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TEST REPORT

N°: 172319-764277-C

Version : 02

Subject	Radio spectrum matters tests according to standards: 47 CFR Part 15.247
Issued to	Technicolor Connected Home USA, LLC 5030 Sugarloaf Parkway, Building 6 Lawrenceville – GA 30044 USA
Apparatus under test	
↪ Product	IP Set-Top Box
↪ Trade mark	Technicolor
↪ Manufacturer	Technicolor
↪ Model under test	UIW4059MIL
↪ Serial number	LAB3-V0 nr.030
↪ FCC ID	G95UIW4059
Conclusion	See Test Program chapter
Test date	April 8, 2021 to April 22, 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	97 pages
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PUBLICATION HISTORY

Version	Date	Author	Modification
01	June 8, 2021	Armand MAHOUNGOU	Creation of the document
02	June 8, 2021	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.



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1. TEST PROGRAM

References

- 47 CFR Part 15.247
- KDB 558074 D01 DTS Meas Guidance v05r02
- KDB 662911 D01 Multiple Transmitter Output v02r01
- ANSI C63.10-2013

Radio requirement:

Clause (47CFR Part 15.247) Test Description	Test result - Comments			
Occupied Bandwidth	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
6dB Bandwidth	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA()	<input type="checkbox"/> NP(1)
Duty Cycle	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Maximum Conducted Output Power	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Power Spectral Density	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Conducted Spurious Emission at the Band Edge	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA()	<input type="checkbox"/> NP(1)
Unwanted Emissions into Non-Restricted Frequency Bands	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA()	<input type="checkbox"/> NP(1)
AC Power Line Conducted Emission	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA(2)	<input type="checkbox"/> NP(1)
Unwanted Emissions into Restricted Frequency Bands	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
Receiver Radiated emissions	<input checked="" type="checkbox"/> PASS	<input type="checkbox"/> FAIL	<input type="checkbox"/> NA	<input type="checkbox"/> NP(1)
This table is a summary of test report, see conclusion of each clause of this test report for detail.				

(1): Limited program

(2): EUT not directly or indirectly connected to the AC Power Public Network

PASS: EUT complies with standard's requirement

FAIL: EUT does not comply with standard's requirement

NA: Not Applicable

NP: Test Not Performed

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

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):
Technicolor UIW4059MIL

Serial Number: LAB3-V0 nr.030





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
Laptop computer	-	-	Use to set the EUT



L C I E

Equipment information:

Type:	WIFI			
Frequency band:	2400MHz-2483.5MHz			
Chipset Ref :	Realtek RTL8822CS			
Standard:	<input checked="" type="checkbox"/> 802.11b	<input checked="" type="checkbox"/> 802.11g	<input checked="" type="checkbox"/> 802.11n HT20	<input checked="" type="checkbox"/> 802.11n HT40
Spectrum Modulation:	<input checked="" type="checkbox"/> DSSS		<input checked="" type="checkbox"/> OFDM	
Number of Channel:	11			
Spacing channel:	5MHz			
Channel bandwidth:	<input checked="" type="checkbox"/> 20MHz		<input checked="" type="checkbox"/> 40MHz	
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
Transmit chains:	<input type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Beam forming gain:	<input type="checkbox"/> Yes: XdB			<input checked="" type="checkbox"/> No
Receiver chains	<input type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
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
Ad-Hoc mode:	<input type="checkbox"/> Yes			<input checked="" type="checkbox"/> No
Duty cycle:	<input checked="" type="checkbox"/> Continuous duty		<input type="checkbox"/> Intermittent duty	<input type="checkbox"/> 100% duty
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
Operating voltage range:	Vnom:	<input checked="" type="checkbox"/> 120V/60Hz		<input checked="" type="checkbox"/> 12 VDC +/-5%
		<input checked="" type="checkbox"/> 240V/50Hz		<input type="checkbox"/> X VDC

Antenna Characteristic			
Antenna assembly	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
1	3.1	2400MHz-2483.5MHz	50
2	3.5	2400MHz-2483.5MHz	50
Accumulated	1.7	2400MHz-2483.5MHz	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



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CHANNEL PLAN	
802.11b / 802.11g / 802.11n HT20	
Channel	Frequency (MHz)
Cmin: 1	2412
2	2417
3	2422
4	2427
5	2432
Cmid: 6	2437
7	2442
8	2447
9	2452
10	2457
Cmax: 11	2462

CHANNEL PLAN	
802.11n HT40	
Channel	Frequency (MHz)
Cmin: 3	2422
4	2427
5	2432
Cmid: 6	2437
7	2442
8	2447
Cmax: 9	2452



L C I E

DATA RATE		
802.11b		
Data Rate (Mbps)	Modulation Type	Modulation Worst Case
1	DBPSK	<input checked="" type="checkbox"/>
2	DQPSK	<input type="checkbox"/>
5.5	DQPSK	<input type="checkbox"/>
11	CCK	<input type="checkbox"/>

DATA RATE		
802.11g		
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"/>



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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"/>
☑	32	1	BPSK	-	-	-	-	-	<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"/>
	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"/>
☐	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"/>
	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"/>	
☐	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"/>
	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"/>
32	1	BPSK	-	-	-	6.0	6.7	<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"/>
	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"/>
	☐	16	3	BPSK				40.5	45
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"/>
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"/>	
☐	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"/>
	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"/>	



2.2. RUNNING MODE

Test mode	Description of test mode
Test mode 1	Permanent emission with modulation on a fixed channel in the data rate that produced the highest power

Test	Running mode
Occupied Bandwidth	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
6dB Bandwidth	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
Duty Cycle	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
Maximum Conducted Output Power	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
Power Spectral Density	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
Conducted Spurious Emission at the Band Edge	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
Unwanted Emissions into Non-Restricted Frequency Bands	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
AC Power Line Conducted Emission	<input checked="" type="checkbox"/> Test mode 1 (1) <input type="checkbox"/> Alternative test mode()
Unwanted Emissions into Restricted Frequency Bands	<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 documents "LCIE_Radio tests_UZW4059MIL_v0.4.docx" and "MIL_Script for radio certification_v0.3.xlsx" (provided by customer) for the command used during test.

Power Target used during test

Mode B		
Modulation CCK 1M		
Channel	Tx1 target	Tx2 target
C1 = 2412MHz	75	86
C6 = 2437MHz	87	98
C11 = 2462MHz	79	90

Mode G		
Modulation 6M		
Channel	Tx1 target	Tx2 target
C1 = 2412MHz	65	75
C6 = 2437MHz	77	87
C11 = 2462MHz	69	79

Mode nHT20		
Modulation HTMCS8		
Channel	Tx1 target	Tx2 target
C1 = 2412MHz	65	75
C6 = 2437MHz	77	87
C11 = 2462MHz	69	79

Mode nHT40		
Modulation HTMCS8		
Channel	Tx1 target	Tx2 target
C1 = 2422MHz	61	71
C6 = 2437MHz	73	83
C11 = 2452MHz	65	75

2.3. EQUIPMENT LABELLING



2.4. EQUIPMENT MODIFICATION

None Modification:



2.5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follow:

$$FS = RA + AF + CF - AG$$

Where

- FS = Field Strength
- RA = Receiver Amplitude
- AF = Antenna Factor
- CF = Cable Factor
- AG = Amplifier Gain

Assume a receiver reading of 52.5dB μ V is obtained. The antenna factor of 7.4 and a cable factor of 1.1 are added. The amplifier gain of 29dB is subtracted, giving a field strength of 32 dB μ V/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dB}\mu\text{V/m}$$

The 32 dB μ V/m value can be mathematically converted to its corresponding level in μ V/m.

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(32\text{dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m.}$$

2.6. CALIBRATION DATE

The calibration intervals are extended at 12+2 months. This extended interval is based on the fact that there is sufficient calibration data to statistically establish a trend or based on experience of use of the test equipment to assure good measurement results for a longer period.

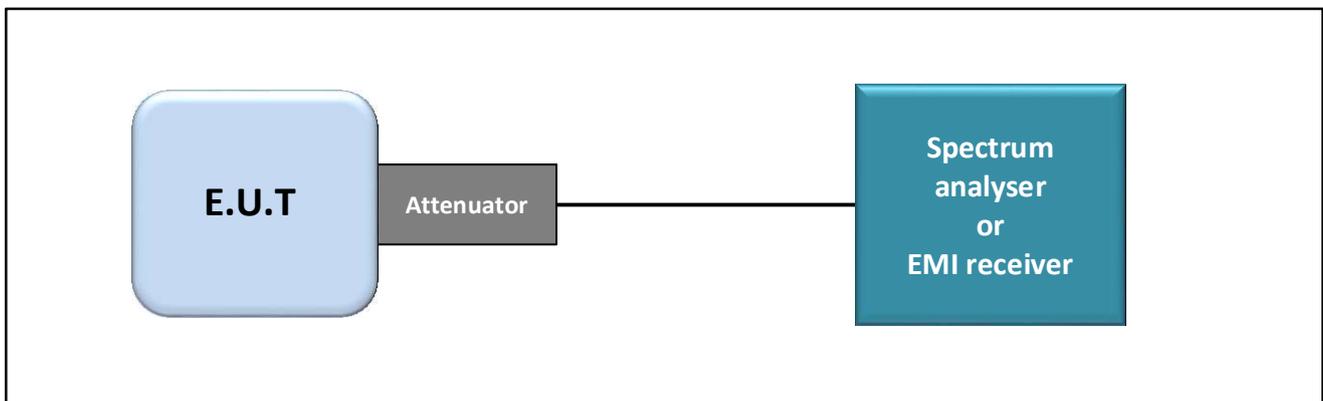
3. OCCUPIED BANDWIDTH

3.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : April 20, 2021
Ambient temperature : 24°C
Relative humidity : 42%

3.2. TEST SETUP

- The Equipment Under Test is installed:
 - On a table
 - In an anechoic chamber
- Measurement is performed with a spectrum analyzer in:
 - Conducted Method
 - Radiated Method
- Test Procedure:
 - RSS-Gen Issue 5 § 6.7
 - ANSI C63.10 § 6.9.2



Test set up of Occupied Bandwidth



Photograph for Occupied bandwidth

3.3. LIMIT

None

3.4. TEST EQUIPMENT LIST

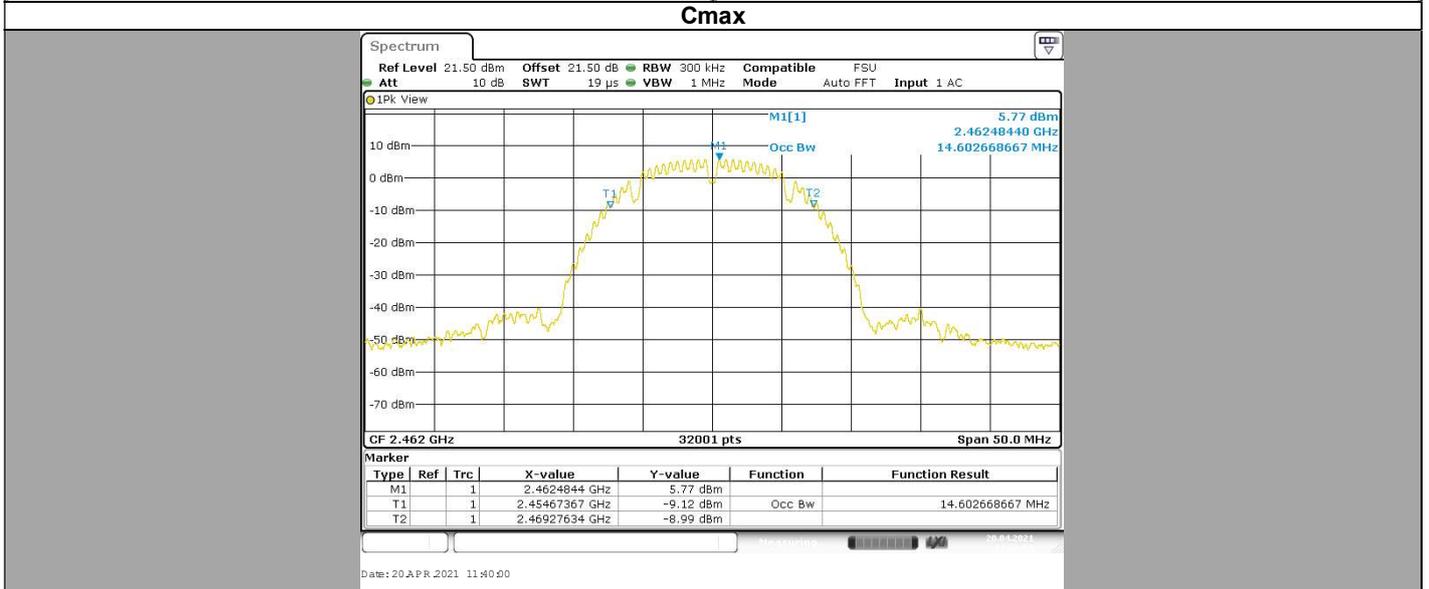
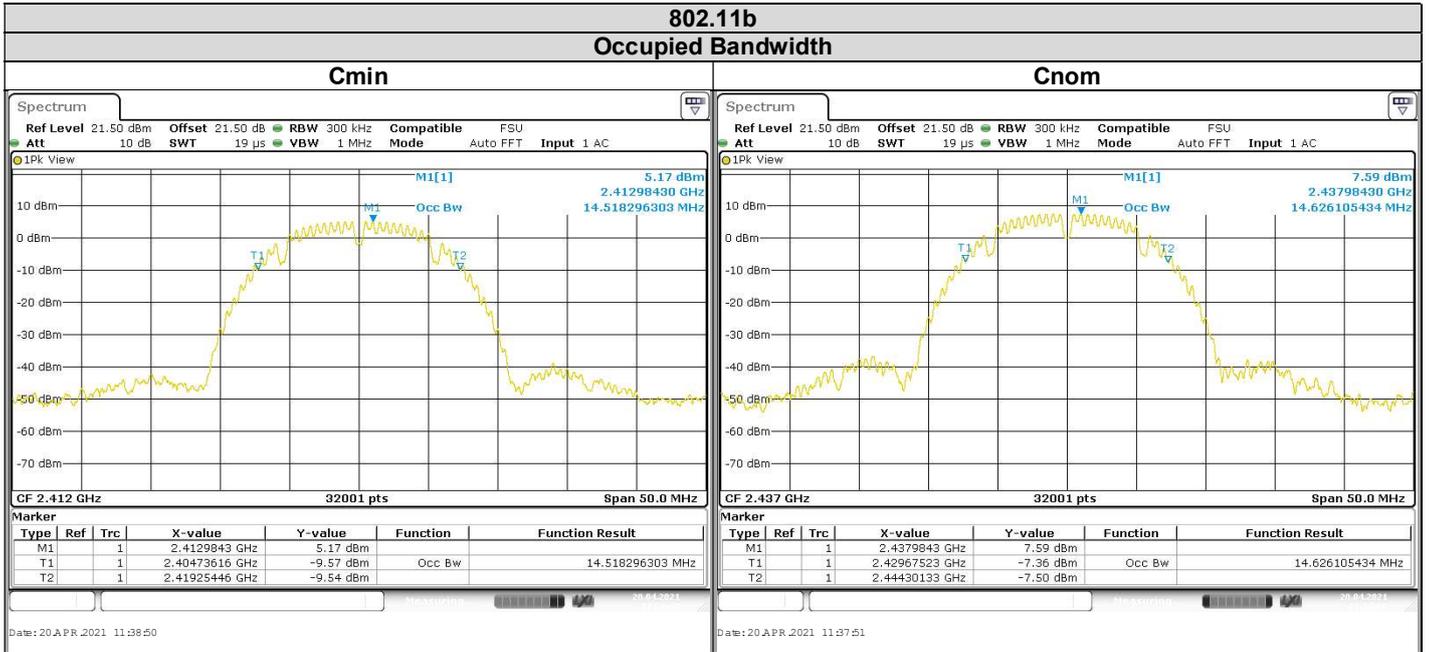
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR7	A2642026	2019/07	2021/07
Cable + Attenuateur 20dB	PASTERNAK	PE350-150CM	A5329973	2020/09	2021/09
Multimeter	KEITHLEY	2000	A1242090	2019/05	2021/05
Power supply	KIKUSUI	PCR500M	A7040079	See Multimeter	See Multimeter
Load 50 ohms	TELEGARTNER	-	A7150103	2019/04	2021/04
Load 50 ohms	TELEGARTNER	-	A7150104	2019/04	2021/04

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



L C I E

3.5. RESULTS



Channel	Occupied Bandwidth (MHz)
Cmin	14.518
Cnom	14.626
Cmax	14.603

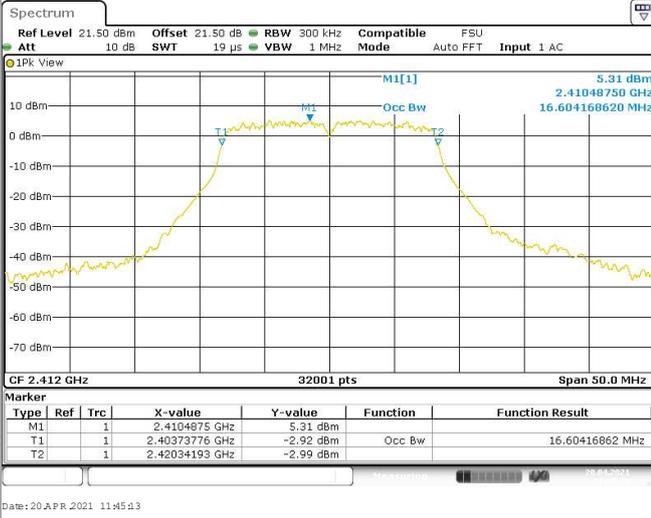


L C I E

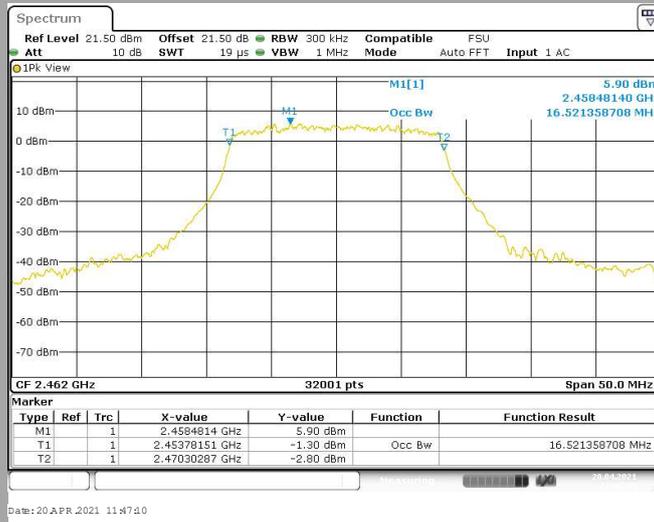
802.11g
Occupied Bandwidth

Cmin

Cnom



Cmax



Channel

Occupied Bandwidth (MHz)

Cmin

16.604

Cnom

16.527

Cmax

16.521



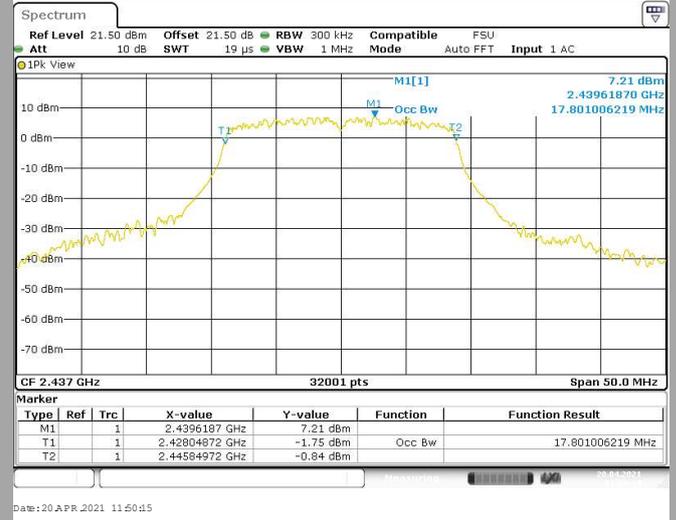
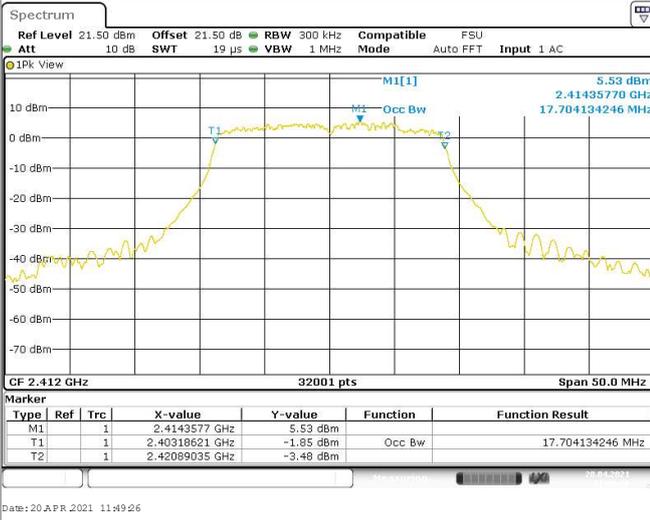
L C I E

802.11n HT20

Occupied Bandwidth

Cmin

Cnom



Cmax



Channel

Occupied Bandwidth (MHz)

Cmin

17.704

Cnom

17.801

Cmax

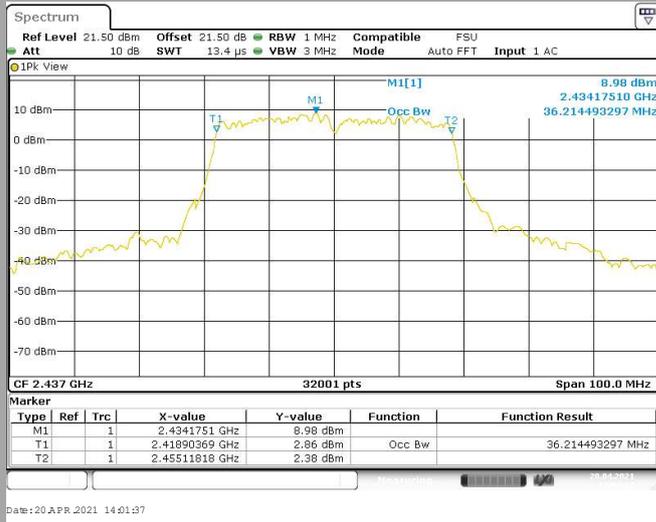
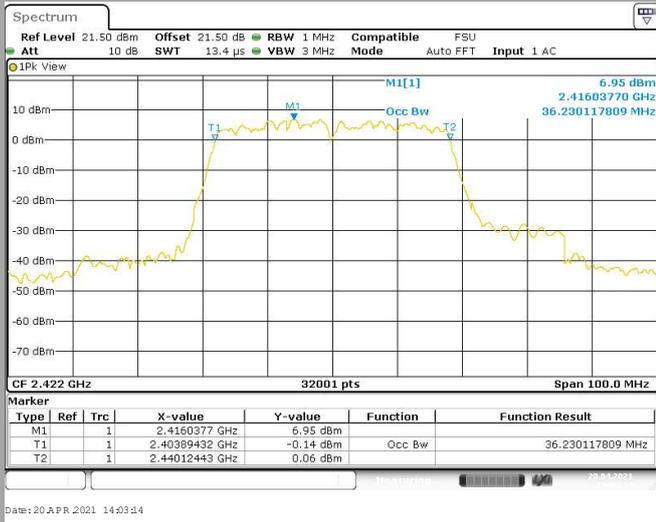
17.624

802.11n HT40

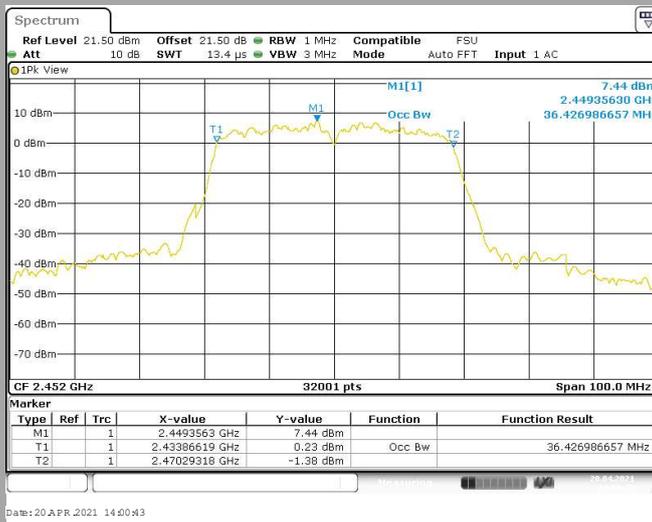
Occupied Bandwidth

Cmin

Cnom



Cmax



Channel	Occupied Bandwidth (MHz)
Cmin	36.230
Cnom	36.214
Cmax	36.427

3.6. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **Technicolor UIW4059MIL**, SN: **LAB3-V0 nr.030**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247** limits.

4. 6dB EMISSION BANDWIDTH

4.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : April 20, 2021
Ambient temperature : 24°C
Relative humidity : 42%

4.2. TEST SETUP

- The Equipment Under Test is installed:

- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

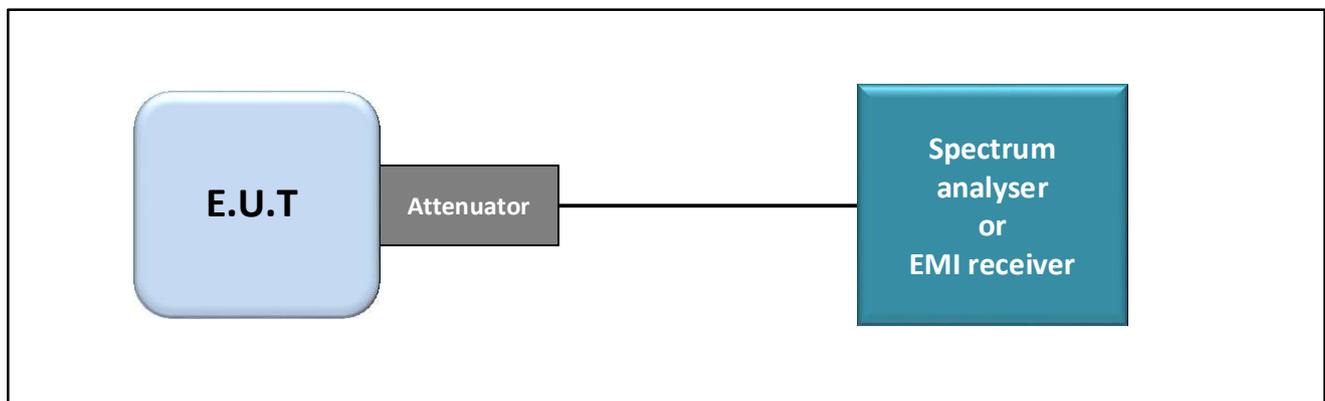
- Conducted Method
- Radiated Method

- Test Procedure:

- ANSI C63.10 § 11.8.1
- ANSI C63.10 § 11.8.2

Measurement Procedure:

1. Set resolution bandwidth (RBW) = 100kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. Compare the resultant bandwidth with the RBW setting of the analyzer.



Test set up of 6dB Emission Bandwidth



Photograph for 6dB emission bandwidth

4.3. LIMIT

Frequency range	The 6dB bandwidth Limit
2400MHz to 2483.5MHz	≤500kHz

4.4. TEST EQUIPMENT LIST

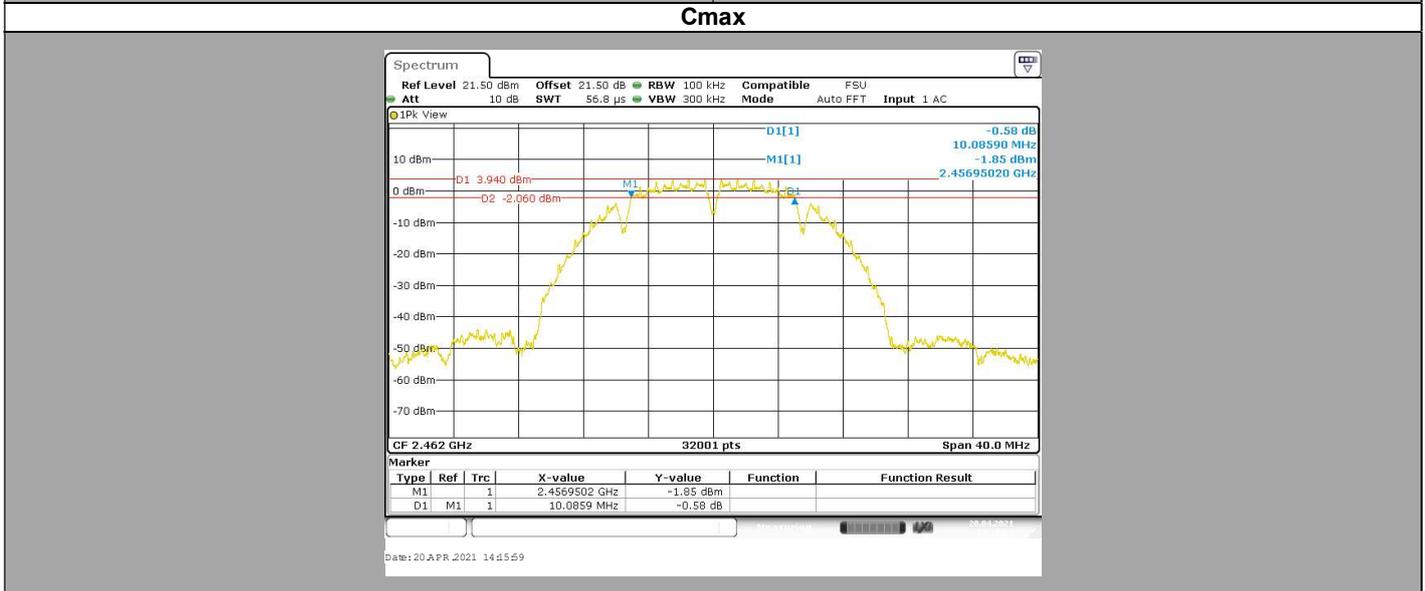
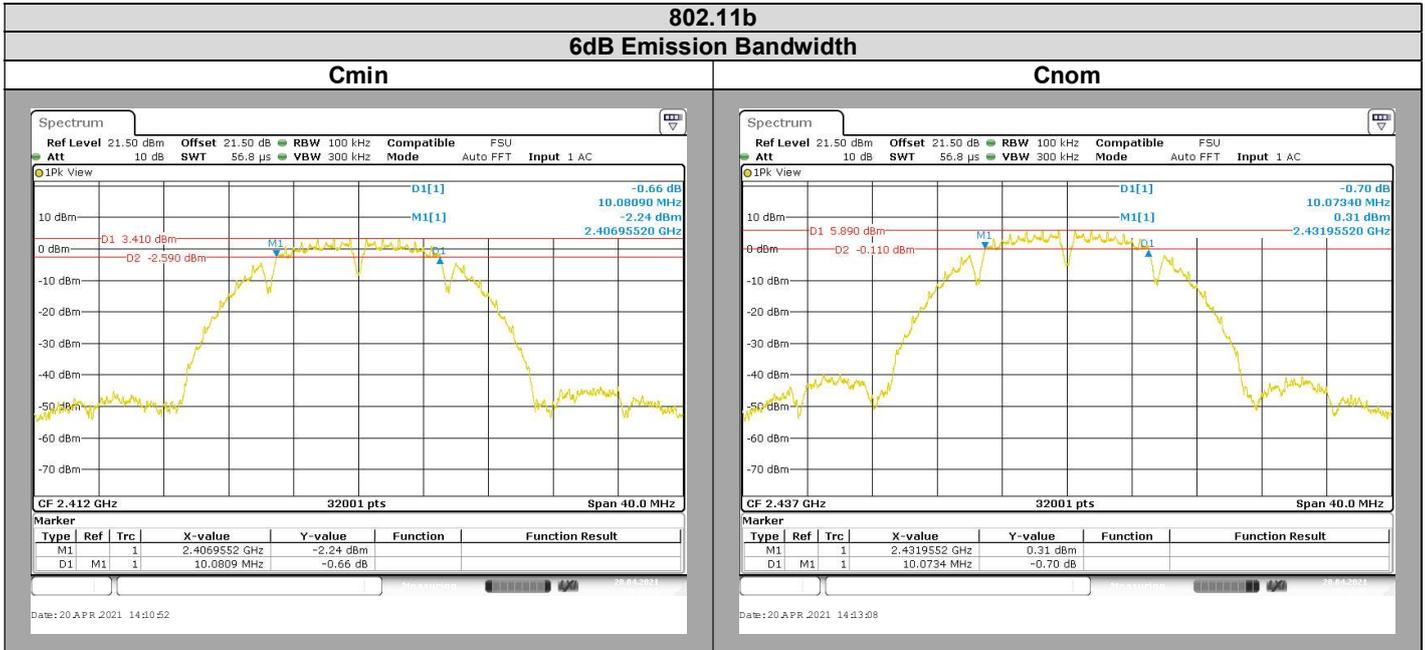
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR7	A2642026	2019/07	2021/07
Cable + Attenuateur 20dB	PASTERNAK	PE350-150CM	A5329973	2020/09	2021/09
Multimeter	KEITHLEY	2000	A1242090	2019/05	2021/05
Power supply	KIKUSUI	PCR500M	A7040079	See Multimeter	See Multimeter
Load 50 ohms	TELEGARTNER	-	A7150103	2019/04	2021/04
Load 50 ohms	TELEGARTNER	-	A7150104	2019/04	2021/04

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



L C I E

4.5. RESULTS



Channel	6dB Emission Bandwidth (MHz)	Limit (MHz)
Cmin	10.081	Minimum 0.5
Cnom	10.073	Minimum 0.5
Cmax	10.086	Minimum 0.5



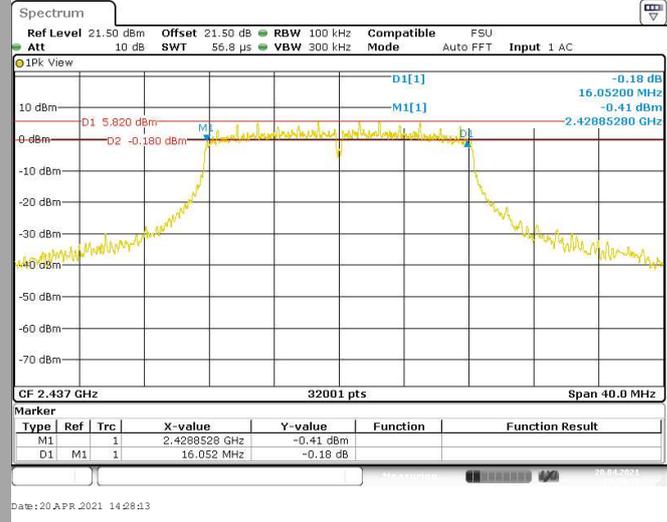
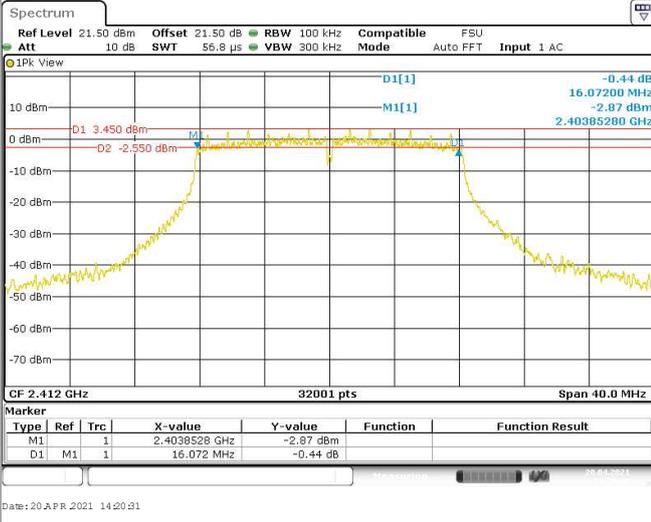
L C I E

802.11g

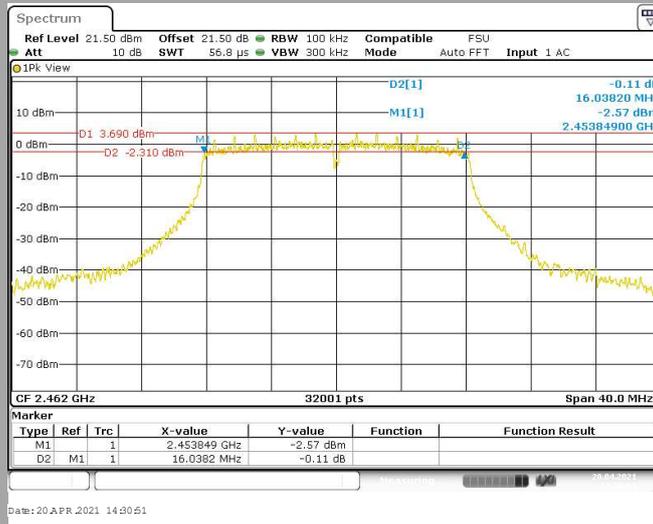
6dB Emission Bandwidth

Cmin

Cnom



Cmax



Channel	6dB Emission Bandwidth (MHz)	Limit (MHz)
Cmin	16.072	Minimum 0.5
Cnom	16.052	Minimum 0.5
Cmax	16.038	Minimum 0.5



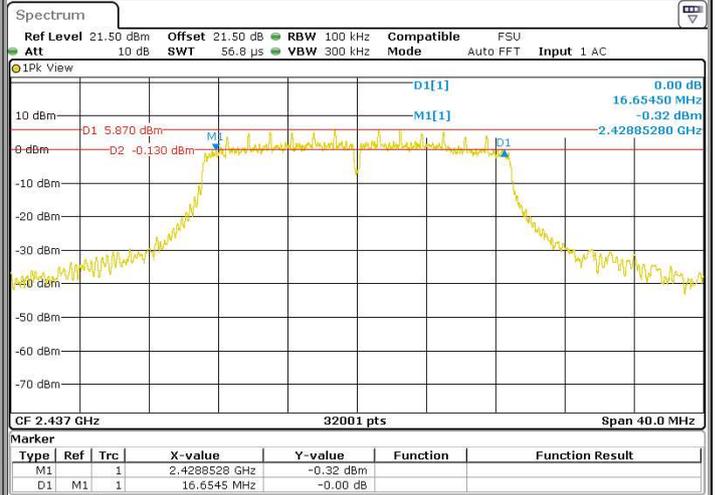
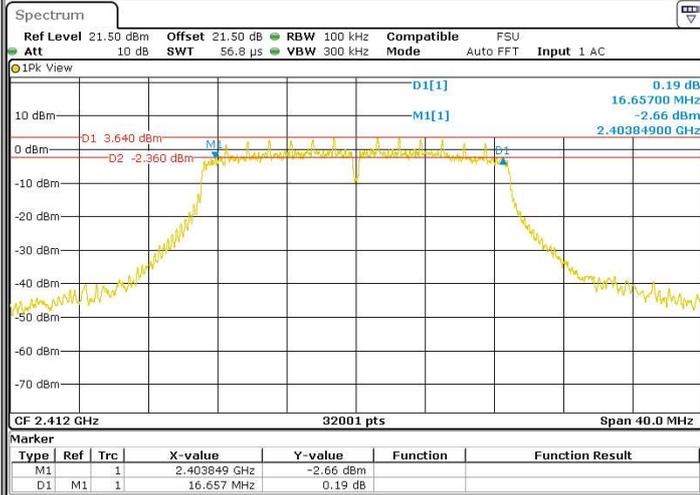
L C I E

802.11n HT20

6dB Emission Bandwidth

Cmin

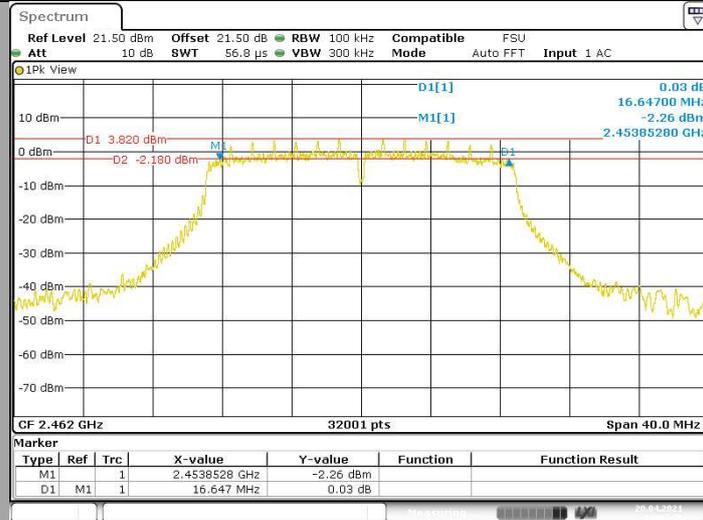
Cnom



Date: 20 APR 2021 14:38:13

Date: 20 APR 2021 14:40:17

Cmax

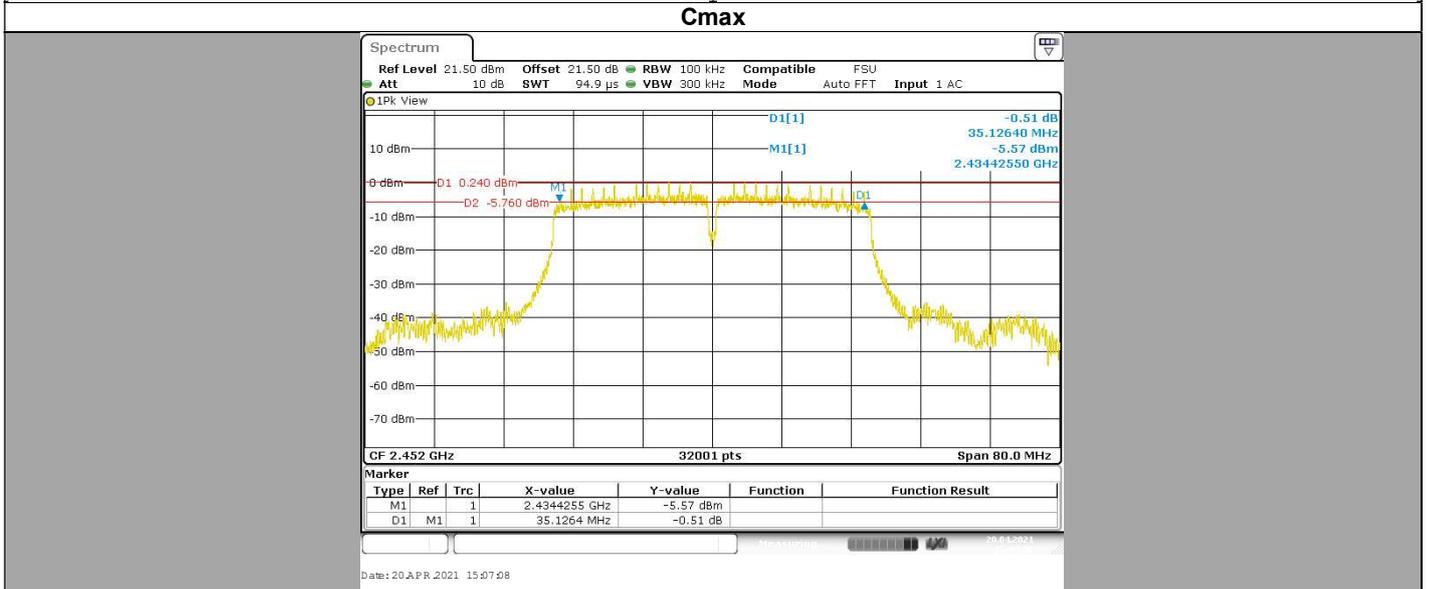
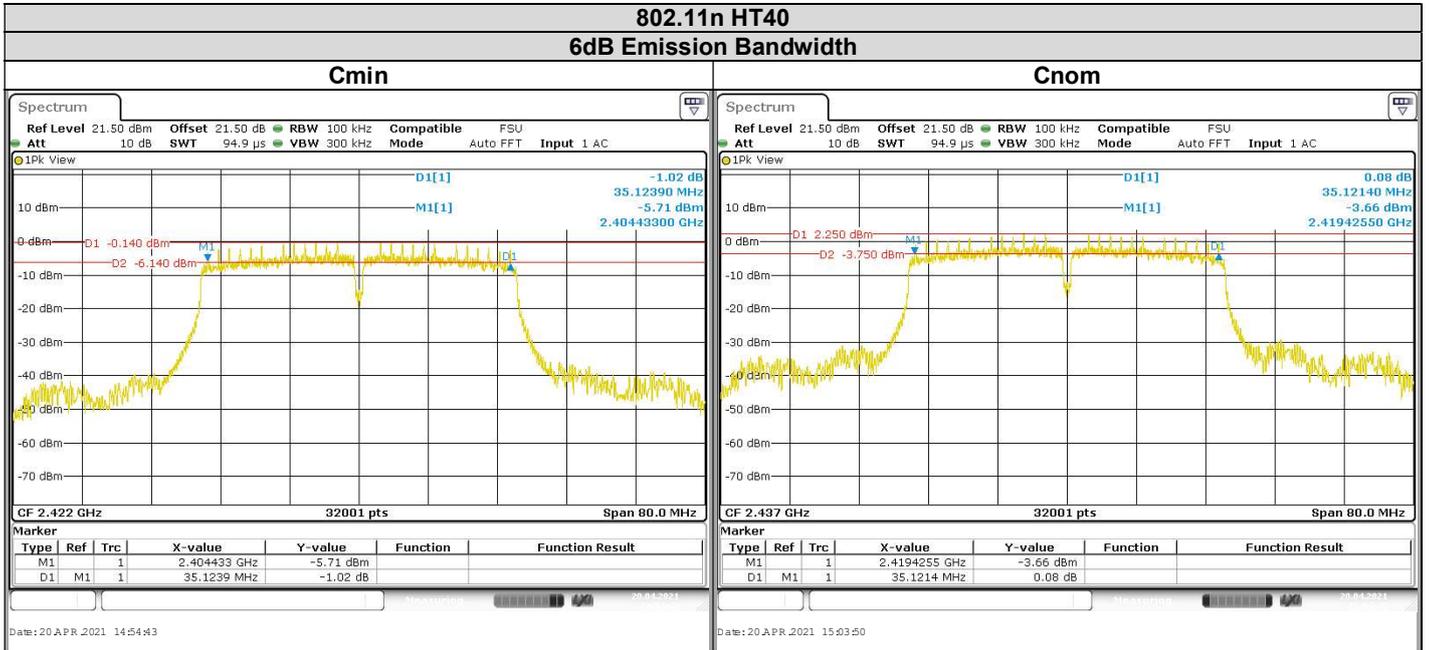


Date: 20 APR 2021 14:42:11

Channel	6dB Emission Bandwidth (MHz)	Limit (MHz)
Cmin	16.657	Minimum 0.5
Cnom	16.654	Minimum 0.5
Cmax	16.647	Minimum 0.5



L C I E



Channel	6dB Emission Bandwidth (MHz)	Limit (MHz)
Cmin	35.124	Minimum 0.5
Cnom	35.121	Minimum 0.5
Cmax	35.126	Minimum 0.5

4.6. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **Technicolor UIW4059MIL**, SN: **LAB3-V0 nr.030**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247** limits.

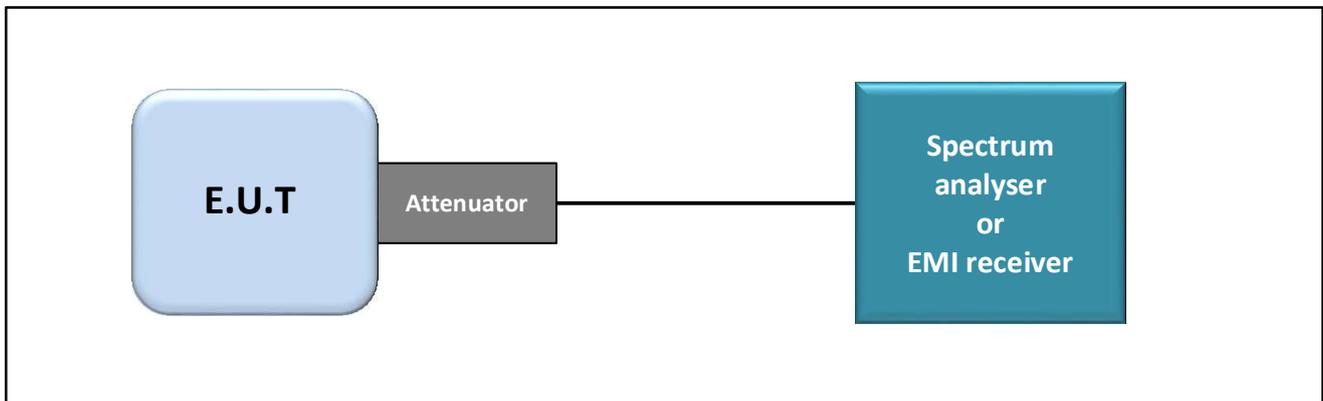
5. DUTY CYCLE

5.1. TEST CONDITIONS

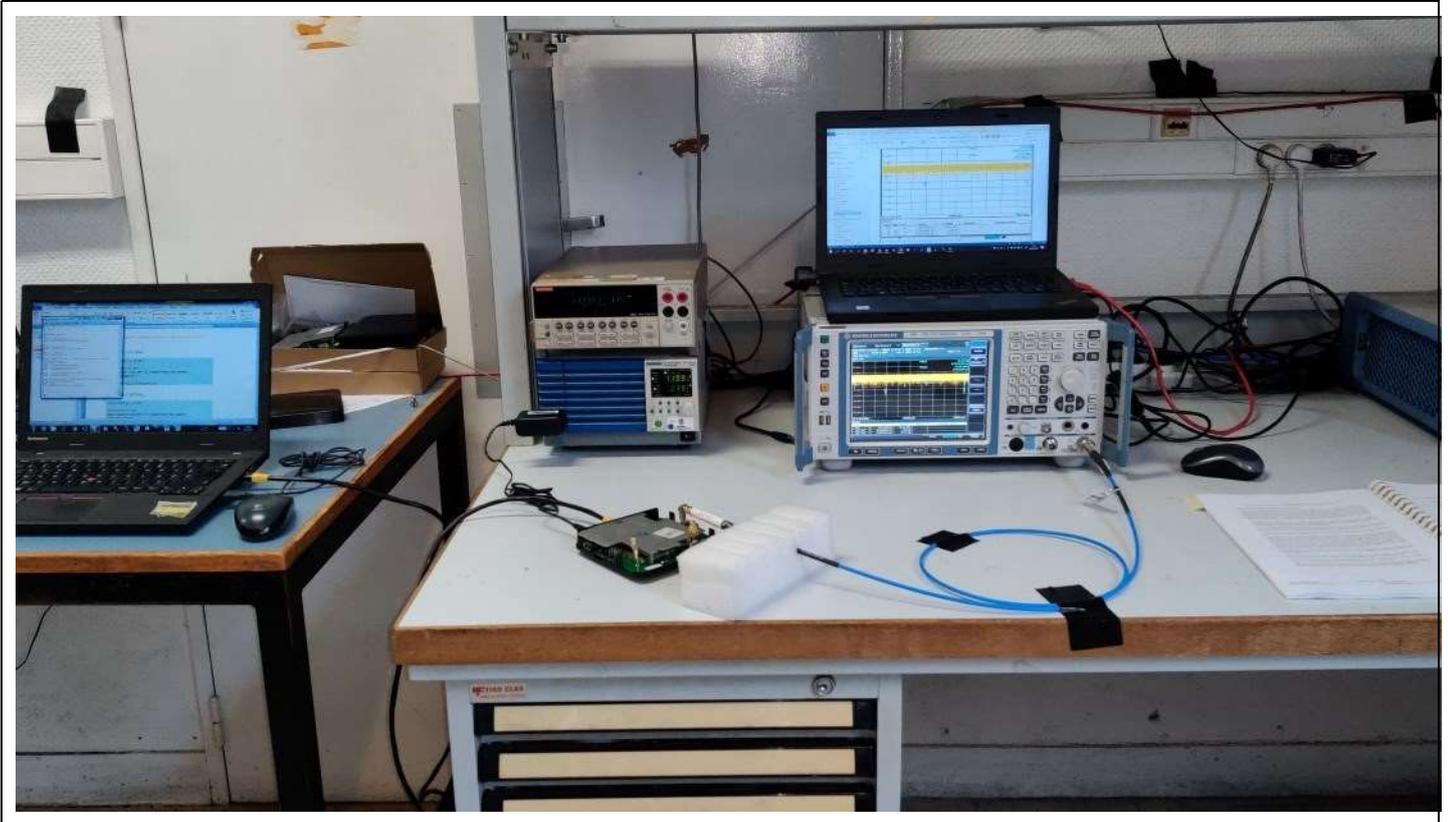
Test performed by : Armand MAHOUNGOU
Date of test : April 9, 2021
Ambient temperature : 25°C
Relative humidity : 45%

5.2. TEST SETUP

- The Equipment Under Test is installed:
 - On a table
 - In an anechoic chamber
- Measurement is performed with a spectrum analyzer in:
 - Conducted Method
 - Radiated Method
- Test Procedure:
 - ANSI C63.10 § 11.6



Test set up of Duty Cycle



Photograph for Duty Cycle

5.3. LIMIT

None

5.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURE R	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR7	A2642026	2019/07	2021/07
Multimeter	KEITHLEY	2000	A1242090	2019/05	2021/05
Power supply	KIKUSUI	PCR500M	A7040079	See Multimeter	See Multimeter
Cable + Attenuateur 20dB	PASTERNAK	PE350-150CM	A5329973	2020/08	2021/08
Load 50 ohms	TELEGARTNER	-	A7150105	2019/04	2021/04
Load 50 ohms	TELEGARTNER	-	A7150104	2019/04	2021/04

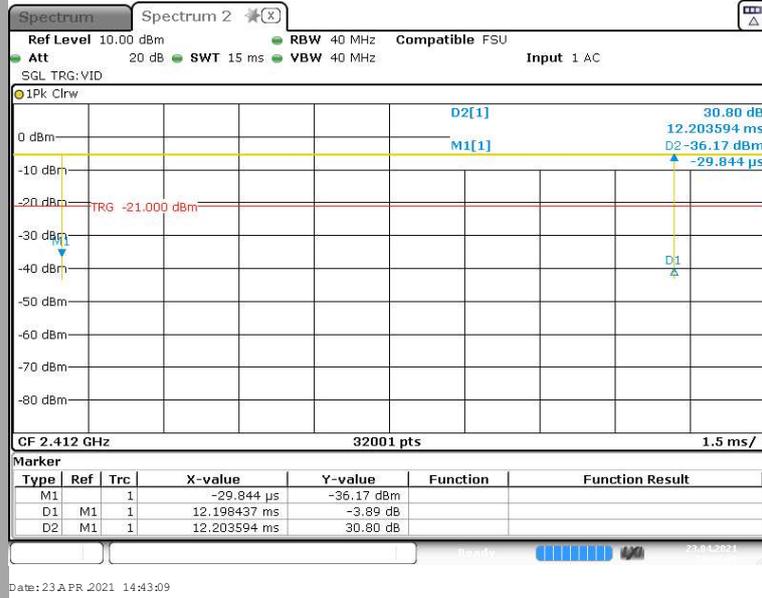
Note: In our quality system, the test equipment calibration due is more & less 2 months



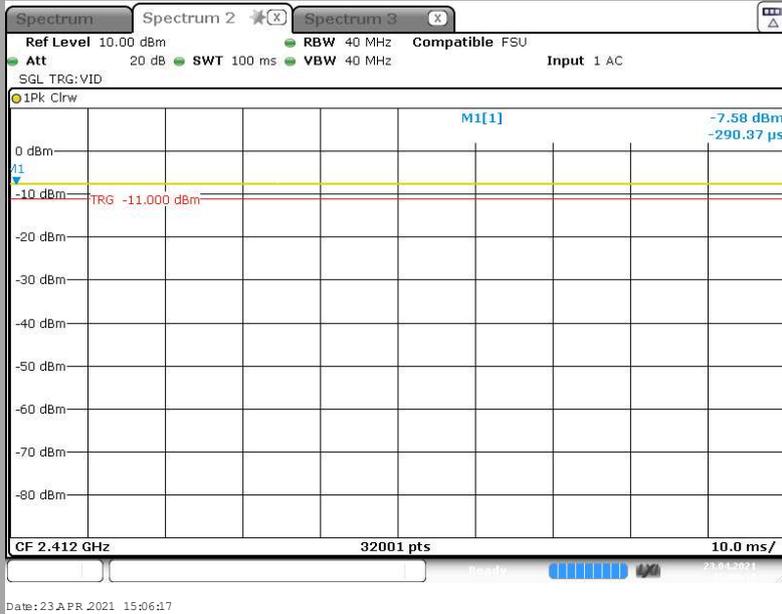
L C I E

5.5. RESULTS

802.11b
Duty Cycle
Cmin



802.11b
Cmin



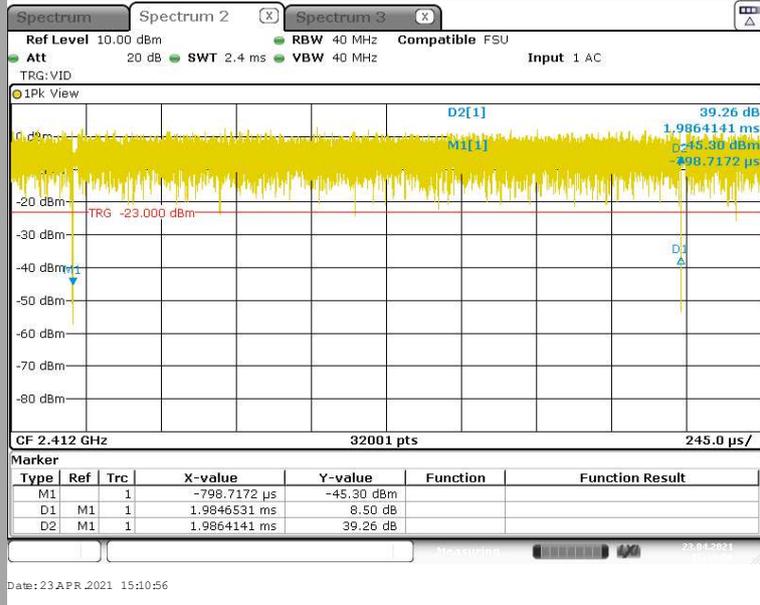
Channel

Mode	Duty Cycle (%)	Duty Cycle Correction (dB)
802.11b	99.958	$20\log\left(\frac{1}{\text{duty cycle}}\right) = 0.00365$

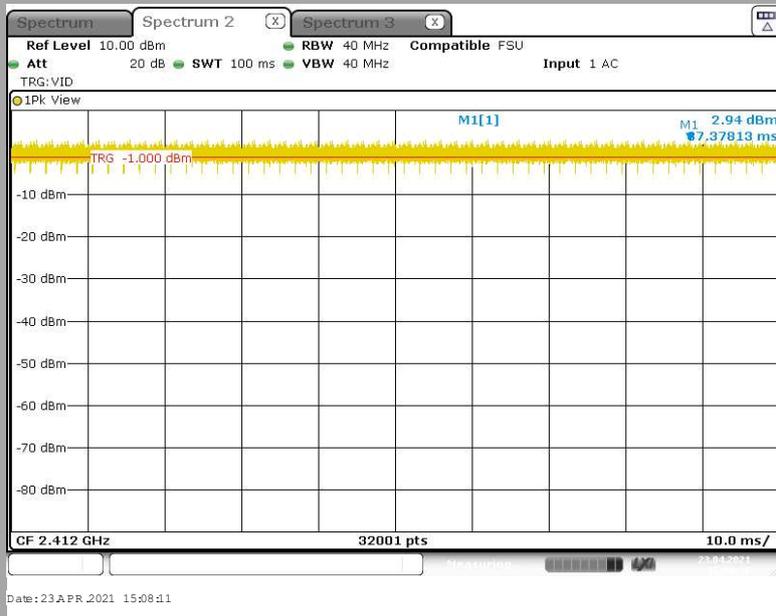


L C I E

802.11g
Duty Cycle
Cmin



802.11g
Cmin



Channel

Mode	Duty Cycle (%)	Duty Cycle Correction (dB)
802.11g	99.911	$20\log\left(\frac{1}{\text{duty cycle}}\right) = 0.00773$

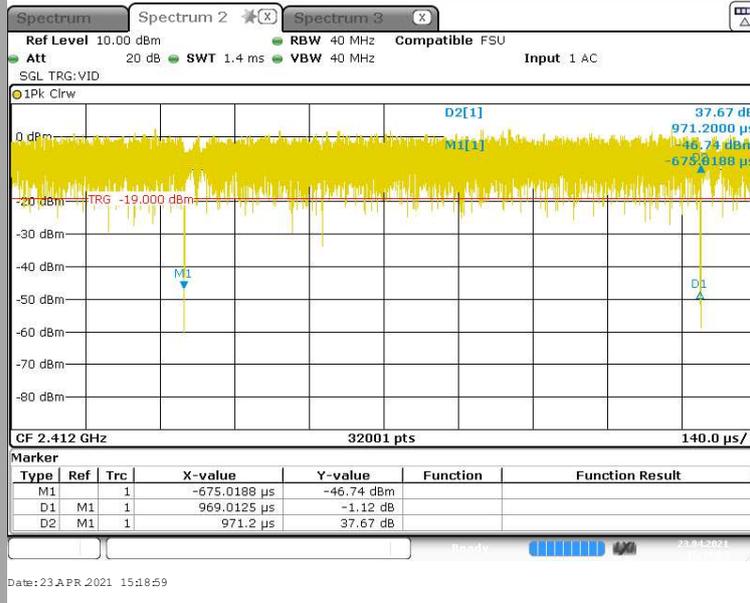


L C I E

802.11n HT20

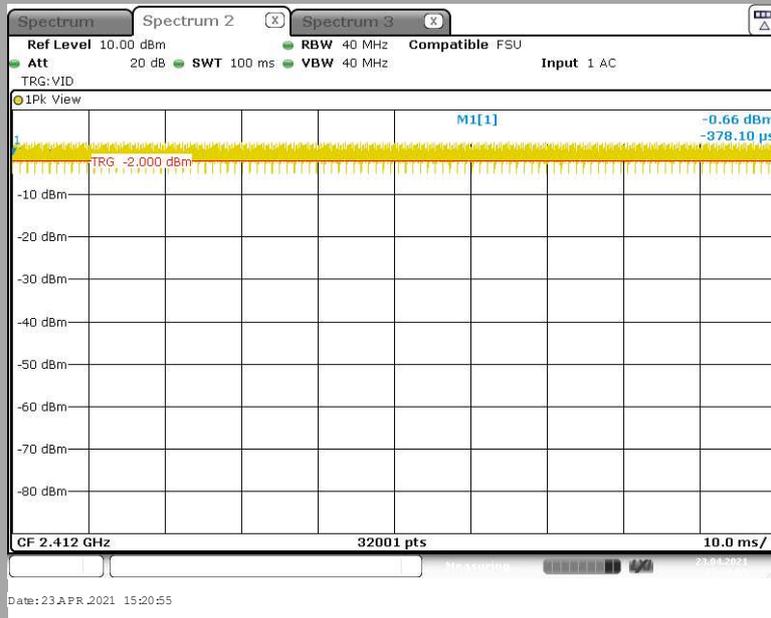
Duty Cycle

Cmin



802.11n HT20

Cmin



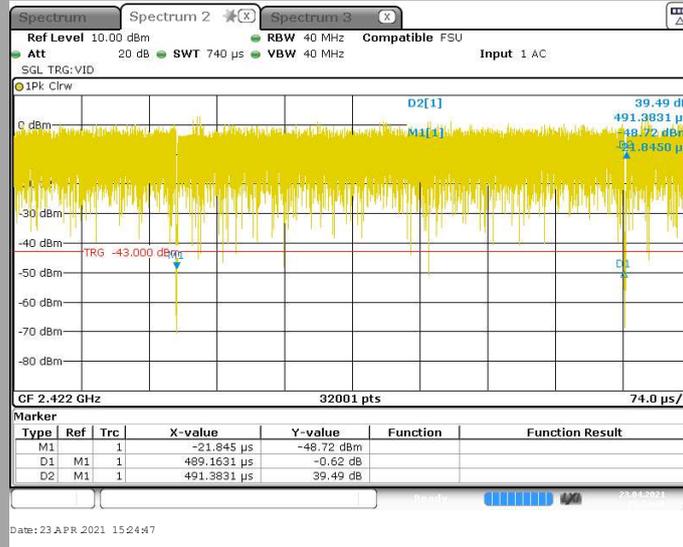
Channel

Mode	Duty Cycle (%)	Duty Cycle Correction (dB)
802.11n HT20	99.775	$20\log\left(\frac{1}{\text{duty cycle}}\right) = 0.00196$

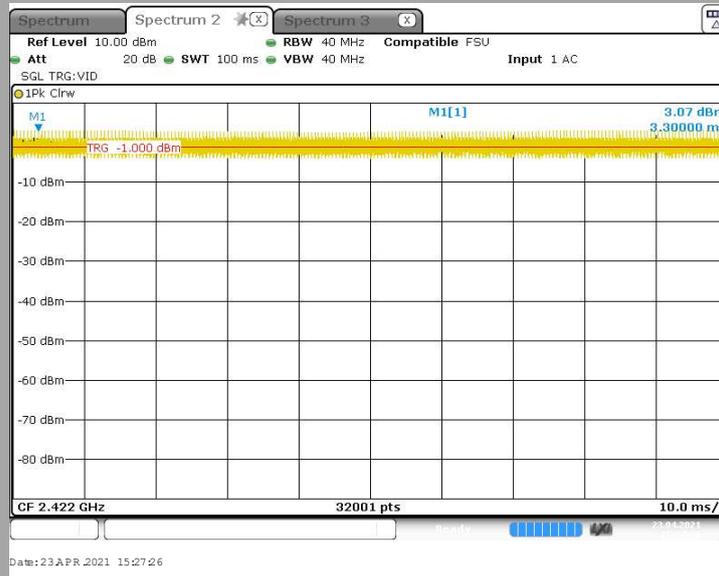


L C I E

802.11n HT40
Duty Cycle
Cmin



802.11n HT40
Cmin



Channel

Mode	Duty Cycle (%)	Duty Cycle Correction (dB)
802.11n HT40	99.548	$20\log\left(\frac{1}{\text{duty cycle}}\right) = 0.0393$

5.6. CONCLUSION

Duty Cycle measurement performed on the sample of the product **Technicolor UIW4059MIL**, SN: **LAB3-V0 nr.030**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247** limits.

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : April 20, 2021
Ambient temperature : 24°C
Relative humidity : 42%

6.2. TEST SETUP

- The Equipment Under Test is installed:

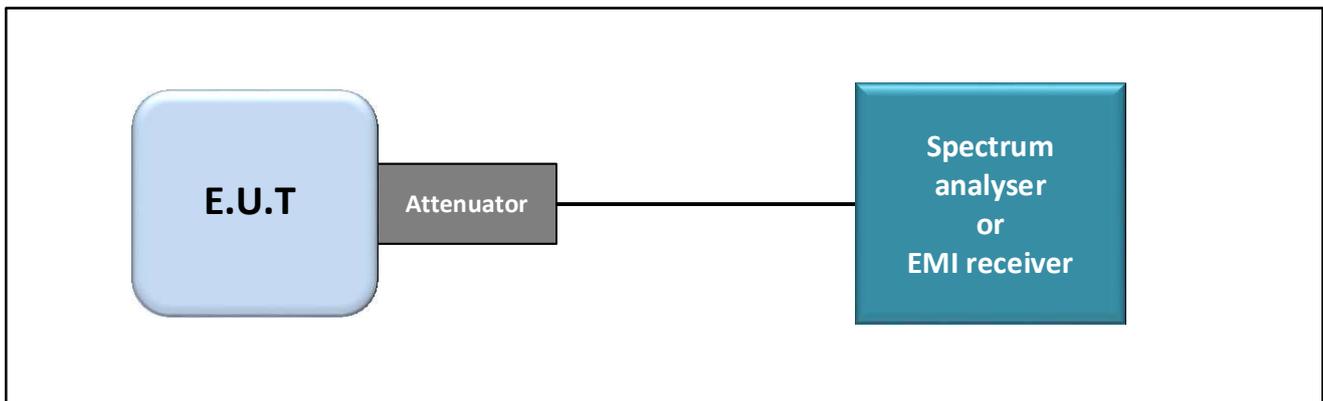
- On a table
- In an anechoic chamber

- Measurement is performed with a spectrum analyzer in:

- Conducted Method
- Radiated Method

- Test Procedure:

- ANSI C63.10 § 11.9.1.1
- ANSI C63.10 § 11.9.1.2
- ANSI C63.10 § 11.9.2.2.2 (Method AVGSA-1)
- ANSI C63.10 § 11.9.2.2.4 (Method AVGSA-2)
- KDB 662911 D01 Multiple Transmitter Output v02r01



Test set up of Maximum Conducted Output Power



Photograph for Maximum Conducted Output Power

6.3. LIMIT

Frequency range	Maximum Conducted Output Power
2400MHz to 2483.5MHz	≤30dBm*

*Remark: Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

6.4. TEST EQUIPMENT LIST

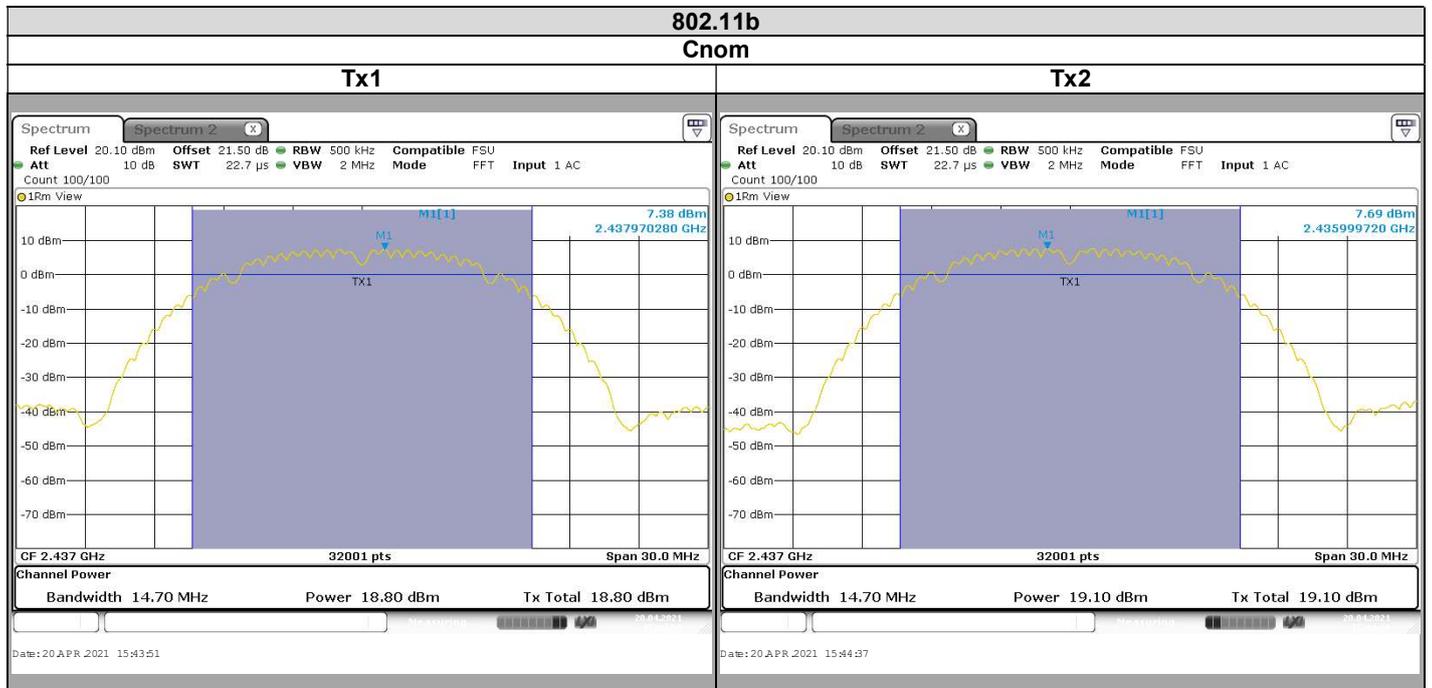
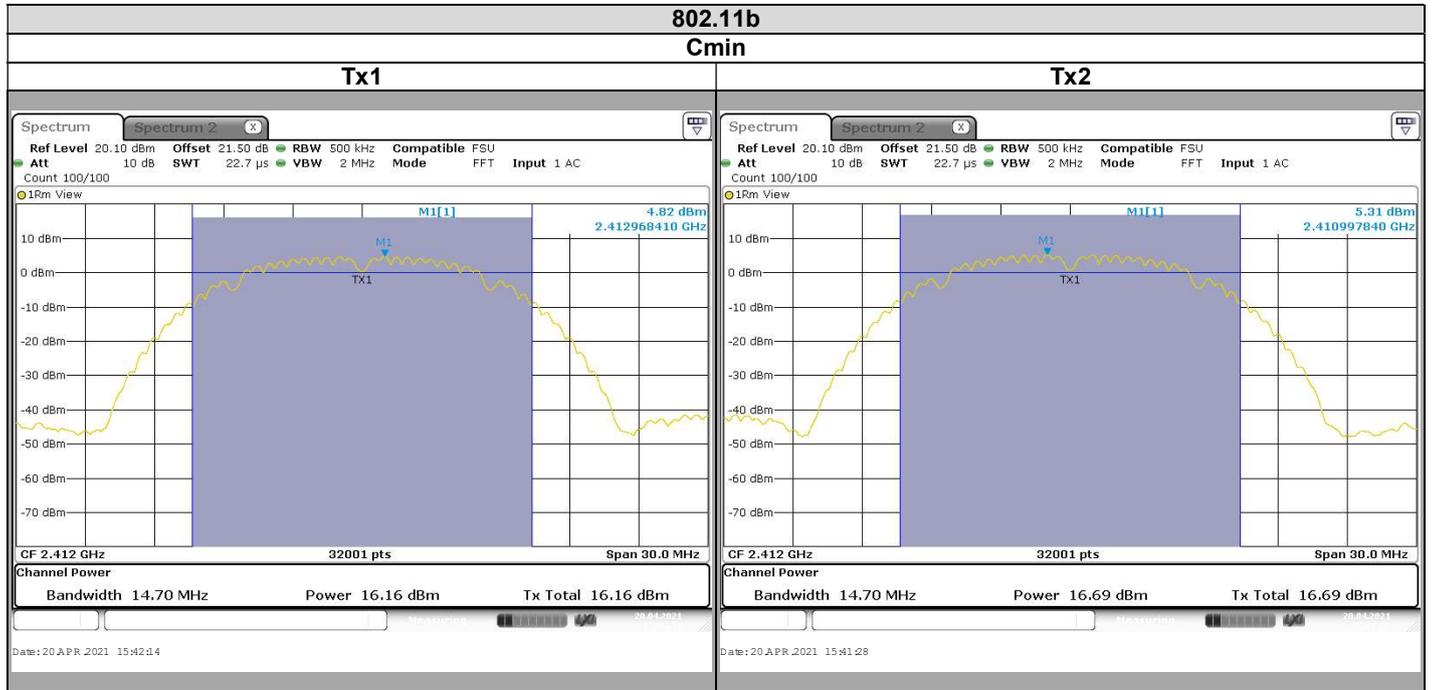
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Cal_Date	Cal_Due
EMI receiver	ROHDE & SCHWARZ	ESR7	A2642026	2019/07	2021/07
Cable + Attenuateur 20dB	PASTERNAK	PE350-150CM	A5329973	2020/09	2021/09
Multimeter	KEITHLEY	2000	A1242090	2019/05	2021/05
Power supply	KIKUSUI	PCR500M	A7040079	See Multimeter	See Multimeter
Load 50 ohms	TELEGARTNER	-	A7150103	2019/04	2021/04
Load 50 ohms	TELEGARTNER	-	A7150104	2019/04	2021/04

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



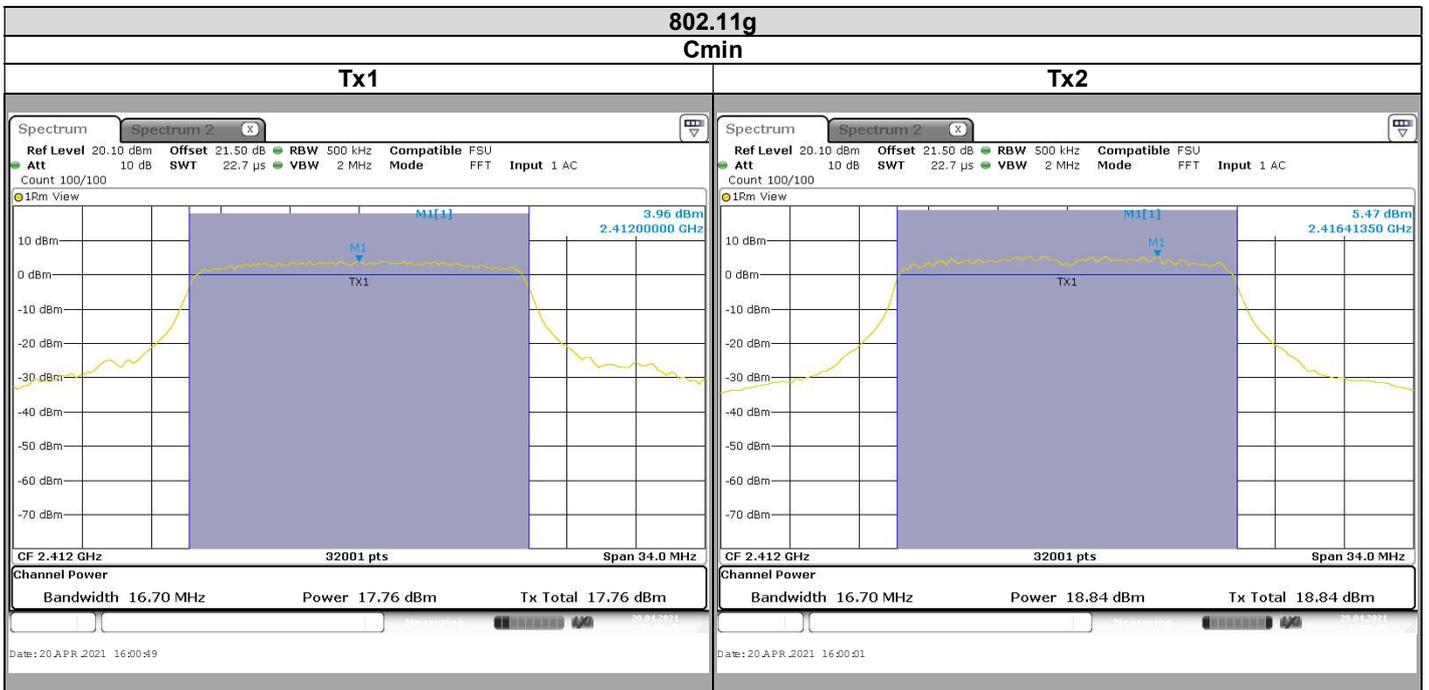
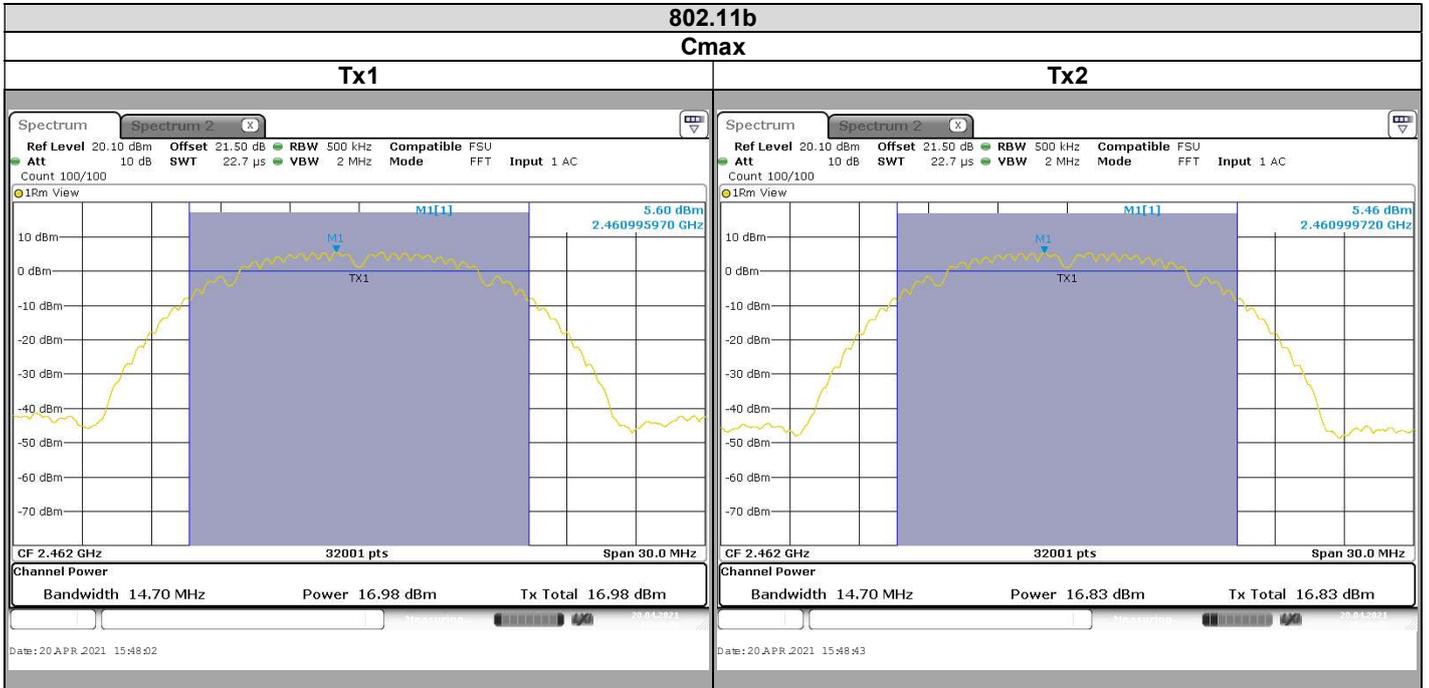
L C I E

6.5. RESULTS



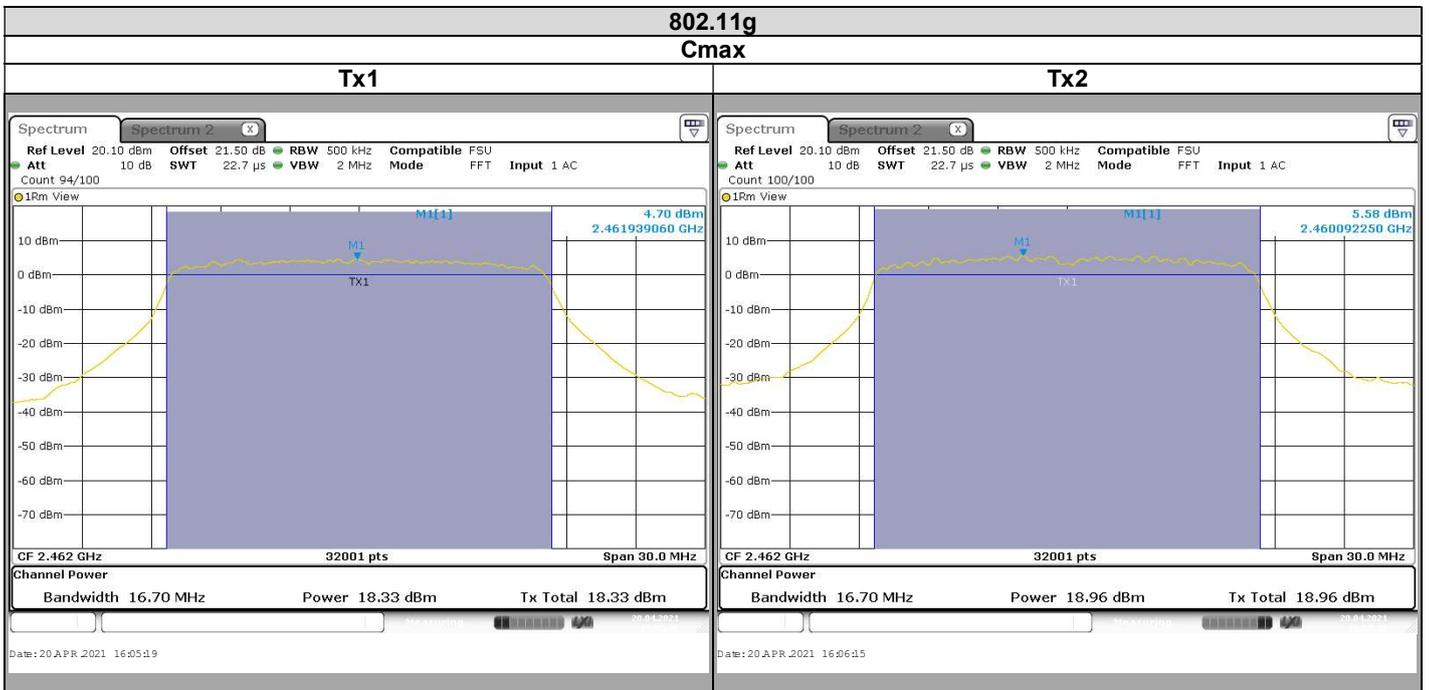
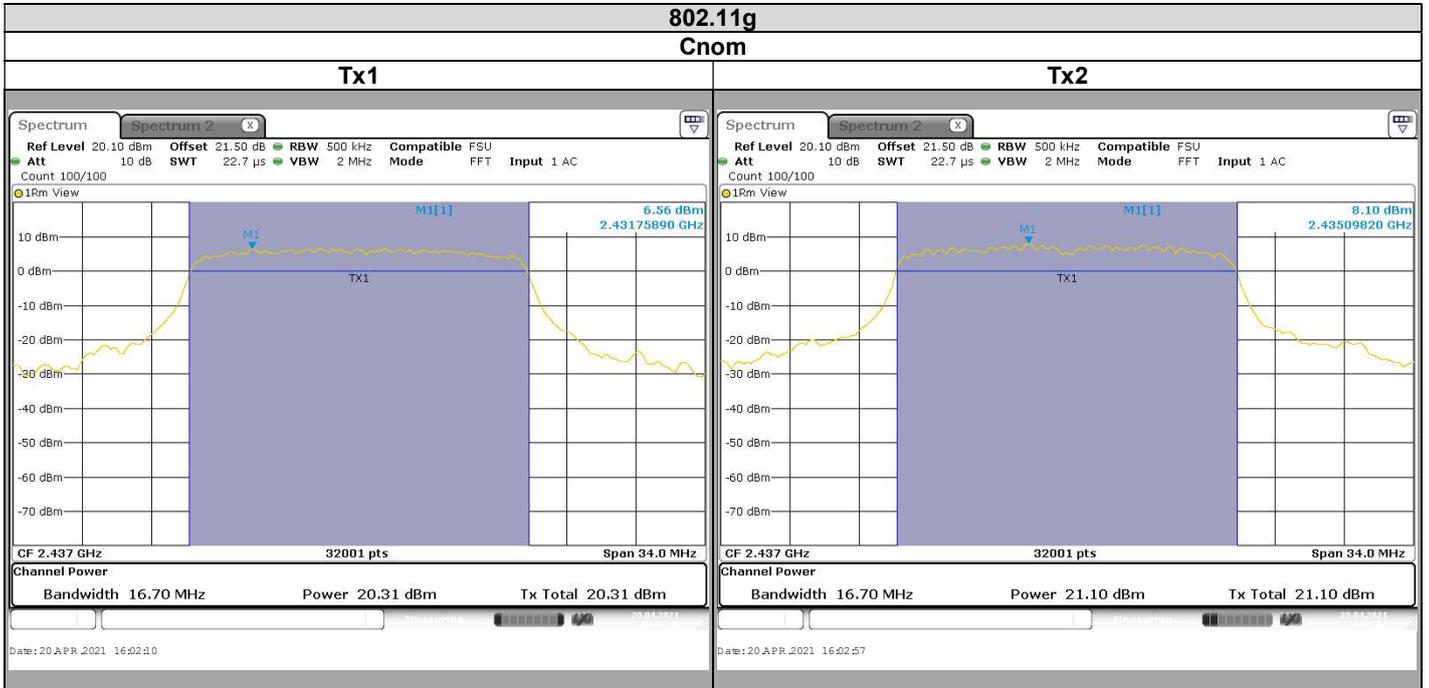


L C I E



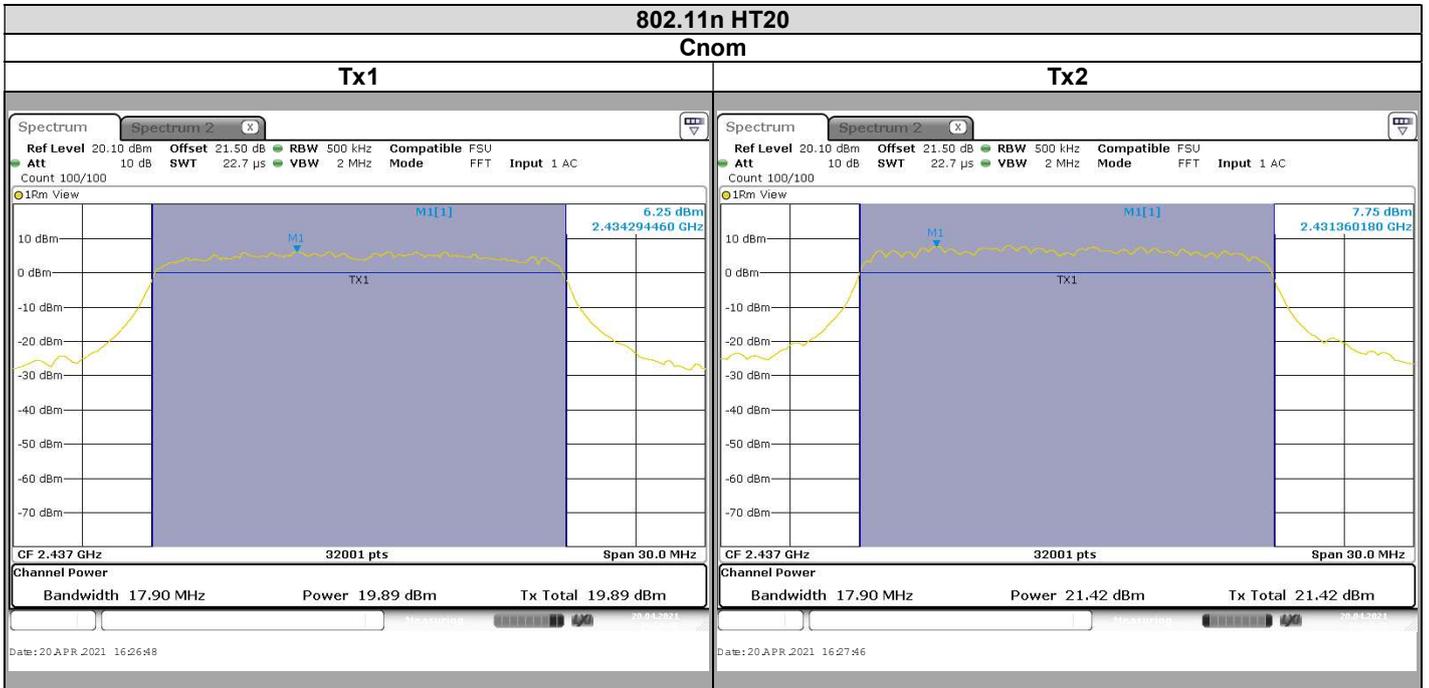
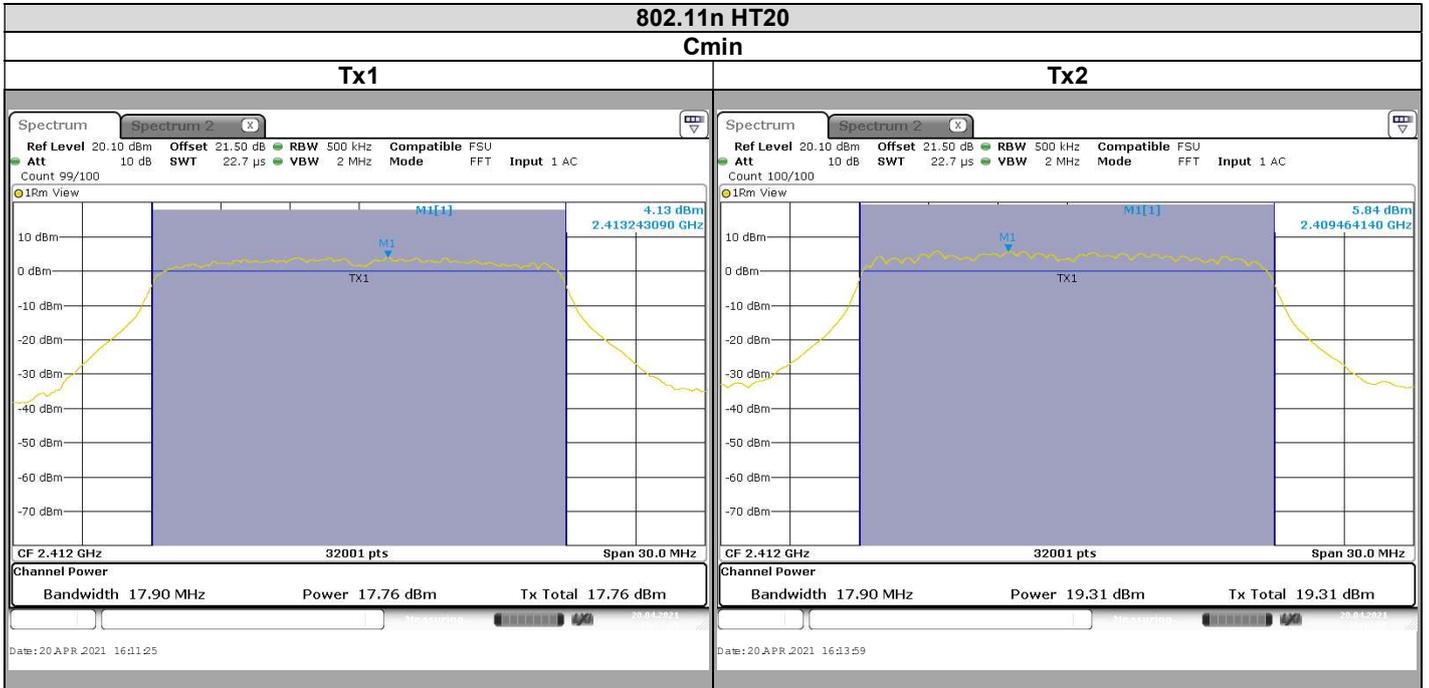


L C I E





L C I E





L C I E

