EMITECH GROUPE

R041-14-105994-3A - DM / CBU

This test report cancels and replaces the report R041-14-105994-3A Ed.0

RADIO TEST REPORT

According to the standard(s):

FCC part 15 Subpart C

Equipment under test:

AIVIA 310
AIVIA 330

FCC ID: SZ4-3XX090601

Company:

PYRESCOM

Diffusion: Mr ANWEILER (Company: PYRESCOM)

Number of pages: 39 including 1 annex

Ed.	Date	Modified page(s)	Written by Name / Visa	Technical verification Quality approval Name / Visa
1	05 May. 15	Refer to lines in the margin	David MONTAULON D.M	Olivier HEYER

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NAME OF THE EQUIPMENT UNDER TEST (E.U.T.)	:	AIVIA 310 (U2A310-EX121) AIVIA 330 (U2A330-3H121) (FCC ID: SZ4-3XX090601)
Serial number	:	1323P361(AIVIA 330) 1322P336(AIVIA 310)
Part number	:	FCC ID: SZ4-3XX090601
Software Version	:	09.09r
MANUFACTURER'S NAME	:	PYRESCOM
APPLICANT'S ADDRESS:		
Company	:	PYRESCOM
Address	:	Mas des Tilleuls - BP 80051 66680 CANOHES FRANCE
Person(s) present during the tests	:	Nobody
Responsible	:	Mr ANWEILER
DATE(S) OF TESTS	:	January 26th to February 13th of 2015
TESTS LOCATION(S)	:	EMITECH MONTPELLIER laboratory in VENDARGUES (34) - FRANCE Open area test site in SALINELLES (30) - FRANCE FCC Test Firm Registration Number: 954701
TESTS SUPERVISOR(S)	:	None
TESTS OPERATOR(S)	:	David MONTAULON

CONTENTS

1. INTRODUCTION

This document submits the results of Electromagnetic Compatibility tests performed on the equipment AIVIA 310 et AIVIA 330 (denominated hereafter E.U.T.: equipment under test) according to document(s) listed below.

2. REFERENCE DOCUMENT(S)

FCC Part 15	Code of Federal Regulations Title 47 – Telecommunications Chapter 1 – Federal Communications Commission Part 15 – Radio frequency devices Subpart C – Intentional Radiators
ANSI C 63.4:2003	American National Standard for Methods of measurement of Radio-Noise from low-voltage. Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

3. EQUIPMENT UNDER TEST CONFIGURATION

Equipment under test (E.U.T.) description: Adapted to be used inside as well as outside, AIVIA is a cabinet designed for public access to defibrillation.
FCC ID: SZ4-3XX090601

4. TECHNICAL SPECIFICATIONS

Presentation of equipment for testing purposes:

Frequency ranges used by the transmitter: 13.56MHz +/- 7 kHz and UMTS bands I and XVIII
(3G module is already certified FCC ID :N7NQ2698)

Equipment
- ☐ single-frequency
- ☐ two-frequency
- ☒ multi-frequency

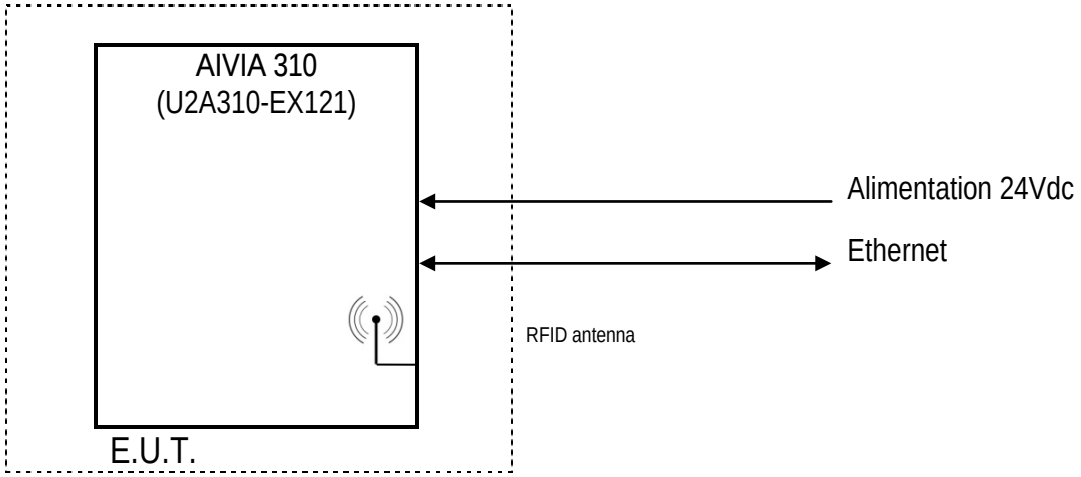
Choice of model for testing:

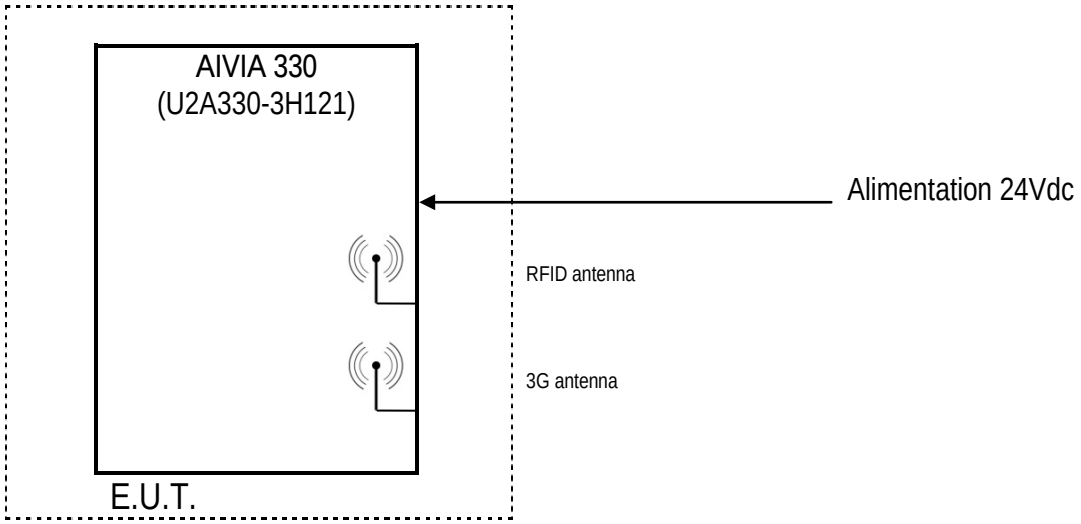
Test(s) frequency(ies): 13.56MHz

Extremes temperature ranges: -20°C/+55°C

Mechanical and electrical design:

Power source / Battery type: 24Vdc
Antenna type: Integral





Auxiliary test equipment: Test PC, autocom

Equipment modifications applied during tests: No

5. SUMMARY OF TEST RESULTS

Tests designation	Results satisfying?	Comments
Antenna requirement - FCC part 15.203	YES	Integrated antennas
Restricted band of operation - FCC part 15.205	YES	
Conducted power lines - FCC part 15.207	YES	
Unwanted radiated emissions - FCC part 15.209	YES	
Field strength - FCC part 15.225 a) to d)	YES	
Frequency tolerance - FCC part 15.225 e)	YES	

N.P.: Not Performed. N.A.: Not Applicable.

- In emission:

Sample subject to the test complies with prescriptions of the standard(s) FCC Part 15 Subpart C according to limits specified in this test report.

To declare, or not, the compliance with the specifications, it was not explicitly taken account of uncertainty associated with the results.

6. CONDUCTED EMISSIONS – SECTION 15.207

Standards: FCC part 15 Subpart C 15.207

Tests methods: ANSI C63.4:2003

Test configuration:

Tested cable(s)	Measure with	E.U.T. height
AIVIA 310 / MW DR-75-24 110Vac/60Hz power supply	L.I.S.N.	40cm
AIVIA 330 / MW DR-75-24 110Vac/60Hz power supply	L.I.S.N.	40cm
AIVIA 330 / MW DR-75-24 110Vac/60Hz power supply/ RF on 50OHms load	L.I.S.N.	40cm
AIVIA 310 / MW DR-75-24 110Vac/60Hz power supply/RFon 50 Ohms load	L.I.S.N.	40cm

Frequency band	Tested cable(s)	Resolution bandwidth	Video bandwidth	Detection mode
150kHz-30MHz	AIVIA 310 / MW DR-75-24 110Vac/60Hz power supply	10KHz	30kHz	Peak
150kHz-30MHz	AIVIA 330 / MW DR-75-24 110Vac/60Hz power supply	10KHz	30kHz	Peak
150kHz-30MHz	AIVIA 330 / MW DR-75-24 110Vac/60Hz power supply/ RF on 50OHms load	10KHz	30kHz	Peak
150kHz-30MHz	AIVIA 310 / MW DR-75-24 110Vac/60Hz power supply/RF on 50 Ohms load	10KHz	30kHz	Peak

The MW DR-75-24 is a standard power supply 110Vac/60Hz/24Vdc.
Additional test: Integrated antenna is replaced by an equivalent 50Ohms load.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Cable	Micro-coax	N-3m	10535	05/09/2013	05/11/2015
Cable	Micro-coax	N-5m	10527	05/09/2013	05/11/2015
Limiter	Hewlett Packard	11947A	0239	22/10/2013	22/12/2015
LISN	PMM	L3-25	0821	13/03/2014	13/05/2016
Receiver	Agilent	E4440A	5824	01/05/2014	01/07/2016
Shielded enclosure	RAY PROOF	C.GS3	1123	17/10/2013	17/12/2016
Software	Nexio	BAT EMC	0000	#	#

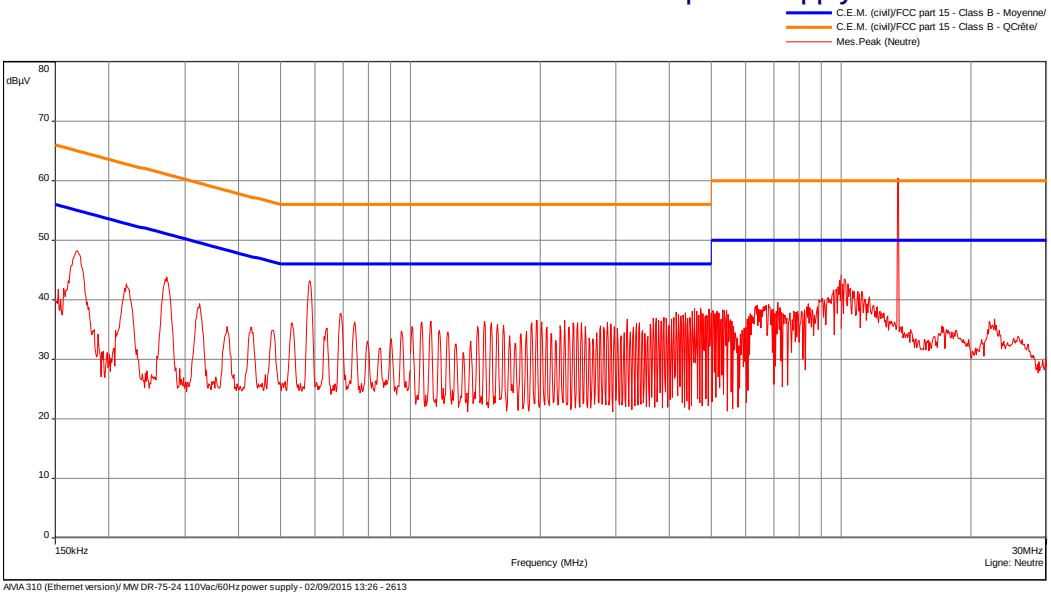
#: Permanent validity *BAT-EMC software version: V3.6.0.32*

Results: See Graph(s) hereafter. Limits on the graphs are average and quasi-peak limits (upper limit).

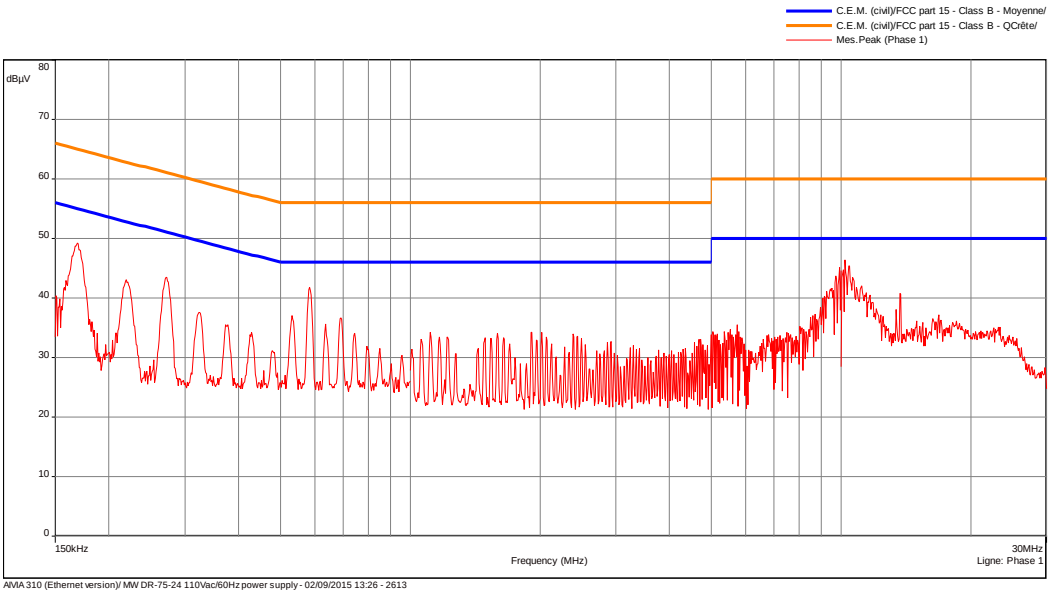
Measurement uncertainty: +/- 3.53 dB

Conducted voltage emission (measurement) — EMI2613

AIVIA 310 / MW DR-75-24 110Vac/60Hz power supply



AIVIA 310 (Ethernet version)/ MW DR-75-24 110Vac/60Hz power supply - 02/09/2015 13:26 - 2613



AIVIA 310 (Ethernet version)/ MW DR-75-24 110Vac/60Hz power supply - 02/09/2015 13:26 - 2613

Date: 09/02/2015 13:26:54

Technician: DM

Class: B of the standard

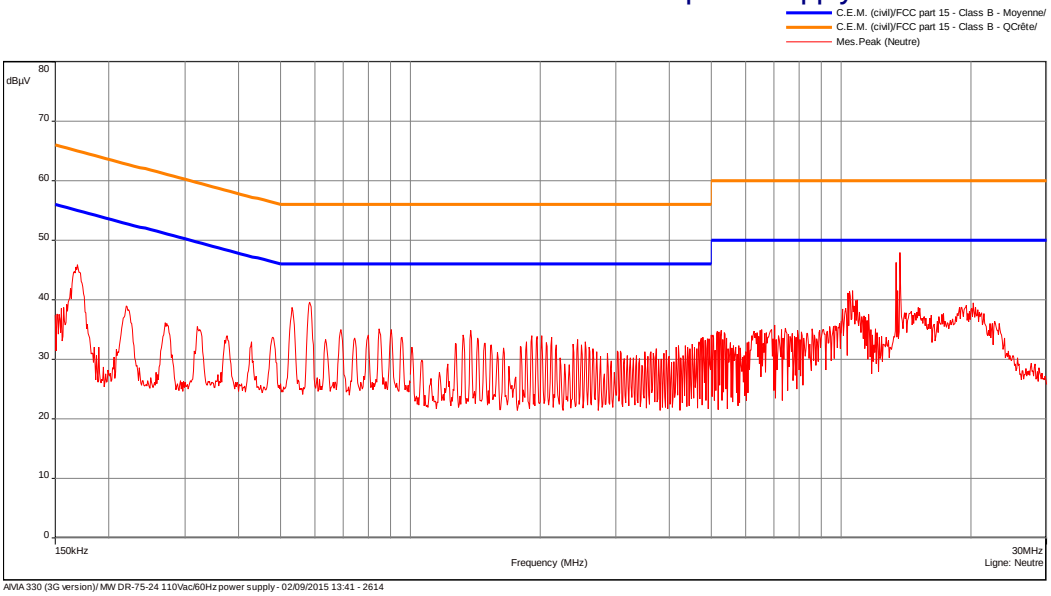
Detection:
Peak

13.56MHz: used frequency

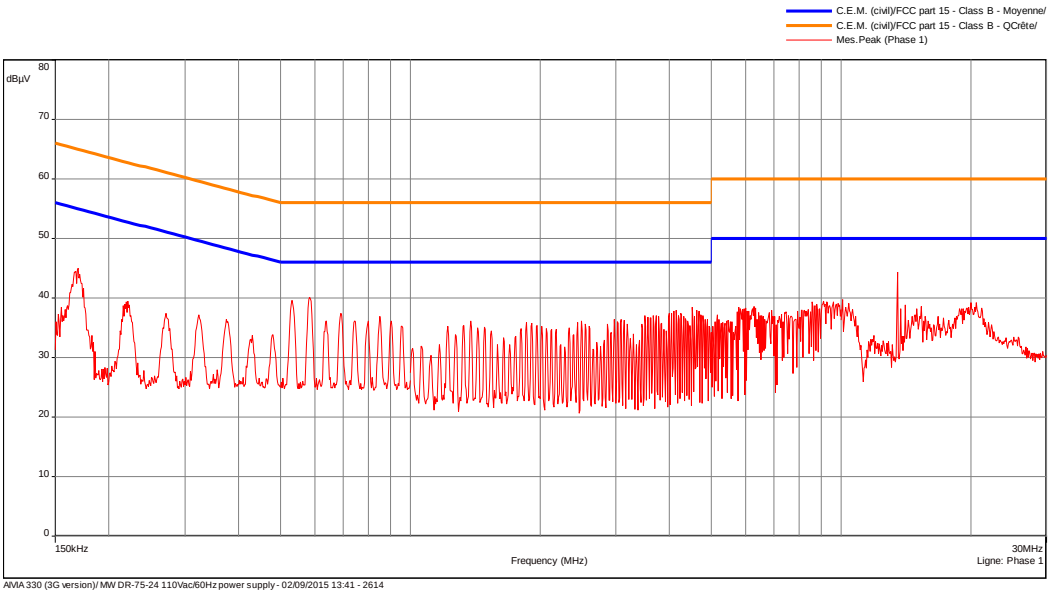
Modification(s) during test:
None

Conducted voltage emission (measurement) — EMI2614

AIVIA 330 / MW DR-75-24 110Vac/60Hz power supply



AIVIA 330 (3G version)/ MW DR-75-24 110Vac/60Hz power supply - 02/09/2015 13:41 - 2614



AIVIA 330 (3G version)/ MW DR-75-24 110Vac/60Hz power supply - 02/09/2015 13:41 - 2614

Date: 09/02/2015 13:41:48

Technician: DM

Class: B of the standard

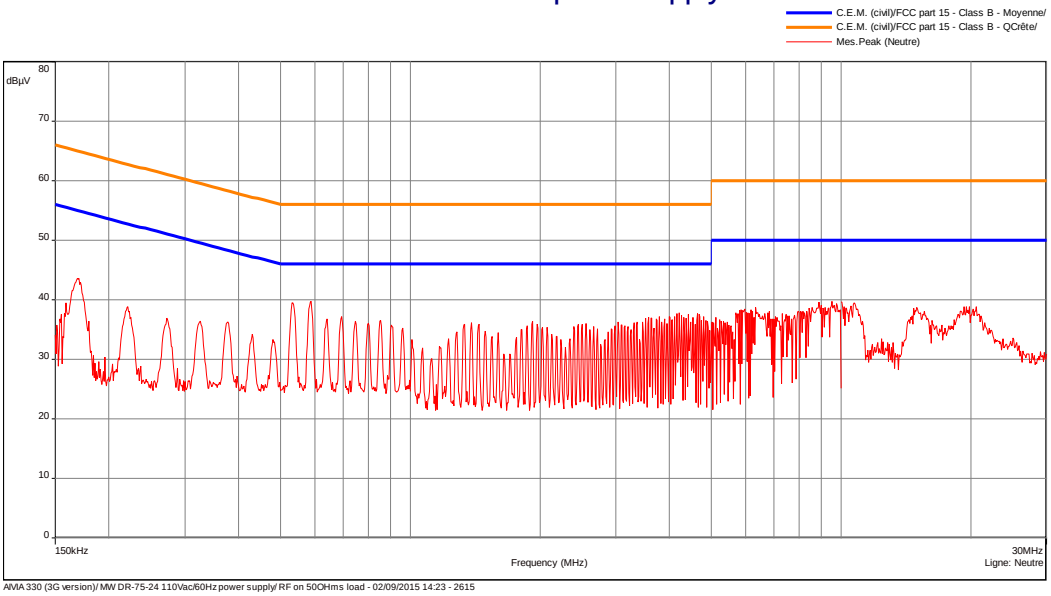
Detection:
Peak

13.56MHz: used frequency

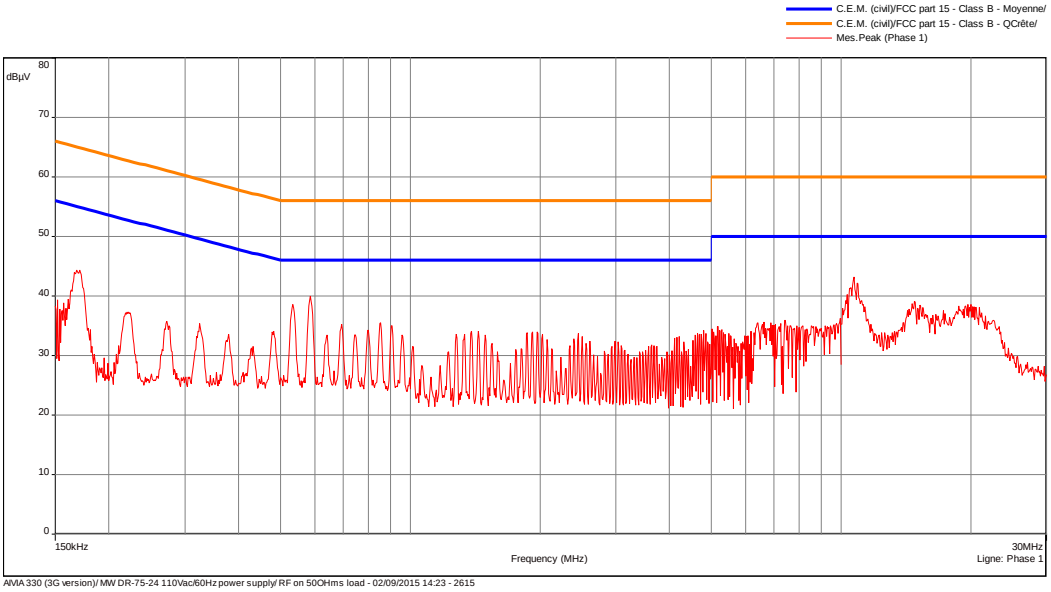
Modification(s) during test:
None

Conducted voltage emission (measurement) | EMI2615

AIVIA 330 / MW DR-75-24 110Vac/60Hz power supply/ RF on 50OHms load



AIVIA 330 (3G version)/ MW DR-75-24 110Vac/60Hz power supply/ RF on 50OHms load - 02/09/2015 14:23 - 2615



AIVIA 330 (3G version)/ MW DR-75-24 110Vac/60Hz power supply/ RF on 50OHms load - 02/09/2015 14:23 - 2615

Date: 09/02/2015 14:23:11

Technician: DM

Class: B of the standard

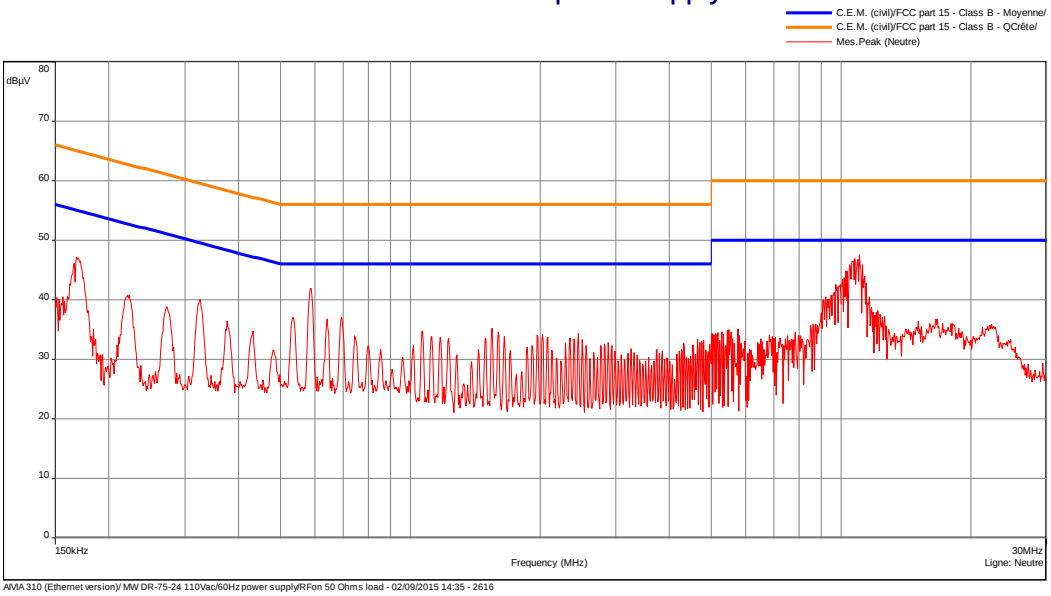
Detection:
Peak

13.56MHz: used frequency

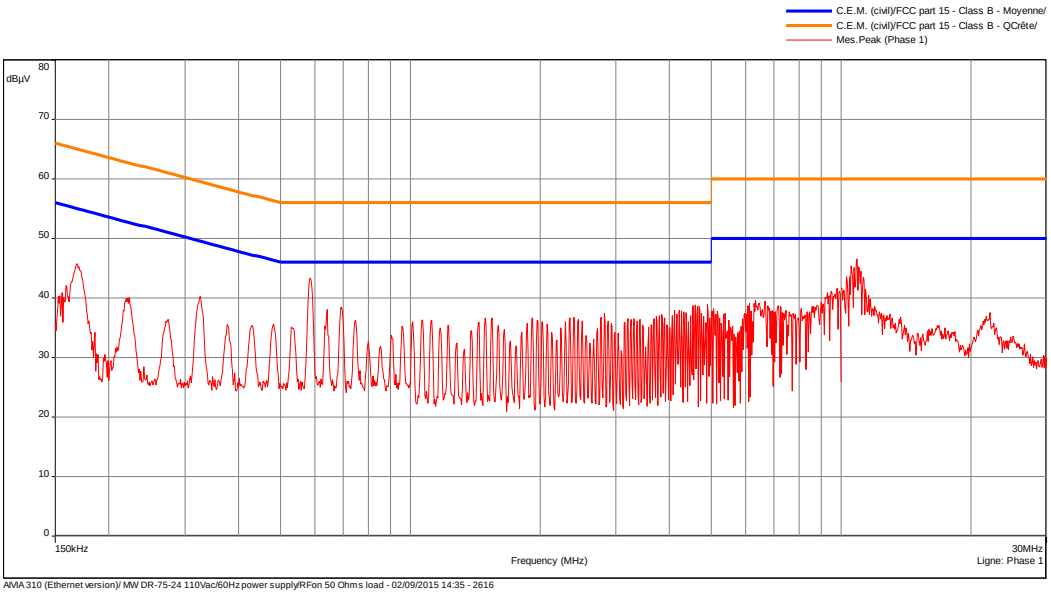
Modification(s) during test:
None

Conducted voltage emission (measurement) — EMI2616

AIVIA 310 / MW DR-75-24 110Vac/60Hz power supply/RF on 50 Ohms load



AIVIA 310 (Ethernet version)/ MW DR-75-24 110Vac/60Hz power supply/RFon 50 Ohms load - 02/09/2015 14:35 - 2616



AIVIA 310 (Ethernet version)/ MW DR-75-24 110Vac/60Hz power supply/RFon 50 Ohms load - 02/09/2015 14:35 - 2616

Date: 09/02/2015 14:35:59

Technician: DM

Class: B of the standard

Detection:
Peak

13.56MHz: used frequency

Modification(s) during test:
None

7. UNWANTED RADIATED EMISSIONS – SECTION 15.209

Standards: FCC part 15 Radio part 15.209

Tests methods: FCC part 15.209 and ANSI C63.4:2003

a) *Pre-measurement in semi anechoic chamber*:

Frequency band	Tested side	Resolution bandwidth	Video bandwidth	Detection mode	E.U.T. height
9kHz-150kHz	Front side	200Hz	1kHz	Peak	80cm
150kHz-30MHz	Front side	10kHz	30kHz	Peak	80cm
30MHz-1GHz	Front side	100kHz	300kHz	Peak	80cm
1GHz-12.75GHz	Front side	1MHz	3MHz	Peak and average	80cm

Measurements below 30MHz are done with a loop antenna as describe in the standard.
Measure is done with an antenna position of 0°, 90° and 45°.
Measurements are done in semi anechoic chamber at 3m. E.U.T. is set on a wooden table.
E.U.T. measurements are maximized at 360° in max-hold peak detection.

Limits:

From 9 kHz to 30MHz: Limit indicated on the curves is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor.

From 30MHz to 1GHz: quasi peak limit provided is the limit given in 15.209 and RSS Gen.

Above 1GHz average limits in restricted bands and general limits are 54dBµV/m. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation.

Test method deviation:

From 9 kHz to 30MHz: measurements are made in peak detection instead of average mode in frequency band 9 kHz-500 kHz

- Measurements are given in dBµA/m instead of µV/m
- Measuring distance is 3 meters instead of 30 and 300 meters

Radiated emissions limits in this frequency band are specified at 30 or 300 meters. Pre measurement distance used during the test, subject of this report, is 3 meters. Then published limits come from a theoretical conversion using an extrapolation factor of 40dB / decade.

Measuring distance: 3 meters

Test equipment list:

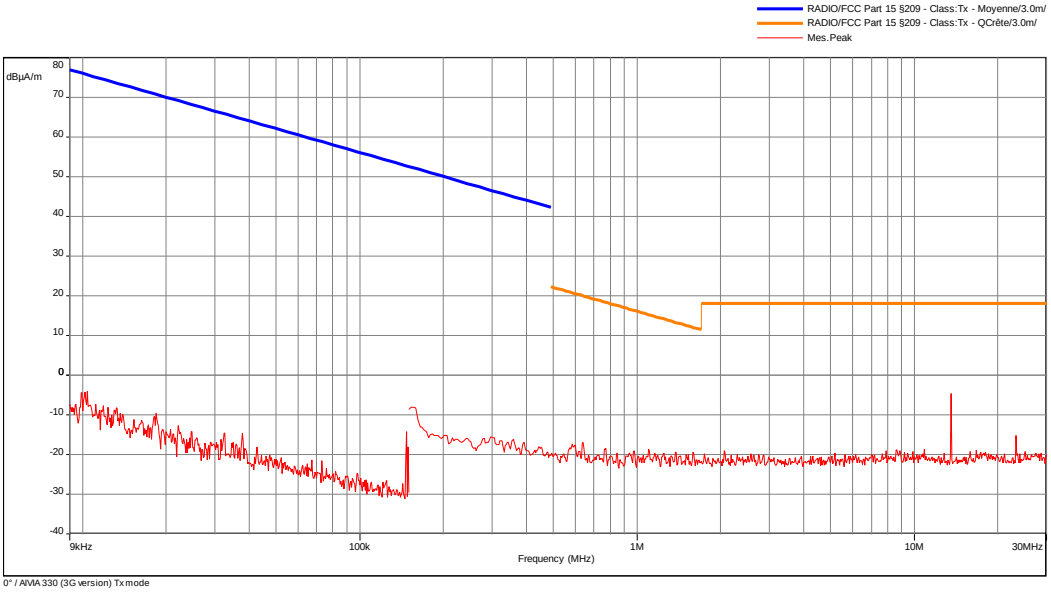
CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Antenna	Rohde & Schwarz	HFH2-Z2	5825	27/01/2015	27/03/2017
Antenna	ETS LINDGREN	3117	8387	26/08/2011	26/10/2015
Antenna	Electro-Metrics	BIA-30HF	1107	03/03/2011	03/05/2015
Antenna	Rohde & Schwarz	HL223	1137	03/03/2011	03/05/2015
Cable	C&C	N-3m	10557	27/09/2013	27/11/2015
Cable	C&C	N-5m	10561	27/09/2013	27/11/2015
Cable	C&C	N-3m	10558	27/09/2013	27/11/2015
Cable	C&C	N-5m	10562	27/09/2013	27/11/2015
Preamplifier	IMPULSE	CA118-546ACN	9169	17/06/2014	17/08/2015
Receiver	Agilent	E4440A	5824	01/05/2014	01/07/2016
Shielded enclosure	RAY PROOF	C.GS3	1123	17/10/2013	17/12/2016
Software	Nexio	BAT EMC	0000	#	#
Thermohygrometer	Bioblock Scientific	Météostar	0963	31/10/2014	31/12/2016

#: Permanent validity *BAT-EMC software version: V3.6.0.32*

Results: See Graphs hereafter.

Radiated magnetic field emission (measurement) — EMI2462

0° / AIVIA 330 Tx mode



0° / AIVIA 330 (3G version) Tx mode

Date: 09/02/2015 14:50:34

Technician: DM

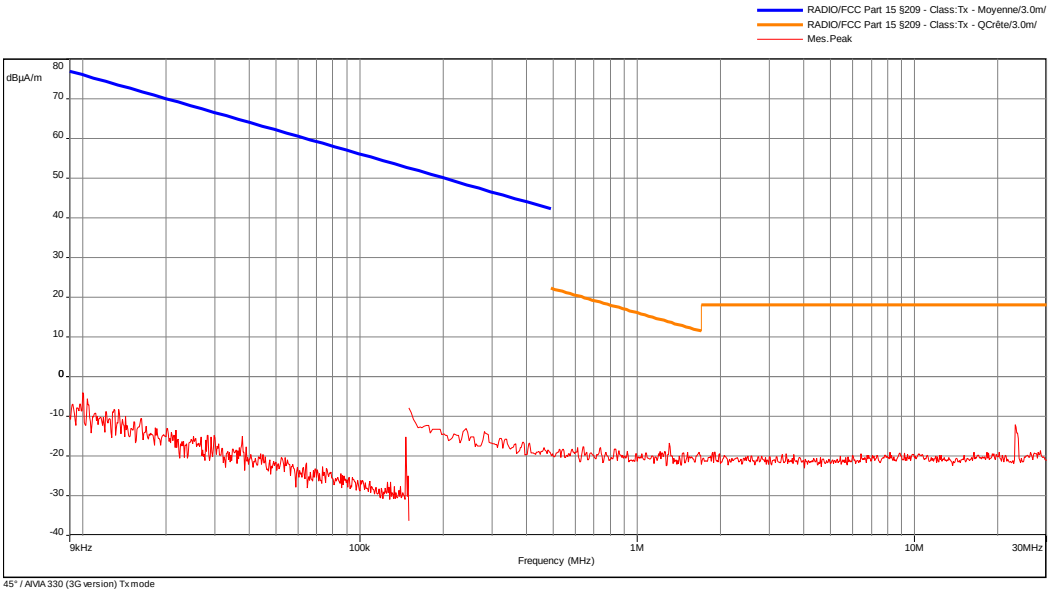
Class: Tx of the standard

Detection: Peak

Modification(s) during test: None

Radiated magnetic field emission (measurement) — EMI2463

45° / AIVIA 330 Tx mode



45° / AIVIA 330 (3G version) Tx mode

Date: 09/02/2015 14:59:07

Technician: DM

Class: Tx of the standard

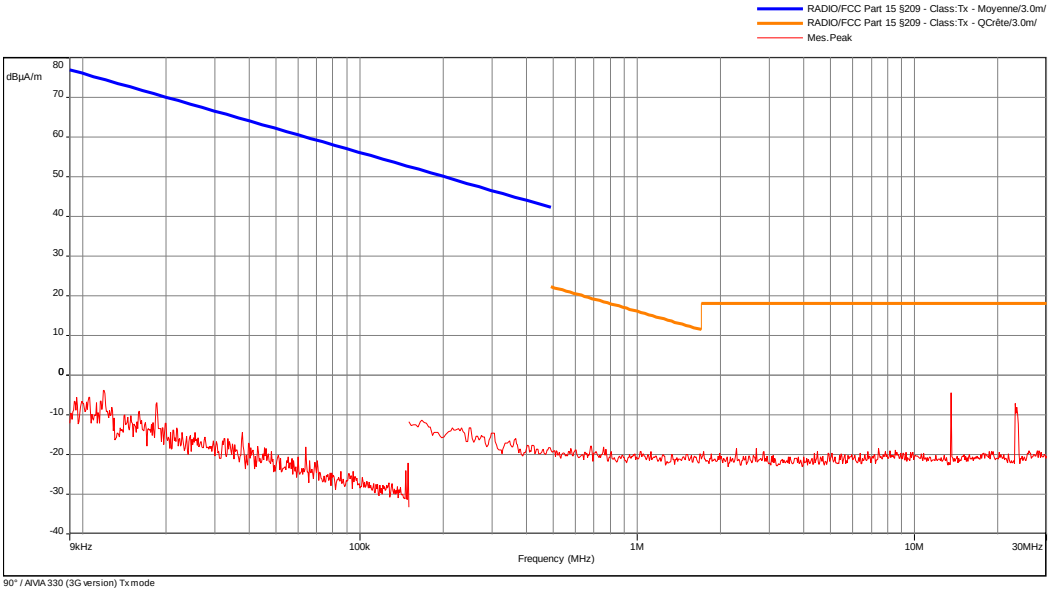
Detection: Peak

Modification(s) during test: None

Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.

Radiated magnetic field emission (measurement)	EMI2464

90° / AIVIA 330 Tx mode



Date: 09/02/2015 15:01:42

Technician: DM

Class: Tx of the standard

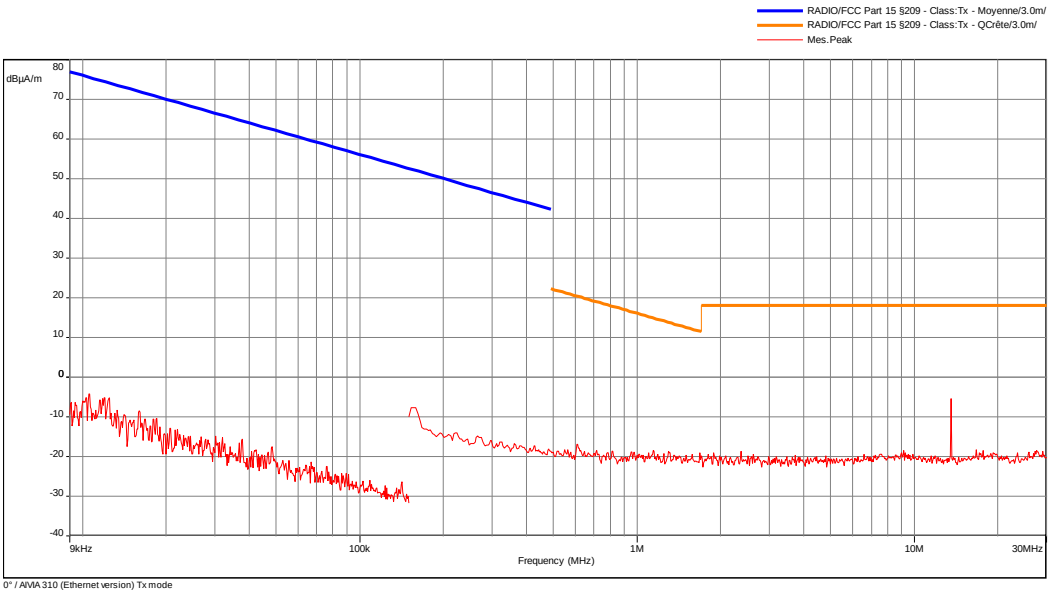
Detection:
Peak

Modification(s) during test:
None

Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.

Radiated magnetic field emission (measurement) — EMI2617

0° / AIVIA 310 Tx mode



0° / AIVIA 310 (Ethernet version) Tx mode

Date: 09/02/2015 15:20:45

Technician: DM

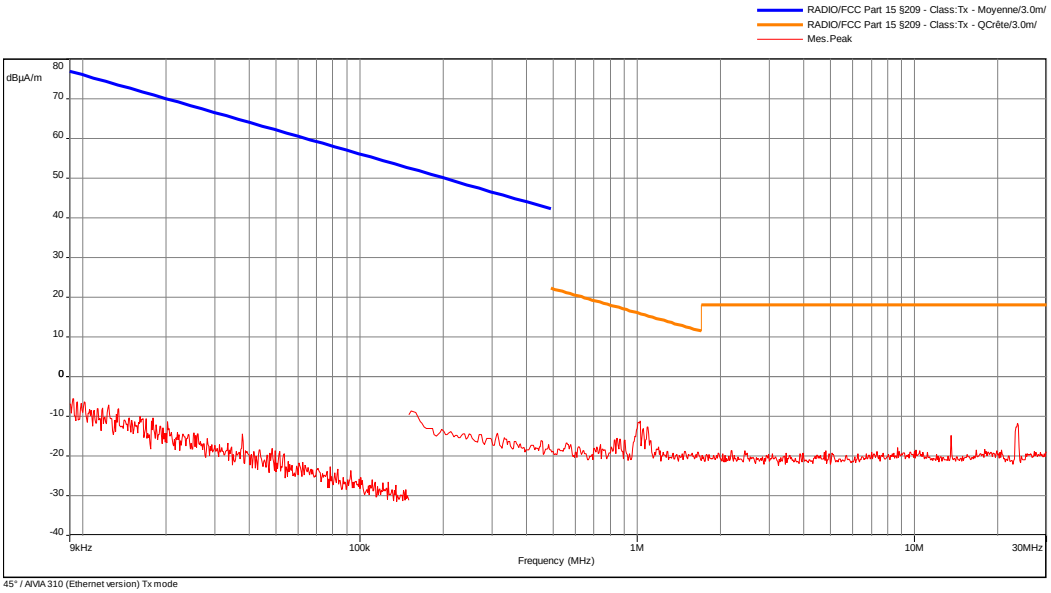
Class: Tx of the standard

Detection:
Peak

Modification(s) during test:
None

Radiated magnetic field emission (measurement) — EMI2618

45° / AIVIA 310 Tx mode



45° / AIVIA 310 (Ethernet version) Tx mode

Date: 09/02/2015 15:24:15

Technician: DM

Class: Tx of the standard

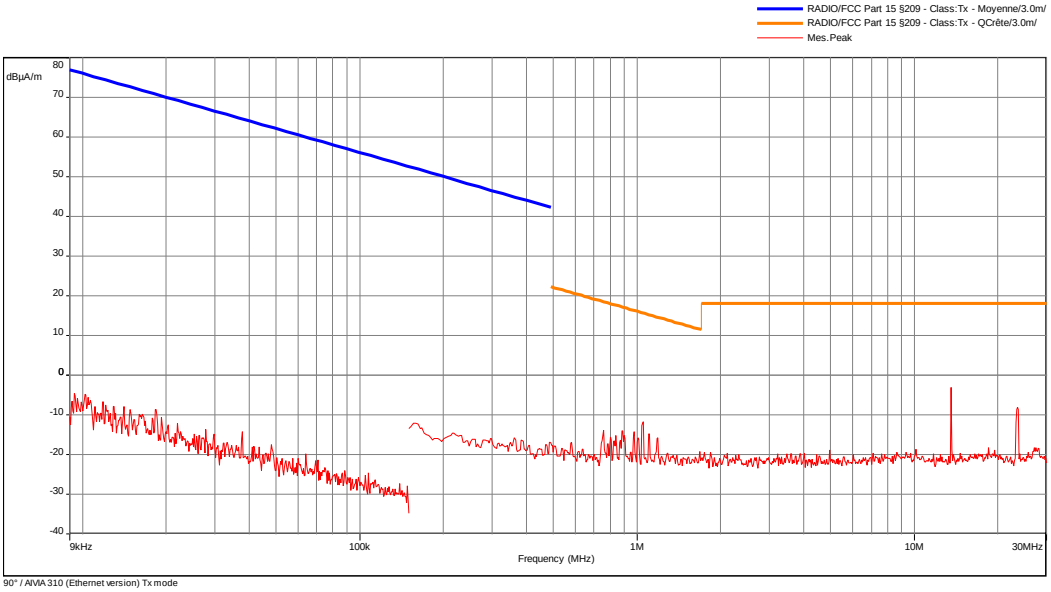
Detection:
Peak

Modification(s) during test:
None

Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.

Radiated magnetic field emission (measurement)	EMI2619

90° / AIVIA 310 Tx mode



Date: 09/02/2015 15:29:15

Technician: DM

Class: Tx of the standard

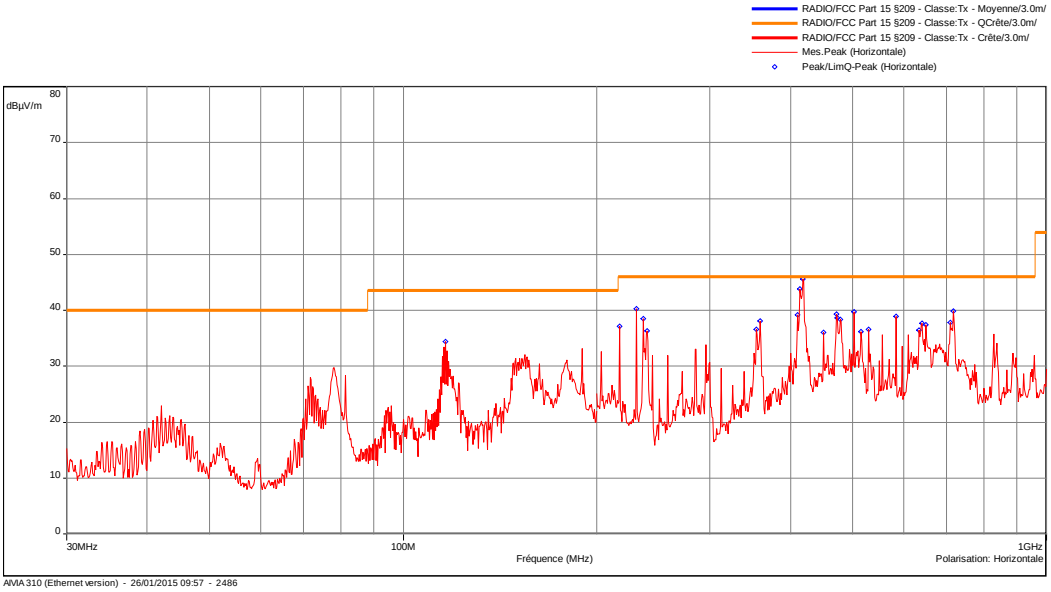
Detection:
Peak

Modification(s) during test:
None

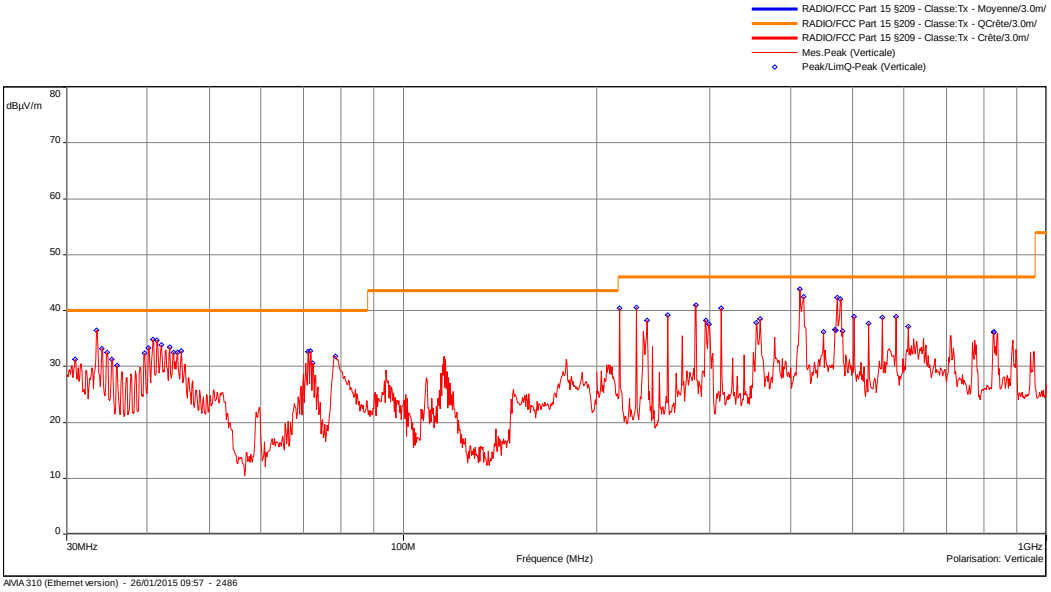
Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.

Radiated electric emission (measurement) — EMI2486

AIVIA 310



AIVIA 310 (Ethernet version) - 26/01/2015 09:57 - 2486



AIVIA 310 (Ethernet version) - 26/01/2015 09:57 - 2486

Date: 26/01/2015 09:57:57

Technician: DM

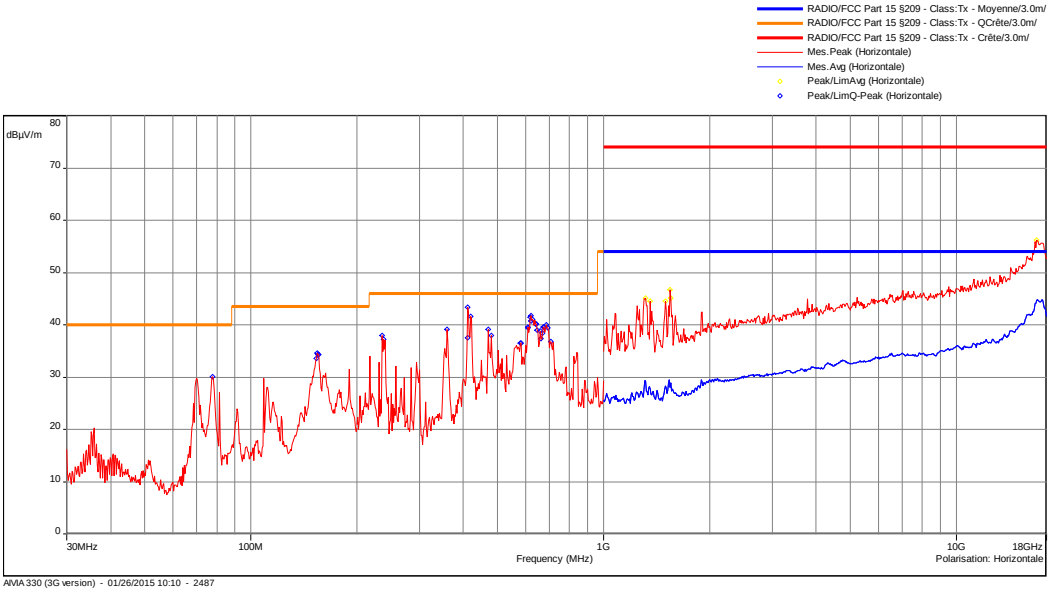
Class: Tx of the standard

Detection:
Peak

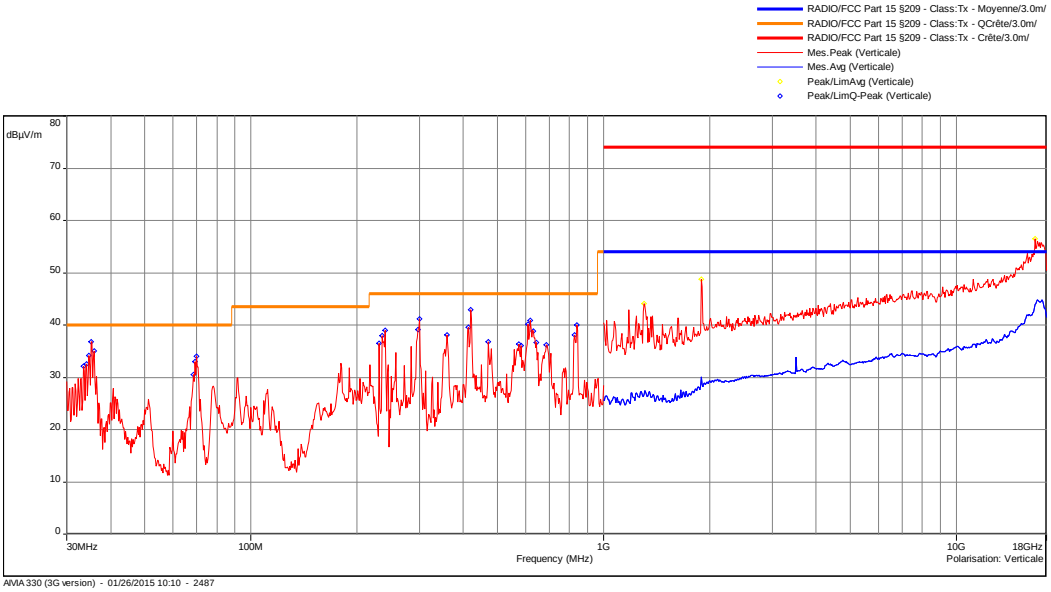
Modification(s) during test:
None

Radiated electric emission (measurement) — EMI2487

AIVIA 330



AIVIA 330 (3G version) - 01/26/2015 10:10 - 2487



AIVIA 330 (3G version) - 01/26/2015 10:10 - 2487

Date: 26/01/2015 10:10:36

Technician: DM

Class: Tx of the standard

Detection:
Peak and average

Modification(s) during test:
None

b) Measurement at 3 meters on open area test site:

Temperature (°C): 15.3 *Humidity (%HR):* 51.4 *Pressure (hPa):* -

Test configuration: For each measured frequencies, E.U.T. is set via a turntable in order to find the highest level. Test antenna is set between 1m and 4m in order to find the highest level in vertical and horizontal polarization. Only highest levels are recorded.

Frequency band	Initial position (0°)	Resolution bandwidth	Measuring distance	Detection mode	E.U.T. height
9kHz-150kHz	Front side	200Hz	10m	Quasi-peak	80cm
150kHz-30MHz	Front side	10kHz	10m	Quasi-peak	80cm
30MHz-1GHz	Front side	120kHz	3m	Quasi-peak	80cm
1GHz-12.75GHz	Front side	1MHz	3m	Average	80cm

Test method deviation: Between 9 kHz to 30MHz: measurements are given in dBµA/m instead of dBµV/m (conversion factor: 51.5dB) and measuring distance is 10 meters instead of 300m.

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	CAL DATE	DUE DATE
Antenna	ETS LINDGREN	3117	5456	17/08/2012	17/10/2016
Antenna	Rohde & Schwarz	HL223	3126	03/03/2011	03/05/2015
Antenna	Rohde & Schwarz	HFH2-Z2	5825	27/01/2015	27/03/2017
Antenna	Electro-Metrics	BIA-30HF	1107	03/03/2011	03/05/2015
Antenna mast	INNCO	MA4000-EP-O	10261	#	#
Cable	Cables & Connetiques	N-1.5m	4203	04/06/2013	04/08/2015
Cable	Huber Sumner	N-14m	8146	04/06/2013	04/08/2015
Cable	Huber Sumner	N-20m	8385	04/06/2013	04/08/2015
Mast controller	INNCO	CO3000	10260	#	#
Open area test site	EMITECH	Salinelles	3482	18/04/2014	18/06/2017
Preamplifier	IMPULSE	CA118-546ACN	9169	17/06/2014	17/08/2015
Receiver	Agilent	E4440A	5824	01/05/2014	01/07/2016
Receiver	Rohde & Schwarz	ESHS10	3371	26/11/2012	26/03/2015
Receiver	Rohde & Schwarz	ESVS10	3211	26/11/2012	26/03/2015
Turntable	Heinrich Deisel	D4420	4038	#	#
Turntable controller	Heinrich Deisel	HD100	4036	#	#

#: Permanent validity

Results: See Boards hereafter.

Measurement uncertainty: +/- 4.84 dB (f<200MHz, Vertical)
+/- 4.62 dB (f<200MHz, Horizontal)
+/- 4.77 dB (f>200MHz, Vertical)
+/- 4.78 dB (f<200MHz, Horizontal)
+/- 5.16 dB (f>1GHz)

AIVIA 310

Frequency (MHz)	Polarization	Azimuth (degree)	Antenna Height (cm)	Measure (dBµV/m)	Limit (dBµV/m)	Comments
78.49	Horizontal	0	250	34.32	40	C
71.96	Horizontal	0	250	24.83	40	C
116.03	Horizontal	120	250	30.01	43	C
153.94	Horizontal	0	200	29.61	43	C
189.47	Horizontal	200	200	30.02	43	C
37.25	Vertical	0	100	21.14	40	C
33.43	Vertical	0	100	16.18	40	C
43.50	Vertical	0	100	24.83	40	C
72.04	Vertical	180	100	31.53	40	C
77.82	Vertical	180	100	35.02	40	C
115.57	Vertical	180	100	33.62	43	C
183.28	Vertical	180	100	30.34	43	C
217.04	Vertical	0	100	21.09	46	C
230.57	Vertical	50	200	30.32	46	C
239.30	Vertical	300	200	33.07	46	C
257.70	Vertical	300	200	35.01	46	C
284.84	Vertical	300	200	32.64	46	C
295.43	Vertical	300	200	29.28	46	C
299.18	Vertical	300	200	27.22	46	C
311.94	Vertical	300	150	31.81	46	C
358.98	Vertical	256	150	33.59	46	C
354.48	Vertical	256	150	33.85	46	C
413.45	Vertical	300	150	35.05	46	C
450.00	Vertical	320	100	32.66	46	C
472.53	Vertical	219	100	31.06	46	C
478.65	Vertical	219	100	36.71	46	C
501.84	Vertical	220	100	21.01	46	C
528.96	Vertical	270	100	31.34	46	C
556.08	Vertical	270	100	36.25	46	C
583.21	Vertical	270	100	32.72	46	C
610.34	Vertical	270	100	28.31	46	C
827.13	Vertical	0	100	28.05	46	C
217.04	Horizontal	280	100	33.95	46	C
230.56	Horizontal	280	100	32.68	46	C
236.36	Horizontal	280	100	27.75	46	C
239.26	Horizontal	280	100	31.57	46	C
294.46	Horizontal	270	100	27.81	46	C
358.93	Horizontal	280	300	31.10	46	C
413.85	Horizontal	150	100	41.35	46	C
418.60	Horizontal	150	100	42.42	46	C

C=Compliant

Frequency (MHz)	Polarization	Azimuth (degree)	Antenna Height (cm)	Measure (dBµV/m)	Limit (dBµV/m)	Comments
450.00	Horizontal	235	170	32.81	46	C
472.64	Horizontal	270	100	29.12	46	C
501.84	Horizontal	270	118	31.54	46	C
515.36	Horizontal	270	120	29.39	46	C
528.96	Horizontal	270	118	36.17	46	C
583.20	Horizontal	270	1.2	37.72	46	C
650.00	Horizontal	270	120	40.54	46	C
711.10	Horizontal	270	100	41.28	46	C

C=Compliant

All other unwanted radiated spurious are at least 20 dB below specified limits

AIVIA 330

Frequency (MHz)	Polarization	Azimuth (degree)	Antenna Height (cm)	Measure (dBµV/m)	Limit (dBµV/m)	Comments
78.49	Horizontal	0	250	34.32	40	C
71.96	Horizontal	0	250	24.83	40	C
116.03	Horizontal	120	250	30.01	43	C
153.94	Horizontal	0	200	29.61	43	C
183.79	Horizontal	250	200	28.84	43	C
189.47	Horizontal	200	200	30.02	43	C
37.25	Vertical	0	100	21.14	40	C
33.43	Vertical	0	100	16.18	40	C
43.50	Vertical	0	100	24.83	40	C
72.04	Vertical	180	100	31.53	40	C
77.82	Vertical	180	100	35.02	40	C
183.28	Vertical	180	100	30.34	43	C
230.57	Vertical	50	200	30.32	46	C
239.30	Vertical	300	200	33.07	46	C
257.70	Vertical	300	200	35.01	46	C
284.84	Vertical	300	200	32.64	46	C
295.43	Vertical	300	200	29.28	46	C
299.18	Vertical	300	200	27.22	46	C
358.98	Vertical	256	150	33.59	46	C
354.48	Vertical	256	150	33.85	46	C
413.45	Vertical	300	150	35.05	46	C
472.53	Vertical	219	100	31.06	46	C

C=Compliant

Frequency (MHz)	Polarization	Azimuth (degree)	Antenna Height (cm)	Measure (dBµV/m)	Limit (dBµV/m)	Comments
478.65	Vertical	219	100	36.71	46	C
556.08	Vertical	270	100	36.25	46	C
583.21	Vertical	270	100	32.72	46	C
610.34	Vertical	270	100	28.31	46	C
827.13	Vertical	0	100	28.05	46	C
217.04	Horizontal	280	100	33.95	46	C
236.36	Horizontal	280	100	27.75	46	C
239.26	Horizontal	280	100	31.57	46	C
358.93	Horizontal	280	300	31.10	46	C
413.85	Horizontal	150	100	41.35	46	C
418.60	Horizontal	150	100	42.42	46	C
472.64	Horizontal	270	100	29.12	46	C
583.20	Horizontal	270	1.2	37.72	46	C
650.00	Horizontal	270	120	40.54	46	C
711.10	Horizontal	270	100	41.28	46	C

C=Compliant

All other unwanted radiated spurious are at least 20 dB below specified limits

8. OPERATION WITHIN THE BAND 13.110-14.010 MHZ – SECTION 15.225

Standards: FCC Part 15 Radio part 15.225 a) to d)

Tests methods: ANSI C63.4:2003

Test configuration:

Frequency band	Tested side	Resolution bandwidth	Video bandwidth	Detection mode	E.U.T. height
13.11MHz-14.01MHz	Front side / antenna 0	10kHz	30kHz	Peak	80cm
13.11MHz-14.01MHz	Front side / antenna 45	10kHz	30kHz	Peak	80cm
13.11MHz-14.01MHz	Front side / antenna 90	10kHz	30kHz	Peak	80cm

Measure is done with an antenna position of 0°, 90° and 45°. Only higher level is recorded

Test method deviation: Measurements are given in dBµA/m instead of dBµV/m (conversion factor: 51.5dB). Final measuring distance is 10m instead of 30 m.

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Antenna	Rohde & Schwarz	HFH2-Z2	5825	27/01/2015	27/03/2017
Cable	Huber Sumner	N-20m	8385	04/06/2013	04/08/2015
Receiver	Agilent	E4440A	5824	01/05/2014	01/07/2016
Receiver	Rohde & Schwarz	ESHS10	3371	26/11/2012	26/03/2015
Open area test site	EMITECH	Salinelles	3482	18/04/2014	18/06/2017
Software	Nexio	BAT EMC	0000	#	#
Turntable	Heinrich Deisel	D4420	4038	#	#
Turntable controller	Heinrich Deisel	HD100	4036	#	#
Thermohygrometer	Bioblock Scientific	Météostar	0963	31/10/2014	31/12/2016

#: Permanent validity

BAT-EMC software version: V3.6.0.32

Results: See Graph(s) hereafter

AIVIA 330

Frequency (MHz)	Polarization	Azimut (degree)	Antenna Height (cm)	Measure (dBµA/m)	Limit (dBµA/m) (*)	Comments
13.56	Circular 0°	180	100	-13.478	51.58	C
13.56	Circular 45°	270	100	-8.978	51.58	C
13.56	Circular 90°	90	100	-5.978	51.58	C

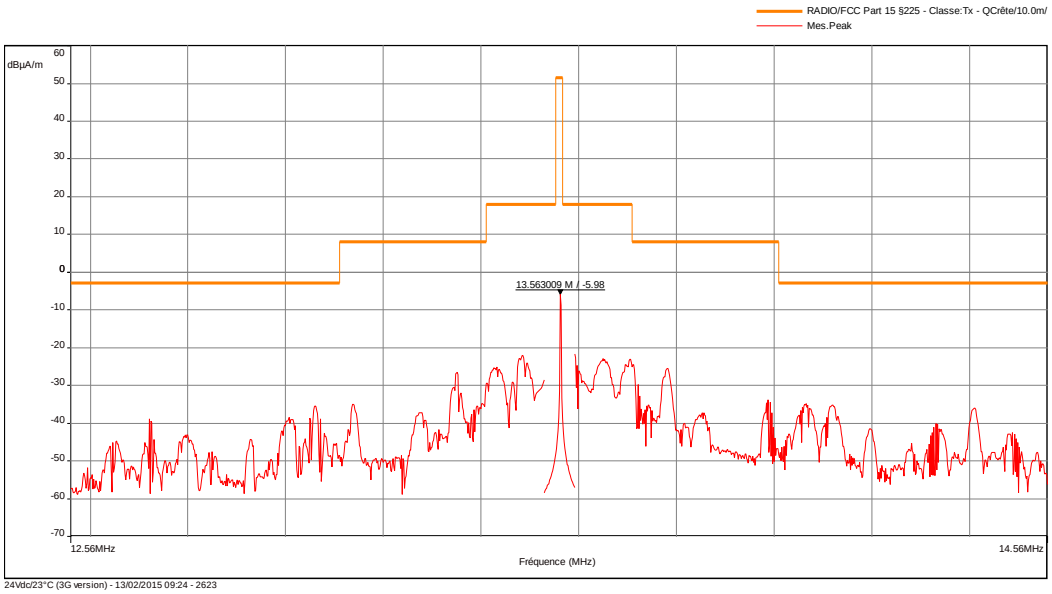
C=Compliant

(*) Using an extrapolation factor of 40 dB/decade (as described in section 15.31 (f)), the level at 30m is about 26.432dBµV/m (20.97µV/m) for a limit at 15.848 mV/m.

Carrier measurement at 10m: -5.978 dBµA/m (≈ 45.522dBµV/m)

Radiated magnetic field emission (measurement)	EMI2623

24Vdc/23°C



Date: 13/02/2015 09:24:04

Technician: DM

Detection:
Peak

Comments:

Modification(s) during test:
None

Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.

AIVIA 310

Frequency (MHz)	Polarization	Azimuth (degree)	Antenna Height (cm)	Measure (dBµA/m)	Limit (dBµA/m) (*)	Comments
13.56	Circular 0°	180	100	-15.778	51.58	C
13.56	Circular 45°	270	100	-11.678	51.58	C
13.56	Circular 90°	90	100	-9.078	51.58	C

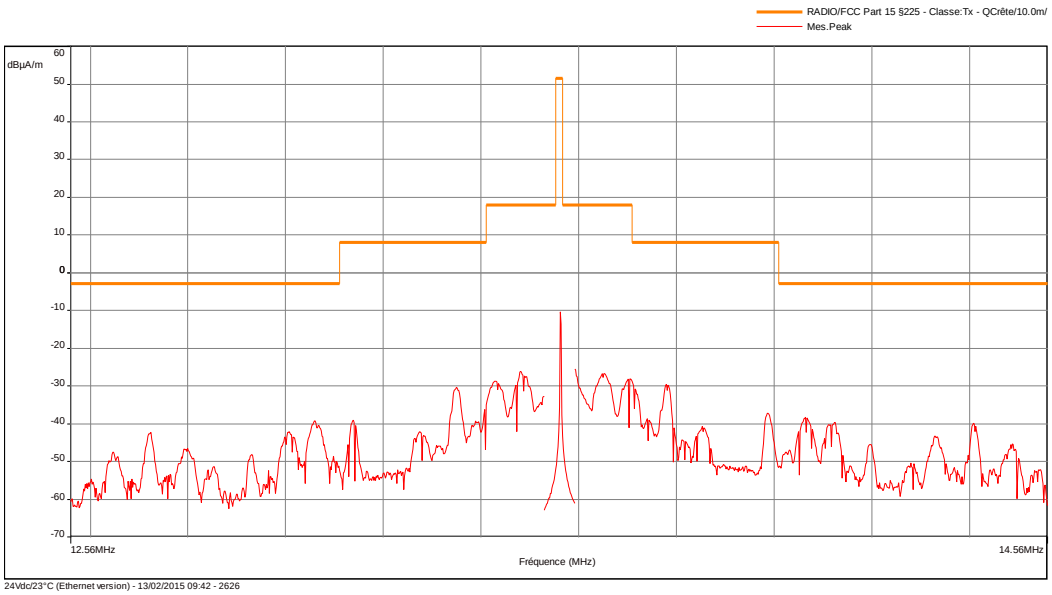
C=Compliant

(*) Using an extrapolation factor of 40 dB/decade (as described in section 15.31 (f)), the level at 30m is about 23.33dBµV/m (14.67µV/m) for a limit at 15.848 mV/m.

Carrier measurement at 10m: -9.078 dBµA/m (≈ 42.422dBµV/m)

Radiated magnetic field emission (measurement)	EMI2626

24Vdc/23°C



Date: 13/02/2015 09:42:39

Technician: DM

Class: Tx of the standard

Detection: Peak

Modification(s) during test: None

Limit indicated on this plot is calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.

9. FREQUENCY TOLERANCE – SECTION 15.225

Standards: FCC Part 15 Radio part 15.225

Tests methods: FCC Part 15 Radio part 15.225 e)

Test configuration: A near field probe detects field near equipment (relative measurement).

Resolutions:

Frequency	Resolution bandwidth	Video bandwidth
13.56MHz	3Hz	10Hz

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	CAL DATE	DUE DATE
Antenna	EMITECH	3.5 cm	4653	#	#
Climatic enclosure	Secasi	SM600C	1670	20/01/2012	20/03/2014
Multimeter	Agilent	U1252A	6138	16/10/2013	16/12/2015
Power supply	KIKUSUI	PCR2000L	0800	#	#
Receiver	Agilent	E4440A	5824	22/10/2013	22/12/2015

#: Permanent validity

Standard limits: +/- 0.01% of the operating frequency

Results: See Board(s) below

Measurement uncertainty: +/- 1 x 10^{-7}(Radiofrequency)
+/- 1°C (Temperature)
+/- 5% (Humidity)

E.U.T. operating mode: with modulation

AIVIA 330

	Temperature	Power supply (Vdc)	Measured Frequency (MHz)	Frequency tolerance (%)	Limit (%)
Normal condition	+20°C (Humidity 31%)	24	13.563009	0.00000%	+/-0.01
		23.52	13.563034	+0.00018%	
		24.48	13.563040	+0.00023%	
Extremes conditions	-30°C	110.0	13.563102	+0.00069%	
		93.5	13.563158	+0.00110%	
		126.5	13.563151	+0.00105%	
	+50°C	110.0	13.562947	-0.00046%	
		93.5	13.562941	-0.00050%	
		126.5	13.562897	-0.00083%	

AIVIA 310

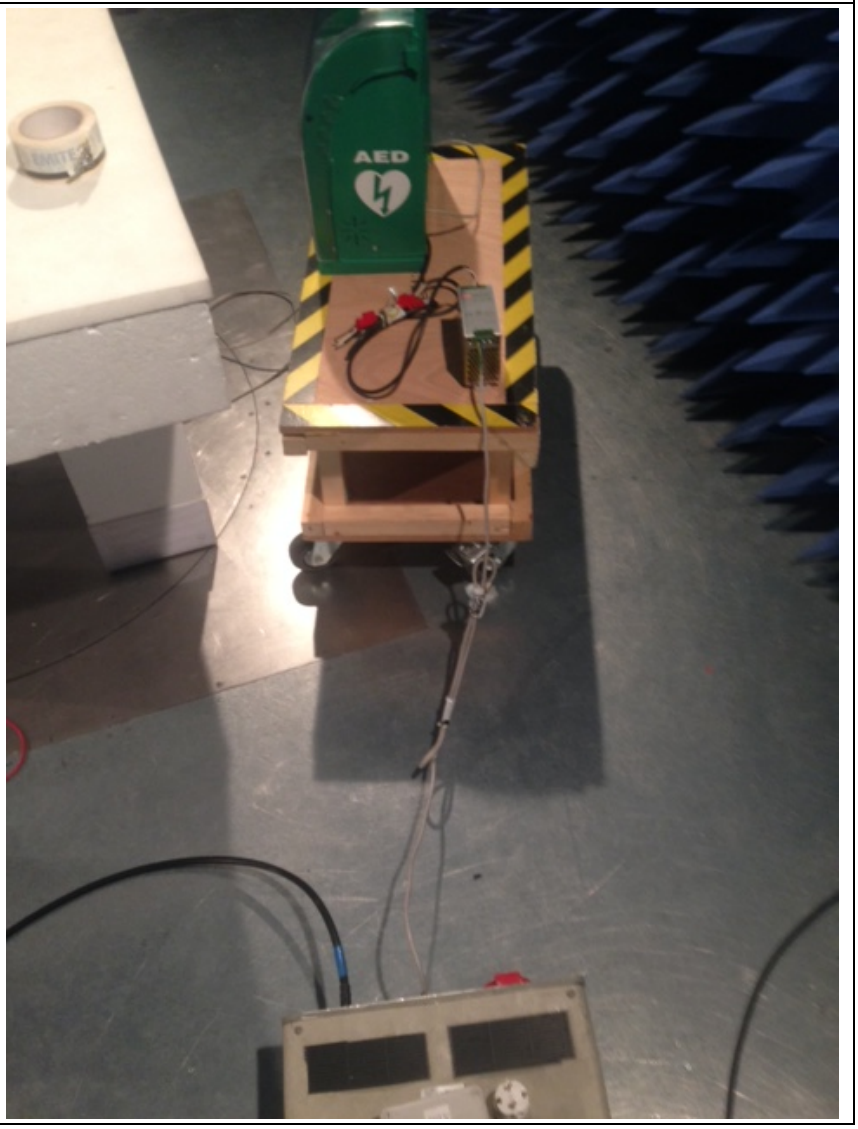
	Temperature	Power supply (Vac)	Measured Frequency (MHz)	Frequency tolerance (%)	Limit (%)
Normal condition	+20°C (Humidity 31%)	24	13.562972	0.00000%	+/-0.01
		23.52	13.562934	-0.00028%	
		24.48	13.563058	+0.00063%	
Extremes conditions	-30°C	110.0	13.563071	+0.00073%	
		93.5	13.563102	+0.00096%	
		126.5	13.563083	+0.00082%	
	+50°C	110.0	13.562928	-0.00032%	
		93.5	13.562872	-0.00074%	
		126.5	13.562891	-0.00060%	

□□□ End of report – 1 annex to be forwarded □□□

ANNEX:
PHOTOGRAPH(S)

E.U.T General view	
E.U.T. marking plate (AIVIA 310)	

E.U.T. marking plate (AIVIA 330)	
3G module (AIVIA 330)	

RFID module	
Conducted emissions	

Radiated measurement (Pre measurement)	

Radiated measurement on open area test site	

Radiated measurement on open area test site	

Radiated measurement on open area test site (carriers measurements)	

Frequency tolerance (climatic enclosure)	

Ac power supply used for 110Vac/60Hz power supply measurement