TEST REPORT

According to FCC, CFR 47 Part 15

IER 506B
FCC ID:WGO506B-UHF03

N°060138-CC-1-c

GYL technologies
Parc d'activités de Lanserre
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49610 JUIGNE SUR LOIRE
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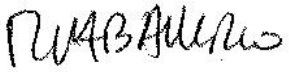
Summary

1 Reference and record of revisions of the test report:

Test report number :	**Revision :**	**Number of pages**	**Modification reasons :**
060138-CC-1-a	a	32	Creation, October 1st, 2009
060138-CC-1-b	b	41	Addition of duty cycle measurements
060138-CC-1-c	c	42	New duty cycle measurement
Redactor : JL JAMET			**Date of writing** : 13 November 2009
Technical control: O. ROY 			**Quality Control: M. CABALLERO** 

2 Interpretation and remarks:

2.1 RESULTS:

This equipment complies with the rules of the FCC section 15.247 and related sections concerning its radio functions.

This equipment complies with the rules of the FCC section 15.207, 15.209 and related sections concerning its intentional radiator functions.

This equipment complies with the rules of the FCC section 15.107, 15.109 class B and related sections concerning its non intentional radiator functions (printer).

3 GENERAL INFORMATION:

3.1 APPLICANT:

IER
3 Rue Salomon de Rothschild
BP 320
92156 SURESNES Cédex
France

3.2 MANUFACTURER:

IER
3 Rue Salomon de Rothschild
BP 320
92156 SURESNES Cédex
France

3.3 TEST DATE:

From May 5 to 19, July 3, September 7 to 9, 2009

3.4 TEST SITE:

GYL Technologies
Parc d'activités de Lanserre
49610 Juigné sur Loire – France
FCC registration Number: 90469

4 INTRODUCTION:

The following test report for bag tag reader/printer is written in accordance with Part 15 of the Federal Communications Commissions. The Equipment under Test (EUT) was IER506B with RFID option. The test results reported in this document relate only to the item that was tested.

All measurements contained in this Application were conducted in accordance with ANSI C63.4 Methods of Measurement of Radio Noise Emissions of 2003. The instrumentation utilized for the measurements conforms to the ANSI C63.4 standard for EMI and Field Strength Instrumentation. Some accessories are used to increase sensitivity and prevent overloading of the measuring instrument. These are explained in this report. Calibration checks are performed regularly on the instruments, and all accessories including the high pass filter, preamplifier and cables.

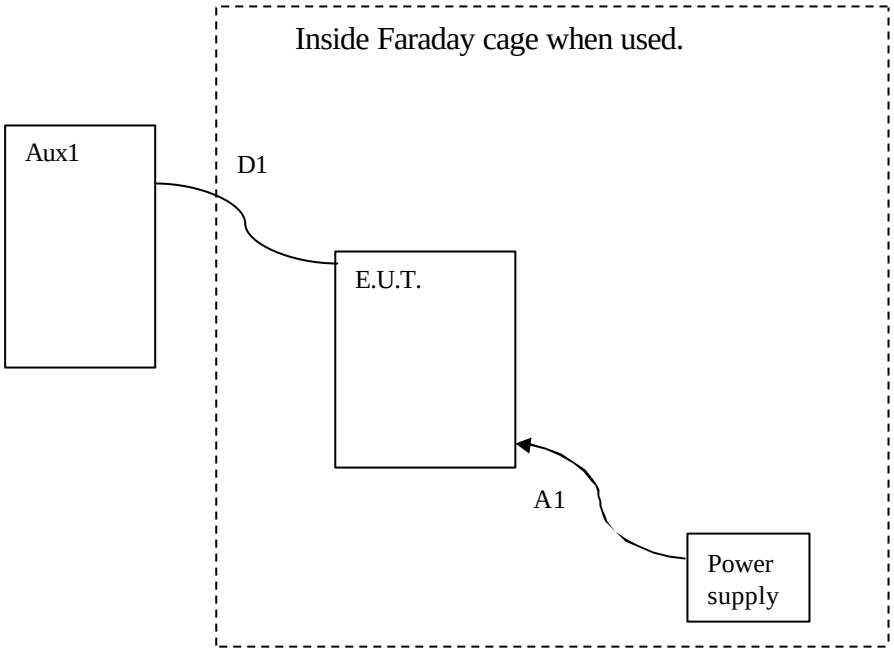
All conducted and radiated emissions measurements were performed manually at GYL TECHNOLOGIES. The radiated emissions measurements required by the rules were performed on the three to ten meters, open field, test site maintained by GYL Technologies Parc d'activités de Lanserre, 49610 Juigné sur Loire , France. Complete description and site attenuation measurement data have been placed on file with the Federal Communications Commission.

5 MEASUREMENT EQUIPMENT LIST:

PART TYPE	MANUFACTURER	MODEL	GYL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
RECEIVERS					
Receiver	Rohde & Schwarz	ESI 7	M02020	May 08, May 09	May 10
Spectrum analyzer	Rohde & Schwarz	FSEM 30	M02021	May 08, May 09	May 10
Spectrum analyzer	HP	8591EM	M96005	May 08, May 09	May 10
Filter 150 kHz	Rohde & Schwarz	EZ25	M02040	May 08, May 09	May 10
ARTIFICIAL MAINS NETWORKS					
LISN (50µH / 5/50Ω)	THURLBY THANDAR	LISN 1600	M95010	June-08	June-09
ANTENNAS					
Bilog (30-2000MHz)	CHASE	CBL-6112	M02031	June-08, July 09	July-10
Bilog (30-2000MHz)	CHASE	CBL-6112	M02032	June-08, July 09	July-10
Horn antenna	EMCO	3115	M02045	Feb-09	Feb-10
Amplifier 0.5-18GHz	LUCIX Corporation	S005180L3201	M08007	April 09	April 10

CONFIGURATION OF TESTED SYSTEM:

For all tests, the device under test was tested with its ancillary equipment.



E.U.T.: Equipment under Test
A1: AC power cable
D1: RS 232 cable
Aux1: NEC Laptop: Model: PC NEC Ref: Versa P440 Serial number: 4971487016

6 EXERCISING TEST CONDITIONS:

Measurements are done in hopping mode in all channels with modulation, and printing tickets.
For measurements that need to be done in one channel, the channel used was activated with its modulation.
The equipment uses a PRASK modulation for GEN2 mode and ASK modulation for Class0 on each channel.

7 CONFORMANCE STATEMENT:

7.1 STANDARDS REFERENCED FOR THIS REPORT:

PART 2: 2004	Frequency allocations and Radio Treaty Matters General Rules and Regulations
PART 15: 2008	Radio frequency devices
ANSI C63.4-2003	Standard format measurements/technical report personal computer and peripherals

7.2 JUSTIFICATION:

As mentioned in paragraph 5 of this report, the equipment is a part of bag tag reader/printer, information technology equipment with radio part. It can be installed in residential commercial or light industry areas the following sub clause of the standard mentioned above are:

- Part 15.247 for intentional radiator in band 902-928 MHz.
- Part 15.207 and 15.209 (subpart C) for respectively conducted and radiated emission for intentional radiator.
- Part 15.107 and 15.109 (subpart B) for respectively conducted and radiated emission for unintentional radiator (printer) Class B.

8 TEST ACCORDING TO CFR 47 Part 15

Tests performed by JL JAMET at GYL Technologies laboratories May 5 to 19 2009.

8.1 REFERENCE DOCUMENTATION:

FCC part 15 (Sub part B) 15.107, 15.109, 15.207, 15.209 and 15.247 of 2008

8.2 POWER LINE CONDUCTED EMISSIONS MEASUREMENTS (15.107, 15.207):

The power line conducted emission measurements were performed in a semi anechoic chamber. The EUT was assembled on a non conductive 80 centimeters high wooden table. Power was fed to the EUT through a 50 ohm / 50 micro-Henry Line Impedance Stabilization Network (EUT LISN). The EUT LISN was fed power through an A.C. filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. The spectrum analyzer was connected to the A.C. line through an isolation transformer. The 50-ohm output of the EUT LISN was connected to the spectrum analyzer input through a Rohde and Schwartz 150 kHz high-pass filter. The filter is used to prevent overload of the spectrum analyzer from noise below 150 kHz. Conducted emission levels were measured on each current-carrying line with the receiver operating in the CISPR quasi-peak mode (or average mode if applicable)

8.3 RESULTS:

The conducted emissions initial measurement consists of a pre-scan, in order to determine the maximum peak values.

- If the conducted emissions have limits showing a margin lower than 20dB, data collection measurement is performed on the six (6) highest frequencies to determine the compliance of the EUT.
- If the conducted emissions have limits showing a margin greater than 20dB, data collection measurement is not performed and the curves are given as evidence of compliance.

The following table lists worst-case conducted emission data. Specifically: emission frequency, measurement level (including cable loss and transducer factors) in quasi-peak and average mode and margin.

The conducted test was performed with the EUT exercise program loaded, and the emissions were scanned between 150 kHz to 30 MHz on the NEUTRAL SIDE and LIVE SIDE, herein referred to as Neutral, and Live respectively.

Configuration for final measurement	
Resolution, Band With	9 kHz
Final Quasi Peak measurement time	1 s minimum
Final average measurement time	1 sec minimum

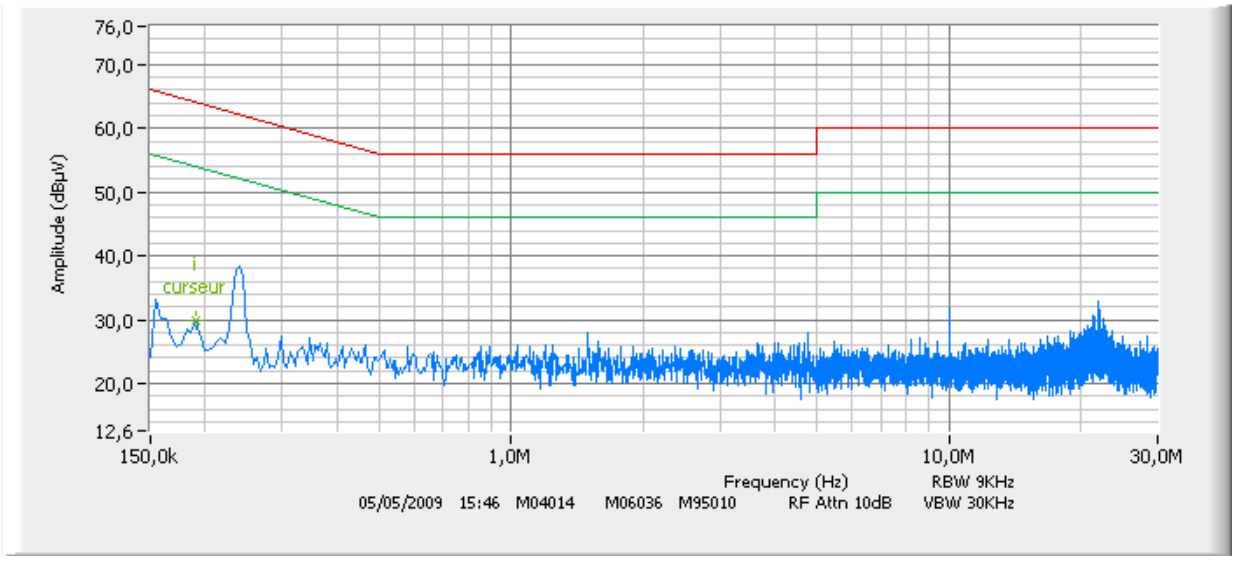
8.3.1 Power supply

8.3.1.1 A1 Live:

Frequency (MHz)	Quasi-peak (dBµV)	QP Limit (dBµV)	QP margin (dB)
0,238	38,79	62,17	23,38
3,732	21,38	56.00	34,62
4,215	21,50	56.00	34,50
10.000	30,44	60.00	29,56
20,968	26,84	60.00	33,16
21,583	25,35	60.00	34,65

Frequency (MHz)	Average (dBµV)	Average Limit (dBµV)	Average margin (dB)
0,238	38,67	52,17	13,50
3,732	15,30	46.00	30,70
4,215	15,29	46.00	30,71
10.000	28,61	50.00	21,39
20,968	21,56	50.00	28,44
21,583	18,57	50.00	31,43

Graph retour

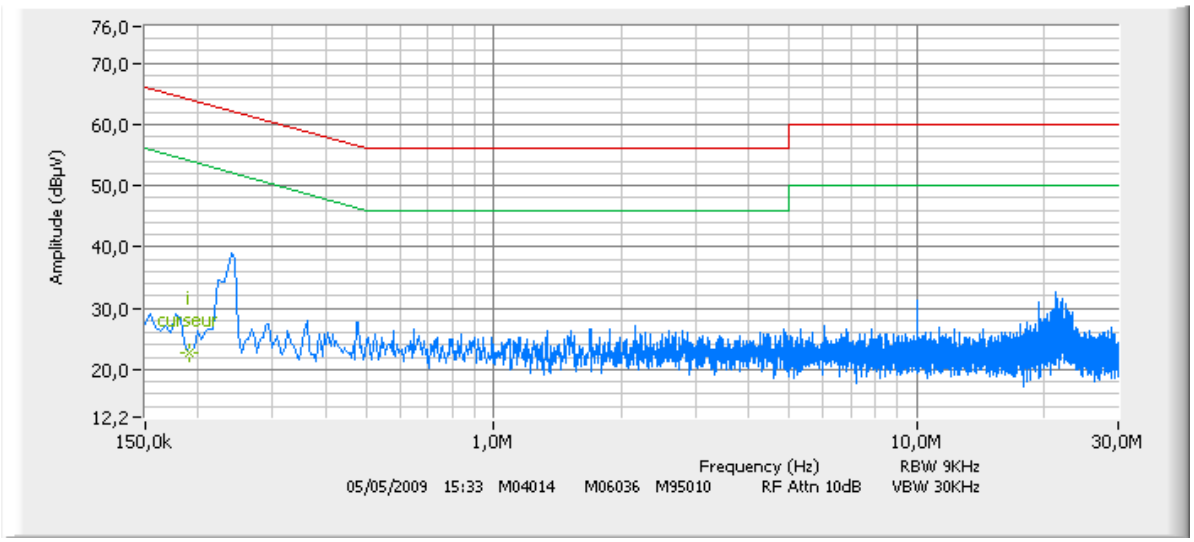


8.3.1.1 A1 Neutral:

Frequency (MHz)	Quasi-peak (dBµV)	QP Limit (dBµV)	QP margin (dB)
0,238	43,67	62,17	18,50
2,153	21,62	56.00	34,38
10,007	31,17	60.00	28,83
19,472	25,90	60.00	34,10
21,265	31,30	60.00	28,70
22,163	30,46	60.00	29,54

Frequency (MHz)	Average (dBµV)	Average Limit (dBµV)	Average margin (dB)
0,238	37,84	52,17	14,33
2,153	15,56	46.00	30,44
10,007	29,57	50.00	20,43
19,472	20,45	50.00	29,55
21,265	26,56	50.00	23,44
22,163	24,61	50.00	25,39

Graph retour



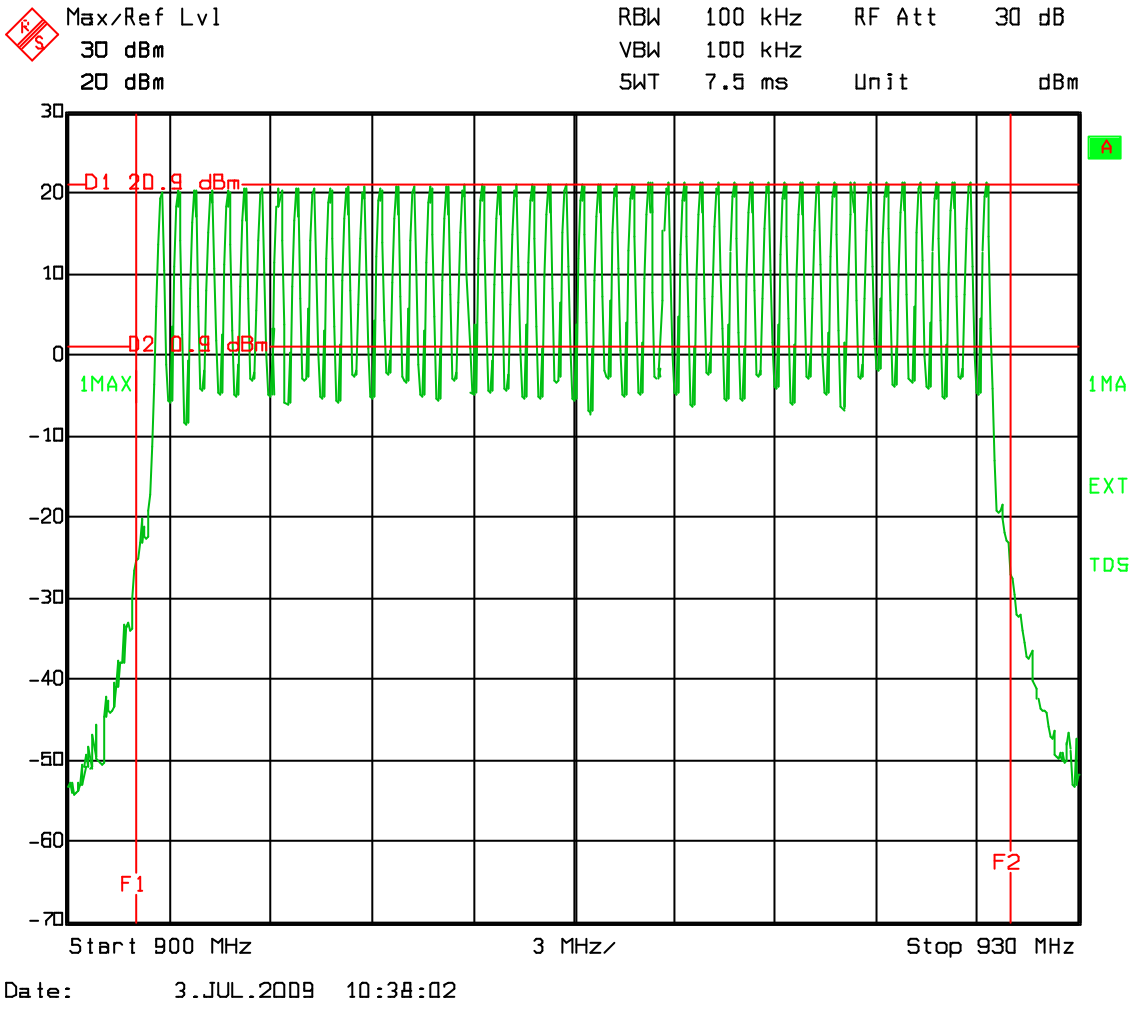
8.4 INTERPRETATION AND REMARKS:

The equipment complies with the §15.107 Class B and §15.207 requirements.

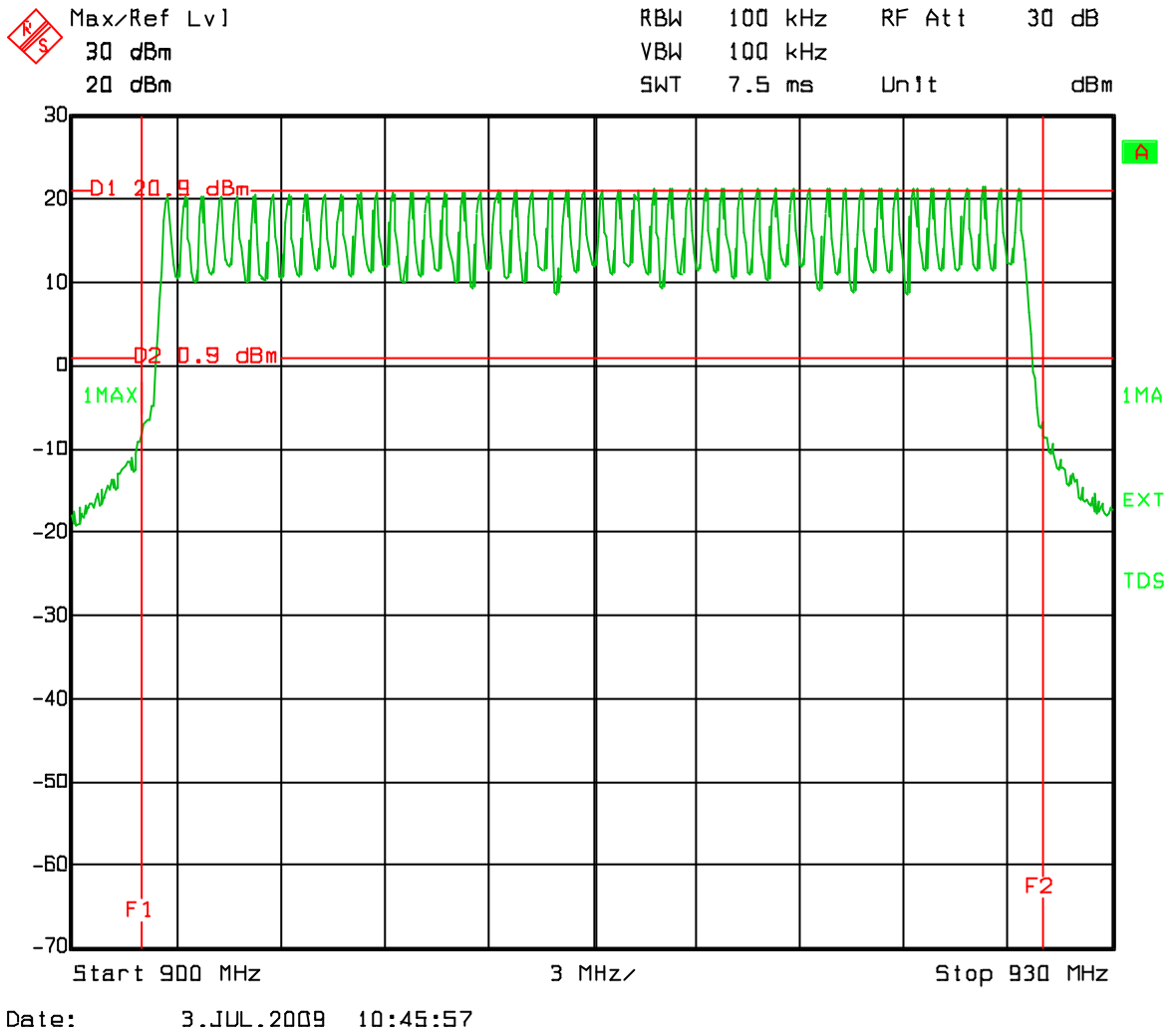
8.5 Intentional radiator operation within the band 902 – 928 MHz §15.247:

The system uses 50 channels numbered from 1 to 50.
At band edge F1 (902 MHz), F2 (928MHz), the level is far below this limit:
For details of frequency hopping technology used see Exhibit 12 operational description.

Gen2 mode

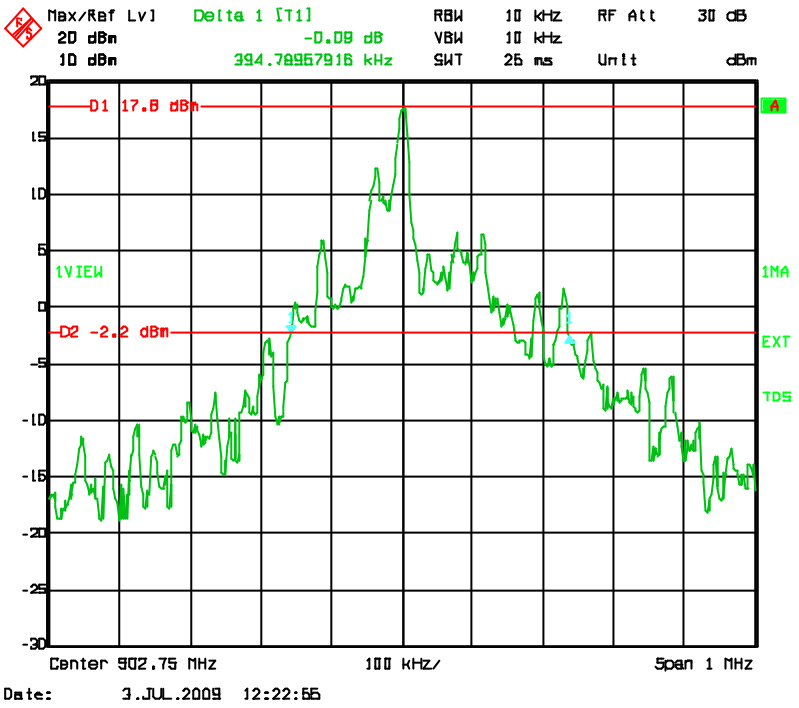


Class 0 mode

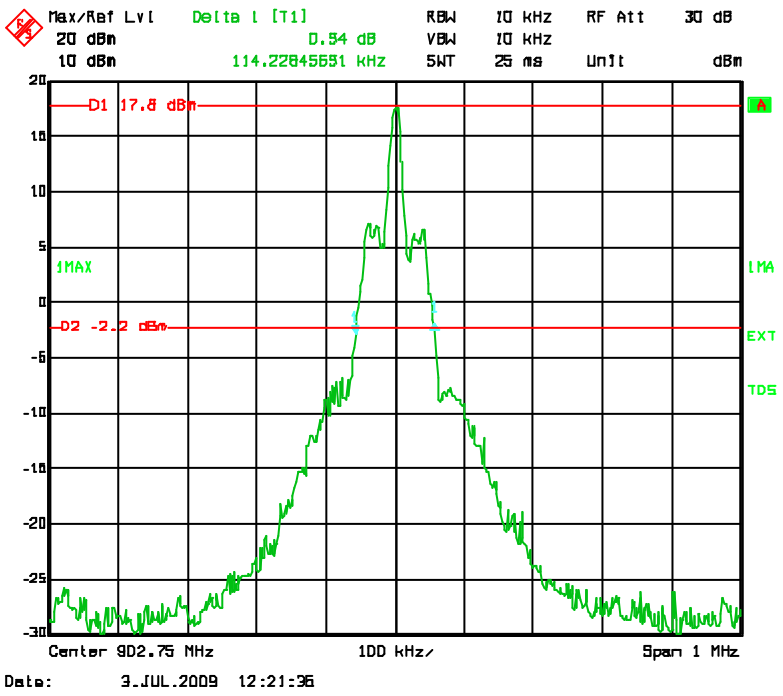

Max/Ref Lvl
30 dBm
20 dBm
RBW 100 kHz
VBW 100 kHz
SWT 7.5 ms
RF Att 30 dB
Unit dBm
D1 20.9 dBm
D2 0.9 dBm
1MAX
A
1MA
EXT
TDS
F1
F2
Start 900 MHz
3 MHz/
Stop 930 MHz
Date: 3.JUL.2009 10:45:57

8.5.1 Frequency hopping channel separation and bandwidth (15.247 (a) (1))

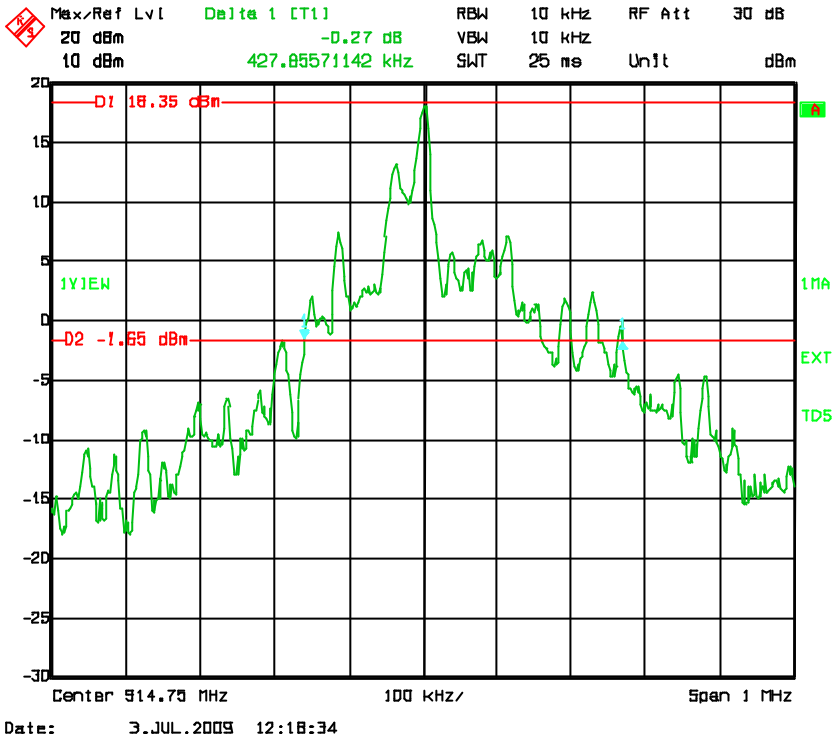
902.75MHz Class 0



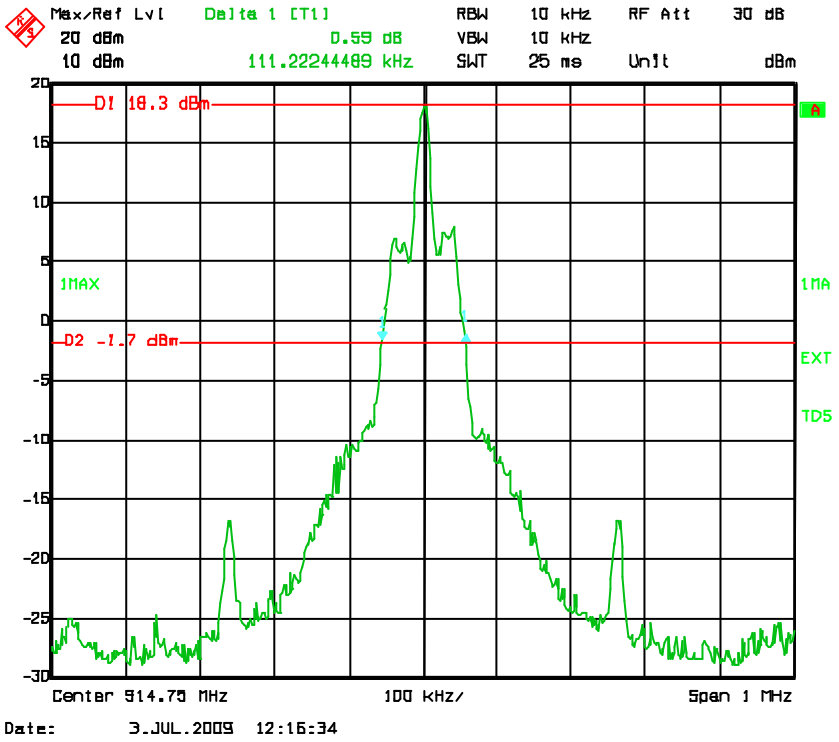
902.75MHz Gen2



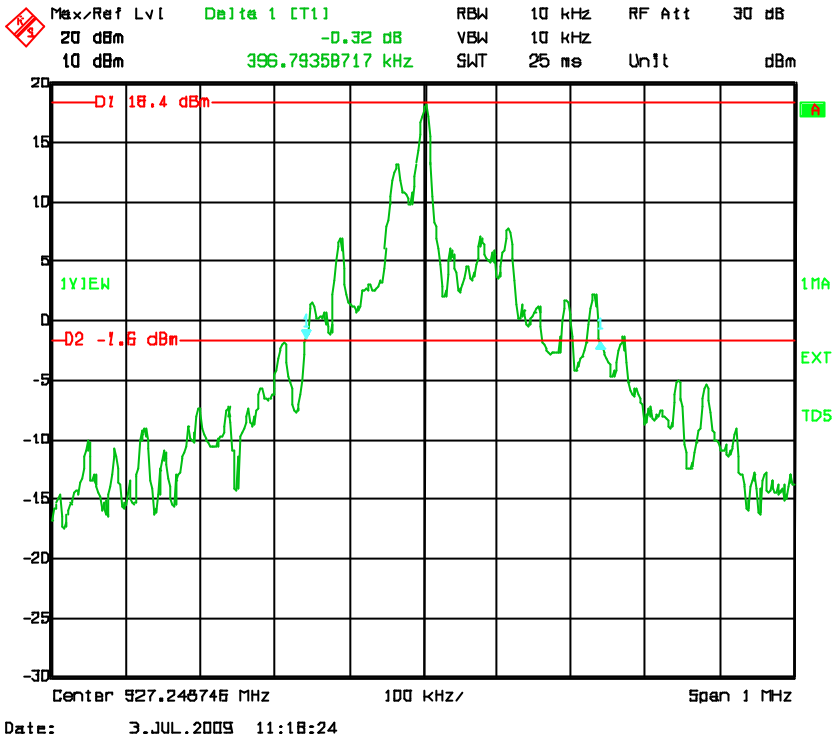
914.75MHz Class 0



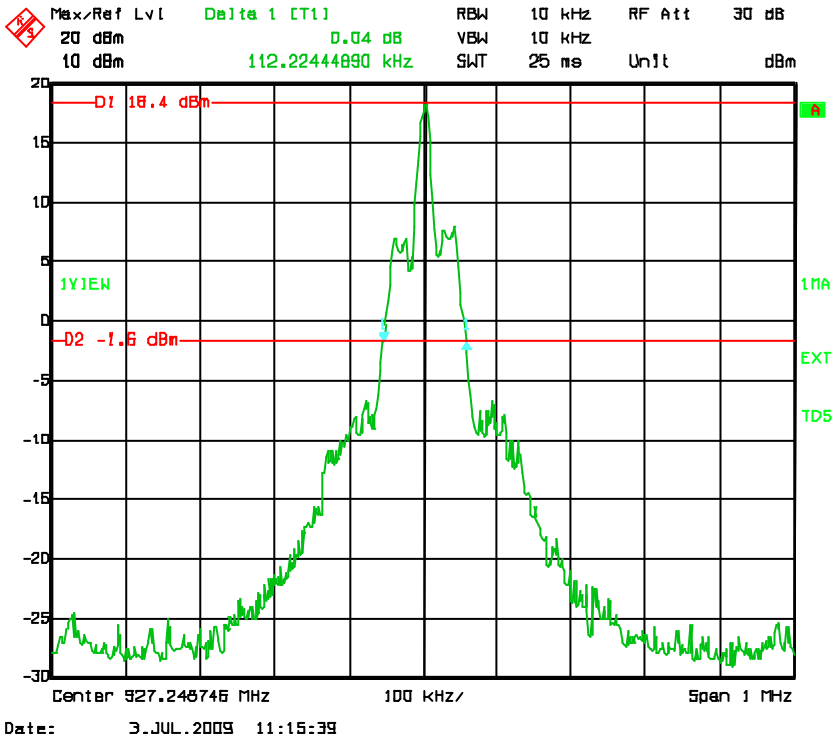
914.75MHz Gen2



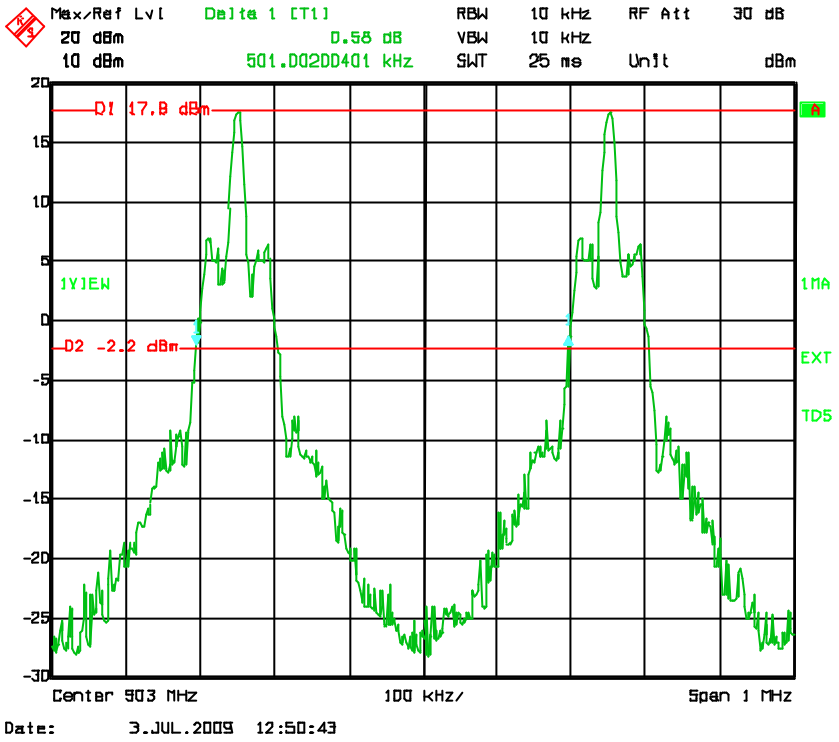
927.25MHz Class 0



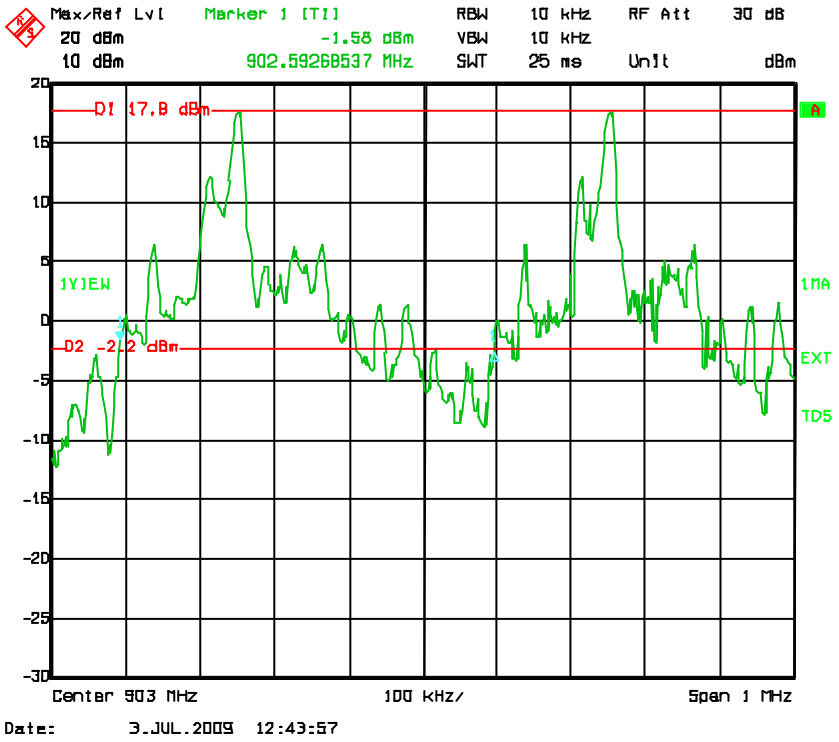
927.25MHz Gen2



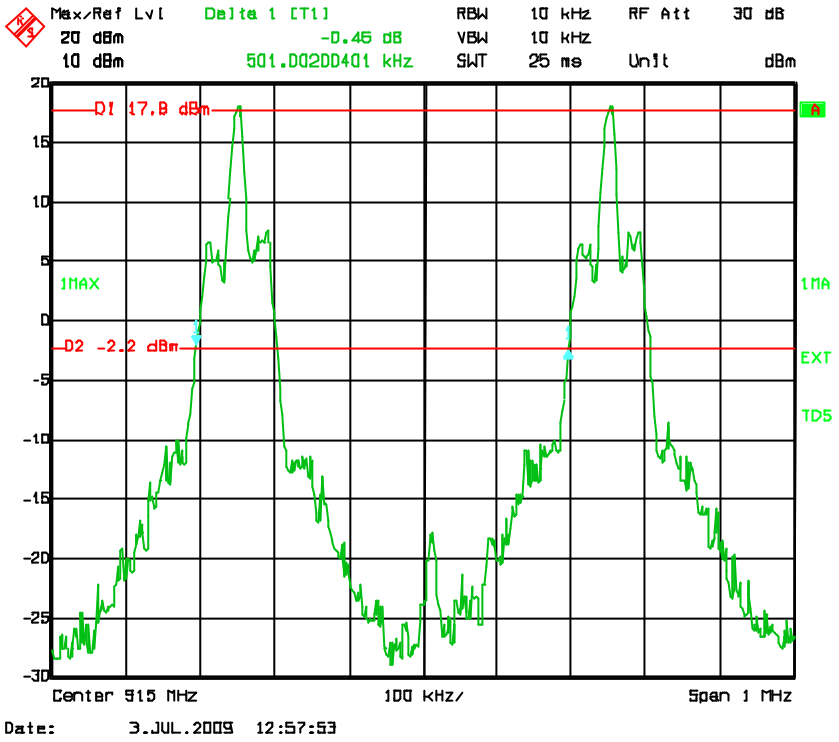
Frequencies: 902.5 MHz and 903.5 MHz in GEN2 mode



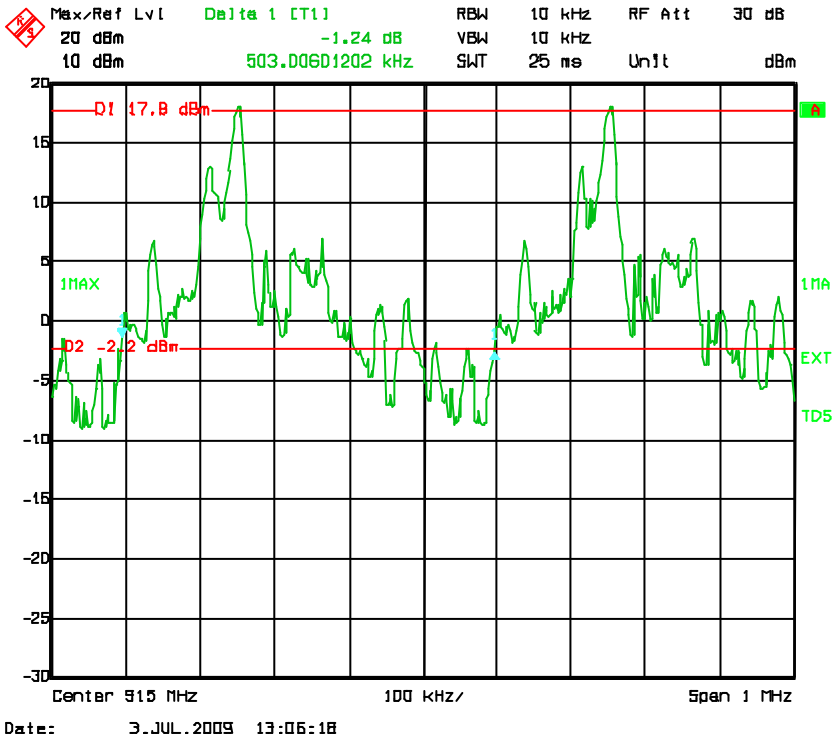
Frequencies: 902.5 MHz and 903.5 MHz in Class0 mode (500 kHz)



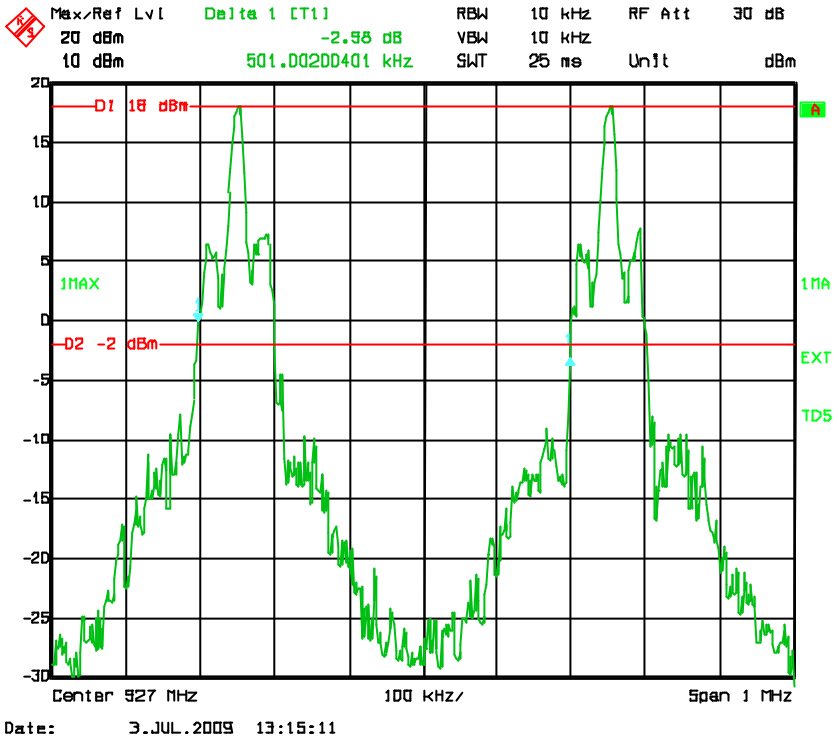
Frequencies: 914.5 MHz and 915.5 MHz in GEN2 mode



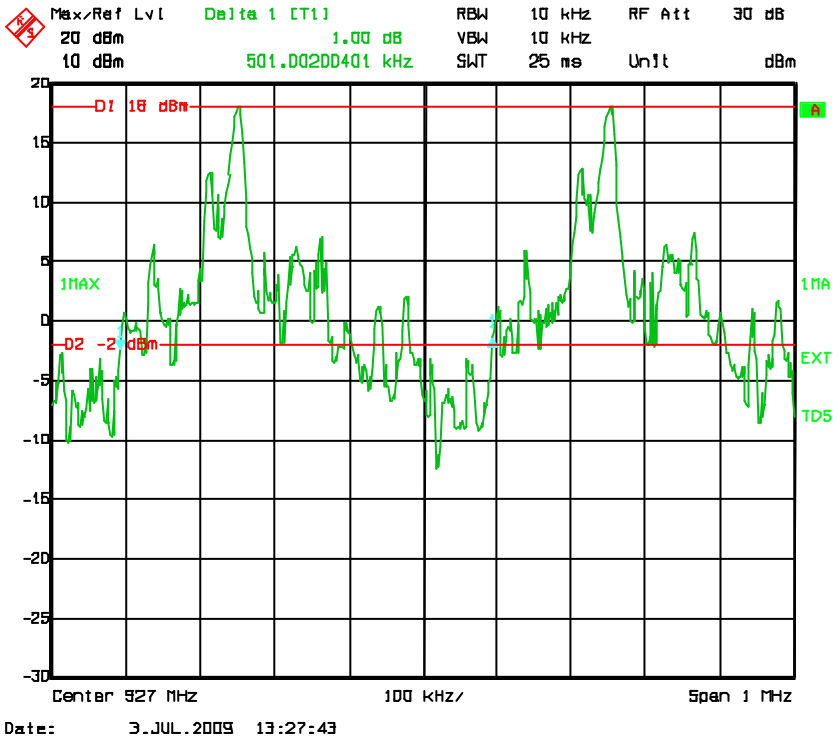
Frequencies: 914.75 MHz and 915.25 MHz in Class0 mode



Frequencies: 926.75 MHz and 927.25 MHz in GEN2 mode



Frequencies: 926.25 MHz and 926.75 MHz in class 0 mode



In Gen 2 mode

The 20dB bandwidth of each hopping channel is **114.22 kHz** (less than 500 kHz)
The channel separation is close to **500 kHz** which is greater than the 20dB bandwidth.

In class 0 mode

The 20dB bandwidth of each hopping channel is **427.85 kHz** (less than 500 kHz)
The channel separation is close to **500 kHz** which is greater than the 20dB bandwidth.

8.5.2 Duty cycle

Measurements are performed in a normal printing mode.

Gen2 mode

The worst case of a real communication with the tag has been measured by the applicant (described in Exhibit 12 operational description: extract below) and is **208.5 ms within a 20s period**: less than the 400ms limit. Communication time can depend of the response time of the tag.

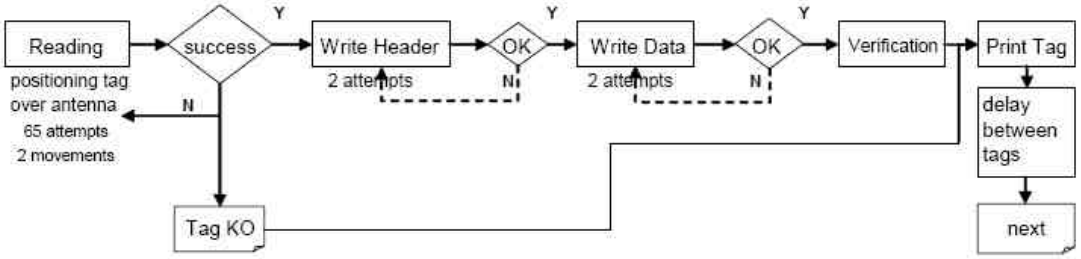
2. GEN2 Timing:

In a ***GEN2*** printer, RF signal is emitted into a given channel to communicate with the chip (the EPC chip reading).
The duration of the attempted reading is equal to maximum 8.5ms if successful, and it is equal to 5.5ms in case of failure (non-detection chip).
In this last case, the tag is printed "VOID" then ejected, and then the printer tries to read the next one.
The number of attempted reading is adjustable.

If the reading is successful, then the printer attempts to write into the chip. In GEN2, data are written in 6 memory blocks, block by block.

Encoding a GEN2 tag follows four steps before printing the label (bag tag)

- Reading : prior to any encoding, a tag must be readable
- Writing Header (1 block)
- Writing Data (6 blocks)
- Verification of written data



In accordance with this flow chart, Timings have been calculated for three cases:
Case 1: The tag is defective (KO) or absent
Case 2: encoding without any difficulty
Case 3: encoding with some retries

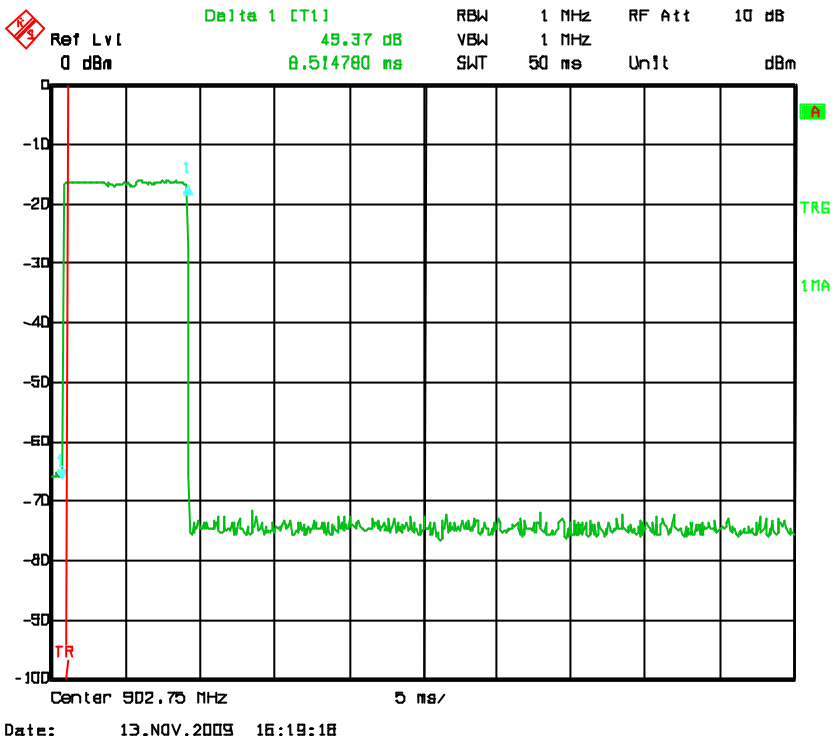
Timings take into account the software delays to send and receive data, the delays to Write/Read chip and to print the label.

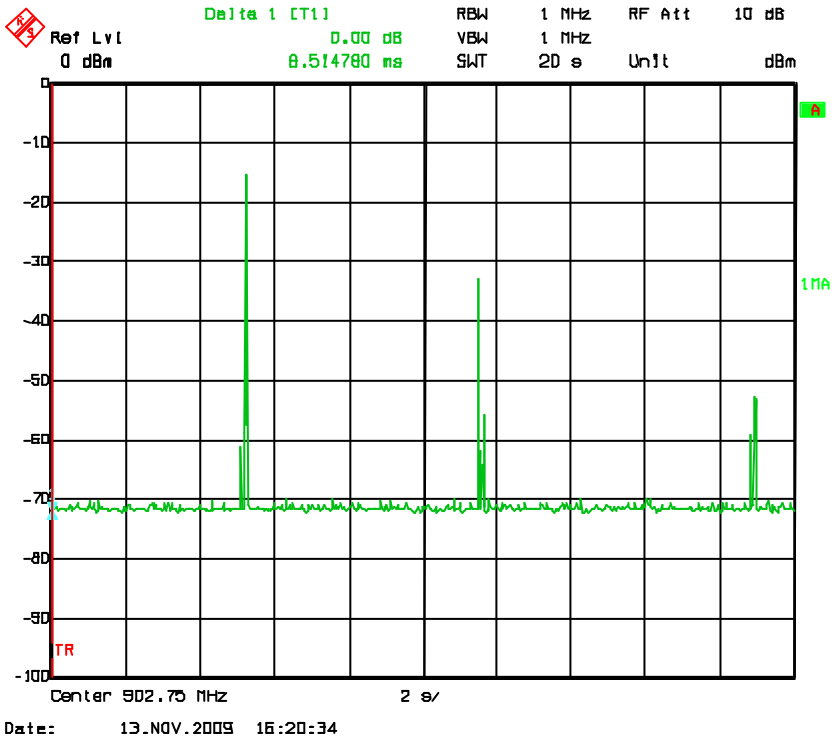
	Case 1	Case 2	Case 3
Time to encode and print one label	5.7s	4.3s	4.6s
Calculated total RF ON duration for one label	715ms	301ms	540ms
Number of channels used for 1 label	130	12	14
Calculated RF ON duration in any single channel for one printed label	16.5ms	200ms	200ms
Number of channels used for 1 label	130	12	14
Maximum calculated RF ON duration in any single channel when labels printed continually -overlap of channel occupation during a 20s period -	60.5ms	208.5ms	205.5ms
Number of channels used during 20s	540	60	70

These timings are worse cases because calculations are made "printing continually", thus a "delay" between tags=0s, which is not usual: normal use of printer if not more than 3 tickets the minute.

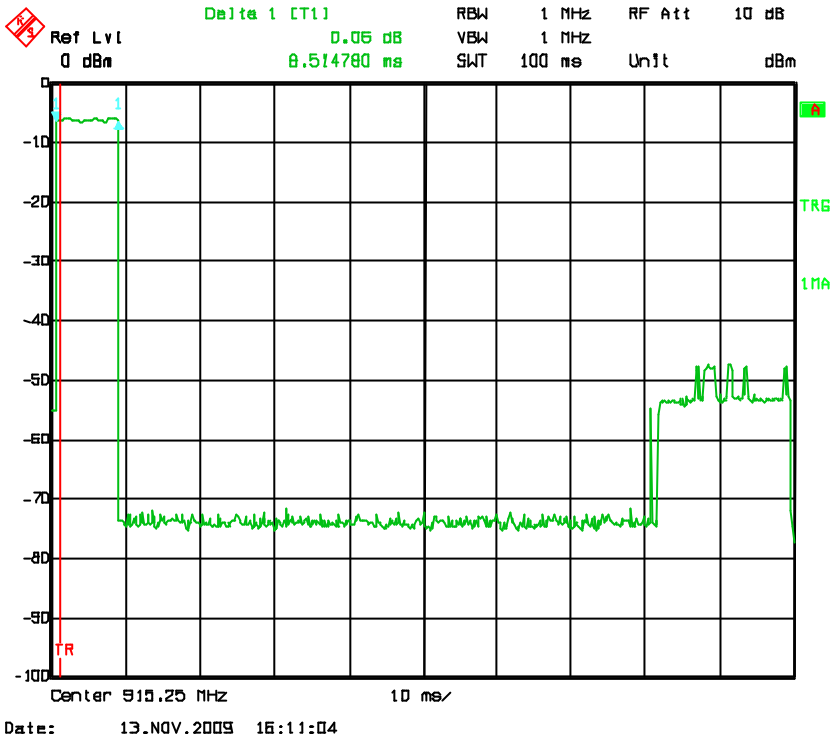
Measurement with normal printing gives 8.5 ms maximum and one time during a 20 s observation period (3 tickets printed).

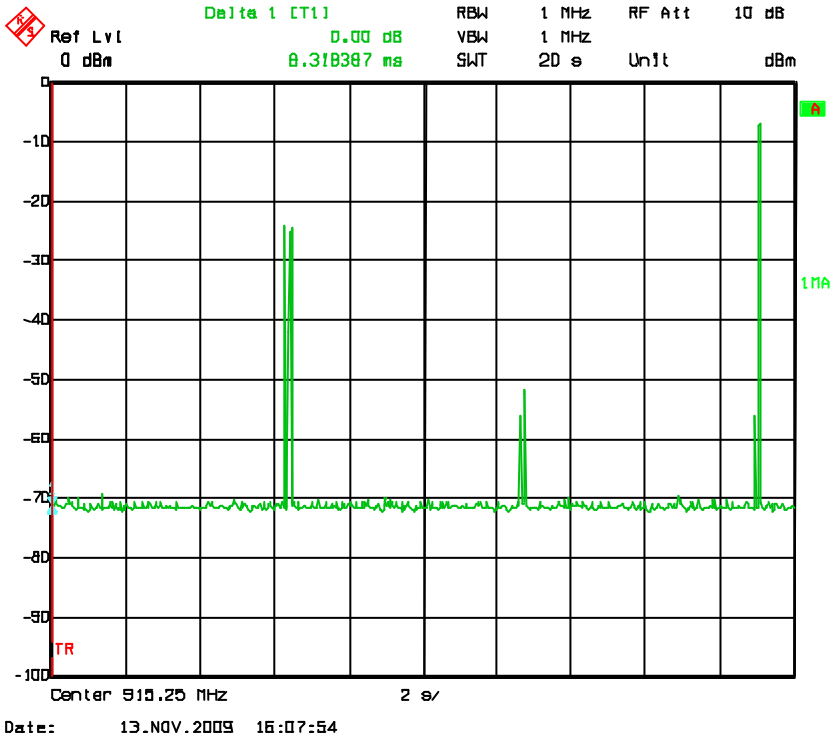
Lowest channel 902.75 MHz



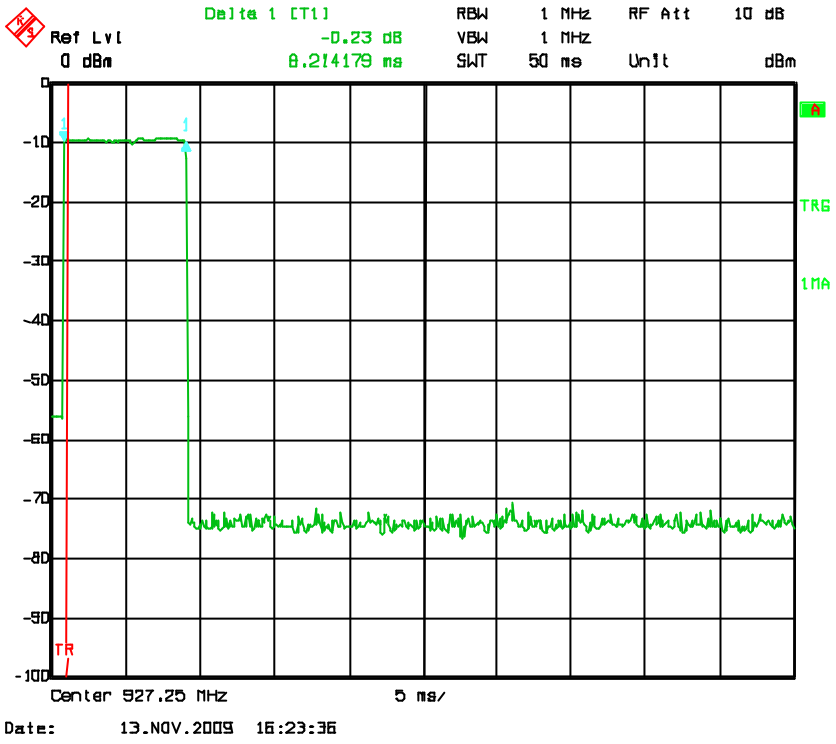


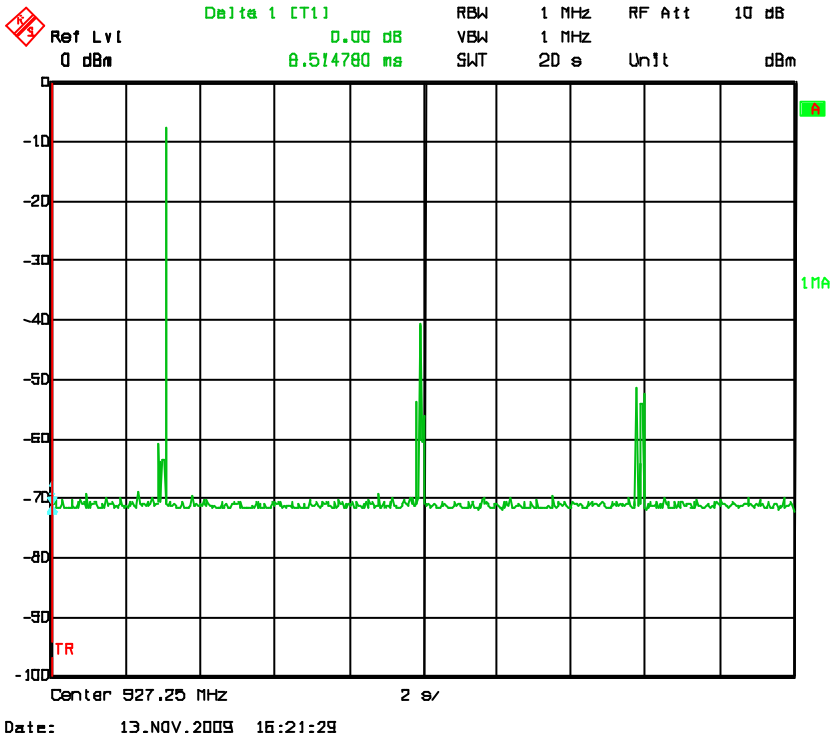
Middle channel 915.25 MHz





highest channel 927.25 MHz





Class 0 mode

The worst case of a real communication with the tag has been measured by the applicant (described in Exhibit 12 operational description: extract below) and is less than **36 ms within a 10s period**: less than the 400ms limit. Communication time can depend of the response time of the tag.
That gives an average correction factor of -14.9 dB if needed.

Class0, is read only.

The duration of the attempted reading is equal to maximum 9 ms if successful, and it is equal to 6 ms if failure (non-detection chip).
In this case, the printer ejects the tag and tries to read the next one in another channel. The number of attempted reading is adjustable.

Timings have been calculated for three cases:
Case 1: The tag is defective (KO) or absent
Case 2: reading without any difficulty
Case 3: reading with some retries

	Case 1	Case 2	Case 3
Time to read and print one label	5.7s	4s	4.1s
Calculated total RF ON duration for one label	780ms	57ms	105ms
Number of channels used for 1 label	130	9	17
Calculated RF ON duration in any single channel for one printed label	18ms	9ms	9ms
Number of channels used for 1 label	130	9	17
Maximum calculated RF ON duration in any single channel when labels printed continually - overlap of channel occupation during a 10s period -	36ms	9ms	15ms
Number of channels used during 10s	260	27	51

Measurement with normal printing gives 5 ms maximum and three times during a 10 s observation period (1 ticket printed) that gives 10ms in a 10s period.

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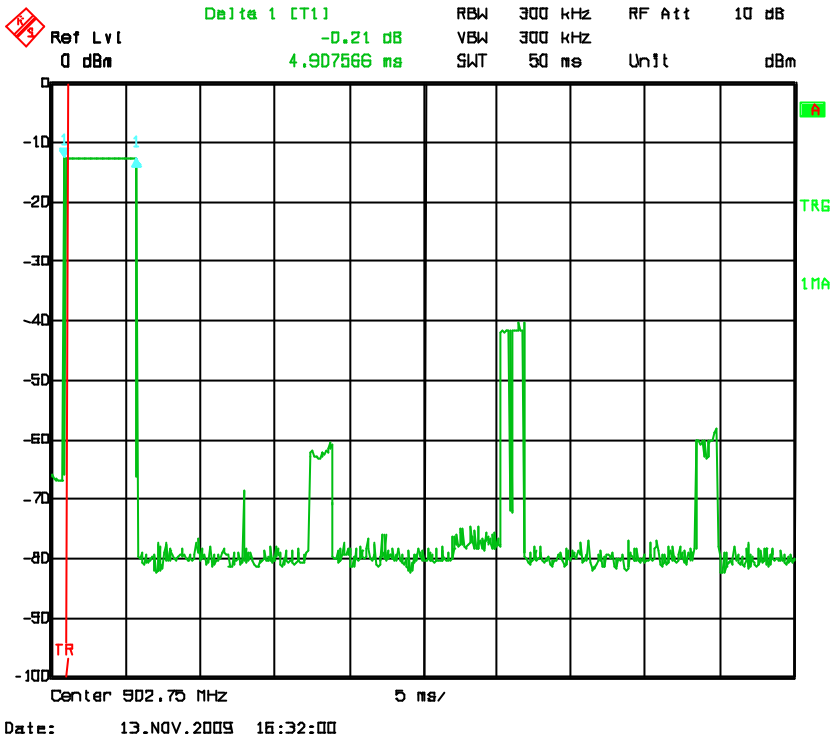
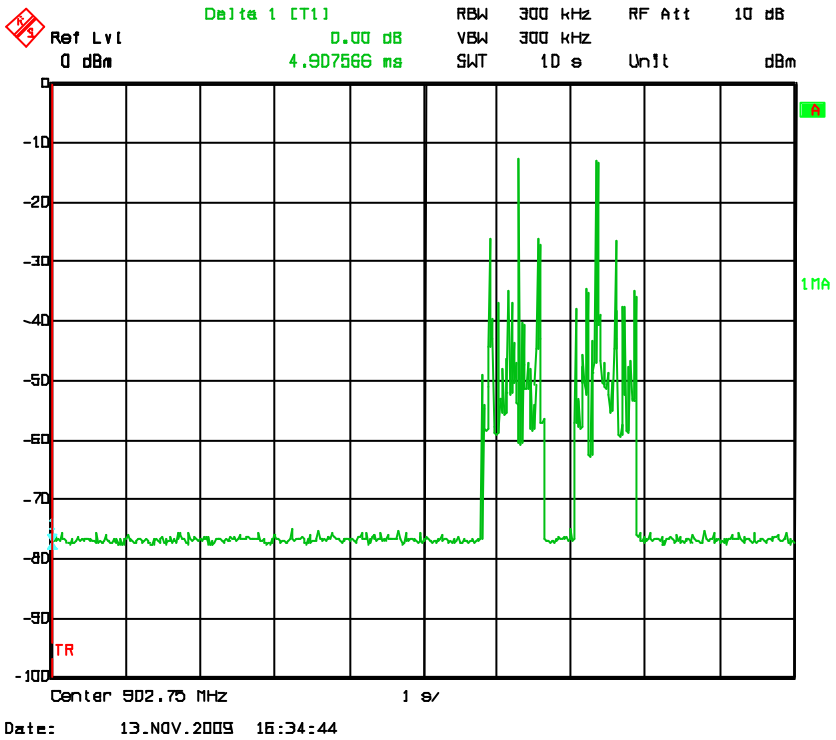
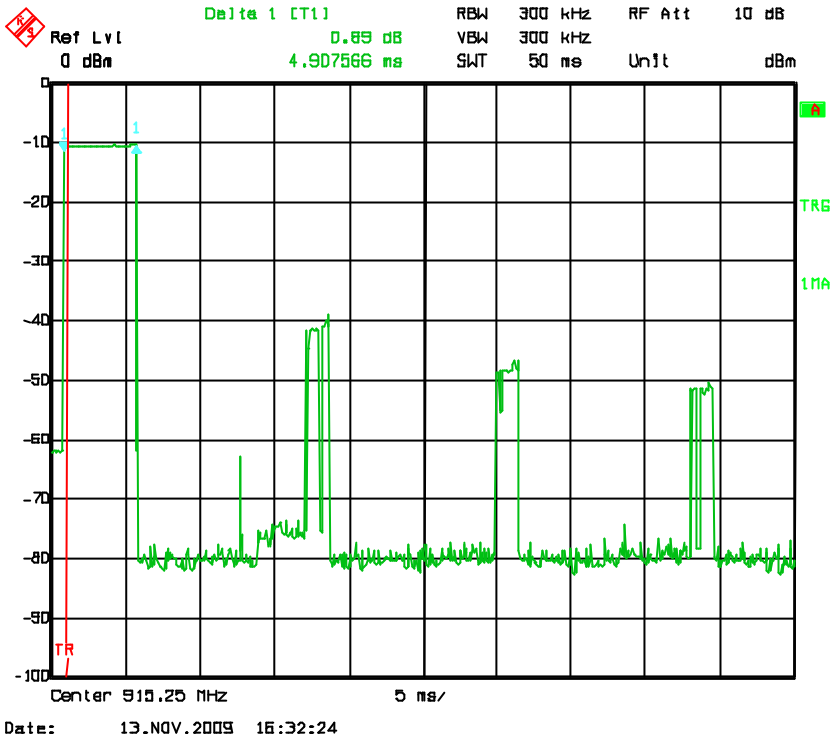
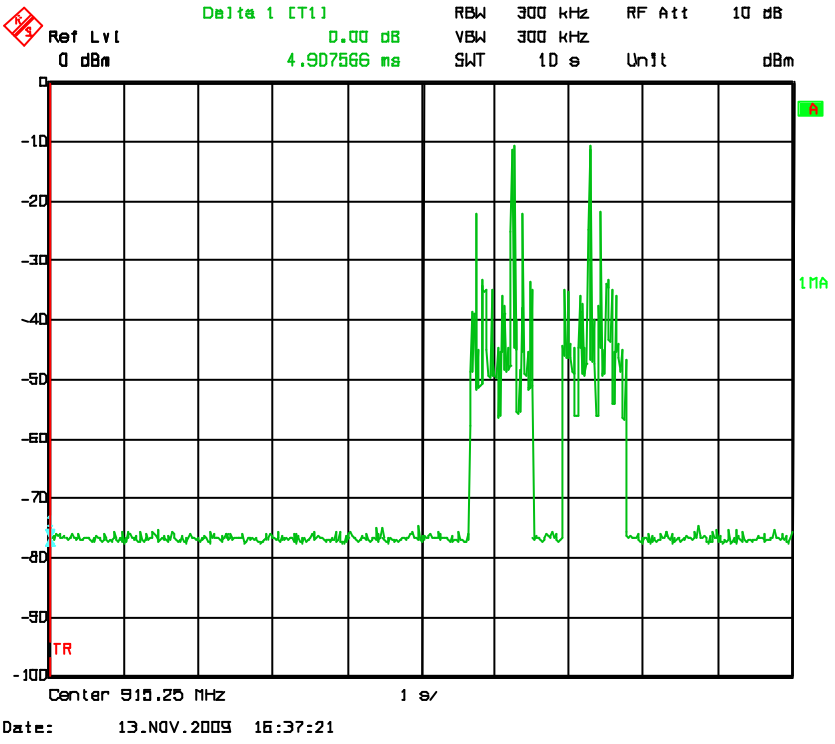
Lowest channel 902.75 MHz



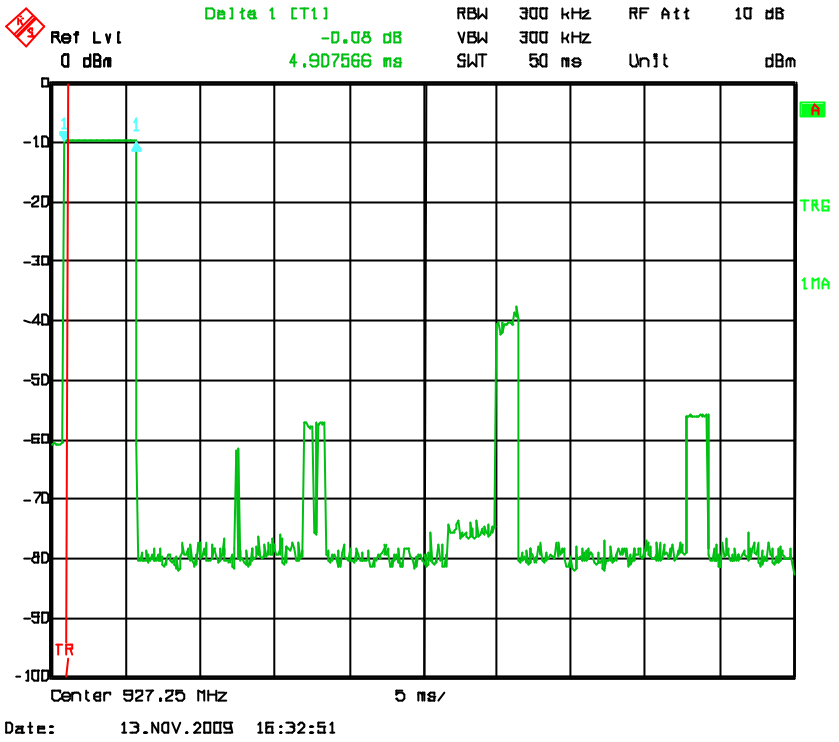


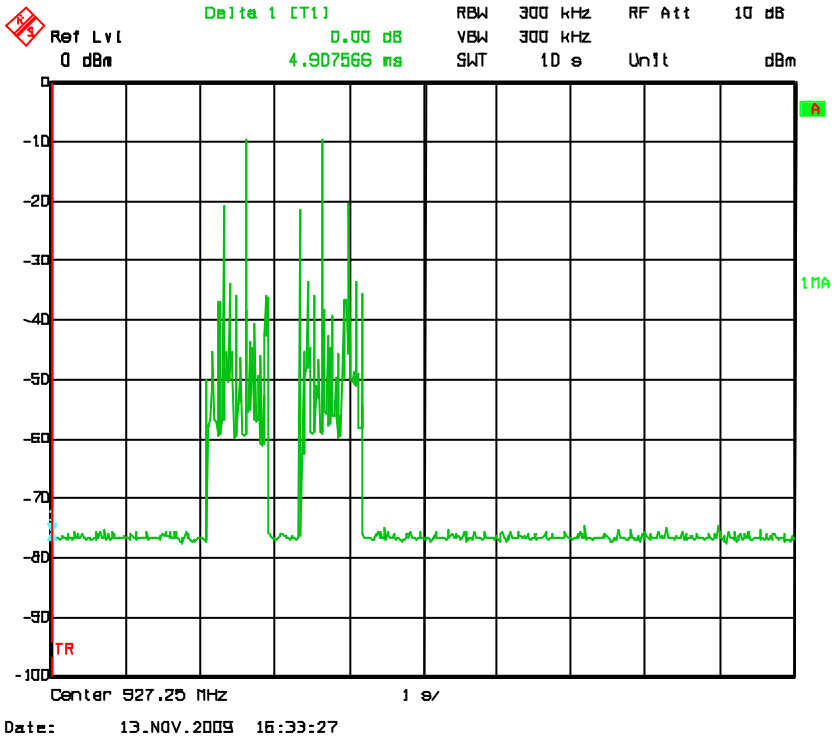
Middle channel 915.25 MHz





highest channel 927.25 MHz





8.5.3 Maximum peak output power

The maximum peak conducted power measured in this product.
The conducted limit is 1W.

		Gen 2			Class 0		
Results	Frequency (MHz)	Power* (dBm)	Power (mW)	Peak at 3m in 100kHz (dBµV/m)	Power* (dBm)	Power (mW)	Peak at 3m in 100kHz (dBµV/m)
Lowest channel	902.75	19.79	95	92.38	19.92	98	91.85
Middle channel	914.75	20.92	124	91.65	20.68	117	92.05
Highest channel	927.25	21.48	**140**	93.23	20.93	**124**	95.20

*Measured with 1MHz RBW greater than the 20 dB bandwidth.

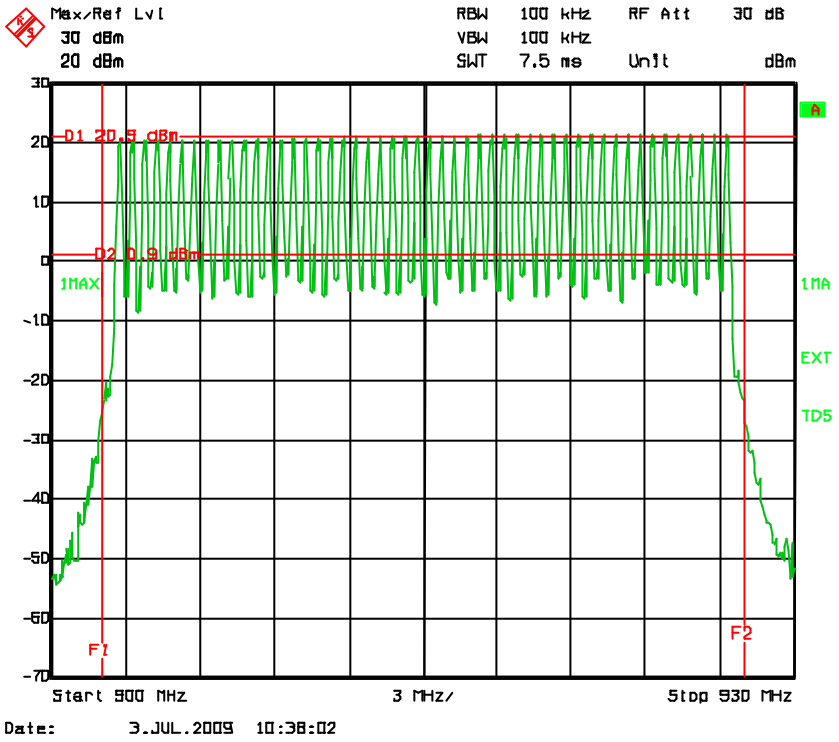
Power measurement done with input voltage at 102V, 120V and 138V without any change (delta lower than 0.2 dBm)

8.5.4 Spurious emissions (15.247 § (d))

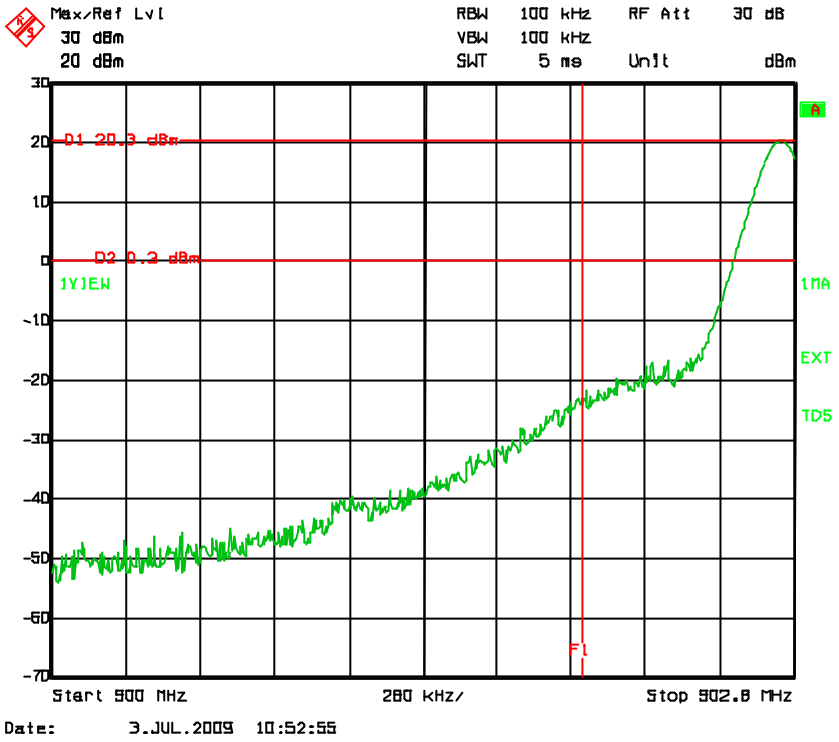
In any 100 kHz bandwidth outside the frequency band, the level is at least 20 dB below that in the 100 kHz bandwidth within the band contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

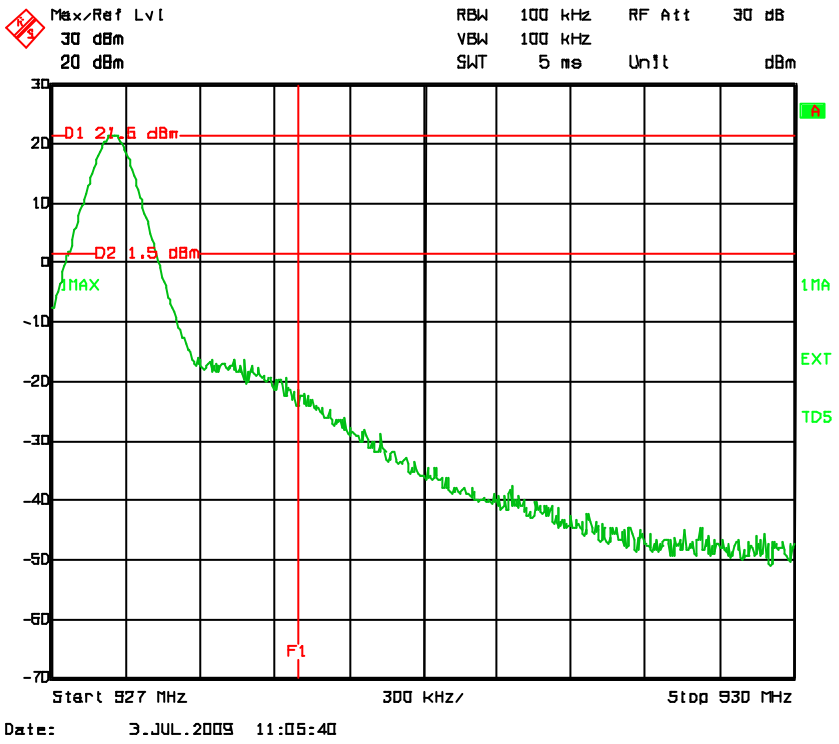
Measurement performed with max Peak detector.
At band edge F1 (902 MHz), F2 (928MHz), the level is far below the limit with or without hopping:

With hopping: Gen 2 mode

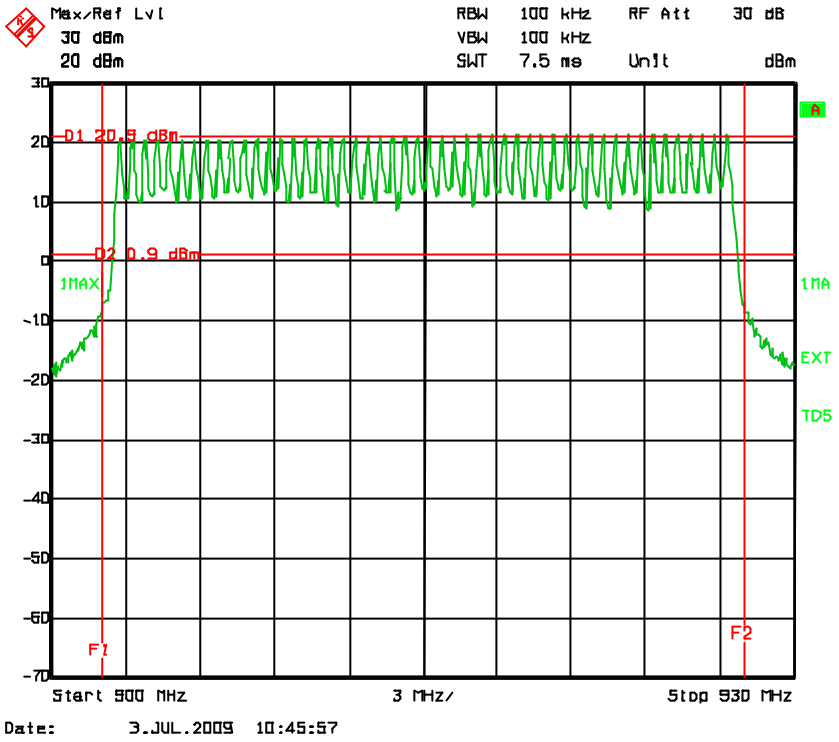


Without hopping: Gen 2

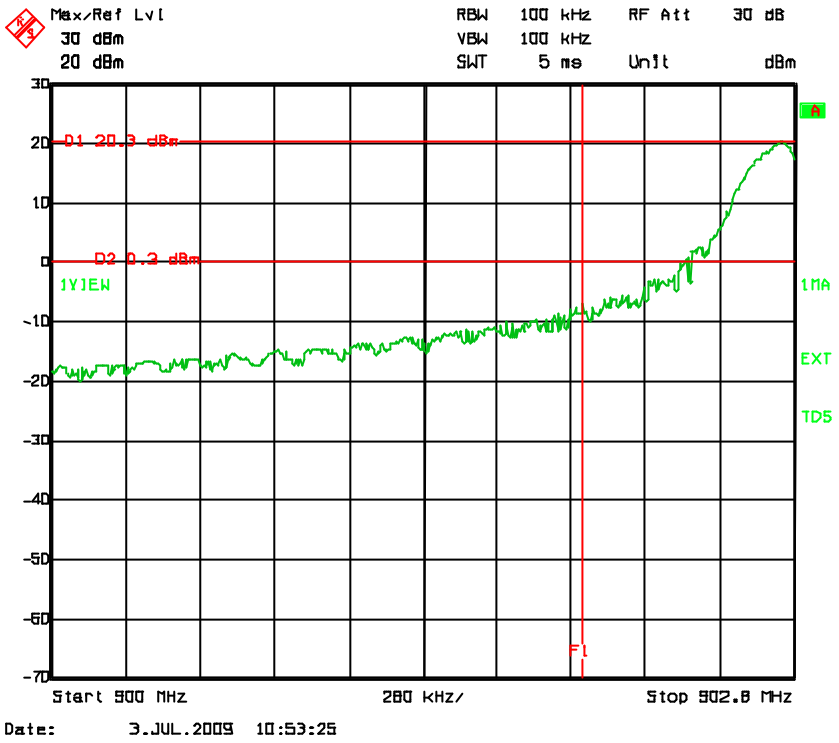


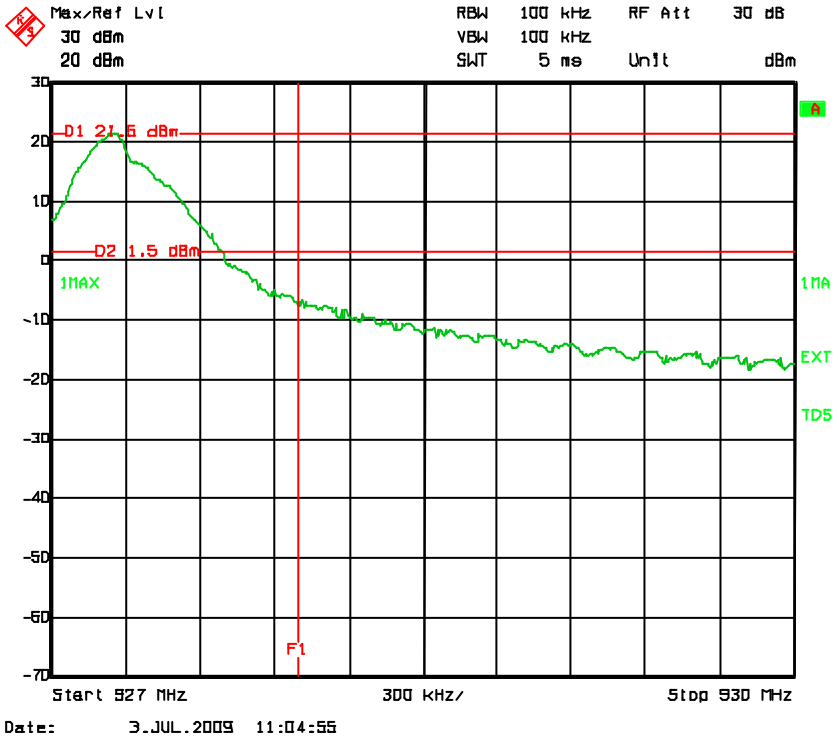


With hopping: Class 0 mode



Without hopping: Class 0 mode





8.5.5 Spurious emissions measurement results from 30MHz to 1GHz:

Before final measurements of radiated emissions were made on the open-field three/ten meter range; the EUT was pre-scanned in the semi anechoic at one meter distance. This was done in order to determine its emissions spectrum signature. The physical arrangement of the test system was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to insure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three/ten-meter, open-field test site. The EUT was placed on a conductive turntable on isolated support, table, 0.8 meter above the ground plane. At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters in order to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations. The spectrum analyzer's 6 dB bandwidth was set to 100kHz for peak measurement and 120 kHz for quasi-peak, and the analyzer was operated in the CISPR quasi-peak detection mode when needed. No video filter less than 10 times the resolution bandwidth was used. The range of the frequency spectrum to be investigated is specified in FCC Part 15. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

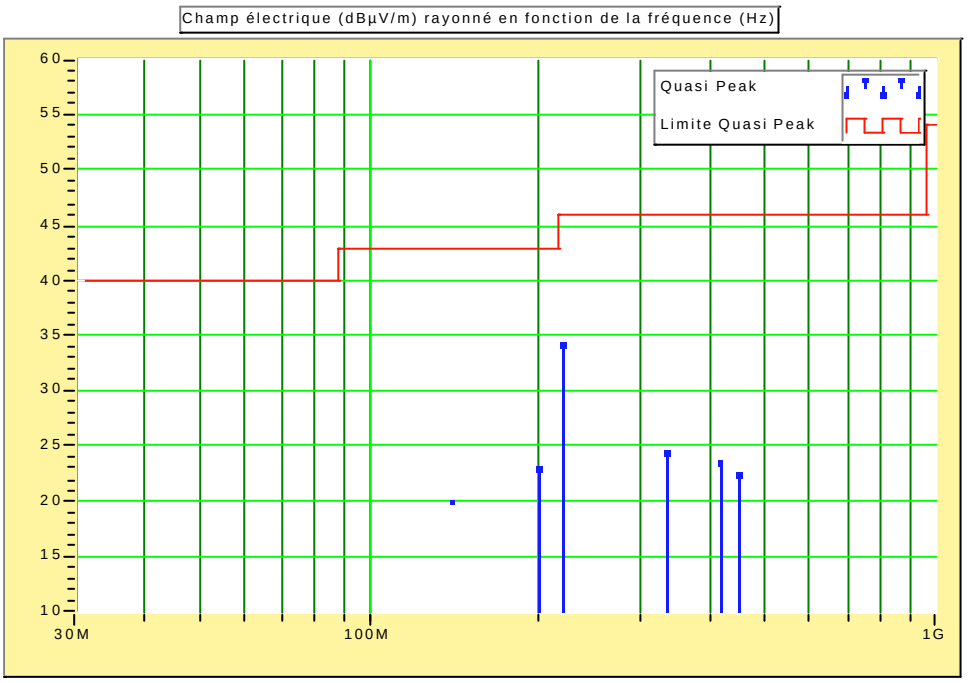
Summary of settings for measurements in restricted bands below 1GHz

ESI 7 EMI TEST RECEIVER IN RECEIVER MODE	
Preamplifier	ON
Preselector	ON
Resolution, Band Width	120 kHz
Final Quasi Peak measurement time	1 s minimum

8.5.5.1 RESULTS (Class B):

The following data table lists the most significant emission frequencies, measured level, correction factor (includes cable and antenna corrections), corrected reading and the limit. The highest peaks are measured in quasi-peak detection mode at 3 meters distance.
Intentional radiator and Class B non intentional radiator
As no significant difference can be identified between class 0 and Gen 2 modulation during prescan, measurements have been performed with Gen 2 modulation.

Frequency in MHz	Peak Value in dBµV/m	Quasi-Peak Value in dBµV/m	Quasi-Peak Limit in dBµV/m	Margin in dB	Pol	Height in cm	Angles in °	Correction Factors in dB
139,921	24,5	19,9	43,0	23,1	V	90	49	14,5
200,039	27,9	22,9	43,0	20,1	V	138	300	13,0
219,990	38,1	34,1	46,0	11,9	V	101	251	14,6
336,005	27,3	24,4	46,0	21,7	V	160	115	18,9
415,969	26,2	23,5	46,0	22,5	V	166	49	20,4
447,992	25,8	22,5	46,0	23,5	V	146	49	21,1



8.5.6 Spurious emissions measurement results from 1GHz to 10GHz:

In restricted bands, a pre-scan measurement is done very close to the product (less than 10cm) with 100 kHz RBW and a max peak detector. Then measurements are performed at 1 m with 1MHz RBW and a video averaging (10Hz) for spurious measurement with normal hopping emission and reception.
Harmonics are peak measured with 1MHz RBW and an averaging due to the duty cycle correction factor if needed.
Spurious emissions are also made with a permanent emission on lowest, middle and highest channel.
Average limit in restricted bands §15.205 at 3 m is 54 dBµV/m (with a peak limit at 74 dBµV/m).
Otherwise, the limit is only 20 dB under the emission level without averaging with duty cycle factor (limit is thus 2.2 dBm for conducted emission).
The averaging correction factor is used only when necessary (margin lower than 10dB) and when the spurious radiation is pulsed in the same manner as the normal emission.

RESULTS:

The following data table lists the most significant emission frequencies, measured level, correction factor (includes cable and antenna corrections), corrected reading and the limit.

Final measurements results at 3 m

Measurement done in Gen 2 mode

Max spurious for channel 902.75

Freq. (MHz)	H.	Peak(1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Avg Limit (dBµV/m)	Min. Margin (dB)
902,75	1					
1 806	2	Note 1				
2 708	3	54.32	44.32	74	54	29.68
3 611	4	NF				
4 514	5	NF				
5 417	6	50.64	40.64	74	54	33.36
6 319	7	NF				
7 222	8	NF				
8 125	9	NF				
9 028	10	NF				

Note 1: see conducted measurement below mentioned

(1) Peak measurement with 100 kHz RBW and VBW when frequency outside restricted bands.
Peak measurement with 1MHz RBW and VBW when frequency in restricted bands.
* NF means Noise Floor.

Max spurious for channel 914.75

Freq. (MHz)	H.	Peak (1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Avg Limit (dBµV/m)	Min. Margin (dB)
914,75	1					
1 830	2	Note 1				
2 744	3	55.88	45.88	74,0	54,0	28.12
3 659	4	NF				
4 574	5	NF				
5 489	6	Note 1				
6 403	7	NF				
7 318	8	47.83	37.83	74,0	54,0	36.17
8 233	9	NF				
9 148	10	NF				

Note 1: see conducted measurement below mentioned

Max spurious for channel 927.25

Freq. (MHz)	H.	Peak(1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Avg Limit (dBµV/m)	Min. Margin (dB)
927,25	1					
1 855	2	Note 1				
2 782	3	47.23	37.23	74,0	54,0	36.77
3 709	4	NF				
4 636	5	NF				
5 564	6	Note 1				
6 491	7	NF				
7 418	8	50.32	40.32	74,0	54,0	33.68
8 345	9	NF				
9 273	10	NF				

Note 1: see conducted measurement below mentioned

* NF means Noise Floor

Spurious founded outside harmonics.

Freq. (MHz)	Peak(1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Peak Margin (dB)	Avg (2) (dBµV/m) At 1 m	Avg (2) (dBµV/m) corrected for 3 m distance	Avg Limit (dBµV/m)	Avg Margin (dB)
1 001	28.7	18.7	74,0	55.3	24.70	14.70	54,0	39.30
1 030	27.1	17.1	74,0	56.9	13.96	03.96	54,0	50.04
1 068	34.2	24.2	74,0	49.8	22.00	12.00	54,0	42.00
1 200	38.3	28.3	74,0	45.7	29.10	19.10	54,0	34.90
1322	33.6	23.6	74,0	50.4	15.06	05.06	54,0	48.94

Spurious conducted measurement.

Freq. (MHz)	H.	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
902,75	1	19.90		
1 806	2	36.52	1	37.52

Freq. (MHz)	H.	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
914,75	1	20.70		
1829	2	-35.20	1	36.20
5488	6	-64.82	1	65.82

Freq. (MHz)	H.	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
927,25	1	21.00		
1854	2	-33.71	1	34.71
5563	6	-61.37	1	62.37

Spurious conducted measurement outside harmonics

Freq. (MHz)	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
6086	-55.46	1	56.46

Measurement done in Class 0 mode

Max spurious for channel 902.75

Freq. (MHz)	H.	Peak(1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Avg Limit (dBµV/m)	Min. Margin (dB)
902,75	1					
1 806	2	Note 1				
2 708	3	54.53	44.53	74	54	29.47
3 611	4	NF				
4 514	5	NF				
5 417	6	52.37	42.37	74	54	31.63
6 319	7	NF				
7 222	8	NF				
8 125	9	NF				
9 028	10	NF				

Note 1: see conducted measurement below mentioned

(1) Peak measurement with 100 kHz RBW and VBW when frequency outside restricted bands.
Peak measurement with 1MHz RBW and VBW when frequency in restricted bands.

* NF means Noise Floor.

Max spurious for channel 914.75

Freq. (MHz)	H.	Peak (1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Avg Limit (dBµV/m)	Min. Margin (dB)
914,75	1					
1 830	2	Note 1				
2 744	3	54.12	44.12	74,0	54,0	29.88
3 659	4	NF				
4 574	5	NF				
5 489	6	Note 1				
6 403	7	NF				
7 318	8	50.11	49.11	74,0	54,0	24.89
8 233	9	NF				
9 148	10	NF				

Note 1: see conducted measurement below mentioned

Max spurious for channel 927.25

Freq. (MHz)	H.	Peak(1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Avg Limit (dBµV/m)	Min. Margin (dB)
927,25	1					
1 855	2	Note 1				
2 782	3	50.51	49.51	74,0	54,0	24.49
3 709	4	NF				
4 636	5	NF				
5 564	6	Note 1				
6 491	7	NF				
7 418	8	52.48	42.48	74,0	54,0	31.52
8 345	9	NF				
9 273	10	NF				

Note 1: see conducted measurement below mentioned

* NF means Noise Floor

Spurious founded outside harmonics.

Freq. (MHz)	Peak(1) (dBµV/m) At 1m	Peak (1) (dBµV/m) corrected for 3 m distance	Peak Limit (dBµV/m)	Peak Margin (dB)	Avg (2) (dBµV/m) At 1 m	Avg (2) (dBµV/m) corrected for 3 m distance	Avg Limit (dBµV/m)	Avg Margin (dB)
1 001	29.70	19.70	74,0	54.30	24.50	14.50	54,0	39.50
1 030	27.50	17.50	74,0	56.50	14.10	04.10	54,0	49.90
1 068	31.48	21.48	74,0	52.52	21.78	11.78	54,0	42.22
1 200	36.74	26.74	74,0	47.26	30.00	20.00	54,0	34.00
1322	34.35	24.35	74,0	49.65	17.70	07.70	54,0	46.30

Spurious conducted measurement.

Freq. (MHz)	H.	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
902,75	1	19.90		
1 806	2	-37.55	0.9	38.45

Freq. (MHz)	H.	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
914,75	1	20.70		
1829	2	-34.64	0.9	35.54
5488	6	-65.06	0.9	65.96

Freq. (MHz)	H.	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
927,25	1	20.90		
1854	2	-35.28	0.9	36.18
5563	6	-61.18	0.9	62.08

Spurious conducted measurement outside harmonics

Freq. (MHz)	Peak(1) (dBm)	Peak Limit (dBm)	Margin (dB)
6086	-55.34	0.9	56.24

8.6 Receiver spurious radiation

No spurious emission has been found in receiver mode over the noise floor.

8.7 Antenna gain 15.247 § (b)(4)

		Gen 2			Class 0		
Results	Frequency (MHz)	Antenna gain (dBi)	Power (mW)	Peak at 3m in 1MHz (dBµV/m)	Antenna gain (dBi)	Power (mW)	Peak at 3m in 1MHz (dBµV/m)
Lowest channel	902.75	-21	95	94.07	-22	98	93.24
Middle channel	914.75	-22	124	93.84	-22	117	93.61
Highest channel	927.25	-21	140	95.65	-21	124	95.60

$G(dBi) = 10Log[(Ed)^2/(30P)]$

The antenna is designed to communicate at few mm and is inside a metallic enclosure.

The antenna gain is less than 6dBi.

8.8 Antenna requirements

Not applicable because the antenna is located inside the equipment and is not replaceable without modifying the product.

8.9 Conclusion:

The equipement complies with 15.109, 15.209 and 15.247 limits