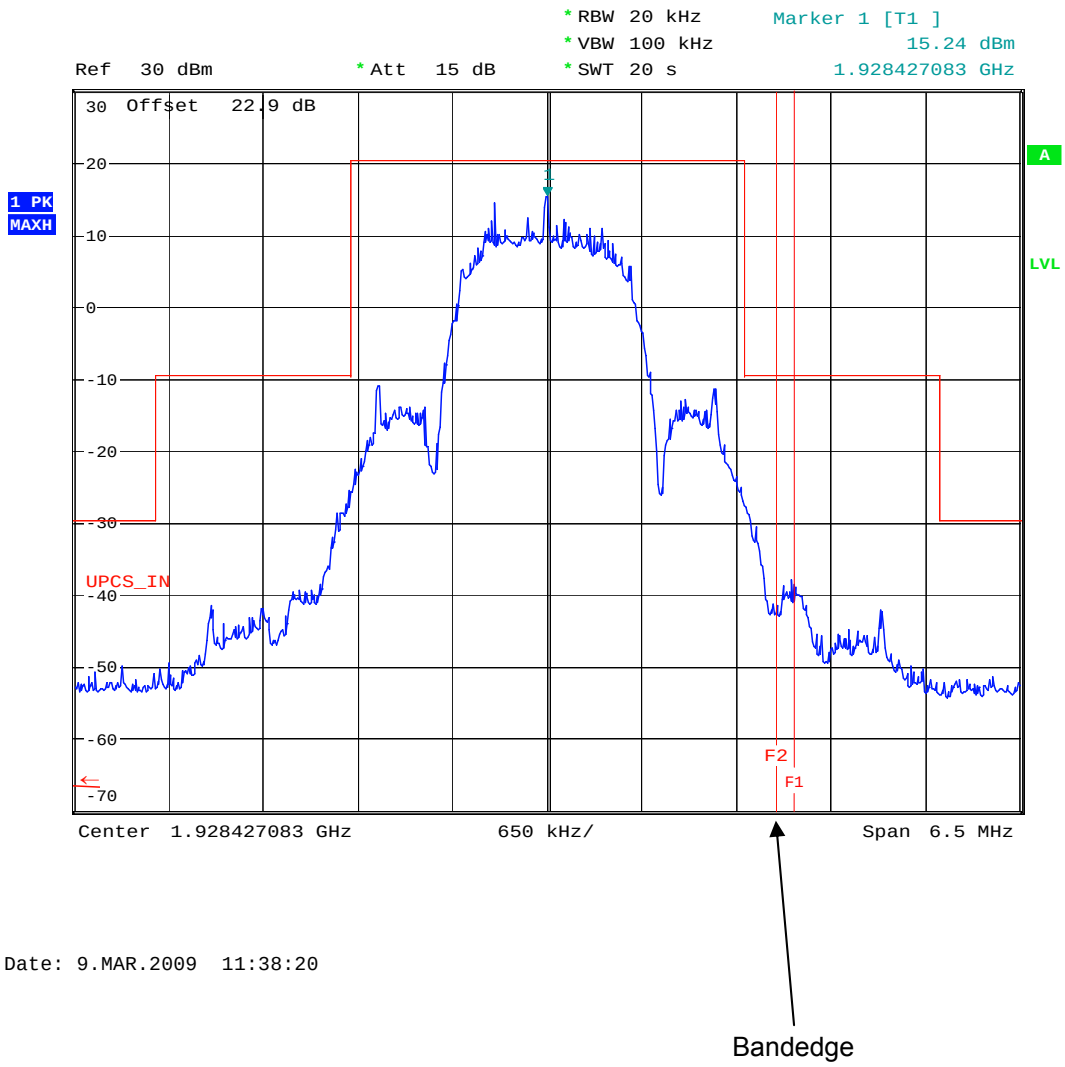
ANNEX K

EMISSIONS INSIDE THE SUB-BAND – CONDUCTED

RF carrier set to the lowest carrier defined by the EUT



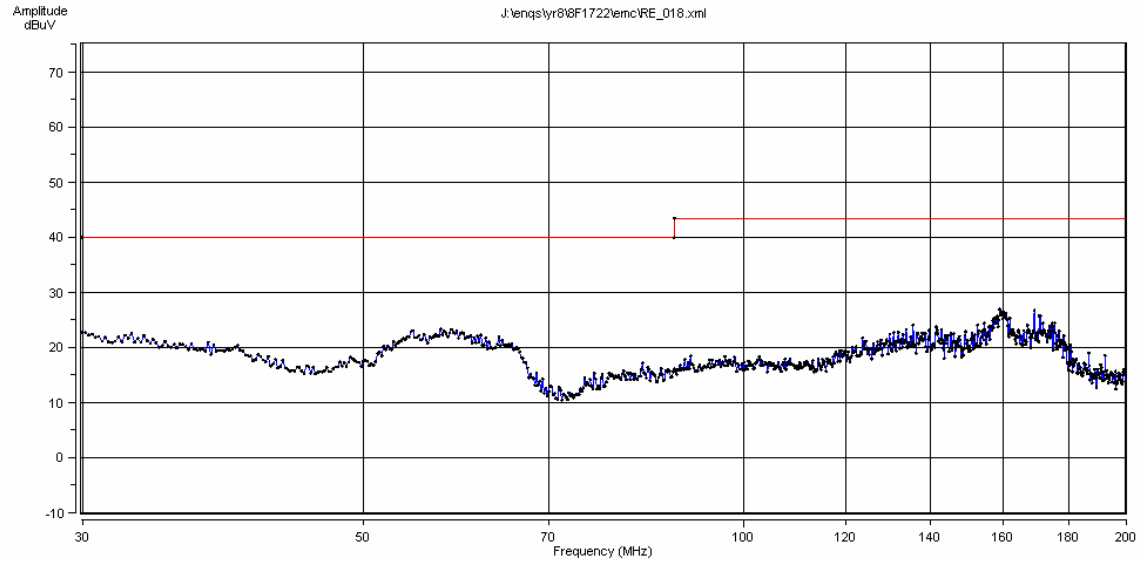
RF carrier set to the highest carrier defined by the EUT



ANNEX L

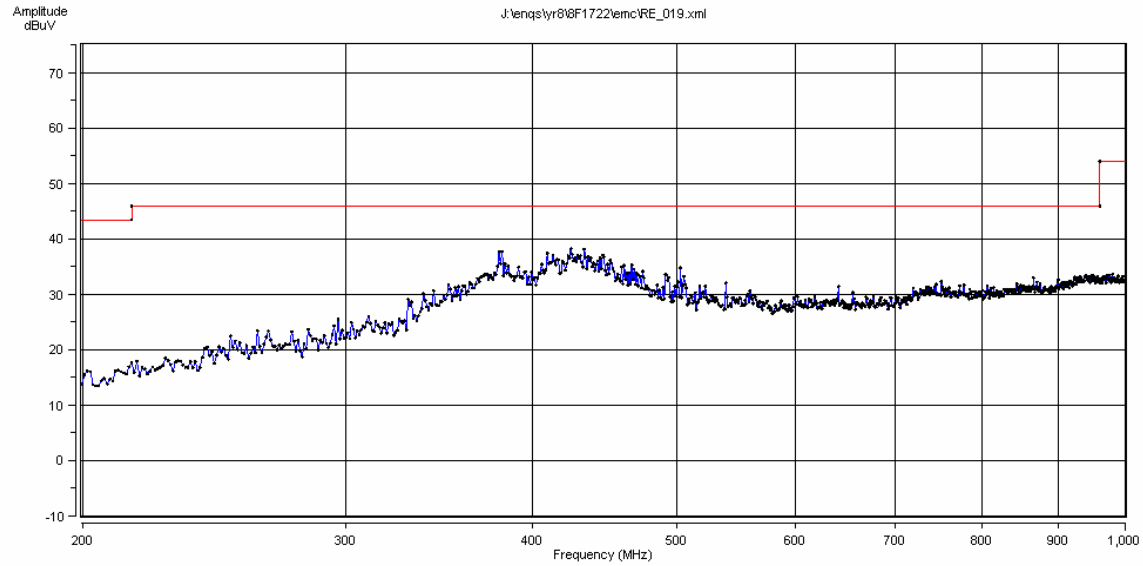
SPURIOUS EMISSIONS – RADIATED

KTL EMC Emissions Software - Radiated emissions



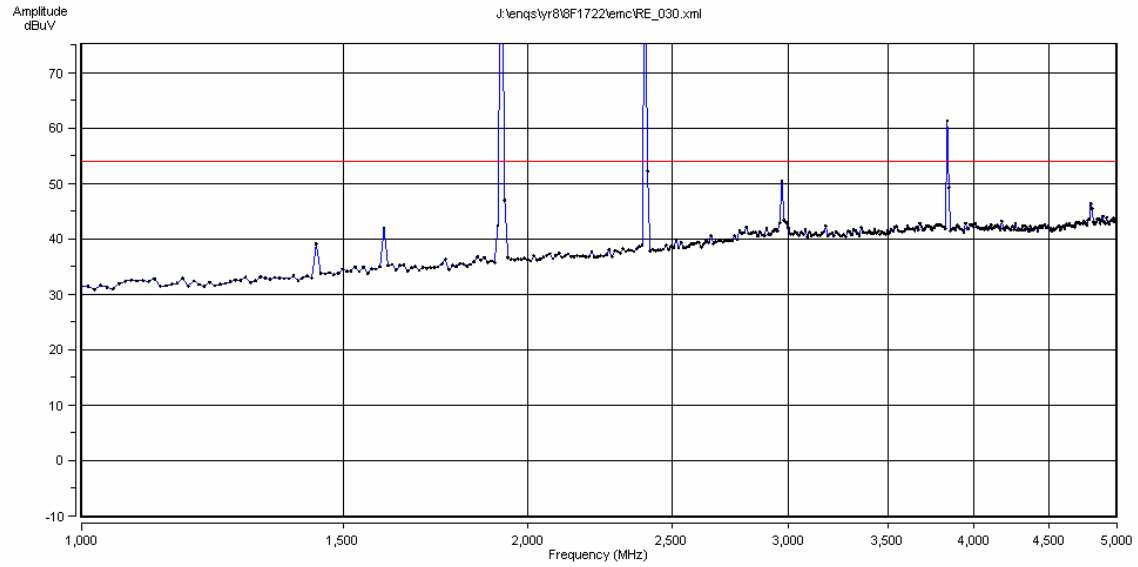
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2402MHz
Spec Distance (m):	3	**Mod State:**	DECT: 1921.536MHz
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PS	**Date/Time:**	20/03/2009 08:46:45
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions



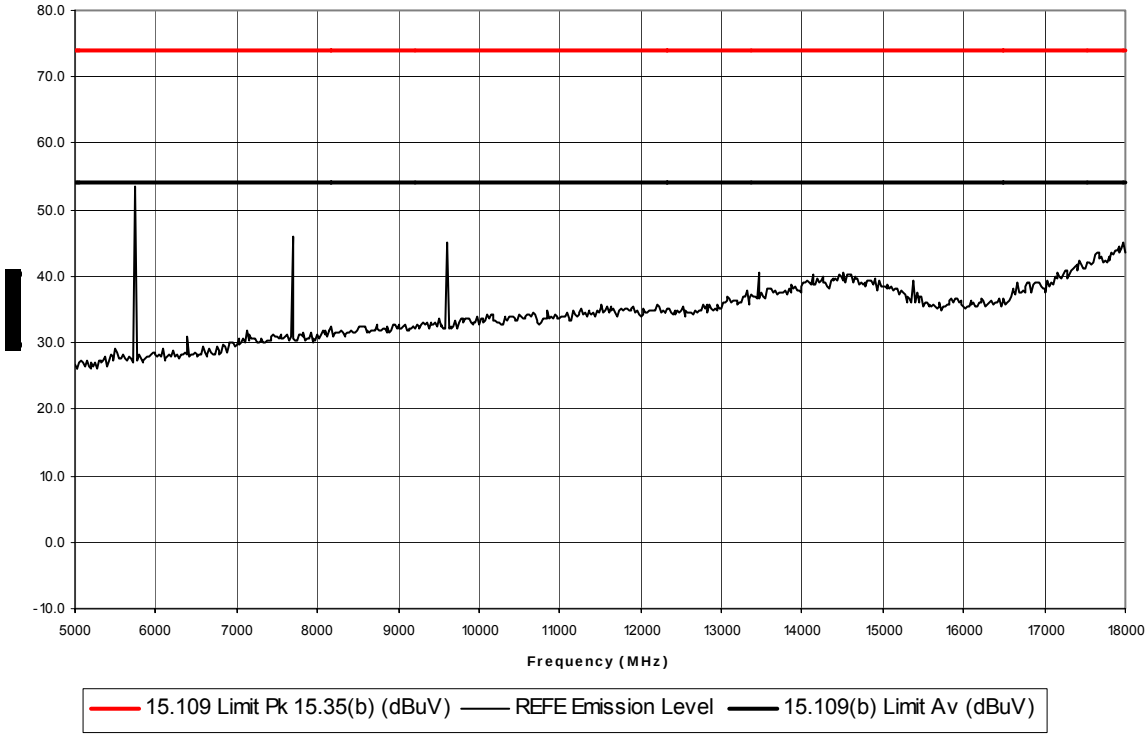
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2402MHz
Spec Distance (m):	3	**Mod State:**	DECT: 1921.536MHz
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PS	**Date/Time:**	20/03/2009 08:52:04
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions

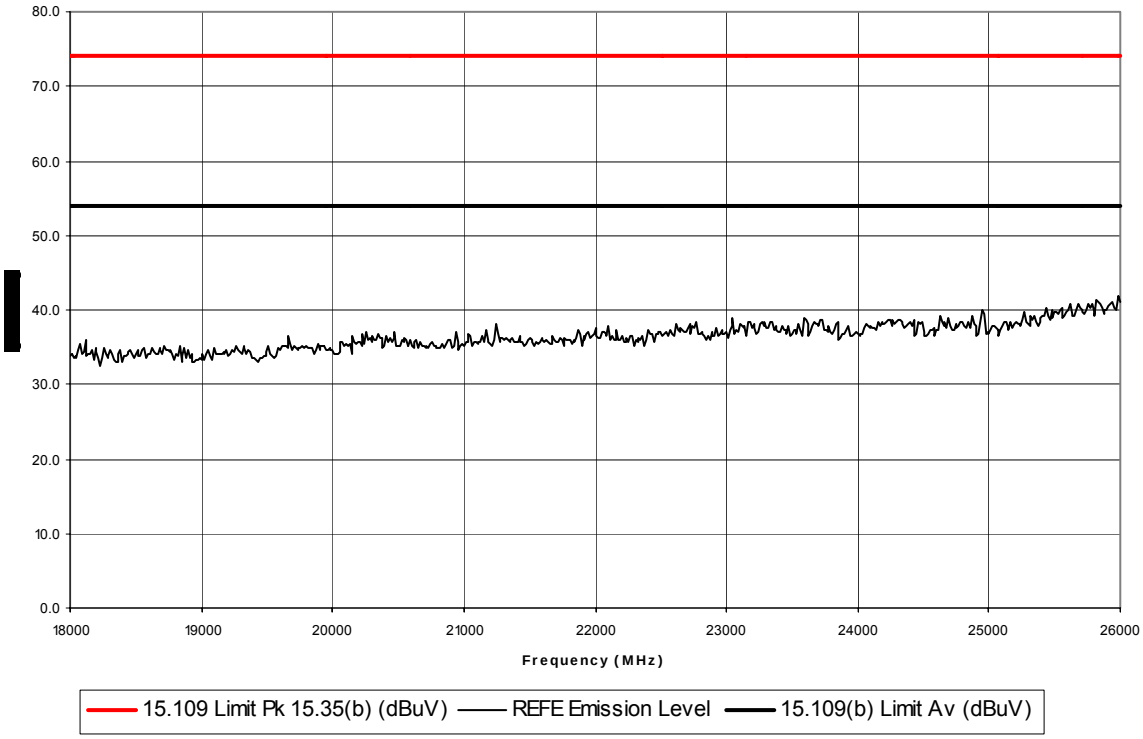


Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	E4407B (HP commands)	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2402MHz DECT: 1921.536MHz
Spec Distance (m):	3	**Mod State:**	
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PSU	**Date/Time:**	20/03/2009 12:29:07
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

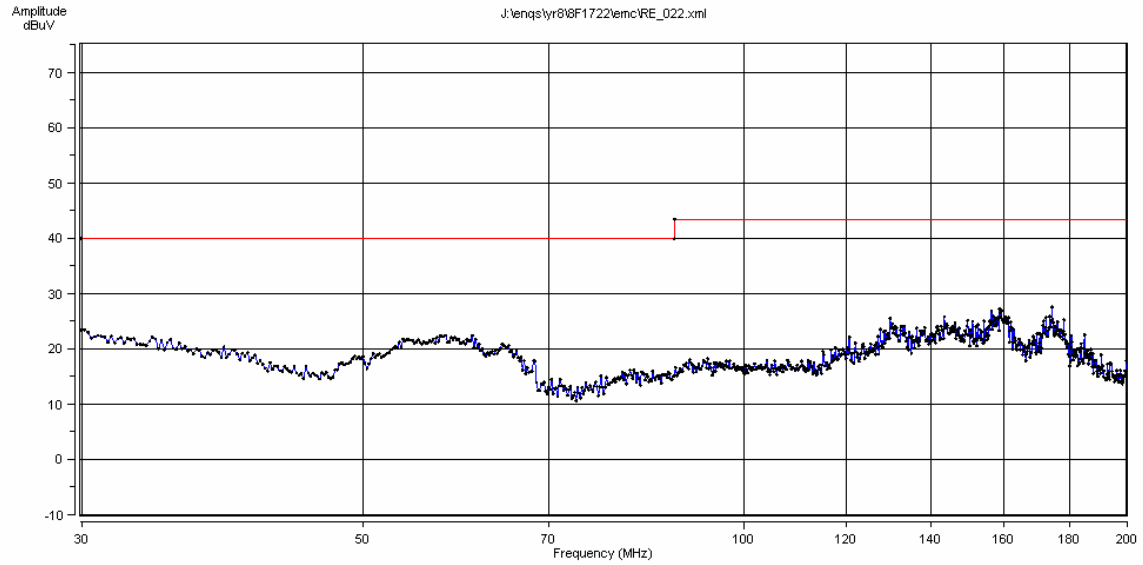
Peak Detector Preview Spurious Emissions (HOR/VER Pol) (REFE)
Job No. 8F1722 Sample No. S02 and S40
TX Operating Mode:
Bottom Channels: BT TX 2402MHz and DECT TX 1921.536MHz



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

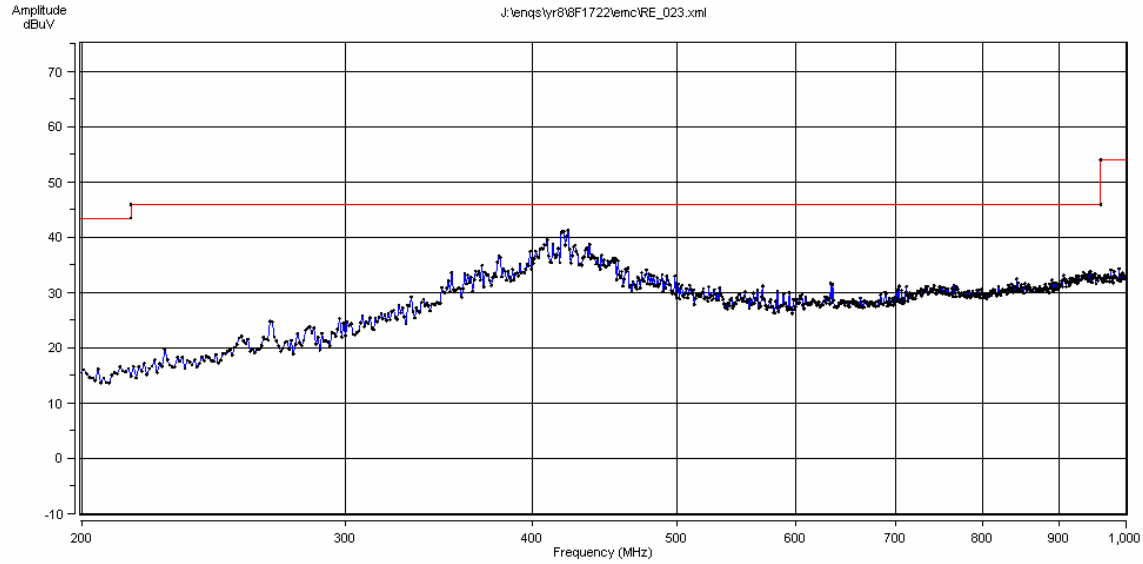


KTL EMC Emissions Software - Radiated emissions



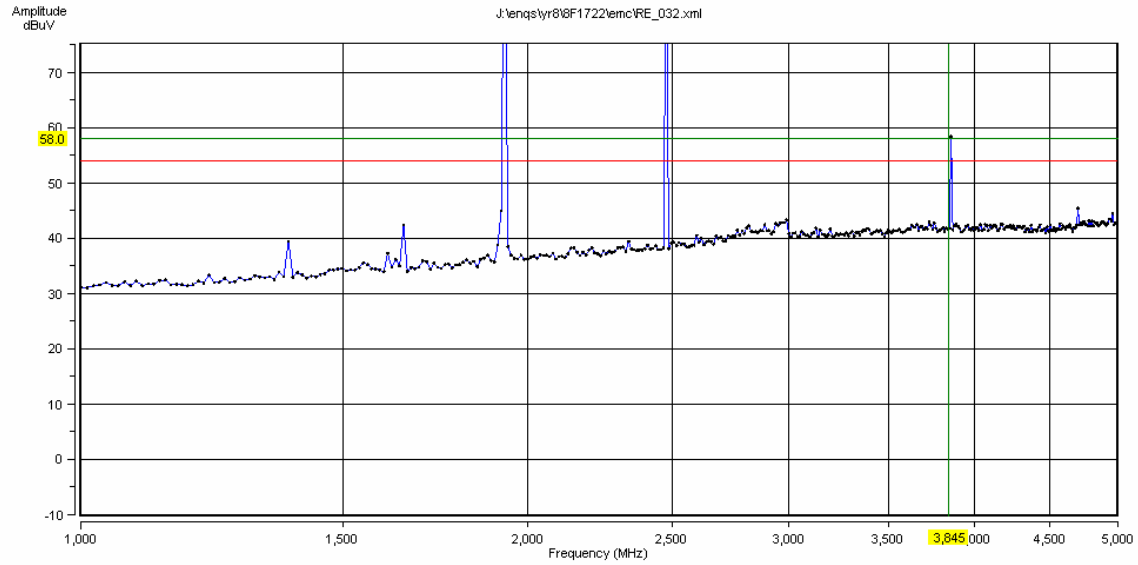
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2480MHz Top DECT: 1928.448MHz
Spec Distance (m):	3	**Mod State:**	
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PSU	**Date/Time:**	20/03/2009 10:00:07
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions



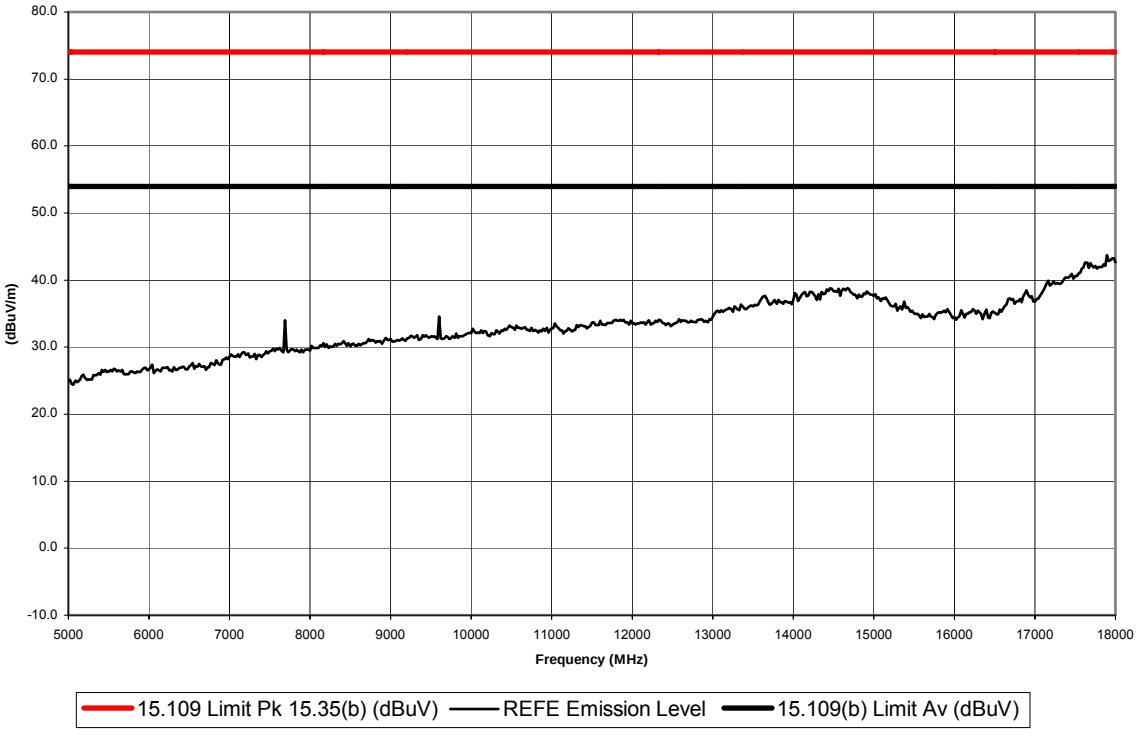
Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	ESAI	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2480MHz Top DECT: 1928.448MHz
Spec Distance (m):	3	**Mod State:**	
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PSU	**Date/Time:**	20/03/2009 10:03:05
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

KTL EMC Emissions Software - Radiated emissions

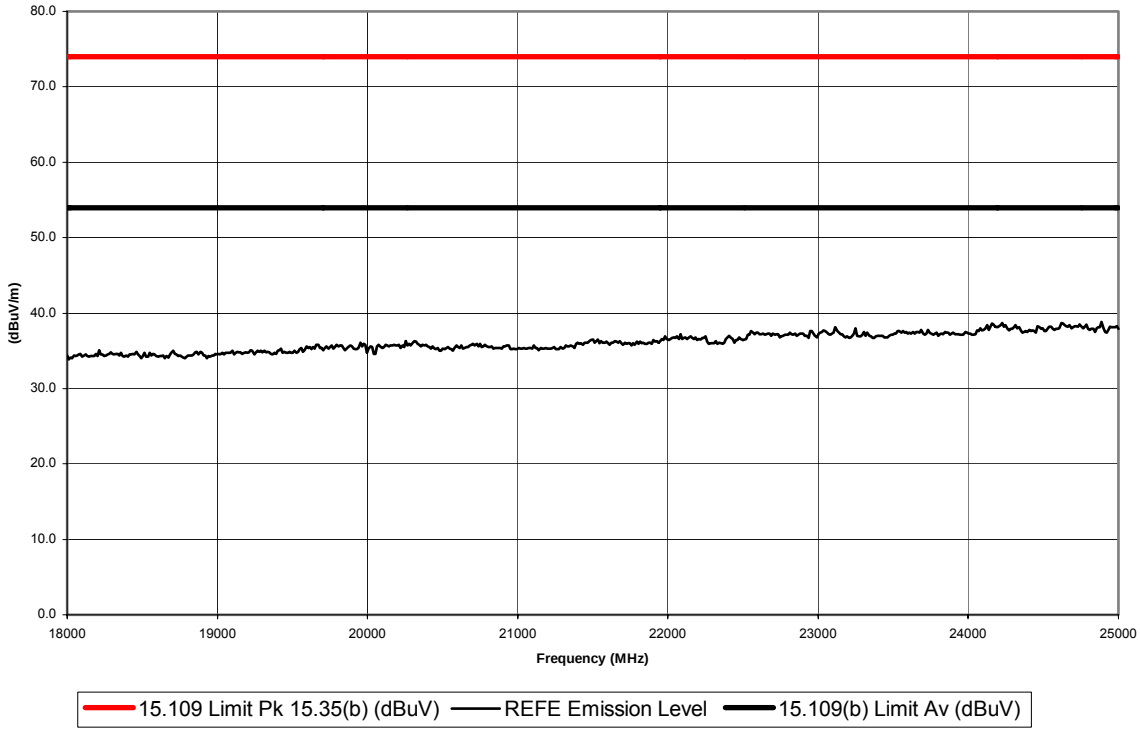


Test Location:	EMC Ferrite	**Remote Drive Eq.:**	110Vac/60Hz supply
Analyser Type:	E4407B (HP commands)	**Sample Numbers:**	RFG109
Specification:	FCC 47CFR15:2008, Clause 15.109	**Mode/Config/Arrg:**	Bluetooth:3Mb EDR 2480MHz (TOP) DECT:TX mode Top CH 1928.448
Spec Distance (m):	3	**Mod State:**	
Measurement Dist (m):	3.0	**Engineer:**	Martin Leach
EUT Names:	Jabra 9400 series DECT base station and PS	**Date/Time:**	20/03/2009 12:58:45
Sample Numbers:	S02 and S40	**Job Number:**	8F1722

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

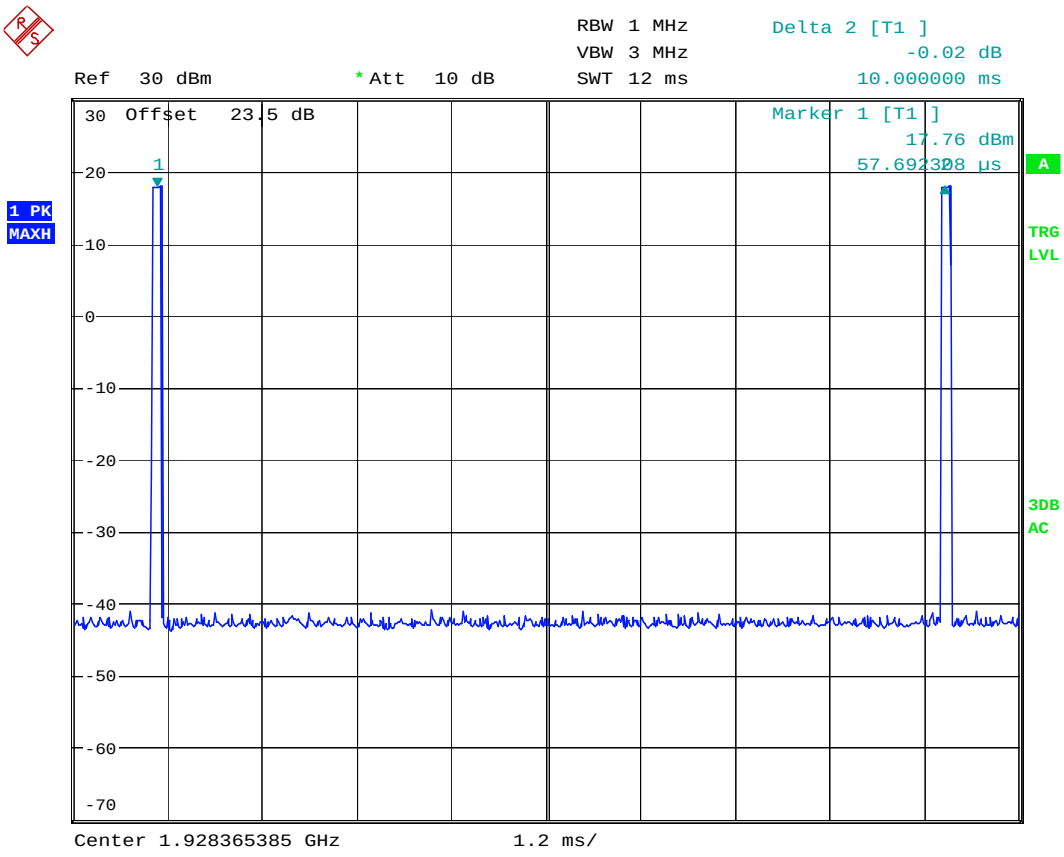


Peak Detector Preview Spurious Emissions (HOR/VER Pol) (REFE)
Job No. 8F1722 Sample No. S02 and S40
TX Operating Mode:
Top Channels: BT TX 2480MHz and DECT TX 1928.448MHz



ANNEX M

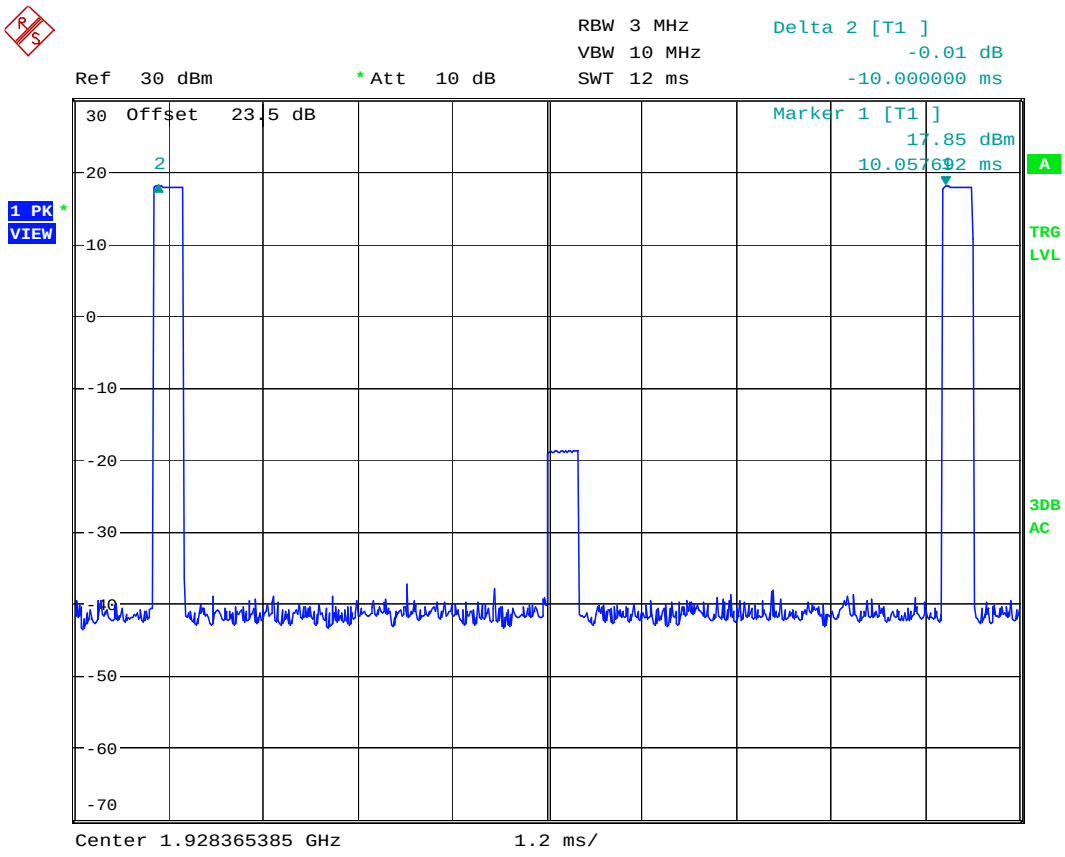
FRAME PERIOD



TET TYU

Date: 26.JUN.2009 13:04:17

Control and Signalling Information



TET TYU

Date: 26.JUN.2009 13:00:21

Communications Channel Active

ANNEX N

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
SIGNAL GENERATOR	HP	83630B	3722A00588	UH340	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			
L222	Attenuator	Bird	Calibrate in use		
L246	Attenuator	Bird			
L254	Signal Generator	Marconi			
L426	Temperature Indicator	Fluke			
L638	Function Generator	Wavetek	Use Calibrated oscilloscope		
UH122	Oscilloscope	Tektronix			
UH221	Function Generator	Wavetek	Use Calibrated oscilloscope		
UH281	Spectrum Analyser	R&S	24/07/2006	12	24/07/2007
UH303	Power Splitter/Combiner	HP			
UH305	Power Splitter/Combiner	HP			
UH306	Power Splitter/Combiner	HP			
UH307	Crystal Detector	HP	For information only		
	CMD 60	R&S			

ANNEX O

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%**