TEST REPORT

N°: 148983-704527-A **Version : 01**

Subject	**Radio spectrum matters** **tests according to standards:** **47 CFR Part 15.247 & RSS-247 Issue 1 & RSS-Gen Issue 4**
Issued to	**Technicolor** 975, Avenue des Champs Blancs CS17616 35576 – Cesson-Sévigné Cedex France
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Apparatus under test

Product	OTT STB
Trade mark	**Technicolor Player**
Manufacturer	**Technicolor**
Model under test	**UIW4010TCH**
Serial number	**--**
FCC ID	**G95-UIW4010TCH**
IC ID	**431C-UIW4010TCH**

Test date	: August 31, 2016 to October 14, 2016
Test location	Fontenay Aux Roses & Ecuelles
Composition of document	36 pages
Document issued on	June 19, 2017

Written by :	**Approved by :**
Arnaud FAYETTE	Stéphane PHOUDIAH
Tests operator	**Technical manager**

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PUBLICATION HISTORY

Version	Date	Author	Modification
01	June 7, 2017	Arnaud FAYETTE	Creation of the document

SUMMARY

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1. TEST PROGRAM

References

- **47 CFR Part 15.247**
- **RSS 247 Issue 1**
- **RSS Gen Issue 4**
- **KDB 558074 D01 DTS Meas Guidance v03r05**
- **ANSI C63.10-2013**

Radio requirement:

Clause (47CFR Part 15.407 & RSS-247 Issue 1 & RSS-Gen Issue 4) 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 (3)	☐ 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
(3): Include in unwanted emission into non restricted frequency band

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 Player UIW4010TCH **Serial Number:** --

Similarity with already granted equipment:
This equipment is a variant from UIW4010ECH model. The only difference is the model name (HVIN), the color enclosure and the ON/OFF switch position. As a consequence, tests results of this report are fully retrieved from UIW4010ECH test reports Granted in October 2016 under FCC ID: G95-UIW4010ECH; IC: 431C-UIW4010ECH). Only additional tests according to 47CFR Part 15B and ICES 003 have been performed.

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
1	Power Supply	-	☐	☐	☑	-
2	HDMI	1,8	☑	☐	☑	-

Auxiliary equipment used during test:

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

Equipment information:

Bluetooth LE Type:	☑ **BLE**	☐ **v4.0**	☑ **v4.1**	☐ **v4.2**
Frequency band:	[2400 – 2483.5] MHz			
Number of Channel:	40			
Spacing channel:	2MHz			
Channel bandwidth:	1MHz			
Antenna Type:	☑ Integral	☐ External	☐ Dedicated	
Antenna connector:	☑ Yes	☐ No	☐ Temporary for test	
Transmit chains:	1			
	Single antenna			
Receiver chains	1			
Type of equipment:	☑ Stand-alone	☐ Plug-in	☐ Combined	
Ad-Hoc mode:	☑ Yes	☐ No		
Duty cycle:	☑ Continuous duty	☐ Intermittent duty	☐ 100% duty	
Equipment type:	☑ Production model	☐ Pre-production model		
Operating temperature range:	Tmin:	☐ -20°C	☑ 0°C	☐ X°C
	Tnom:	20°C		
	Tmax:	☐ 35°C	☐ 55°C	☑ 40°C
Type of power source:	☑ AC power supply	☐ DC power supply	☐ Battery	
Operating voltage range:	Vnom:	☑ 120V/60Hz	☐ X Vdc	

Antenna Characteristic			
Antenna assembly	**Gain (dBi)**	**Frequency Band (MHz)**	**Impedance(Ω)**
1	5,4	2400-2483.5	50

CHANNEL PLAN			
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
Cmin: 0	2402	**Cmid: 20**	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	**Cmax: 39**	2480

DATA RATE		
Data Rate (Mbps)	**Modulation Type**	**Worst Case Modulation**
1	GFSK	☑

2.2. RUNNING MODE

The EUT is set in the following modes during tests:
- Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
- Permanent reception

The product is capable of simultaneous emission in WIFI (2.4GHz or 5GHz) and Bluetooth (EDR or LE).

Following commands with the specific test software “DutApiMimoBtFmBridgeEt” are used to set the product:
- See document “UIW4010ECH_ BT control_V03.docx” for the command used during test

2.3. EQUIPMENT MODIFICATION

☑ None ☐ Modification:

3. OCCUPIED BANDWIDTH

3.1. TEST CONDITIONS

Test performed by : Arnaud FAYETTE
Date of test : September 5, 2016
Ambient temperature : 23 °C
Relative humidity : 45 %

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 4 § 6.6
☑ ANSI C63.10 § 6.9.2

3.1. LIMIT

None

3.2. TEST EQUIPMENT LIST

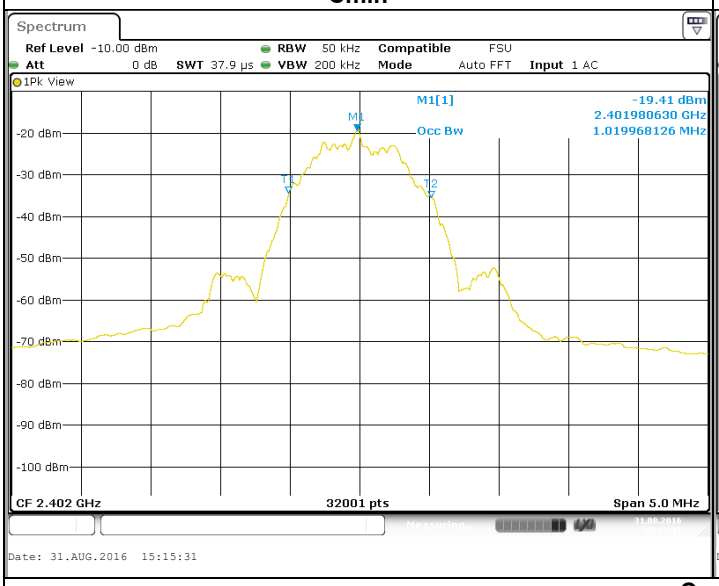
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Calibration date	Calibration due
Multi-meter	KEITHLEY	2000	A1242090	2016/05	2018/05
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7049006	Verified with calibrated multimeter	Verified with calibrated multimeter
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/10
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2015/10	2016/10

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

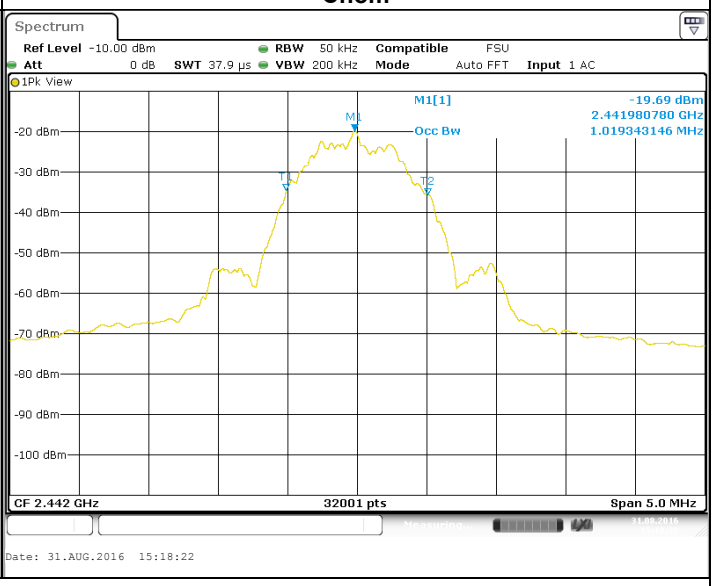
3.3. RESULTS

Occupied Bandwidth

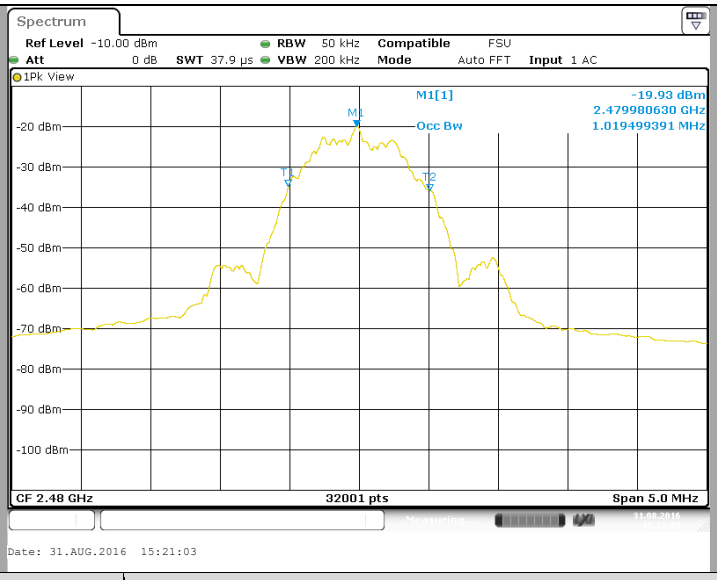
Cmin



Cnom



Cmax



Channel	Occupied Bandwidth (MHz)
Cmin	1,020
Cnom	1,019
Cmax	1,019

3.1. CONCLUSION

Occupied Channel Bandwidth measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS-GEN ISSUE 4** limits.

4. 6DB EMISSION BANDWIDTH

4.1. TEST CONDITIONS

Test performed by : Arnaud FAYETTE
Date of test : October 14, 2016
Ambient temperature : 23 °C
Relative humidity : 44 %

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:
☐ KDB 558074 D01 DTS Meas Guidance v03r05 § 8.1
☑ KDB 558074 D01 DTS Meas Guidance v03r05 § 8.2

4.3. LIMIT

The 6dB bandwidth shall be at least 500kHz

4.4. TEST EQUIPMENT LIST

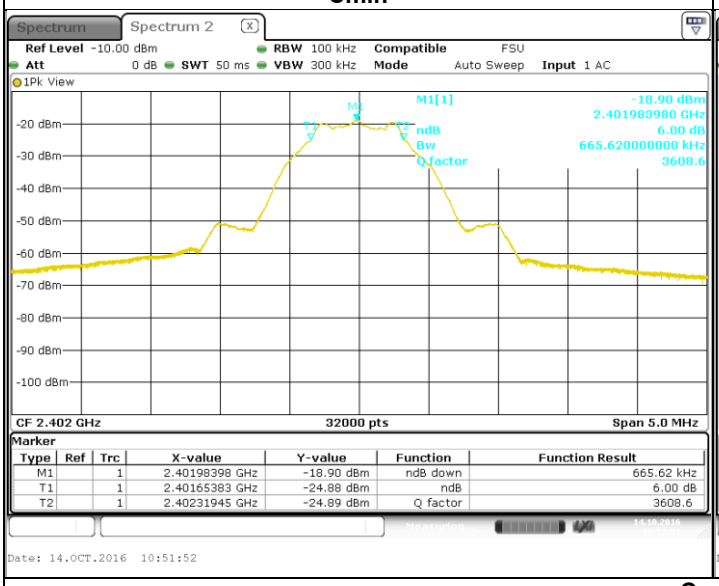
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Calibration date	Calibration due
Multi-meter	KEITHLEY	2000	A1242090	2016/05	2018/05
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7049006	Verified with calibrated multimeter	Verified with calibrated multimeter
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/10
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2015/10	2016/10

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

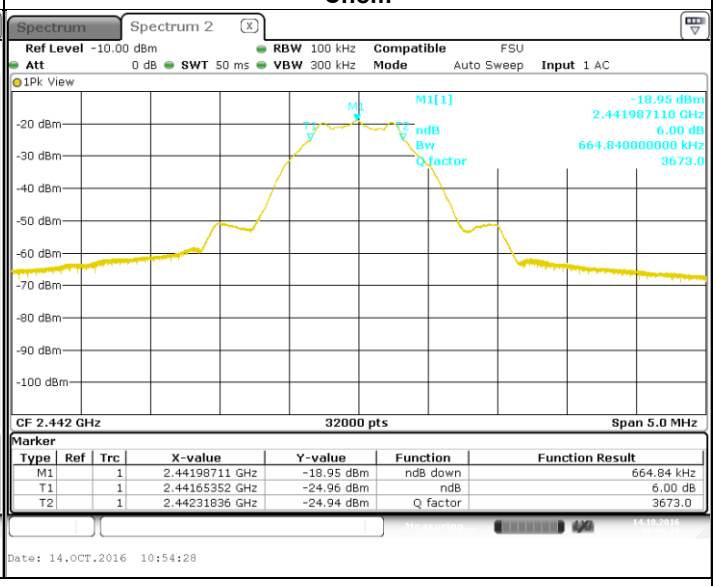
4.5. RESULTS

6dB Emission Bandwidth

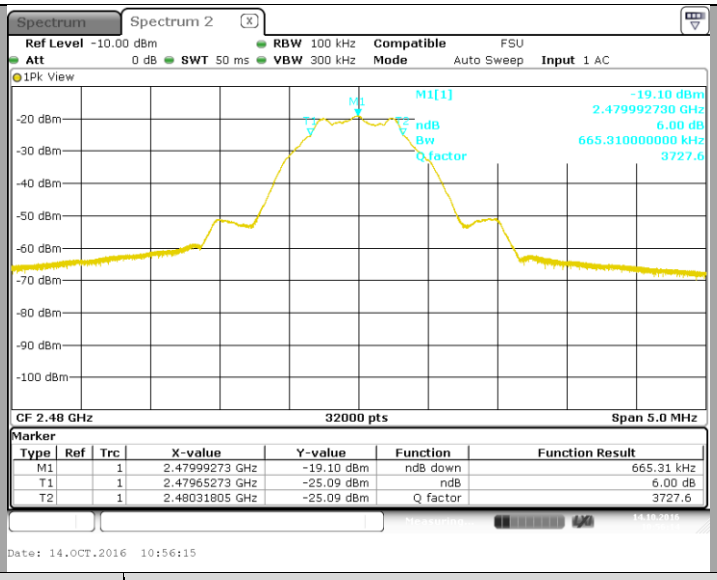
Cmin



Cnom



Cmax



Channel	6dB Emission Bandwidth (MHz)
Cmin	0,665
Cnom	0,665
Cmax	0,665

4.6. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.

5. DUTY CYCLE

5.1. TEST CONDITIONS

Test performed by	: Arnaud FAYETTE
Date of test	: September 5, 2016
Ambient temperature	: 24 °C
Relative humidity	: 43 %

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:
☑ KDB 558074 D01 DTS Meas Guidance v03r05 § 6.0 b)

5.3. LIMIT

None

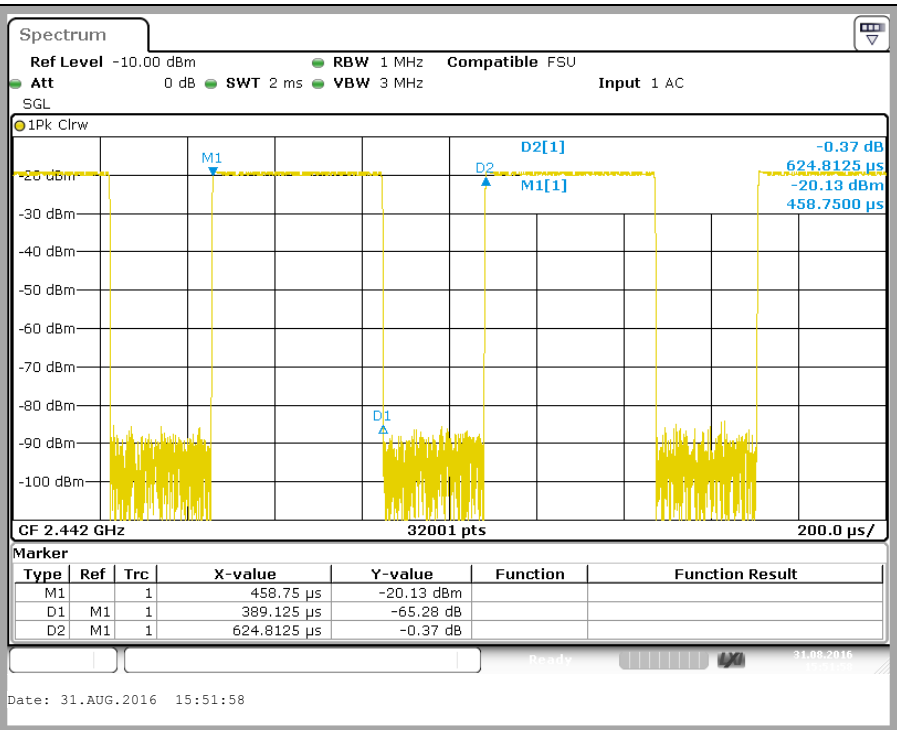
5.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Calibration date	Calibration due
Multi-meter	KEITHLEY	2000	A1242090	2016/05	2018/05
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7049006	Verified with calibrated multimeter	Verified with calibrated multimeter
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/10
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2015/10	2016/10

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

5.5. RESULTS

Duty Cycle		
Cnom		



Channel	Duty Cycle (%)	Duty Cycle Correction (dB)
Cnom	62,3	2.1

5.6. CONCLUSION

Duty Cycle measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1. TEST CONDITIONS

Test performed by : Arnaud FAYETTE
Date of test : August 31, 2016
Ambient temperature : 24 °C
Relative humidity : 45 %

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:
☑ KDB 558074 D01 DTS Meas Guidance v03r05 § 9.1.1 (RBW≥DTS bandwidth)
☐ KDB 558074 D01 DTS Meas Guidance v03r05 § 9.2.2.2 (Method AVGSA-1)
☐ KDB 558074 D01 DTS Meas Guidance v03r05 § 9.2.2.4 (Method AVGSA-2)

6.3. LIMIT

Maximum Conducted Output power:
2400MHz-2483.5MHz: Shall not exceed 30dBm
Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

6.4. TEST EQUIPMENT LIST

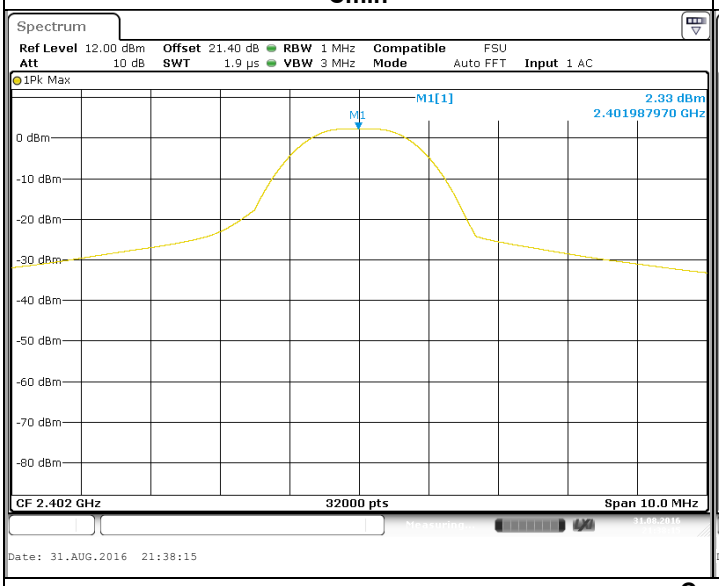
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Calibration date	Calibration due
Multi-meter	KEITHLEY	2000	A1242090	2016/05	2018/05
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7049006	Verified with calibrated multimeter	Verified with calibrated multimeter
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/10
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2015/10	2016/10

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

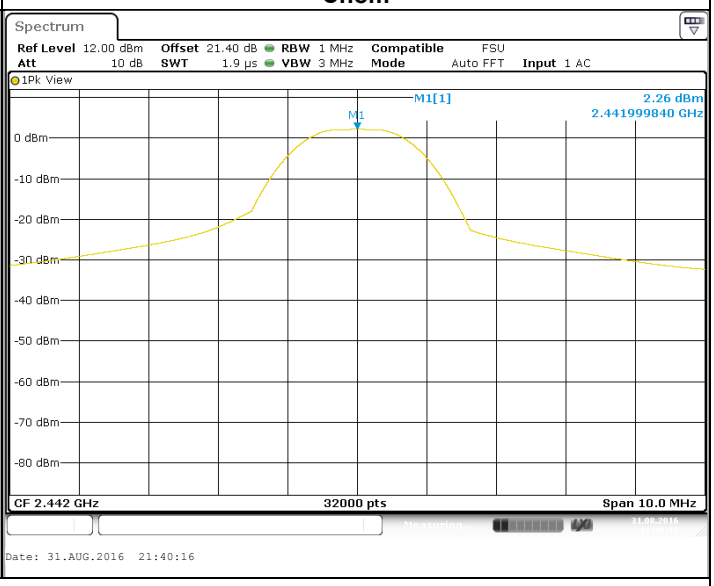
6.5. RESULTS

Maximum Conducted Output Power

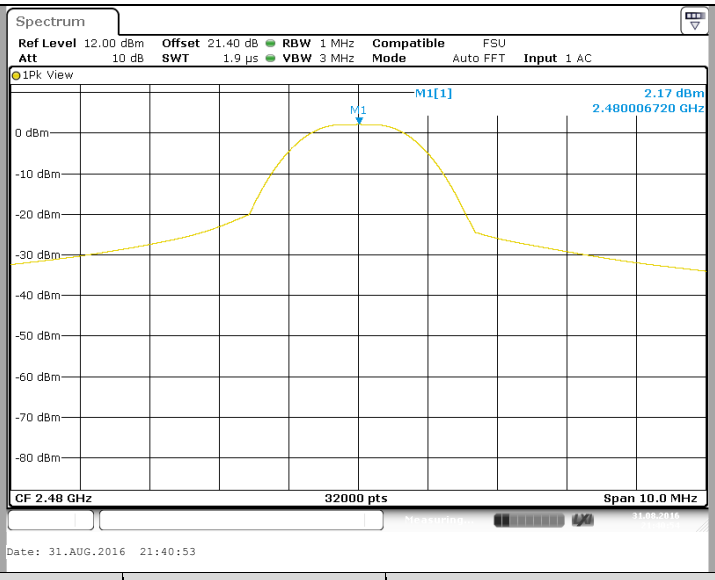
Cmin



Cnom



Cmax



Channel	Offset Cable + Att (dB)	Antenna Gain (dBi)	Maximum Conducted Power (dBm)	Limit (dBm)
Cmin	**21,4**	5,4	2,33	30
Cnom	**21,4**	5,4	2,26	30
Cmax	**21,4**	5,4	2,17	30

6.6. CONCLUSION

Maximum Conducted Output Power measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.

7. POWER SPECTRAL DENSITY

7.1. TEST CONDITIONS

Test performed by : Arnaud FAYETTE
Date of test : August 31, 2016
Ambient temperature : 23 °C
Relative humidity : 45 %

7.2. 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:
☑ KDB 558074 D01 DTS Meas Guidance v03r05 § 10.2 (Method PKPSD)
☐ KDB 558074 D01 DTS Meas Guidance v03r05 § 10.3 (Method AVGPSD-1)

7.3. LIMIT

Power Spectral Density:
2400MHz-2483.5MHz: Shall not exceed 8dBm/3kHz
Limits are reduced by G-6dBi if Overall Antenna Gain above 6dBi

7.4. TEST EQUIPMENT LIST

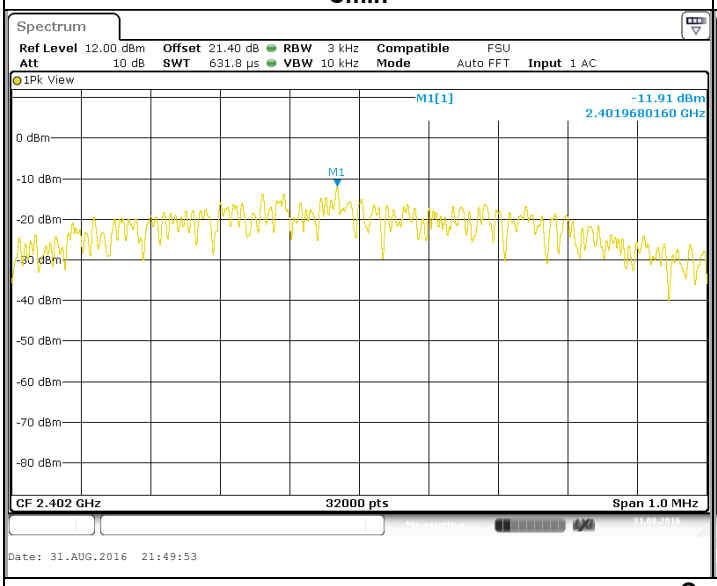
DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Calibration date	Calibration due
Multi-meter	KEITHLEY	2000	A1242090	2016/05	2018/05
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7049006	Verified with calibrated multimeter	Verified with calibrated multimeter
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/10
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2015/10	2016/10

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

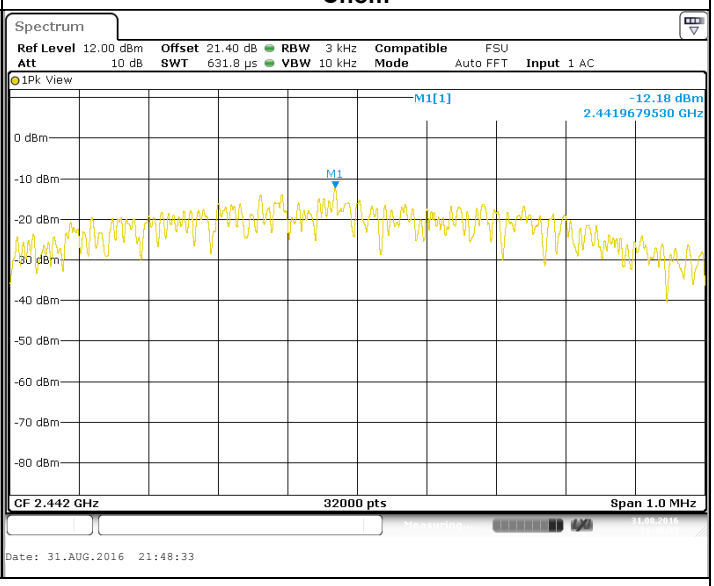
7.5. RESULTS

Power Spectral Density

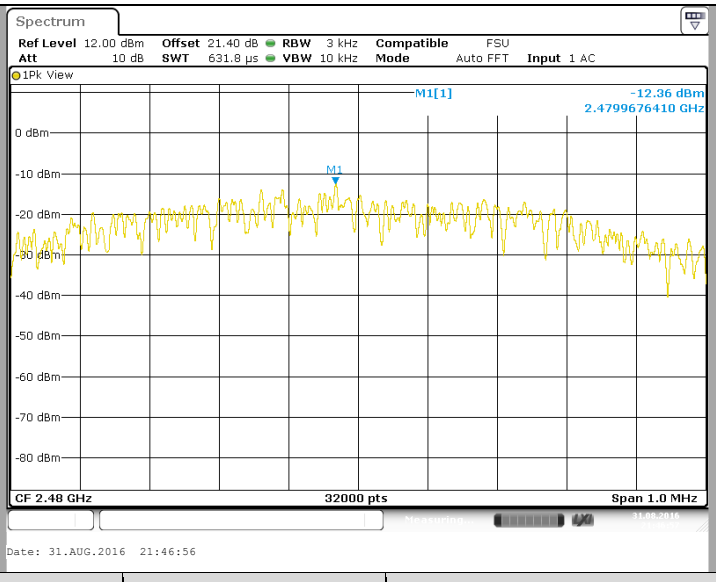
Cmin



Cnom



Cmax



Channel	Offset Cable + Att (dB)	Antenna Gain (dBi)	Power Spectral Density (dBm/3kHz)	Limit ((dBm/3kHz)
Cmin	**21,4**	5,4	-11,91	8
Cnom	**21,4**	5,4	-12,18	8
Cmax	**21,4**	5,4	-12,36	8

7.6. CONCLUSION

Power Spectral Density measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.

8. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS AT THE BAND EDGE

8.1. TEST CONDITIONS

Test performed by : Arnaud FAYETTE
Date of test : October 3, 2016
Ambient temperature : 23 °C
Relative humidity : 41 %

8.2. 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:
☑ KDB 558074 D01 DTS Meas Guidance v03r05 § 11

8.3. LIMIT

All Spurious Emissions must be at least Choose limit below the Fundamental Radiator Level at the Band Edge Edge "2400MHz & 2483,5MHz"

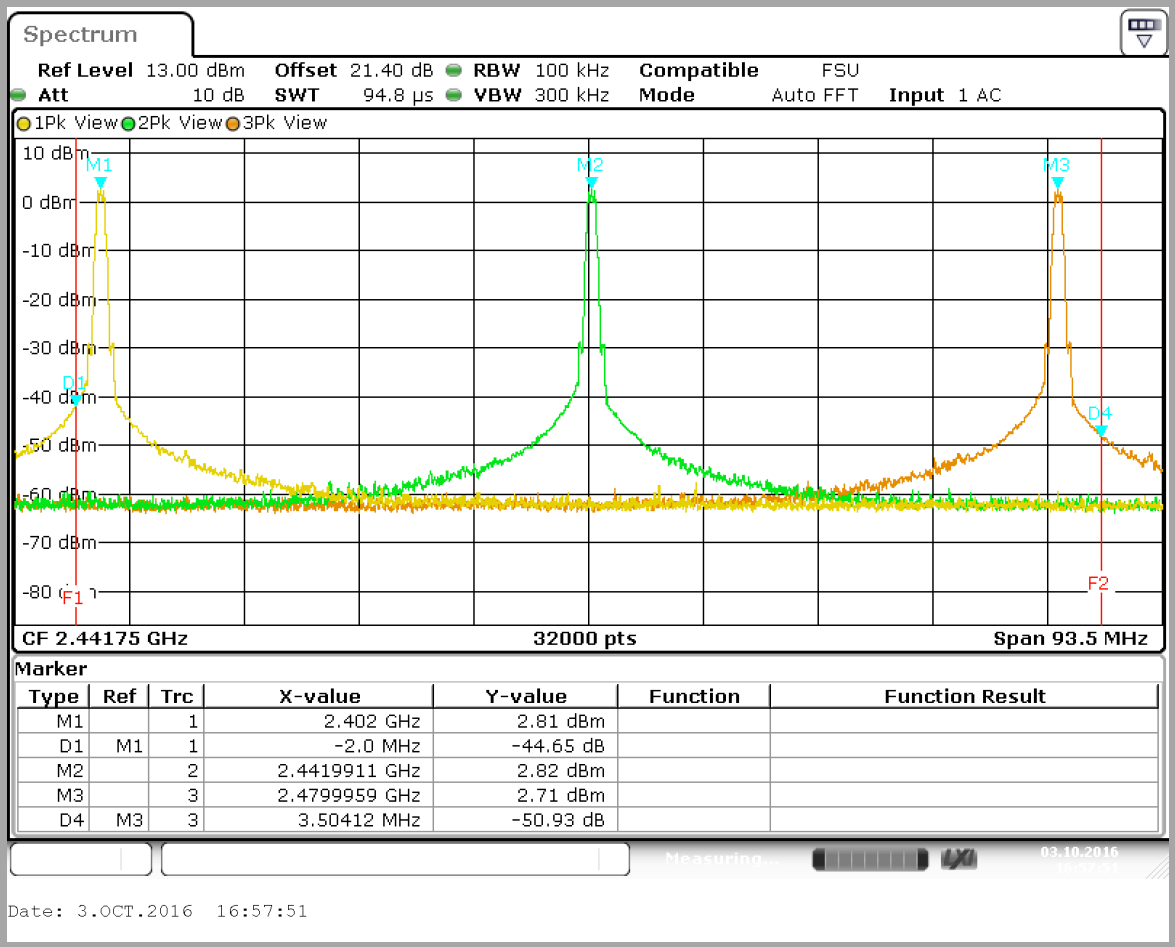
8.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Calibration date	Calibration due
Multi-meter	KEITHLEY	2000	A1242090	2016/05	2018/05
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7049006	Verified with calibrated multimeter	Verified with calibrated multimeter
EMI receiver	ROHDE & SCHWARZ	ESR 7	A2642023	2015/03	2016/10
RF cable & 20 dB attenuator	Télédyne	920-0202-048	A5329661	2015/10	2016/10

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

8.5. RESULTS

Unwanted Emission into non-restricted frequency bands at the band edge
Cmin/Cnom/Cmax



Conducted Spurious Emission at the Band Edge (MHz)	2400	2483,5
Spurious Level (dBc)	-45,07	-51,26

8.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands at the band edge measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.

9. UNWANTED EMISSIONS INTO NON-RESTRICTED FREQUENCY BANDS

9.1. TEST CONDITIONS

Test performed by	: Arnaud FAYETTE
Date of test	: August 31, 2016
Ambient temperature	: 24 °C
Relative humidity	: 35 %

9.2. 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:
☑ KDB 558074 D01 DTS Meas Guidance v03r05 § 11

9.3. LIMIT

All Spurious Emissions must be at least Choose limit below the Fundamental Radiator Level

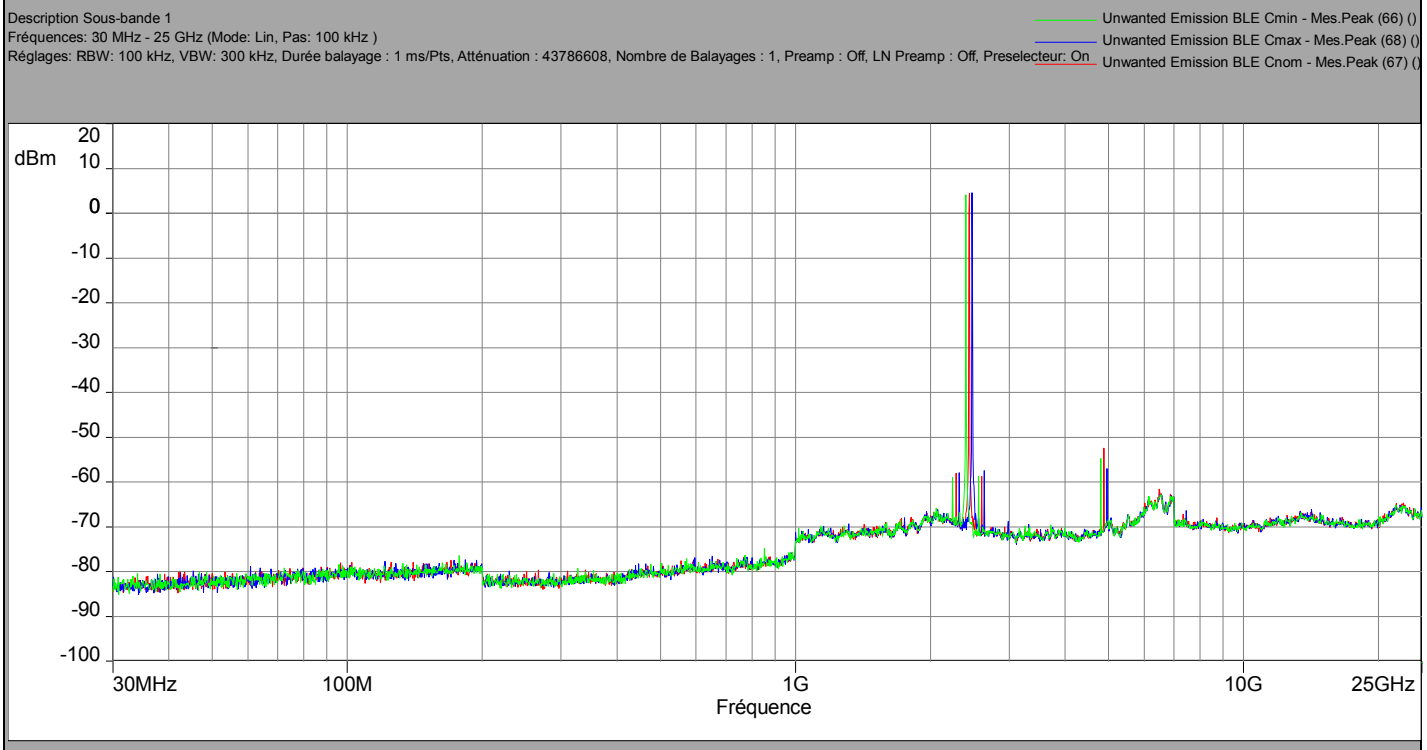
9.4. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE	Calibration date	Calibration due
Multi-meter	KEITHLEY	2000	A1242090	2017/06	2017/06
Programmable AC/DC power supply	-; KIKUSUI	PCR500M	A7040079	-	-
EMI receiver	ROHDE & SCHWARZ	ESI40 1088 740K40	A2642010	2016/07	2017/07
Cable	sans; ATEM	SMA 0.5m	A5329645	2015/08	2016/08
Rejector filter 2,4GHz	-	2.45GHz	A7484048	2015/12	2016/12

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

9.5. RESULTS

Cmin/Cnom/Cmax



Frequency (MHz)	Spurious Level (dBm)	Spurious Level (dBc)
2242	-58,94	63,11
2282	-58,06	62,51
2320	-57,93	62,51
2562	-58,70	62,87
2602	-58,69	63,14
2640	-57,45	62,03
4804	-54,74	58,91
4883	-52,46	56,91
4959	-57,03	61,61

9.6. CONCLUSION

Unwanted Emission into non-restricted frequency bands measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.247 & RSS 247 ISSUE 1** limits.

10. AC POWER LINE CONDUCTED EMISSIONS

10.1. TEST CONDITIONS

Test performed by	: Laurent DENEUX
Date of test	: September 19, 2016
Ambient temperature	: 20°C
Relative humidity	: 47%

10.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013) method. The EUT is placed on the ground reference plane, at 80cm from the LISN. The distance between the EUT and the vertical ground plane is 40cm. Auxiliaries are powered by another LISN. The cable has been shorted to 1meter length. The EUT is powered through the LISN. Measurement is made with a receiver in peak mode. This was followed by a Quasi-Peak, i.e. CISPR measurement for any strong signal. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary. The LISN (measure) is 50Ω / 50µH. Interconnecting cables and equipment's were moved to position that maximized emission.

10.3. LIMIT

Quasi-Peak
0,15kHz to 0,5MHz: 66dBµV to 56dBµV*
0,5MHz to 5MHz: 56dBµV
5MHz to 30MHz: 60dBµV

Average
0,15kHz to 0,5MHz: 56dBµV to 46dBµV*
0,5MHz to 5MHz: 46dBµV
5MHz to 30MHz: 50dBµV

*Decreases with the logarithm of the frequency

10.4. TEST EQUIPMENT LIST

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	ROHDE & SCHWARZ	ESR	101403	2016-06	2017-06
V ISLN	ROHDE & SCHWARZ	ESH2-Z5	C2322001	2016-05	2017-05
Pulse limiter	ROHDE & SCHWARZ	ESH3-Z2	A2649008	2016-03	2017-03
Cable	-	-	A5329417	2015-10	2016-10
Ground plane	LCIE	-	-	-	

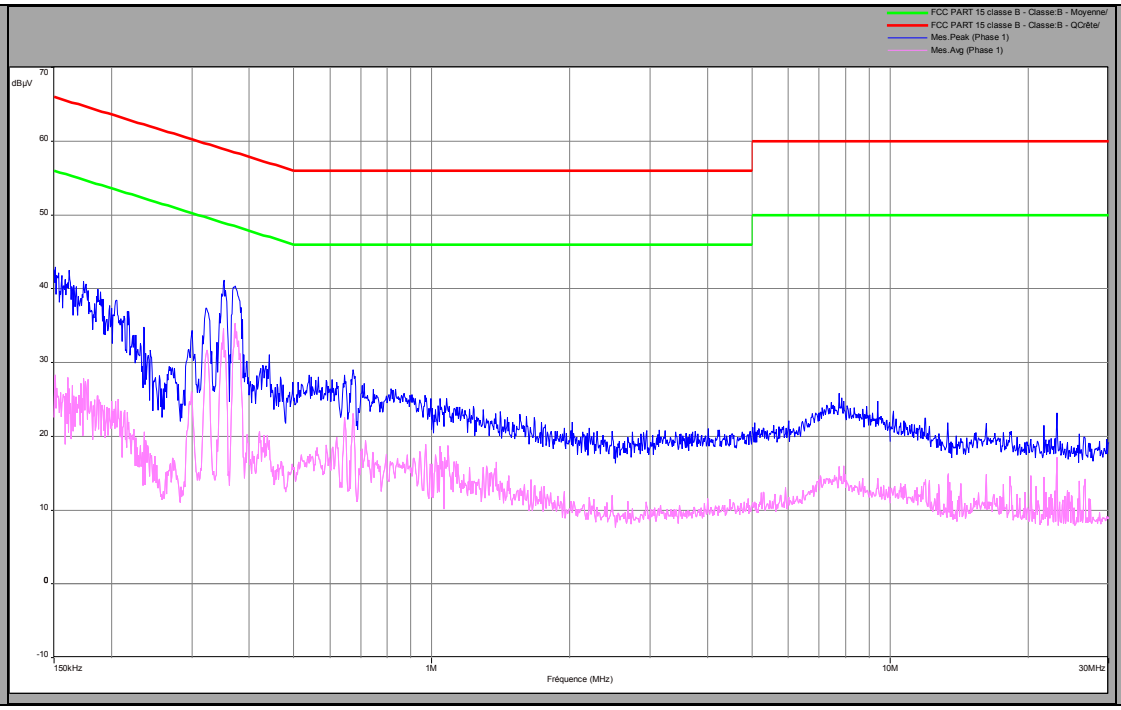
Note: In our quality system, the test equipment calibration due is more & less 2 months

10.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

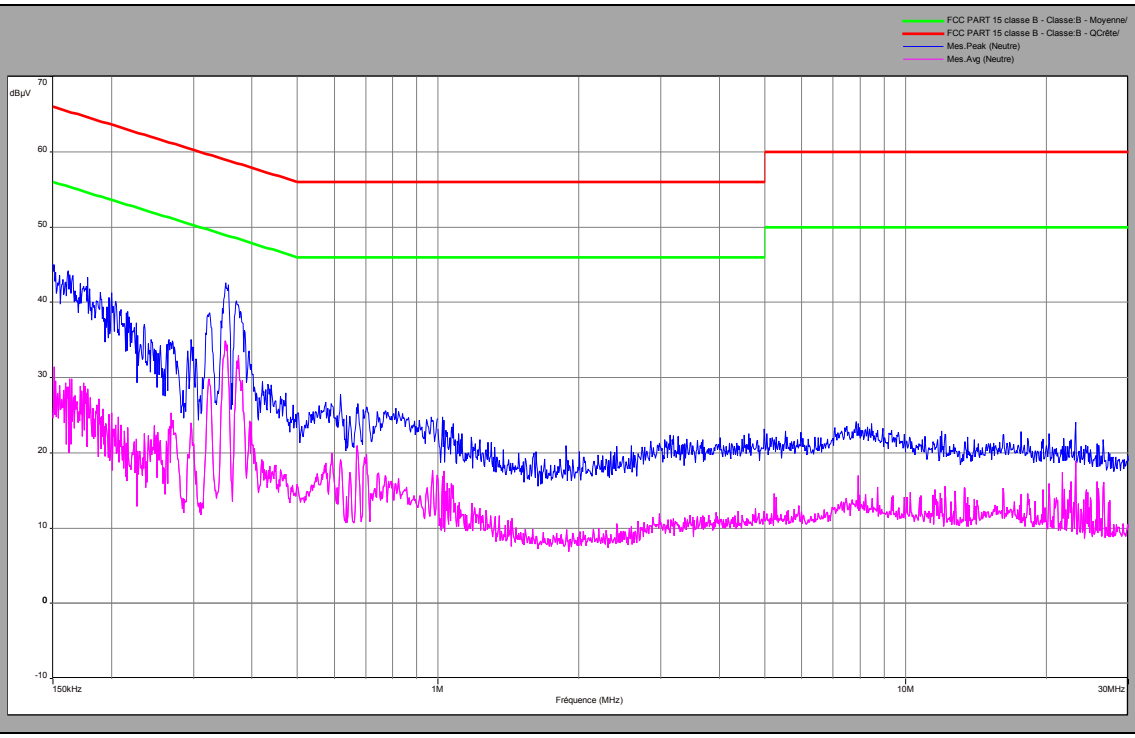
☑ None ☐ Divergence:

10.6. RESULTS

Channel
Phase



Neutral



Phase Line					
Frequency (MHz)	**Peak Level (dBµV)**	**Quasi-Peak Level (dBµV)**	**Quasi-Peak Limit (dBµV)**	**Average Level (dBµV)**	**Average Limit (dBµV)**
0.162	44.2	-	65.3	30	55.3
0.342	42.6	-	58.9	35	48.9
0.672	26.5	-	56	21	46
7.856	24	-	60	17	50
23.13	23	-	60	19	50

Neutral Line					
Frequency (MHz)	**Peak Level (dBµV)**	**Quasi-Peak Level (dBµV)**	**Quasi-Peak Limit (dBµV)**	**Average Level (dBµV)**	**Average Limit (dBµV)**
0.162	44.5	-	65.3	27.8	55.3
0.343	41.2	-	58.9	34.6	48.9
0.673	29	-	56	23	46
7.338	25.8	-	60	16	50
23.13	23	-	60	17	50

10.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.407 & RSS 247 ISSUE 1 limits.

11. UNWANTED EMISSIONS IN RESTRICTED FREQUENCY BANDS

11.1. TEST CONDITIONS

Test performed by : Laurent DENEUX
Date of test : September 19, 2016 to September 20, 2016
Ambient temperature : 22°C
Relative humidity : 51%

11.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013). The EUT is placed **on an open area test site**. Distance between measuring antenna and the EUT is **10m**. Test is performed in horizontal (H) and vertical (V) polarization with **bilog** antenna below 1GHz and with a horn antenna above 1GHz. Measurement bandwidth was 120kHz below 1GHz and 1MHz above 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height search was performed from 1 to 4m. The EUT is place at 1.5m high above 1GHz and at 0.8m high under 1GHz.

11.3. LIMIT

Limit at 10m:

30MHz to 88MHz: 29.5dBµV/m QPeak
88MHz to 216MHz: 33dBµV/m QPeak
216MHz to 960MHz: 35.5dBµV/m QPeak
960MHz to 1000MHz: 43.5dBµV/m QPeak
Above 1000MHz: 63.5BµV/m Peak
43.5BµV/m Average

11.4. TEST EQUIPMENT LIST

Test Equipment Used					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	ROHDE & SCHWARZ	ESR	101403	2016-06	2017-06
Open test site	LCIE	-	F2000400	2016-05	2017-05
Preamplifier	HEWLETT PACKARD	8449B	A4069002	2016-01	2017-01
Bilog antenna	CHASE	CBL 6112A	C2040040	2016-01	2017-01
Horn antenna	AH SYSTEMS	SAS-572	C2042026	2016-04	2018-04
Horn antenna	EMCO	.3115	C2042016	2016-02	2017-02
Cable	-	-	A5329542	2016-02	2017-02
Cable	-	-	A5329449	2015-11	2016-11
Cable	-	-	A5329368	2015-11	2016-11
cable	-	-	A5329444	2015-11	2016-11

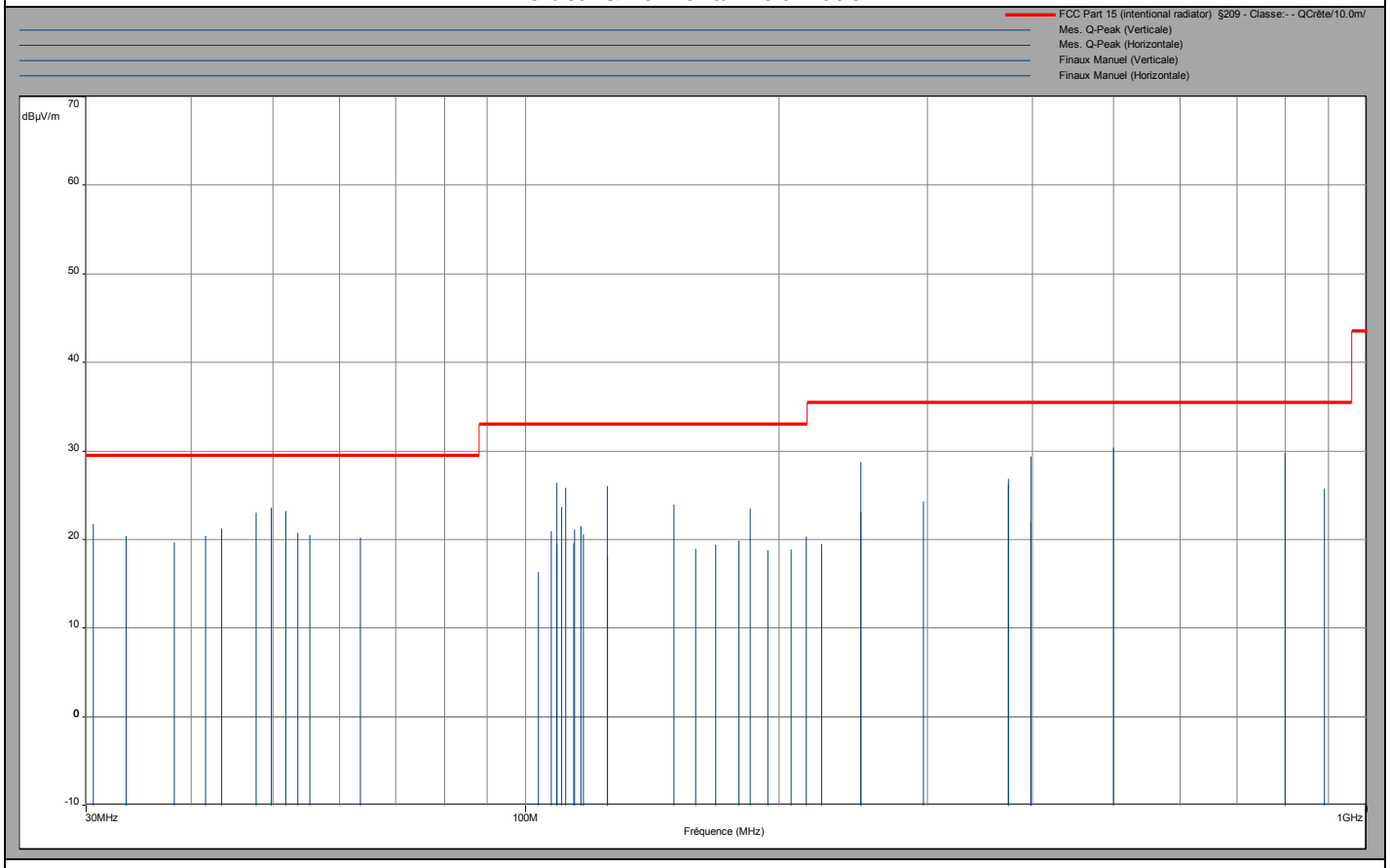
Note: In our quality system, the test equipment calibration due is more & less 2 months

11.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

☑ None ☐ Divergence:

11.6. RESULTS

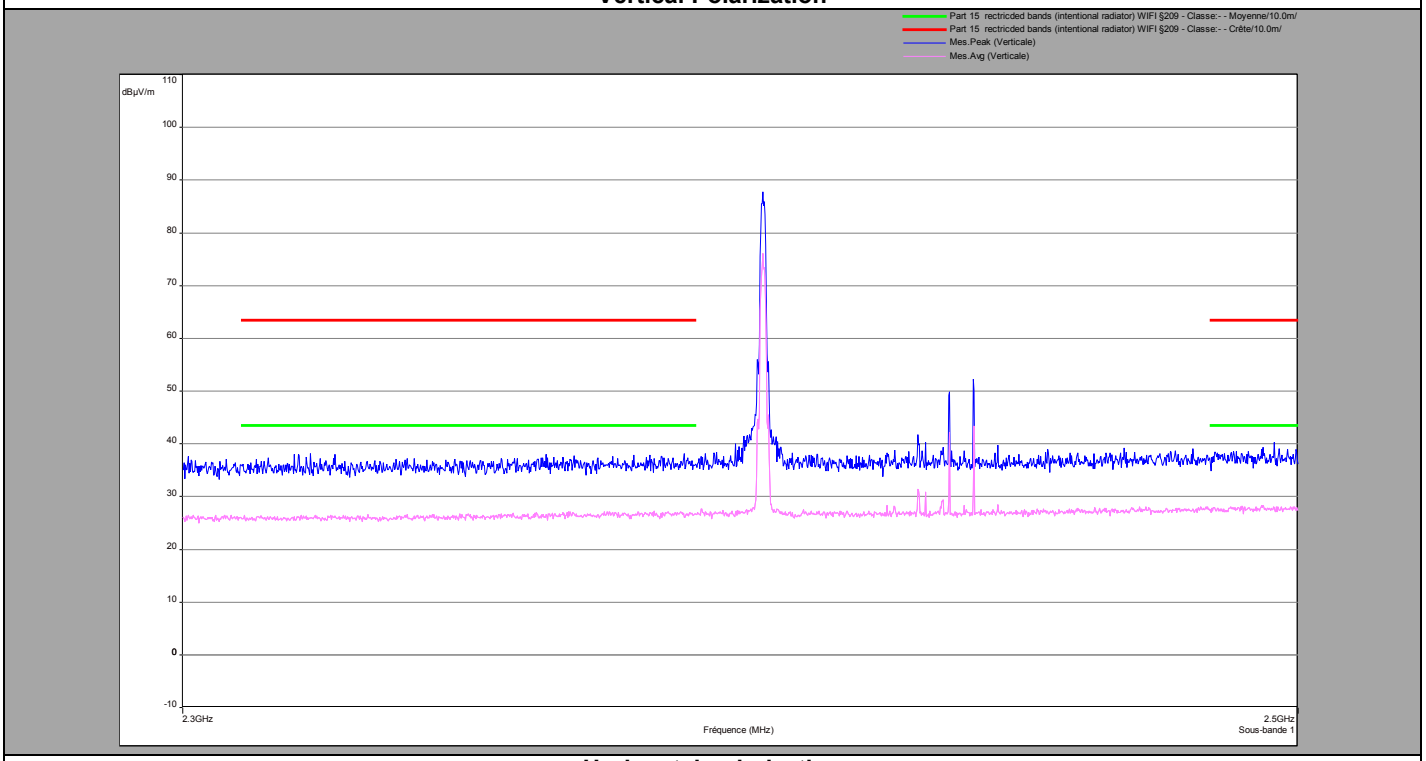
Below 1GHz
Cnom
Vertical & horizontal Polarization



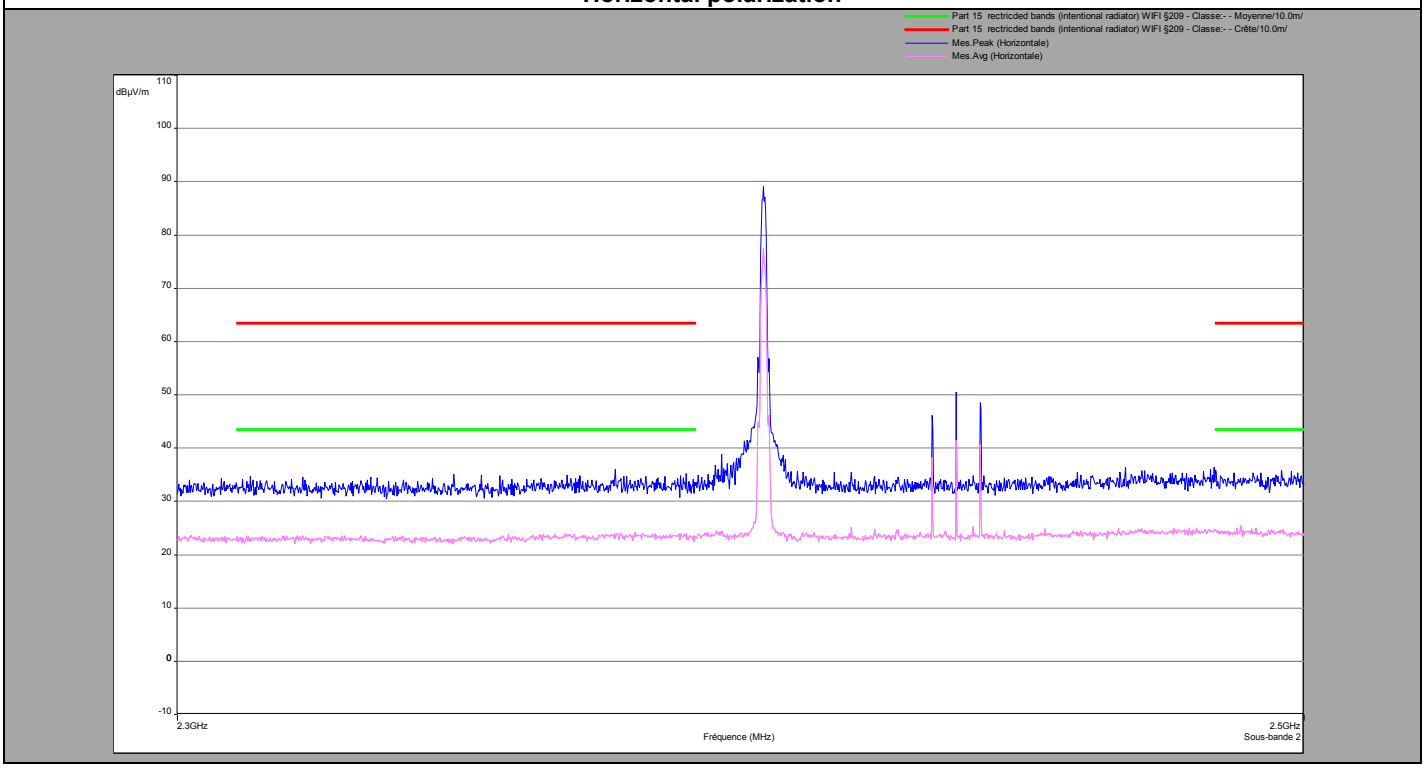
Above 1GHz

Cmin

Vertical Polarization



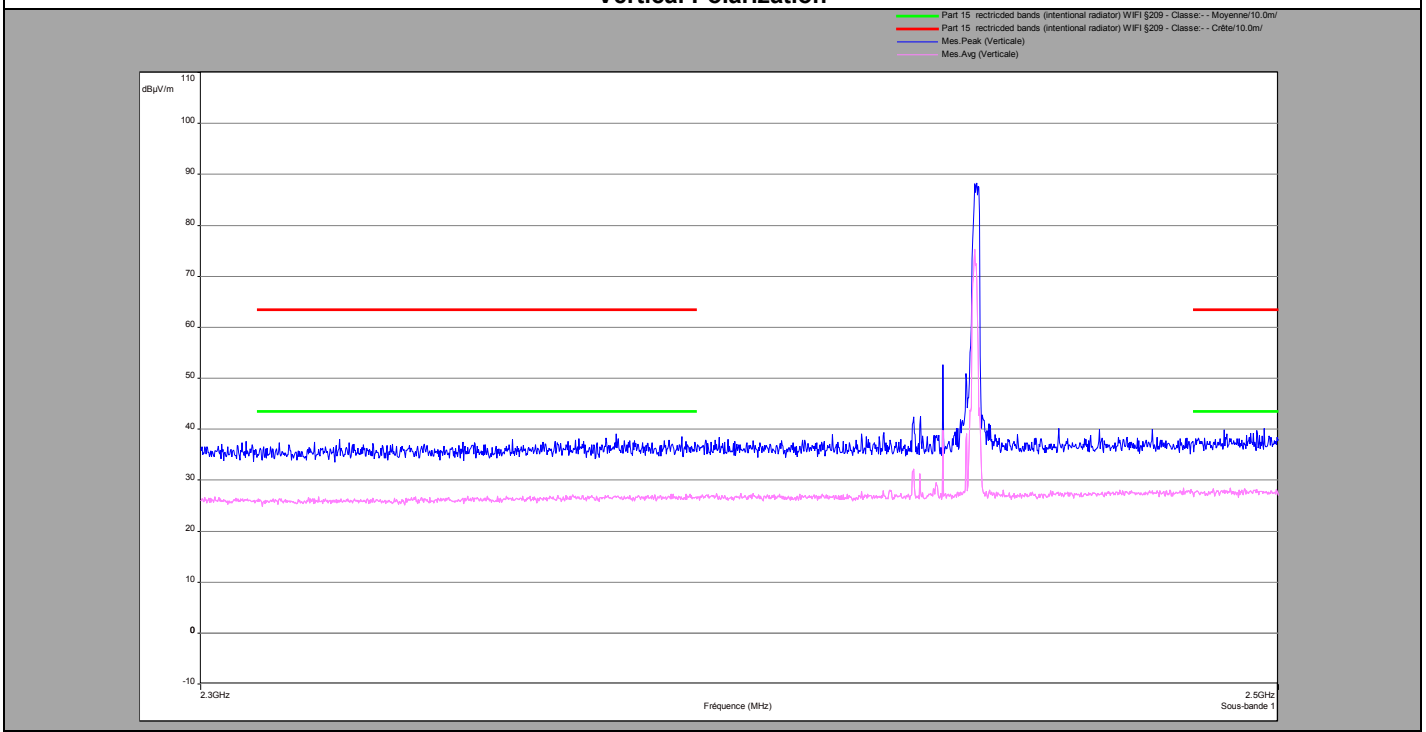
Horizontal polarization



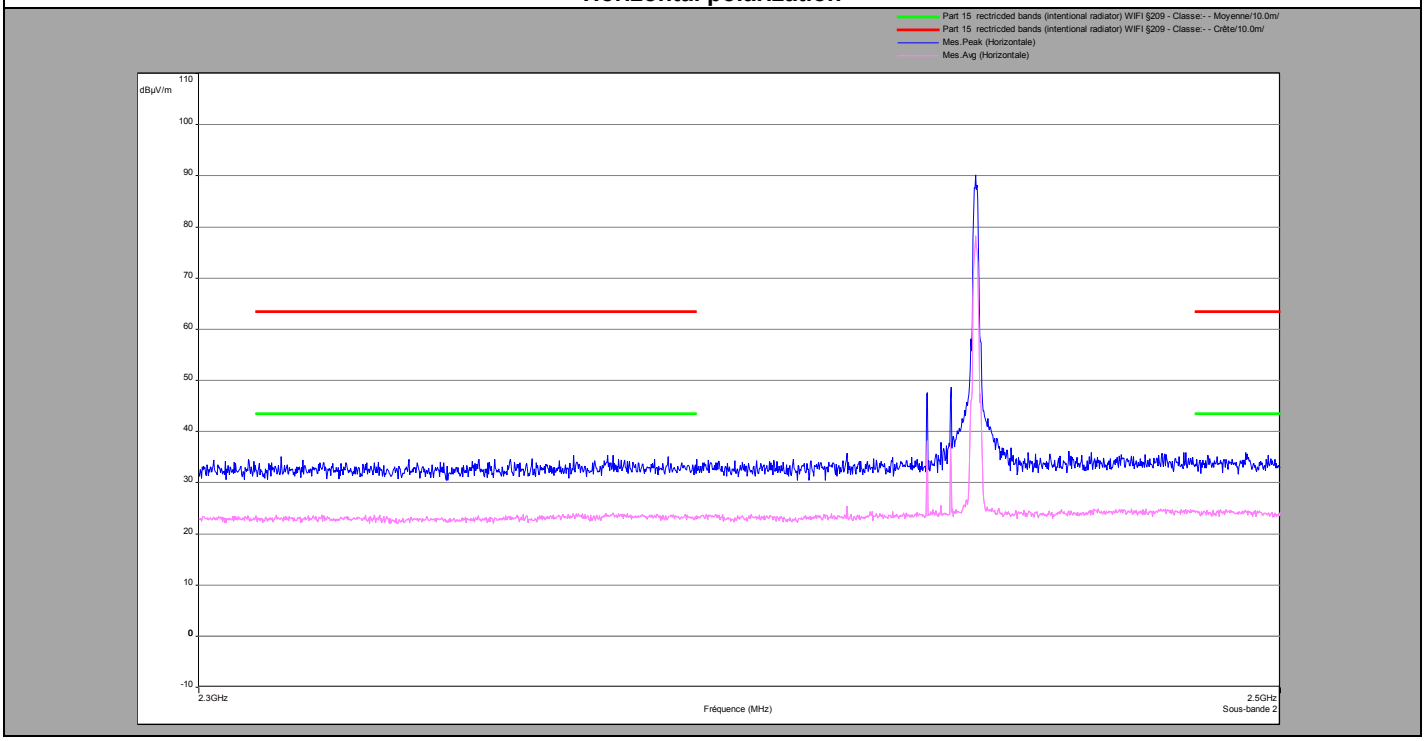
Above 1GHz

Cnom

Vertical Polarization



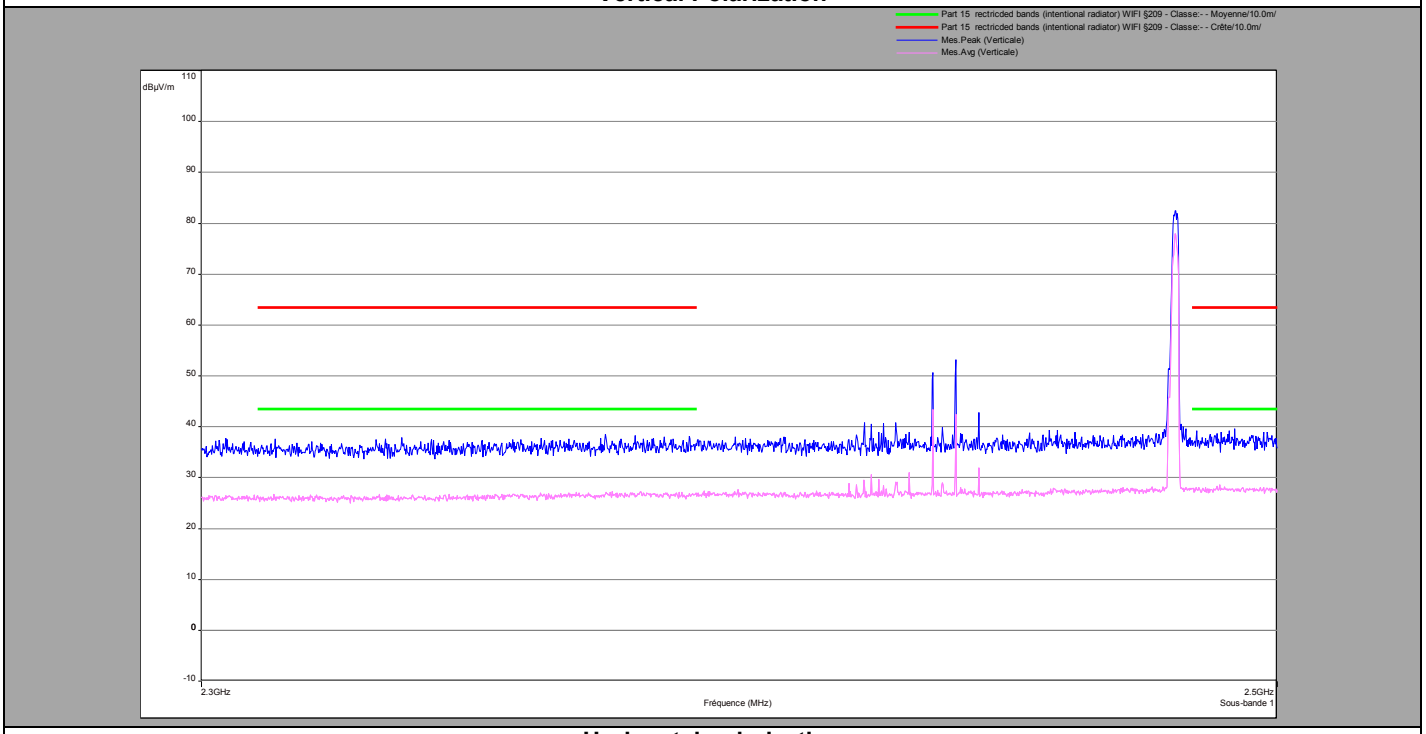
Horizontal polarization



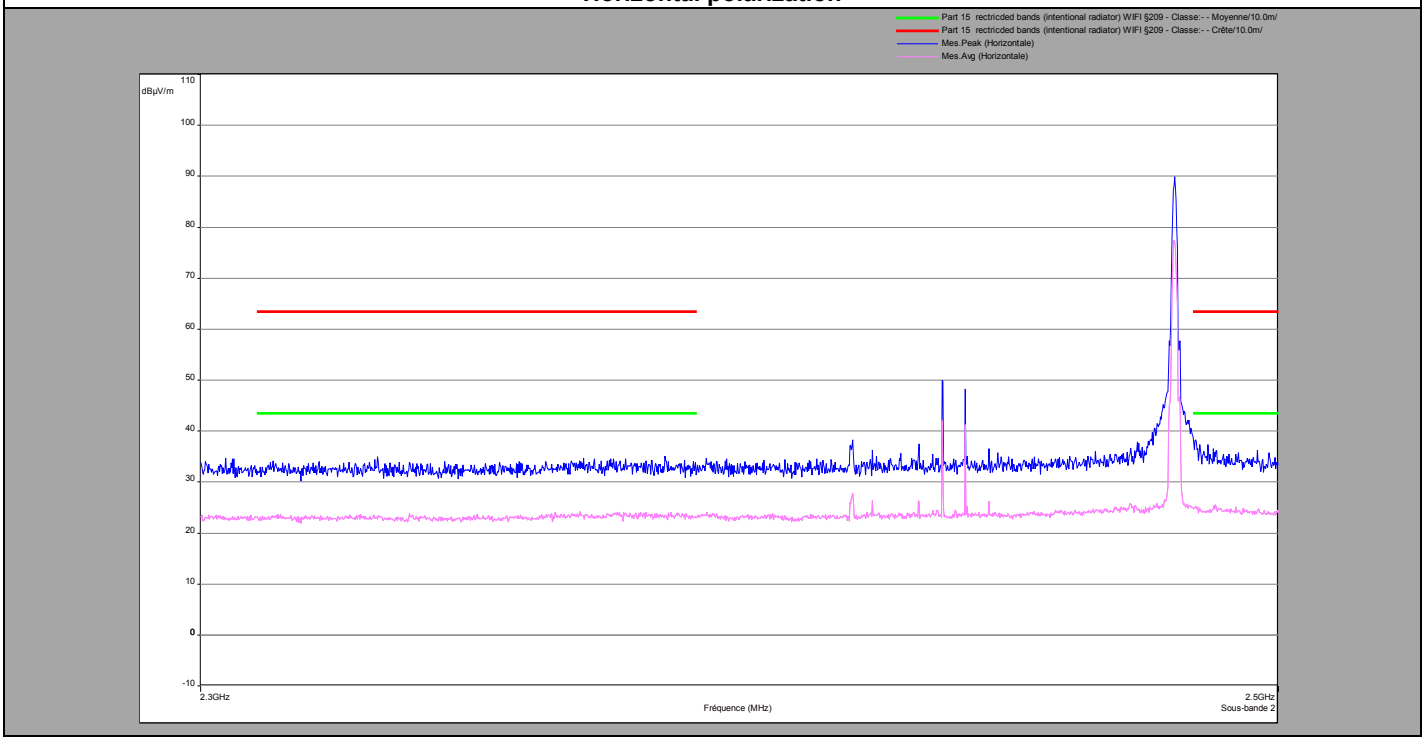
Above 1GHz

Cmax

Vertical Polarization



Horizontal polarization



Below 1GHz			
Polarization	**Frequency (MHz)**	**QPeak Level (dBµV/m)**	**Limit (dBµV/m)**
Vertical	30.6	21.8	29.5
Vertical	33.5	20.49	29.5
Vertical	38.2	19.73	29.5
Vertical	41.6	20.43	29.5
Vertical	43.5	21.24	29.5
Vertical	47.8	23.09	29.5
Vertical	49.8	23.66	29.5
Vertical	51.8	23.29	29.5
Vertical	53.6	20.82	29.5
Vertical	55.3	20.52	29.5
Vertical	63.6	20.23	29.5
Vertical	103.4	16.33	33
Vertical	107.3	20.96	33
Vertical	108.8	26.38	33
Vertical	110.3	23.69	33
Vertical	111.6	25.89	33
Vertical	114.2	21.19	33
Vertical	117.1	20.65	33
Vertical	125	26.06	33
Vertical	150	24.01	33
Vertical	159.1	18.99	33
Vertical	168	19.45	33
Vertical	179.3	19.87	33
Vertical	185	23.53	33
Vertical	194	18.81	33
Vertical	206.9	18.94	33
Vertical	215.4	20.33	33
Vertical	224.6	19.53	35.5
Vertical	250	23.04	35.5
Vertical	297	24.36	35.5
Vertical	375	26.92	35.5
Vertical	398.3	29.42	35.5
Vertical	500	30.4	35.5
Vertical	800	29.74	35.5
Vertical	891.1	25.82	35.5

Below 1GHz			
Polarization	**Frequency (MHz)**	**QPeak Level (dBµV/m)**	**Limit (dBµV/m)**
Horizontal	108.8	19.57	33
Horizontal	113.9	19.59	33
Horizontal	116.3	21.5	33
Horizontal	125	18.15	33
Horizontal	250	28.82	35.5
Horizontal	375	26.21	35.5
Horizontal	398.4	21.98	35.5

Above 1GHz						
Cmin						
Polarization	Frequency (MHz)	Average Level (dBµV/m)	Average Level + Duty Cycle (dBµV/m)	Average Limit (dBµV/m)	Peak Level (dBµV/m)	Peak Limit (dBµV/m)
Vertical	1023,7	28,74	30,84	43.5	35.92	63.5
Vertical	1103,5	30,51	32,61	43.5	34.78	63.5
Vertical	1125	30,08	32,18	43.5	34.46	63.5
Vertical	1200	26,11	28,21	43.5	34.53	63.5
Vertical	1250	26,37	28,47	43.5	30.41	63.5
Vertical	1397	31,85	33,95	43.5	41.21	63.5
Vertical	1548,7	28,51	30,61	43.5	37.98	63.5
Vertical	2390	27,6	29,7	43.5	38.1	63.5
Vertical	2483,5	27,8	29,9	43.5	38.4	63.5
Horizontal	1000,4	27,31	29,41	43.5	36.14	63.5
Horizontal	1199,8	29,54	31,64	43.5	36.56	63.5
Horizontal	1400,1	30,82	32,92	43.5	39.64	63.5
Horizontal	1549,2	29,52	31,62	43.5	37.29	63.5
Horizontal	1992,2	24,4	26,5	43.5	30.96	63.5
Horizontal	2390	24	26,1	43.5	35.2	63.5
Horizontal	2483,5	34,5	36,6	43.5	36.4	63.5

Above 1GHz						
Cnom						
Polarization	Frequency (MHz)	Average Level (dBµV/m)	Average Level + Duty Cycle (dBµV/m)	Average Limit (dBµV/m)	Peak Level (dBµV/m)	Peak Limit (dBµV/m)
Vertical	1023,7	28,74	30,84	43.5	35.92	63.5
Vertical	1103,5	30,51	32,61	43.5	34.78	63.5
Vertical	1125	30,08	32,18	43.5	34.46	63.5
Vertical	1200	26,11	28,21	43.5	34.53	63.5
Vertical	1250	26,37	28,47	43.5	30.41	63.5
Vertical	1397	31,85	33,95	43.5	41.21	63.5
Vertical	1548,7	28,51	30,61	43.5	37.98	63.5
Vertical	2390	27,2	29,3	43.5	38.6	63.5
Vertical	2483,5	27,6	29,7	43.5	38.3	63.5
Horizontal	1000,4	27,31	29,41	43.5	36.14	63.5
Horizontal	1199,8	29,54	31,64	43.5	36.56	63.5
Horizontal	1400,1	30,82	32,92	43.5	39.64	63.5
Horizontal	1549,2	29,52	31,62	43.5	37.29	63.5
Horizontal	1992,2	24,4	26,5	43.5	30.96	63.5
Horizontal	2390	23,5	25,6	43.5	34.5	63.5
Horizontal	2483,5	24,8	26,9	43.5	35.8	63.5

Above 1GHz						
Cmax						
Polarization	Frequency (MHz)	Average Level (dBµV/m)	Average Level + Duty Cycle (dBµV/m)	Average Limit (dBµV/m)	Peak Level (dBµV/m)	Peak Limit (dBµV/m)
Vertical	1023,7	28,74	30,84	43.5	35.92	63.5
Vertical	1103,5	30,51	32,61	43.5	34.78	63.5
Vertical	1125	30,08	32,18	43.5	34.46	63.5
Vertical	1200	26,11	28,21	43.5	34.53	63.5
Vertical	1250	26,37	28,47	43.5	30.41	63.5
Vertical	1397	31,85	33,95	43.5	41.21	63.5
Vertical	1548,7	28,51	30,61	43.5	37.98	63.5
Vertical	2390	27,6	29,7	43.5	37.6	63.5
Vertical	2483,5	28	30,1	43.5	39.2	63.5
Horizontal	1000,4	27,31	29,41	43.5	36.14	63.5
Horizontal	1199,8	29,54	31,64	43.5	36.56	63.5
Horizontal	1400,1	30,82	32,92	43.5	39.64	63.5
Horizontal	1549,2	29,52	31,62	43.5	37.29	63.5
Horizontal	1992,2	24,4	26,5	43.5	30.96	63.5
Horizontal	2390	23,3	25,4	43.5	34.7	63.5
Horizontal	2483,5	25	27,1	43.5	39	63.5

11.7. CONCLUSION

Unwanted Emission in restricted frequency bands measurement performed on the sample of the product **Technicolor Player** UIW4010TCH, in configuration and description presented in this test report, show levels **compliant** to the 47 CFR PART 15.247 & RSS 247 ISSUE 1 limits.

12. 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