

TEST REPORT

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EUT DESCRIPTION Radio Equipment for inverter check

EUT TRADEMARK Power-One

EUT MODEL PVI-DESKTOP-BT-US

DERIVED MODEL PVI-DESKTOP-US

REFERENCE STANDARDS : 47 CFR FCC part 15.247

TEST REPORT NUMBER FCCTR_100137_2

TEST REPORT ISSUE DATE 26/03/2010

TESTING LABORATORY Prima Ricerca & Sviluppo S.r.l.
Via Campagna, 92 -22020 Faloppio (Co) –Italy

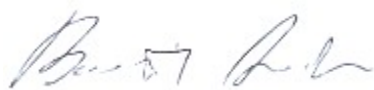
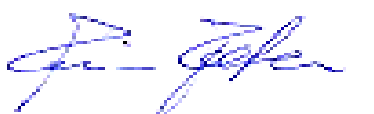
TESTING LOCATION As Above

DATE OF TEST SAMPLE RECEIPT 16/02/2010

DATE OF TEST 16/02/2010 26/03/2010

TESTED BY Andrea Bortolotti

APPROVED BY Massimo Maltempi

*The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
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TRFCC_15.247

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1. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

1.1 Identification

Brand name: POWER-ONE
Manufacturer: POWER-ONE ITALY SPA
Equipment : Transceiver
Serial number : Not present
Model PVI-DESKTOP-BT-US
Derived model PVI-DESKTOP-US (see following manufacturer declaration)
FCC ID : X6W-DESK
Country of manufacturer: ITALY



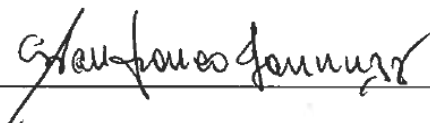
ref. 3188 US (Dichiarazione Differenze Modelli)

Declaration

We Power-One Italy S.p.a. - Via San Giorgio, 642 – 52028 Terranuova B.ni (AR) - Italy, declare that :

Model PVI-DESKTOP-BT-US is the same in construction (including the printed wiring board) respect to model PVI-DESKTOP-US except for added integrated Bluetooth Module and SMD Antenna.

Terranuova B.ni, 2010 February 08


Ing. Gianfranco Iannuzzi
(Test Houses Liaison Engineer)



1.2 *Technical data*

FCC class: 47 CFR FCC Part 15 Subpart C § 15.247
Product type: Radio Equipment for inverter check
Radio type: Intentional radiators
Power type : 110V 60Hz Power supply adapter / output 5 Vdc
Type Modulation: FHSS

The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter

Modulation : GFSK
Data Rate (Mbps) : 50 Kbps
Frequency range : 902 – 928 MHz
Channel number : 63
Channel Band Width (20dB) : 334 KHz
Channel space: 400KHz
Conducted/radiated Output Power : -4,7 dBm
Carrier Frequency: Channel No.1: 902,65 MHz Channel No.63: 927,45 MHz
Field Antenna : Antenna Type: wired integrated mod. 91531888100G
Gain: 0 dBi

Channel table

N°	frequencies	N°	frequencies
1	902,65	33	915,45
2	903,05	34	915,85
3	903,45	35	916,25
4	903,85	36	916,65
5	904,25	37	917,05
6	904,65	38	917,45
7	905,05	39	917,85
8	905,45	40	918,25
9	905,85	41	918,65
10	906,25	42	919,05
11	906,65	43	919,45
12	907,05	44	919,85
13	907,45	45	920,25
14	907,85	46	920,65
15	908,25	47	921,05
16	908,65	48	921,45
17	909,05	49	921,85
18	909,45	50	922,25
19	909,85	51	922,65
20	910,25	52	923,05
21	910,65	53	923,45
22	911,05	54	923,85
23	911,45	55	924,25
24	911,85	56	924,65
25	912,25	57	925,05
26	912,65	58	925,45
27	913,05	59	925,85
28	913,45	60	926,25
29	913,85	61	926,65
30	914,25	62	927,05
31	914,65	63	927,45
32	915,05		

1.3 **Modifications incorporated in E.U.T.**

The following items are the modifications introduced in the equipment under test :

- None

1.4 **Ports identification**

This section contains descriptions of all signal ports and AC/DC power input/output ports, the length and the type of the cable provided by manufacturer needed for the tests.

Moreover it is specified if the ports are ever or optionally connected.

Port		Description	Connection
1	Enclosure	Plastic case	By screws and by pressure
2	AC power input/output ports	110Vac 60Hz/ 12 Vdc external power supply adapter	By plug
3	DC power input/output ports	(Internal battery supplied)	Port not present
4	Signals / control lines	RS485 port (Type 2.0) (how declared by the client, cable < 3mt)	Female type A plug
5	Telecommunication ports	Port no present	

Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.

1.5 **Auxiliary equipment**

- NONE

2. TEST CONDITIONS

2.1 Operating test modes and test conditions

The equipment has been tested according to the operative conditions described in the user/installation manual provided by the manufacturer and by following reference standards :

Reference Standard:

- 47 CFR FCC Part 15 Subpart C § 15.247
- RSS-210 Issue 7 June 2007 - Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment,

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item “Operating condition of the equipment under test” of all technical sheets of the tests (see Section 4)

Operating condition	Description
#1	EUT in transmission mode with modulation
#2	EUT in transmission mode with only carrier frequency
#3	EUT in receiver mode

2.2 Test overview

The appliance is classified as “Intentional radiator” in conformity to FCC Part 15 Subpart C § 15.247.

The application is mainly as monitoring of photovoltaic inverter

3. REFERENCE STANDARD FOR PERFORMED TESTS

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in ANSI C63.4-2003 and 47 CFR FCC Part 15 Subpart C.

4. SUMMARY OF TEST RESULTS

4.1 Emission tests

Port		Phenomena	Basic standard	Operating condition ¹	Result
1	Antenna port	Antenna requirement	15.203	---	Within the limit
2		Maximum Peak Output Power	FCC Part 15 §15.247 (b) (2)	#2	Within the limit
3		Hopping Channel Separation	FCC Part 15 §15.247 (a) (1)	#1	Within the limit
4		Number of Hopping Frequency Used	FCC Part 15 §15.247 (a) (1) (i)	#1	Within the limit
5		20 dB Bandwidth	FCC Part 15 §15.247 (a) (1)	#1	Within the limit
6		Dwell Time on Each Channel	FCC Part 15 §15.247 (a) (1) (i)	#1	Within the limit
7		100 kHz Bandwidth of Band Edge	FCC Part 15 § 15.247 (c)	#1	Within the limit
8		Restricted Bands	FCC Part 15 § 15.205	#1	Within the limit
9		FHSS requirements for 900 Mhz ferq. band	FCC Part 15 § 15.247 (a)	#1	Within the limit
10	Enclosure	Spurious Emission at Antenna Port	FCC Part 15 §15.209, §15.33 (a)	#2	Within the limit
11	AC mains Input ports	RF Disturbance voltage: continuous Conducted Emission	FCC Part 15 § 15 207(a)	#1	Within the limit
12	Enclosure	Receiver spurious emission	RSS-210 Issue 7 § 2.2	#1	Within the limit

Note:

5. TEST RESULTS

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TEST 1.	ANTENNA REQUIREMENT
REFERENCE DOCUMENT	<p>According to §15.203 / 15.204</p> <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sec. 15.211, Sec. 15.213, Sec. 15.217, Sec. 15.219, or Sec. 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Sec. 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.</p> <p>And according to § 15.247 (1), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p>

Antenna requirement	
Manufacturer documents	PVI-DESKTOP-BT-US & other (Antenna Declaration).pdf
N° of authorized antenna type	1
Antenna type	Wire Integral antenna
Total gain	0 dBi
External power amplifier	Not present

**TEST
2.**

MAXIMUM PEAK OUTPUT POWER

REFERENCE DOCUMENT According to §15.247(b) (2), for frequency hopping systems operating in the 902-928MHz band : 1 watt for systems employing at least 50 hopping channels; 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

- **TEST SETUP:** In according to manufacturer specifications
- **TEST LOCATION:** Semi-anechoic chamber (CISPR 16-1)
Siemens+Matsushita type B84117-D6019-T232
- **TEST EQUIPMENT USED FOR TEST:** EMI Receiver Rohde & Schwarz Mod. ESU40
Chase Antenna Mod. CBL 6111 A

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar

modulation:	OFF
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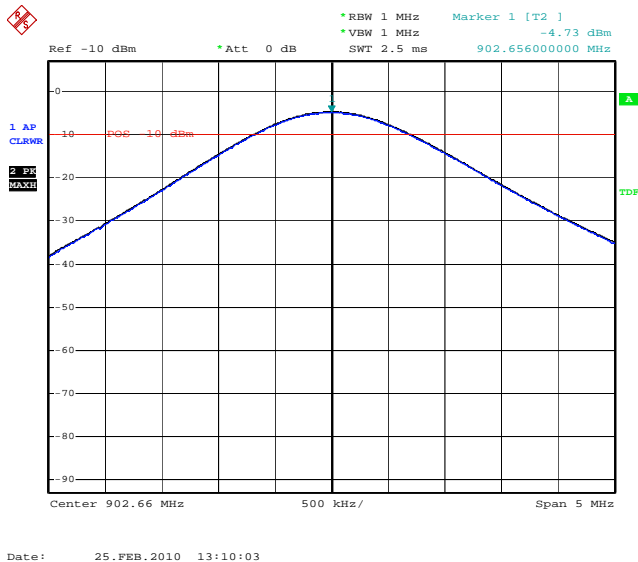
Measurement Result

frequency	Output Power in dBm	Output Power in W	Standard	Result
CH low	-4,73	0.000336	< 1W	compliant
CH middle	-5,80	0.000263	< 1W	compliant
CH high	-8,97	0.000126	< 1W	compliant
Incertezza di misura / Measurement Uncertainty : ± 3 dB				

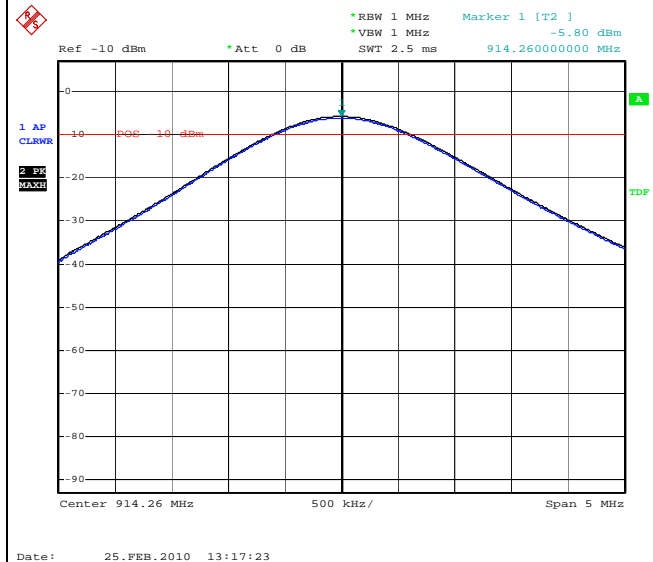


Plots of result

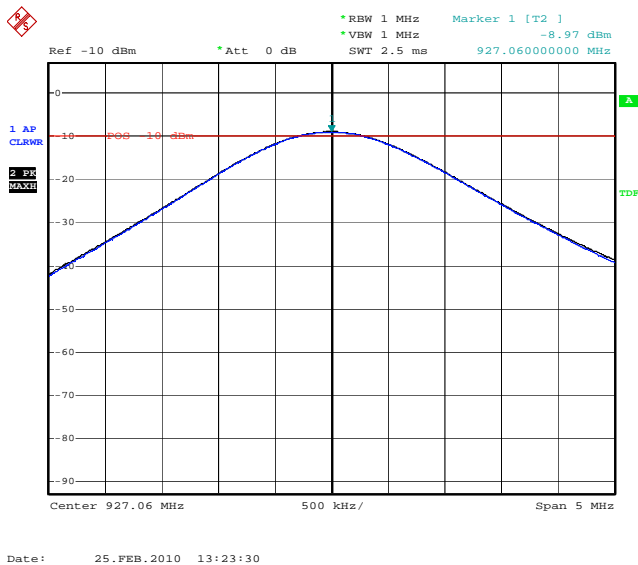
ch low



ch middle



ch High



BLANK

TEST
3. **CHANNEL BANDWIDTH**

REFERENCE DOCUMENT According to §15.247(a)(l), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

- **TEST SETUP:** In according to manufacturer specifications
- **TEST LOCATION:** Radio test area
- **TEST EQUIPMENT USED FOR TEST:**
 - Spectrum Analyzer Rohde&Schwarz mod. FSP40
 - Test Fixture Prima Ricerca&Sviluppo
 - Climatic Chamber MAZZALI mod. Climatest

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar

modulation:	ON
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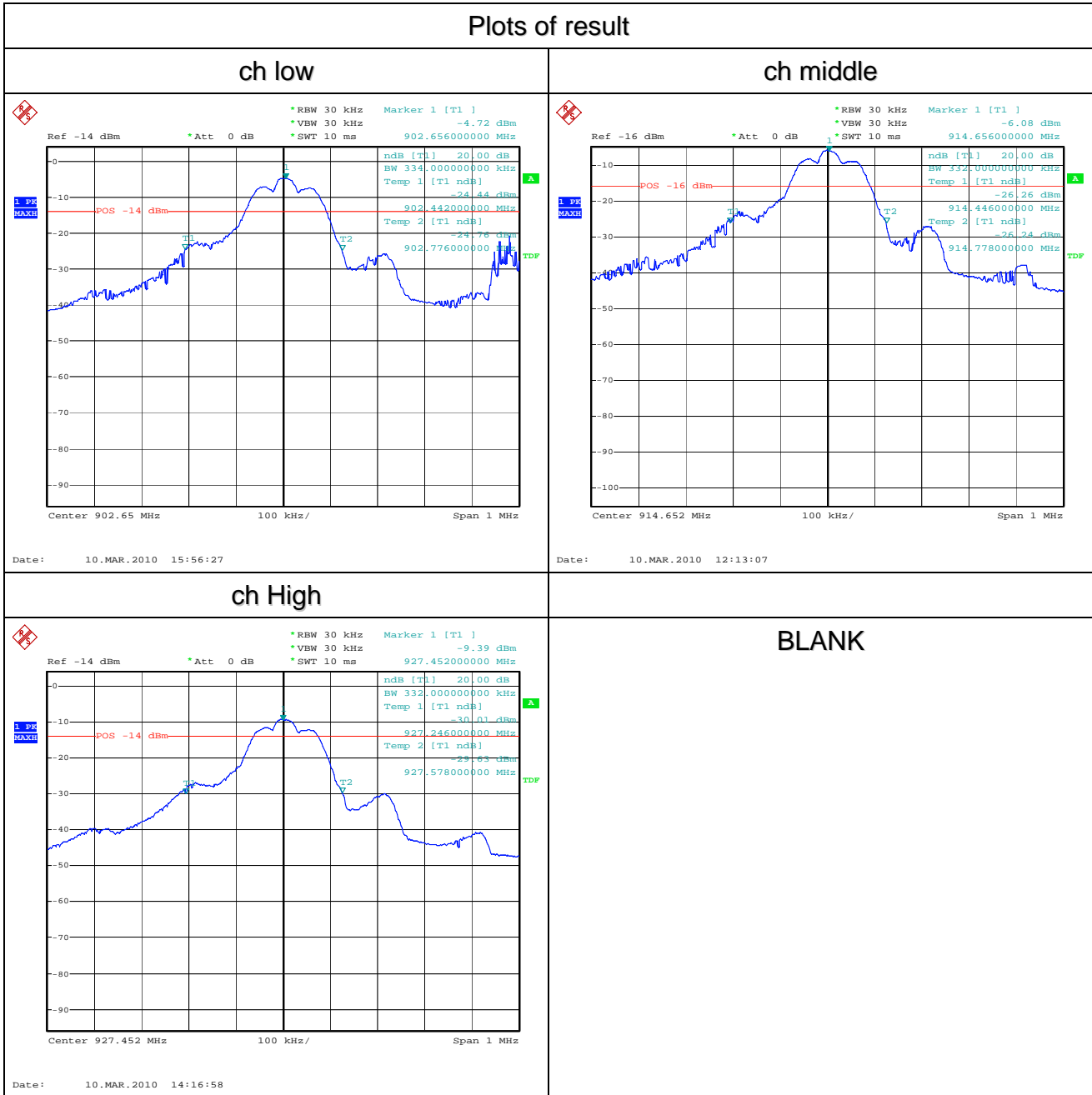
Measurement Result

frequency	Measurement (kHz)	Standard	Result
CH low	334	≤ 500KHz	compliant
CH midle	332	≤ 500KHz	compliant
CH high	332	≤ 500KHz	compliant

Incertezza di misura / Measurement Uncertainty : ±1 KHz



Plots of result



TEST
4.

NUMBER OF HOPPING FREQUENCY USED

REFERENCE DOCUMENT According to §15.247(a)(1)(i), frequency hopping systems operating in the 902-928Mhz band: if the 20 dB bandwidth of the hopping channel is 250kHz or greater, the system shall use at least 25 hopping frequencies.

- **TEST SETUP:** In according to manufacturer specifications
- **TEST LOCATION:** Radio test area
- **TEST EQUIPMENT USED FOR TEST:**
 - Spectrum Analyzer Rohde&Schwarz mod. FSP40
 - Test Fixture Prima Ricerca&Sviluppo
 - Cristal Detector Agilent mod.8472B

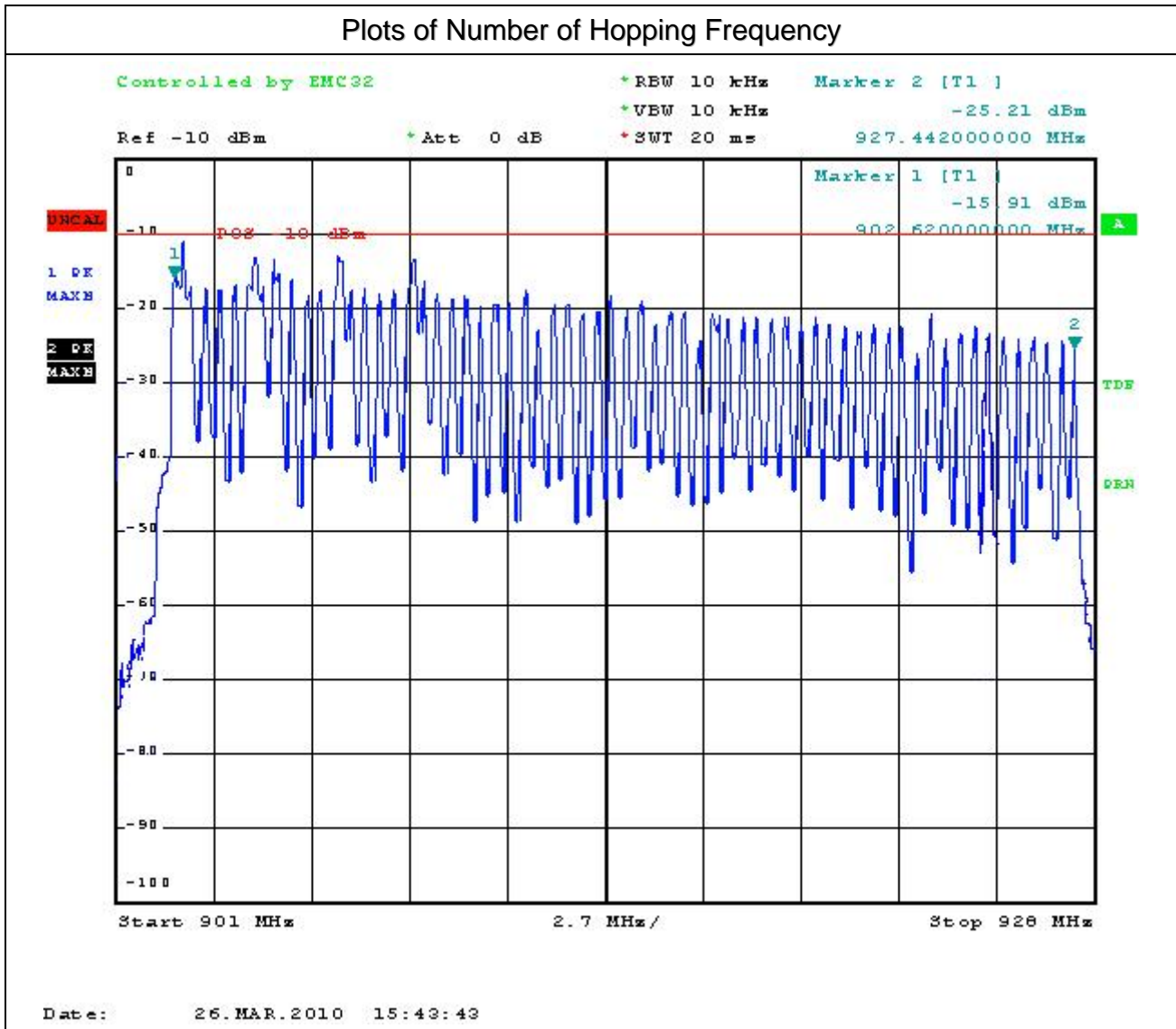
TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar

Measurement Result

Measurement	Standard	Result
63	>25	Compliant



Plots of Number of Hopping Frequency



TEST
5.

HOPPING CHANNEL SEPARATION

REFERENCE DOCUMENT According to §15.247(a)(1), frequency hopping system shall have, hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies.

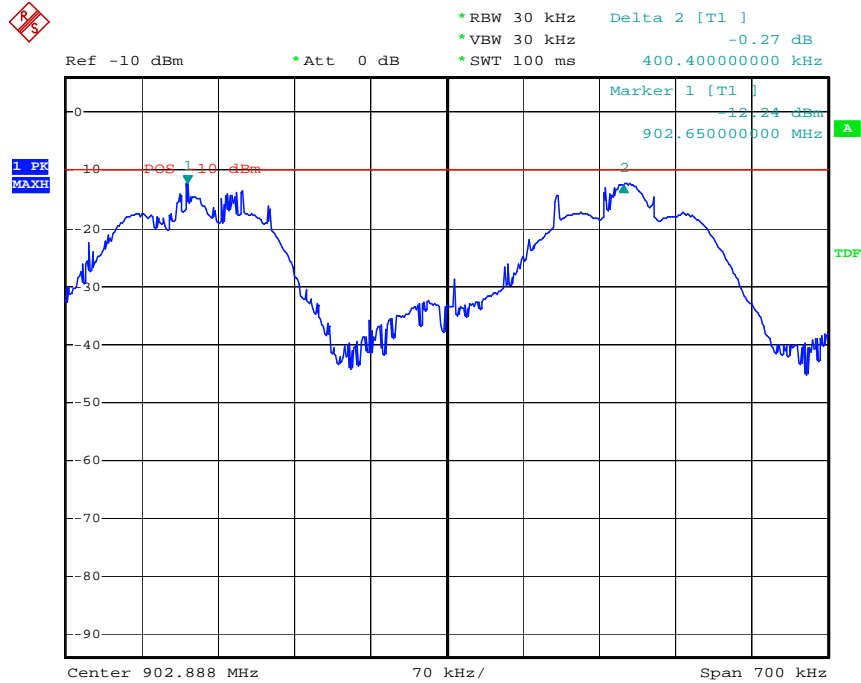
- **TEST SETUP:** In according to manufacturer specifications
- **TEST LOCATION:** Radio test area
- **TEST EQUIPMENT USED FOR TEST:**
 - Spectrum Analyzer Rohde&Schwarz mod. FSP40
 - Test Fixture Prima Ricerca&Sviluppo

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24 °C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar

Measurement Result

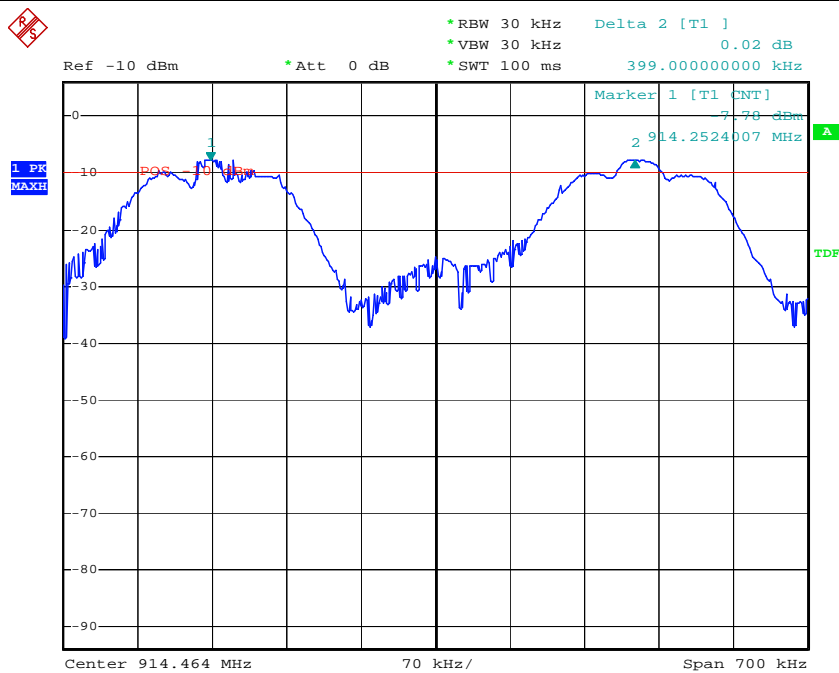
Frequency	Measurement (kHz)	Result
Low	400,4	Compliant
Middle	399	Compliant
High	400,4	Compliant

Ch low Plots of Hopping Channel separation



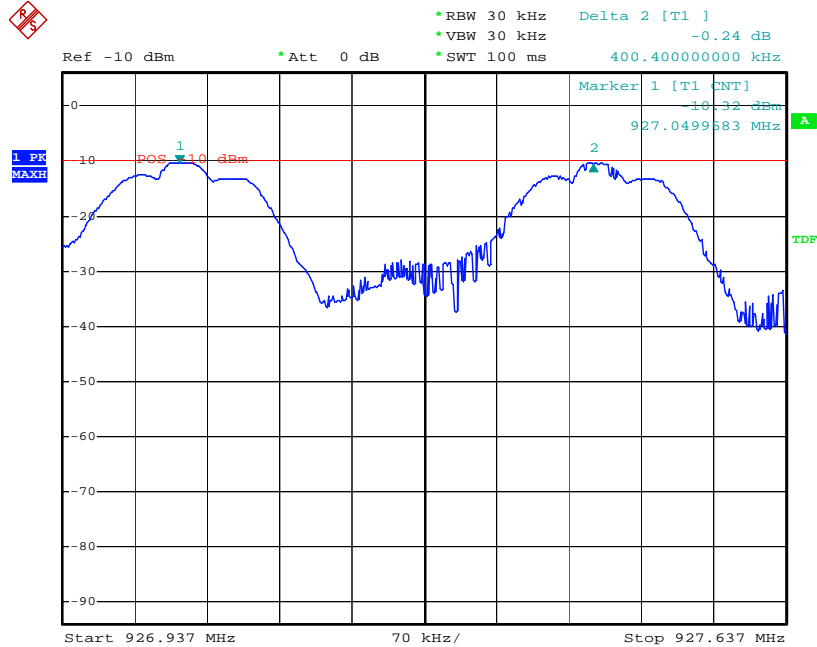
Date: 11.MAR.2010 15:41:12

Ch middle Plots of Hopping Channel separation



Date: 11.MAR.2010 15:58:19

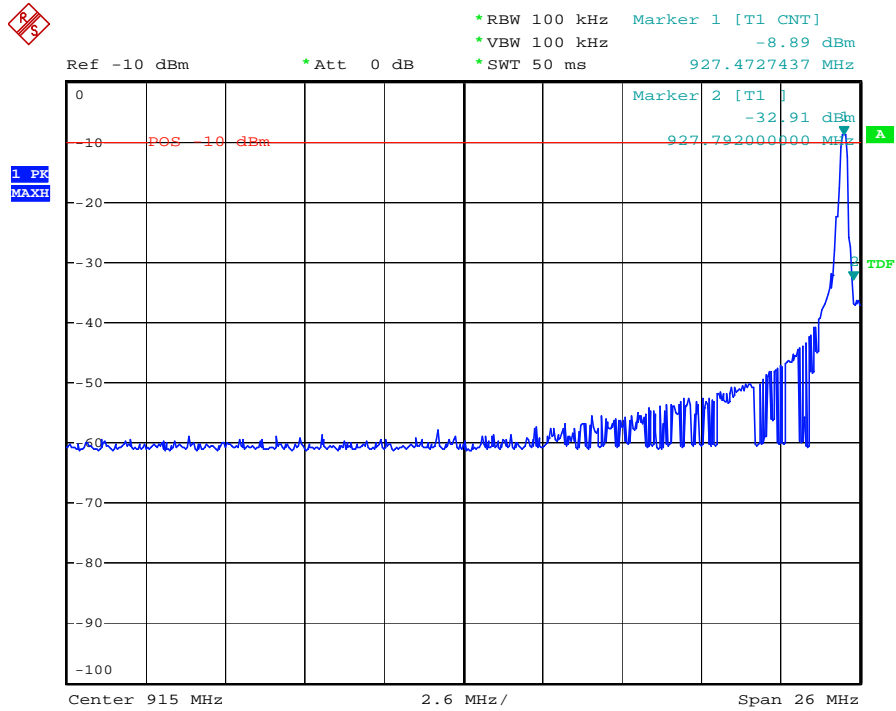
Ch high Plots of Hopping Channel separation



Date: 11.MAR.2010 17:00:23

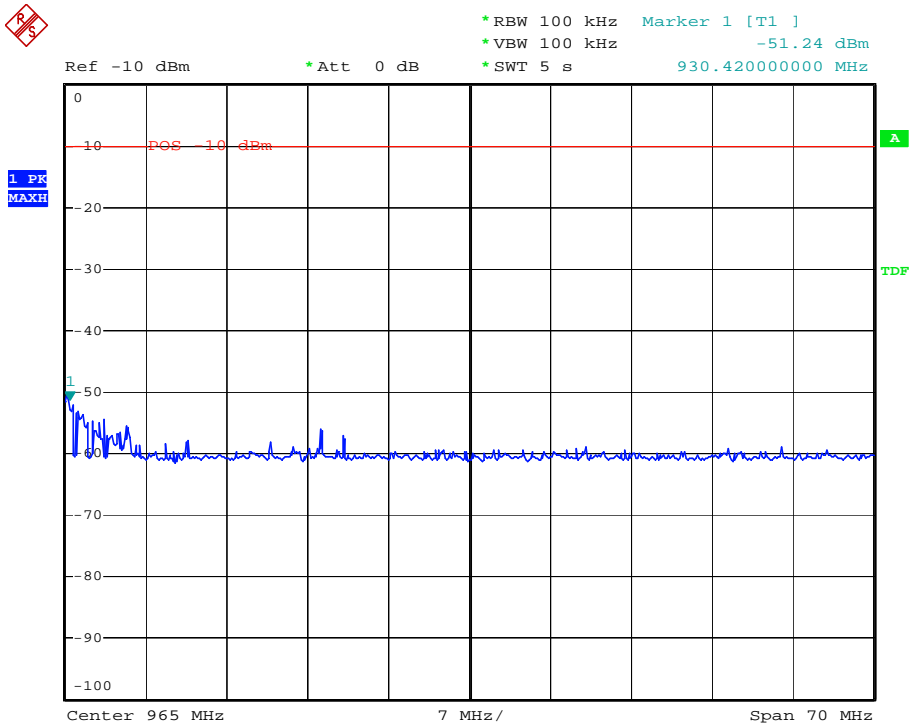


Plots of 100KHz Band Edge



Date: 11.MAR.2010 12:01:31

Plots of 100KHz Band Edge



Date: 11.MAR.2010 11:53:56

TEST
7.

DWELL TIME

REFERENCE DOCUMENT According to §15.247 (a)(1)(i), if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period..

- **TEST SETUP:** In according to manufacturer specifications
- **TEST LOCATION:** Radio test area
- **TEST EQUIPMENT USED FOR TEST:**
 - Spectrum Analyzer Rohde&Schwarz mod. FSP40
 - Test Fixture Prima Ricerca&Sviluppo

TEST CONDITIONS:		MEASURED
Ambient temperature :	23°C ± 5°C	24 °C
Ambient humidity :	25 - 75 %rH	45%
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	960 mbar

Measurement Result

9.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
5. Repeat above procedures until all frequencies measured were complete.

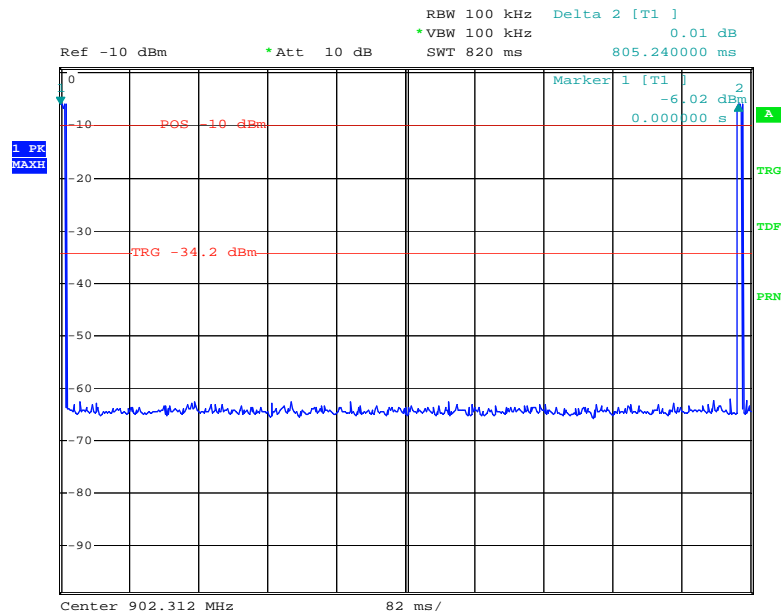
Please refer the following plots.

Dwell Timing period

EUT transmit every 805,24 msec

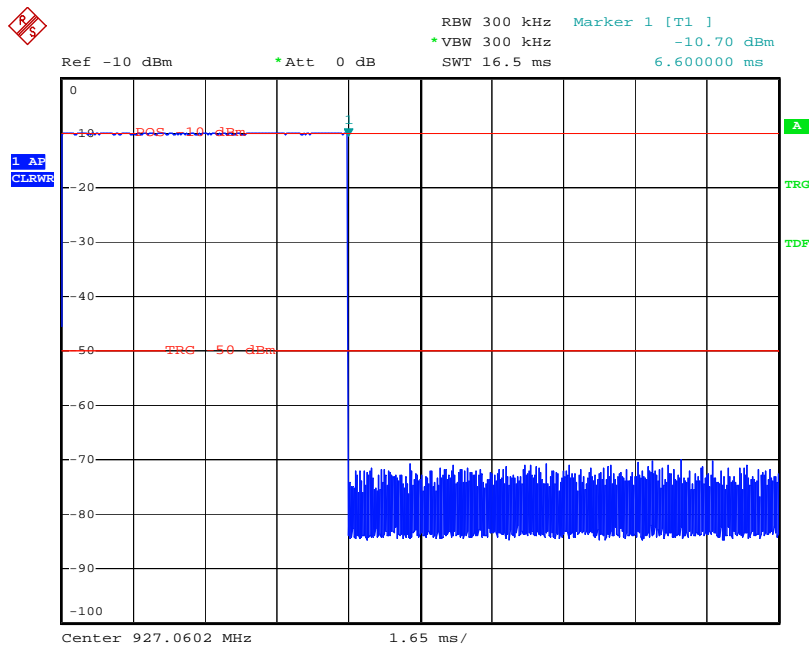
Burst ON for 6,6 msec, max transmission period on 10 sec is 0,081963 sec

period



Date: 29.MAR.2010 12:29:58

Timing on



Date: 11.MAR.2010 17:30:00

TEST
8. **EMISSION OF MAINS TERMINAL DISTURBANCE**
VOLTAGE (CONTINUOUS DISTURBANCE)

REFERENCE FCC 47CFR Part 15
DOCUMENT

- **TEST SETUP:** According to reference standard
 - **TEST LOCATION:** Semianechoic chamber
 - **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU 40
Artificial Network Rohde & Schwarz Mod. ESH3-Z5
-

- **TESTED PORT:** AC mains : Phase and Neutral Line
 - **FREQUENCY RANGE:** 0.15 - 30 MHz
 - **EMISSION LIMITS:** Section 15.207 of Standard
 - **MEASUREMENT UNCERTAINTY:** Total uncertainty (k=2) \pm 2.5 dB
-

TEST CONDITIONS:		MEASURED
Ambient temperature :	15 - 35 °C	24 \pm 3 °C
Ambient humidity :	25 - 75 %rH	38 \pm 5 %rH
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	975 \pm 50 mbar

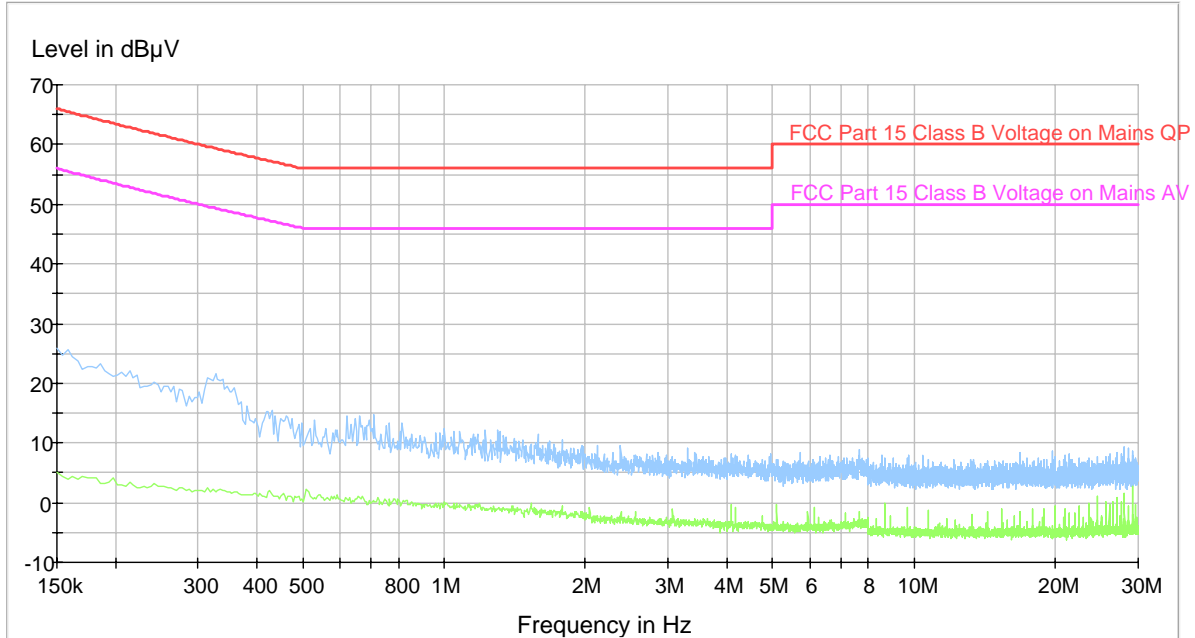
OPERATING CONDITION (Rif. Section. 2) : #1

RESULT: WITHIN THE LIMIT



Neutral

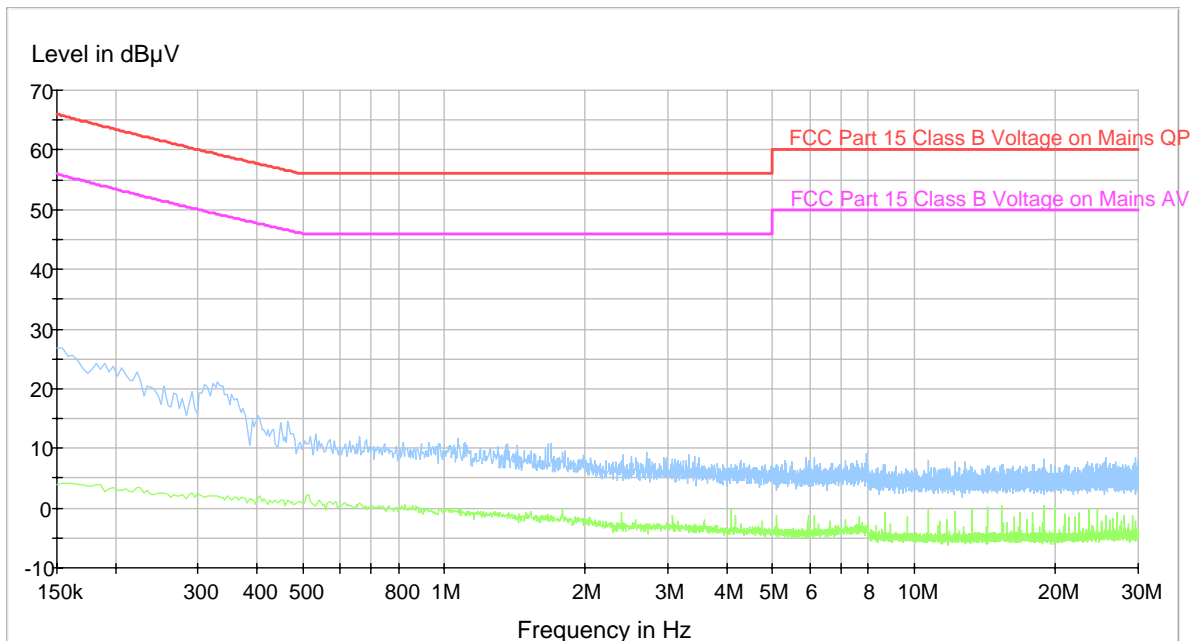
Voltage with 2-Line-LISN



— FCC Part 15 Class B Voltage on Mains QP.LimitLine — FCC Part 15 Class B Voltage on Mains AV.LimitLine
— Preview Result 1 — Preview Result 2

Phase

Voltage with 2-Line-LISN



— FCC Part 15 Class B Voltage on Mains QP.LimitLine — FCC Part 15 Class B Voltage on Mains AV.LimitLine
— Preview Result 1 — Preview Result 2

**TEST
9.**

RADIATED EMISSION 9 KHZ ÷ 10TH HARMONIC

REFERENCE DOCUMENT FCC 47CFR Part 15

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU 40
Chase Antenna Mod. CBL 6111 A
Antenna Rohde & Schwarz mod. HL50
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.209 of reference document
- **UNCERTAINTY OF MEASURE:** Combined uncertainty = ± 1.75 dB
Total uncertainty = $(k=2) \pm 3.5$ dB

TEST CONDITIONS:	MEASURED
Ambient temperature : 15 - 35 °C	23,5 \pm 3 °C
Ambient humidity : 25 - 75 %rH	39 \pm 5 %rH
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	950 \pm 50 mbar

OPERATING CONDITION (Rif. Section. 2) : #1

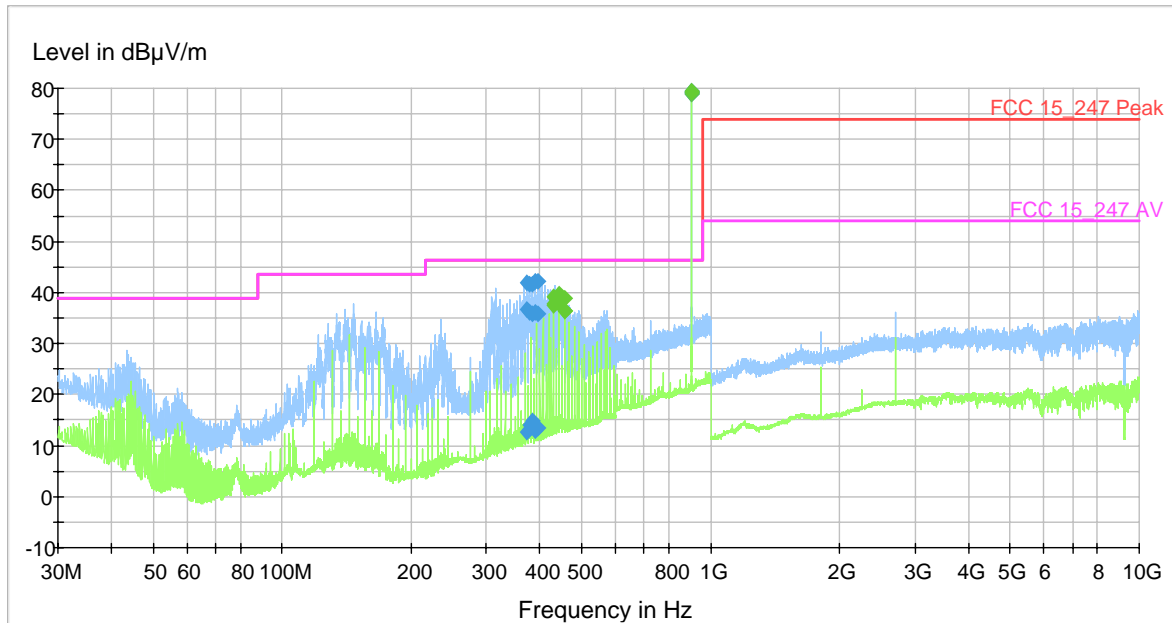
RESULT: WITHIN THE LIMIT

CH1	902,65 MHz
CH31	914,65 MHz
CH63	927,45 MHz

Vertical Polarization

CH1

Electric Field Strength FCC



◆ FCC 15_247 Peak.LimitLine ◆ FCC 15_247 AV.LimitLine ◆ Preview Result 1
◆ Final Measurement Result 1 ◆ Final Measurement Result 2 ◆ Final Result 1
◆ Final Result 2 ◆ Final Result 2 +

Final Result 1

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
371.92000	41.8	12.7	12.7	100.0	V	180.0	18.6	4.60	46.40	
378.20000	41.7	14.0	14.0	100.0	V	180.0	18.8	4.70	46.40	
384.44000	41.7	14.9	14.9	100.0	V	180.0	18.9	4.70	46.40	
390.68000	42.2	12.9	12.9	100.0	V	180.0	19.1	4.20	46.40	
396.96000	42.2	13.6	13.6	100.0	V	180.0	19.4	4.20	46.40	
902.65000	79.5	79.2	79.2	100.0	V	180.0	27.8	-33.10	46.40	

Final Result 2

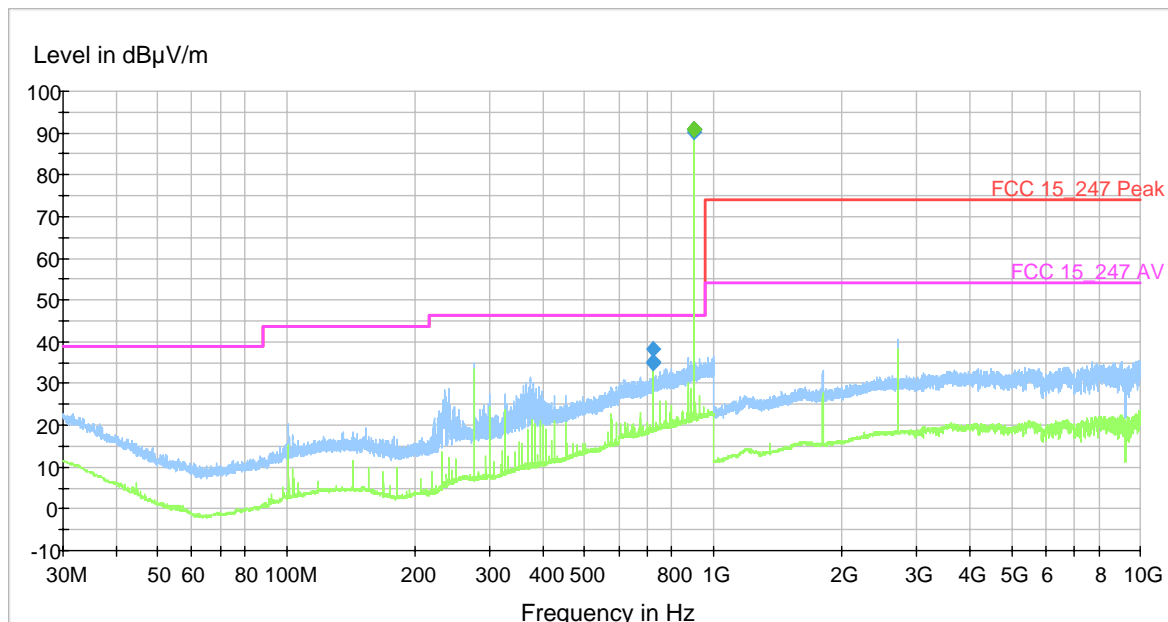
Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
431.320000	39.1	37.6	37.6	100.0	V	180.0	20.3	7.30	46.40	
443.800000	39.6	37.8	37.8	100.0	V	180.0	20.4	6.80	46.40	
456.320000	38.9	36.4	36.4	100.0	V	180.0	20.7	7.50	46.40	
902.650000	79.5	79.2	79.2	100.0	V	180.0	27.8	-33.10	46.40	



Horizontal Polarization

CH1

Electric Field Strength FCC



◆ FCC 15_247 Peak.LimitLine ◆ FCC 15_247 AV.LimitLine ◆ Preview Result 1 ◆ Preview Result 2
◆ Final Measurement Result 1 ◆ Final Measurement Result 2 ◆ Final Result 1 ◆ Final Result 1 +
◆ Final Result 2 ◆ Final Result 2 +

Final Result 1

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
725.120000	38.1	34.8	34.8	100.0	H	180.0	25.5	8.30	46.40	
902.650000	91.0	90.9	90.9	100.0	H	180.0	27.8	-44.60	46.40	

Final Result 2

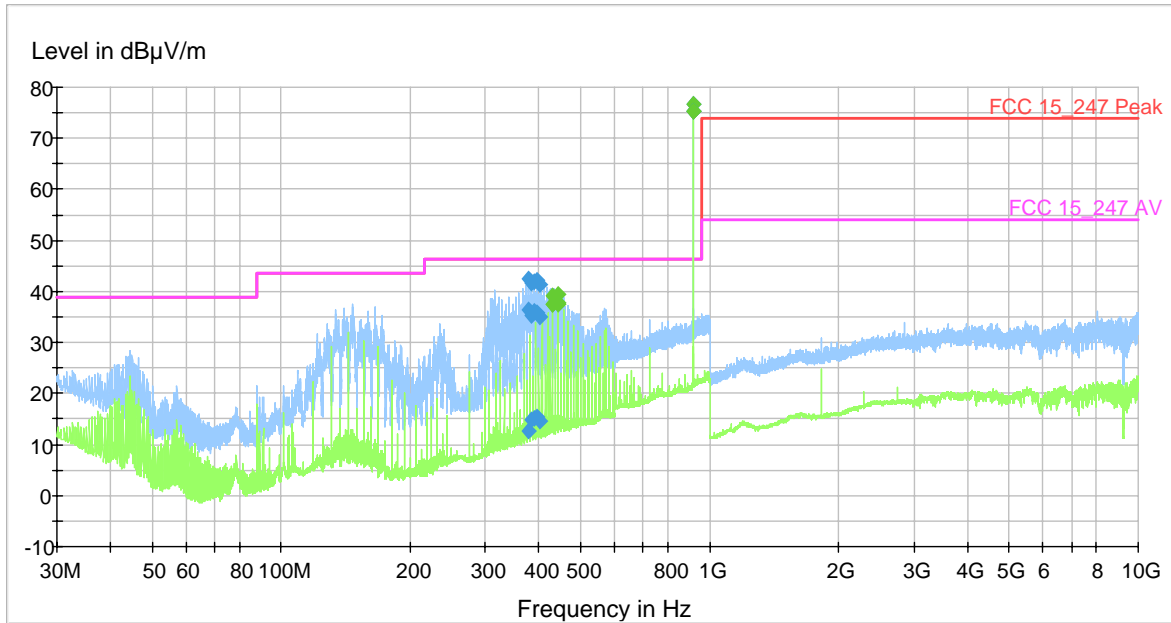
Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
902.650000	91.0	90.9	90.9	100.0	H	180.0	27.8	-44.60	46.40	



Vertical Polarization

CH31

Electric Field Strength FCC



◆ FCC 15_247 Peak.LimitLine
◆ FCC 15_247 AV.LimitLine
◆ Preview Result 1
◆ Preview Result 2
◆ Final Measurement Result 1
◆ Final Measurement Result 2
◆ Final Result 1
◆ Final Result 1 +
◆ Final Result 2
◆ Final Result 2 +

Final Result 1

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
378.160000	42.4	12.7	12.7	100.0	V	180.0	18.8	4.00	46.40	
384.400000	41.7	14.9	14.9	100.0	V	180.0	18.9	4.70	46.40	
390.680000	42.0	15.1	15.1	100.0	V	180.0	19.1	4.40	46.40	
396.960000	42.2	15.5	15.5	100.0	V	180.0	19.4	4.20	46.40	
403.160000	41.4	14.7	14.7	100.0	V	180.0	19.6	5.00	46.40	
914.640000	75.3	75.2	75.2	100.0	V	180.0	28.2	-28.90	46.40	

Final Result 2

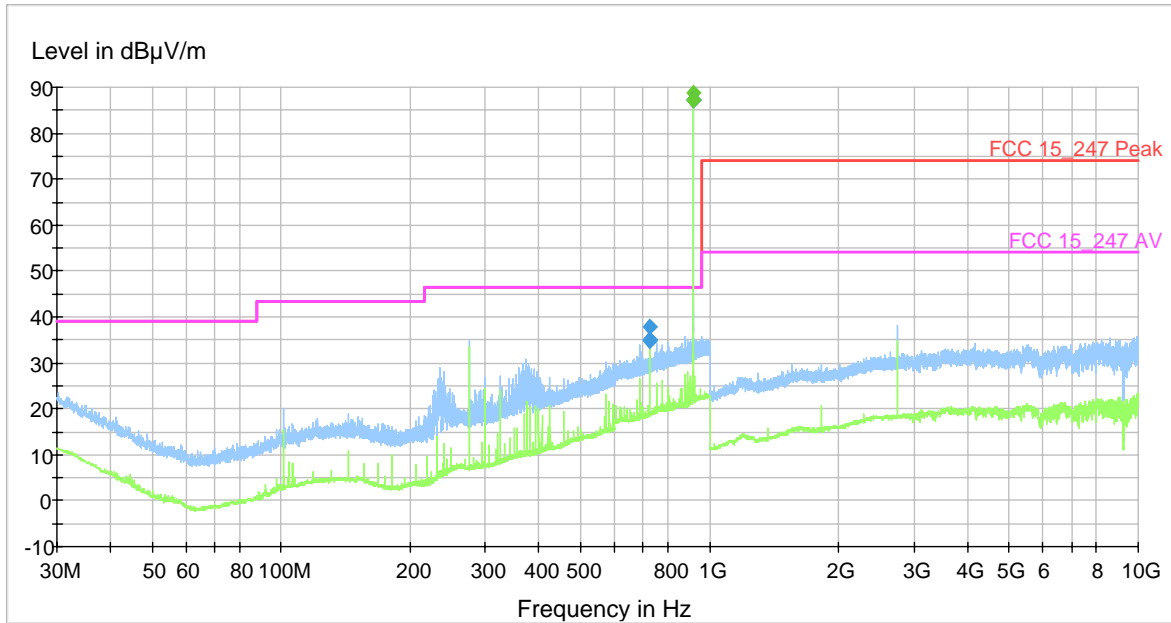
Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
431.320000	39.0	37.5	37.5	100.0	V	180.0	20.3	7.40	46.40	
443.800000	39.3	37.6	37.6	100.0	V	180.0	20.4	7.10	46.40	
914.640000	75.3	75.2	75.2	100.0	V	180.0	28.2	-28.90	46.40	



Horizontal polarization

CH31

Electric Field Strength FCC



◆ FCC 15_247 Peak.LimitLine ◆ FCC 15_247 AV.LimitLine ◆ Preview Result 1 ◆ Preview Result 2
◆ Final Measurement Result 1 ◆ Final Measurement Result 2 ◆ Final Result 1 ◆ Final Result 1 +
◆ Final Result 2

Final Result 1

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
725.120000	37.9	34.8	34.8	100.0	H	180.0	25.5	8.50	46.40	
914.640000	87.4	87.2	87.2	100.0	H	180.0	28.2	-41.00	46.40	

Final Result 2

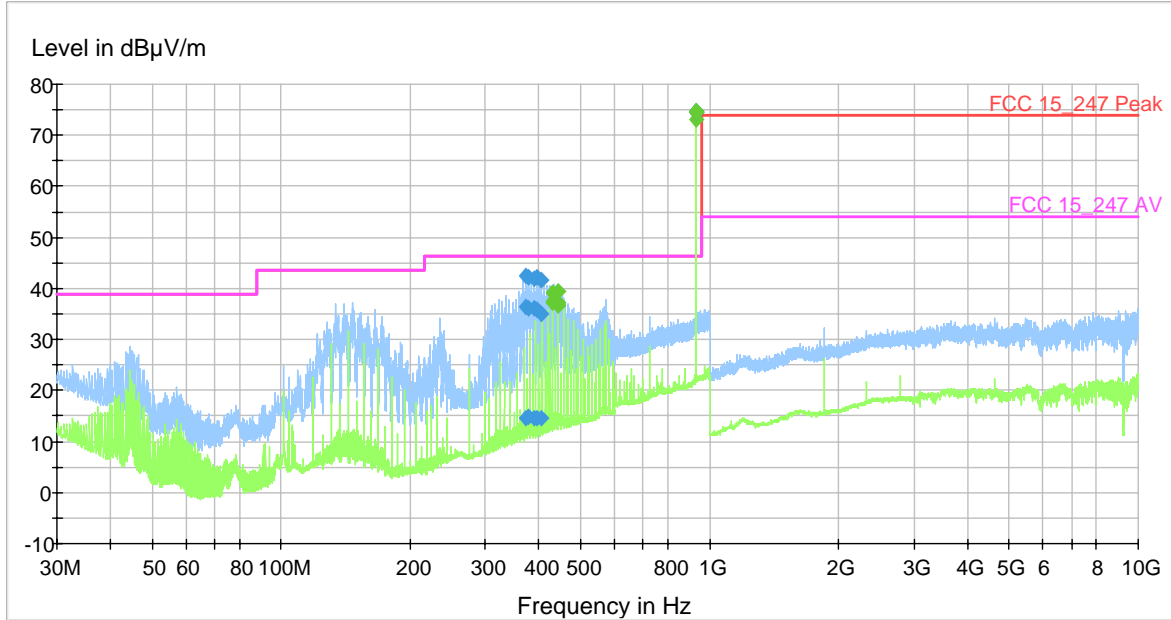
Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
914.640000	87.4	87.2	87.2	100.0	H	180.0	28.2	-41.00	46.40	



Vertical Polarization

CH63

Electric Field Strength FCC



◆ FCC 15_247 Peak.LimitLine
◆ Final Measurement Result 1
◆ Final Result 2
 ◆ FCC 15_247 AV.LimitLine
◆ Final Measurement Result 2
◆ Final Result 2 +
 ◆ Preview Result 1
◆ Final Result 1
 ◆ Preview Result 2
◆ Final Result 1 +

Final Result 1

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
371.960000	42.6	14.5	14.5	100.0	V	180.0	18.6	3.80	46.40	
378.160000	42.0	14.9	14.9	100.0	V	180.0	18.8	4.40	46.40	
390.680000	41.9	14.5	14.5	100.0	V	180.0	19.1	4.50	46.40	
396.920000	42.2	14.6	14.6	100.0	V	180.0	19.4	4.20	46.40	
403.200000	41.5	14.6	14.6	100.0	V	180.0	19.6	4.90	46.40	
927.440000	74.6	74.5	74.5	100.0	V	180.0	28.7	-28.20	46.40	

Final Result 2

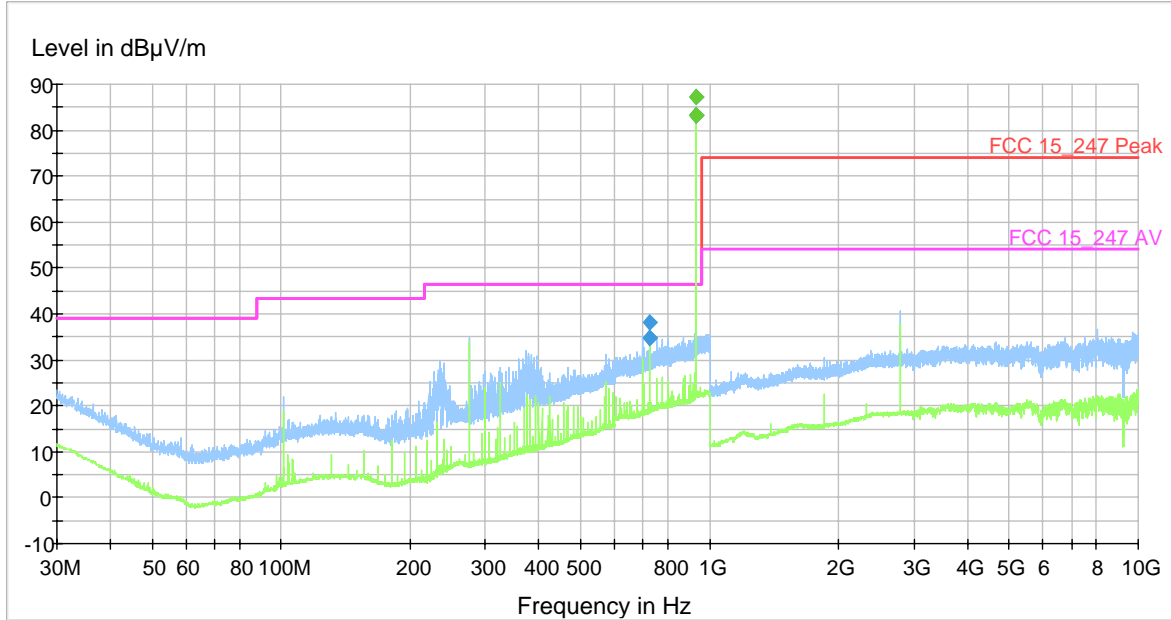
Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
431.320000	39.2	37.5	37.5	100.0	V	180.0	20.3	7.20	46.40	
443.800000	39.3	37.2	37.2	100.0	V	180.0	20.4	7.10	46.40	
927.440000	74.6	74.5	74.5	100.0	V	180.0	28.7	-28.20	46.40	



Horizontal Polarization

CH63

Electric Field Strength FCC



- ◆ FCC 15_247 Peak.LimitLine
- ◆ FCC 15_247 AV.LimitLine
- ◆ Preview Result 1
- ◆ Preview Result 2
- ◆ Final Measurement Result 1
- ◆ Final Measurement Result 2
- ◆ Final Result 1
- ◆ Final Result 1 +
- ◆ Final Result 2
- ◆ Final Result 2 +

Final Result 1

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
725.120000	38.0	34.9	34.9	100.0	H	181.0	25.5	8.40	46.40	
927.440000	83.3	83.2	83.2	100.0	H	181.0	28.7	-36.90	46.40	

Final Result 2

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)	Average-MaxHold (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
927.440000	83.3	83.2	83.2	100.0	H	181.0	28.7	-36.90	46.40	

**TEST
1**

RECEIVER SPURIUS EMISSION 9 KHZ ÷ 10TH HARMONIC

REFERENCE RSS-GEN Issue 2 § 4.10, § 6, § 7.2.3
DOCUMENT RSS-210 Issue 7 § 2.2

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU 40
Chase Antenna Mod. CBL 6111 A
Antenna Rohde & Schwarz mod. HL25
Preamplifier BONN mod BLMA 0118 –1M
Premplifier BONN mod BLMA 1840 –1A
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.209 of reference document
- **UNCERTAINTY OF MEASURE:** Combined uncertainty = ± 1.75 dB
Total uncertainty = $(k=2) \pm 3.5$ dB

TEST CONDITIONS:	MEASURED
Ambient temperature : 15 - 35 °C	23,5 \pm 3 °C
Ambient humidity : 25 - 75 %rH	39 \pm 5 %rH
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	950 \pm 50 mbar

OPERATING CONDITION (Rif. Section. 2) : #1

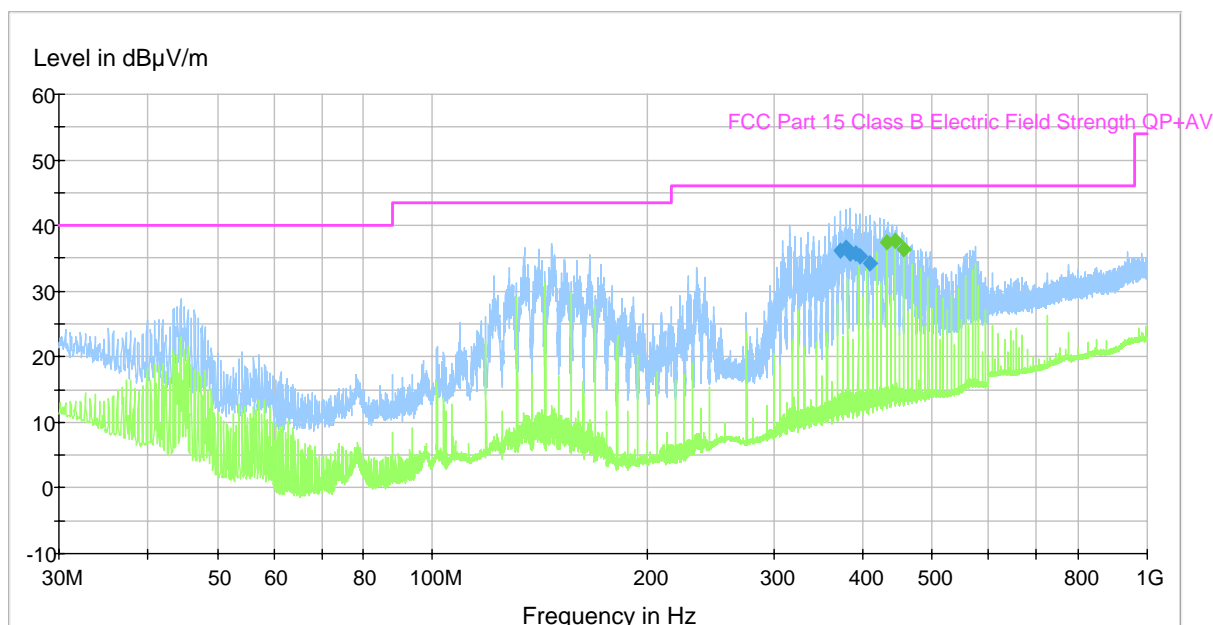
RESULT: WITHIN THE LIMIT



Worst case frequency band 902,65 MHz

Antenna polarity Vertical

Electric Field Strength FCC



— FCC Part 15 Class B Electric Field Strength QP+AV.LimitLine
— Preview Result 1
— Preview Result 2
◆ Final Result 1
◆ Final Result 2

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
371.960000	36.2	1000.00	120.000	119.0	V	201.0	18.6	9.8	46.0
378.200000	36.6	1000.00	120.000	125.0	V	182.0	18.8	9.4	46.0
384.440000	35.8	1000.00	120.000	124.0	V	202.0	18.9	10.2	46.0
390.680000	35.6	1000.00	120.000	124.0	V	185.0	19.1	10.4	46.0
396.960000	35.4	1000.00	120.000	124.0	V	185.0	19.4	10.6	46.0
409.440000	34.3	1000.00	120.000	124.0	V	201.0	19.9	11.8	46.0

Final Result 2

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
431.320000	37.4	1000.00	120.000	100.0	V	185.0	20.3	8.6	46.0
443.800000	37.7	1000.00	120.000	100.0	V	181.0	20.4	8.3	46.0
456.320000	36.3	1000.00	120.000	100.0	V	181.0	20.7	9.7	46.0

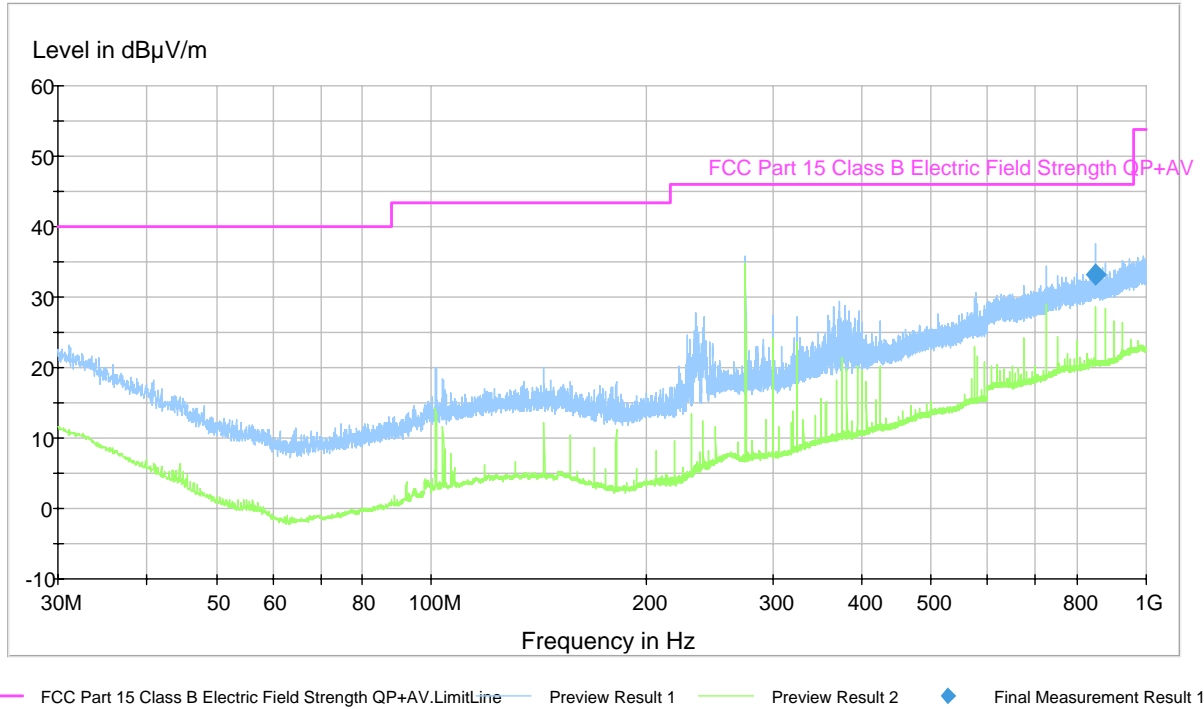
No significant spurious are detected on frequency band 1-10 GHz



Worst case frequency band 902,65 MHz

Antenna polarity Horizontal

Electric Field Strength FCC



No significant spurious are detected on frequency band 1-10 GHz

6. EUT TECHNICAL DOCUMENTATION

6.1 Wiring diagrams

	<i>Document reference (n., edition, date, ...)</i>
WIRING DIAGRAM	*****
PART LIST	*****

6.2 Technical manual

	<i>Document reference (n., edition, date, ...)</i>
Operating Manual	*****

6.3 Photographic documentation

PHOTO 1 – E.U.T. IDENTIFICATION





PHOTO 2 – E.U.T. IDENTIFICATION

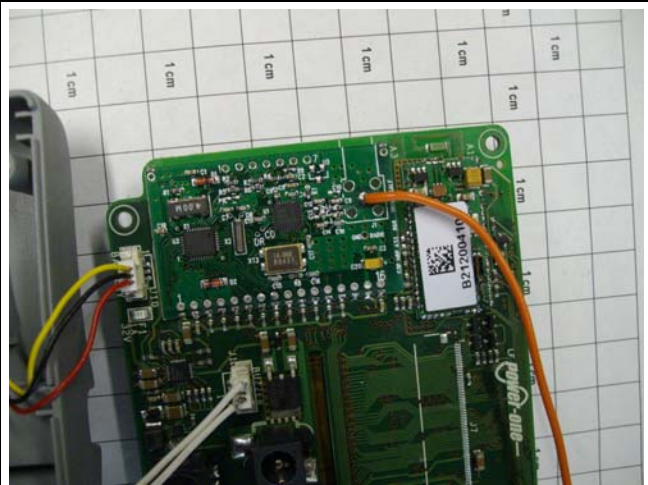
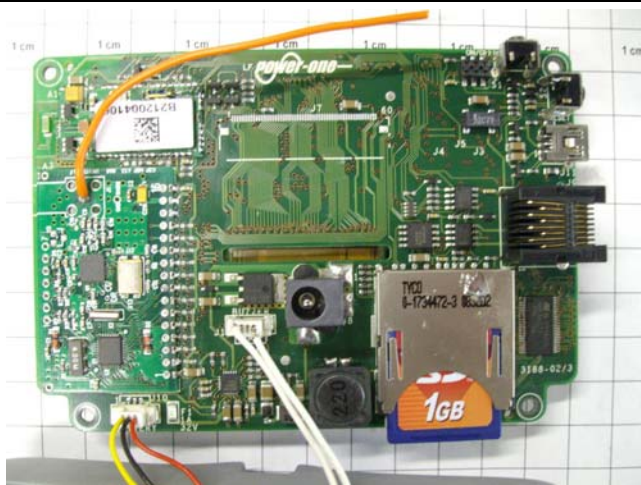
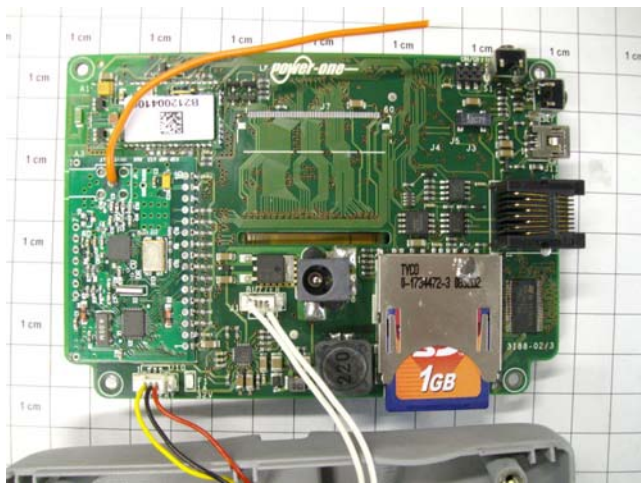


PHOTO 3 – SET-UP FOR EMISSION RADIATED TEST

