



LCIE



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WIFI 2,4GHz Template: Release May 28th, 2020

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

IP Set-Top Box
Technicolor
Technicolor
UIW4059MIL
LAB3-V0 nr.030
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

Document issued on

June 8, 2021

Written by :
Armand MAHOUNGOU
Tests operator



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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.



SUMMARY

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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	☒ PASS	☐ FAIL	☐ NA	☐ NP(1)
6dB Bandwidth	☒ PASS	☐ FAIL	☐ NA()	☐ NP(1)
Duty Cycle	☒ PASS	☐ FAIL	☐ NA	☐ NP(1)
Maximum Conducted Output Power	☒ PASS	☐ FAIL	☐ NA	☐ NP(1)
Power Spectral Density	☒ PASS	☐ FAIL	☐ NA	☐ NP(1)
Conducted Spurious Emission at the Band Edge	☒ PASS	☐ FAIL	☐ NA()	☐ NP(1)
Unwanted Emissions into Non-Restricted Frequency Bands	☒ PASS	☐ FAIL	☐ NA()	☐ NP(1)
AC Power Line Conducted Emission	☒ PASS	☐ FAIL	☐ NA(2)	☐ NP(1)
Unwanted Emissions into Restricted Frequency Bands	☒ PASS	☐ FAIL	☐ NA	☐ NP(1)
Receiver Radiated emissions	☒ PASS	☐ FAIL	☐ NA	☐ 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



Equipment Under Test

Power supply:

Name	Type	Rating	Reference / Sn	Comments
Supply1	☒ AC ☐ DC ☐ 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	☒	☐	☐	-
2	HDMI cable	1.5	☒	☒	☐	-
3	Ethernet cable	1.5	☒	☒	☐	-

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Laptop computer	-	-	Use to set the EUT



Equipment information:

Type:	WIFI			
Frequency band:	2400MHz-2483.5MHz			
Chipset Ref :	Realtek RTL8822CS			
Standard:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☒ 802.11n HT40
Spectrum Modulation:	☒ DSSS		☒ OFDM	
Number of Channel:	11			
Spacing channel:	5MHz			
Channel bandwidth:	☒ 20MHz		☒ 40MHz	
Antenna Type:	☒ Integral	☐ External	☐ Dedicated	
Antenna connector:	☒ Yes	☐ No	☐ Temporary for test	
Transmit chains:	☐ 1	☒ 2	☐ 3	☐ 4
Beam forming gain:	☐ Yes: XdB		☒ No	
Receiver chains:	☐ 1	☒ 2	☐ 3	☐ 4
Type of equipment:	☒ Stand-alone	☐ Plug-in	☐ Combined	
Equipment arrangement:	☒ Tabletop	☐ Floor-standing	☐ Multiple orientations	
Ad-Hoc mode:	☐ Yes		☒ No	
Duty cycle:	☒ Continuous duty	☐ Intermittent duty	☐ 100% duty	
Operating temperature range:	Tmin:	☐ -20°C	☐ 0°C	☒ 5°C
	Tnom:	20°C		
	Tmax:	☐ 35°C	☐ 55°C	☒ 45°C
Type of power source:	☒ AC power supply	☒ DC power supply	☐ Battery	
Operating voltage range:	Vnom:	☒ 120V/60Hz	☒ 12 VDC +/-5%	
		☒ 240V/50Hz	☐ 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
$10 \log[(10G1/20 + 10G2/20 + \dots + 10GN/20)^2 / NANT] \text{dBi}$	KDB 662911 D01 v02r01	☐ Yes / ☒ No

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

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

DATA RATE		
802.11b		
Data Rate (Mbps)	Modulation Type	Modulation Worst Case
1	DBPSK	☒
2	DQPSK	☐
5.5	DQPSK	☐
11	CCK	☐

DATA RATE		
802.11g		
Data Rate (Mbps)	Modulation Type	Modulation Worst Case
6	BPSK	☒
9	BPSK	☐
12	QPSK	☐
18	QPSK	☐
24	16-QAM	☐
36	16-QAM	☐
48	64-QAM	☐
54	64-QAM	☐



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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	☐
	1	1	QPSK				13	14.4	☐
	2	1	QPSK				19.5	21.7	☐
	3	1	16-QAM				26	28.9	☐
	4	1	16-QAM				39	43.3	☐
	5	1	64-QAM				52	57.8	☐
	6	1	64-QAM				58.5	65	☐
	7	1	64-QAM				65	72.2	☐
☑	32	1	BPSK	-	-	-	-	-	☐
	8	2	BPSK				13	14.4	☑
	9	2	QPSK				26	28.9	☐
	10	2	QPSK				39	43.3	☐
	11	2	16-QAM				52	57.8	☐
	12	2	16-QAM				78	86.7	☐
	13	2	64-QAM				104	115.6	☐
	14	2	64-QAM				117	130.3	☐
	15	2	64-QAM				130	144.4	☐
	33	2	16-QAM	QPSK	-	-	39	43.3	☐
	34	2	64-QAM	QPSK	-	-	52	57.8	☐
	35	2	64-QAM	16-QAM	-	-	65	72.2	☐
	36	2	16-QAM	QPSK	-	-	58.5	65	☐
	37	2	64-QAM	QPSK	-	-	78	86.7	☐
	38	2	64-QAM	16-QAM	-	-	97.5	108.3	☐
☐	16	3	BPSK				19.5	21.7	☐
	17	3	QPSK				39	43.3	☐
	18	3	QPSK				58.5	65	☐
	19	3	16-QAM				78	86.7	☐
	20	3	16-QAM				117	130	☐
	21	3	64-QAM				156	173.3	☐
	22	3	64-QAM				175.5	195	☐
	23	3	64-QAM				195	216.7	☐
	39	3	16-QAM	QPSK	QPSK	-	52	57.8	☐
	40	3	16-QAM	16-QAM	QPSK	-	65	72.2	☐
	41	3	64-QAM	QPSK	QPSK	-	65	72.2	☐
	42	3	64-QAM	16-QAM	QPSK	-	78	86.7	☐
	43	3	64-QAM	16-QAM	16-QAM	-	91	101.1	☐
	44	3	64-QAM	64-QAM	QPSK	-	91	101.1	☐
	45	3	64-QAM	64-QAM	16-QAM	-	104	115.6	☐
	46	3	16-QAM	QPSK	QPSK	-	78	86.7	☐
	47	3	16-QAM	16-QAM	QPSK	-	97.5	108.3	☐
	48	3	64-QAM	QPSK	QPSK	-	97.5	108.3	☐
	49	3	64-QAM	16-QAM	QPSK	-	117	130	☐
	50	3	64-QAM	16-QAM	16-QAM	-	136.5	151.7	☐
	51	3	64-QAM	64-QAM	QPSK	-	136.5	151.7	☐
	52	3	64-QAM	64-QAM	16-QAM	-	156	173.3	☐
☐	24	4	BPSK				26	28.9	☐
	25	4	QPSK				52	57.8	☐
	26	4	QPSK				78	86.7	☐
	27	4	16-QAM				104	115.6	☐
	28	4	16-QAM				156	173.3	☐
	29	4	64-QAM				208	231.1	☐
	30	4	64-QAM				234	260	☐
	31	4	64-QAM				260	288.9	☐
	53	4	16-QAM	QPSK	QPSK	QPSK	65	72.2	☐
	54	4	16-QAM	16-QAM	QPSK	QPSK	78	86.7	☐
	55	4	16-QAM	16-QAM	16-QAM	QPSK	91	101.1	☐
	56	4	64-QAM	QPSK	QPSK	QPSK	78	86.7	☐
	57	4	64-QAM	16-QAM	QPSK	QPSK	91	101.1	☐
	58	4	64-QAM	16-QAM	16-QAM	QPSK	104	115.6	☐
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	117	130	☐
	60	4	64-QAM	QPSK	QPSK	QPSK	104	115.6	☐
	61	4	64-QAM	16-QAM	16-QAM	QPSK	117	130	☐
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	130	144.4	☐
	63	4	64-QAM	64-QAM	64-QAM	QPSK	130	144.4	☐
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	143	158.9	☐
	65	4	16-QAM	QPSK	QPSK	QPSK	97.5	108.3	☐
	66	4	16-QAM	16-QAM	QPSK	QPSK	117	130	☐
	67	4	16-QAM	16-QAM	16-QAM	QPSK	136.5	151.7	☐
	68	4	64-QAM	QPSK	QPSK	QPSK	117	130	☐
	69	4	64-QAM	16-QAM	QPSK	QPSK	136.5	151.7	☐
	70	4	64-QAM	16-QAM	16-QAM	QPSK	156	173.3	☐
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	175.5	195	☐
	72	4	64-QAM	64-QAM	QPSK	QPSK	156	173.3	☐
	73	4	64-QAM	64-QAM	16-QAM	QPSK	175.5	195	☐
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	195	216.7	☐
	75	4	64-QAM	64-QAM	64-QAM	QPSK	195	216.7	☐
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	214.5	238.3	☐



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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	☐
	1	1	QPSK				27	30	☐
	2	1	QPSK				40.5	45	☐
	3	1	16-QAM				54	60	☐
	4	1	16-QAM				81	90	☐
	5	1	64-QAM				108	120	☐
	6	1	64-QAM				121.5	135	☐
	7	1	64-QAM				135	150	☐
☑	32	1	BPSK	-	-	-	6.0	6.7	☐
	8	2	BPSK				27	30	☒
	9	2	QPSK				54	60	☐
	10	2	QPSK				81	90	☐
	11	2	16-QAM				108	120	☐
	12	2	16-QAM				162	180	☐
	13	2	64-QAM				216	240	☐
	14	2	64-QAM				243	270	☐
	15	2	64-QAM				270	300	☐
	33	2	16-QAM	QPSK	-	-	81	90.0	☐
	34	2	64-QAM	QPSK	-	-	108	120	☐
	35	2	64-QAM	16-QAM	-	-	135	150	☐
	36	2	16-QAM	QPSK	-	-	121.5	135	☐
	37	2	64-QAM	QPSK	-	-	162	180	☐
	38	2	64-QAM	16-QAM	-	-	202.5	225	☐
☐	16	3	BPSK				40.5	45	☐
	17	3	QPSK				81	90	☐
	18	3	QPSK				121.5	135	☐
	19	3	16-QAM				162	180	☐
	20	3	16-QAM				243	270	☐
	21	3	64-QAM				324	360	☐
	22	3	64-QAM				364.5	405	☐
	23	3	64-QAM				405	450	☐
	39	3	16-QAM	QPSK	QPSK	-	108	120	☐
	40	3	16-QAM	16-QAM	QPSK	-	135	150	☐
	41	3	64-QAM	QPSK	QPSK	-	135	150	☐
	42	3	64-QAM	16-QAM	QPSK	-	162	180	☐
	43	3	64-QAM	16-QAM	16-QAM	-	189	210	☐
	44	3	64-QAM	64-QAM	QPSK	-	189	210	☐
	45	3	64-QAM	64-QAM	16-QAM	-	216	240	☐
	46	3	16-QAM	QPSK	QPSK	-	162	180	☐
	47	3	16-QAM	16-QAM	QPSK	-	202.5	225	☐
	48	3	64-QAM	QPSK	QPSK	-	202.5	225	☐
	49	3	64-QAM	16-QAM	QPSK	-	243	270	☐
	50	3	64-QAM	16-QAM	16-QAM	-	283.5	315	☐
☐	51	3	64-QAM	64-QAM	QPSK	-	283.5	315	☐
	52	3	64-QAM	64-QAM	16-QAM	-	324	360	☐
	24	4	BPSK				54	60	☐
	25	4	QPSK				108	120	☐
	26	4	QPSK				162	180	☐
	27	4	16-QAM				216	240	☐
	28	4	16-QAM				324	360	☐
	29	4	64-QAM				432	480	☐
	30	4	64-QAM				486	540	☐
	31	4	64-QAM				540	600	☐
	53	4	16-QAM	QPSK	QPSK	QPSK	135	150	☐
	54	4	16-QAM	16-QAM	QPSK	QPSK	162	180	☐
	55	4	16-QAM	16-QAM	16-QAM	QPSK	189	210	☐
	56	4	64-QAM	QPSK	QPSK	QPSK	162	180	☐
	57	4	64-QAM	16-QAM	QPSK	QPSK	189	210	☐
	58	4	64-QAM	16-QAM	16-QAM	QPSK	216	240	☐
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	243	270	☐
	60	4	64-QAM	QPSK	QPSK	QPSK	216	240	☐
	61	4	64-QAM	16-QAM	16-QAM	QPSK	243	270	☐
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	270	300	☐
	63	4	64-QAM	64-QAM	64-QAM	QPSK	270	300	☐
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	297	330	☐
	65	4	16-QAM	QPSK	QPSK	QPSK	202.5	225	☐
	66	4	16-QAM	16-QAM	QPSK	QPSK	243	270	☐
	67	4	16-QAM	16-QAM	16-QAM	QPSK	283.5	315	☐
	68	4	64-QAM	QPSK	QPSK	QPSK	243	270	☐
	69	4	64-QAM	16-QAM	QPSK	QPSK	283.5	315	☐
	70	4	64-QAM	16-QAM	16-QAM	QPSK	324	360	☐
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	364.5	405	☐
	72	4	64-QAM	64-QAM	QPSK	QPSK	324	360	☐
	73	4	64-QAM	64-QAM	16-QAM	QPSK	364.5	405	☐
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	405	450	☐
	75	4	64-QAM	64-QAM	64-QAM	QPSK	405	450	☐
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	445.5	495	☐

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	☒ Test mode 1 (1)	☐ Alternative test mode()
6dB Bandwidth	☒ Test mode 1 (1)	☐ Alternative test mode()
Duty Cycle	☒ Test mode 1 (1)	☐ Alternative test mode()
Maximum Conducted Output Power	☒ Test mode 1 (1)	☐ Alternative test mode()
Power Spectral Density	☒ Test mode 1 (1)	☐ Alternative test mode()
Conducted Spurious Emission at the Band Edge	☒ Test mode 1 (1)	☐ Alternative test mode()
Unwanted Emissions into Non-Restricted Frequency Bands	☒ Test mode 1 (1)	☐ Alternative test mode()
AC Power Line Conducted Emission	☒ Test mode 1 (1)	☐ Alternative test mode()
Unwanted Emissions into Restricted Frequency Bands	☒ Test mode 1 (1)	☐ Alternative test mode()

- (1) Following commands with the specific test software "Teraterm" are used to set the product:
- 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.

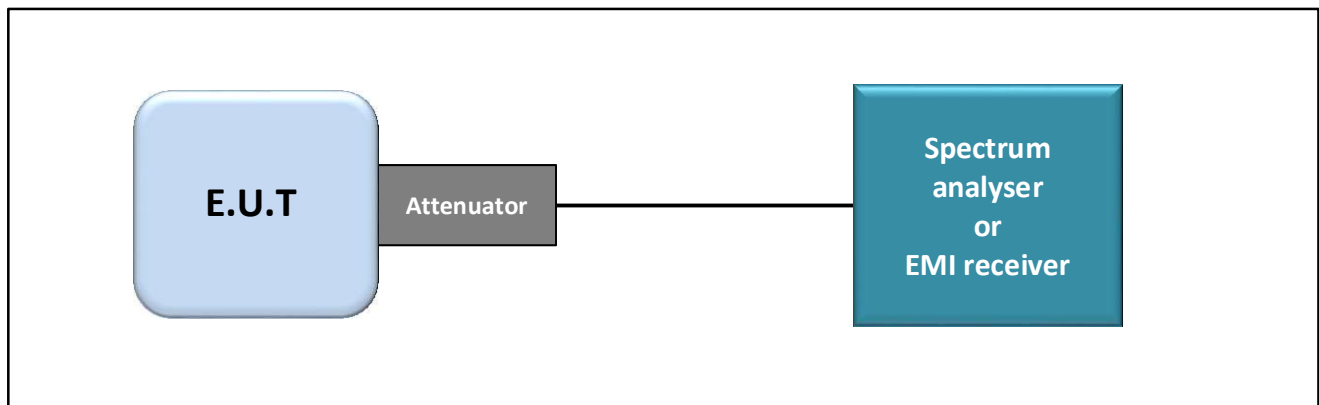
3. OCCUPIED BANDWIDTH

3.1. TEST CONDITIONS

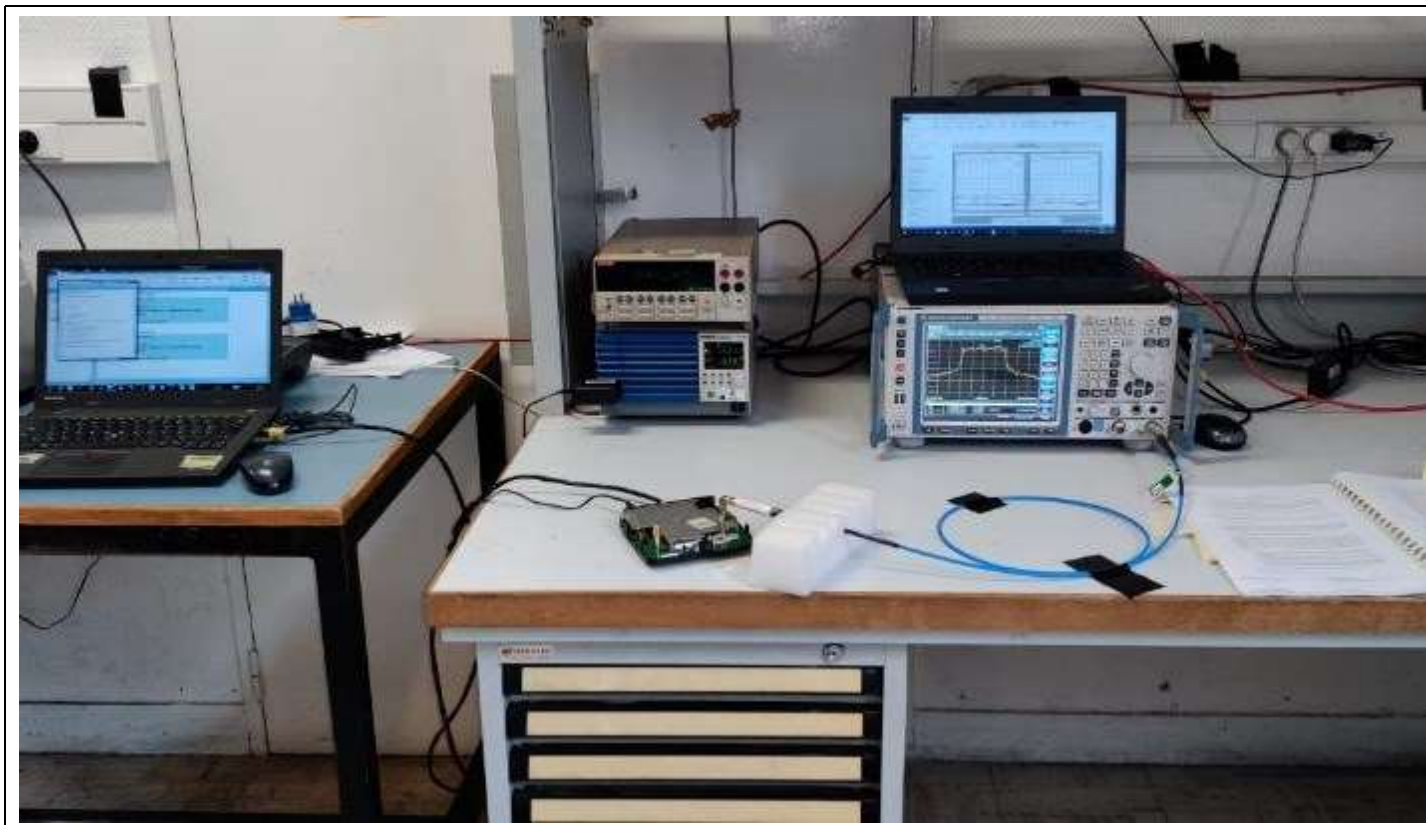
Test performed by : Armand MAHOUNGOU
Date of test : April 20, 2021
Ambient temperature : 24°C
Relative humidity : 42%

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

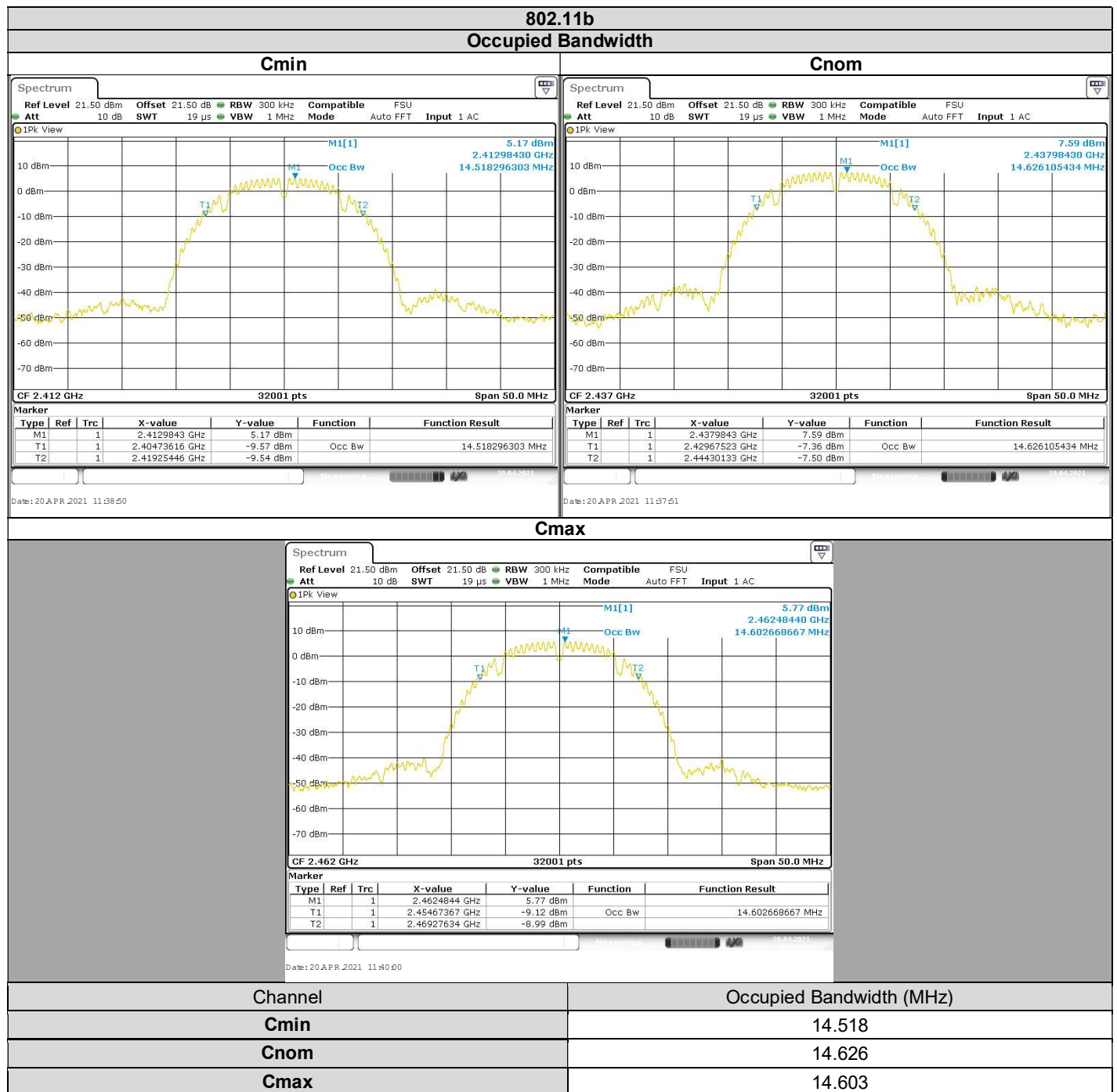
None

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

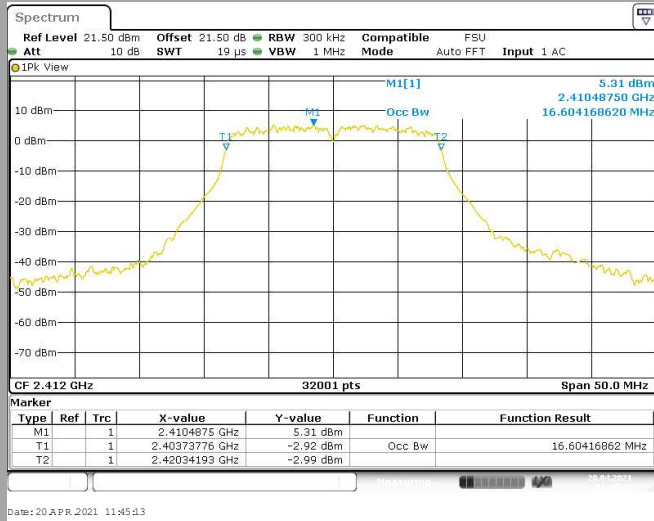
Note: In our quality system, the test equipment calibration due is more & less 2 months

3.5. RESULTS



802.11g Occupied Bandwidth

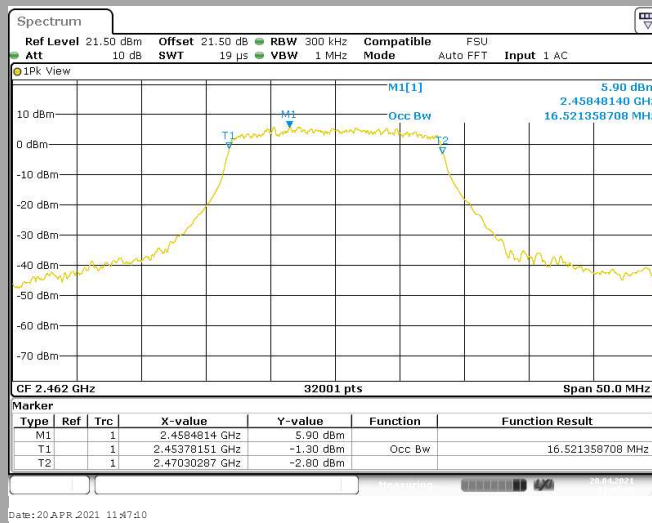
Cmin



Cnom



Cmax



Channel

Occupied Bandwidth (MHz)

Cmin

16.604

Cnom

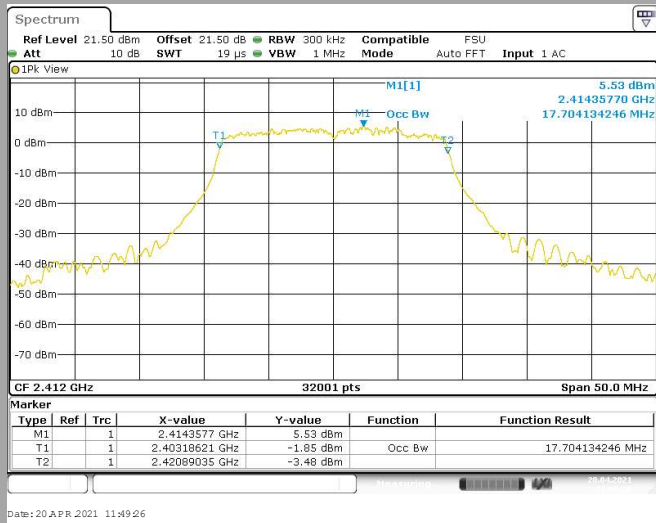
16.527

Cmax

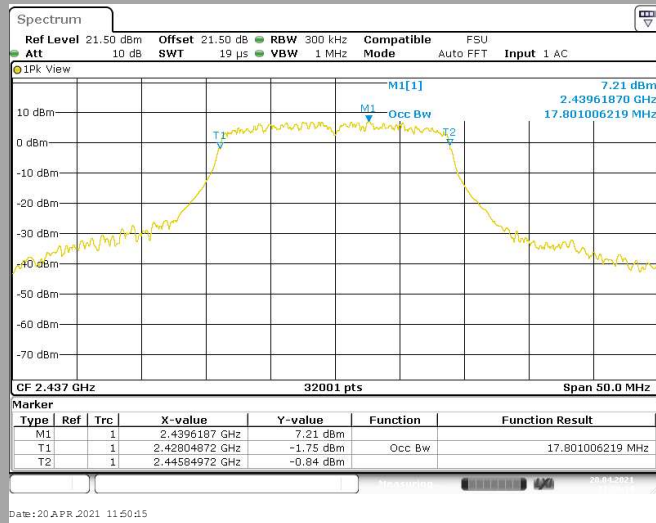
16.521

802.11n HT20 Occupied Bandwidth

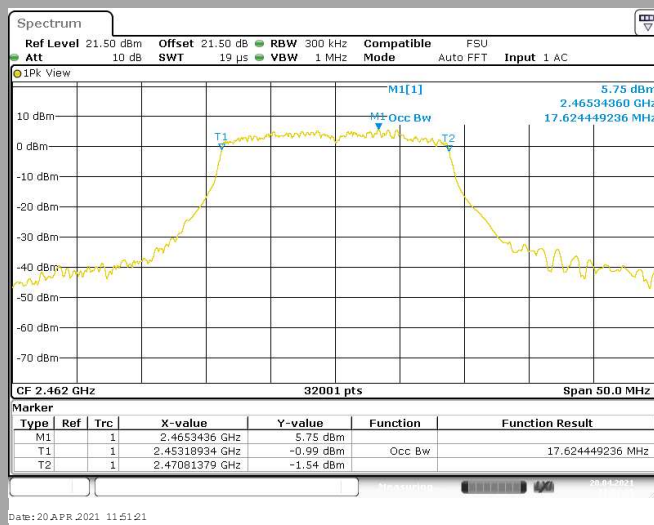
Cmin



Cnom



Cmax



Channel

Occupied Bandwidth (MHz)

Cmin

17.704

Cnom

17.801

Cmax

17.624



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:

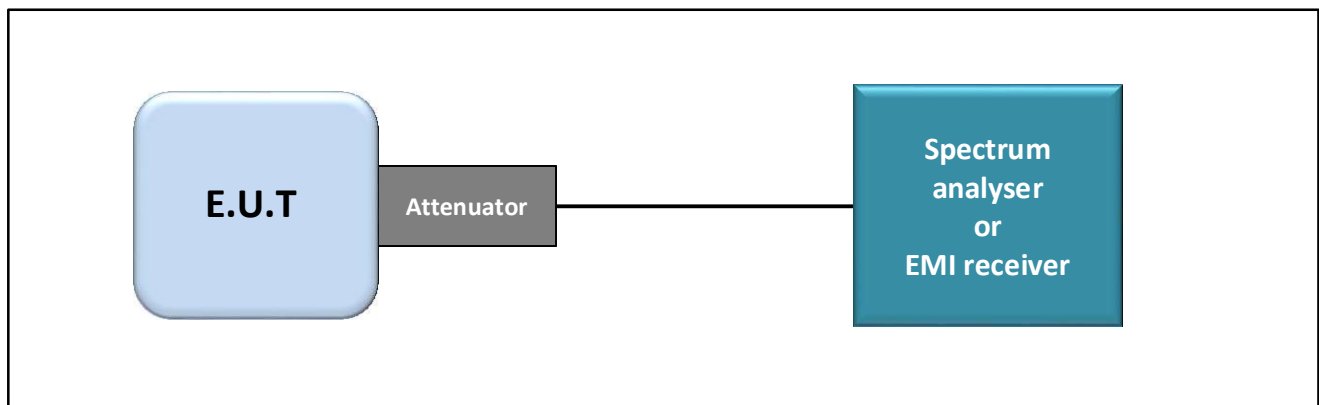
- ☒ Conducted Method
- ☐ Radiated Method

- 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

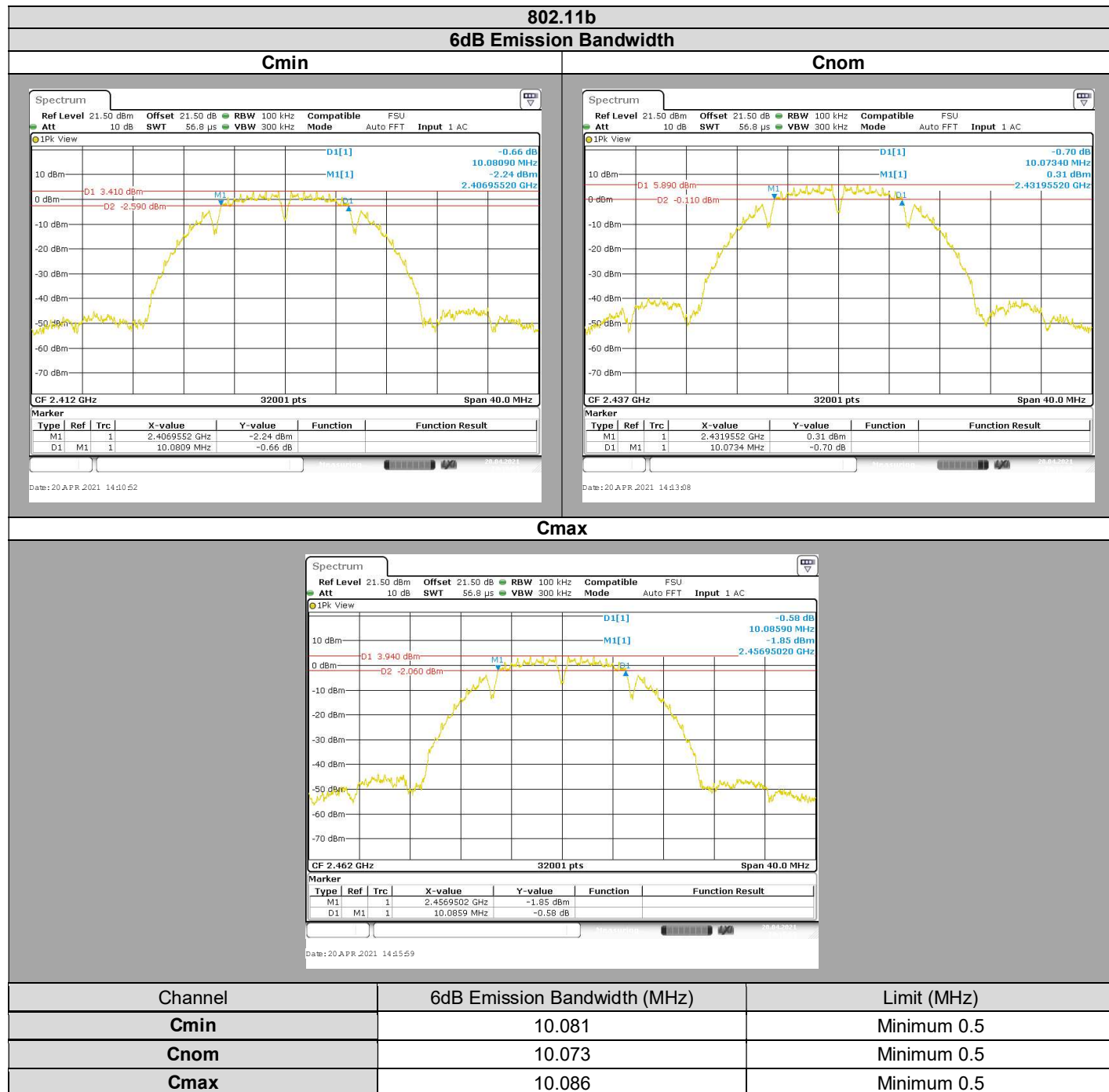
Frequency range	The 6dB bandwidth Limit
2400MHz to 2483.5MHz	≤500kHz

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

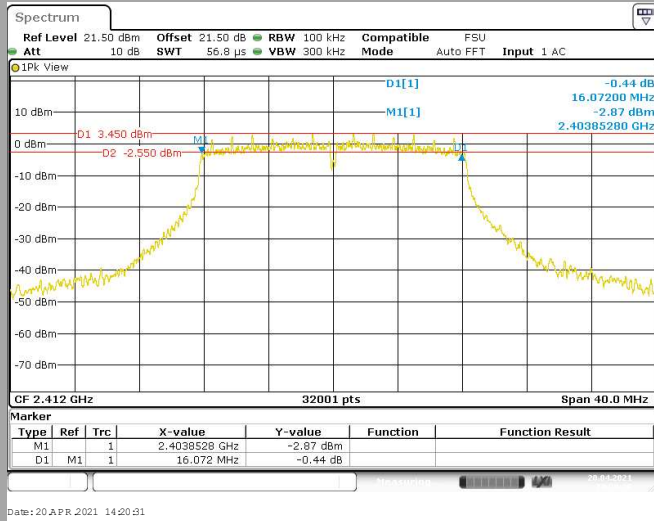
Note: In our quality system, the test equipment calibration due is more & less 2 months

4.5. RESULTS

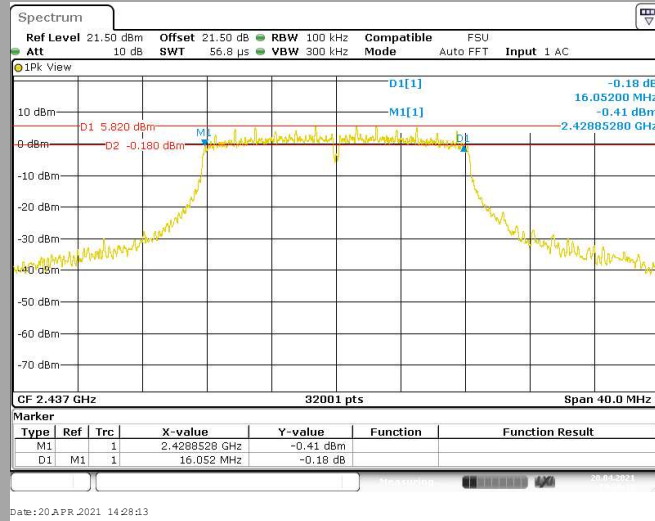


802.11g
6dB Emission Bandwidth

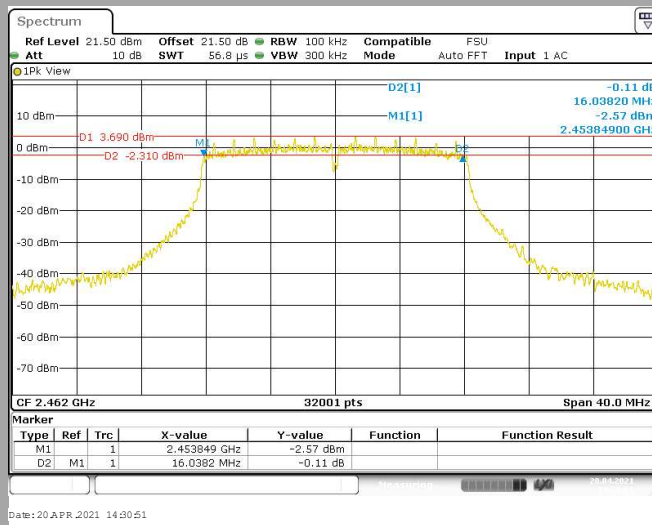
Cmin



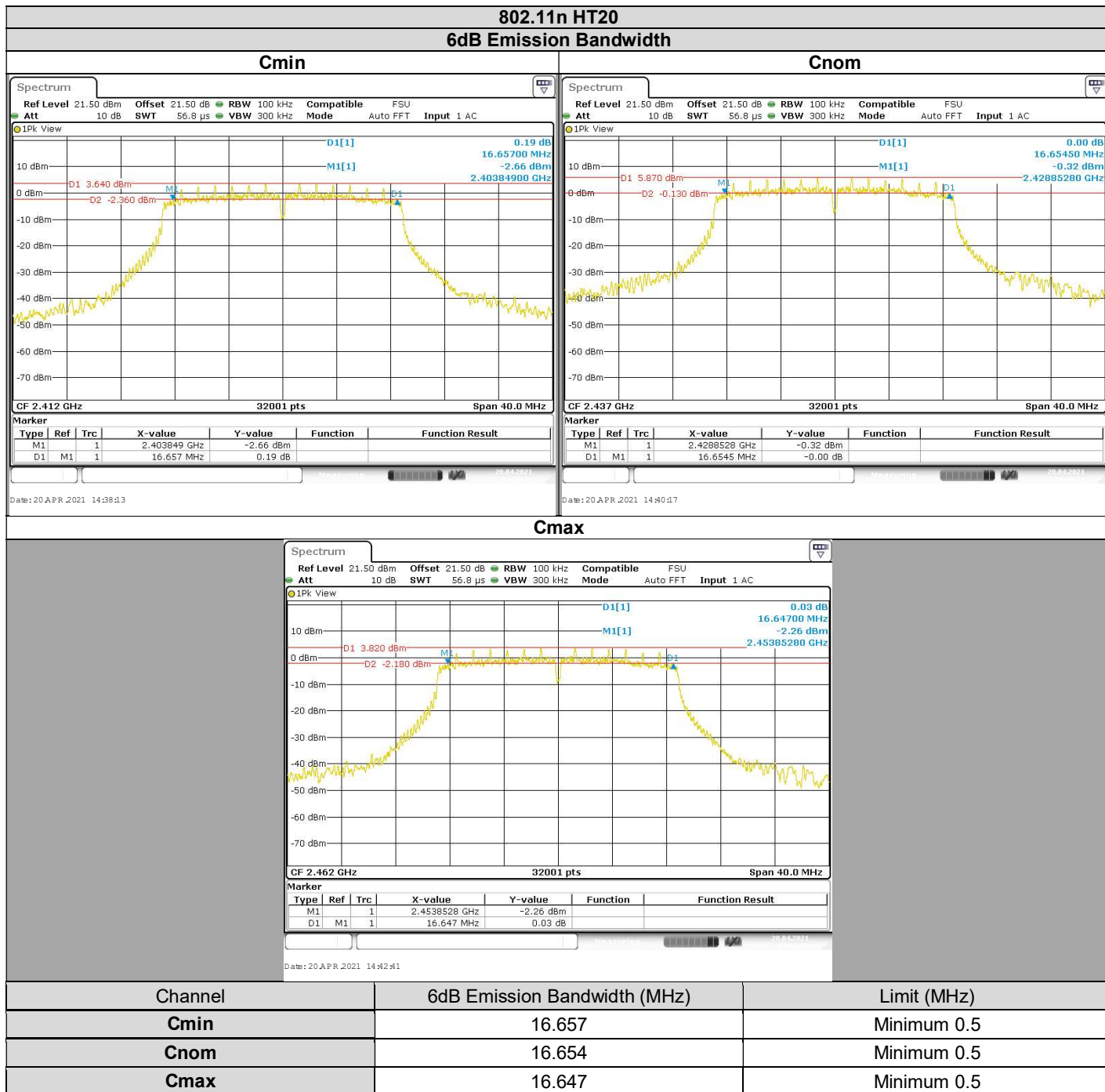
Cnom

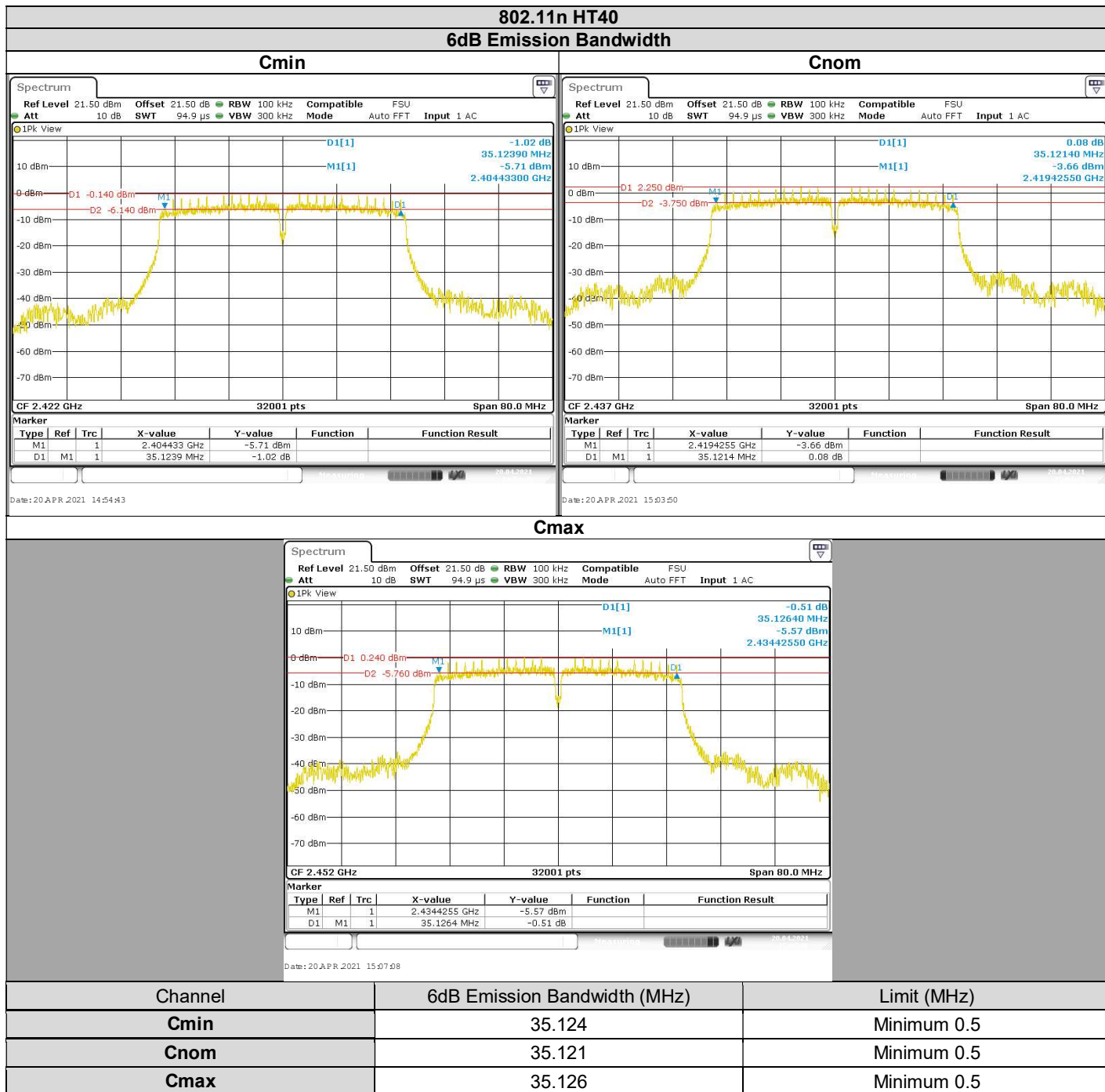


Cmax



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





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.

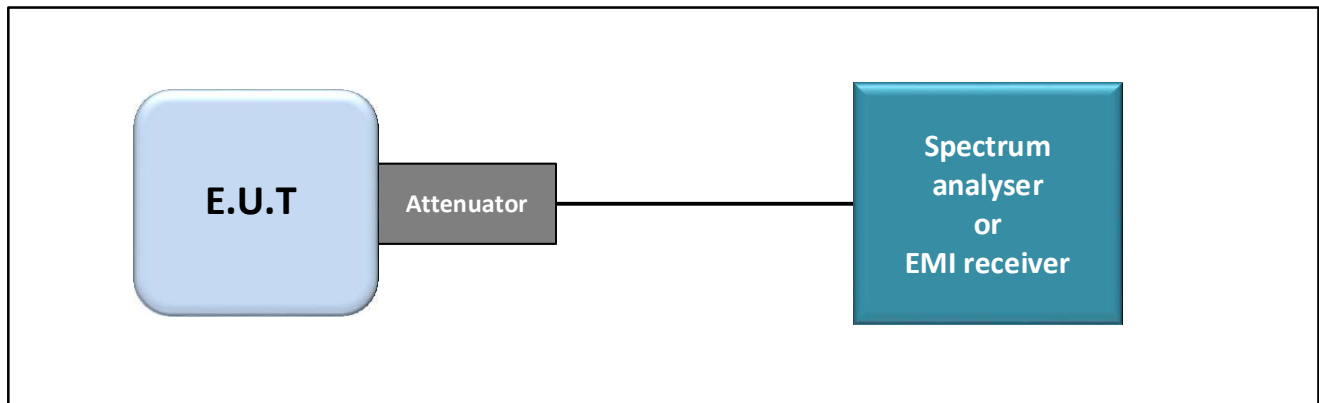
5. DUTY CYCLE

5.1. TEST CONDITIONS

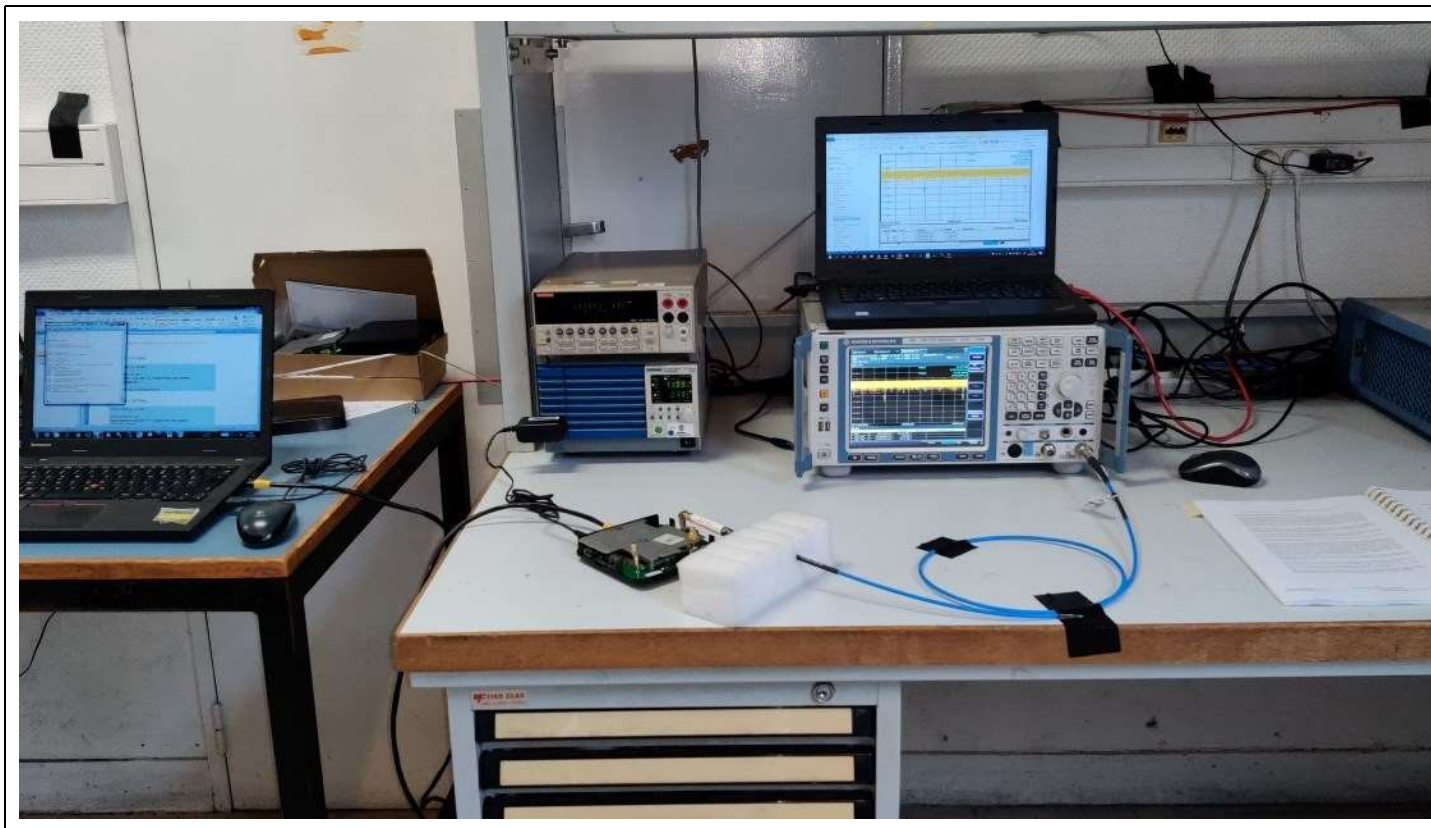
Test performed by : Armand MAHOUNGOU
Date of test : April 9, 2021
Ambient temperature : 25°C
Relative humidity : 45%

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

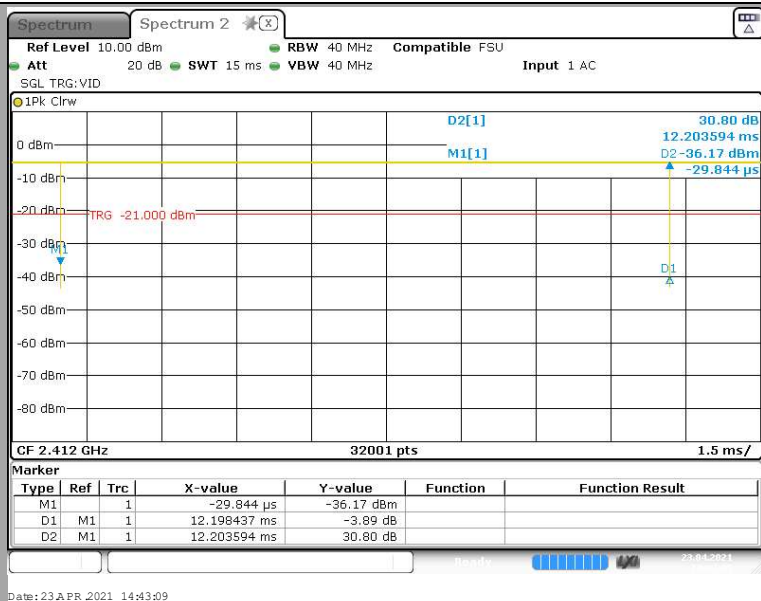
5.4. TEST EQUIPMENT LIST

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

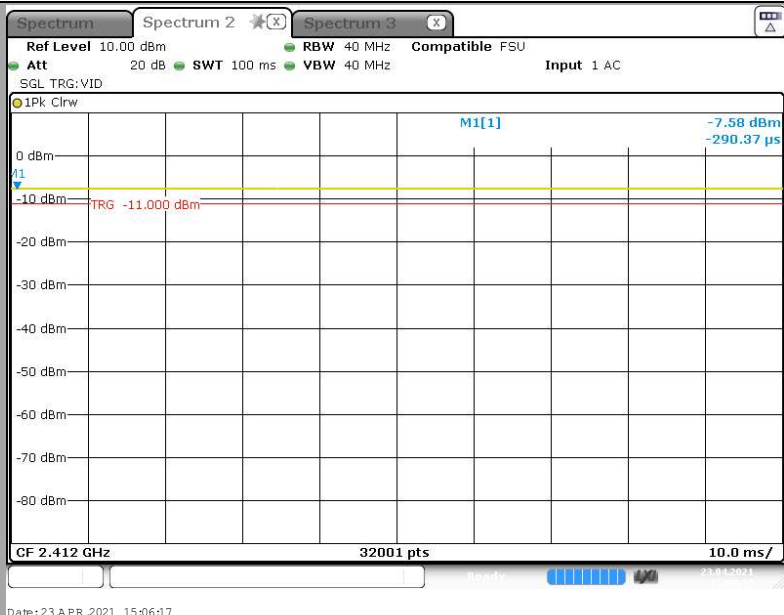
Note: In our quality system, the test equipment calibration due is more & less 2 months

5.5. RESULTS

802.11b Duty Cycle Cmin



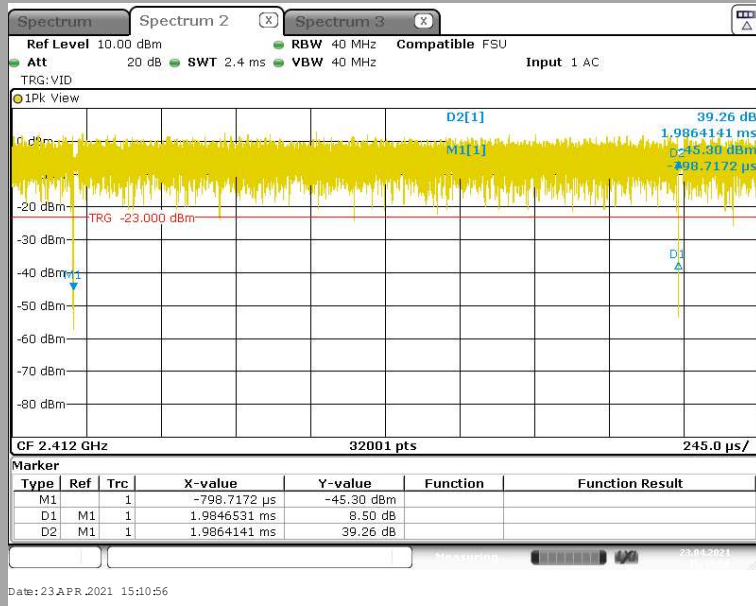
802.11b Cmin



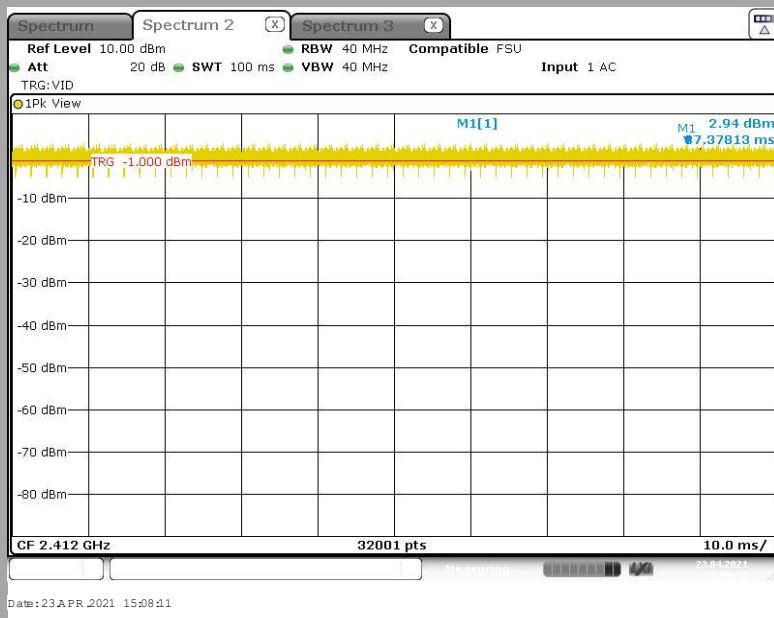
Channel

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

802.11g
Duty Cycle
Cmin



802.11g
Cmin



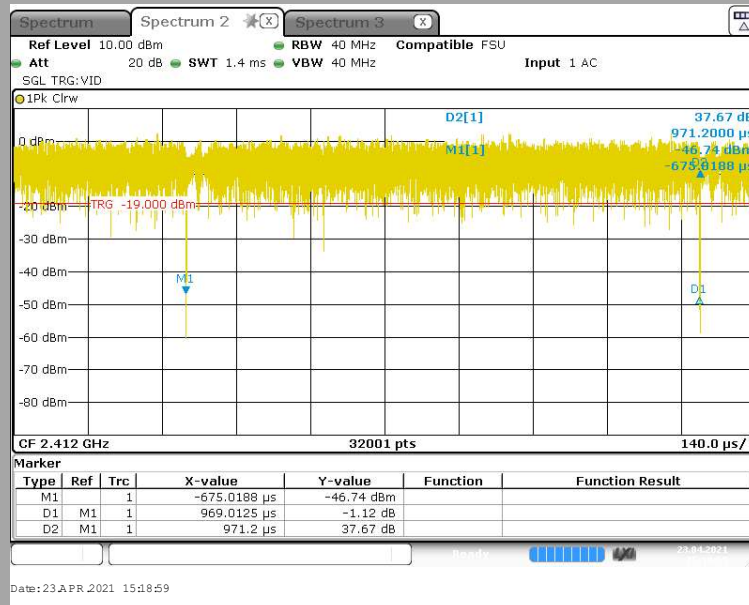
Channel

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

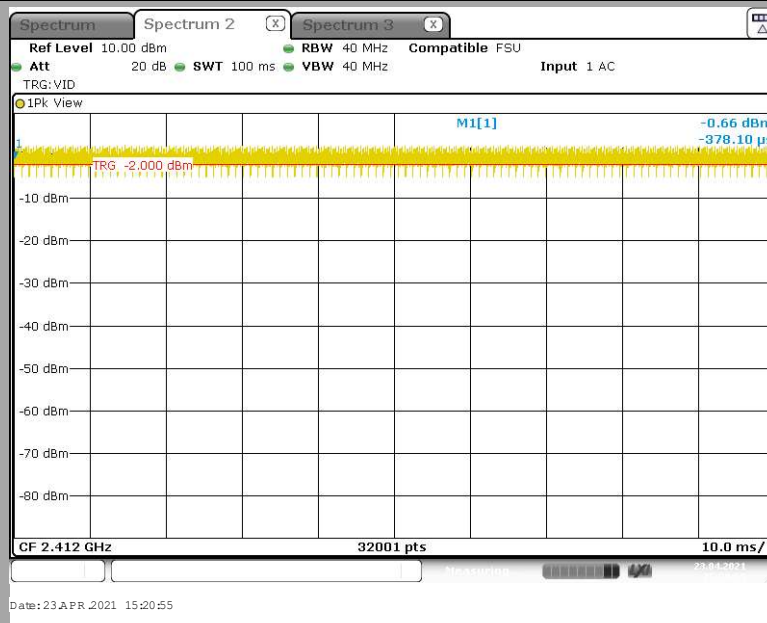


L C I E

802.11n HT20
Duty Cycle
Cmin



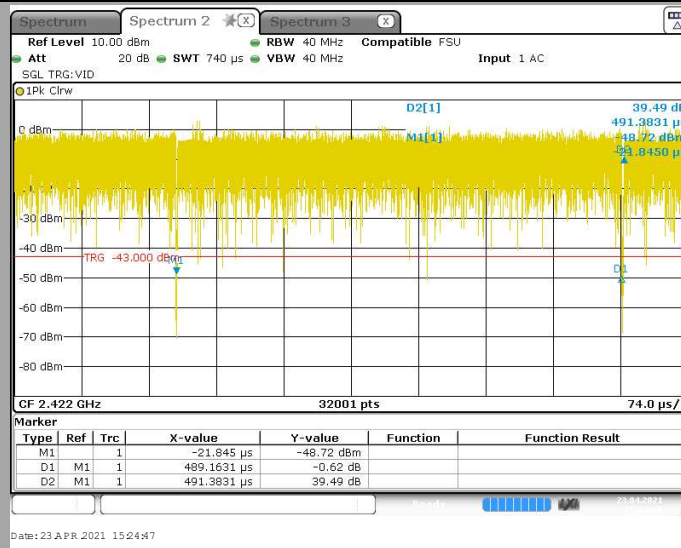
802.11n HT20
Cmin



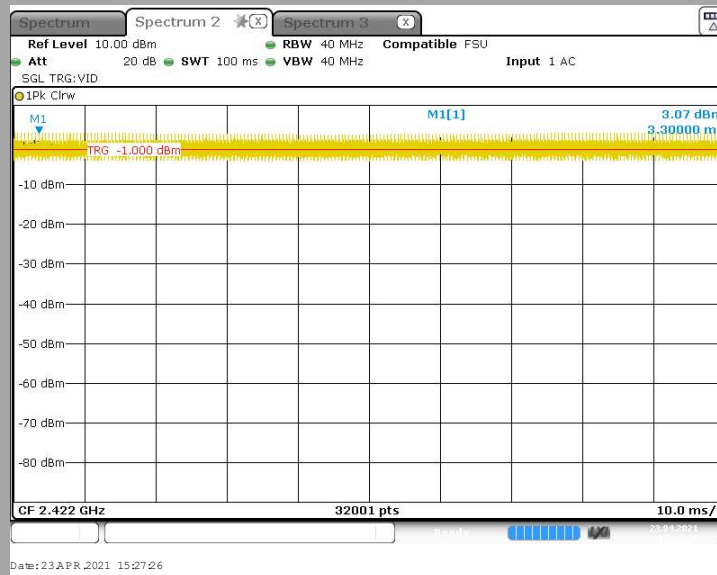
Channel

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

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:

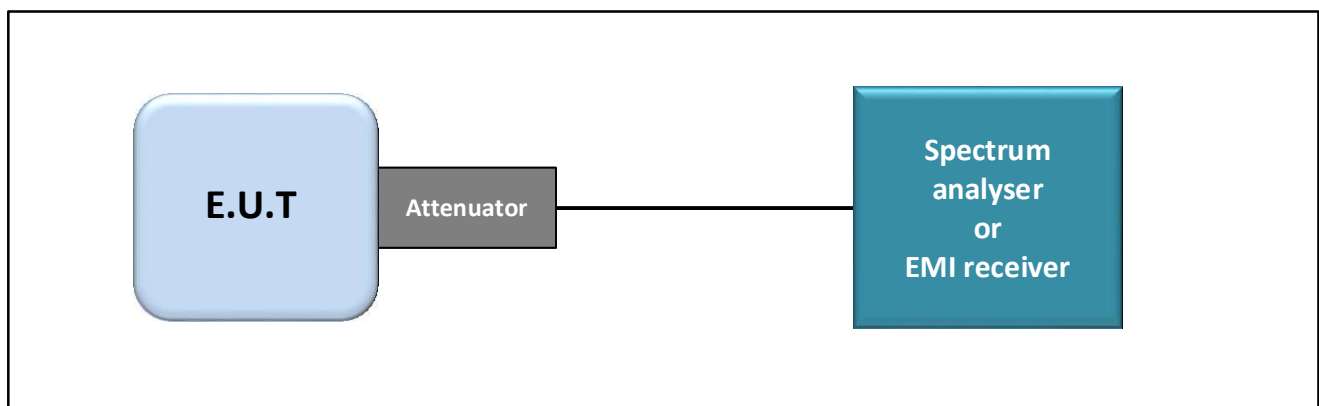
- ☒ On a table
- ☐ In an anechoic chamber

- 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

6.5. RESULTS

