

# TEST REPORT

EVALUATION Test for IL7SF

APPLICANT  
LG Electronics Inc.

DATE OF ISSUE  
January 28, 2021

Tested by  
Jin Gwan Lee

(signature)



Technical Manager  
Jong Seok Lee

(signature)



HCT CO., LTD.

*Soo Chan Lee*  
SooChan Lee / CEO

**HCT Co., Ltd.**

74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA  
Tel. +82 31 634 6300 F ax. +82 31 645 6401

**HCT Co., Ltd.**

74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA  
Tel. +82 31 634 6300 Fax. +82 31 645 6401

**TEST  
REPORT**  
EVALUATION Test  
for IL7SF

**DATE OF ISSUE**

January 28, 2021

**Additional Model**

-

<b>Applicant</b>	<b>LG Electronics Inc.</b> 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea
<b>FCC ID</b>	BEJIL7SF2
<b>Equipment Class(es) FCC Rule Part(s)</b>	DSS, DTS, NII Part 15 subpart C 15.247 Part 15 subpart C 15.407
<b>Application's Statement</b>	The applicant takes full responsibility that the test data referenced below represents compliance for this FCC ID.
<b>Differences Brief Description</b>	Hardware and software of this device are identical to the implementation in BEJIL7SB2 The operational description includes detailed information about the changes between the devices. The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the summary table below.
<b>Test Reference</b>	KDB 484596 D01 Reference Test Data v01  The result shown in this test report refer only to the sample(s) tested unless otherwise stated. This test results were applied only to the test methods required by the standard.



## REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	January 28, 2021	Initial Release

\* The report shall not be reproduced except in full(only partly) without approval of the laboratory.



The detail test data can be found in this documents, Appendix A.

Category	Spot Check	Verdict
Unlicensed EMC	Band Edge	Share
	Spurious Emissions	Share

Reference Detail Section

Reference	Equipment Class	Report Title	Section
FCC ID : BEJIL7SB2	DSS	Bluetooth Report	All sections
	DTS	DTS Report	All sections
		BT LE Report	All sections
	NII	UNII Test Report	All sections



## 1. Summary of the spot check for Unlicensed EMC

### Internal Antenna

Mod	Test Item	Mod/ Channel	Measured Frequency [MHz]	IL7FB [dBuV/m]		PLS	IL7SF [dBuV/m]		PLS	Deviation (dB)	
				Peak	Average		Peak	Average		Peak	Average
BT	Band Edge	2-DH5/ch.78	2483.5 ~ 2500	63.36	34.33	-	62.41	33.31	-	-0.95	-1.02
	RSE	3-DH5/ch.39	7323	50.06	36.83	-	49.06	35.32	-	-1	-1.51
DTS	Band Edge	802.11g/ch.11	2483.5 ~ 2500	68.48	50.24	10	63.58	47.89	10	-4.9	-2.35
	RSE	802.11b /ch.11	7386	56.54	48.58	13	57.15	50.72	13	0.61	2.14

### External Antenna

Mod	Test Item	Mod/ Channel	Measured Frequency [MHz]	IL7FB [dBuV/m]		PLS	IL7SF [dBuV/m]		PLS	Deviation (dB)	
				Peak	Average		Peak	Average		Peak	Average
UNII	Band Edge	802.11ac (VHT40) /ch.102	5460 ~ 5470	64.67	-	15	65.07	-	15	0.4	-
	RSE	802.11a /ch.165	11650	58.38	-	18	57.46	-	16	-0.92	-



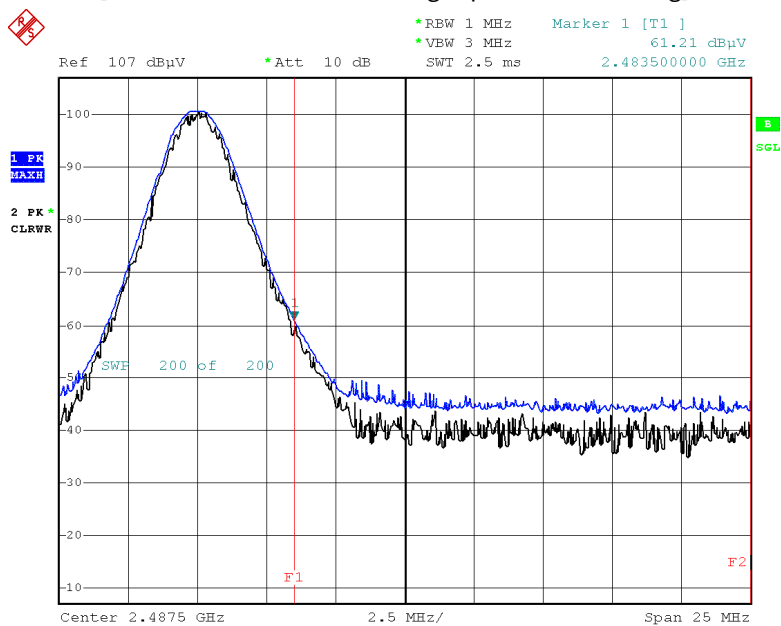
2. Test Plot

BT Band Edge (2-DH5/ch.78)

Bandedge

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	dBuV	[dB]	[H/V]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
2483.5	61.21	1.20	V	0	62.41	73.98	11.57	PK
2483.5	56.85	1.20	V	-24.73	33.31	53.98	20.67	AV

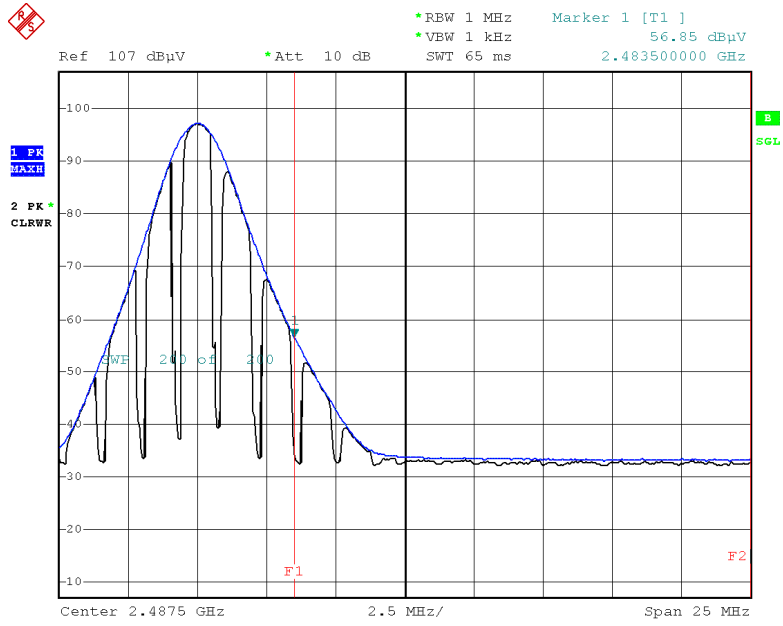
[Radiated Restricted Band Edges plot- Peak Reading]



Date: 12.JAN.2021 10:27:00



[Radiated Restricted Band Edges plot- Average Reading]



Date: 12.JAN.2021 10:26:36

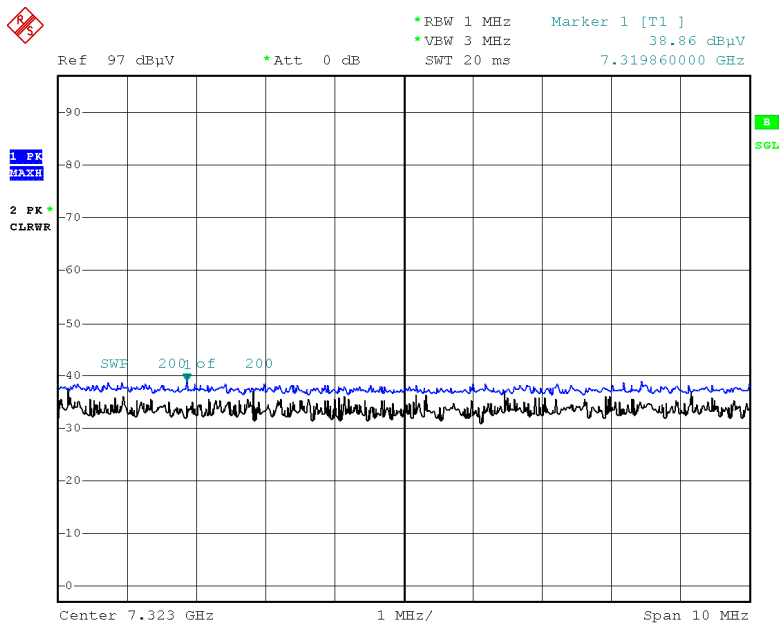


BT R.S.E 3<sup>rd</sup> Harmonic(3-DH5/ch.39)

RSE

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Type
7323	38.86	10.20	H	49.06	73.98	24.92	PK
7323	25.12	10.20	H	35.32	53.98	18.66	AV

[Radiated Spurious Emissions plot – Peak Reading]

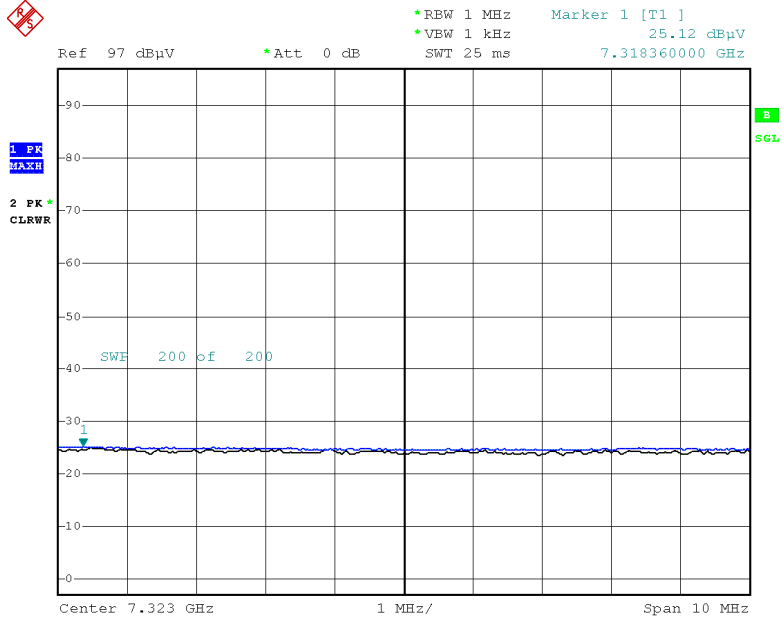


Date: 12.JAN.2021 10:37:25





### [Radiated Spurious Emissions plot - Average Reading]



Date: 12.JAN.2021 10:36:57

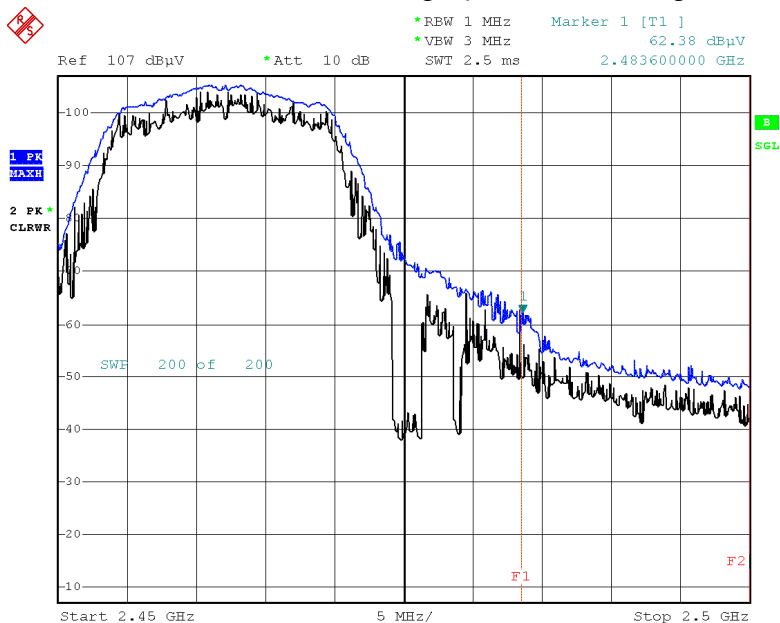


### DTS Band Edge (802.11g\_20 MHz BW 6 Mbps ch.11)

**Bandedge**

Frequency	Reading	Duty Cycle	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	dBuV	Factor	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Type
2483.5	62.38	0.00	1.20	V	63.58	73.98	10.40	PK
2483.5	46.49	0.21	1.20	V	47.89	53.98	6.09	AV

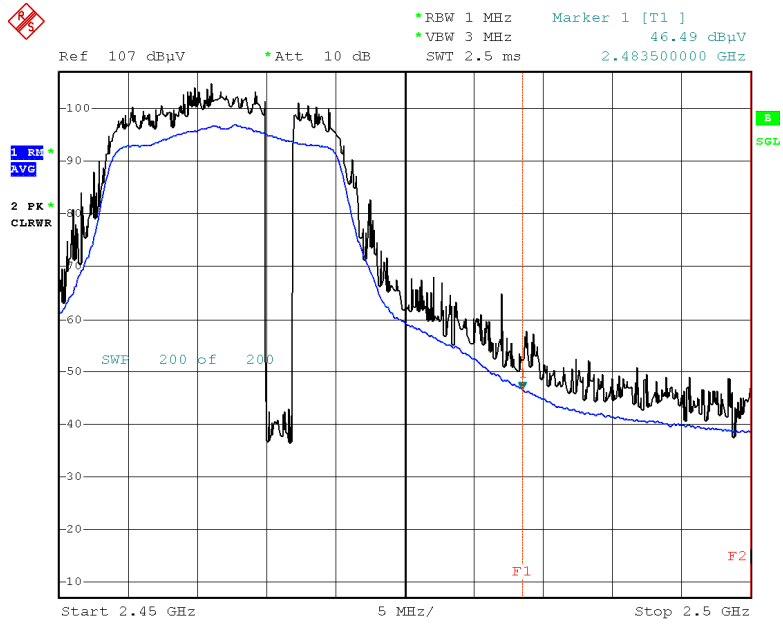
[Radiated Restricted Band Edges plot – Peak Reading]



Date: 12.JAN.2021 09:01:57



[Radiated Restricted Band Edges plot - Average Reading]



Date: 12.JAN.2021 09:01:48

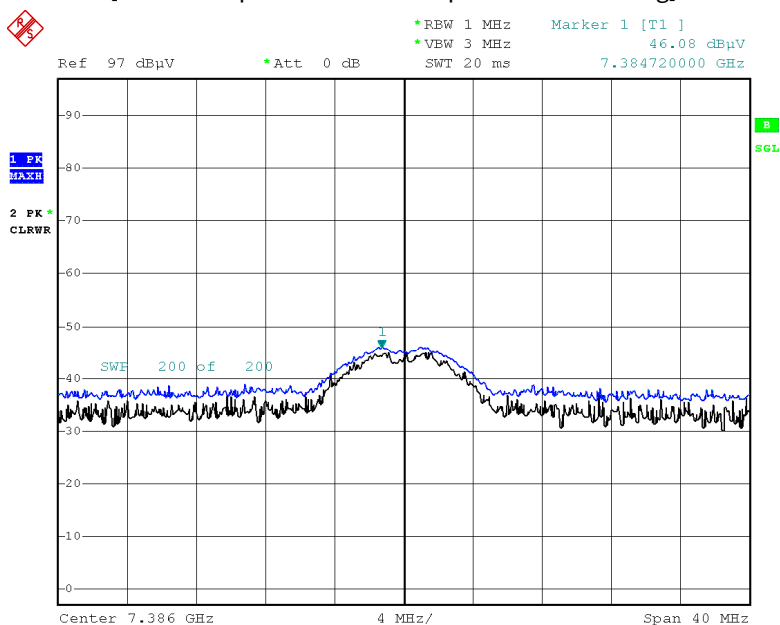


### DTS R.S.E 3<sup>rd</sup> Harmonic (802.11b 1Mbps/ch.11)

RSE

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Type
7386	46.08	11.07	H	57.15	73.98	16.83	PK
7386	39.65	11.07	H	50.72	53.98	3.26	AV

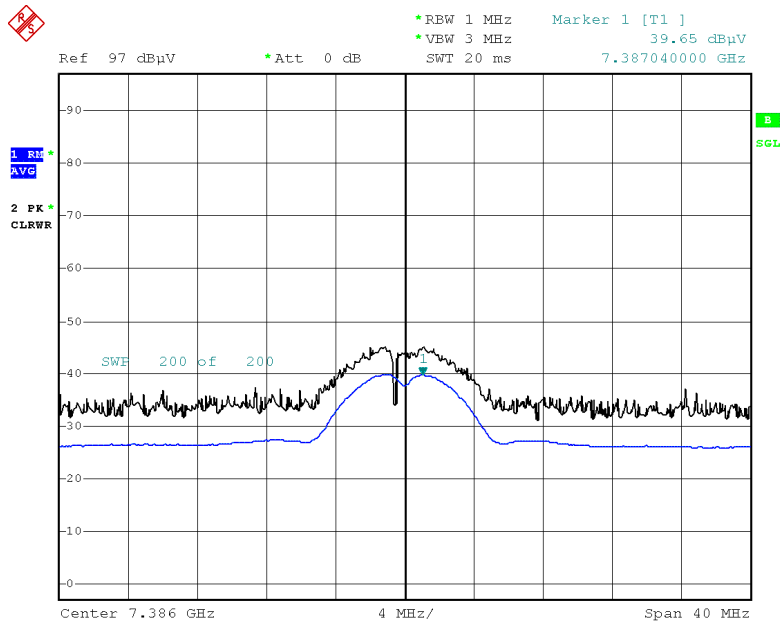
[Radiated Spurious Emissions plot – Peak Reading]



Date: 12.JAN.2021 09:10:21



### [Radiated Spurious Emissions plot - Average Reading]



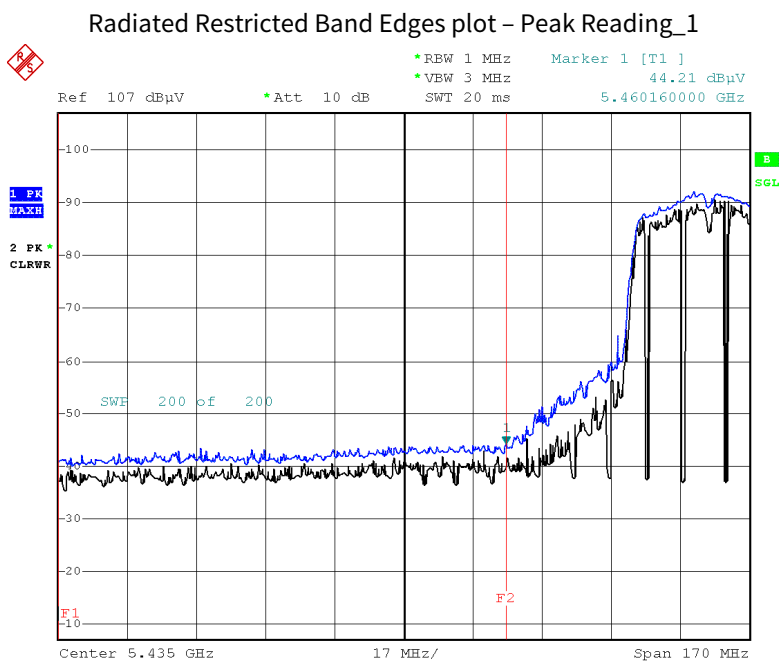
Date: 12.JAN.2021 09:10:08



## U-NII Band Edge (802.11ac\_40 MHz BW 13.5 Mbps\_ch102)

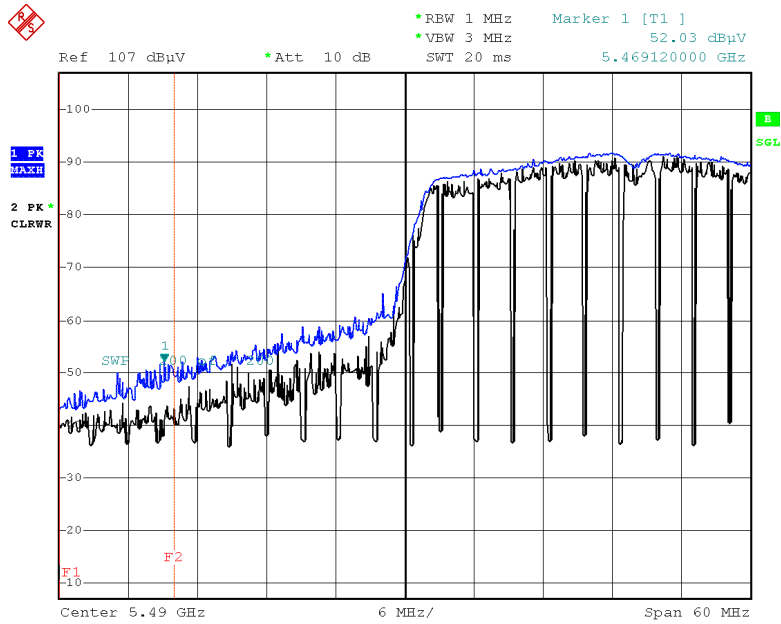
### Bandedge

Frequency	Reading	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Type
5460	44.21	12.83	V	57.04	73.98	16.94	PK
5460	32.04	12.83	V	44.87	53.98	9.11	AV
5470	52.03	13.04	V	65.07	68.20	3.13	PK



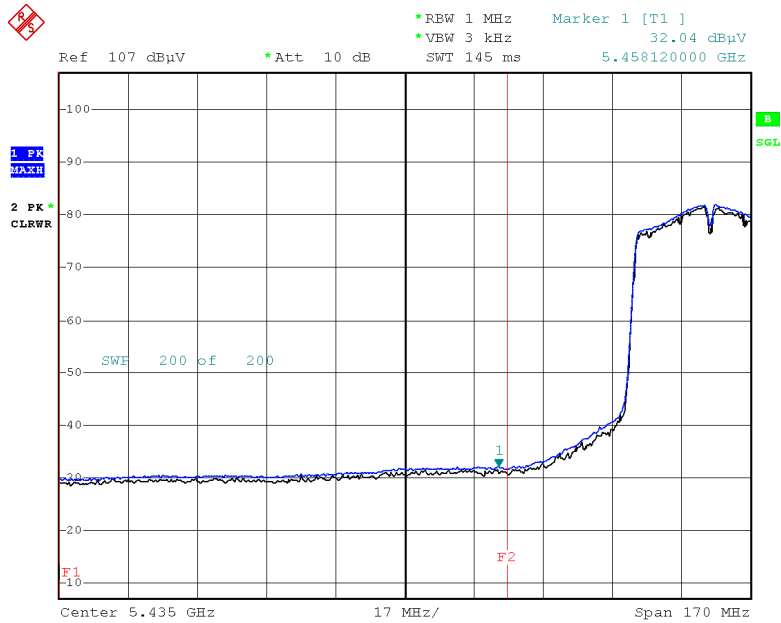
Date: 12.JAN.2021 09:36:21

### Radiated Restricted Band Edges plot – Peak Reading\_2



Date: 12.JAN.2021 09:37:49

### Radiated Restricted Band Edges plot – Average Reading



Date: 12.JAN.2021 09:35:48

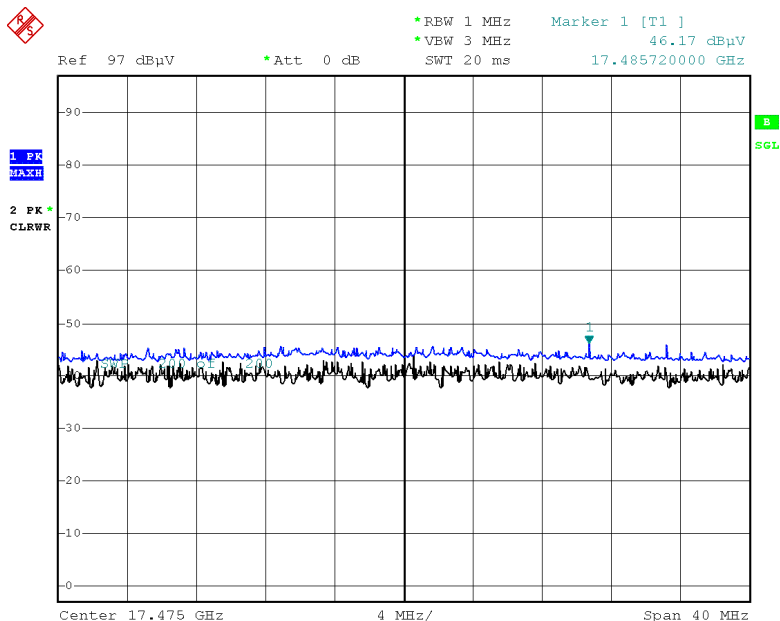


U-NII R.S.E 2<sup>nd</sup> Harmonic (802.11a\_6 Mbps \_ ch 165)

RSE

Frequency	Reading	AN.+CL-AMP G	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	dBuV	[dB]	[H/V]	[dBuV/m]	[dBuV/m]	[dB]	Type
17475	46.17	11.29	H	57.46	68.20	10.74	PK

[Radiated Spurious Emissions plot – Peak Reading]



Date: 12.JAN.2021 09:56:35





### 3. List of test equipment

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Incco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Incco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Emco	2090 / Controller	N/A	N/A	060520
Ets	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	05/18/2020	Biennial	1513-175
Schwarzbeck	VULB 9160 / Hybrid Antenna	08/19/2020	Biennial	9160-3368
Schwarzbeck	VULB 9168 / Hybrid Antenna	09/04/2020	Biennial	9168-0895
Schwarzbeck	BBHA 9120D / Horn Antenna	11/18/2019	Biennial	9120D-1191
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	11/29/2019	Biennial	BBHA9170541
Rohde & Schwarz	FSP(9 kHz ~ 30 GHz) / Spectrum Analyzer	09/14/2020	Annual	836650/016
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/22/2020	Annual	101068-SZ
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	01/21/2020	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	02/10/2020	Annual	1
CERNEX	CBLU1183540B-01/Broadband Bench Top LNA 56-10 / Attenuator(10 dB)	12/23/2020	Annual	N/A
WEINSCHL				
CERNEX	CBL06185030 / Broadband Low Noise Amplifier 18B-03 / Attenuator (3 dB)	12/23/2020	Annual	N/A
Api tech.				
Wainwright Instruments	WHKX10-2700-3000-18000-40SS / High Pass Filter	09/22/2020	Annual	N/A
Wainwright Instruments	WHKX8-6090-7000-18000-40SS / High Pass Filter	12/18/2020	Annual	N/A
T&M SYSTEM	COAXIAL ATTENUATOR / Thru	12/23/2020	Annual	N/A
CERNEX	CBL18265035 / Power Amplifier	12/04/2020	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	03/23/2020	Annual	25956
TESCOM	TC-3000C / Bluetooth Tester	03/18/2020	Annual	3000C000276