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WIFI 5GHz (DFS) Template: Release April 14th, 2021

TEST REPORT

N°: 172319-764277-E

Version : 02

Subject

Radio spectrum matters
tests according to standards:
47 CFR Part 15.407 (DFS Only)

Issued to

Technicolor Connected Home USA, LLC
5030 Sugarloaf Parkway, Building 6
Lawrenceville – GA 30044
USA

Apparatus under test

- ↳ Product
- ↳ Trade mark
- ↳ Manufacturer
- ↳ Model under test
- ↳ Serial number
- ↳ FCC ID

IP Set-Top Box
TECHNICOLOR
TECHNICOLOR
UIW4059MIL
ELN029 LAB03 Proto Eleckto
G95UIW4059

Conclusion

See Test Program chapter

Test date

: April 28, 2021 to April 29, 2021

Test location

Moirans

Test Site

6500A-1 & 6500A-3

Registration Number

197516

Designation Number

FR0008

Sample receipt date

April 6, 2021

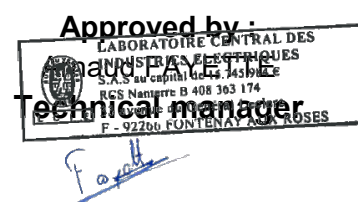
Composition of document

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Written by :
Julien Palard
Tests operator



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PUBLICATION HISTORY

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01	May 31, 2021	Julien Palard	Creation of the document
02	Erreur ! Source du renvoi introuvable.	Armand MAHOUNGOU	Device internal picture removing

Each new edition of this test report replaces and cancels the previous edition. The control of the old editions of report is under responsibility of client.



SUMMARY

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1. TEST PROGRAM

References

- 47 CFR Part 15.407 (DFS requirements)
- KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02
- KDB 905462 D04 Test Mode New Rules v01
- KDB 905462 D03 Client Without DFS New Rules v01r02
- KDB 905462 D06 802.11 Channel Plans New Rules v02
- KDB 905462 D07 Overview UNII Rules v02

Radio requirement:

Clause (47CFR Part 15.407 & RSS 247 Issue 1) Test Description	Test result - Comments			
Channel Availability Check Time & DFS Detection Threshold	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA(1)(2)	<input type="checkbox"/> NP(3)
U-NII Detection Bandwidth	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA(1)	<input type="checkbox"/> NP(3)
Statistical Performance Check & DFS Detection Threshold	<input type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input checked="" type="checkbox"/> NA	<input type="checkbox"/> NP(3)
Channel Closing Transmission Time & Channel Move Time	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(3)
Non-occupancy period	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA(1)	<input type="checkbox"/> NP(3)
This table is a summary of test report, see conclusion of each clause of this test report for detail.				

- (1): Client without radar detection
 (2): Client with radar detection
 (3): Limited program

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

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):
TECHNICOLOR UIW4059MIL

Serial Number: ELN029 LAB03 Proto Eleckto



Equipment Under Test



L C I E



Equipment Under Test

Power supply:

Name	Type	Rating	Reference / Sn	Comments
Supply1	<input checked="" type="checkbox"/> AC <input type="checkbox"/> DC <input type="checkbox"/> Battery	120-240V;50-60Hz		

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
1	Mains power supply cable	1.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
2	HDMI cable	1.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-
3	Ethernet cable	1.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Wireless AC1750 Dual Band Gigabit Cloud Router	DLINK DIR-868L	RZ641E8004888	FCC ID:RRK2012060056-1 IC ID: 4833A-WMCA01A1
Laptop	-	-	Use to set the EUT & the communication traffic
Laptop	-	-	Use to set the EUT & the communication traffic



L C I E

Equipment information:

Type:	WIFI			
Chipset Ref :	Realtek RTL8822CS			
Frequency band:	<input checked="" type="checkbox"/> 5150MHz-5250MHz	<input checked="" type="checkbox"/> 5250MHz-5350MHz	<input checked="" type="checkbox"/> 5470MHz-5725MHz	
	<input checked="" type="checkbox"/> 5725MHz-5850MHz			
Standard:	<input checked="" type="checkbox"/> 802.11a	<input checked="" type="checkbox"/> 802.11n HT20	<input checked="" type="checkbox"/> 802.11n HT40	
	<input checked="" type="checkbox"/> 802.11ac VHT20	<input checked="" type="checkbox"/> 802.11ac VHT40	<input checked="" 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 checked="" type="checkbox"/> 80MHz	<input type="checkbox"/> 160MHz
Antenna Type:	<input checked="" type="checkbox"/> Integral	<input type="checkbox"/> External	<input type="checkbox"/> Dedicated	
Antenna connector:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Temporary for test	
Antenna Requirements §15.203	The transmitter uses an integral antenna with a u.fl connector which is classified as a unique connector			
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
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	<input type="checkbox"/> Combined	
Equipment arrangement:	<input checked="" type="checkbox"/> Tabletop	<input type="checkbox"/> Floor-standing	<input type="checkbox"/> Multiple orientations	
Operating temperature range:	Tmin:	<input type="checkbox"/> -20°C	<input type="checkbox"/> 0°C	<input checked="" type="checkbox"/> 5 °C
	Tnom:	20°C		
	Tmax:	<input type="checkbox"/> 35°C	<input type="checkbox"/> 55°C	<input checked="" type="checkbox"/> 45 °C
Type of power source:	<input checked="" type="checkbox"/> AC power supply	<input checked="" type="checkbox"/> DC power supply	<input type="checkbox"/> Battery Battery Type	
Operating voltage range:	Vnom:	<input checked="" type="checkbox"/> 120V/60Hz	<input checked="" type="checkbox"/> 12 VDC	
		<input checked="" type="checkbox"/> 240V/60Hz	<input type="checkbox"/> X VDC	
Mode:	<input type="checkbox"/> Master	<input type="checkbox"/> Slave with radar detection	<input checked="" type="checkbox"/> Slave without radar detection	
	<input type="checkbox"/> Bridge		<input type="checkbox"/> Mesh	
Fixed outdoor P to P/M application:	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No	
System architectures:	<input checked="" type="checkbox"/> IP based		<input type="checkbox"/> Frame based	
User access restriction:	<input checked="" type="checkbox"/> Yes (The manufacturer declares that information regarding the parameters of the detected Radar Waveforms is not available to the end user)		<input type="checkbox"/> No	



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Antenna Characteristic			
Antenna assembly	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
1	5.1	5150MHz-5850MHz	50
2	4.7	5150MHz-5850MHz	50
Accumulated	3	5150MHz-5850MHz	50

Accumulated gain calculation		
Formula used for calculation	KDB	Correlated
$10 \log[(10G1 / 20 + 10G2 / 20 + \dots + 10GN / 20)2 / NANT]dBi$	KDB 662911 D01 v02r01	<input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No

Hardware information		
Software (if applicable):	V. :	UIW4059MIL_HSW 0.7



L C I E

CHANNEL PLAN		
802.11a / 802.11n HT20/ 802.11ac VHT20		
Channel	Frequency (MHz)	Available Channel
C1=36	5180	<input checked="" type="checkbox"/>
C2=40	5200	<input checked="" type="checkbox"/>
44	5220	<input checked="" type="checkbox"/>
C3=48	5240	<input checked="" type="checkbox"/>
C4=52	5260	<input checked="" type="checkbox"/>
56	5280	<input checked="" type="checkbox"/>
C5=60	5300	<input checked="" type="checkbox"/>
C6=64	5320	<input checked="" type="checkbox"/>
C7=100	5500	<input checked="" type="checkbox"/>
104	5520	<input checked="" type="checkbox"/>
108	5540	<input checked="" type="checkbox"/>
112	5560	<input checked="" type="checkbox"/>
C8=116	5580	<input checked="" type="checkbox"/>
120	5600	<input checked="" type="checkbox"/>
124	5620	<input checked="" type="checkbox"/>
128	5640	<input checked="" type="checkbox"/>
132	5660	<input checked="" type="checkbox"/>
136	5680	<input checked="" type="checkbox"/>
C9=140	5700	<input checked="" type="checkbox"/>
C10=144	5720	<input checked="" type="checkbox"/>
C11=149	5745	<input checked="" type="checkbox"/>
153	5765	<input checked="" type="checkbox"/>
C12=157	5785	<input checked="" type="checkbox"/>
161	5805	<input checked="" type="checkbox"/>
C13=165	5825	<input checked="" type="checkbox"/>



L C I E

CHANNEL PLAN		
802.11n HT40/ 802.11ac VHT40		
Channel	Frequency (MHz)	Available Channel
C14=36+40	5190	<input checked="" type="checkbox"/>
C15=44+48	5230	<input checked="" type="checkbox"/>
C16=52+56	5270	<input checked="" type="checkbox"/>
C17=60+64	5310	<input checked="" type="checkbox"/>
C18=100+104	5510	<input checked="" type="checkbox"/>
C19=108+112	5550	<input checked="" type="checkbox"/>
116+120	5590	<input checked="" type="checkbox"/>
124+128	5630	<input checked="" type="checkbox"/>
C20=132+136	5670	<input checked="" type="checkbox"/>
C21=140+144	5710	<input checked="" type="checkbox"/>
C22=149+153	5755	<input checked="" type="checkbox"/>
C23=157+161	5795	<input checked="" type="checkbox"/>

CHANNEL PLAN		
802.11ac VHT80		
Channel	Frequency (MHz)	Available Channel
C24=36+40+44+48	5210	<input checked="" type="checkbox"/>
C25=52+56+60+64	5290	<input checked="" type="checkbox"/>
C26=100+104+108+112	5530	<input checked="" type="checkbox"/>
C27=116+120+124+128	5610	<input checked="" type="checkbox"/>
C28=132+136+140+144	5690	<input checked="" type="checkbox"/>
C29=149+153+157+161	5775	<input checked="" type="checkbox"/>

No DFS Channel
DFS Channel
Weather DFS Channel (Not Authorised for RSS-247)



L C I E

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"/>



L C I E

DATA RATE										
802.11n HT20										
Available for EUT	MCS Index	Spatial streams	Modulation				Data Rate (Mbps)		Worst Case Modulation	
							(GI = 800ns)	(GI = 400ns)		
☑	0	1	BPSK				6.5	7.2	<input type="checkbox"/>	
	1	1	QPSK				13	14.4	<input type="checkbox"/>	
	2	1	QPSK				19.5	21.7	<input type="checkbox"/>	
	3	1	16-QAM				26	28.9	<input type="checkbox"/>	
	4	1	16-QAM				39	43.3	<input type="checkbox"/>	
	5	1	64-QAM				52	57.8	<input type="checkbox"/>	
	6	1	64-QAM				58.5	65	<input type="checkbox"/>	
☑	7	1	64-QAM				65	72.2	<input type="checkbox"/>	
	8	2	BPSK				13	14.4	<input checked="" type="checkbox"/>	
	9	2	QPSK				26	28.9	<input type="checkbox"/>	
	10	2	QPSK				39	43.3	<input type="checkbox"/>	
	11	2	16-QAM				52	57.8	<input type="checkbox"/>	
	12	2	16-QAM				78	86.7	<input type="checkbox"/>	
	13	2	64-QAM				104	115.6	<input type="checkbox"/>	
☐	14	2	64-QAM				117	130.3	<input type="checkbox"/>	
	15	2	64-QAM				130	144.4	<input type="checkbox"/>	
	16	3	BPSK				19.5	21.7	<input type="checkbox"/>	
	17	3	QPSK				39	43.3	<input type="checkbox"/>	
	18	3	QPSK				58.5	65	<input type="checkbox"/>	
	19	3	16-QAM				78	86.7	<input type="checkbox"/>	
	20	3	16-QAM				117	130	<input type="checkbox"/>	
☐	21	3	64-QAM				156	173.3	<input type="checkbox"/>	
	22	3	64-QAM				175.5	195	<input type="checkbox"/>	
	23	3	64-QAM				195	216.7	<input type="checkbox"/>	
	24	4	BPSK				26	28.9	<input type="checkbox"/>	
	25	4	QPSK				52	57.8	<input type="checkbox"/>	
	26	4	QPSK				78	86.7	<input type="checkbox"/>	
	27	4	16-QAM				104	115.6	<input type="checkbox"/>	
☐	28	4	16-QAM				156	173.3	<input type="checkbox"/>	
	29	4	64-QAM				208	231.1	<input type="checkbox"/>	
	30	4	64-QAM				234	260	<input type="checkbox"/>	
	31	4	64-QAM				260	288.9	<input type="checkbox"/>	
	☐	32	1	BPSK	-	-	-	-	<input type="checkbox"/>	
		33	2	16-QAM	QPSK	-	-	39	43.3	<input type="checkbox"/>
		34	2	64-QAM	QPSK	-	-	52	57.8	<input type="checkbox"/>
35		2	64-QAM	16-QAM	-	-	65	72.2	<input type="checkbox"/>	
36		2	16-QAM	QPSK	-	-	58.5	65	<input type="checkbox"/>	
37		2	64-QAM	QPSK	-	-	78	86.7	<input type="checkbox"/>	
38		2	64-QAM	16-QAM	-	-	97.5	108.3	<input type="checkbox"/>	
☐	39	3	16-QAM	QPSK	QPSK	-	52	57.8	<input type="checkbox"/>	
	40	3	16-QAM	16-QAM	QPSK	-	65	72.2	<input type="checkbox"/>	
	41	3	64-QAM	QPSK	QPSK	-	65	72.2	<input type="checkbox"/>	
	42	3	64-QAM	16-QAM	QPSK	-	78	86.7	<input type="checkbox"/>	
	43	3	64-QAM	16-QAM	16-QAM	-	91	101.1	<input type="checkbox"/>	
	44	3	64-QAM	64-QAM	QPSK	-	91	101.1	<input type="checkbox"/>	
	45	3	64-QAM	64-QAM	16-QAM	-	104	115.6	<input type="checkbox"/>	
	46	3	16-QAM	QPSK	QPSK	-	78	86.7	<input type="checkbox"/>	
	47	3	16-QAM	16-QAM	QPSK	-	97.5	108.3	<input type="checkbox"/>	
	48	3	64-QAM	QPSK	QPSK	-	97.5	108.3	<input type="checkbox"/>	
	49	3	64-QAM	16-QAM	QPSK	-	117	130	<input type="checkbox"/>	
	50	3	64-QAM	16-QAM	16-QAM	-	136.5	151.7	<input type="checkbox"/>	
	51	3	64-QAM	64-QAM	QPSK	-	136.5	151.7	<input type="checkbox"/>	
52	3	64-QAM	64-QAM	16-QAM	-	156	173.3	<input type="checkbox"/>		
☐	53	4	16-QAM	QPSK	QPSK	QPSK	65	72.2	<input type="checkbox"/>	
	54	4	16-QAM	16-QAM	QPSK	QPSK	78	86.7	<input type="checkbox"/>	
	55	4	16-QAM	16-QAM	16-QAM	QPSK	91	101.1	<input type="checkbox"/>	
	56	4	64-QAM	QPSK	QPSK	QPSK	78	86.7	<input type="checkbox"/>	
	57	4	64-QAM	16-QAM	QPSK	QPSK	91	101.1	<input type="checkbox"/>	
	58	4	64-QAM	16-QAM	16-QAM	QPSK	104	115.6	<input type="checkbox"/>	
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	117	130	<input type="checkbox"/>	
	60	4	64-QAM	QPSK	QPSK	QPSK	104	115.6	<input type="checkbox"/>	
	61	4	64-QAM	16-QAM	16-QAM	QPSK	117	130	<input type="checkbox"/>	
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	130	144.4	<input type="checkbox"/>	
	63	4	64-QAM	64-QAM	64-QAM	QPSK	130	144.4	<input type="checkbox"/>	
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	143	158.9	<input type="checkbox"/>	
	65	4	16-QAM	QPSK	QPSK	QPSK	97.5	108.3	<input type="checkbox"/>	
	66	4	16-QAM	16-QAM	QPSK	QPSK	117	130	<input type="checkbox"/>	
	67	4	16-QAM	16-QAM	16-QAM	QPSK	136.5	151.7	<input type="checkbox"/>	
	68	4	64-QAM	QPSK	QPSK	QPSK	117	130	<input type="checkbox"/>	
	69	4	64-QAM	16-QAM	QPSK	QPSK	136.5	151.7	<input type="checkbox"/>	
	70	4	64-QAM	16-QAM	16-QAM	QPSK	156	173.3	<input type="checkbox"/>	
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	175.5	195	<input type="checkbox"/>	
	72	4	64-QAM	64-QAM	QPSK	QPSK	156	173.3	<input type="checkbox"/>	
	73	4	64-QAM	64-QAM	16-QAM	QPSK	175.5	195	<input type="checkbox"/>	
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	195	216.7	<input type="checkbox"/>	
	75	4	64-QAM	64-QAM	64-QAM	QPSK	195	216.7	<input type="checkbox"/>	
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	214.5	238.3	<input type="checkbox"/>	



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DATA RATE										
802.11n HT40										
Available for EUT	MCS Index	Spatial streams	Modulation				Data Rate (Mbps)		Worst Case Modulation	
							(GI = 800ns)	(GI = 400ns)		
☑	0	1	BPSK				13	15	<input type="checkbox"/>	
	1	1	QPSK				27	30	<input type="checkbox"/>	
	2	1	QPSK				40.5	45	<input type="checkbox"/>	
	3	1	16-QAM				54	60	<input type="checkbox"/>	
	4	1	16-QAM				81	90	<input type="checkbox"/>	
	5	1	64-QAM				108	120	<input type="checkbox"/>	
	6	1	64-QAM				121.5	135	<input type="checkbox"/>	
☑	7	1	64-QAM				135	150	<input type="checkbox"/>	
	8	2	BPSK				27	30	<input checked="" type="checkbox"/>	
	9	2	QPSK				54	60	<input type="checkbox"/>	
	10	2	QPSK				81	90	<input type="checkbox"/>	
	11	2	16-QAM				108	120	<input type="checkbox"/>	
	12	2	16-QAM				162	180	<input type="checkbox"/>	
	13	2	64-QAM				216	240	<input type="checkbox"/>	
☐	14	2	64-QAM				243	270	<input type="checkbox"/>	
	15	2	64-QAM				270	300	<input type="checkbox"/>	
	16	3	BPSK				40.5	45	<input type="checkbox"/>	
	17	3	QPSK				81	90	<input type="checkbox"/>	
	18	3	QPSK				121.5	135	<input type="checkbox"/>	
	19	3	16-QAM				162	180	<input type="checkbox"/>	
	20	3	16-QAM				243	270	<input type="checkbox"/>	
☐	21	3	64-QAM				324	360	<input type="checkbox"/>	
	22	3	64-QAM				364.5	405	<input type="checkbox"/>	
	23	3	64-QAM				405	450	<input type="checkbox"/>	
	24	4	BPSK				54	60	<input type="checkbox"/>	
	25	4	QPSK				108	120	<input type="checkbox"/>	
	26	4	QPSK				162	180	<input type="checkbox"/>	
	27	4	16-QAM				216	240	<input type="checkbox"/>	
☐	28	4	16-QAM				324	360	<input type="checkbox"/>	
	29	4	64-QAM				432	480	<input type="checkbox"/>	
	30	4	64-QAM				486	540	<input type="checkbox"/>	
	31	4	64-QAM				540	600	<input type="checkbox"/>	
	32	1	BPSK	-	-	-	6.0	6.7	<input type="checkbox"/>	
	☐	33	2	16-QAM	QPSK	-	-	81	90.0	<input type="checkbox"/>
		34	2	64-QAM	QPSK	-	-	108	120	<input type="checkbox"/>
35		2	64-QAM	16-QAM	-	-	135	150	<input type="checkbox"/>	
36		2	16-QAM	QPSK	-	-	121.5	135	<input type="checkbox"/>	
37		2	64-QAM	QPSK	-	-	162	180	<input type="checkbox"/>	
38		2	64-QAM	16-QAM	-	-	202.5	225	<input type="checkbox"/>	
39		3	16-QAM	QPSK	QPSK	-	108	120	<input type="checkbox"/>	
☐	40	3	16-QAM	16-QAM	QPSK	-	135	150	<input type="checkbox"/>	
	41	3	64-QAM	QPSK	QPSK	-	135	150	<input type="checkbox"/>	
	42	3	64-QAM	16-QAM	QPSK	-	162	180	<input type="checkbox"/>	
	43	3	64-QAM	16-QAM	16-QAM	-	189	210	<input type="checkbox"/>	
	44	3	64-QAM	64-QAM	QPSK	-	189	210	<input type="checkbox"/>	
	45	3	64-QAM	64-QAM	16-QAM	-	216	240	<input type="checkbox"/>	
	46	3	16-QAM	QPSK	QPSK	-	162	180	<input type="checkbox"/>	
	47	3	16-QAM	16-QAM	QPSK	-	202.5	225	<input type="checkbox"/>	
	48	3	64-QAM	QPSK	QPSK	-	202.5	225	<input type="checkbox"/>	
	49	3	64-QAM	16-QAM	QPSK	-	243	270	<input type="checkbox"/>	
	50	3	64-QAM	16-QAM	16-QAM	-	283.5	315	<input type="checkbox"/>	
	51	3	64-QAM	64-QAM	QPSK	-	283.5	315	<input type="checkbox"/>	
	52	3	64-QAM	64-QAM	16-QAM	-	324	360	<input type="checkbox"/>	
☐	53	4	16-QAM	QPSK	QPSK	QPSK	135	150	<input type="checkbox"/>	
	54	4	16-QAM	16-QAM	QPSK	QPSK	162	180	<input type="checkbox"/>	
	55	4	16-QAM	16-QAM	16-QAM	QPSK	189	210	<input type="checkbox"/>	
	56	4	64-QAM	QPSK	QPSK	QPSK	162	180	<input type="checkbox"/>	
	57	4	64-QAM	16-QAM	QPSK	QPSK	189	210	<input type="checkbox"/>	
	58	4	64-QAM	16-QAM	16-QAM	QPSK	216	240	<input type="checkbox"/>	
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	243	270	<input type="checkbox"/>	
	60	4	64-QAM	QPSK	QPSK	QPSK	216	240	<input type="checkbox"/>	
	61	4	64-QAM	16-QAM	16-QAM	QPSK	243	270	<input type="checkbox"/>	
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	270	300	<input type="checkbox"/>	
	63	4	64-QAM	64-QAM	64-QAM	QPSK	270	300	<input type="checkbox"/>	
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	297	330	<input type="checkbox"/>	
	65	4	16-QAM	QPSK	QPSK	QPSK	202.5	225	<input type="checkbox"/>	
	66	4	16-QAM	16-QAM	QPSK	QPSK	243	270	<input type="checkbox"/>	
	67	4	16-QAM	16-QAM	16-QAM	QPSK	283.5	315	<input type="checkbox"/>	
	68	4	64-QAM	QPSK	QPSK	QPSK	243	270	<input type="checkbox"/>	
	69	4	64-QAM	16-QAM	QPSK	QPSK	283.5	315	<input type="checkbox"/>	
	70	4	64-QAM	16-QAM	16-QAM	QPSK	324	360	<input type="checkbox"/>	
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	364.5	405	<input type="checkbox"/>	
	72	4	64-QAM	64-QAM	QPSK	QPSK	324	360	<input type="checkbox"/>	
	73	4	64-QAM	64-QAM	16-QAM	QPSK	364.5	405	<input type="checkbox"/>	
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	405	450	<input type="checkbox"/>	
	75	4	64-QAM	64-QAM	64-QAM	QPSK	405	450	<input type="checkbox"/>	
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	445.5	495	<input type="checkbox"/>	



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DATA RATE: 802.11ac VHT20							
Available for EUT	MCS Index	Nbr of spatial streams	Modulation (Stream 1/2/3/4)	Coding rate	GI = 800ns	GI = 400ns	Worst Case Modulation
☑	0	1	BPSK	1/2	6,5	7,2	<input type="checkbox"/>
	1	1	QPSK	1/2	13	14,4	<input type="checkbox"/>
	2	1	QPSK	3/4	19,5	21,7	<input type="checkbox"/>
	3	1	16-QAM	1/2	26	28,9	<input type="checkbox"/>
	4	1	16-QAM	3/4	39	43,3	<input type="checkbox"/>
	5	1	64-QAM	2/3	52	57,8	<input type="checkbox"/>
	6	1	64-QAM	3/4	58,5	65	<input type="checkbox"/>
	7	1	64-QAM	5/6	65	72,2	<input type="checkbox"/>
	8	1	256-QAM	3/4	78	86,7	<input type="checkbox"/>
☑	9	1	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>
	10	2	BPSK	1/2	13	14,4	<input checked="" type="checkbox"/>
	11	2	QPSK	1/2	26	28,8	<input type="checkbox"/>
	12	2	QPSK	3/4	39	43,4	<input type="checkbox"/>
	13	2	16-QAM	1/2	52	57,8	<input type="checkbox"/>
	14	2	16-QAM	3/4	78	86,6	<input type="checkbox"/>
	15	2	64-QAM	2/3	104	115,6	<input type="checkbox"/>
	16	2	64-QAM	3/4	117	130	<input type="checkbox"/>
	17	2	64-QAM	5/6	130	144,4	<input type="checkbox"/>
☐	18	2	256-QAM	3/4	156	173,4	<input type="checkbox"/>
	19	2	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>
	20	3	BPSK	1/2	19,5	21,6	<input type="checkbox"/>
	21	3	QPSK	1/2	39	43,2	<input type="checkbox"/>
	22	3	QPSK	3/4	58,5	65,1	<input type="checkbox"/>
	23	3	16-QAM	1/2	78	86,7	<input type="checkbox"/>
	24	3	16-QAM	3/4	117	129,9	<input type="checkbox"/>
	25	3	64-QAM	2/3	156	173,4	<input type="checkbox"/>
	26	3	64-QAM	3/4	175,5	195	<input type="checkbox"/>
☐	27	3	64-QAM	5/6	195	216,6	<input type="checkbox"/>
	28	3	256-QAM	3/4	234	260,1	<input type="checkbox"/>
	29	3	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>
	30	4	BPSK	1/2	26	28,8	<input type="checkbox"/>
	31	4	QPSK	1/2	52	57,6	<input type="checkbox"/>
	32	4	QPSK	3/4	78	86,8	<input type="checkbox"/>
	33	4	16-QAM	1/2	104	115,6	<input type="checkbox"/>
	34	4	16-QAM	3/4	156	173,2	<input type="checkbox"/>
	35	4	64-QAM	2/3	208	231,2	<input type="checkbox"/>
☐	36	4	64-QAM	3/4	234	260	<input type="checkbox"/>
	37	4	64-QAM	5/6	260	288,8	<input type="checkbox"/>
	38	4	256-QAM	3/4	312	346,8	<input type="checkbox"/>
	39	4	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>
	40	5	BPSK	1/2	32,5	36	<input type="checkbox"/>
	41	5	QPSK	1/2	65	72	<input type="checkbox"/>
	42	5	QPSK	3/4	97,5	108,5	<input type="checkbox"/>
	43	5	16-QAM	1/2	130	144,5	<input type="checkbox"/>
	44	5	16-QAM	3/4	195	216,5	<input type="checkbox"/>
☐	45	5	64-QAM	2/3	260	289	<input type="checkbox"/>
	46	5	64-QAM	3/4	292,5	325	<input type="checkbox"/>
	47	5	64-QAM	5/6	325	361	<input type="checkbox"/>
	48	5	256-QAM	3/4	390	433,5	<input type="checkbox"/>
	49	5	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>
	50	6	BPSK	1/2	39	43,2	<input type="checkbox"/>
	51	6	QPSK	1/2	78	86,4	<input type="checkbox"/>
	52	6	QPSK	3/4	117	130,2	<input type="checkbox"/>
	53	6	16-QAM	1/2	156	173,4	<input type="checkbox"/>
☐	54	6	16-QAM	3/4	234	259,8	<input type="checkbox"/>
	55	6	64-QAM	2/3	312	346,8	<input type="checkbox"/>
	56	6	64-QAM	3/4	351	390	<input type="checkbox"/>
	57	6	64-QAM	5/6	390	433,2	<input type="checkbox"/>
	58	6	256-QAM	3/4	468	520,2	<input type="checkbox"/>
	59	6	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>
	60	7	BPSK	1/2	45,5	50,4	<input type="checkbox"/>
	61	7	QPSK	1/2	91	100,8	<input type="checkbox"/>
	62	7	QPSK	3/4	136,5	151,9	<input type="checkbox"/>
☐	63	7	16-QAM	1/2	182	202,3	<input type="checkbox"/>
	64	7	16-QAM	3/4	273	303,1	<input type="checkbox"/>
	65	7	64-QAM	2/3	364	404,6	<input type="checkbox"/>
	66	7	64-QAM	3/4	409,5	455	<input type="checkbox"/>
	67	7	64-QAM	5/6	455	505,4	<input type="checkbox"/>
	68	7	256-QAM	3/4	546	606,9	<input type="checkbox"/>
	69	7	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>
	70	8	BPSK	1/2	52	57,6	<input type="checkbox"/>
	71	8	QPSK	1/2	104	115,2	<input type="checkbox"/>
☐	72	8	QPSK	3/4	156	173,6	<input type="checkbox"/>
	73	8	16-QAM	1/2	208	231,2	<input type="checkbox"/>
	74	8	16-QAM	3/4	312	346,4	<input type="checkbox"/>
	75	8	64-QAM	2/3	416	462,4	<input type="checkbox"/>
	76	8	64-QAM	3/4	468	520	<input type="checkbox"/>
	77	8	64-QAM	5/6	520	577,6	<input type="checkbox"/>
	78	8	256-QAM	3/4	624	693,6	<input type="checkbox"/>
	79	8	256-QAM	5/6	N/A	N/A	<input type="checkbox"/>



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DATA RATE: 802.11ac VHT40							
Available for EUT	MCS Index	Nbr of spatial streams	Modulation (Stream 1/2/3/4)	Coding rate	GI = 800ns	GI = 400ns	Worst Case Modulation
☑	0	1	BPSK	1/2	13,5	15	<input type="checkbox"/>
	1	1	QPSK	1/2	27	30	<input type="checkbox"/>
	2	1	QPSK	3/4	40,5	45	<input type="checkbox"/>
	3	1	16-QAM	1/2	54	60	<input type="checkbox"/>
	4	1	16-QAM	3/4	81	90	<input type="checkbox"/>
	5	1	64-QAM	2/3	108	120	<input type="checkbox"/>
	6	1	64-QAM	3/4	121,5	135	<input type="checkbox"/>
	7	1	64-QAM	5/6	135	150	<input type="checkbox"/>
	8	1	256-QAM	3/4	162	180	<input type="checkbox"/>
☑	9	1	256-QAM	5/6	180	200	<input type="checkbox"/>
	10	2	BPSK	1/2	27	30	<input checked="" type="checkbox"/>
	11	2	QPSK	1/2	54	60	<input type="checkbox"/>
	12	2	QPSK	3/4	81	90	<input type="checkbox"/>
	13	2	16-QAM	1/2	108	120	<input type="checkbox"/>
	14	2	16-QAM	3/4	162	180	<input type="checkbox"/>
	15	2	64-QAM	2/3	216	240	<input type="checkbox"/>
	16	2	64-QAM	3/4	243	270	<input type="checkbox"/>
	17	2	64-QAM	5/6	270	300	<input type="checkbox"/>
☐	18	2	256-QAM	3/4	324	360	<input type="checkbox"/>
	19	2	256-QAM	5/6	360	400	<input type="checkbox"/>
	20	3	BPSK	1/2	40,5	45	<input type="checkbox"/>
	21	3	QPSK	1/2	81	90	<input type="checkbox"/>
	22	3	QPSK	3/4	121,5	135	<input type="checkbox"/>
	23	3	16-QAM	1/2	162	180	<input type="checkbox"/>
	24	3	16-QAM	3/4	243	270	<input type="checkbox"/>
	25	3	64-QAM	2/3	324	360	<input type="checkbox"/>
	26	3	64-QAM	3/4	364,5	405	<input type="checkbox"/>
☐	27	3	64-QAM	5/6	405	450	<input type="checkbox"/>
	28	3	256-QAM	3/4	486	540	<input type="checkbox"/>
	29	3	256-QAM	5/6	540	600	<input type="checkbox"/>
	30	4	BPSK	1/2	54	60	<input type="checkbox"/>
	31	4	QPSK	1/2	108	120	<input type="checkbox"/>
	32	4	QPSK	3/4	162	180	<input type="checkbox"/>
	33	4	16-QAM	1/2	216	240	<input type="checkbox"/>
	34	4	16-QAM	3/4	324	360	<input type="checkbox"/>
	35	4	64-QAM	2/3	432	480	<input type="checkbox"/>
☐	36	4	64-QAM	3/4	486	540	<input type="checkbox"/>
	37	4	64-QAM	5/6	540	600	<input type="checkbox"/>
	38	4	256-QAM	3/4	648	720	<input type="checkbox"/>
	39	4	256-QAM	5/6	720	800	<input type="checkbox"/>
	40	5	BPSK	1/2	67,5	75	<input type="checkbox"/>
	41	5	QPSK	1/2	135	150	<input type="checkbox"/>
	42	5	QPSK	3/4	202,5	225	<input type="checkbox"/>
	43	5	16-QAM	1/2	270	300	<input type="checkbox"/>
	44	5	16-QAM	3/4	405	450	<input type="checkbox"/>
☐	45	5	64-QAM	2/3	540	600	<input type="checkbox"/>
	46	5	64-QAM	3/4	607,5	675	<input type="checkbox"/>
	47	5	64-QAM	5/6	675	750	<input type="checkbox"/>
	48	5	256-QAM	3/4	810	900	<input type="checkbox"/>
	49	5	256-QAM	5/6	900	1000	<input type="checkbox"/>
	50	6	BPSK	1/2	81	90	<input type="checkbox"/>
	51	6	QPSK	1/2	162	180	<input type="checkbox"/>
	52	6	QPSK	3/4	243	270	<input type="checkbox"/>
	53	6	16-QAM	1/2	324	360	<input type="checkbox"/>
☐	54	6	16-QAM	3/4	486	540	<input type="checkbox"/>
	55	6	64-QAM	2/3	648	720	<input type="checkbox"/>
	56	6	64-QAM	3/4	729	810	<input type="checkbox"/>
	57	6	64-QAM	5/6	810	900	<input type="checkbox"/>
	58	6	256-QAM	3/4	972	1080	<input type="checkbox"/>
	59	6	256-QAM	5/6	1080	1200	<input type="checkbox"/>
	60	7	BPSK	1/2	94,5	105	<input type="checkbox"/>
	61	7	QPSK	1/2	189	210	<input type="checkbox"/>
	62	7	QPSK	3/4	283,5	315	<input type="checkbox"/>
☐	63	7	16-QAM	1/2	378	420	<input type="checkbox"/>
	64	7	16-QAM	3/4	567	630	<input type="checkbox"/>
	65	7	64-QAM	2/3	756	840	<input type="checkbox"/>
	66	7	64-QAM	3/4	850,5	945	<input type="checkbox"/>
	67	7	64-QAM	5/6	945	1050	<input type="checkbox"/>
	68	7	256-QAM	3/4	1134	1260	<input type="checkbox"/>
	69	7	256-QAM	5/6	1260	1400	<input type="checkbox"/>
	70	8	BPSK	1/2	108	120	<input type="checkbox"/>
	71	8	QPSK	1/2	216	240	<input type="checkbox"/>
☐	72	8	QPSK	3/4	324	360	<input type="checkbox"/>
	73	8	16-QAM	1/2	432	480	<input type="checkbox"/>
	74	8	16-QAM	3/4	648	720	<input type="checkbox"/>
	75	8	64-QAM	2/3	864	960	<input type="checkbox"/>
	76	8	64-QAM	3/4	972	1080	<input type="checkbox"/>
	77	8	64-QAM	5/6	1080	1200	<input type="checkbox"/>
	78	8	256-QAM	3/4	1296	1440	<input type="checkbox"/>
	79	8	256-QAM	5/6	1440	1600	<input type="checkbox"/>



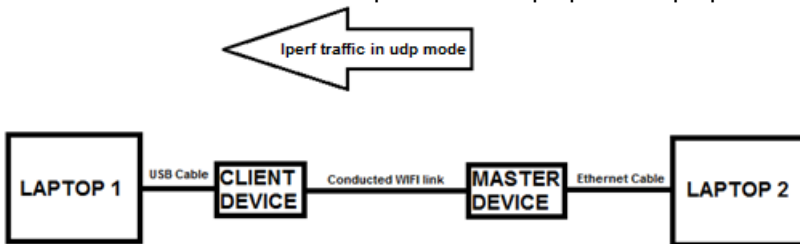
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DATA RATE: 802.11ac VHT80							
Available for EUT	MCS Index	Nbr of spatial streams	Modulation (Stream 1/2/3/4)	Coding rate	GI = 800ns	GI = 400ns	Worst Case Modulation
☑	0	1	BPSK	1/2	29.3	32.5	<input type="checkbox"/>
	1	1	QPSK	1/2	58.5	65	<input type="checkbox"/>
	2	1	QPSK	3/4	87.8	97.5	<input type="checkbox"/>
	3	1	16-QAM	1/2	117	130	<input type="checkbox"/>
	4	1	16-QAM	3/4	175.5	195	<input type="checkbox"/>
	5	1	64-QAM	2/3	234	260	<input type="checkbox"/>
	6	1	64-QAM	3/4	263.3	292.5	<input type="checkbox"/>
	7	1	64-QAM	5/6	292.5	325	<input type="checkbox"/>
	8	1	256-QAM	3/4	351	390	<input type="checkbox"/>
☑	9	1	256-QAM	5/6	390	433.3	<input type="checkbox"/>
	10	2	BPSK	1/2	58.6	65	<input checked="" type="checkbox"/>
	11	2	QPSK	1/2	117	130	<input type="checkbox"/>
	12	2	QPSK	3/4	175.6	195	<input type="checkbox"/>
	13	2	16-QAM	1/2	234	260	<input type="checkbox"/>
	14	2	16-QAM	3/4	351	390	<input type="checkbox"/>
	15	2	64-QAM	2/3	468	520	<input type="checkbox"/>
	16	2	64-QAM	3/4	526.6	585	<input type="checkbox"/>
	17	2	64-QAM	5/6	585	650	<input type="checkbox"/>
☐	18	2	256-QAM	3/4	702	780	<input type="checkbox"/>
	19	2	256-QAM	5/6	780	866.6	<input type="checkbox"/>
	20	3	BPSK	1/2	87.9	97.5	<input type="checkbox"/>
	21	3	QPSK	1/2	175.5	195	<input type="checkbox"/>
	22	3	QPSK	3/4	263.4	292.5	<input type="checkbox"/>
	23	3	16-QAM	1/2	351	390	<input type="checkbox"/>
	24	3	16-QAM	3/4	526.5	585	<input type="checkbox"/>
	25	3	64-QAM	2/3	702	780	<input type="checkbox"/>
	26	3	64-QAM	3/4	789.9	877.5	<input type="checkbox"/>
☐	27	3	64-QAM	5/6	877.5	975	<input type="checkbox"/>
	28	3	256-QAM	3/4	1053	1170	<input type="checkbox"/>
	29	3	256-QAM	5/6	1170	1299.9	<input type="checkbox"/>
	30	4	BPSK	1/2	117.2	130	<input type="checkbox"/>
	31	4	QPSK	1/2	234	260	<input type="checkbox"/>
	32	4	QPSK	3/4	351.2	390	<input type="checkbox"/>
	33	4	16-QAM	1/2	468	520	<input type="checkbox"/>
	34	4	16-QAM	3/4	702	780	<input type="checkbox"/>
	35	4	64-QAM	2/3	936	1040	<input type="checkbox"/>
☐	36	4	64-QAM	3/4	1053.2	1170	<input type="checkbox"/>
	37	4	64-QAM	5/6	1170	1300	<input type="checkbox"/>
	38	4	256-QAM	3/4	1404	1560	<input type="checkbox"/>
	39	4	256-QAM	5/6	1560	1733.2	<input type="checkbox"/>
	40	5	BPSK	1/2	146.5	162.5	<input type="checkbox"/>
	41	5	QPSK	1/2	292.5	325	<input type="checkbox"/>
	42	5	QPSK	3/4	439	487.5	<input type="checkbox"/>
	43	5	16-QAM	1/2	585	650	<input type="checkbox"/>
	44	5	16-QAM	3/4	877.5	975	<input type="checkbox"/>
☐	45	5	64-QAM	2/3	1170	1300	<input type="checkbox"/>
	46	5	64-QAM	3/4	1316.5	1462.5	<input type="checkbox"/>
	47	5	64-QAM	5/6	1462.5	1625	<input type="checkbox"/>
	48	5	256-QAM	3/4	1755	1950	<input type="checkbox"/>
	49	5	256-QAM	5/6	1950	2166.5	<input type="checkbox"/>
	50	6	BPSK	1/2	175.8	195	<input type="checkbox"/>
	51	6	QPSK	1/2	351	390	<input type="checkbox"/>
	52	6	QPSK	3/4	526.8	585	<input type="checkbox"/>
	53	6	16-QAM	1/2	702	780	<input type="checkbox"/>
☐	54	6	16-QAM	3/4	1053	1170	<input type="checkbox"/>
	55	6	64-QAM	2/3	1404	1560	<input type="checkbox"/>
	56	6	64-QAM	3/4	1579.8	1755	<input type="checkbox"/>
	57	6	64-QAM	5/6	1755	1950	<input type="checkbox"/>
	58	6	256-QAM	3/4	2106	2340	<input type="checkbox"/>
	59	6	256-QAM	5/6	2340	2599.8	<input type="checkbox"/>
	60	7	BPSK	1/2	205.1	227.5	<input type="checkbox"/>
	61	7	QPSK	1/2	409.5	455	<input type="checkbox"/>
	62	7	QPSK	3/4	614.6	682.5	<input type="checkbox"/>
☐	63	7	16-QAM	1/2	819	910	<input type="checkbox"/>
	64	7	16-QAM	3/4	1228.5	1365	<input type="checkbox"/>
	65	7	64-QAM	2/3	1638	1820	<input type="checkbox"/>
	66	7	64-QAM	3/4	1843.1	2047.5	<input type="checkbox"/>
	67	7	64-QAM	5/6	2047.5	2275	<input type="checkbox"/>
	68	7	256-QAM	3/4	2457	2730	<input type="checkbox"/>
	69	7	256-QAM	5/6	2730	3033.1	<input type="checkbox"/>
	70	8	BPSK	1/2	234.4	260	<input type="checkbox"/>
	71	8	QPSK	1/2	468	520	<input type="checkbox"/>
☐	72	8	QPSK	3/4	702.4	780	<input type="checkbox"/>
	73	8	16-QAM	1/2	936	1040	<input type="checkbox"/>
	74	8	16-QAM	3/4	1404	1560	<input type="checkbox"/>
	75	8	64-QAM	2/3	1872	2080	<input type="checkbox"/>
	76	8	64-QAM	3/4	2106.4	2340	<input type="checkbox"/>
	77	8	64-QAM	5/6	2340	2600	<input type="checkbox"/>
	78	8	256-QAM	3/4	2808	3120	<input type="checkbox"/>
	79	8	256-QAM	5/6	3120	3466.4	<input type="checkbox"/>

2.2. RUNNING MODE

Test mode	Description of test mode
Test mode 1	Emission-reception with a duty cycle above 17% in the data rate that produced the highest output power and lperf traffic in udp mode(1)

(1) System testings is performed with iperf test software in udp mode from the Master Device to the Client Device on the test channel. The data traffic is performed Laptop 2 to Laptop 1



Test	Running mode
Channel Closing Transmission Time & Channel Move Time	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
Non-occupancy period	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()

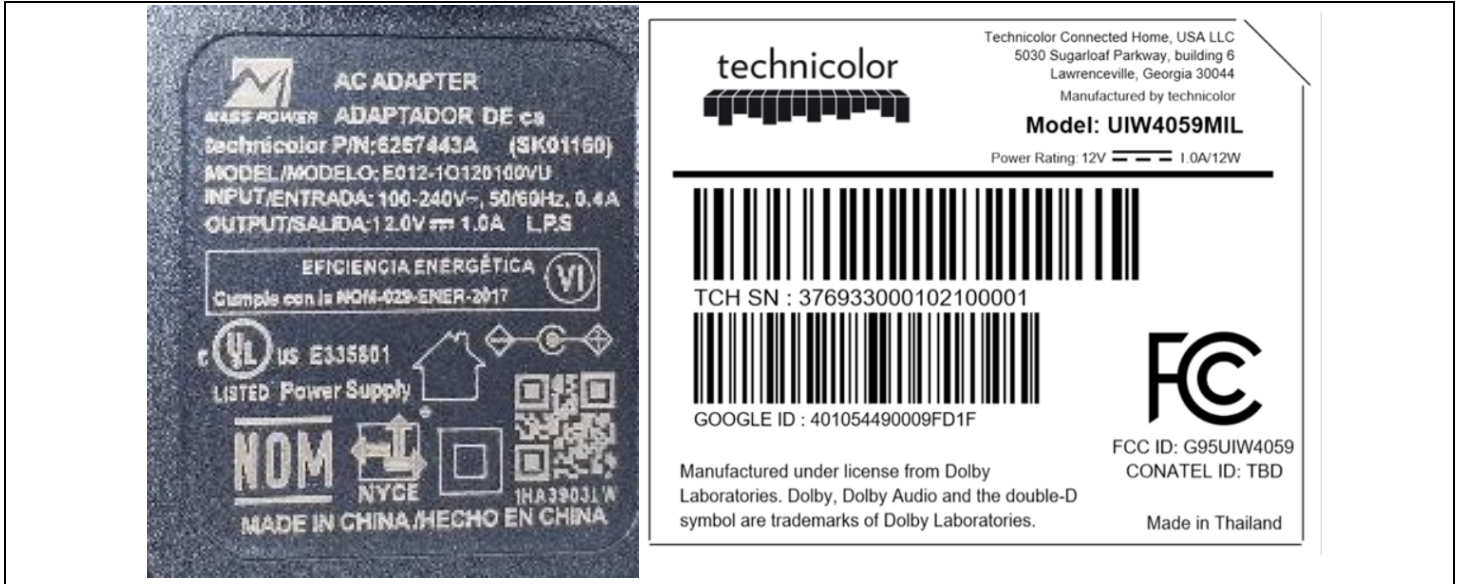
(1) Following commands with the specific test software “teraterm” are used to set the product:

- a. – See document “LCIE_Radio tests_UZW4059MIL_v0.4.docx”(provided by customer) for the command used during test.



L C I E

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 : Julien Palard
 Date of test : April 29, 2021
 Ambient temperature : 23 °C
 Relative humidity : 31 %

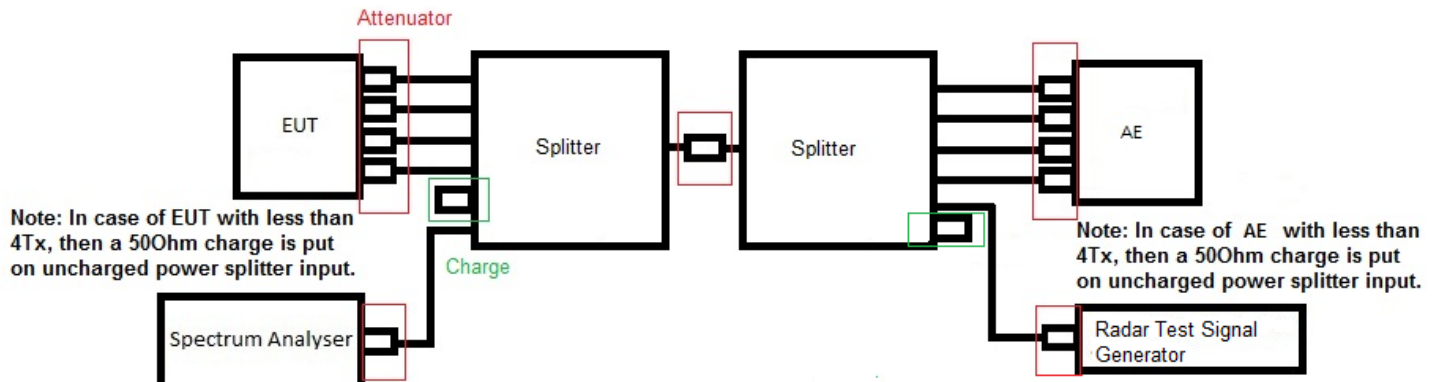
3.2. TEST SETUP

- The Equipment Under Test is:

- On a table
- In an anechoic chamber

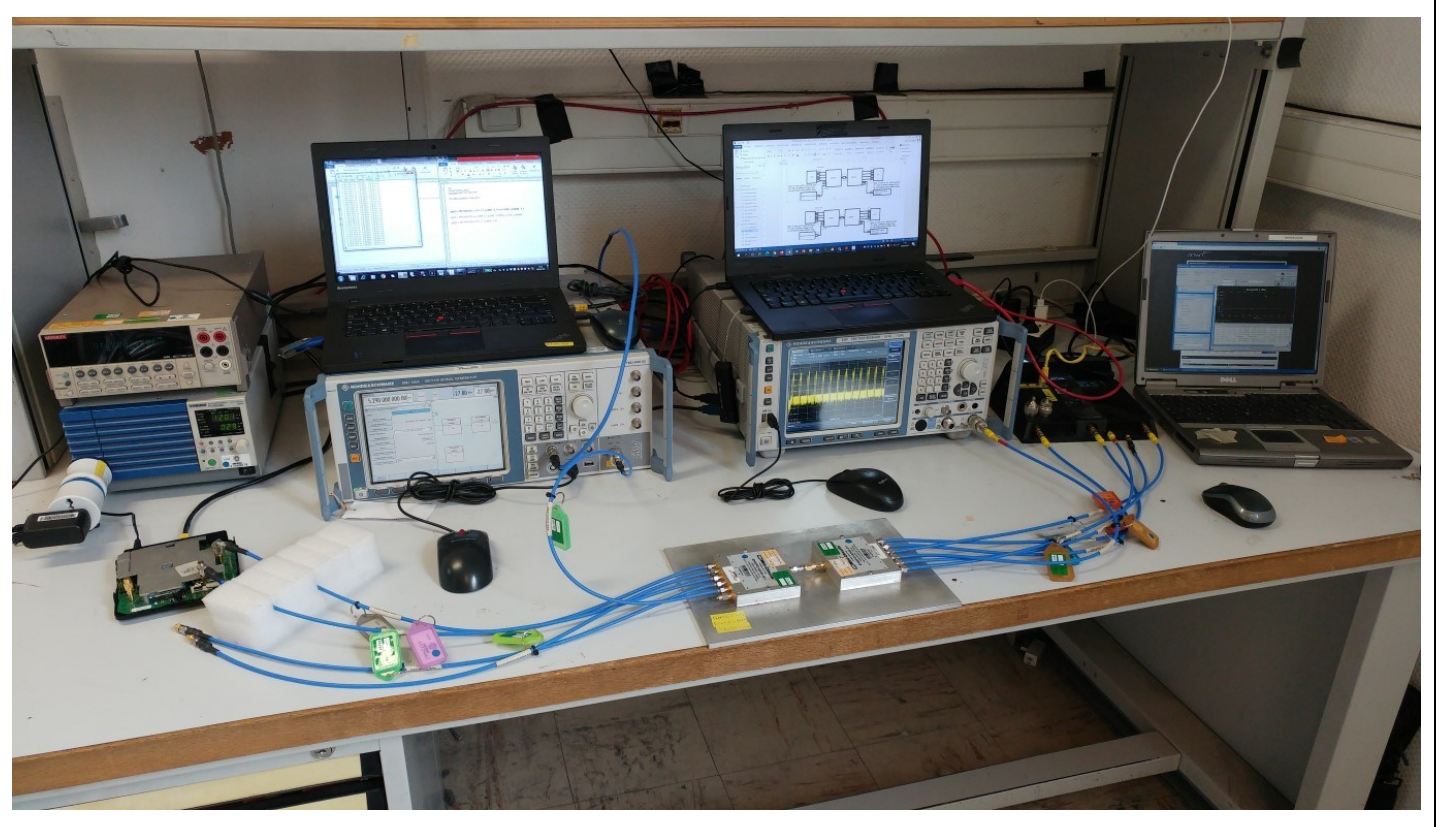
- Measurement is performed with a spectrum analyzer:

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





L C I E



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

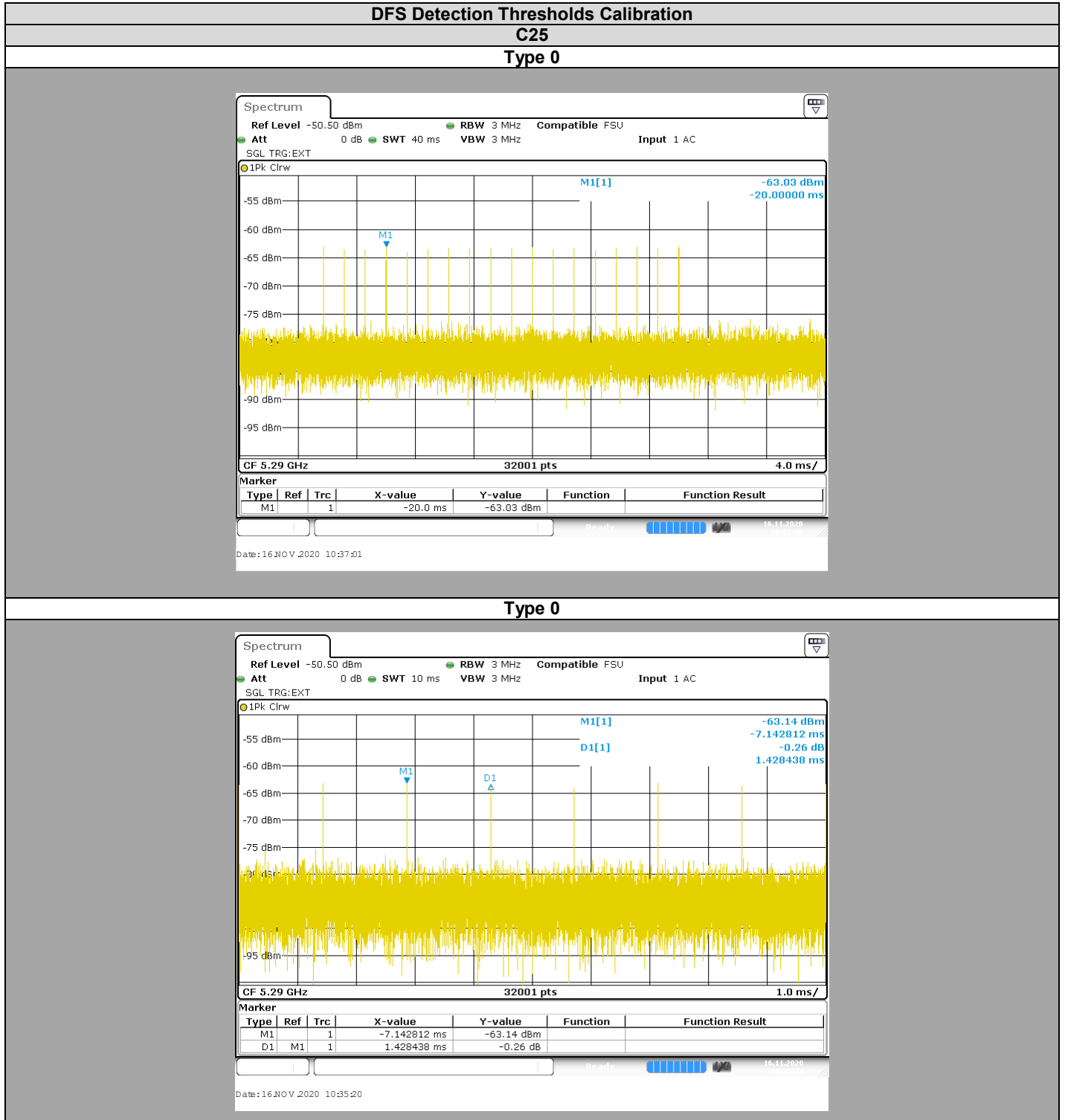


3.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
R&S Commander Software	ROHDE & SCHWARZ	Version 1.6.4	-	-	-
DFS Analysis Tool	ROHDE & SCHWARZ	Version 11.2006 – 1EF59_1E	-	-	-
Power supply	KIKUSUI	PCR500M	A7040079	Calibrate with multimeter	Calibrate with multimeter
Multimeter	KEITHLEY	2000	A1242090	2019/05	2021/05
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642026	2019/07	2021/07
Signal generator	ROHDE & SCHWARZ	SMJ100A	A5444007	2021/03	2022/03
RF cable	Télédyne	920-0202-024	A5329663	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329664	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329665	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329668	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329669	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329670	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329672	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329673	2020/09	2022/09
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122229	2020/09	2022/09
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122230	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122238	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122239	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122240	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122241	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122242	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122243	2020/09	2022/09
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132040	2020/09	2022/09
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132041	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152075	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152076	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152077	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152078	2020/09	2022/09

Note: In our quality system, the test equipment calibration due is more & less 2 months

3.4. RESULTS



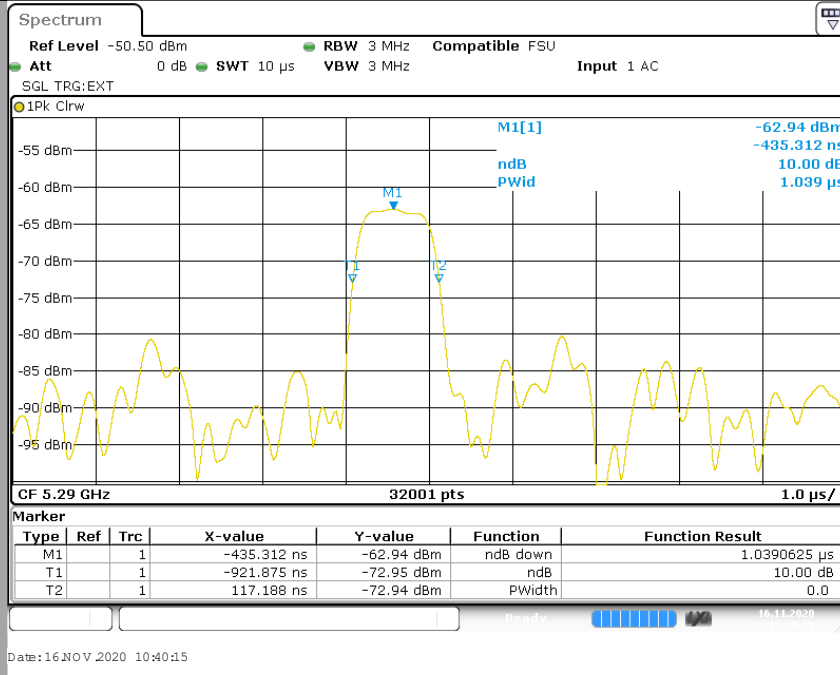


L C I E

DFS Detection Thresholds Calibration

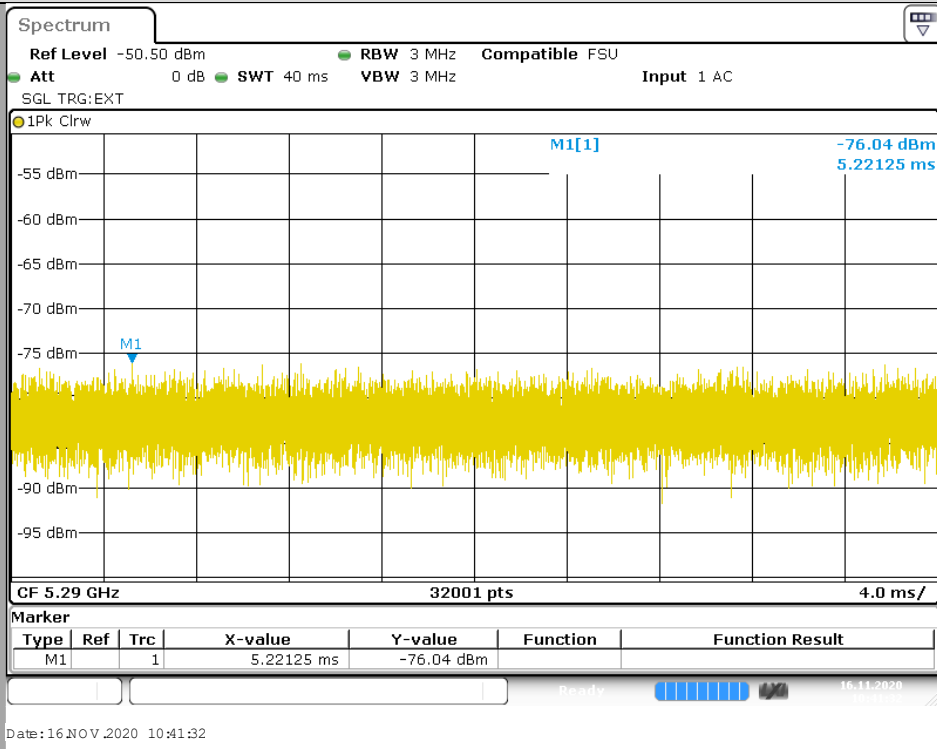
C25

Type 0



Reference Noise Level

C25





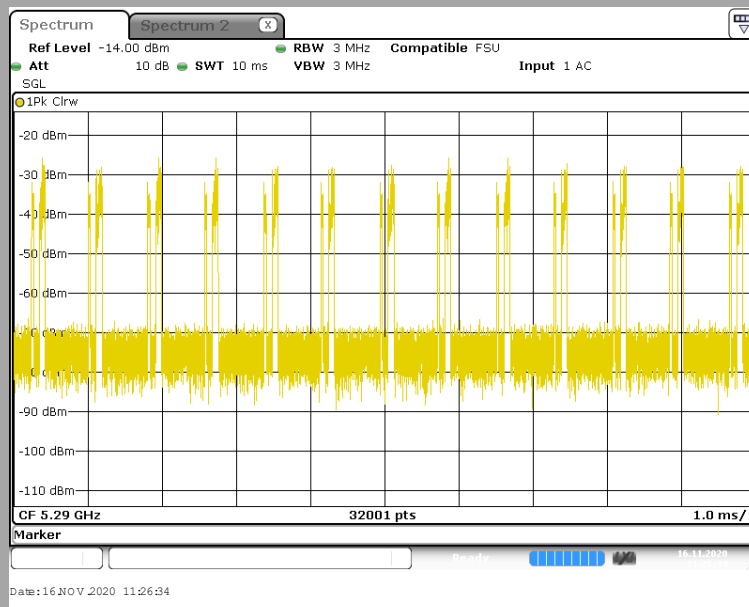
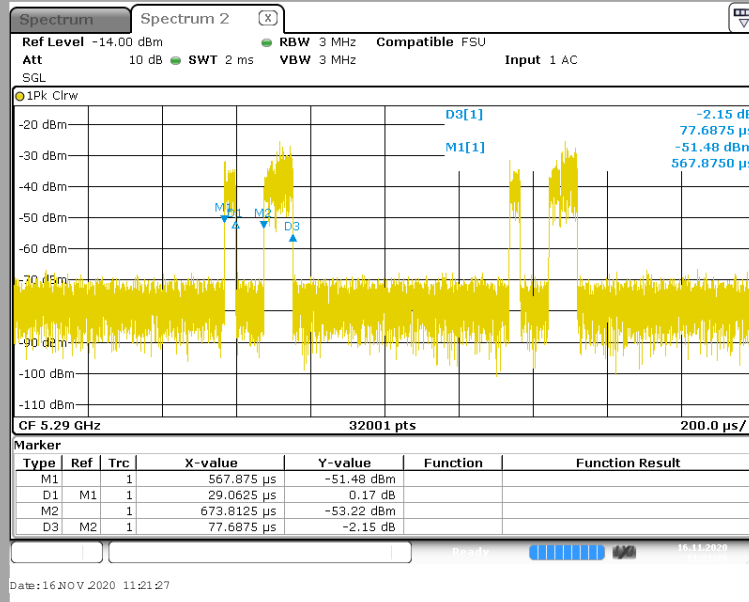
L C I E

Channel	Channel
EIRP (See test report from FCC ID: RRK2012060056-1)	338,065mW
DFS Detection thresholds applied	-64dBm
Additional Level (dB)	1
DFS Detection thresholds applied	-63dBm



L C I E

Client level C25



Duty Cycle (%)

Over 17%

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

4.1. TEST CONDITIONS

Test performed by : Julien Palard
 Date of test : April 29, 2021
 Ambient temperature : 23 °C
 Relative humidity : 31 %

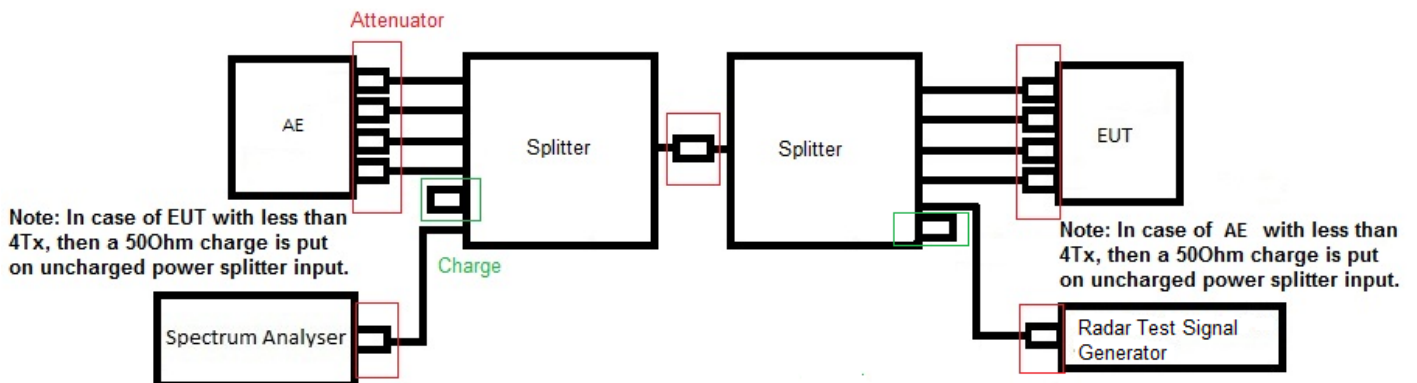
4.2. TEST SETUP

- The Equipment Under Test is:

- On a table
- In an anechoic chamber

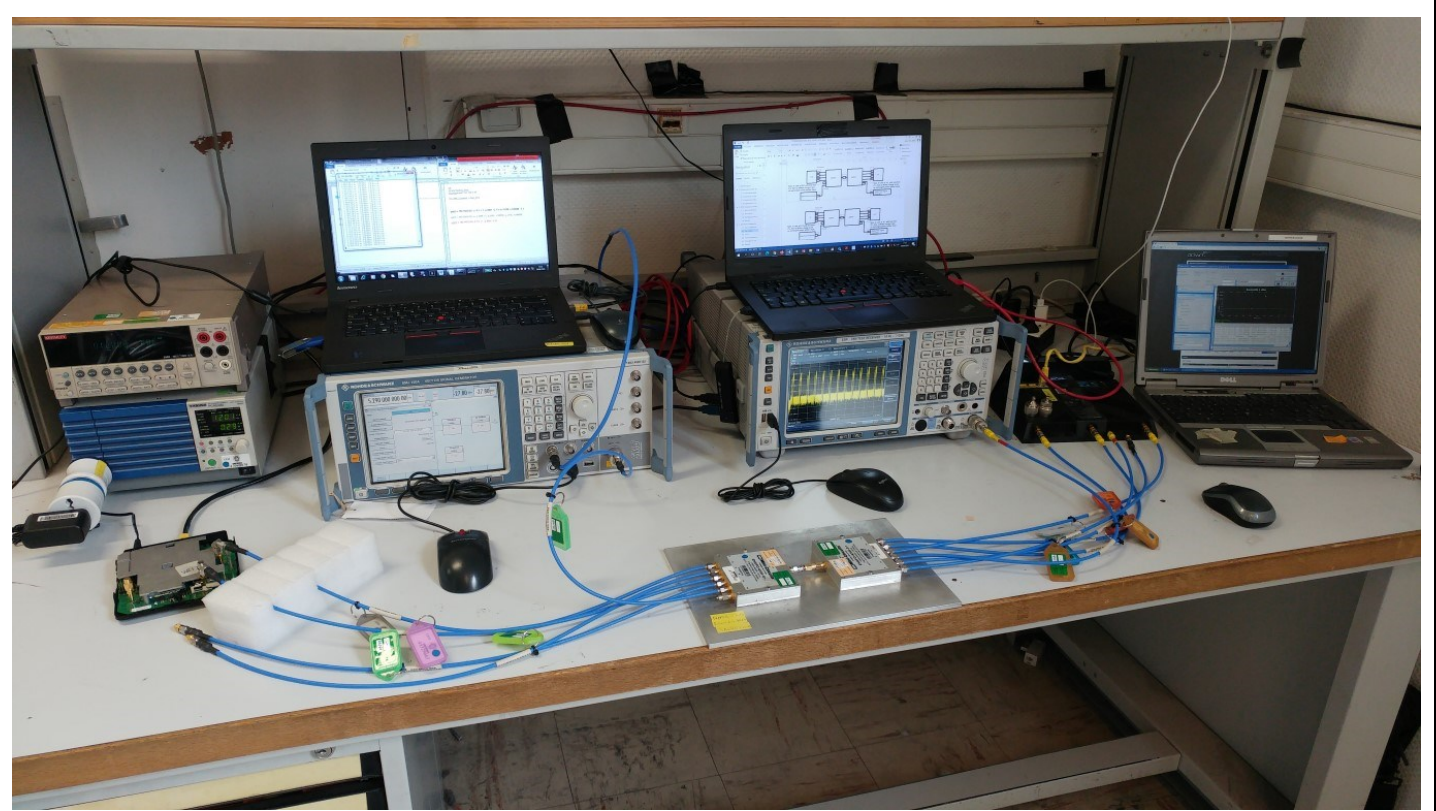
- Measurement is performed with a spectrum analyzer:

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





L C I E



Photograph for DFS Channel Closing Transmission Time & Channel Move Time



4.3. LIMIT

Channel Closing Transmission Time shall not exceed 0.26second
Channel Move Time shall not exceed 10seconds

4.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
R&S Commander Software	ROHDE & SCHWARZ	Version 1.6.4	-	-	-
DFS Analysis Tool	ROHDE & SCHWARZ	Version 11.2006 – 1EF59_1E	-	-	-
Power supply	KIKUSUI	PCR500M	A7040079	Calibrate with multimeter	Calibrate with multimeter
Multimeter	KEITHLEY	2000	A1242090	2019/05	2021/05
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642026	2019/07	2021/07
Signal generator	ROHDE & SCHWARZ	SMJ100A	A5444007	2021/03	2022/03
RF cable	Télédyne	920-0202-024	A5329663	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329664	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329665	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329668	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329669	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329670	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329672	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329673	2020/09	2022/09
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122229	2020/09	2022/09
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122230	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122238	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122239	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122240	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122241	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122242	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122243	2020/09	2022/09
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132040	2020/09	2022/09
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132041	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152075	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152076	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152077	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152078	2020/09	2022/09

Note: In our quality system, the test equipment calibration due is more & less 2 months

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:



L C I E

4.6. RESULTS

Channel Closing Transmission Time & Channel Move Time	
802.11ac VHT80	
C25	
<div style="border: 1px solid #ccc; padding: 5px;"> <p style="text-align: center; margin: 0;">Channel Startup Check</p> <p>Channel Move Time (seconds)</p> <p>Trigger Source <input type="radio"/> Immediate <input checked="" type="radio"/> External</p> <p>Measurement Time (s) <input type="text" value="12"/></p> <p style="text-align: center; margin: 5px 0;">START</p> <p style="text-align: center; margin: 5px 0;">Save Trace</p> <p>Measured Channel Move Time <input type="text" value=".03 s"/></p> <p>Measured Channel Closing Transmission Time <input type="text" value="200 ms"/></p> <hr/> <p>Non-Occupancy Period (minutes)</p> <p>Trigger Source <input type="radio"/> Immediate <input checked="" type="radio"/> External</p> <p>Measurement Time (min) <input type="text" value="32"/></p> <p style="text-align: center; margin: 5px 0;">START</p> <p style="text-align: center; margin: 5px 0;">Save Trace</p> <p>Measured Non-Occupancy Period <input type="text" value="0 min"/></p> </div>	<div style="border: 1px solid #ccc; padding: 5px;"> <p style="text-align: center; margin: 0;">In Service Monitoring</p> </div>
<p><input checked="" type="checkbox"/> Analyzer Conn.</p> <p><input checked="" type="checkbox"/> Timing Alignment</p> <p style="text-align: center; margin: 5px 0;">ABORT</p> <p>Frequency (MHz) <input type="text" value="5290"/></p> <p>RefLevel (dBm) <input type="text" value="0"/></p> <p>Threshold (dBm) <input type="text" value="-30"/></p> <p><input type="checkbox"/> PreAmp</p>	
<div style="border: 1px solid #ccc; padding: 5px;"> <p style="text-align: center; margin: 0;">Spectrum</p> <p>Ref Level 0.00 dBm RBW 3 MHz Compatible FSU</p> <p>Att 20 dB SWT 12 s VBW 3 MHz Input 1 AC</p> <p>SGL TRG:EXT</p> <p><input checked="" type="radio"/> IPk Clrw</p> <p style="font-size: small; margin-top: 5px;">Date: 29 APR 2021 14:24:11</p> </div>	
Channel Closing Transmission Time (s)	0,2
Channel Move Time (s)	0,03

4.7. CONCLUSION

Channel Closing Transmission Time & Channel Move Time measurement performed on the sample of the product **TECHNICOLOR UIW4059MIL**, SN: **ELN029 LAB03 Proto Eleckto**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.407 limits.

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

5.1. TEST CONDITIONS

Test performed by : Julien Palard
 Date of test : April 29, 2021
 Ambient temperature : 23 °C
 Relative humidity : 31 %

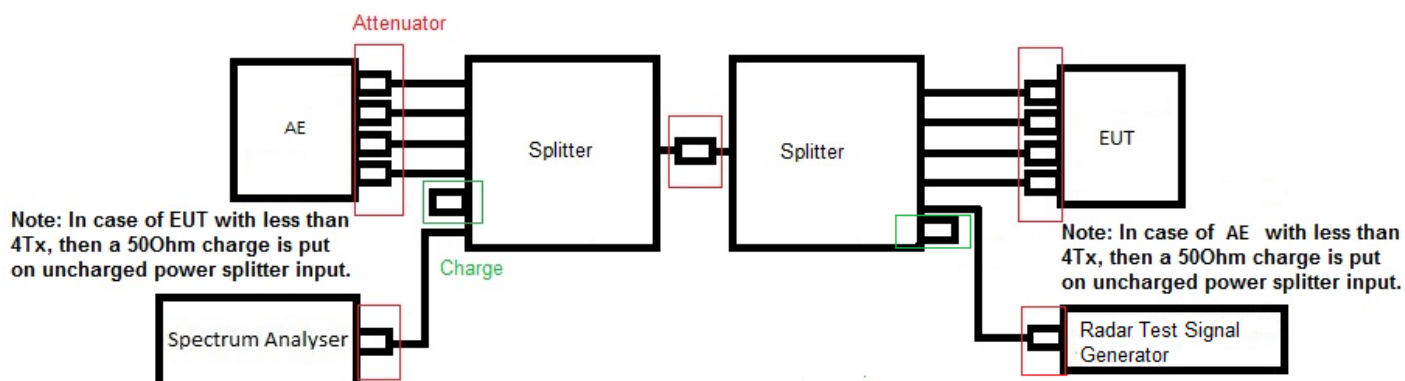
5.2. TEST SETUP

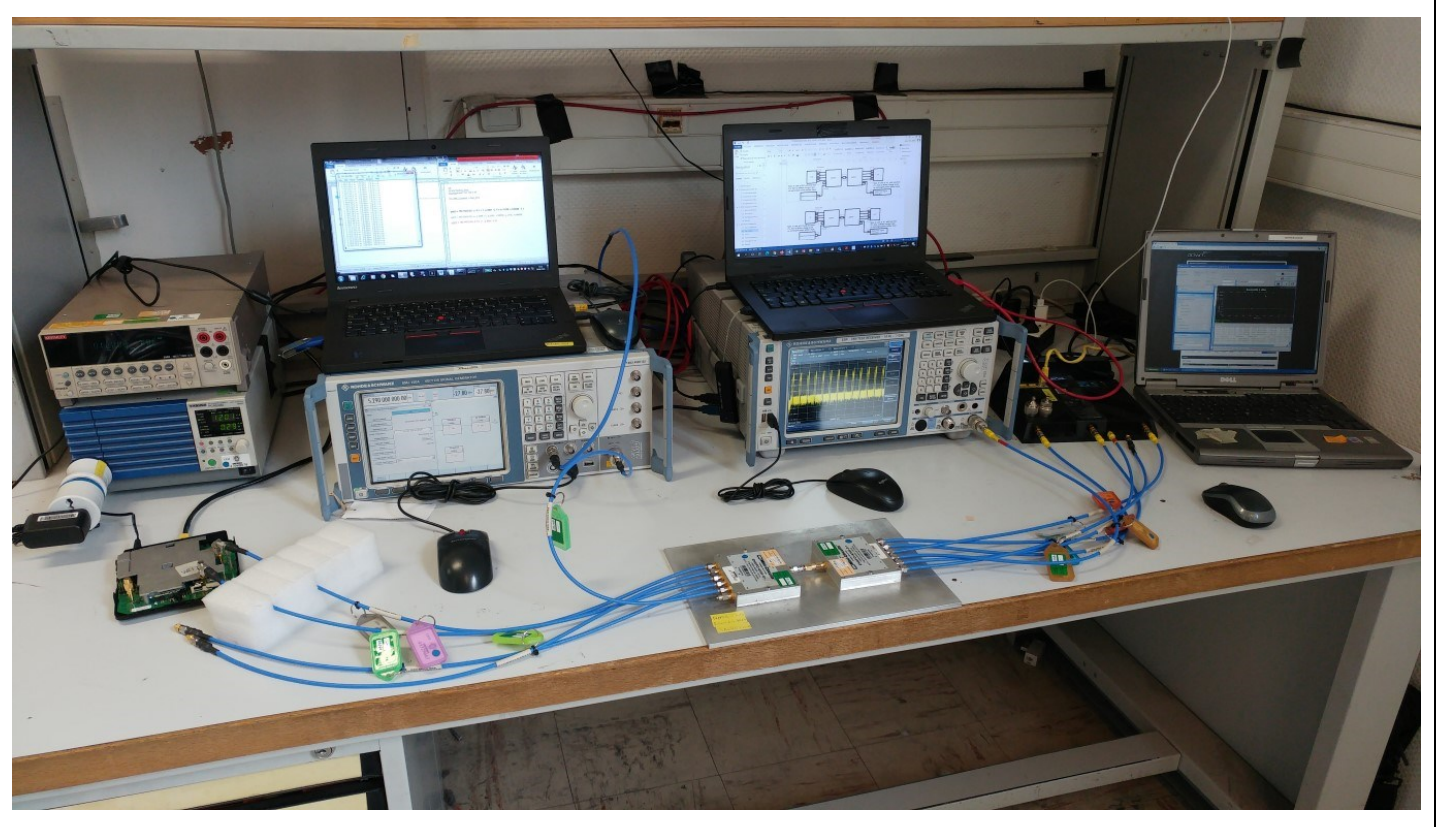
- The Equipment Under Test is:

- 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





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
R&S Commander Software	ROHDE & SCHWARZ	Version 1.6.4	-	-	-
DFS Analysis Tool	ROHDE & SCHWARZ	Version 11.2006 – 1EF59_1E	-	-	-
Power supply	KIKUSUI	PCR500M	A7040079	Calibrate with multimeter	Calibrate with multimeter
Multimeter	KEITHLEY	2000	A1242090	2019/05	2021/05
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642026	2019/07	2021/07
Signal generator	ROHDE & SCHWARZ	SMJ100A	A5444007	2021/03	2022/03
RF cable	Télédyne	920-0202-024	A5329663	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329664	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329665	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329668	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329669	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329670	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329672	2020/09	2022/09
RF cable	Télédyne	920-0202-024	A5329673	2020/09	2022/09
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122229	2020/09	2022/09
Attenuator 10dB	MINI CIRCUITS	BW-S10W2+	A7122230	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122238	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122239	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122240	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122241	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122242	2020/09	2022/09
Attenuator 3dB	MINI CIRCUITS	BW-S3W2+	A7122243	2020/09	2022/09
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132040	2020/09	2022/09
Power splitter	Mini-Circuits	ZN6PD-63W-S+	A7132041	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152075	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152076	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152077	2020/09	2022/09
Load 50 ohms	Fairview Microwave	ST0635F	A7152078	2020/09	2022/09

Note: In our quality system, the test equipment calibration due is more & less 2 months

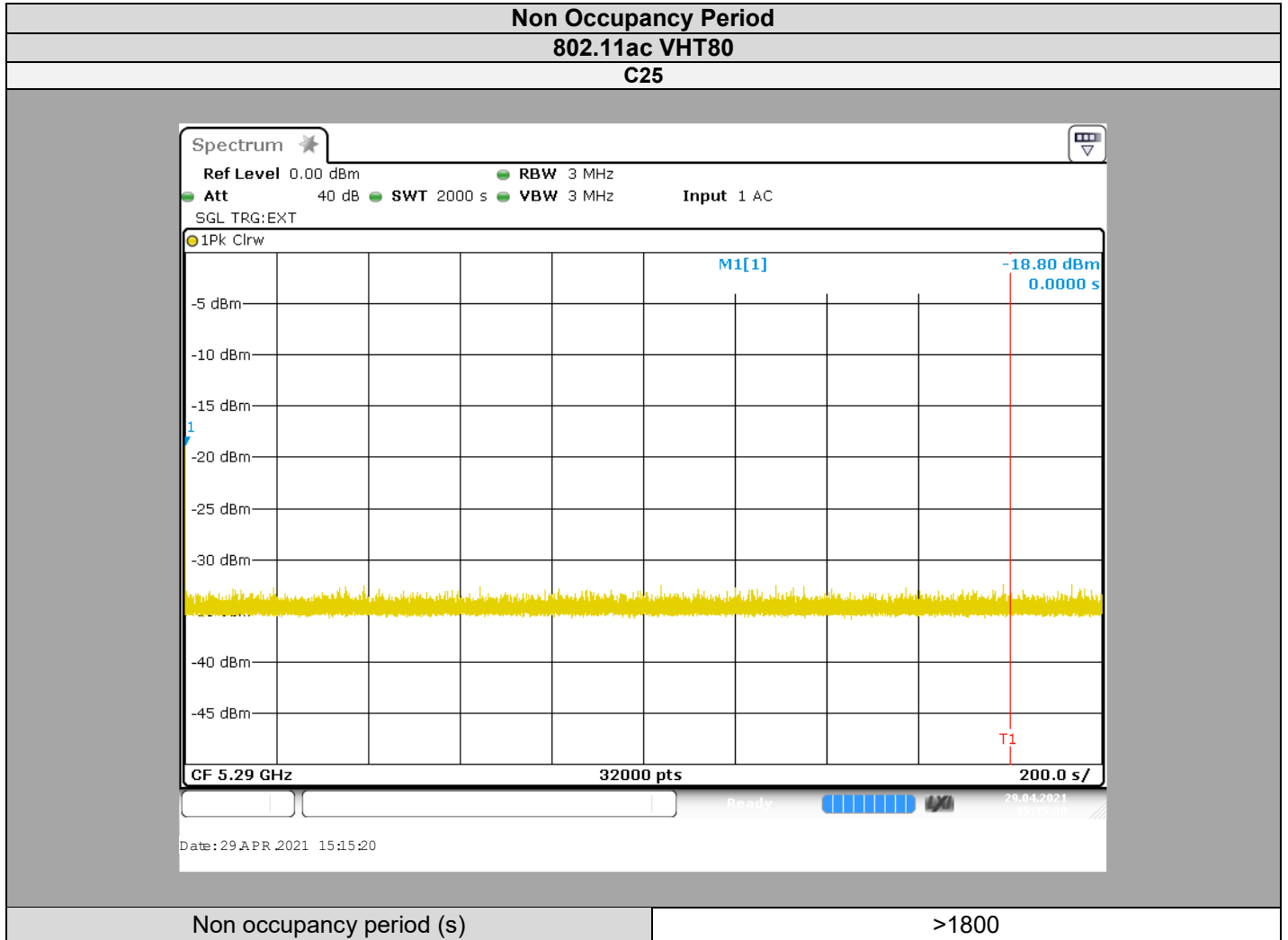
5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None Divergence:



L C I E

5.6. RESULTS



5.7. CONCLUSION

Non-Occupancy period measurement performed on the sample of the product **TECHNICOLOR UIW4059MIL**, SN: **ELN029 LAB03 Proto Eleckto**, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.407 limits.



6. ANNEX : RADAR TEST SIGNAL TYPE 0

TYPE 0		
Pulses per Burst	Pulse Width (μsec)	PRI (μs)
18	1	1428

7. UNCERTAINTIES CHART

47 CFR Part 15.209 & 15.207 Kind of test	Wide uncertainty laboratory (k=2) ±x(dB) / (Hz)/ ms	Uncertainty limit
Measurement of conducted disturbances in voltage on the AC power port (9 kHz – 150 kHz)	2,67	3.8
Measurement of conducted disturbances in voltage on the AC power port (150 kHz – 30 MHz)	2,67	3.4
Measurement of conducted disturbances in voltage on the telecommunication port. (AAN)	3,67	5.0
Measurement of conducted disturbances in current (current clamp)	2,73	2.9
Measurement of disturbance power	2,67	4.5
Measurement of radiated magnetic field from 10kHz to 30MHz in SAC V01	4,48	/
Measurement of radiated magnetic field from 10kHz to 30MHz in SAC C01	4,48	/
Measurement of radiated electric field from 30 to 1000MHz in horizontal position on the OATS (Ecuelles)	4,88	6.3
Measurement of radiated electric field from 1 to 18GHz on the Ecuelles site	5.16	/
Measurement of radiated electric field from 30 to 1000MHz in vertical position on the OATS (Ecuelles)	4,99	6.3
Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC C01	5,08	6.3
Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC C01	5,16	6.3
Measurement of radiated electric field from 30 to 1000MHz in horizontal position in SAC V01	5,08	6.3
Measurement of radiated electric field from 30 to 1000MHz in vertical position in SAC V01	5,15	6.3
Measurement of radiated electric field from 1 to 6 GHz C01	5,1	5.2
Measurement of radiated electric field from 1 to 6 GHz V01	4,85	5.2
Measurement of radiated magnetic field from 10kHz to 30MHz on the OATS (Ecuelles)	4,48	/

The uncertainty values calculated by the laboratory are lower than limit uncertainty values defined by the CISPR. The conformity of the sample is directly established by the applicable limits values. This table includes all uncertainties maximum feasible for testing in the laboratory, whether or not made in this report