



LCIE

TEST REPORT

N°: 137086-675802CR2015-08-21

Subject Electromagnetic compatibility and Radio spectrum Matters
(ERM) tests according to standards:
47 CFR Part 15.407 (DFS Test Only)

Issued to Aava Mobile Oy
Nahkatehtaankatu 2
Oulu
Finland
90130

FCC Registration Number 166175
Industry Canada Number 6230B

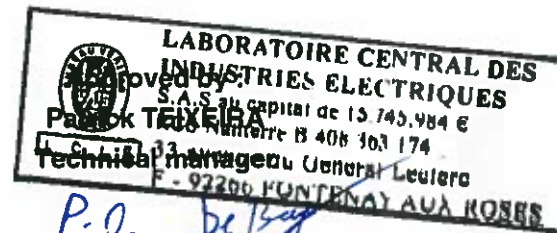
Apparatus under test

- ↳ Product **INARI Tablet Computer**
- ↳ Trade mark **Aava Mobile**
- ↳ Manufacturer **Aava Mobile Oy**
- ↳ Model under test **INARI5-WLAN-1**
- ↳ Serial number **EB44900029**
- ↳ FCC ID **2ABVH-INARI51**
- ↳ IC **11875A-INARI51**

Test date August 18th, 2015 to August 19th, 2015
Test location Fontenay Aux Roses
Test performed by Stéphane PHOUDIAH
Composition of document 28 pages

Initial issued on August 21th, 2015
Modified on August 21th, 2015

Written by :
Stéphane PHOUDIAH
Tests operator



This document shall not be reproduced, except in full, without the written approval of the LCIE. This document contains results related only to the item tested. It does not imply the conformity of the whole production to the item tested. Unless otherwise specified; the decision of conformity takes into account the uncertainty of measures. This document does not anticipate any certification decision.

LCIE	33, av du Général Leclerc	Tel : +33 1 40 95 60 60	Société par Actions Simplifiée
Laboratoire Central	BP 8	Fax : +33 1 40 95 86 56	au capital de 15 745 984 €
des Industries Electriques	92266 Fontenay-aux-Roses cedex	contact@lcie.fr	RCS Nanterre B 408 363 174
Une société de Bureau Veritas	France	www.lcie.fr	



SUMMARY

1.	TEST PROGRAM.....	3
2.	EQUIPMENT UNDER TEST: CONFIGURATION (DECLARED BY PROVIDER)	4
3.	DFS DETECTION THRESHOLDS DETERMINATION, REFERENCE NOISE LEVEL & CHANNEL LOADING	10
4.	DYNAMIC FREQUENCY SELECTION (DFS): CHANNEL MOVE TIME & CHANNEL CLOSING TRANSMISSION TIME	16
5.	DYNAMIC FREQUENCY SELECTION (DFS): NON-OCCUPANCY PERIOD	22
6.	UNCERTAINTIES CHART	27
7.	RADAR TEST SIGNALS	28



1. TEST PROGRAM

References

- 47 CFR Part 15.407
- 905462 D02 UNII DFS Compliance Procedure New Rules v01r02
- 905462 D04 Test Mode New Rules v01
- 905462 D03 Client Without DFS New Rules v01r01
- 905462 D06 802.11 Channel Plans New Rules v01
- 905462 D07 Overview UNII Rules v01

Requirement:

Test Description prior to use of a channel	Test result - Comments			
Non-occupancy period	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP
DFS Detection Threshold	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA (1)	<input type="checkbox"/> NP
Channel Availability Check Time	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA(1)	<input type="checkbox"/> NP
U-NII Detection Bandwidth	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA (1)	<input type="checkbox"/> NP
This table is a summary of test report, see conclusion of each clause of this test report for detail.				

Test Description during normal operation	Test result - Comments			
DFS Detection Threshold	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA (1)	<input type="checkbox"/> NP
Channel Closing Transmission Time	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP
Channel Move Time	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP
U-NII Detection Bandwidth	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA	<input type="checkbox"/> NP
This table is a summary of test report, see conclusion of each clause of this test report for detail.				

(1): The EUT is a client without radar detection.

- PASS: EUT complies with standard's requirement
- FAIL: EUT does not comply with standard's requirement
- NA: Not Applicable
- NP: Test Not Performed
- DP: Declaration of provider

2. EQUIPMENT UNDER TEST: CONFIGURATION (DECLARED BY PROVIDER)

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):
INARI5-WLAN-1

Serial Number: 11875A-INARI51



Equipment Under Test



Inputs/outputs - Cable:

Access	Type
Power & Data	USB

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Wireless-AC1750 Dual Band Gigabit Router	DLINK DIR-868L	RZ641E8004888	FCC ID:RRK2012060056-1 IC ID: 4833A-WMCA01A1
Laptop	Lenovo T400	R8-KXRKM 09/12	-
Laptop	Lenovo T400	L3-AVV9Z 09/03	-

Equipment information:

Type:	WIFI			
Frequency band:	<input checked="" type="checkbox"/> 5150MHz-5250MHz	<input checked="" type="checkbox"/> 5250MHz-5350MHz	<input checked="" type="checkbox"/> 5470MHz-5725MHz	
Standard:	<input checked="" type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n HT20	<input checked="" type="checkbox"/> 802.11n HT40	
	<input type="checkbox"/> 802.11ac VHT80		<input type="checkbox"/> 802.11ac VHT160	
Spectrum Modulation:	<input checked="" type="checkbox"/> OFDM			
Channel bandwidth:	<input checked="" type="checkbox"/> 20MHz	<input checked="" type="checkbox"/> 40MHz	<input type="checkbox"/> 80MHz	<input type="checkbox"/> 160MHz
Antenna Type:	<input checked="" type="checkbox"/> Integral		<input type="checkbox"/> External	
Antenna connector:	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
Transmit chains:	<input type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8
	<input type="checkbox"/> Single antenna		<input checked="" type="checkbox"/> Symmetrical	
	<input type="checkbox"/> Asymmetrical			
	Gain 1: 0dBi	Gain 2: 1,8dBi	Gain 3: dBi	Gain 4: dBi
	Gain 5: dBi	Gain 6: dBi	Gain 7: dBi	Gain 8: dBi
Accumulated Gain: dBi				
TPC:	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No	
Receiver chains	<input type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8
Type of equipment:	<input checked="" type="checkbox"/> Stand-alone		<input type="checkbox"/> Plug-in	
Specific mode:	<input type="checkbox"/> Ad-Hoc		<input type="checkbox"/> Bridge	
System type:	<input checked="" type="checkbox"/> IP based		<input type="checkbox"/> Frame based	
DFS operation:	<input type="checkbox"/> Master		<input type="checkbox"/> Slave with radar detection	
User access restriction:	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No	
Equipment type:	<input checked="" type="checkbox"/> Production model		<input type="checkbox"/> Pre-production model	
Type of power source:	<input checked="" type="checkbox"/> AC power supply		<input type="checkbox"/> DC power supply	
Operating voltage range:	Vnom:		<input checked="" type="checkbox"/> 3,8Vdc	



CHANNEL PLAN		
802.11a / 802.11n HT20		
Channel	Frequency (MHz)	Available Channel
36	5180	<input checked="" type="checkbox"/>
40	5200	<input checked="" type="checkbox"/>
44	5220	<input checked="" type="checkbox"/>
48	5240	<input checked="" type="checkbox"/>
52	5260	<input checked="" type="checkbox"/>
56	5280	<input checked="" type="checkbox"/>
60	5300	<input checked="" type="checkbox"/>
64	5320	<input checked="" type="checkbox"/>
100	5500	<input checked="" type="checkbox"/>
104	5520	<input checked="" type="checkbox"/>
108	5540	<input checked="" type="checkbox"/>
112	5560	<input checked="" type="checkbox"/>
116	5580	<input checked="" type="checkbox"/>
132	5660	<input checked="" type="checkbox"/>
136	5680	<input checked="" type="checkbox"/>
140	5700	<input checked="" type="checkbox"/>
149	5745	<input checked="" type="checkbox"/>
153	5765	<input checked="" type="checkbox"/>
157	5785	<input checked="" type="checkbox"/>
161	5805	<input checked="" type="checkbox"/>
165	5825	<input checked="" type="checkbox"/>



CHANNEL PLAN		
802.11n HT40		
Channel	Frequency (MHz)	Available Channel
36+40	5190	<input checked="" type="checkbox"/>
44+48	5230	<input checked="" type="checkbox"/>
52+56	5270	<input checked="" type="checkbox"/>
C1=60+64	5310	<input checked="" type="checkbox"/>
100+104	5510	<input checked="" type="checkbox"/>
108+112	5550	<input checked="" type="checkbox"/>
132+136	5670	<input checked="" type="checkbox"/>
149+153	5755	<input checked="" type="checkbox"/>
157+161	5795	<input checked="" type="checkbox"/>

No DFS Channel
DFS Channel

DATA RATE		
802.11a		
Data Rate (Mbps)	Modulation Type	Modulation Worst Case
6	BPSK	<input checked="" type="checkbox"/>
9	BPSK	<input type="checkbox"/>
12	QPSK	<input type="checkbox"/>
18	QPSK	<input type="checkbox"/>
24	16-QAM	<input type="checkbox"/>
36	16-QAM	<input type="checkbox"/>
48	64-QAM	<input type="checkbox"/>
54	64-QAM	<input type="checkbox"/>



DATA RATE						
802.11n HT20						
Available for EUT	MCS Index	Spatial streams	Modulation	Data Rate (Mbps)		Worst Case Modulation
				(GI = 800ns)	(GI = 400ns)	
<input checked="" type="checkbox"/>	0	1	BPSK	6.5	7.2	<input type="checkbox"/>
<input checked="" type="checkbox"/>	1	1	QPSK	13	14.4	<input type="checkbox"/>
<input checked="" type="checkbox"/>	2	1	QPSK	19.5	21.7	<input type="checkbox"/>
<input checked="" type="checkbox"/>	3	1	16-QAM	26	28.9	<input type="checkbox"/>
<input checked="" type="checkbox"/>	4	1	16-QAM	39	43.3	<input type="checkbox"/>
<input checked="" type="checkbox"/>	5	1	64-QAM	52	57.8	<input type="checkbox"/>
<input checked="" type="checkbox"/>	6	1	64-QAM	58.5	65	<input type="checkbox"/>
<input checked="" type="checkbox"/>	7	1	64-QAM	65	72.2	<input type="checkbox"/>
<input checked="" type="checkbox"/>	8	2	BPSK	13	14.4	<input type="checkbox"/>
<input checked="" type="checkbox"/>	9	2	QPSK	26	28.9	<input type="checkbox"/>
<input checked="" type="checkbox"/>	10	2	QPSK	39	43.3	<input type="checkbox"/>
<input checked="" type="checkbox"/>	11	2	16-QAM	52	57.8	<input type="checkbox"/>
<input checked="" type="checkbox"/>	12	2	16-QAM	78	86.7	<input type="checkbox"/>
<input checked="" type="checkbox"/>	13	2	64-QAM	104	115.6	<input type="checkbox"/>
<input checked="" type="checkbox"/>	14	2	64-QAM	117	130.3	<input type="checkbox"/>
<input checked="" type="checkbox"/>	15	2	64-QAM	130	144.4	<input checked="" type="checkbox"/>

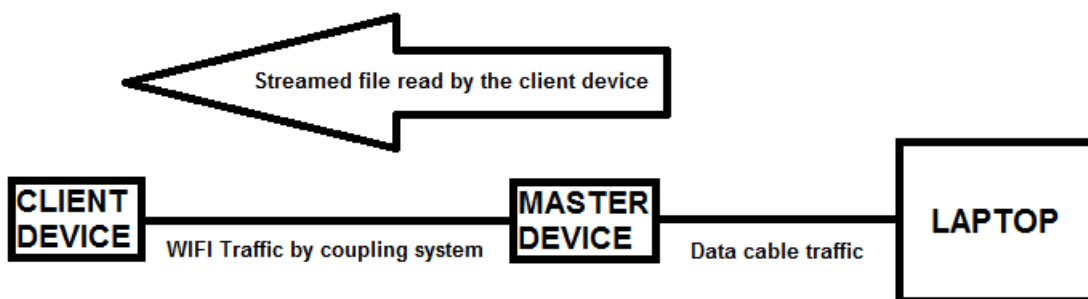
DATA RATE						
802.11n HT40						
Available for EUT	MCS Index	Spatial streams	Modulation	Data Rate (Mbps)		Worst Case Modulation
				(GI = 800ns)	(GI = 400ns)	
<input checked="" type="checkbox"/>	0	1	BPSK	13	15	<input type="checkbox"/>
<input checked="" type="checkbox"/>	1	1	QPSK	27	30	<input type="checkbox"/>
<input checked="" type="checkbox"/>	2	1	QPSK	40.5	45	<input type="checkbox"/>
<input checked="" type="checkbox"/>	3	1	16-QAM	54	60	<input type="checkbox"/>
<input checked="" type="checkbox"/>	4	1	16-QAM	81	90	<input type="checkbox"/>
<input checked="" type="checkbox"/>	5	1	64-QAM	108	120	<input type="checkbox"/>
<input checked="" type="checkbox"/>	6	1	64-QAM	121.5	135	<input type="checkbox"/>
<input checked="" type="checkbox"/>	7	1	64-QAM	135	150	<input type="checkbox"/>
<input checked="" type="checkbox"/>	8	2	BPSK	27	30	<input type="checkbox"/>
<input checked="" type="checkbox"/>	9	2	QPSK	54	60	<input type="checkbox"/>
<input checked="" type="checkbox"/>	10	2	QPSK	81	90	<input type="checkbox"/>
<input checked="" type="checkbox"/>	11	2	16-QAM	108	120	<input type="checkbox"/>
<input checked="" type="checkbox"/>	12	2	16-QAM	162	180	<input type="checkbox"/>
<input checked="" type="checkbox"/>	13	2	64-QAM	216	240	<input type="checkbox"/>
<input checked="" type="checkbox"/>	14	2	64-QAM	243	270	<input type="checkbox"/>
<input checked="" type="checkbox"/>	15	2	64-QAM	270	300	<input checked="" type="checkbox"/>

2.2. RUNNING MODE

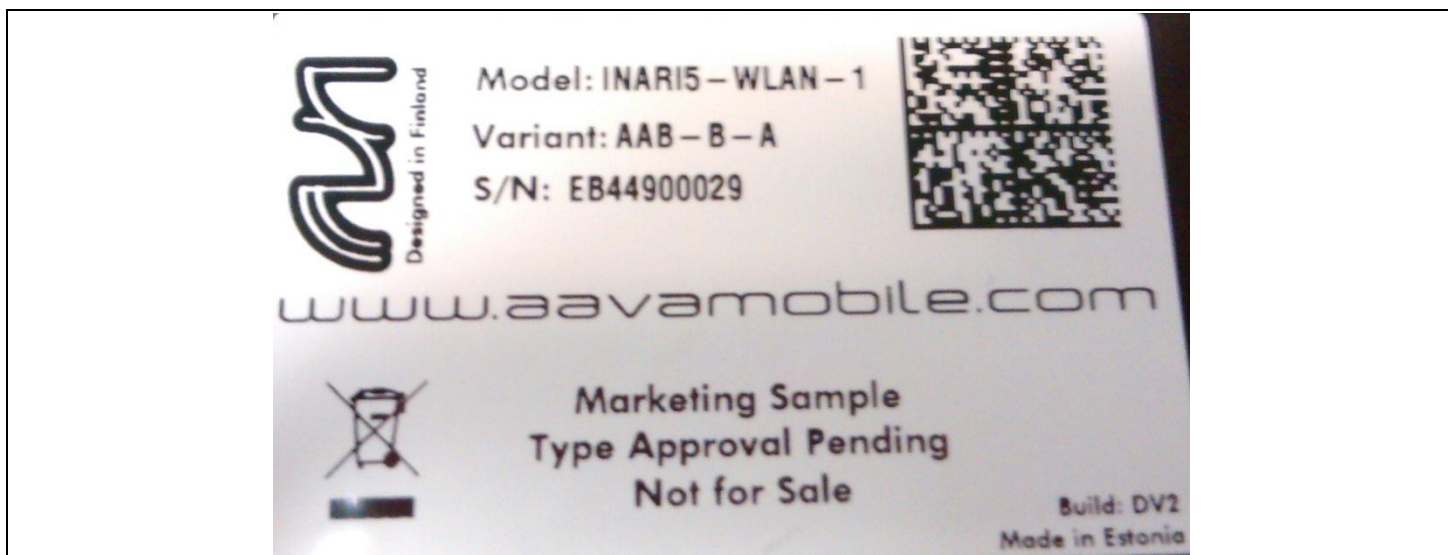
The EUT is set in the following modes during tests:

- System testing is performed with the designed MPEG test file “6 ½ Magic Hour” (<http://ntiacsd.ntia.doc.gov/dfs/>) that streams video for channel loading from the Master Device to the Client Device on the test channel.

The streaming file is played as follow:



2.3. EQUIPMENT LABELLING



2.4. EQUIPMENT MODIFICATION

None Modification:

3. DFS DETECTION THRESHOLDS DETERMINATION, REFERENCE NOISE LEVEL & CHANNEL LOADING

3.1. TEST CONDITIONS

Test performed by : Stéphane PHOUDIAH
Date of test : August 18th, 2015 & August 19th, 2015
Ambient temperature : 25°C
Relative humidity : 36%

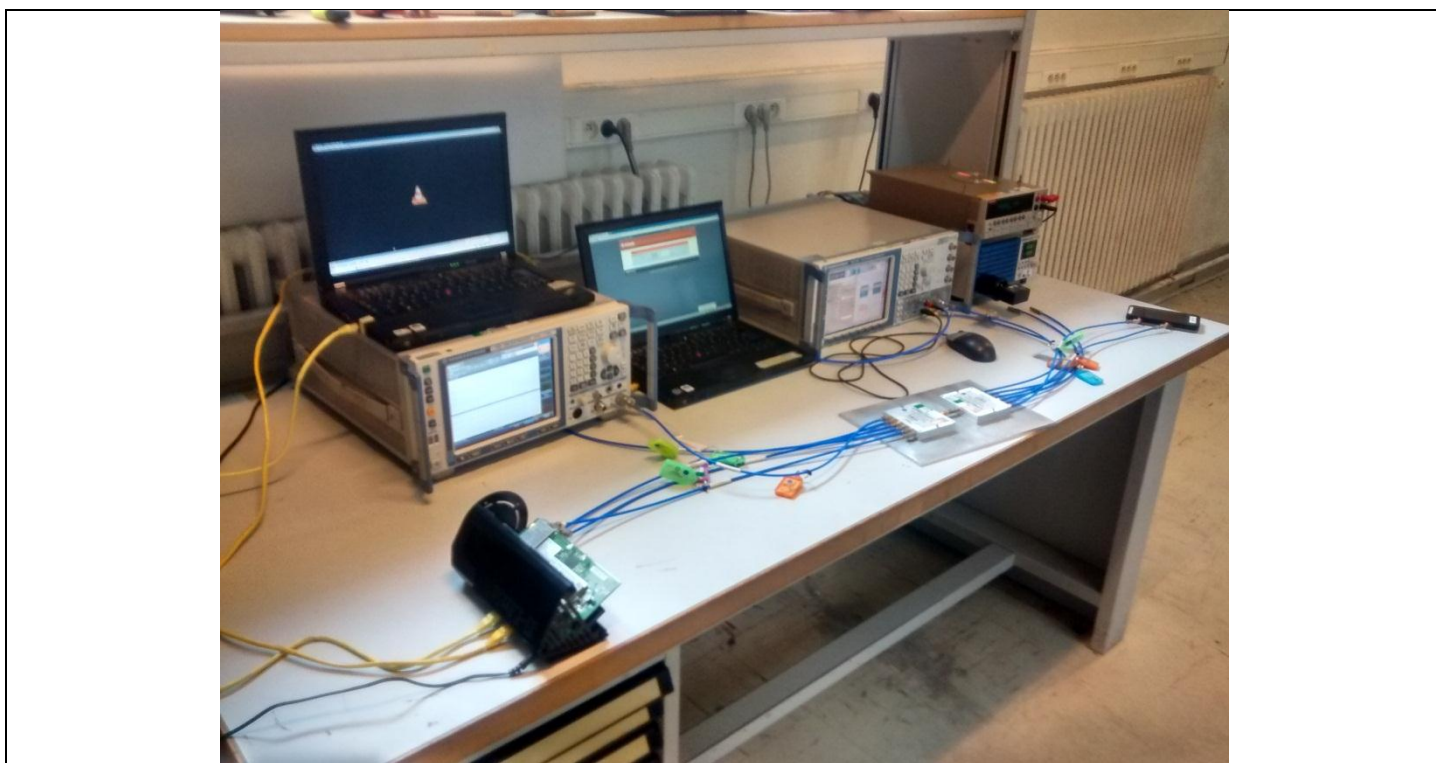
3.2. TEST SETUP

- The Equipment under Test is installed:

- On a table
- In an anechoic chamber

-Measurement is performed with a spectrum analyzer

- On the EUT conducted access
- With a test fixture



Photograph for DFS Detection Thresholds Determination, Reference Noise Level, Channel Loading

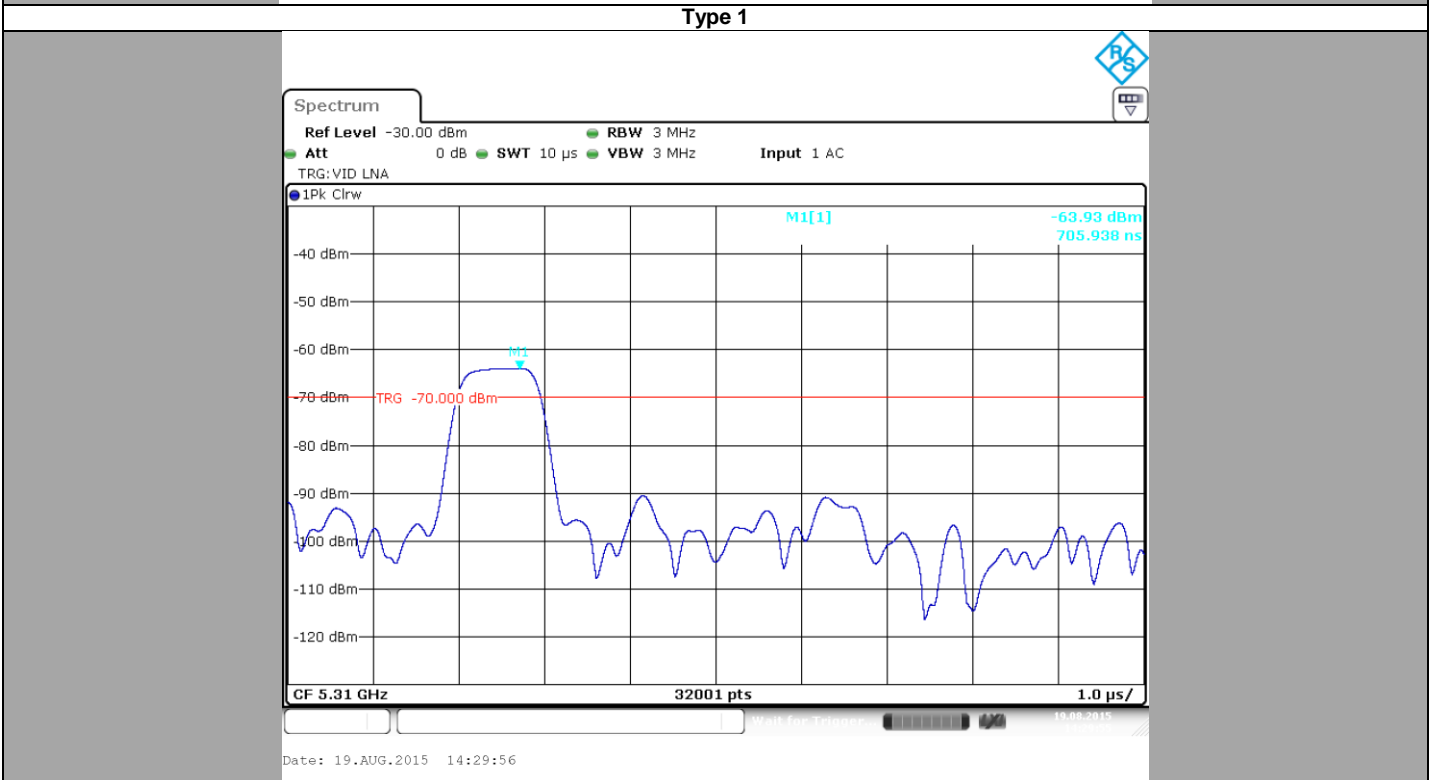
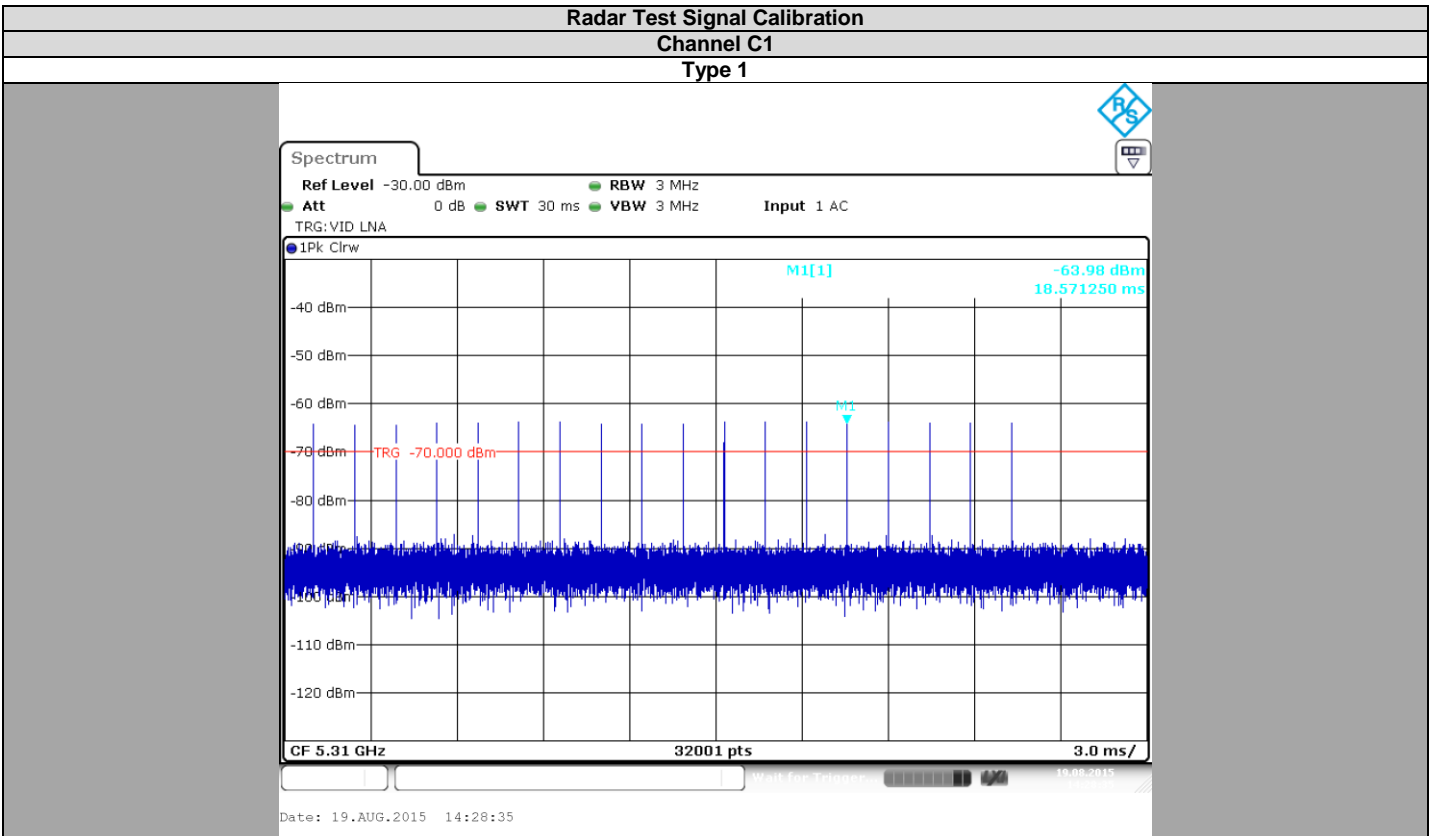


3.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Multi-meter	KEITHLEY	2000	A1241084	2014/02	2016/02
EMI receiver/ Spectrum analyzer	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/03
RF cable	Télédyne	920-0202-024	A5329662	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329663	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329664	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329665	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329666	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329667	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329668	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329669	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329670	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329671	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329672	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329673	2014/04	2016/04
Vector signal generator	ROHDE & SCHWARZ	SMJ100A	A5444007	Verified with calibrated EMI receiver/ Spectrum analyzer before testing	
Programmable AC/DC power supply	KIKUSUI	PCR500M	A7040079	Verified with calibrated multimeter before testing	
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122229	2014/04	2016/04
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122230	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122231	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122232	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122233	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122234	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122238	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122239	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122240	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122241	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122242	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122243	2014/04	2016/04
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132040	2014/04	2016/04
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132041	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152075	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152076	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152077	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152078	2014/04	2016/04



3.4. RESULTS





Reference Noise Level
Channel

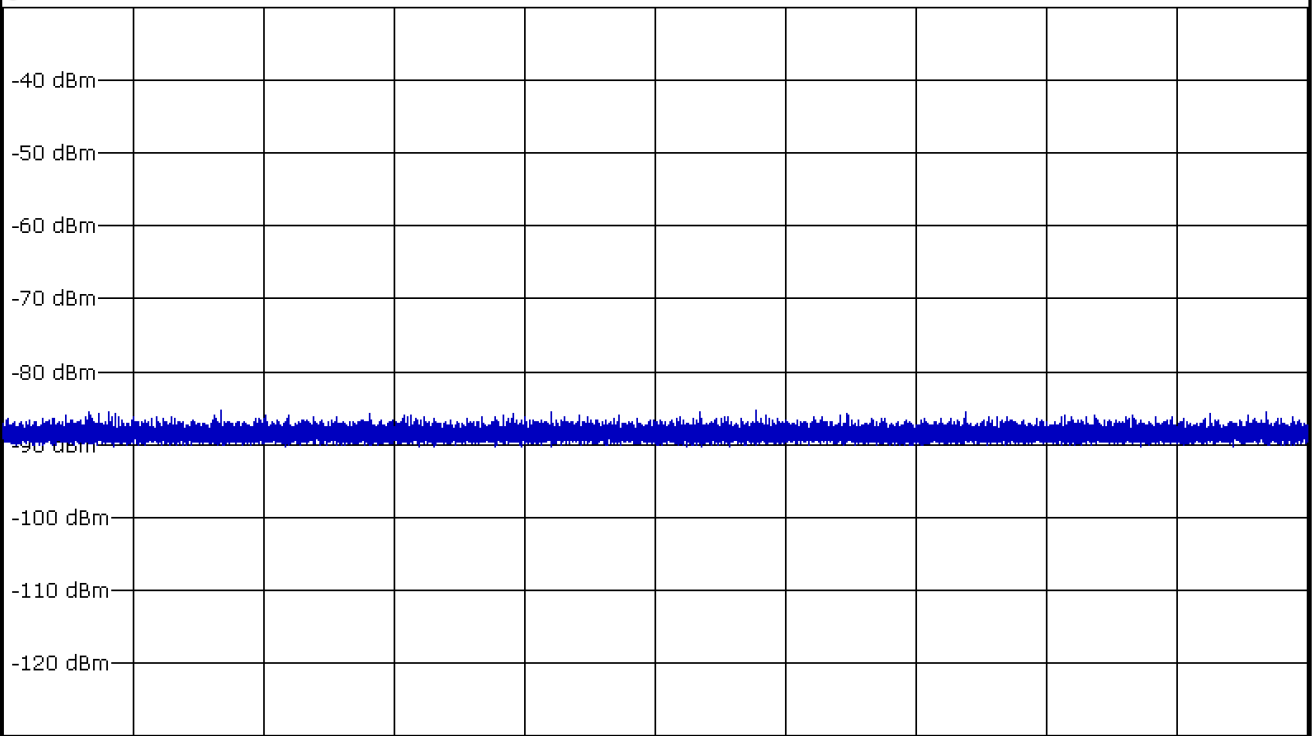


Spectrum

Ref Level -30.00 dBm RBW 3 MHz
Att 0 dB SWT 12 s VBW 3 MHz Input 1 AC

SGL LNA

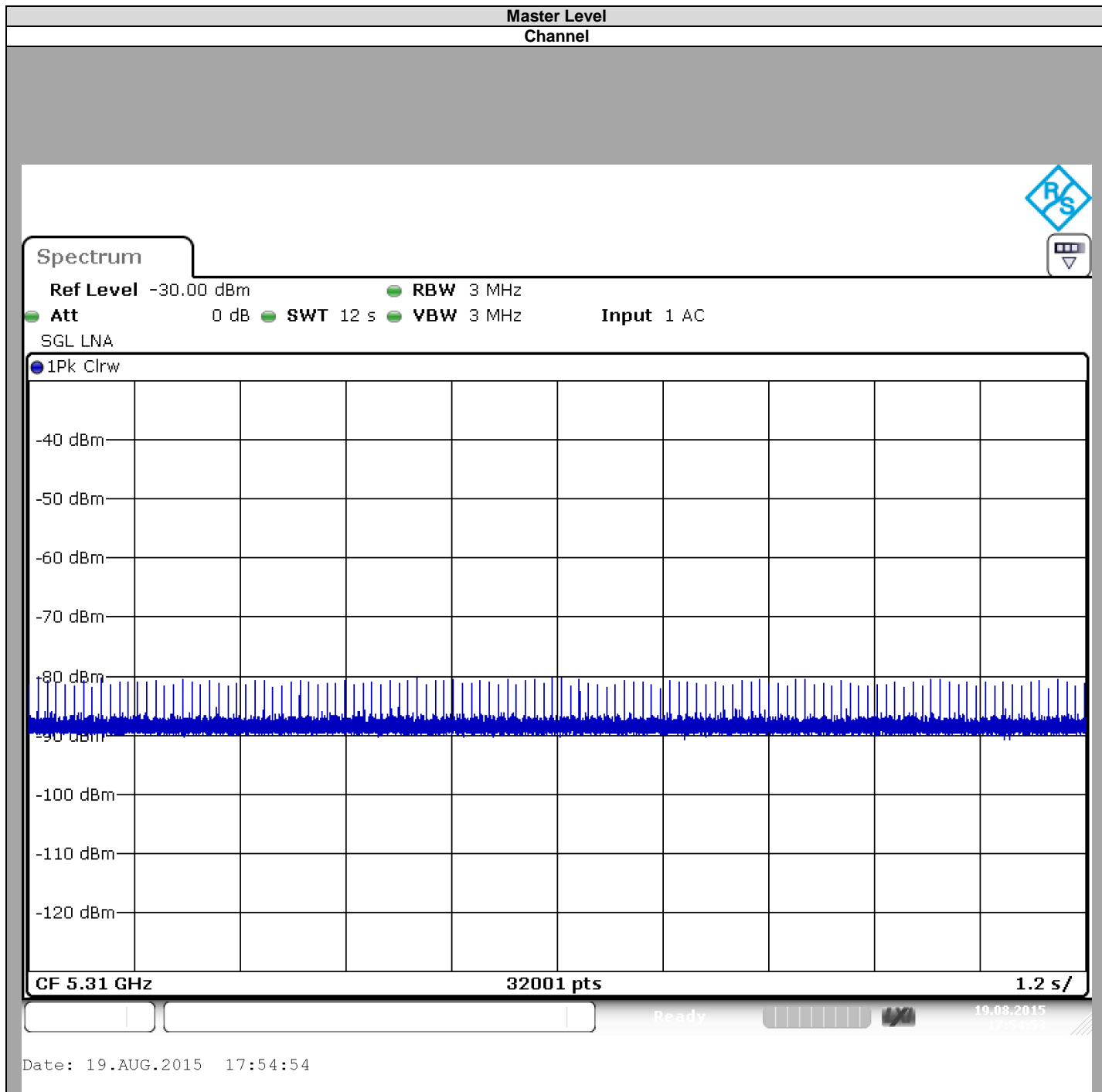
1Pk Clrw

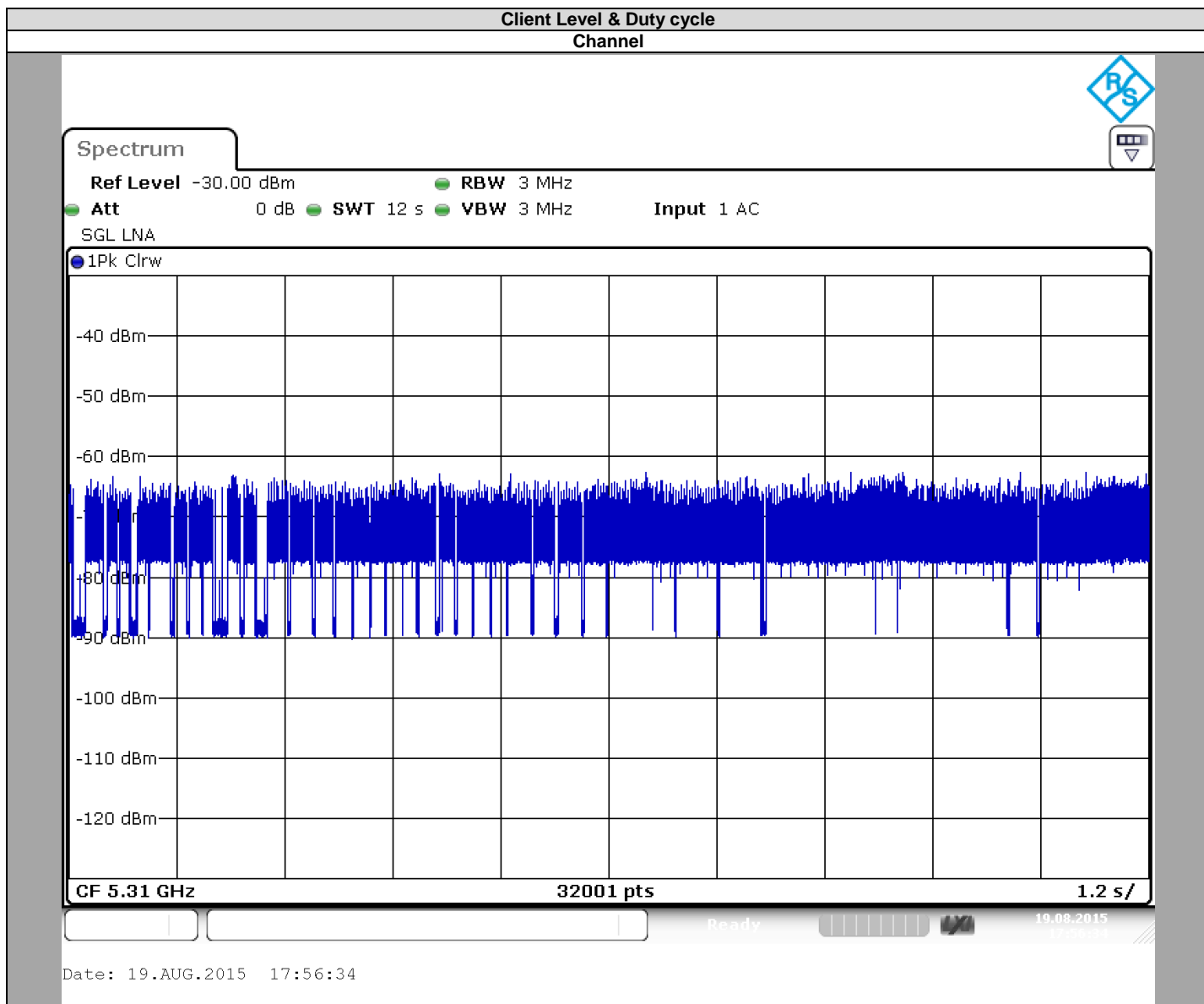


CF 5.31 GHz 32001 pts 1.2 s/

Ready 19.08.2015 17:57:59

Date: 19.AUG.2015 17:57:59





Temperature	Tnom
Voltage	Vnom
Channel	C1
Duty Cycle (%)	Over 17

Temperature	Tnom
Voltage	Vnom
Channel	C1
EIRP (See test report from FCC ID: RRK2012060056-1)	338,065mW
DFS Detection thresholds applied	-64dBm



4. DYNAMIC FREQUENCY SELECTION (DFS): CHANNEL MOVE TIME & CHANNEL CLOSING TRANSMISSION TIME

4.1. TEST CONDITIONS

Test performed by : Stéphane PHOUDIAH
 Date of test : August 18th, 2015 & August 19th, 2015
 Ambient temperature : 25°C
 Relative humidity : 36%

4.2. TEST SETUP

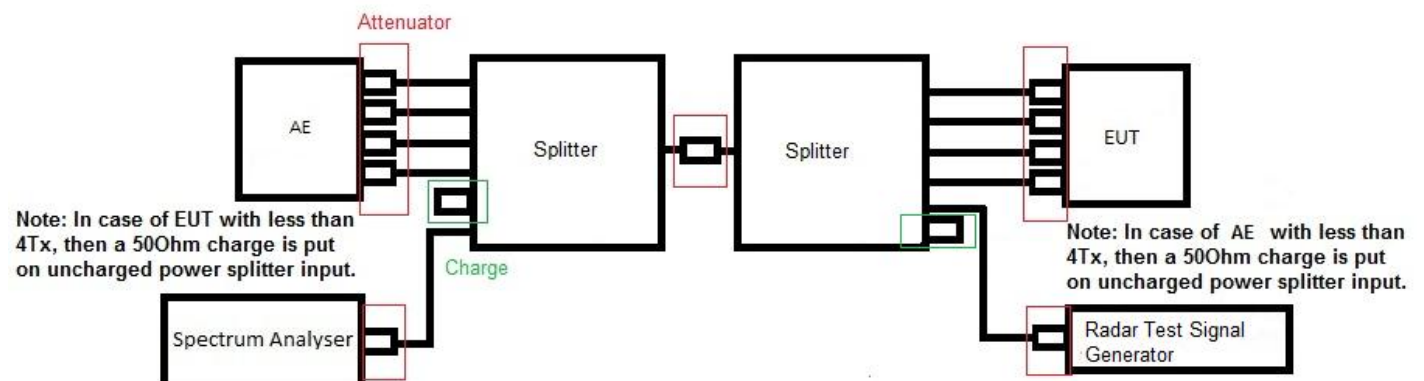
- The Equipment Under Test is:

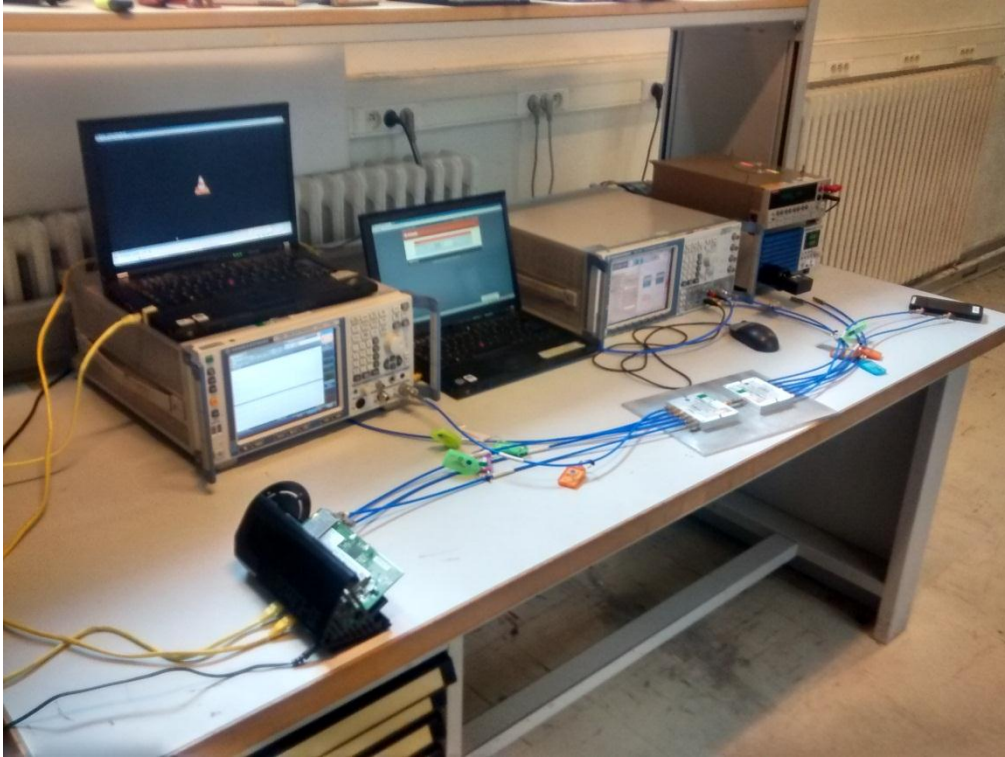
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer:

- On the EUT conducted access
- On the EUT with a test fixture

An additional of 1dB has been added to the amplitude of DFS Detection Thresholds as specified in KDB 905462 D02 UNII DFS Compliance Procedures New Rules v01r02 "5.2 Table 3"





Photograph for DFS Channel Move Time & Channel Closing Transmission Time



4.3. LIMIT

Channel Closing Transmission Time shall not exceed 200ms + an aggregate of 60ms over remaining 10s period
 Channel Move Time shall not exceed 10s

4.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Multi-meter	KEITHLEY	2000	A1241084	2014/02	2016/02
EMI receiver/ Spectrum analyzer	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/03
RF cable	Télédyne	920-0202-024	A5329662	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329663	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329664	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329665	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329666	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329667	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329668	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329669	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329670	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329671	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329672	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329673	2014/04	2016/04
Vector signal generator	ROHDE & SCHWARZ	SMJ100A	A5444007	Verified with calibrated EMI receiver/ Spectrum analyzer before testing	
Programmable AC/DC power supply	KIKUSUI	PCR500M	A7040079	Verified with calibrated multimeter before testing	
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122229	2014/04	2016/04
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122230	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122231	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122232	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122233	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122234	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122238	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122239	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122240	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122241	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122242	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122243	2014/04	2016/04
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132040	2014/04	2016/04
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132041	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152075	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152076	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152077	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152078	2014/04	2016/04



4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:



L C I E

4.6. RESULTS

802.11n HT40
C1

R&S DFS Analysis Tool

File Help

Channel Startup Check

Channel Move Time (seconds)

Trigger Source: Immediate External

Measurement Time:

START

Save Trace

Measured Channel Move Time:

Measured Channel Closing Transmission Time:

Non-Occupancy Period (minutes)

Trigger Source: Immediate External

Measurement Time (min):

START

Save Trace

Measured Non-Occupancy Period:

In Service Monitoring

Analyzer Conn.

Timing

ABORT

Frequency (MHz):

RefLevel (dBm):

Threshold (dBm):

PreAmp

C1

Spectrum

Ref Level -30.00 dBm RBW 3 MHz Att 0 dB SWT 12 s VBW 3 MHz Input 1 AC

SGL TRG: EXT LNA

1Pk View

M1[1] -89.47 dBm
683.250 ms

CF 5.31 GHz 32001 pts 1.2 s/

Date: 19.AUG.2015 18:16:58

Master Traffic. See Master Level in chapter 3

Client traffic. See Client Level in chapter 3



Temperature	Tnom
Voltage	Vnom
Channel	C1
Channel Closing Transmission Time (ms)	201
Channel Move Time (s)	0,683

4.7. CONCLUSION

Channel Shutdown measurement performed on the sample of the product INARI5-WLAN-1, SN: 11875A-INARI51, in configuration and description presented in this test report, show levels **conform to** the 47 CFR 15.407 limits.



5. DYNAMIC FREQUENCY SELECTION (DFS): NON-OCCUPANCY PERIOD

5.1. TEST CONDITIONS

Test performed by : Stéphane PHOUDIAH
 Date of test : August 19th, 2015
 Ambient temperature : 27°C
 Relative humidity : 34%

5.2. TEST SETUP

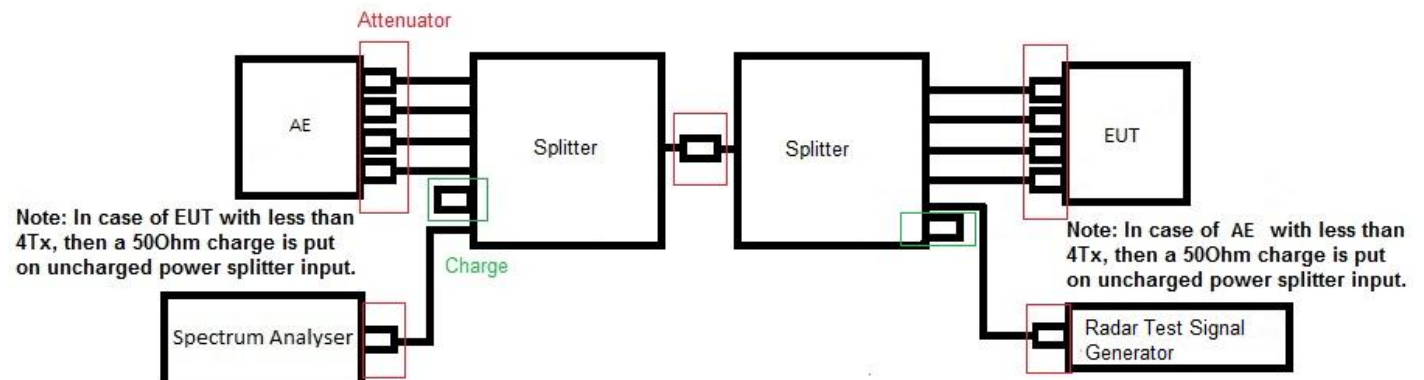
- The Equipment Under Test is:

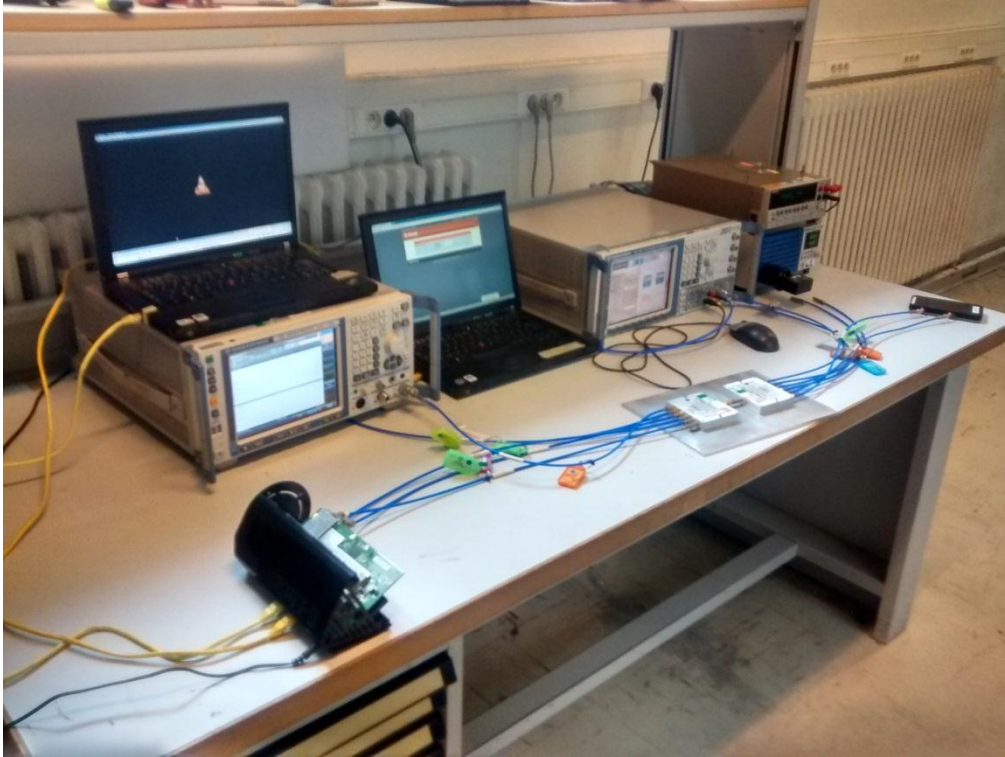
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer:

- On the EUT conducted access
- On the EUT with a test fixture

An additional of 1dB has been added to the amplitude of DFS Detection Thresholds as specified in KDB 905462 D02 UNII DFS Compliance Procedures New Rules v01r02 "5.2 Table 3"





Photograph for DFS Non-Occupancy Period

5.3. LIMIT

Non-Occupancy Period shall exceed 1800 seconds



5.4. TEST EQUIPMENT LIST

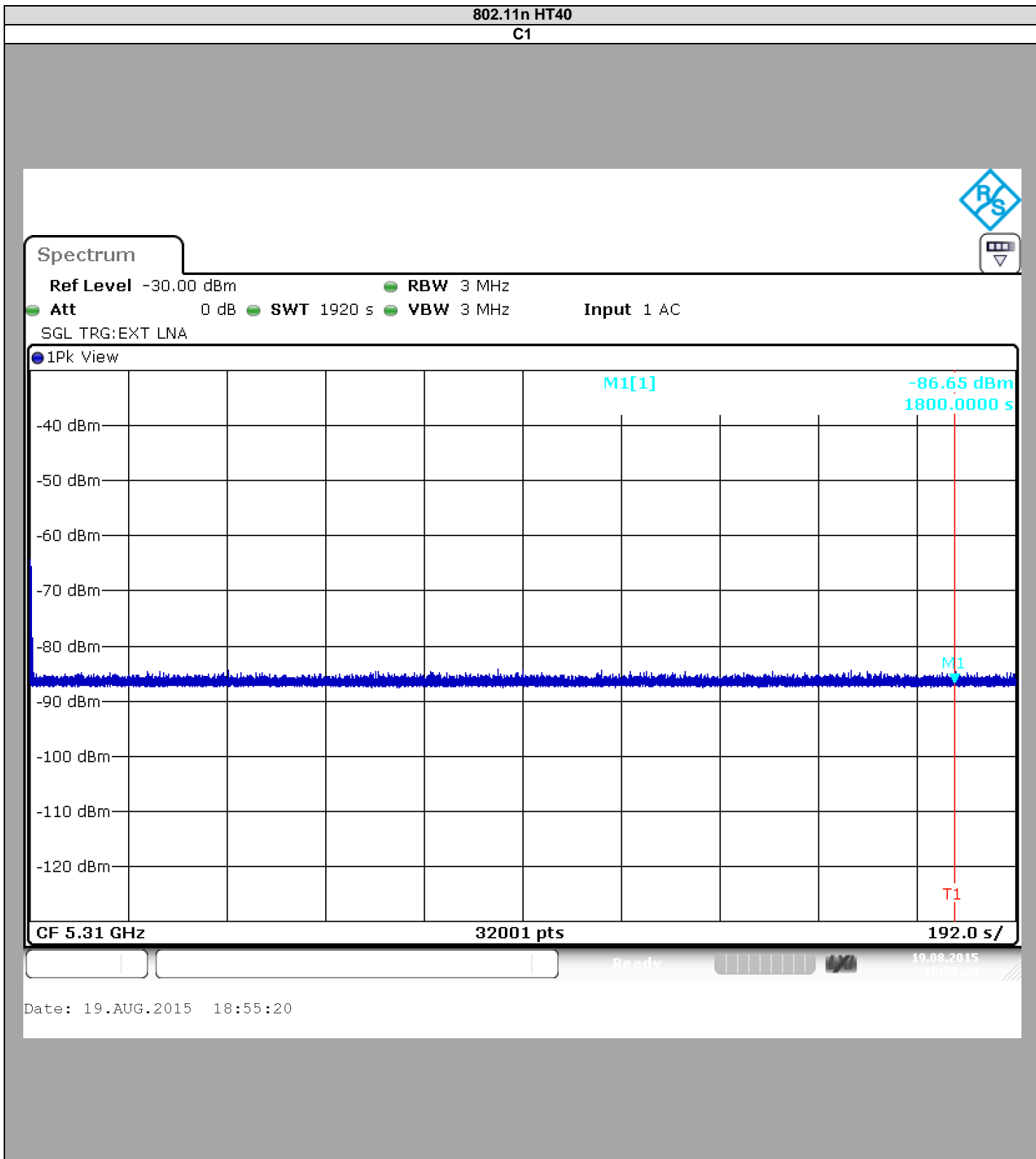
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
Multi-meter	KEITHLEY	2000	A1241084	2014/02	2016/02
EMI receiver/ Spectrum analyzer	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/03
RF cable	Télédyne	920-0202-024	A5329662	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329663	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329664	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329665	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329666	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329667	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329668	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329669	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329670	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329671	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329672	2014/04	2016/04
RF cable	Télédyne	920-0202-024	A5329673	2014/04	2016/04
Vector signal generator	ROHDE & SCHWARZ	SMJ100A	A5444007	Verified with calibrated EMI receiver/ Spectrum analyzer before testing	
Programmable AC/DC power supply	KIKUSUI	PCR500M	A7040079	Verified with calibrated multimeter before testing	
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122229	2014/04	2016/04
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122230	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122231	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122232	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122233	2014/04	2016/04
Attenuator 40dB	MINI CIRCUITS	BW-S40W2+	A7122234	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122238	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122239	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122240	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122241	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122242	2014/04	2016/04
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122243	2014/04	2016/04
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132040	2014/04	2016/04
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132041	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152075	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152076	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152077	2014/04	2016/04
Load 50 ohms	Fairview Microwave	ST0635F	A7152078	2014/04	2016/04

5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:



5.6. RESULTS





Temperature	Tnom
Voltage	Vnom
Channel	C1
Non-Occupancy period (s)	Over 1920

5.7. CONCLUSION

Non-Occupancy period measurement performed on the sample of the product INARI5-WLAN-1, SN: 11875A-INARI51, in configuration and description presented in this test report, show levels **conform to** the 47 CFR 15.407 limits.



6. UNCERTAINTIES CHART

Kind of test	Measurement uncertainties (k=2) $\pm x(\text{dB}) / (\text{Hz})$	Limit for uncertainties $\pm y(\text{dB})$
REQUIREMENTS		
RF power conducted	$\pm 0.6\text{dB}$	$\pm 1,5\text{dB}$
Temperature	$\pm 0.5^\circ\text{C}$	$\pm 1^\circ\text{C}$
Humidity	$\pm 2.5 \%$	$\pm 5\%$



7. RADAR TEST SIGNALS

TEST SIGNAL 1

TEST SIGNAL 1		
Pulses per Burst	Pulse Width (μsec)	PRI (μs)
18	1	1428