

R041-15-106809-2A - DM / CBU

⇒ This report cancels and replaces the test report R041-15-106809-2A Ed.1

RADIO TEST REPORT

According to the standard(s):

FCC Part 15 Radio part 15.247
RSS-247_Issue 1, May 2015

Equipment under test:

WING 4 TRAX
FCC ID: 2AHZ6WING4TRAX
IC: 0025491267-W4T

Company:

TRAXENS SAS

Diffusion: Mr DARAGON

(Company: TRAXENS SAS)

Number of pages: 28 including 1 annex

Ed.	Date	Modified page(s)	Technical verification Quality approval	
			Name	Visa
2	21 Jul. 16	Refer to lines in the margin	Olivier HEYER	

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*NAME OF THE EQUIPMENT
UNDER TEST (E.U.T.)* : WING 4 TRAX

Serial number : 5A5A5AE4

P/N : W4T-V1.0-REV.F

Software version : 1.0

MANUFACTURER'S NAME : TRAXENS SAS

APPLICANT'S ADDRESS:

Company : TRAXENS SAS

Address : Hôtel TECHNOPTIC
2 rue Marc Donadille
13453 MARSEILLE
FRANCE

*Person(s) present during the
tests* : Mr BOURNE

Responsible : Mr DARAGON

DATE(S) OF TESTS : February, from 2nd and 22th of 2016

TESTS LOCATION(S) : EMITECH MONTPELLIER laboratory in VENDARGUES (34)
Open Area Test Site in SALINELLES (30)
FRANCE
FCC Test Firm Registration Number: 954701
IC Filling number : 4379C-1

TESTS OPERATOR(S) : David MONTAULON

CONTENTS

1. INTRODUCTION.....	4
2. REFERENCE DOCUMENT(S).....	4
3. EQUIPMENT UNDER TEST CONFIGURATION.....	4
4. EQUIPMENT UNDER TEST CONFIGURATION SCHEME.....	5
5. SUMMARY OF TEST RESULTS.....	6
6. FREQUENCY HOPPING AND DIGITALLY MODULATED.....	7
7. MAXIMUM PEAK CONDUCTED POWER.....	11
8. INTENTIONAL RADIATOR.....	13
9. UNWANTED EMISSIONS OUTSIDE OF §15.247 FREQUENCY BANDS.....	15
10. MEASUREMENT OF FREQUENCY STABILITY §15.215 (C) AND RSS-GEN.....	22
ANNEX: PHOTOGRAPH(S).....	23

1. INTRODUCTION

This document submits the results of Radio tests performed on the equipment WING 4 TRAX (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- Telecommunication Chapter 1- Federal Communication Commission. <u>Part 15</u> - Radio frequency devices Subpart B- Unintentional Radiators. Limits and methods of measurement of radio disturbance. Characteristic of information technology equipment.
FCC part 15.247	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850MHz. (frequency hopping and digitally modulated)
RSS-247_Issue 1, May2015	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and LicenceExempt Local Area Network (LE-LAN) Devices
RSS-Gen: 2010, Issue 3, December 2010	Exigences générales et information relatives à la certification du matériel de radiocommunication
ANSI C 63.4:2014	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
ANSI C 63.10:2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3. EQUIPMENT UNDER TEST CONFIGURATION

Equipment under test (E.U.T.) description:

FCC ID: 2AHZ6WING4TRAX
IC: 0025491267-W4T

Frequency range: 920MHz – 928MHz
Number of channels: 68 channels
Tested frequencies: 920.7MHz-927.4MHz (hopping mode)
RF max conducted output power: 20mW

Power supply: 3.0V regulated from a 3.6V battery
Dimensions (H x L x P): 35 x 17.5 x 2.9 mm
Operating temperatures: -40°C/+85°C

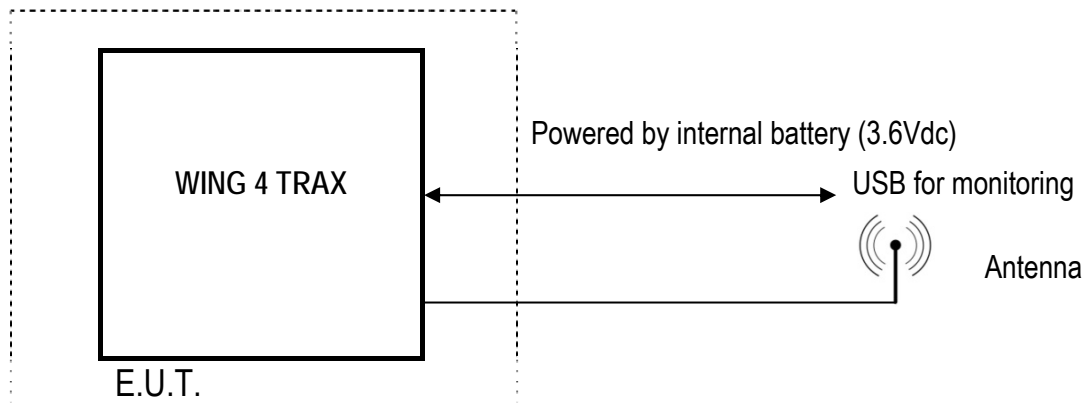
Antennas:

Maximum gain declared less than 6dBi

Cycle and operating mode during emission tests: Frequency hopping emission mode

Equipment modifications applied during tests: No

4. EQUIPMENT UNDER TEST CONFIGURATION SCHEME



5. SUMMARY OF TEST RESULTS

Tests designation	Results satisfying?	Comments
Antenna requirement	YES	
FCC part 15.203		
Restricted band of operation	YES	
- FCC part 15.205 and RSS Gen:2010 §7.2.2		
Conducted power lines	N.A.	Powered by internals batteries
FCC part 15.107 and 15.207 and RSS Gen:2010 §7.2.4		
Frequency hopping and digitally modulated	YES	
FCC part 15 Radio part 15.247 a) and §5.1 of RSS-247:2015		
Maximum peak conducted	YES	
FCC part 15.247 b) and §5.4 of RSS-247:2015		
Intentional radiator	YES	
FCC part 15.247 d) and §5.5 of RSS-247:2015		
Unwanted emissions	YES	
FCC part 15.215 b) and §5.5 of RSS-247:2015		
Measurement of frequency stability §15.215 (c)	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 Radio part 15.247 according to limits, specified in this test report.

6. FREQUENCY HOPPING AND DIGITALLY MODULATED

Standard: FCC part 15 Radio part 15.247 and RSS-247 _ Issue 1, May 2015

Test method: FCC part 15.247 a) (1) & a) (1) (i) and RSS-247 _ Issue 1, May 2015 §5.1

6.1) Frequency hopping channel separation

The system uses 68 channels numbered in hexadecimal from 1 to 68.

Tests are done in max-hold mode in order to capture all hopping channels. Measurements are done in conducted emission.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Attenuator	Radiall	R412710124	4390	25/11/2015	24 months
Attenuator	Radiall	R412720124	4391	25/11/2015	24 months
Cable	STORM MICROWAVE	N-0.2m	10265	23/04/2015	24 months
Cable	C&C	N-3m	10557	25/11/2015	24 months
Receiver	Agilent Technologies	E4440A	5824	11/01/2016	24 months
Shielded enclosure	RAY PROOF	C.V1	1123	#	#
Software	Nexio	BAT EMC	0000	#	#
Thermohygrometer	Bioblock Scientific	Météostar	0963	31/10/2014	24 months
Thermohygrometer	Testo	608-H1	7561	26/09/2014	24 months

#: Permanent validity

BAT-EMC software version: V3.6.0.32

Results: See Curves hereafter.

Antenna base emission (conducted)
Intentional radiator (nb channels)

EMI2524

Frequency (MHz) : 920 MHz - 928 MHz (Analyzer mode)
 Settings: RBW: 100 kHz, VBW: 100 kHz, Auto, sweep count 1

FCC/CNR/FCC Part15 §247 b) (2) - Class Tr - Crête/
 Mes. Peak



Intentional radiator (nb channels) (Zoom) - 02/02/2016 15:25 - 2524

Date: 02/02/2016 15:25:21

Technician: DM

Detection:
 Peak max hold

T (°C): 22.8
 H (%): 38.7
 P (hpa): 1011

Comments:

Modification(s) during test:
 None

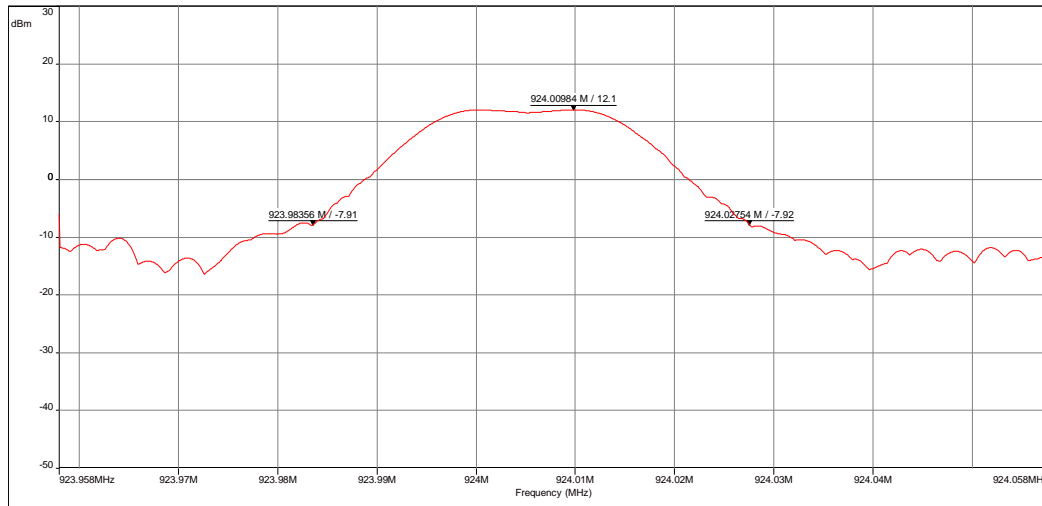
The system uses 68 channels.

Antenna base emission (conducted)
20dB bandwidth

EMI2518

Frequency (MHz) : 923.958 MHz - 924.058 MHz (Analyzer mode)
 Settings: RBW: 10 kHz, VBW: 10 kHz, Auto, sweep count 1

RADIO/EN 300 220-1 V2.4.1 §7.3 - Class c - QCrête/
 Mes. Peak



20dB bandwidth - 02/02/2016 15:40 - 2518

Date: 02/02/2016 15:40:15

Technician: DM

Detection:
 Peak max hold

T (°C): 22.8
 H (%): 38.7
 P (hpa): 1011

Comments:

Modification(s) during test:
 None

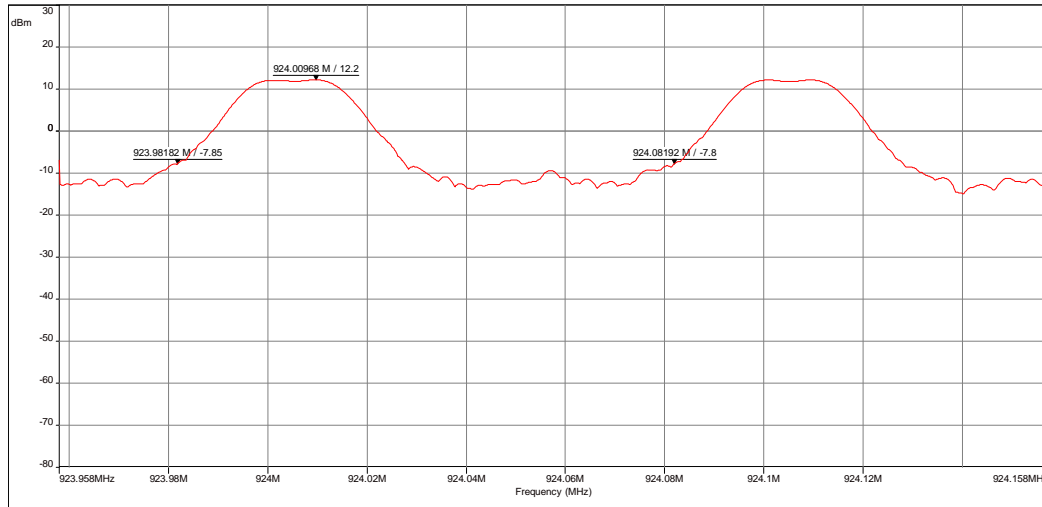
The 20dB bandwidth of each hopping channel is 43.98kHz (in RBW=10kHz). That is less than 500kHz.

Average power (conducted) Carrier Frequency Separation

EMI2519

Frequency (MHz) : 923.958 MHz - 924.158 MHz (Analyzer mode)
Settings: RBW: 10 kHz, VBW: 10 kHz, Auto, sweep count 1

RADIO/EN 300 220-1 V2.4.1 §7.3 - Class c - QCréteil
Mes.Peak



Carrier Frequency Separation - 02/02/2016 15:48 - 2519

Date: 02/02/2016 15:48:46

Technician: DM

Detection:
Peak max hold

T (°C): 22.8
H (%): 38.7
P (hpa): 1011

Comments:

Modification(s) during test:
None

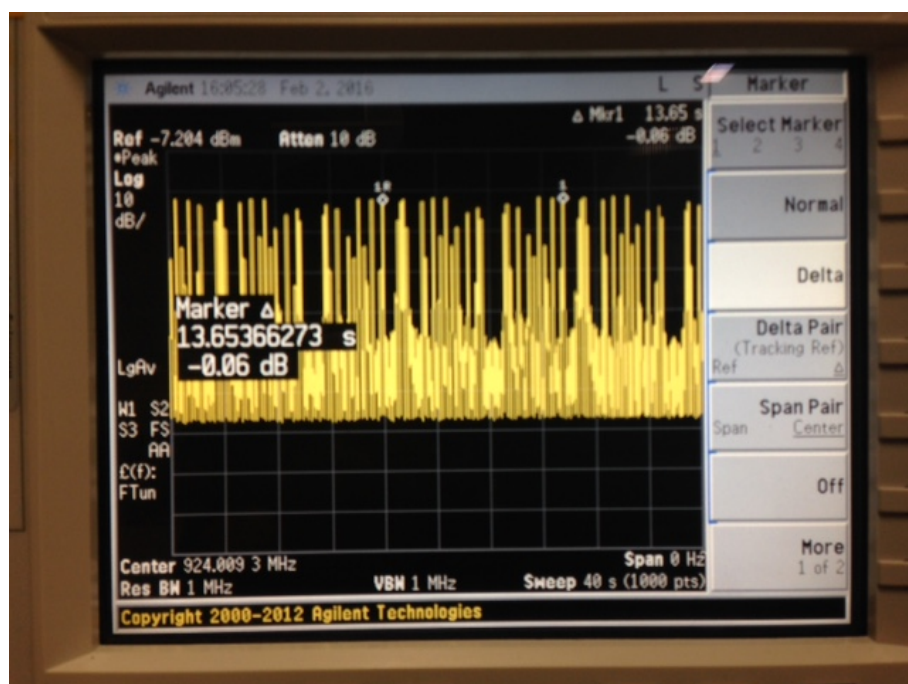
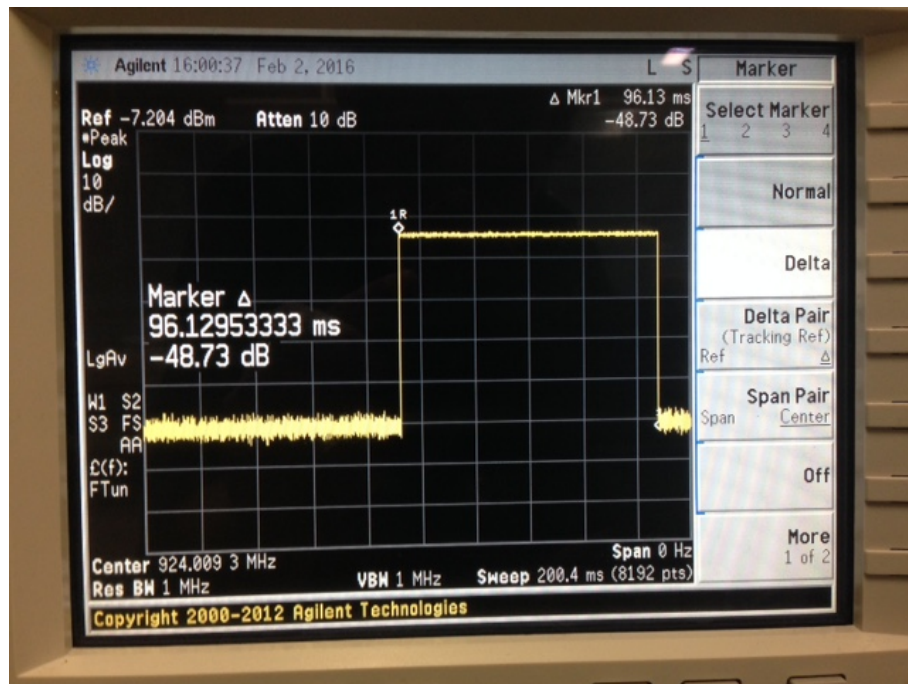
The channel separation is almost 100.1kHz which is greater than the 20dB bandwidth

6.2) Frequency hopping channel separation

The system uses 68 channels in any conditions and the averaging time of occupancy on any channel is less than 0.4 seconds within a period of 20.0 seconds.

The measurement during a long transmission gives 96.13ms every 13.65s on each channel, so the average time within a period of 20.0 second is 140.85ms which is less than the 400ms limit.

Thus the duty cycle correction factor is $20 \log (96.13/100) = -0.35\text{dB}$



7. MAXIMUM PEAK CONDUCTED POWER

Standard: FCC part 15 Radio part 15.247 and §5.1 of RSS-247:2015

Test method: FCC part 15.247 b) (2) and §5.1 of RSS-247:2015

Test configuration:

Frequency band	Tested configuration	Resolution bandwidth	Video bandwidth	Detection mode
920MHz-928MHz	All channels	100kHz	300kHz	Max-hold Peak

Test is done in max-hold peak detection. E.U.T. output is directly connected to spectrum analyzer through attenuators.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Attenuator	Radiall	R412710124	4390	25/11/2015	24 months
Attenuator	Radiall	R412720124	4391	25/11/2015	24 months
Cable	STORM MICROWAVE	N-0.2m	10265	23/04/2015	24 months
Cable	C&C	N-3m	10557	25/11/2015	24 months
Receiver	Agilent Technologies	E4440A	5824	11/01/2016	24 months
Shielded enclosure	RAY PROOF	C.V1	1123	#	#
Software	Nexio	BAT EMC	0000	#	#
Thermohygrometer	Bioblock Scientific	Météostar	0963	31/10/2014	24 months
Thermohygrometer	Testo	608-H1	7561	26/09/2014	24 months

BAT-EMC software version: V3.6.0.32

Results:

Maximum peak conducted: See Board below.

Frequency (MHz)	Channel	Maximum peak power (dBm)	Power limit (dBm)
920.7024	1	12.4	30
927.4208	68	12	30

Calculated radiated electric field at 3m distance:

Maximum Radiated electric field is calculated using the formula:

$$E(V/m) = \frac{\sqrt{30 \times P(W) \times G(dB)}}{d(m)} \text{ where } G \text{ is the declared antenna gain (dBi) in numerical.}$$

Frequency (MHz)	Conducted level	Gain (dBi)	Radiated power (dB μ V/m)
902.7024	12.4	6	113.63
927.4208	12	6	113.23

8. INTENTIONAL RADIATOR

Standard: FCC part 15 Radio part 15.247 and §5.5 of RSS-247:2015

Test method: FCC part 15.247 d) and §5.5 of RSS-247:2015

Test configuration:

Frequency band	Tested	Resolution bandwidth	Video bandwidth	Detection mode	E.U.T. height
902MHz-928MHz	Band Edge	100kHz	300kHz	Max-hold Peak	0cm

Test is done in max-hold peak detection; transmitter output is directly connected to a spectrum analyzer through attenuators. Measurements are performed on lower and upper channels groups.

The purpose of this test is to demonstrate in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

Test method deviation: No

Test equipment list:

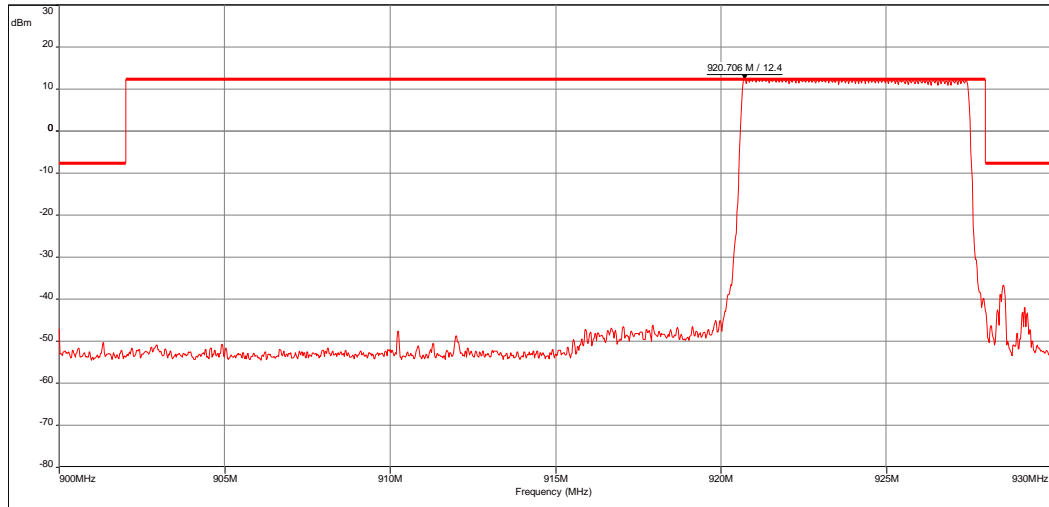
CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Attenuator	Radiall	R412710124	4390	25/11/2015	24 months
Attenuator	Radiall	R412720124	4391	25/11/2015	24 months
Cable	STORM MICROWAVE	N-0.2m	10265	23/04/2015	24 months
Cable	C&C	N-3m	10557	25/11/2015	24 months
Receiver	Agilent Technologies	E4440A	5824	11/01/2016	24 months
Shielded enclosure	RAY PROOF	C.V1	1123	#	#
Software	Nexio	BAT EMC	0000	#	#
Thermohygrometer	Bioblock Scientific	Météostar	0963	31/10/2014	24 months
Thermohygrometer	Testo	608-H1	7561	26/09/2014	24 months

BAT-EMC software version: V3.6.0.32

Results: See Graph(s) hereafter.

Average power (conducted)
EMI2522
Band Edge All channels (900-930MHz)

 Frequency (MHz) : 900 MHz - 930 MHz (Analyzer mode)
 Settings: RBW: 100 kHz, VBW: 300 kHz, Auto, sweep count 1

 FCC/CNR/FCC Part15 §247 d) (TRAXXENS) - Class Tr - Crête/
 Mes Peak


Band Edge All channels (900-930MHz) - 02/02/2016 16:13 - 2522

Date: 02/02/2016 16:13:16

Technician: DM

 Detection:
 Peak max hold

 T (°C): 22.8
 H (%): 38.7
 P (hpa): 1011

Comments:

 Modification(s) during test:
 None

9. UNWANTED EMISSIONS OUTSIDE OF §15.247 FREQUENCY BANDS

Standard: FCC part 15 Radio part 15.247

Test method: FCC part 15.109, 15.209, 15.215 b), 15.247

Frequency band	Initial position	Resolution bandwidth	Measuring distance	Detection mode	E.U.T. height
9kHz-150kHz	Front side	200Hz	10m	Average	80cm
150kHz-500kHz	Front side	10kHz	10m	Average	80cm
500kHz-30MHz	Front side	10kHz	10m	Quasi-peak	80cm
30MHz-1GHz	Front side	120kHz	3m	Quasi-peak	80cm
1GHz-10GHz	Front side	1MHz	3m	Average	80cm

Measurements below 30MHz are done with a loop antenna on a normalized Open Area Test Site as describe in the standard.

Measure is done with an antenna position of 0°, 90° and 45°.

Below 1GHz pre-measurements are done in a semi anechoic chamber at 3m. Finals measurements are conducted on a normalized Open Area Test Site.

Above 1GHz test is done in fully anechoic shielded chamber at 3m. E.U.T. is set on a styrofoam table. In order to find highest levels, tests are done on 3 axes of E.U.T.

Measurements are done in max-hold peak detection in hopping mode maximized at 360°.

Only highest levels are recorded on each configurations of E.U.T.

Limits: From 9kHz to 1GHz limits provided are these given in §15.209.

Above 1GHz average limit in restricted bands §15.205 is 54dBµV/m. Otherwise, the limit is 20dB under carrier emission level at 3m without averaging with duty cycle factor.

The averaging correction factor of -0.35dB is used only when necessary in restricted bands as defined in 15.205.

Test method deviation: No

Test equipment list:

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Antenna	ETS-Lindgren	3117	5456	17/08/2012	36 months
Antenna	Electro Metrics	BIA-30HF	1107	25/04/2015	36 months
Antenna	Rohde & Schwarz	HL223	1137	25/04/2015	36 months
Antenna	Rohde & Schwarz	HL223	3126	25/04/2015	36 months
Cable	Huber Suhner		8146	25/09/2015	24 months
Cable	C&C	N-3m	10557	25/11/2015	24 months
Cable	C&C	N-3m	10558	24/11/2015	24 months
Cable	C&C	N-3m	10558	25/11/2015	24 months
Cable	C&C	N-5m	10560	25/11/2015	24 months
Filter	Micro-Tronics	HPM 11630	4392	07/08/2014	12 months
Filter	Micro-Tronics	HPM 15162	10273	23/04/2015	24 months

CATEGORY	BRAND	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Filter	Wainwright Instruments	WRCG 2400/2483	9771	12/02/2015	24 months
Filter	Wainright	WTRCTV5-700-1000	-	-	-
Mast controller	INNCO	CO3000	10260	#	#
Open area test site	Emitech	Salinelles	3482	18/04/2014	36 months
Preamplifier	IMPULSE	CA118-546ACN	9169	11/08/2015	12 months
Receiver	Agilent Technologies	E4440A	5824	11/01/2016	24 months
Receiver	Rohde & Schwarz	ESVS10	3211	17/04/2015	24 months
Shielded room	RAY PROOF	C.V1	1123	#	#
Software	Nexio	BAT EMC	0000	#	#
Thermohygrometer	Testo	608-H1	7561	26/09/2014	24 months
Thermohygrometer	Bioblock Scientific	Météostar	0963	31/10/2014	24 months
Turntable	Heinrich Deisel	D4420	4038	#	#
Turntable controller	Heinrich Deisel	HD100	4036	#	#

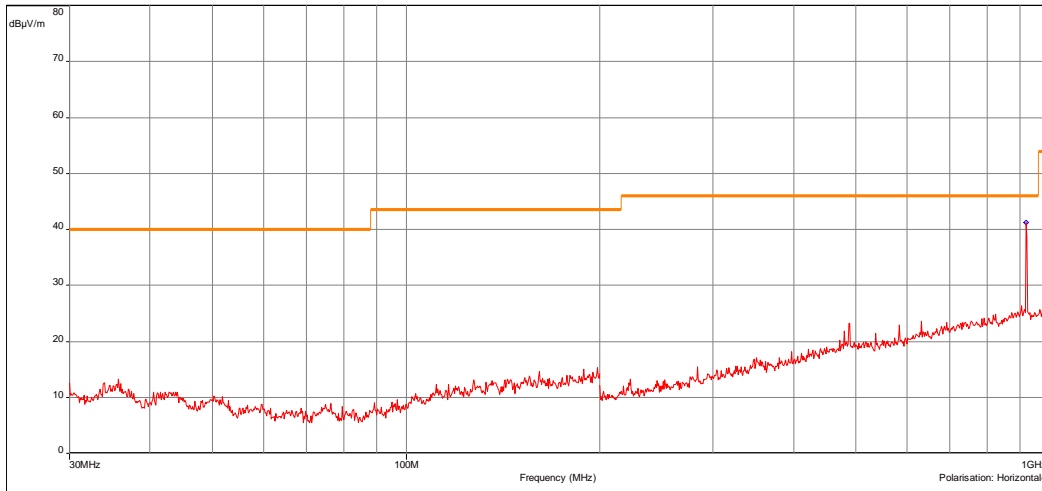
#: Permanent validity

BAT-EMC software version: V3.6.0.32
Results: See Board(s) below.

Radiated electric field measurement
Front side (<1GHz) / Low channel

EMI2535

- FCC/CNR/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- Mes. Peak (Horizontale)
- Peak/LimQ-Peak (Horizontale)



Date: 22/02/2016 10:52:35

Technician: DMO

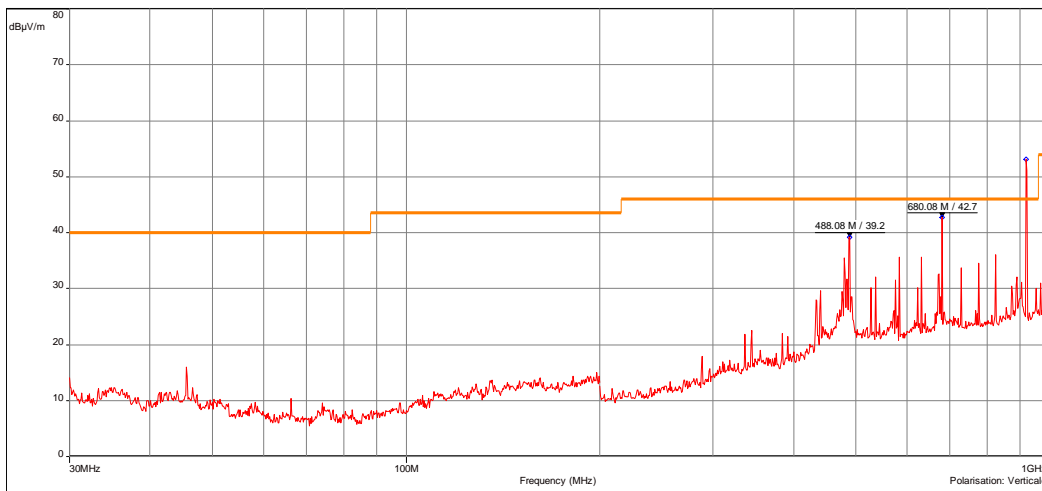
Detection:
Peak

T (°C): 22.1
H (%): 39.5
P (hpa): 1015

Comments:
920-928MHz :Util rejected frequency

Modification(s) during test:

- FCC/CNR/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- Mes. Peak (Verticale)
- Peak/LimQ-Peak (Verticale)

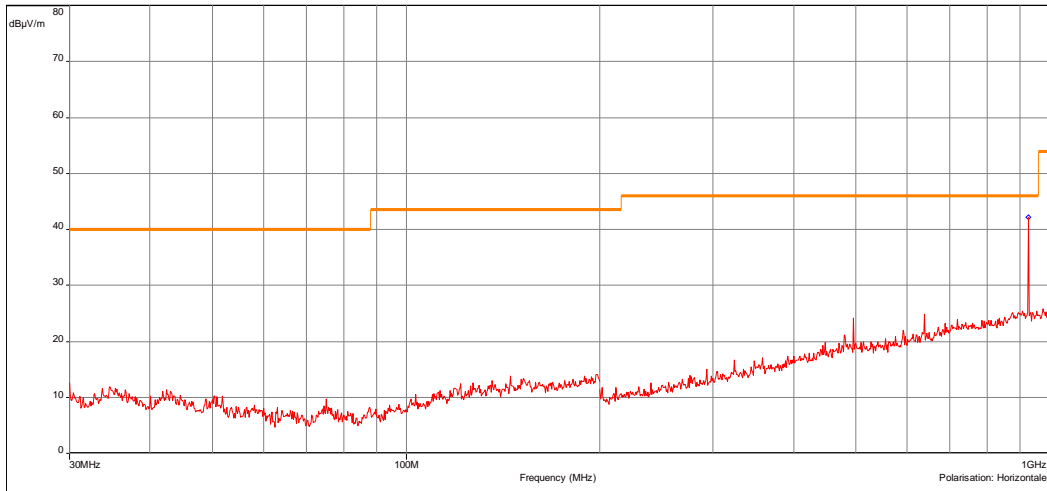


488.08 M / 39.2

680.08 M / 42.7

Radiated electric field measurement
Front side (<1GHz) / High channel
EMI2538

- FCC/CNR/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- Mes.Peak (Horizontale)
- Peak/LimQ-Peak (Horizontale)



Date: 22/02/2016 11:23:29

Technician: DMO

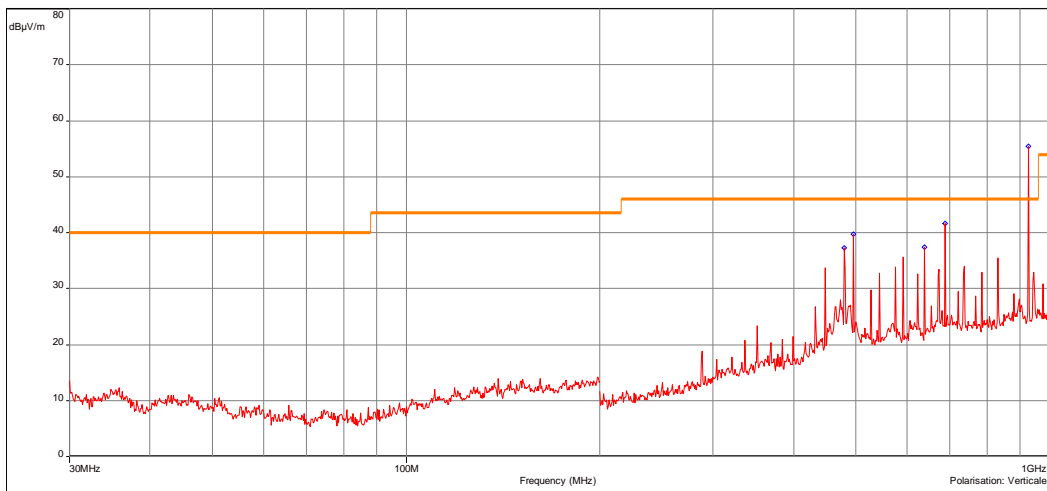
 Detection:
Peak

 T (°C): 22.1
 H (%): 39.5
 P (hpa): 1015

 Comments:
 920-928MHz :Util rejected frequency

Modification(s) during test:

- FCC/CNR/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/
- FCC/CNR/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- Mes.Peak (Verticale)
- Peak/LimQ-Peak (Verticale)



Radiated electric field measurement

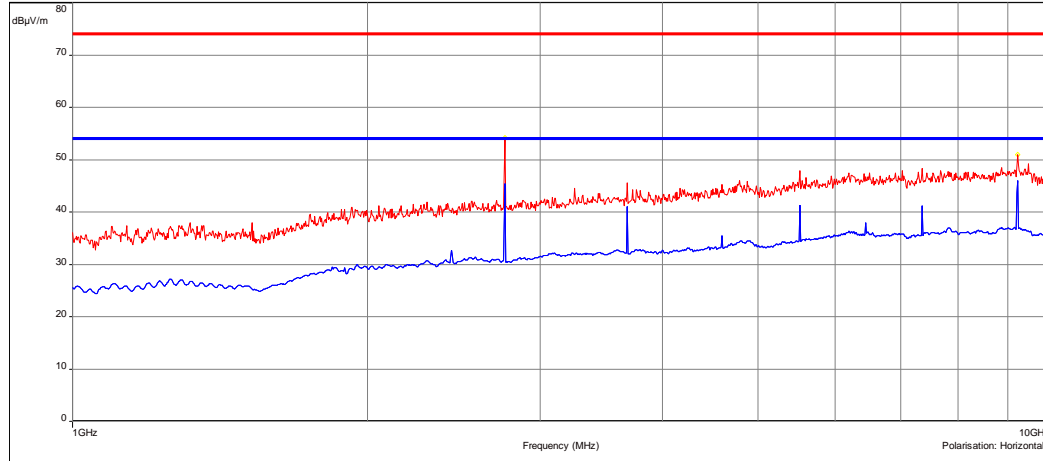
Front side (>1GHz) / Low channel

EMI2536

Frequency (MHz) : 1 GHz - 10 GHz (Analyzer mode)
 Settings: RBW: 1 MHz, VBW: 3 MHz, Auto, sweep count 1
 Polarisation : Horizontale
 Distance: 3 m

— RADIO/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
 — RADIO/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/
 — RADIO/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
 — C.E.M. (civ)/EN 55011 : 09 (A1) §6.2 Tab.5 - Class:B - QCrête/3.0m/
 — Mes. Peak (Horizontale)
 — Mes. Avg (Horizontale)
 ○ Peak/LimAvg (Horizontale)

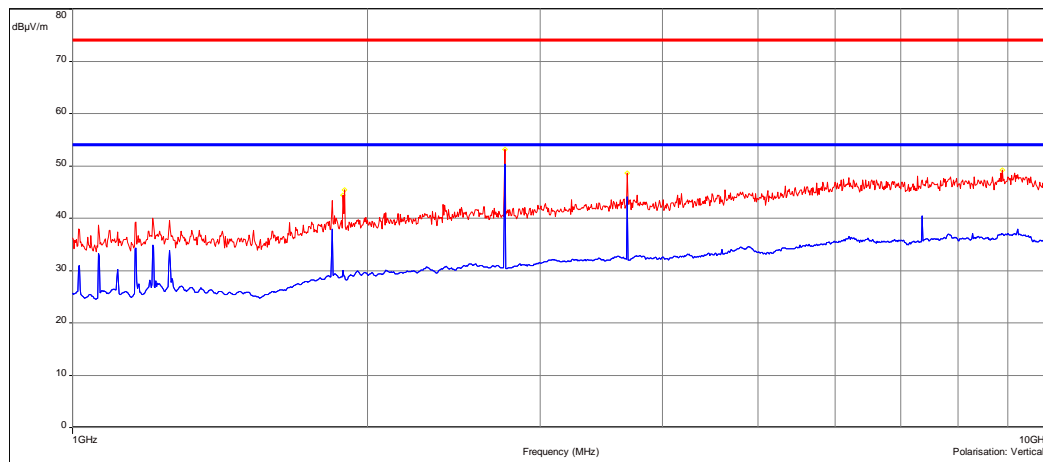
Date: 22/02/2016 11:05:46



Front side (>1GHz) / Low channel-Board 2/P-13 - 02/22/2016 11:05 - 2536

Frequency (MHz) : 1 GHz - 10 GHz (Analyzer mode)
 Settings: RBW: 1 MHz, VBW: 3 MHz, Auto, sweep count 1
 Polarisation : Verticale
 Distance: 3 m

— RADIO/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
 — RADIO/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/
 — RADIO/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
 — C.E.M. (civ)/EN 55011 : 09 (A1) §6.2 Tab.5 - Class:B - QCrête/3.0m/
 — Mes. Peak (Verticale)
 — Mes. Avg (Verticale)
 ○ Peak/LimAvg (Verticale)



Front side (>1GHz) / Low channel-Board 2/P-13 - 02/22/2016 11:05 - 2536

Technician:

 Detection:
Peak

 T (°C):
 H (%):
 P (hpa):

Comments:

Modification(s) during test:

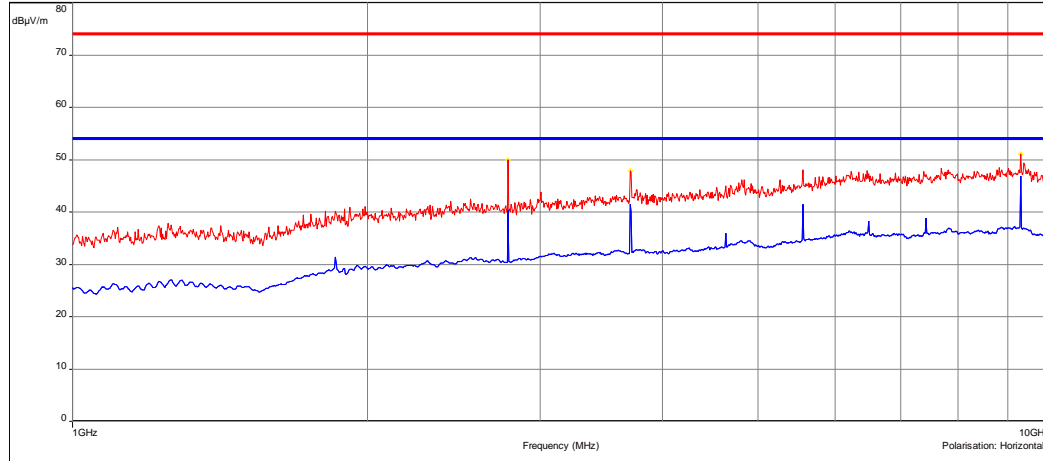
Radiated electric field measurement Front side (>1GHz) / High channel

EMI2537

Frequency (MHz) : 1 GHz - 10 GHz (Analyzer mode)
 Settings: RBW: 1 MHz, VBW: 3 MHz, Auto, sweep count 1
 Polarisation : Horizontale
 Distance: 3 m

- RADIO/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
- RADIO/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/
- RADIO/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- C.E.M. (civ)/EN 55011 : 09 (A1) §6.2 Tab.5 - Class:B - QCrête/3.0m/
- Mes. Peak (Horizontale)
- Mes. Avg (Horizontale)
- Peak/LimAvg (Horizontale)

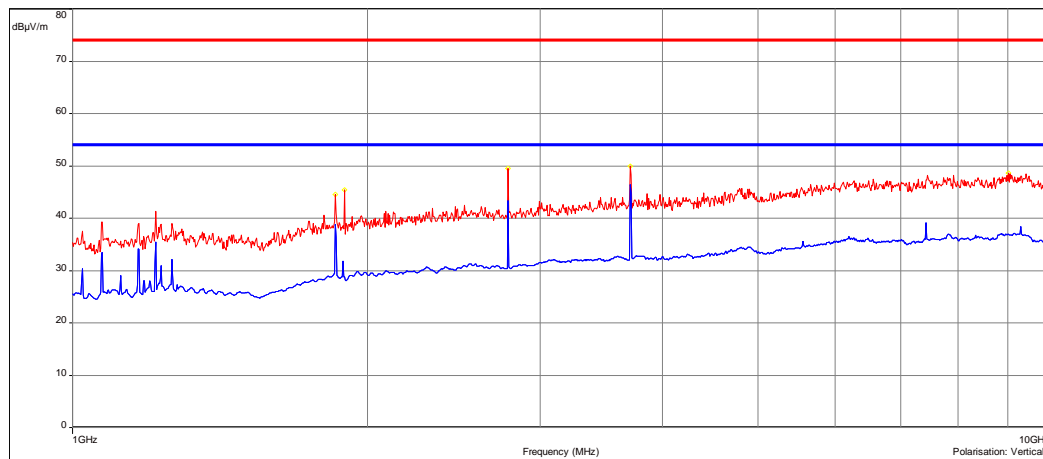
Date: 22/02/2016 11:15:08



Front side (>1GHz) / High channel-Board 2P=13 - 02/22/2016 11:15 - 2537

Frequency (MHz) : 1 GHz - 10 GHz (Analyzer mode)
 Settings: RBW: 1 MHz, VBW: 3 MHz, Auto, sweep count 1
 Polarisation : Verticale
 Distance: 3 m

- RADIO/FCC Part 15 §209 - Class:Tx - Moyenne/3.0m/
- RADIO/FCC Part 15 §209 - Class:Tx - QCrête/3.0m/
- RADIO/FCC Part 15 §209 - Class:Tx - Crête/3.0m/
- C.E.M. (civ)/EN 55011 : 09 (A1) §6.2 Tab.5 - Class:B - QCrête/3.0m/
- Mes. Peak (Verticale)
- Mes. Avg (Verticale)
- Peak/LimAvg (Verticale)



Front side (>1GHz) / High channel-Board 2P=13 - 02/22/2016 11:15 - 2537

Technician:

Detection:
Peak

T (°C):
H (%):
P (hpa):

Comments:

Modification(s) during test:

LOW CHANNEL

Frequency (MHz)	Polarization	Level (dB μ V/m)	Detector	Limit (dB μ V/m)	Margin (dB)
488.08	V	38.90	Quasi peak	46	-7.10
680.08	V	41.08	Quasi peak	46	-4.92
1839.7	V	37.98	Average	54	-16.02
2760.4	V	50.38	Average	54	-3.62
3680.2	V	44.14	Average	54	-9.86
7280.2	V	40.51	Average	54	-13.49
2760.4	H	45.40	Average	54	-8.60
3680.2	H	41.04	Average	54	-12.96
4600	H	35.50	Average	54	-18.5
5520.7	H	41.26	Average	54	-12.74
6422.5	H	37.99	Average	54	-16.01
7360.3	H	41.13	Average	54	-12.87
9199.9	H	46.02	Average	54	-7.98

All other radiated emissions are at least 20dB below the limit.

HIGH CHANNEL

Frequency (MHz)	Polarization	Level (dB μ V/m)	Detector	Limit (dB μ V/m)	Margin (dB)
480.00	V	37.21	Quasi peak	46	-8.79
495.44	V	39.22	Quasi peak	46	-6.78
639.44	V	37.23	Quasi peak	46	-16.77
687.52	V	42.3	Quasi peak	46	-11.7
1855	V	38.88	Average	54	-15.12
2782	V	43.33	Average	54	-10.67
3709.9	V	46.49	Average	54	-7.51
5563	V	35.60	Average	54	-18.4
7418.8	V	39.11	Average	54	-14.89
9275.5	V	38.40	Average	54	-15.6
1855	H	31.42	Average	54	-22.58
2782	H	40.23	Average	54	-13.77
3709.9	H	41.46	Average	54	-12.54
4636.9	H	35.85	Average	54	-18.15
5563.9	H	41.04	Average	54	-12.96
6491.8	H	38.30	Average	54	-15.70
7418.8	H	38.87	Average	54	-15.13
9273.7	H	46.91	Average	54	-7.09

All other radiated emissions are at least 20dB below the limit.

10. MEASUREMENT OF FREQUENCY STABILITY §15.215 (C) AND RSS-GEN

Standard: FCC part 15 Radio part 15.215 c)

Test method: FCC part 15.215 c)

The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Measurements were conducted according to the operating temperature range and voltage range given in the user guide.

Measure is performed in conducted emission.

Test method deviation: Measurement in maxhold mode with modulation.

Test equipment list:

CATEGORIE	MARQUE	TYPE	N° EMITECH	DATE CAL.	DATE VAL
Attenuator	Radiall	R412710124	4390	21/01/2014	24 months
Attenuator	Radiall	R412720124	4391	21/01/2014	24 months
Cable	C&C	N-3m	10557	25/11/2015	24 months
Receiver	Agilent Technologies	E4440A	5824	11/01/2016	24 months
Software	Nexio	BAT EMC	0000	#	#
Thermohygrometer	Bioblock Scientific	Météostar	0963	31/10/2014	24 months
Thermohygrometer	Testo	608-H1	7561	26/09/2014	24 months

Results: See Board(s) below.

Conditions	Temperature °C	Power supply Vdc	Frequency MHz	Frequency error kHz
Normal conditions	23	5	927.4208	-
Extremes tests conditions	-20	5	927.41066	-10.14
	55	5	927.4112	-8.58

Conclusion: No out of band operation under extremes tests conditions.

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

ANNEX: PHOTOGRAPH(S)

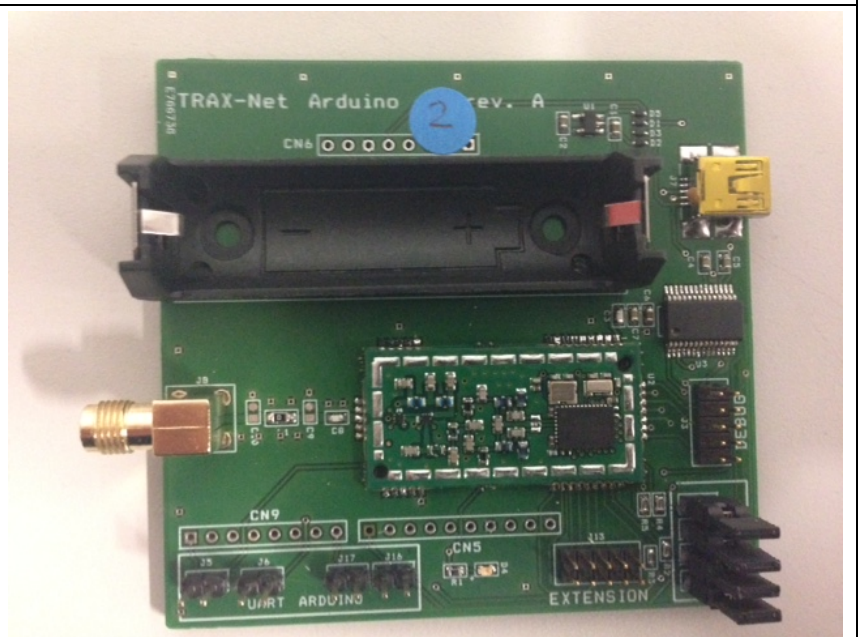
EQUIPMENT UNDER TEST (E.U.T.) PHOTOGRAPH(S)

WING 4 TRAX

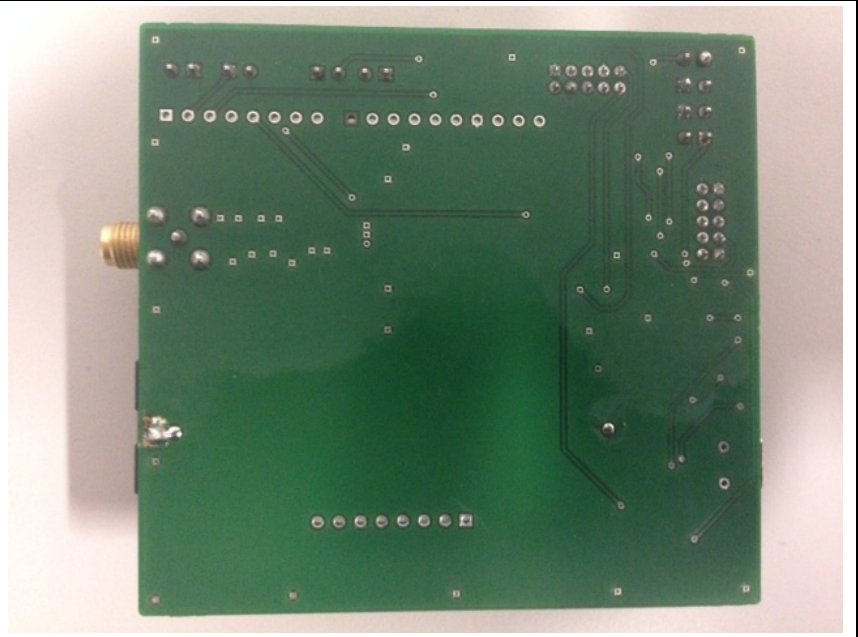
E.U.T. view
(on host top view without metallic
frame)



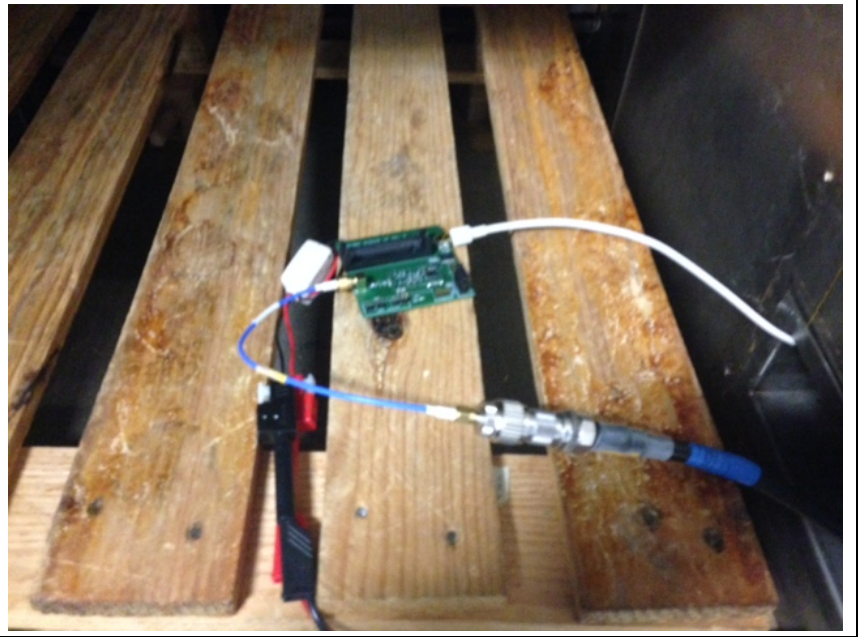
E.U.T. view
(on host top view without metallic
frame)



E.U.T. view
(host bottom view)



Frequency stability
(inside climatic enclosure)



Radiated electric field in anechoic chamber



Radiated electric field in anechoic chamber (f>1GHz)



Open area test site position



Open area test site measurement



Open area test site measurement
($<30\text{MHz}$)

