TESTING LABORATORY
CERTIFICATE #4820.01

FCC PART 15.407

RSS-GEN, ISSUE 5, AMENDMENT 1, MARCH 2019

RSS-247, ISSUE 2, FEBRUARY 2017

TEST REPORT

For

SZ DJI TECHNOLOGY CO., LTD

14th floor, West Wing, Skyworth Semiconductor Design Building NO.18 Gaoxin South 4th Ave, Nanshan, Shenzhen, Guangdong, China

FCC ID: SS3-RM500E1910
IC: 11805A-RM500E1910

Report Type:	**Product Type:**
Original Report	DJI Smart Controller Enterprise

Report Number:	RDG191226022-00B
Report Date:	2020-03-02
Reviewed By:	Ivan Cao Assistant Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:		DJI Smart Controller Enterprise
EUT Model:		RM500-ENT
Operation Frequency:		1.4M: 5728.5-5846.5 MHz 3M:5730.5-5844.5 MHz 10M: 5730.5-5844.5 MHz 20M: 5735.5-5839.5 MHz 40M: 5745.5-5829.5 MHz
Maximum Peak Output Power (Conducted):		1.4M:26.23 dBm 3M: 26.17 dBm 10M:15.83 dBm 20M:15.77 dBm 40M: 16.12 dBm
Modulation Type:		OFDM
Rated Input Voltage:		7.2Vdc from battery or DC 3.6-12V from adapter
Adapter Information	**Model:**	QC24-US
	Input:	100-240VAC~50/60Hz Max 0.8A
	Output:	3.6-8V ---3A/12V---2A
Serial Number:		RDG191226022-RF-S3
EUT Received Date:		2019/12/25

Objective

This type approval report is prepared on behalf of ***SZ DJI TECHNOLOGY CO., LTD*** in accordance with Part 2-Subpart J, Part 15-Subparts A, and E of the Federal Communications Commission's rules. And RSS-247, Issue 2, February 2017, RSS-Gen Issue 5, Amendment 1, March 2019 of the Innovation, Science and Economic Development Canada.

The tests were performed in order to determine compliance with FCC Rules Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules and RSS-247, Issue 2, February 2017, RSS-Gen Issue 5, Amendment 1, March 2019 of the Innovation, Science and Economic Development Canada.

Related Submittal(s)/Grant(s)

FCC Part 15C DTS,15E NII submissions with FCC ID: SS3-RM500E1910
FCC Part 15C DSS submissions with FCC ID: SS3-RM500E1910
RSS-247 DTSs, LE-LANs submissions with IC: 11805A-RM500E1910
Part of system submissions with FCC ID: SS3-M3001910, IC: 11805A-M3001910.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB 789033 D02 General U-NII Test Procedures New Rules v02r01, and RSS-247, Issue 2, February 2017, RSS-Gen Issue 5, Amendment 1, March 2019 of the Innovation, Science and Economic Development Canada.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~40GHz: 5.23 dB
Unwanted Emissions,conducted	±1.5 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "△ ". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk "★".

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

The EUT has 2 antennas, one for transmitting, one for receiving. The device supports SDR1.4/3/10/20/40MHz modes.

For 1.4M mode, 60 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5728.5	31	5788.5
2	5730.5	…	…
…	…	…	…
…	…		
29	5784.5	59	5844.5
30	5786.5	60	5846.5

3 channels were tested:5728.5MHz, 5786.5MHz and 5846.5MHz

For 3M mode, 39 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5730.5	21	5790.5
2	5733.5	…	…
…	…	…	…
…	…	38	5841.5
…	…	39	5844.5
20	5787.5	/	/

3 channels were tested: 5730.5MHz, 5787.5MHz and 5844.5MHz

For 10M mode, 115 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5730.5	59	5788.5
2	5731.5	…	…
…	…	…	…
…	…	114	5843.5
..	…	115	5844.5
58	5787.5	/	/

3 channels were tested:5730.5MHz, 5787.5MHz and 5844.5MHz

For 20M mode, 105 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5735.5	54	5788.5
2	5736.5	…	…
…	…	…	…
…	…	104	5838.5
..	…	105	5839.5
53	5787.5	/	/

3 channels were tested:5735.5MHz, 5787.5MHz and 5839.5MHz

For 40M mode, 85 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5745.5	44	5788.5
2	5746.5	…	…
…	…	…	…
…	…	84	5828.5
..	…	85	5829.5
43	5787.5	/	/

3 channels were tested:5745.5MHz, 5787.5MHz and 5829.5MHz

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

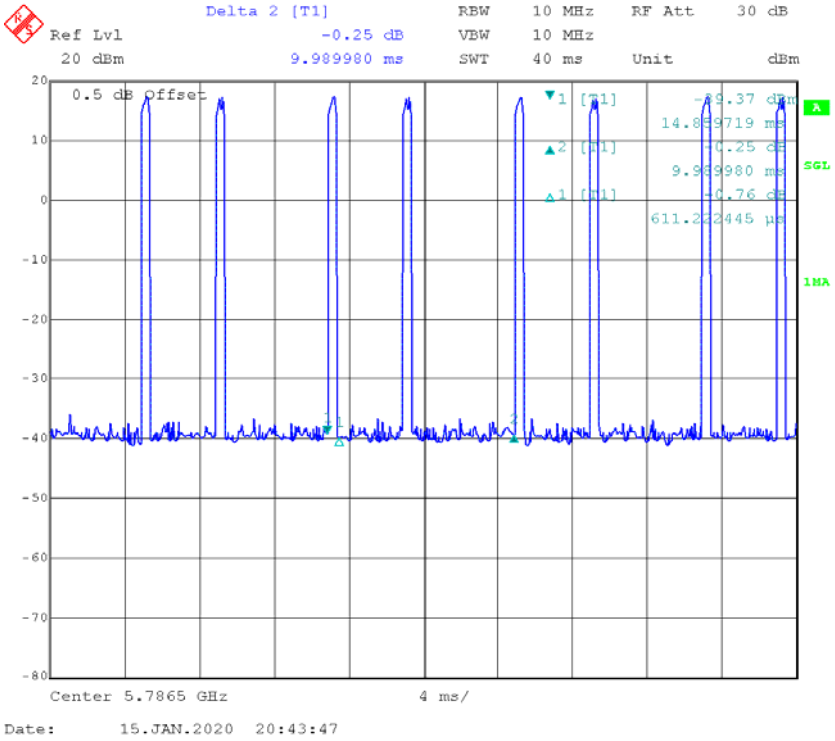
The software "DjiSdrConsole.exe" was used for testing, which was provided by manufacturer. The maximum power with maximum duty cycle was configured as following setting:

Mode	Channel	Test Frequency (MHz)	Power Level Setting
1.4M	Low	5728.5	5
	Middle	5786.5	5
	High	5846.5	5
3M	Low	5730.5	7
	Middle	5787.5	7
	High	5844.5	7
10M	Low	5730.5	2
	Middle	5787.5	2
	High	5844.5	2
20M	Low	5735.5	3
	Middle	5787.5	3
	High	5839.5	3
40M	Low	5745.5	8
	Middle	5787.5	8
	High	5829.5	8

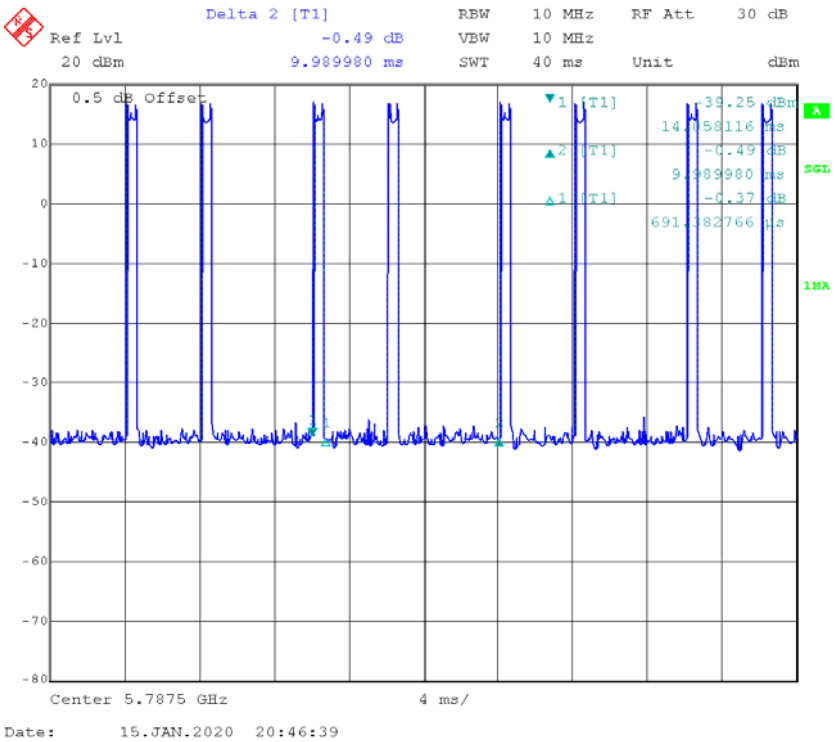
The maximum duty cycle as following table:

Test mode	T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)
1.4M	0.611*2	9.99	12.23
3M	0.691*2	9.99	13.83
10M	3.176+5.180	9.99	83.64
20M	3.257+5.261	9.99	85.27
40M	3.257+5.261	9.99	85.27

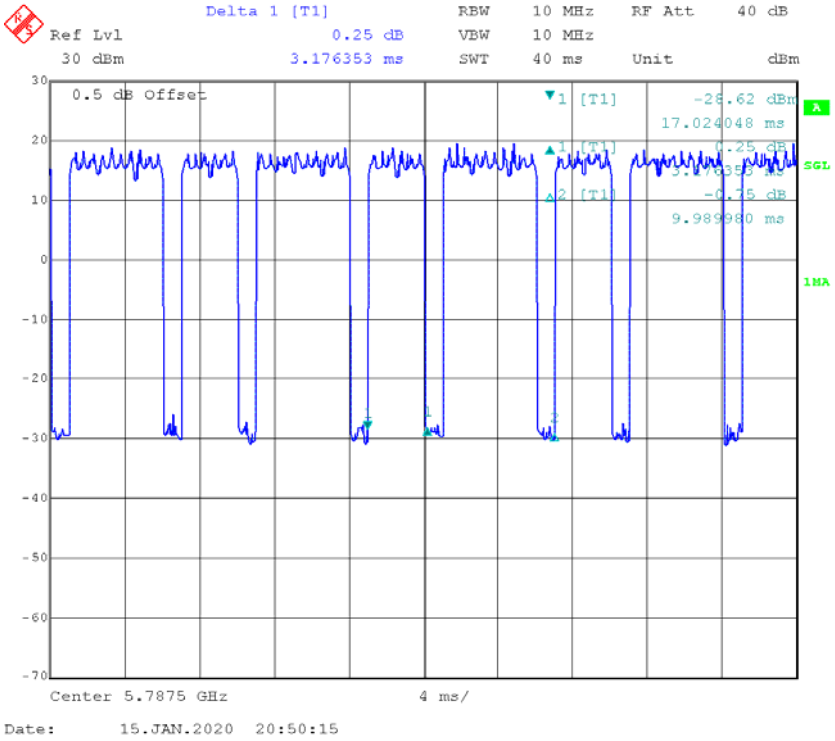
1.4M

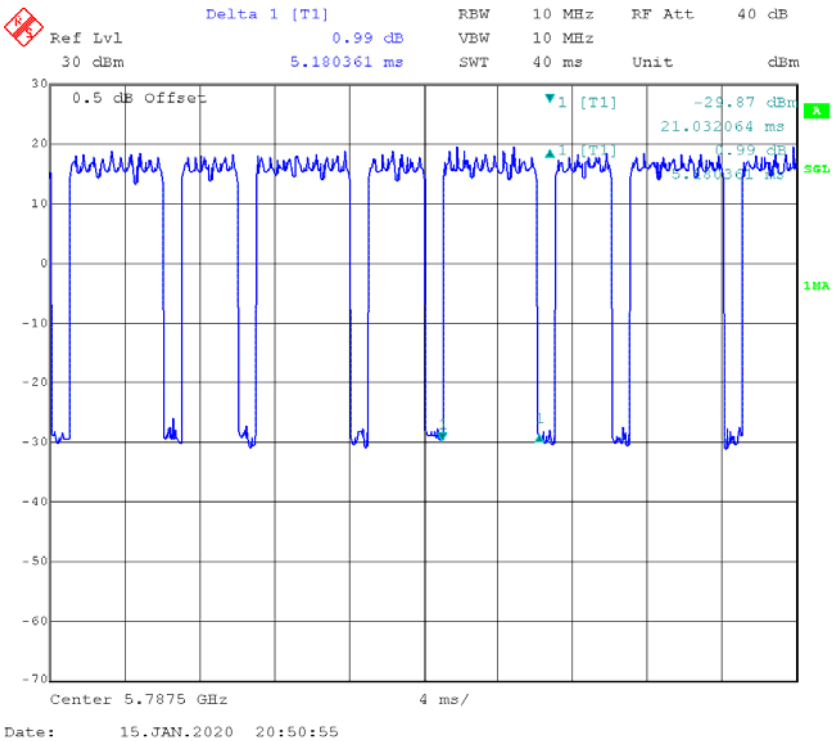

Delta 2 [T1]
RBW 10 MHz
RF Att 30 dB
Ref Lvl
-0.25 dB
VBW 10 MHz
20 dBm
9.989980 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
SGL
1MA
Center 5.7865 GHz
4 ms/
Date: 15.JAN.2020 20:43:47

3M

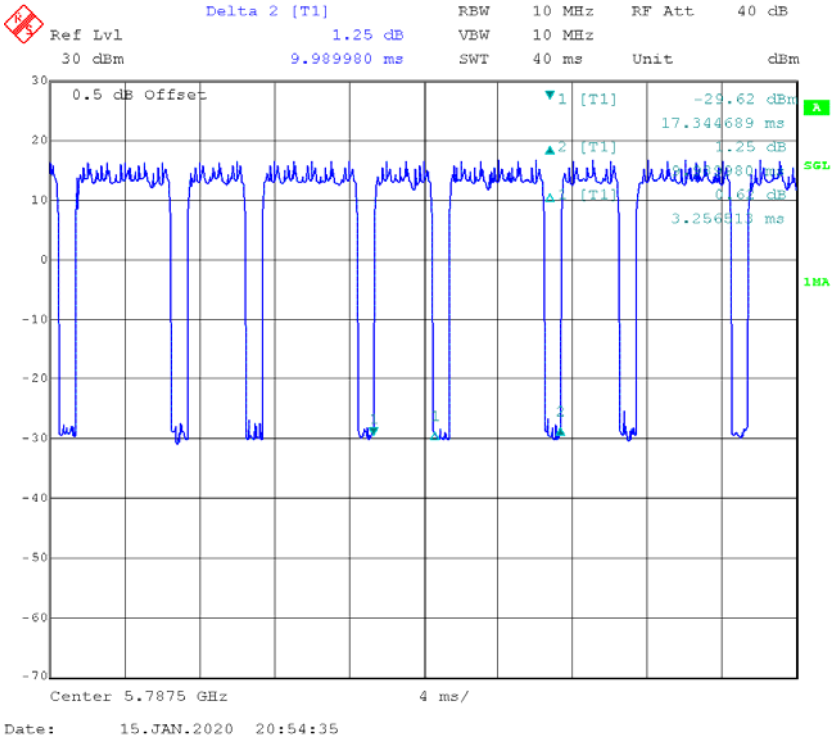

Delta 2 [T1]
RBW 10 MHz
RF Att 30 dB
Ref Lvl
-0.49 dB
VBW 10 MHz
20 dBm
9.989980 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
SGL
1MA
Center 5.7875 GHz
4 ms/
Date: 15.JAN.2020 20:46:39

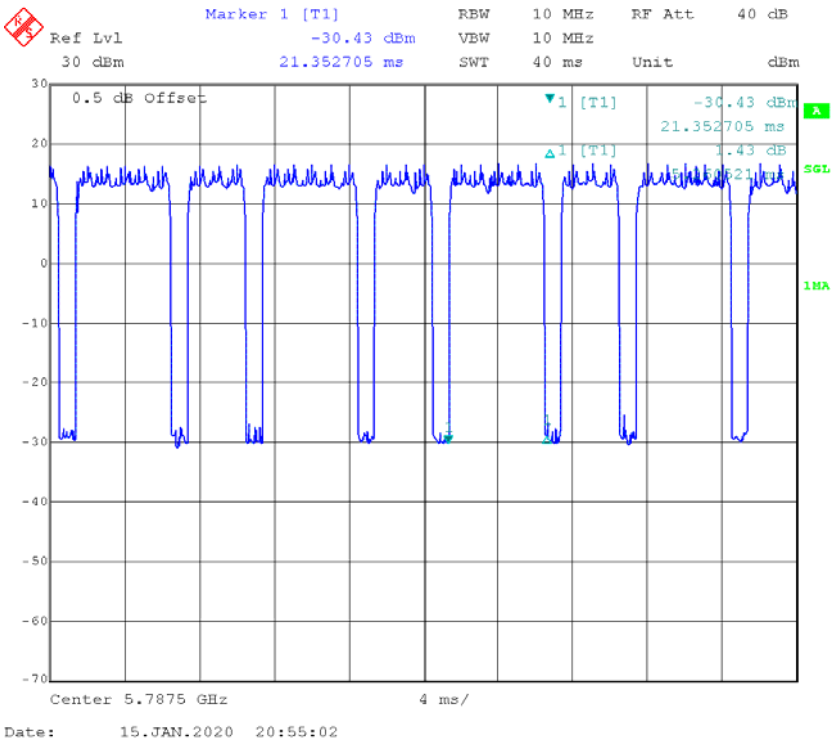
10M


Delta 1 [T1]
RBW 10 MHz
RF Att 40 dB
Ref Lvl
0.25 dB
VBW 10 MHz
30 dBm
3.176353 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
1 [T1]
-28.62 dBm
17.024048 ms
1 [T1]
0.25 dB
2 [T1]
-0.75 dB
9.989980 ms
SGL
1MA
Center 5.7875 GHz
4 ms/
Date: 15.JAN.2020 20:50:15

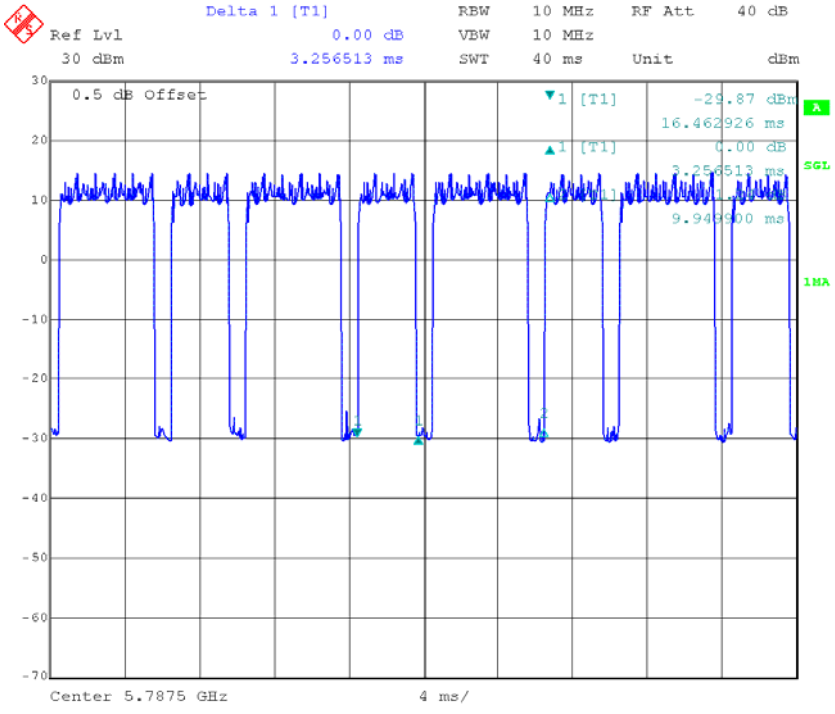

Delta 1 [T1]
RBW 10 MHz
RF Att 40 dB
Ref Lvl
0.99 dB
VBW 10 MHz
30 dBm
5.180361 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
1 [T1]
-29.87 dBm
21.032064 ms
1 [T1]
0.99 dB
SGL
1MA
Center 5.7875 GHz
4 ms/
Date: 15.JAN.2020 20:50:55

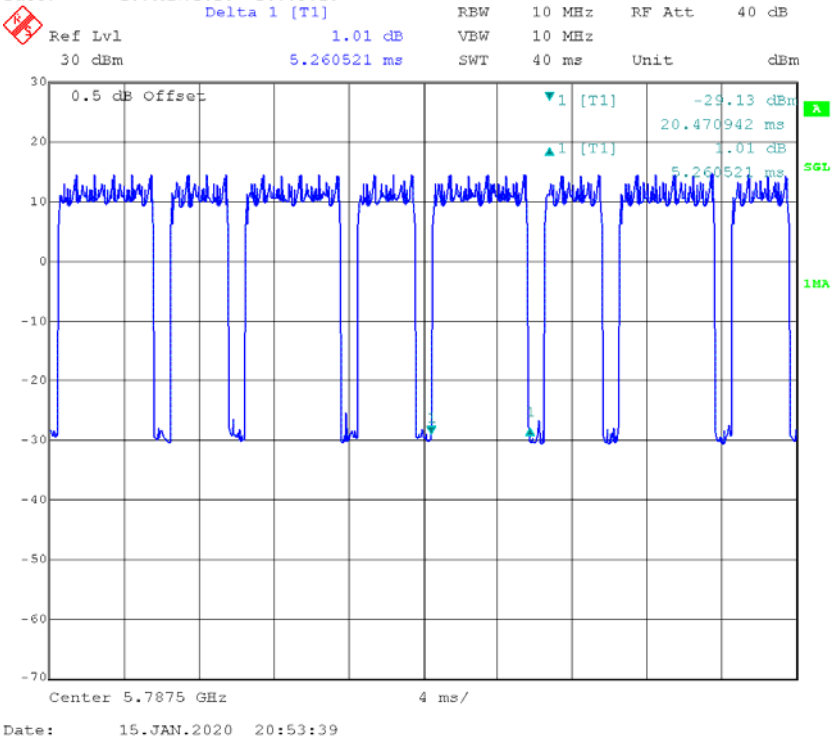
20M


Delta 2 [T1]
RBW 10 MHz
RF Att 40 dB
Ref Lvl
1.25 dB
VBW 10 MHz
30 dBm
9.989980 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
1 [T1] -29.62 dBm
17.344689 ms
2 [T1] 1.25 dB
1 [T1] 0.61 dB
3.256913 ms
SGL
1MA
Center 5.7875 GHz
4 ms/
Date: 15.JAN.2020 20:54:35


Marker 1 [T1]
RBW 10 MHz
RF Att 40 dB
Ref Lvl
-30.43 dBm
VBW 10 MHz
30 dBm
21.352705 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
1 [T1] -30.43 dBm
21.352705 ms
1 [T1] 1.43 dB
SGL
1MA
Center 5.7875 GHz
4 ms/
Date: 15.JAN.2020 20:55:02

40M


Delta 1 [T1]
RBW 10 MHz
RF Att 40 dB
Ref Lvl
0.00 dB
VBW 10 MHz
30 dBm
3.256513 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
1 [T1]
-29.87 dBm
16.462926 ms
1 [T1]
0.00 dB
3.256513 ms
9.940900 ms
A
SGL
1MA
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
Center 5.7875 GHz
4 ms/
Date: 15.JAN.2020 20:53:10


Delta 1 [T1]
RBW 10 MHz
RF Att 40 dB
Ref Lvl
1.01 dB
VBW 10 MHz
30 dBm
5.260521 ms
SWT 40 ms
Unit dBm
0.5 dB Offset
1 [T1]
-29.13 dBm
20.470942 ms
1 [T1]
1.01 dB
5.260521 ms
A
SGL
1MA
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
Center 5.7875 GHz
4 ms/
Date: 15.JAN.2020 20:53:39

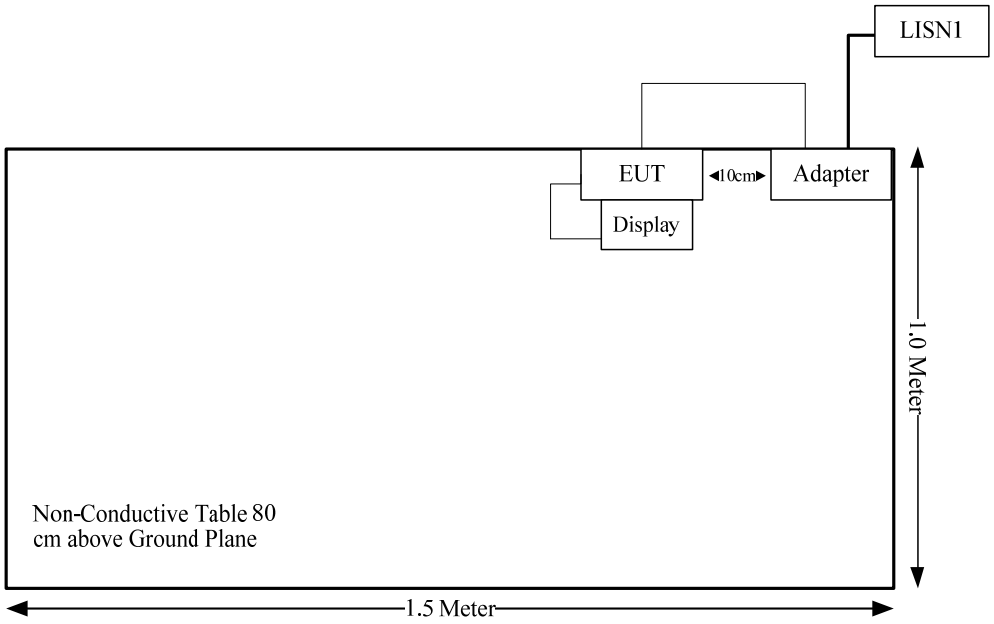
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DJI	CrystalSky (7.85inch) Display	CS785	/

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	yes	No	1.2	Adapter	EUT
USB Cable	yes	No	0.2	EUT	Display

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1093; RSS-102 Clause 4	RF Exposure	Compliance
FCC§15.203, RSS-Gen Clause 6.8	Antenna Requirement	Compliance
FCC§15.407(b)(6)& §15.207(a), RSS-Gen Clause 8.8	Conducted Emissions	Compliance
FCC§15.205& §15.209 &§15.407(b), RSS-247 Clause 6.2	Undesirable Emission& Restricted Bands	Compliance
FCC§15.407(a) (e), RSS-247 Clause 6.2 RSS-Gen Clause 6.7	Emission Bandwidth	Compliance
FCC§15.407(a) RSS-247 Clause 6.2	Conducted Transmitter Output Power	Compliance
FCC§15.407 (a), RSS-247 Clause 6.2	Power Spectral Density	Compliance

FCC §15.407 (f) & §1.1310 & §2.1093, RSS-102 CLAUSE 4- RF Exposure

Applicable Standard

According to subpart 15.407(f)and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to RSS-102 Clause 4 Table 3, SAR limits for device used by the general public.

Body Region	Average SAR (W/Kg)	Averaging Time (minutes)	Mass Average (g)
Whole Body	0.08	6	Whole Body
Localized Head, Neck and Trunk	1.6	6	1
Localized Limbs	4	6	10

Test Result

Compliance, Please refer to the SAR report: RDG191226022-20.

FCC §15.203& RSS-GEN CLAUSE 6.8 - ANTENNA REQUIREMENT

Applicable Standard

According to FCC§ 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

According to RSS-Gen Clause 6.8, The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Antenna Information And Connector Construction

The EUT has two PCB antenna arrangement for SDR, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna Chain	Antenna Type	input impedance (Ohm)	Antenna Gain /Frequency Range
0	PCB	50	3.52 dBi/2.4~2.5GHz 3.45 dBi/5.15~5.85GHz
1	PCB	50	3.52 dBi/2.4~2.5GHz 3.45 dBi/5.15~5.85GHz

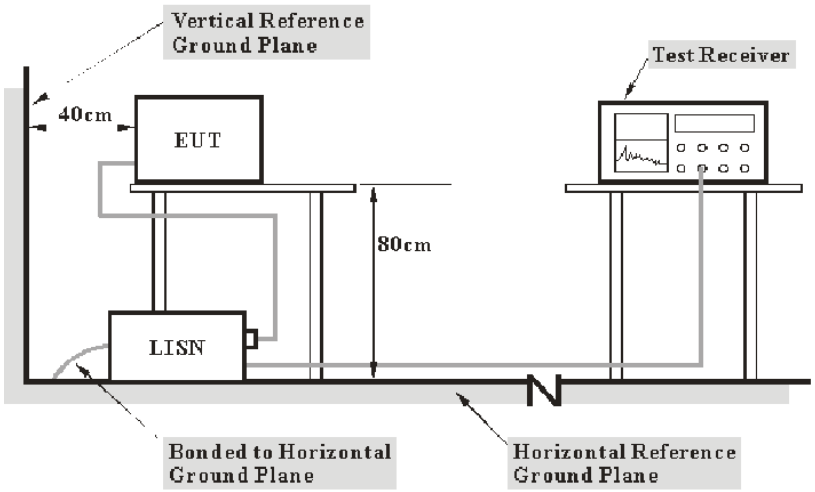
Result: Compliance.

FCC §15.207(a) RSS-GEN CLAUSE 8.8– CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), §15.407(b) (6), RSS-GEN CLAUSE 8.8.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits and RSS-Gen clause 8.8 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to the main lisn with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2019-09-05	2020-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	LISN	ENV 216	101614	2019-09-12	2020-09-12
R&S	EMI Test Receiver	ESCI	101121	2019-05-09	2020-05-09

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the EUT was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

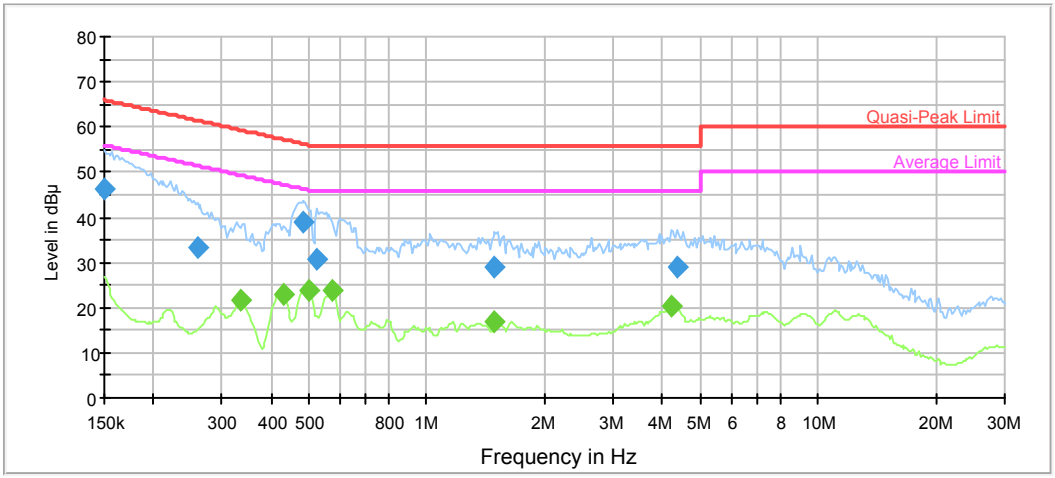
Test Data

Environmental Conditions

Temperature:	23.4 °C
Relative Humidity:	46 %
ATM Pressure:	101.7 kPa
Tester:	Sern Xiang
Test Date:	2020-02-25

Test Mode: Transmitting

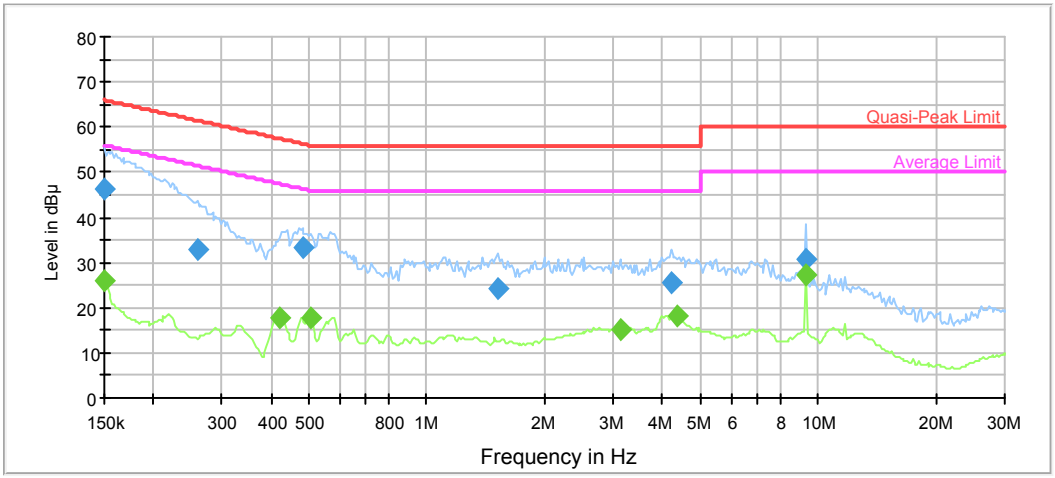
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	46.2	9.000	L1	9.7	19.8	66.0
0.259279	33.4	9.000	L1	9.7	28.1	61.5
0.485304	38.8	9.000	L1	9.7	17.4	56.2
0.525514	30.5	9.000	L1	9.7	25.5	56.0
1.493925	29.1	9.000	L1	9.7	26.9	56.0
4.375596	29.1	9.000	L1	9.8	26.9	56.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.335833	21.6	9.000	L1	9.7	27.7	49.3
0.430682	22.7	9.000	L1	9.7	24.5	47.2
0.500009	24.0	9.000	L1	9.7	22.0	46.0
0.574747	23.8	9.000	L1	9.7	22.2	46.0
1.493925	17.0	9.000	L1	9.7	29.0	46.0
4.204862	20.2	9.000	L1	9.8	25.8	46.0

AC120 V, 60 Hz, Neutral:



requency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	46.4	9.000	N	9.7	19.6	66.0
0.259279	33.1	9.000	N	9.7	28.4	61.5
0.480499	33.3	9.000	N	9.6	23.0	56.3
1.523953	24.0	9.000	N	9.6	32.0	56.0
4.204862	25.4	9.000	N	9.7	30.6	56.0
9.320982	30.6	9.000	N	9.7	29.4	60.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	25.8	9.000	N	9.7	30.2	56.0
0.422196	17.6	9.000	N	9.6	29.8	47.4
0.505009	17.7	9.000	N	9.6	28.3	46.0
3.150880	15.2	9.000	N	9.6	30.8	46.0
4.375596	18.0	9.000	N	9.7	28.0	46.0
9.320982	27.4	9.000	N	9.7	22.6	50.0

FCC §15.209, §15.205 , §15.407(b) &RSS-247 CLAUSE 6.2, RSS-GEN CLAUSE 8.10 –UNWANTED EMISSION

Applicable Standard

FCC §15.407; §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

According to RSS-247 Clause 6.2

Frequency band 5725-5850 MHz

6.2.4.2 Unwanted emission limits

Devices operating in the band 5725-5850 MHz with antenna gain greater than 10 dBi can have unwanted emissions that comply with either the limits in this section or in section 5.5 until six (6) months after the publication date of this standard for certification. Certified devices that do not comply with emission limits in this section shall not be manufactured, imported, distributed, leased, offered for sale or sold after April 1, 2018.

Devices operating in the band 5725-5850 MHz with antenna gain of 10 dBi or less can have unwanted emissions that comply with either the limits in this section or in section 5.5 until April 1, 2018 for certification. Certified devices that do not comply with emission limits in this section shall not be manufactured, imported, distributed, leased, offered for sale or sold after April 1, 2020.

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;

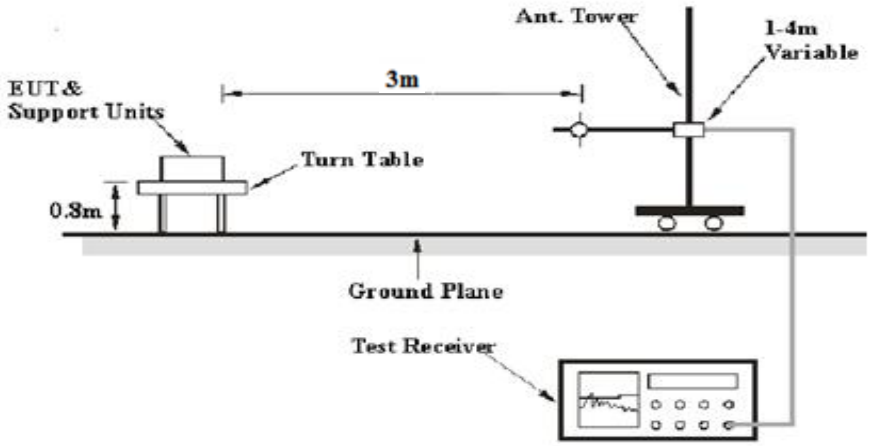
b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;

c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and

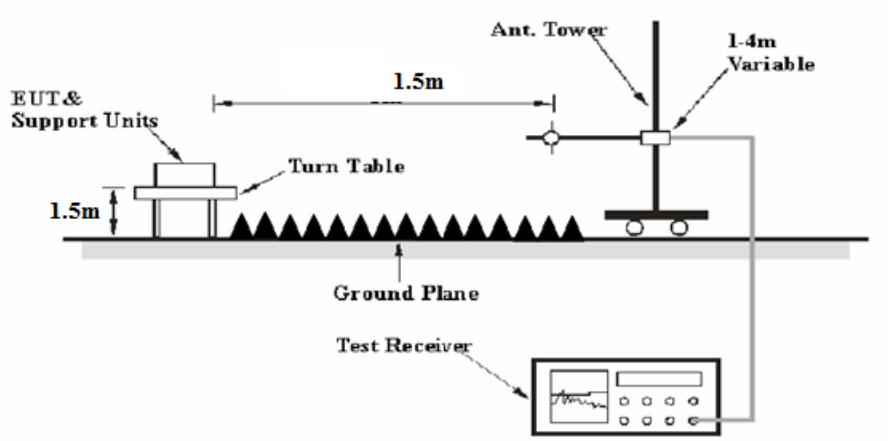
d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

EUT Setup

Below 1 GHz:



1-40 GHz:



The radiated emission below 1GHz tests were performed in the 3 meters chamber test site A, above 1GHz tests were performed in the 3 meters chamber test site B, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.407 and RSS-247, RSS-Gen limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30-1000MHz:

Measurement	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 40GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
Ave.	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

Note: T is minimum transmission duration

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

During the radiated emission test, the adapter was connected to the first AC floor outlet.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: E [dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1.5m
Distance extrapolation factor =20 log (specific distance [3m]/test distance [1.5m]) dB= 6.02 dB

All emissions under the average limit and under the noise floor have not recorded in the report.

Corrected Amplitude & Margin Calculation

For the range 30MHz-1GHz, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit - Corrected Amplitude

For the range 1GHz-40GHz, Test performed at 1.5m, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading and the Distance extrapolation factor. The basic equation is as follows:

Extrapolation result
= Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain-Distance extrapolation factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit-Extrapolation result

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESR3	102453	2019-09-12	2020-09-12
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2019-05-06	2020-05-06
HP	Amplifier	8447D	2727A05902	2019-09-05	2020-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2019-05-09	2020-05-09
R&S	Spectrum Analyzer	FSP 38	100478	2019-05-09	2020-05-09
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2017-12-06	2020-12-05
Ducommun Technolagies	Horn Antenna	ARH-2823-02	1007726-01 1302	2017-12-06	2020-12-05
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-2.4J2.4J-50	C-0700-02	2019-06-27	2020-06-27
Mini-Circuit	Amplifier	ZVA-213-S+	54201245	2019-09-05	2020-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2019-06-27	2020-06-27
Sinoscite	Bandstop Filters	BSF5150-5850MN-0899-003	0899003	2019-05-06	2020-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

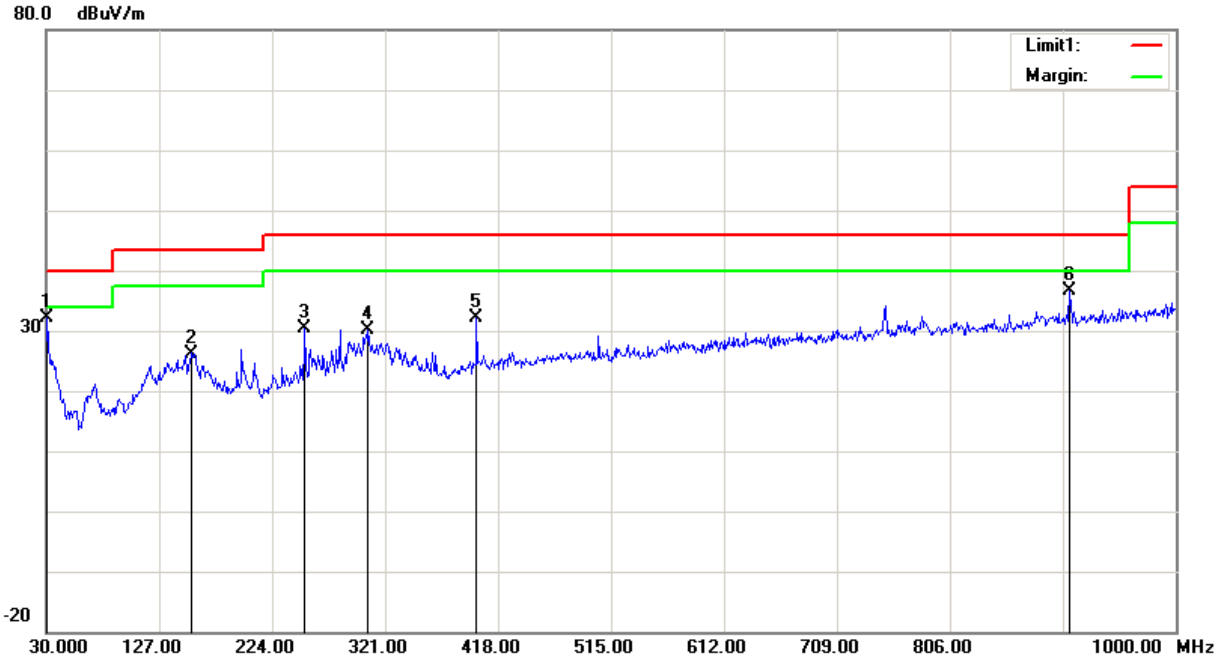
Environmental Conditions

Test Items	Radiation Below 1GHz	Radiation Above 1GHz
Temperature:	21.1℃	25℃
Relative Humidity:	54%	46%
ATM Pressure:	101.0kPa	101.7 kPa
Tester:	Chris Mo	Fixel Zhang
Test Date:	2020-02-21	2020-01-08

Test Mode: Transmitting

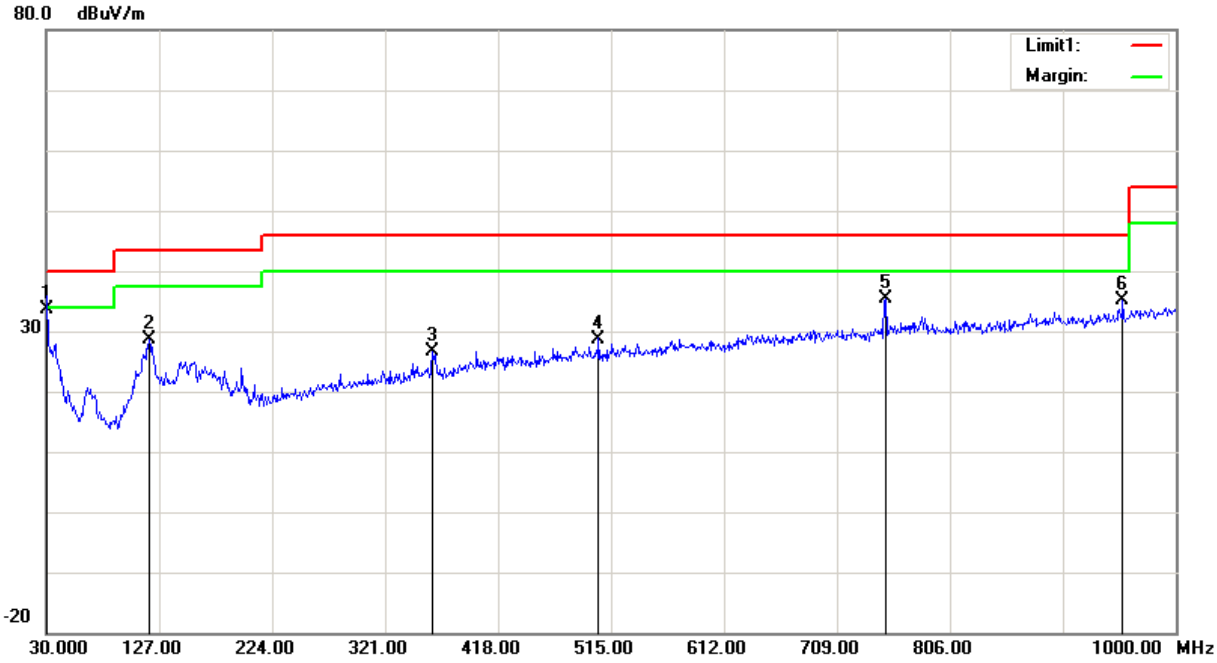
1) 30MHz-1GHz *(10M middle channel was the worst)*

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.9700	31.12	peak	0.91	32.03	40.00	7.97
155.1300	32.12	peak	-5.87	26.25	43.50	17.25
252.1300	36.49	peak	-6.02	30.47	46.00	15.53
306.4500	33.79	peak	-3.68	30.11	46.00	15.89
399.5700	34.16	peak	-2.03	32.13	46.00	13.87
908.8200	30.35	peak	6.37	36.72	46.00	9.28

Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.9700	32.79	QP	0.91	33.70	40.00	6.30
118.2700	33.41	peak	-4.82	28.59	43.50	14.91
361.7400	29.48	peak	-2.80	26.68	46.00	19.32
504.3300	29.03	peak	-0.28	28.75	46.00	17.25
750.7100	31.70	peak	3.66	35.36	46.00	10.64
954.4100	34.21	peak	0.82	35.03	46.00	10.97

2) 1GHz-40GHz:

1.4MHz Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)						
Low Channel: 5728.5 MHz										
5728.50	83.46	PK	H	34.19	3.69	0.00	121.34	115.32	N/A	N/A
5728.50	79.95	AV	H	34.19	3.69	0.00	117.83	111.81	N/A	N/A
5728.50	92.56	PK	V	34.19	3.69	0.00	130.44	124.42	N/A	N/A
5728.50	89.02	AV	V	34.19	3.69	0.00	126.90	120.88	N/A	N/A
5725.00	55.10	PK	V	34.19	3.69	0.00	92.98	86.96	122.20	35.24
5720.00	39.12	PK	V	34.19	3.69	0.00	77.00	70.98	110.80	39.82
5700.00	31.32	PK	V	34.18	3.68	0.00	69.18	63.16	105.20	42.04
5650.00	30.05	PK	V	34.16	3.63	0.00	67.84	61.82	68.20	6.38
11457.00	42.73	PK	V	38.96	6.59	25.50	62.78	56.76	74.00	17.24
11457.00	32.41	AV	V	38.96	6.59	25.50	52.46	46.44	54.00	7.56
17185.50	34.90	PK	V	41.28	8.77	23.77	61.18	55.16	68.20	13.04
Middle Channel: 5786.5 MHz										
5786.50	83.27	PK	H	34.21	3.71	0.00	121.19	115.17	N/A	N/A
5786.50	80.26	AV	H	34.21	3.71	0.00	118.18	112.16	N/A	N/A
5786.50	92.25	PK	V	34.21	3.71	0.00	130.17	124.15	N/A	N/A
5786.50	89.03	AV	V	34.21	3.71	0.00	126.95	120.93	N/A	N/A
11573.00	40.40	PK	V	39.00	6.61	25.46	60.55	54.53	74.00	19.47
11573.00	30.10	AV	V	39.00	6.61	25.46	50.25	44.23	54.00	9.77
17359.50	35.70	PK	V	42.25	8.81	23.60	63.16	57.14	68.20	11.06
High Channel: 5846.5 MHz										
5846.50	83.42	PK	H	34.24	3.75	0.00	121.41	115.39	N/A	N/A
5846.50	80.37	AV	H	34.24	3.75	0.00	118.36	112.34	N/A	N/A
5846.50	92.62	PK	V	34.24	3.75	0.00	130.61	124.59	N/A	N/A
5846.50	89.43	AV	V	34.24	3.75	0.00	127.42	121.4	N/A	N/A
5850.00	62.13	PK	V	34.24	3.75	0.00	100.12	94.1	122.20	28.10
5855.00	39.12	PK	V	34.24	3.75	0.00	77.11	71.093	110.80	39.71
5875.00	31.32	PK	V	34.25	3.77	0.00	69.34	63.32	105.20	41.88
5925.00	29.03	PK	V	34.27	3.80	0.00	67.10	61.08	68.20	7.12
11693.00	35.87	PK	V	39.00	6.65	25.38	56.14	50.12	74.00	23.88
11693.00	25.78	AV	V	39.00	6.65	25.38	46.05	40.03	54.00	13.97
17539.50	36.70	PK	V	43.34	8.85	23.44	65.45	59.43	68.20	8.77

3MHz Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)						
Low Channel: 5730.5 MHz										
5730.50	83.41	PK	H	34.19	3.69	0.00	121.29	115.27	N/A	N/A
5730.50	80.28	AV	H	34.19	3.69	0.00	118.16	112.14	N/A	N/A
5730.50	92.74	PK	V	34.19	3.69	0.00	130.62	124.6	N/A	N/A
5730.50	87.45	AV	V	34.19	3.69	0.00	125.33	119.31	N/A	N/A
5725.00	57.53	PK	V	34.19	3.69	0.00	95.41	89.39	122.20	32.81
5720.00	47.37	PK	V	34.19	3.69	0.00	85.25	79.23	110.80	31.57
5700.00	32.23	PK	V	34.18	3.68	0.00	70.09	64.07	105.20	41.13
5650.00	31.38	PK	V	34.16	3.63	0.00	69.17	63.15	68.20	5.05
11461.00	37.99	PK	V	38.96	6.59	25.51	58.03	52.01	74.00	21.99
11461.00	25.23	AV	V	38.96	6.59	25.51	45.27	39.25	54.00	14.75
17191.50	35.70	PK	V	41.31	8.77	23.76	62.02	56	68.20	12.20
Middle Channel: 5787.5 MHz										
5787.50	84.22	PK	H	34.22	3.71	0.00	122.15	116.13	N/A	N/A
5787.50	79.40	AV	H	34.22	3.71	0.00	117.33	111.31	N/A	N/A
5787.50	92.78	PK	V	34.22	3.71	0.00	130.71	124.69	N/A	N/A
5787.50	87.30	AV	V	34.22	3.71	0.00	125.23	119.21	N/A	N/A
11575.00	41.91	PK	V	39.00	6.61	25.46	62.06	56.04	74.00	17.96
11575.00	30.47	AV	V	39.00	6.61	25.46	50.62	44.6	54.00	9.40
17362.50	36.87	PK	V	42.30	8.81	23.59	64.39	58.37	68.20	9.83
High Channel: 5844.5 MHz										
5844.50	84.64	PK	H	34.24	3.75	0.00	122.63	116.61	N/A	N/A
5844.50	79.47	AV	H	34.24	3.75	0.00	117.46	111.44	N/A	N/A
5844.50	92.58	PK	V	34.24	3.75	0.00	130.57	124.55	N/A	N/A
5844.50	87.21	AV	V	34.24	3.75	0.00	125.20	119.18	N/A	N/A
5850.00	56.62	PK	V	34.24	3.75	0.00	94.61	88.59	122.20	33.61
5855.00	44.39	PK	V	34.24	3.75	0.00	82.38	76.36	110.80	34.44
5875.00	29.87	PK	V	34.25	3.77	0.00	67.89	61.87	105.20	43.33
5925.00	29.37	PK	V	34.27	3.80	0.00	67.44	61.42	68.20	6.78
11689.00	35.84	PK	V	39.00	6.65	25.38	56.11	50.09	74.00	23.91
11689.00	25.74	AV	V	39.00	6.65	25.38	46.01	39.99	54.00	14.01
17533.50	36.47	PK	V	43.31	8.85	23.44	65.19	59.17	68.20	9.03

10MHz Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)						
Low Channel: 5730.5 MHz										
5730.50	74.43	PK	H	34.19	3.69	0.00	112.31	106.29	N/A	N/A
5730.50	63.30	AV	H	34.19	3.69	0.00	101.18	95.16	N/A	N/A
5730.50	82.24	PK	V	34.19	3.69	0.00	120.12	114.1	N/A	N/A
5730.50	70.80	AV	V	34.19	3.69	0.00	108.68	102.66	N/A	N/A
5725.00	64.31	PK	V	34.19	3.69	0.00	102.19	96.17	122.20	26.03
5720.00	37.01	PK	V	34.19	3.69	0.00	74.89	68.87	110.80	41.93
5700.00	26.70	PK	V	34.18	3.68	0.00	64.56	58.54	105.20	46.66
5650.00	27.42	PK	V	34.16	3.63	0.00	65.21	59.19	68.20	9.01
11461.00	35.63	PK	V	38.96	6.59	25.51	55.67	49.65	74.00	24.35
11461.00	25.11	AV	V	38.96	6.59	25.51	45.15	39.13	54.00	14.87
17191.50	34.70	PK	V	41.31	8.77	23.76	61.02	55	68.20	13.20
Middle Channel: 5787.5 MHz										
5787.50	75.10	PK	H	34.22	3.71	0.00	113.03	107.01	N/A	N/A
5787.50	63.12	AV	H	34.22	3.71	0.00	101.05	95.03	N/A	N/A
5787.50	84.32	PK	V	34.22	3.71	0.00	122.25	116.23	N/A	N/A
5787.50	72.33	AV	V	34.22	3.71	0.00	110.26	104.24	N/A	N/A
11575.00	37.57	PK	V	39.00	6.61	25.46	57.72	51.7	74.00	22.30
11575.00	27.10	AV	V	39.00	6.61	25.46	47.25	41.23	54.00	12.77
17362.50	35.87	PK	V	42.30	8.81	23.59	63.39	57.37	68.20	10.83
High Channel: 5844.5 MHz										
5844.50	74.87	PK	H	34.24	3.75	0.00	112.86	106.84	N/A	N/A
5844.50	63.74	AV	H	34.24	3.75	0.00	101.73	95.71	N/A	N/A
5844.50	83.23	PK	V	34.24	3.75	0.00	121.22	115.2	N/A	N/A
5844.50	70.90	AV	V	34.24	3.75	0.00	108.89	102.87	N/A	N/A
5850.00	61.64	PK	V	34.24	3.75	0.00	99.63	93.61	122.20	28.59
5855.00	36.00	PK	V	34.24	3.75	0.00	73.99	67.97	110.80	42.83
5875.00	26.92	PK	V	34.25	3.77	0.00	64.94	58.92	105.20	46.28
5925.00	26.81	PK	V	34.27	3.80	0.00	64.88	58.86	68.20	9.34
11689.00	35.87	PK	V	39.00	6.65	25.38	56.14	50.12	74.00	23.88
11689.00	25.78	AV	V	39.00	6.65	25.38	46.05	40.03	54.00	13.97
17533.50	36.70	PK	V	43.31	8.85	23.44	65.42	59.4	68.20	8.80

20MHz Mode:

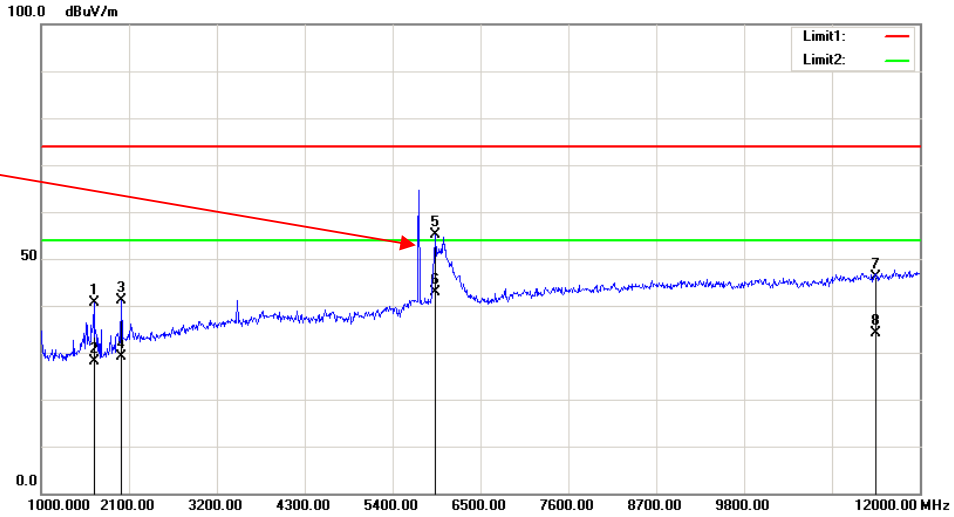
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)						
Low Channel: 5735.5 MHz										
5735.50	74.97	PK	H	34.19	3.69	0.00	112.85	106.83	N/A	N/A
5735.50	61.60	AV	H	34.19	3.69	0.00	99.48	93.46	N/A	N/A
5735.50	82.78	PK	V	34.19	3.69	0.00	120.66	114.64	N/A	N/A
5735.50	69.58	AV	V	34.19	3.69	0.00	107.46	101.44	N/A	N/A
5725.00	54.96	PK	V	34.19	3.69	0.00	92.84	86.82	122.20	35.38
5720.00	42.00	PK	V	34.19	3.69	0.00	79.88	73.86	110.80	36.94
5700.00	26.78	PK	V	34.18	3.68	0.00	64.64	58.62	105.20	46.58
5650.00	27.21	PK	V	34.16	3.63	0.00	65.00	58.98	68.20	9.22
11471.00	36.54	PK	V	38.97	6.59	25.51	56.59	50.57	74.00	23.43
11471.00	25.78	AV	V	38.97	6.59	25.51	45.83	39.81	54.00	14.19
17206.50	36.87	PK	V	41.40	8.77	23.75	63.29	57.27	68.20	10.93
Middle Channel: 5787.5 MHz										
5787.50	75.59	PK	H	34.22	3.71	0.00	113.52	107.5	N/A	N/A
5787.50	61.21	AV	H	34.22	3.71	0.00	99.14	93.12	N/A	N/A
5787.50	81.85	PK	V	34.22	3.71	0.00	119.78	113.76	N/A	N/A
5787.50	68.70	AV	V	34.22	3.71	0.00	106.63	100.61	N/A	N/A
11575.00	38.87	PK	V	39.00	6.61	25.46	59.02	53	74.00	21.00
11575.00	27.70	AV	V	39.00	6.61	25.46	47.85	41.83	54.00	12.17
17362.50	36.87	PK	V	42.30	8.81	23.59	64.39	58.37	68.20	9.83
High Channel: 5839.5 MHz										
5839.50	75.13	PK	H	34.24	3.74	0.00	113.11	107.09	N/A	N/A
5839.50	61.02	AV	H	34.24	3.74	0.00	99.00	92.98	N/A	N/A
5839.50	81.89	PK	V	34.24	3.74	0.00	119.87	113.85	N/A	N/A
5839.50	68.78	AV	V	34.24	3.74	0.00	106.76	100.74	N/A	N/A
5850.00	50.00	PK	V	34.24	3.75	0.00	87.99	81.97	122.20	40.23
5855.00	39.87	PK	V	34.24	3.75	0.00	77.86	71.84	110.80	38.96
5875.00	26.84	PK	V	34.25	3.77	0.00	64.86	58.84	105.20	46.36
5925.00	27.23	PK	V	34.27	3.80	0.00	65.30	59.28	68.20	8.92
11679.00	35.70	PK	V	39.00	6.65	25.39	55.96	49.94	74.00	24.06
11679.00	25.54	AV	V	39.00	6.65	25.39	45.80	39.78	54.00	14.22
17518.50	36.87	PK	V	43.21	8.85	23.45	65.48	59.46	68.20	8.74

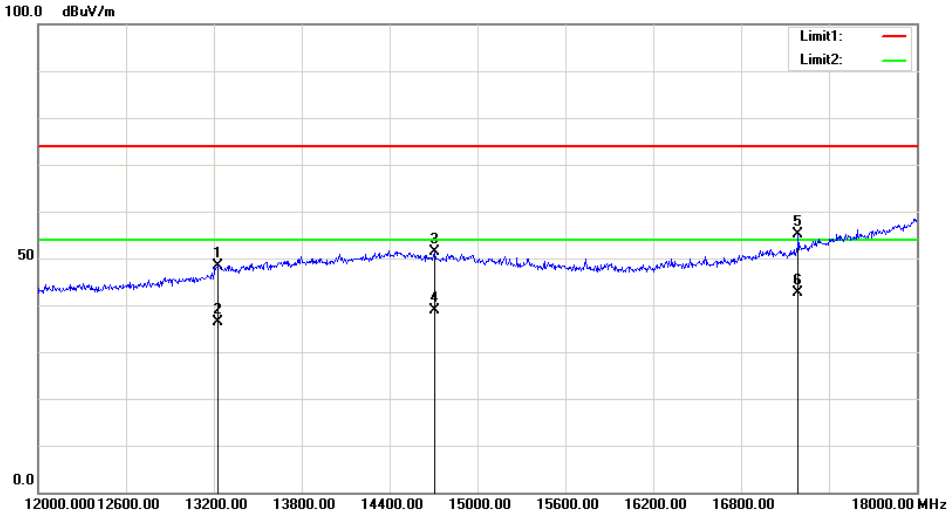
40MHz Mode:

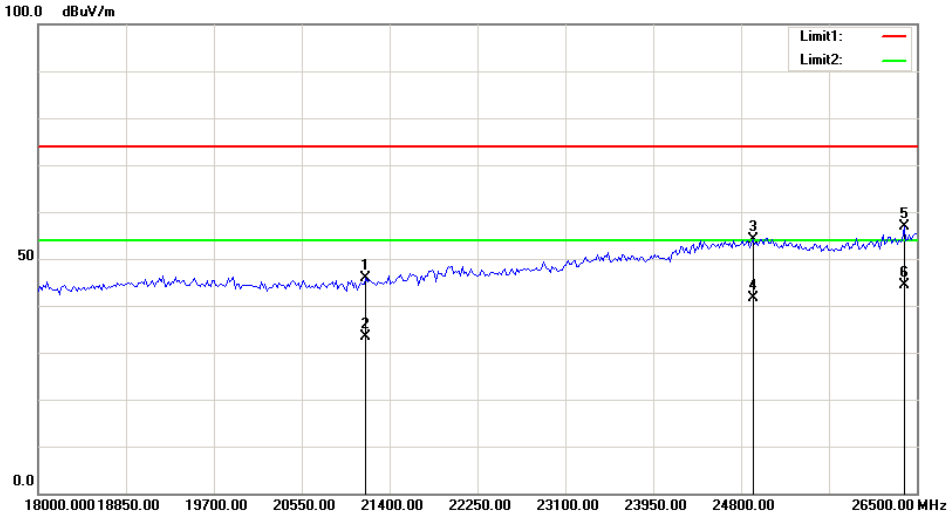
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)						
Low Channel: 5745.5 MHz										
5745.50	78.80	PK	H	34.20	3.69	0.00	116.69	110.67	N/A	N/A
5745.50	63.55	AV	H	34.20	3.69	0.00	101.44	95.42	N/A	N/A
5745.50	85.29	PK	V	34.20	3.69	0.00	123.18	117.16	N/A	N/A
5745.50	70.50	AV	V	34.20	3.69	0.00	108.39	102.37	N/A	N/A
5725.00	61.69	PK	V	34.19	3.69	0.00	99.57	93.55	122.20	28.65
5720.00	61.65	PK	V	34.19	3.69	0.00	99.53	93.51	110.80	17.29
5700.00	48.60	PK	V	34.18	3.68	0.00	86.46	80.44	105.20	24.76
5650.00	32.00	PK	V	34.16	3.63	0.00	69.79	63.77	68.20	4.43
11491.00	33.86	PK	V	38.99	6.59	25.51	53.93	47.91	74.00	26.09
11491.00	20.45	AV	V	38.99	6.59	25.51	40.52	34.5	54.00	19.50
17236.50	36.75	PK	V	41.57	8.78	23.72	63.38	57.36	68.20	10.84
Middle Channel: 5787.5 MHz										
5787.50	75.05	PK	H	34.22	3.71	0.00	112.98	106.96	N/A	N/A
5787.50	61.54	AV	H	34.22	3.71	0.00	99.47	93.45	N/A	N/A
5787.50	83.97	PK	V	34.22	3.71	0.00	121.90	115.88	N/A	N/A
5787.50	67.48	AV	V	34.22	3.71	0.00	105.41	99.39	N/A	N/A
11575.00	38.75	PK	V	39.00	6.61	25.46	58.90	52.88	74.00	21.12
11575.00	24.16	AV	V	39.00	6.61	25.46	44.31	38.29	54.00	15.71
17362.50	36.57	PK	V	42.30	8.81	23.59	64.09	58.07	68.20	10.13
High Channel: 5829.5 MHz										
5829.50	76.84	PK	H	34.23	3.73	0.00	114.80	108.78	N/A	N/A
5829.50	62.20	AV	H	34.23	3.73	0.00	100.16	94.14	N/A	N/A
5829.50	85.96	PK	V	34.23	3.73	0.00	123.92	117.9	N/A	N/A
5829.50	70.12	AV	V	34.23	3.73	0.00	108.08	102.06	N/A	N/A
5850.00	60.74	PK	V	34.24	3.75	0.00	98.73	92.71	122.20	29.49
5855.00	57.75	PK	V	34.24	3.75	0.00	95.74	89.72	110.80	21.08
5875.00	46.14	PK	V	34.25	3.77	0.00	84.16	78.14	105.20	27.06
5925.00	30.09	PK	V	34.27	3.80	0.00	68.16	62.14	68.20	6.06
11659.00	43.84	PK	V	39.00	6.64	25.40	64.08	58.06	74.00	15.94
11659.00	30.06	AV	V	39.00	6.64	25.40	50.30	44.28	54.00	9.72
17488.50	36.04	PK	V	43.03	8.85	23.47	64.45	58.43	68.20	9.77

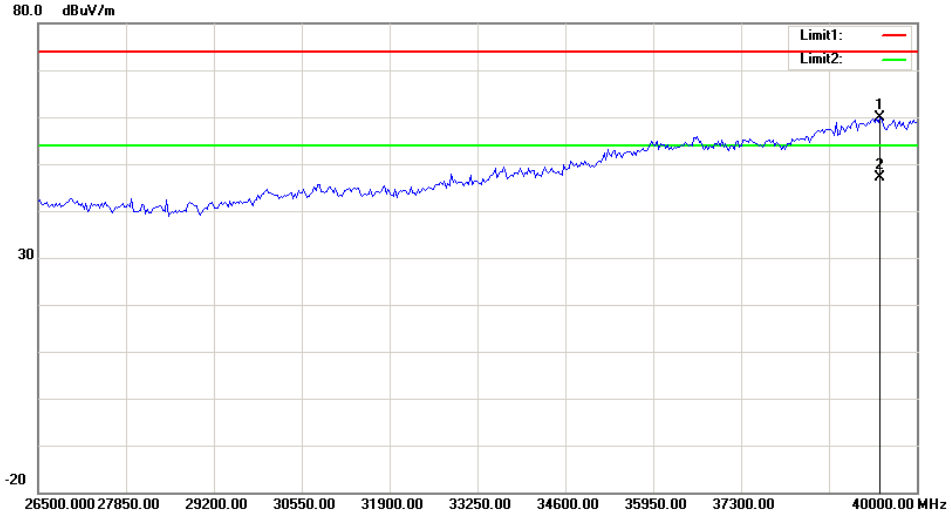
Test Plots *(1.4M Low channel was the worst)*
Horizontal

Fundamental Test with Band Rejection Filter



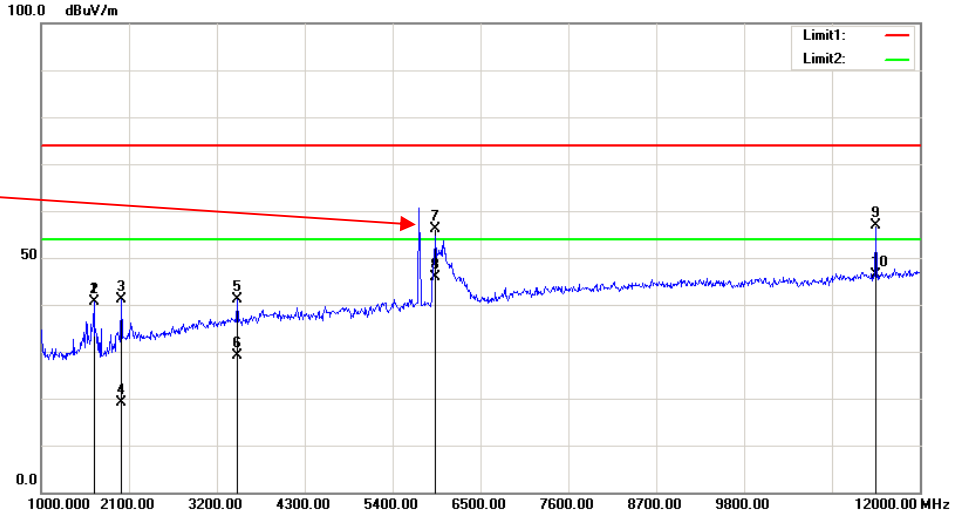


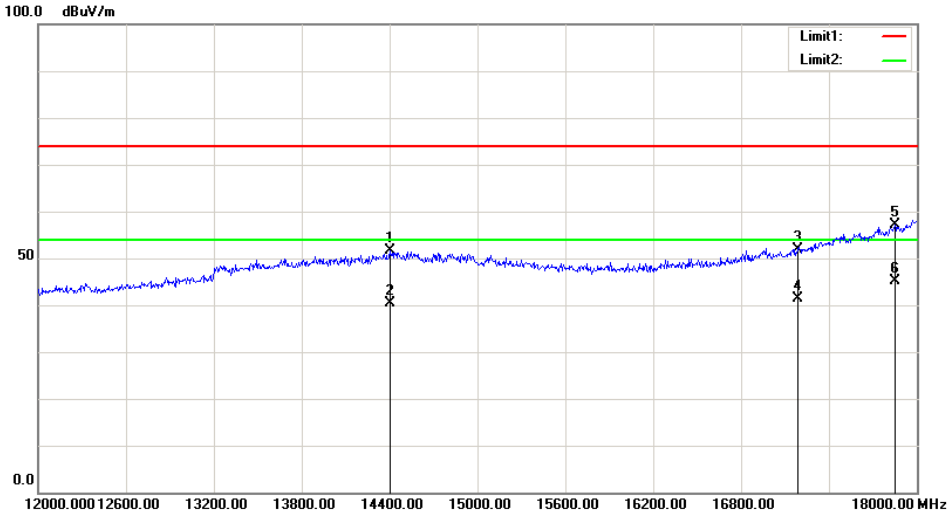


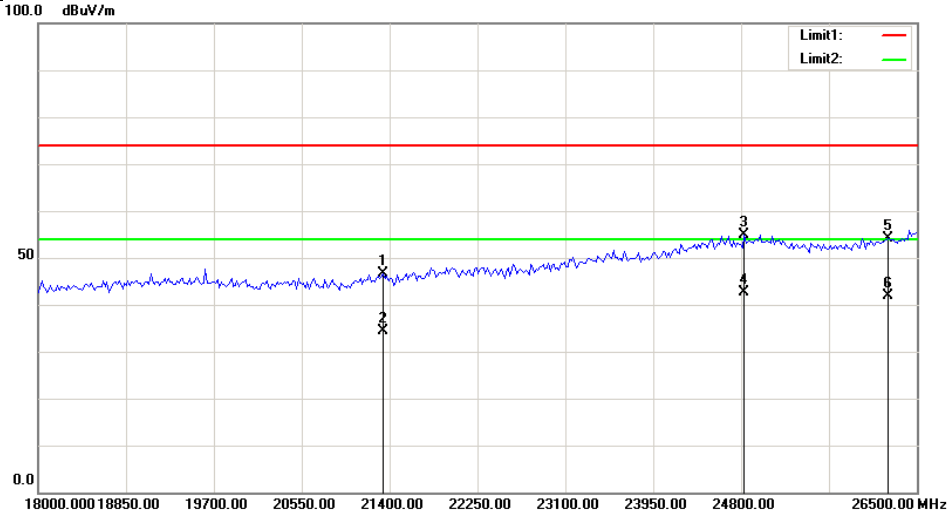


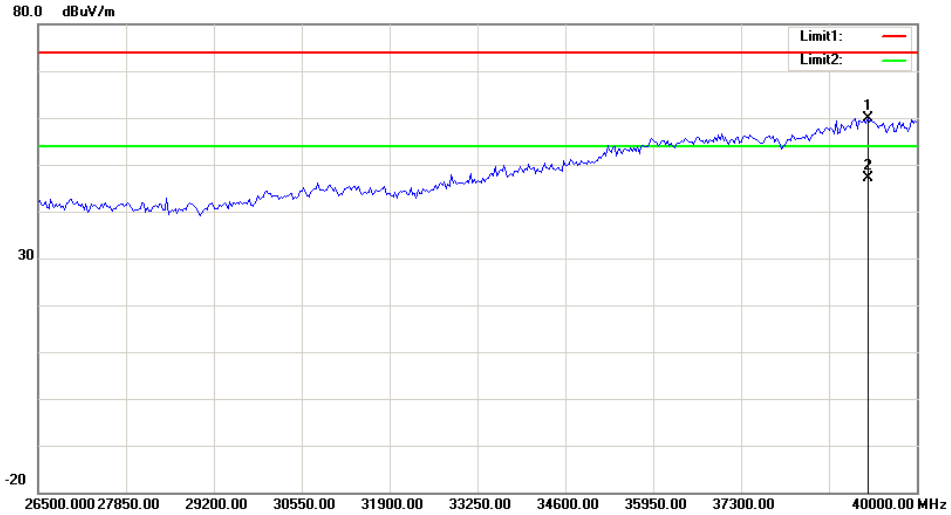
Vertical

Fundamental Test with Band Rejection Filter






100.0 dBuV/m
Limit1:
Limit2:
50
0.0
1
2
3
4
5
6
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz


80.0 dBuV/m
Limit1:
Limit2:
30
-20
1
2
26500.000 27850.00 29200.00 30550.00 31900.00 33250.00 34600.00 35950.00 37300.00 40000.00 MHz

FCC §15.407(a)(e) & RSS-247 CLAUSE 6.2,RSS-Gen CLAUSE 6.7– EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

Applicable Standard

15.407(a) (e), RSS-247 Clause 6.2 and RSS-Gen Clause 6.7

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2019-08-03	2020-08-03
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Test Data

Environmental Conditions

Temperature:	23.6-25.1 °C
Relative Humidity:	43-48%
ATM Pressure:	101.5-101.7kPa
Tester:	Severn Zhu
Test Date:	2020-01-13 to 2020-01-15

Test Result: Pass. Please refer to the following tables and plots.

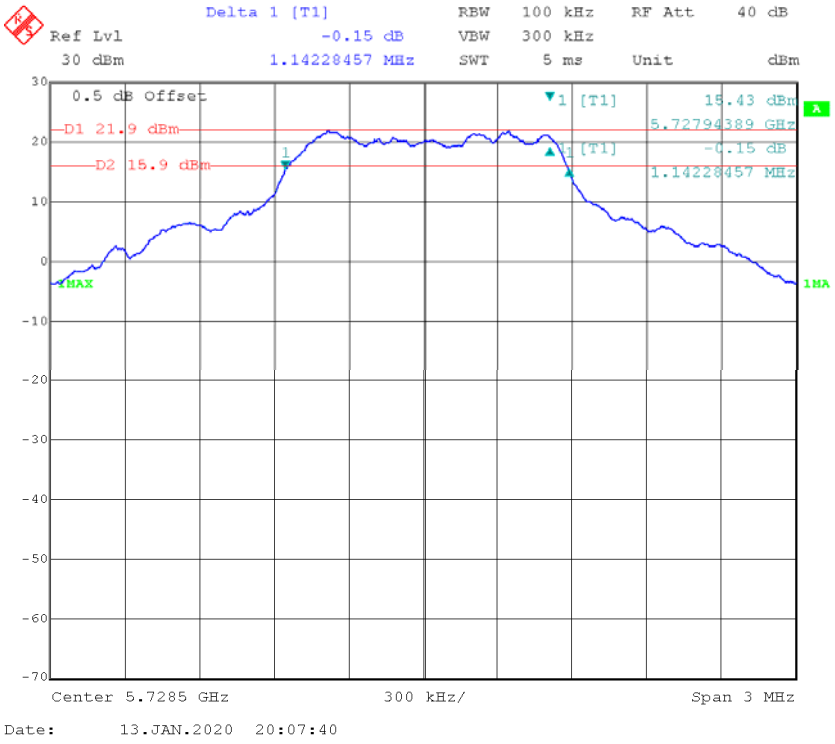
Test mode: Transmitting

Mode	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limis (MHz)
1.4M	5728.5	1.142	2.092	≥0.5
	5786.5	1.144	2.148	≥0.5
	5846.5	1.148	1.980	≥0.5
3M	5730.5	2.248	4.329	≥0.5
	5787.5	2.248	4.553	≥0.5
	5844.5	2.242	4.553	≥0.5
10M	5730.5	9.052	9.098	≥0.5
	5787.5	9.074	9.138	≥0.5
	5844.5	9.070	9.138	≥0.5
20M	5735.5	18.136	18.036	≥0.5
	5787.5	18.140	18.116	≥0.5
	5839.5	18.108	18.036	≥0.5
40M	5745.5	36.112	36.072	≥0.5
	5787.5	36.196	36.713	≥0.5
	5829.5	36.120	36.232	≥0.5

Note: the 99% Occupied Bandwidth has not fallen into the band 5470-5725MHz.

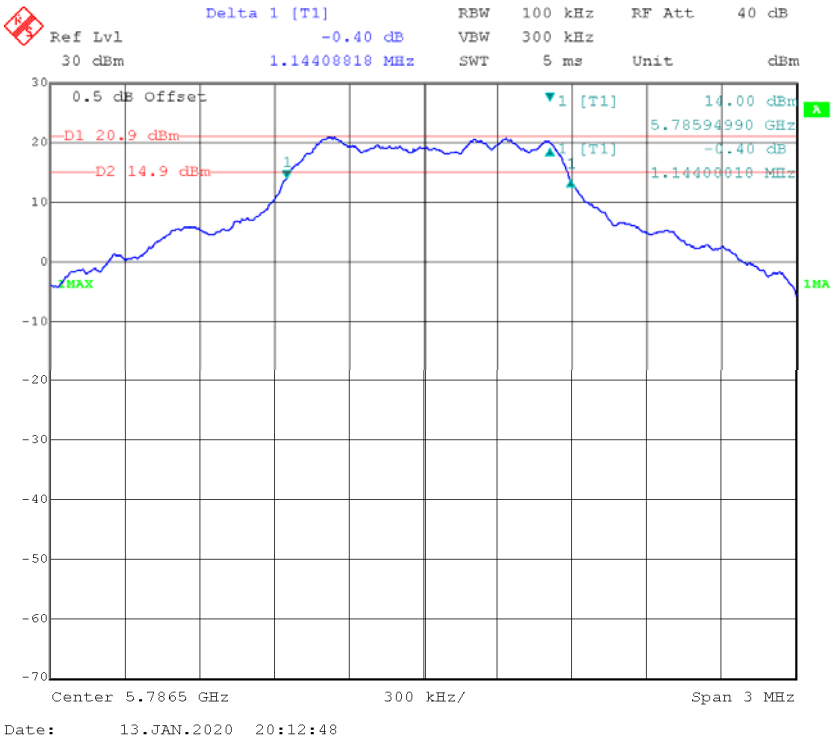
6dB Minimum Emission Bandwidth:

1.4M Low Channel



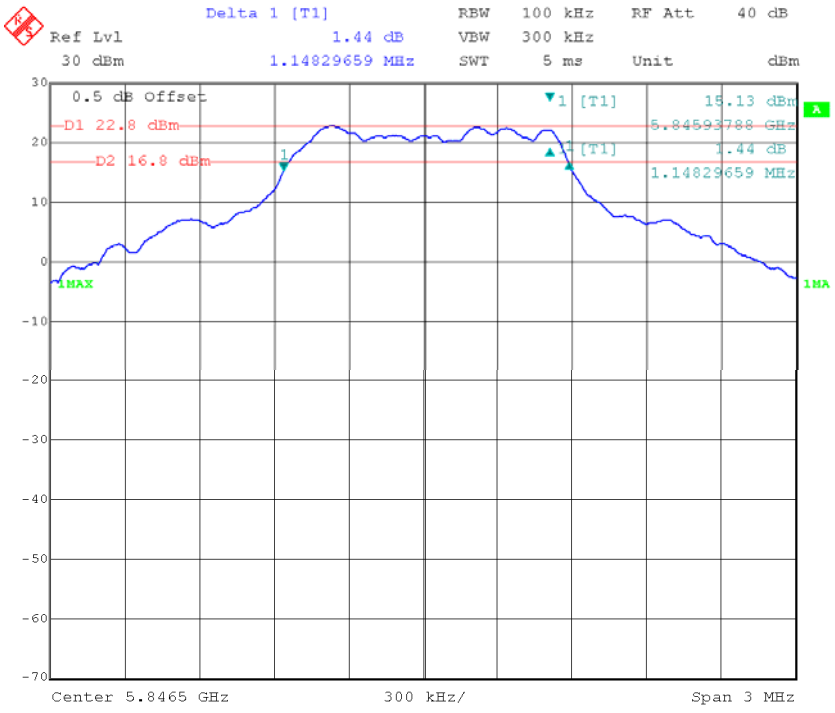
Date: 13.JAN.2020 20:07:40

1.4M Middle Channel



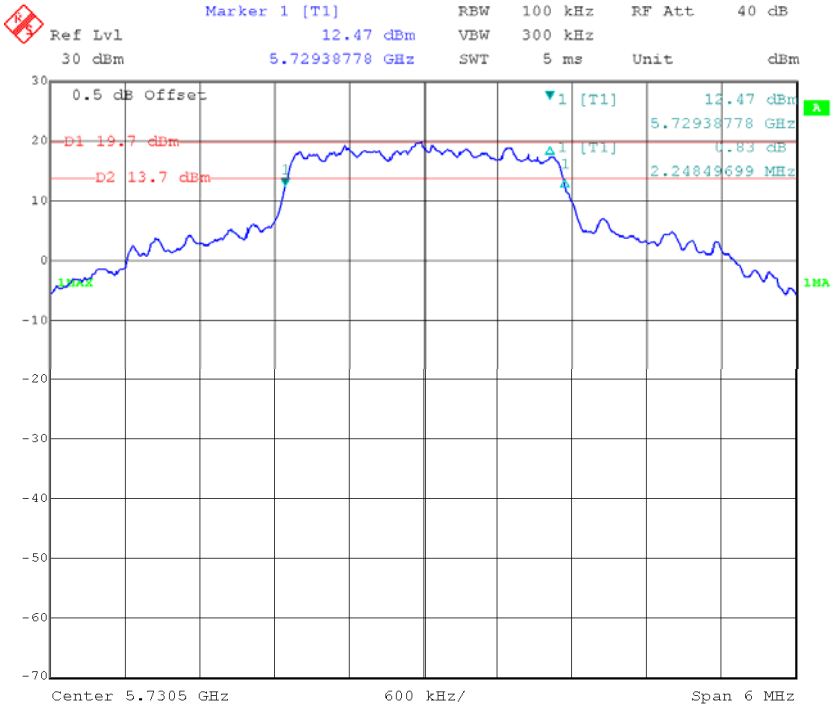
Date: 13.JAN.2020 20:12:48

1.4M High Channel



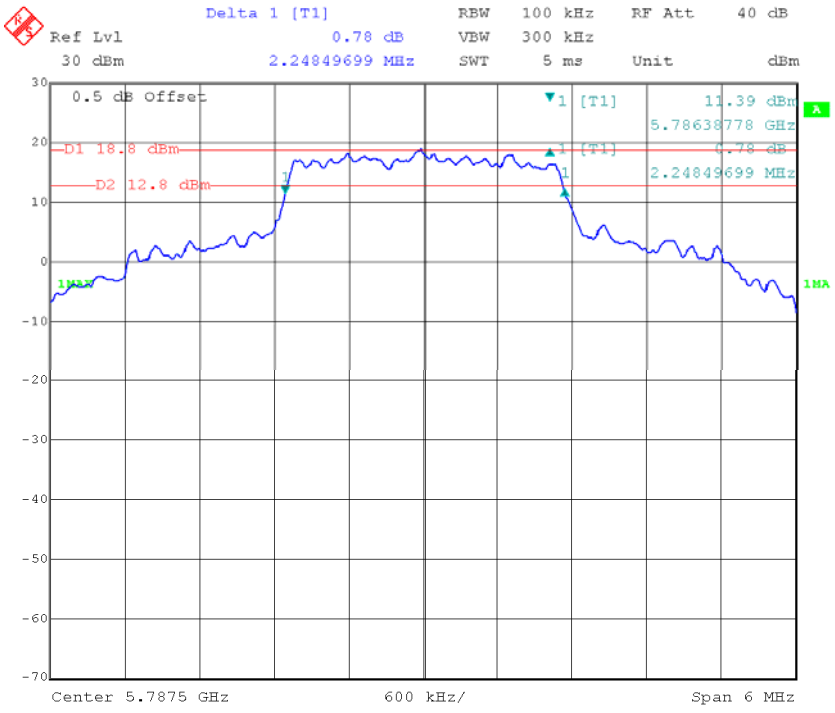
Date: 13.JAN.2020 20:28:25

3M Low Channel

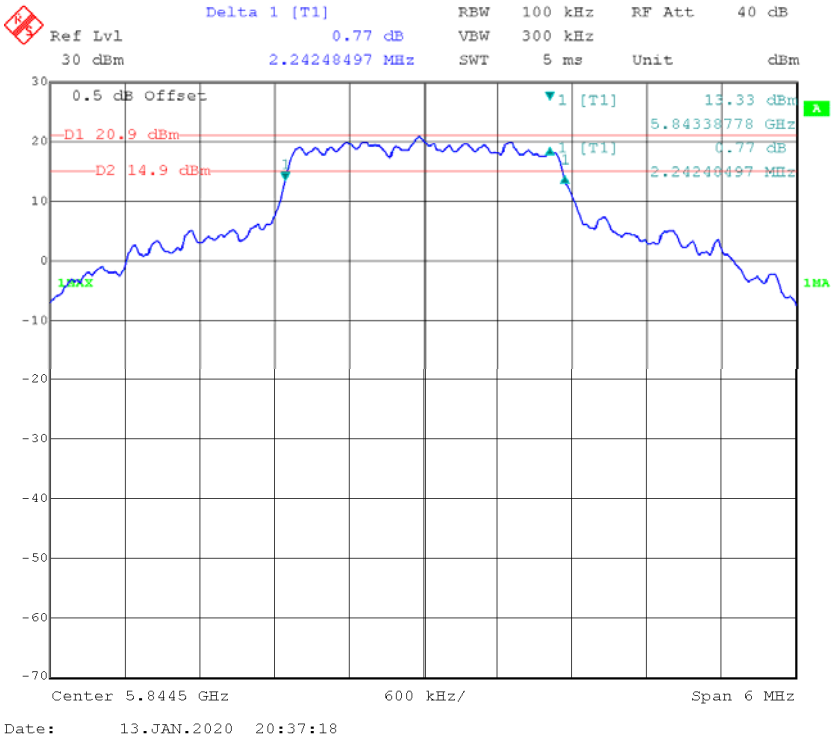


Date: 13.JAN.2020 20:31:34

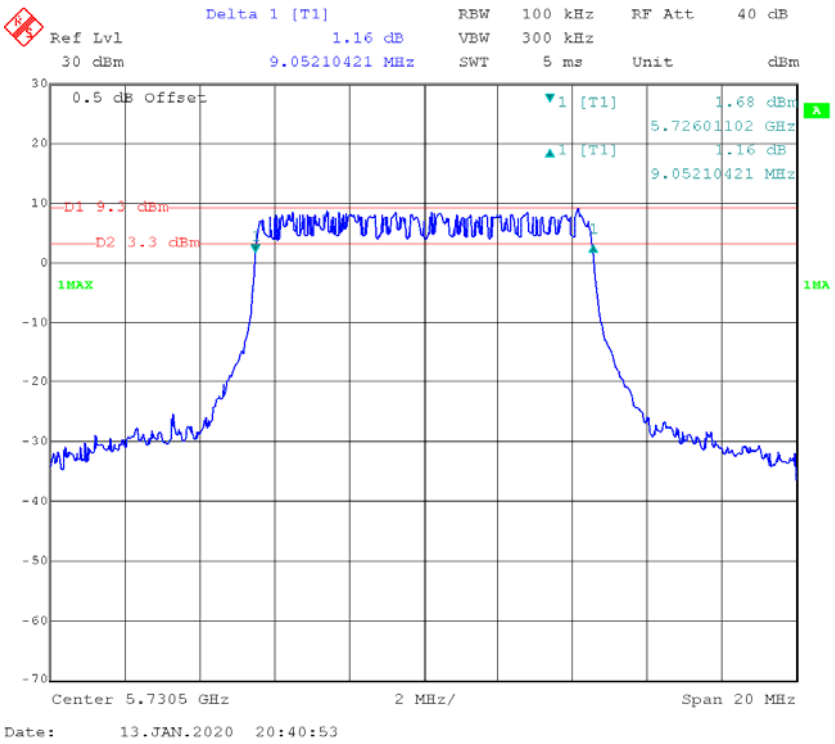
3M Middle Channel



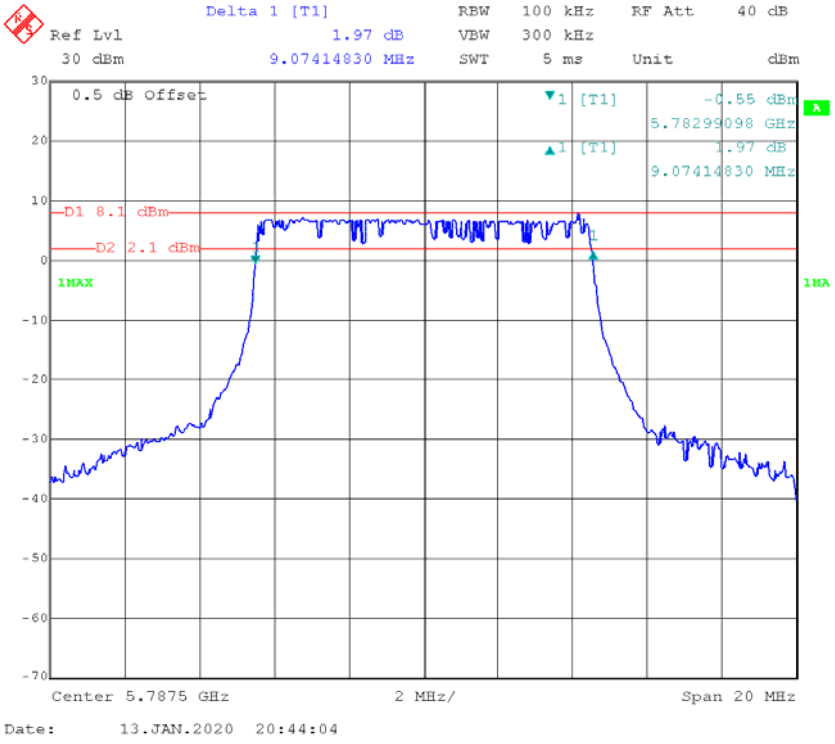
3M High Channel



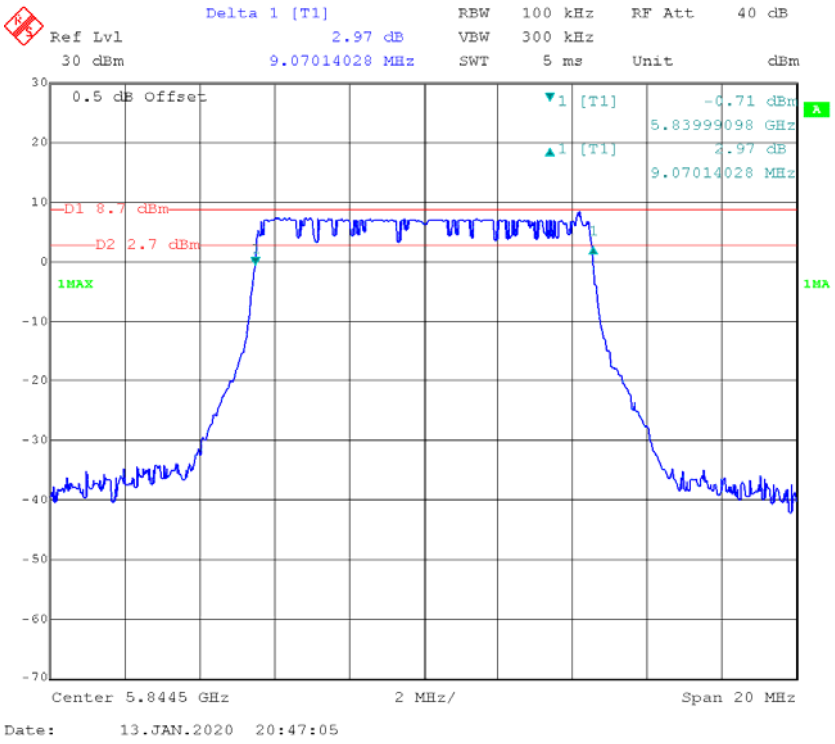
10M Low Channel



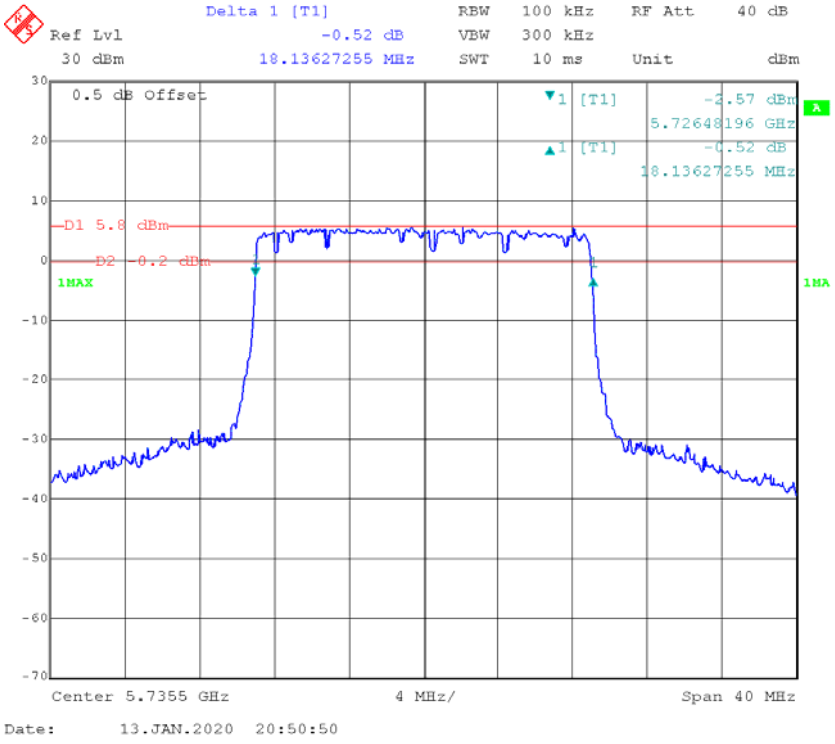
10M Middle Channel



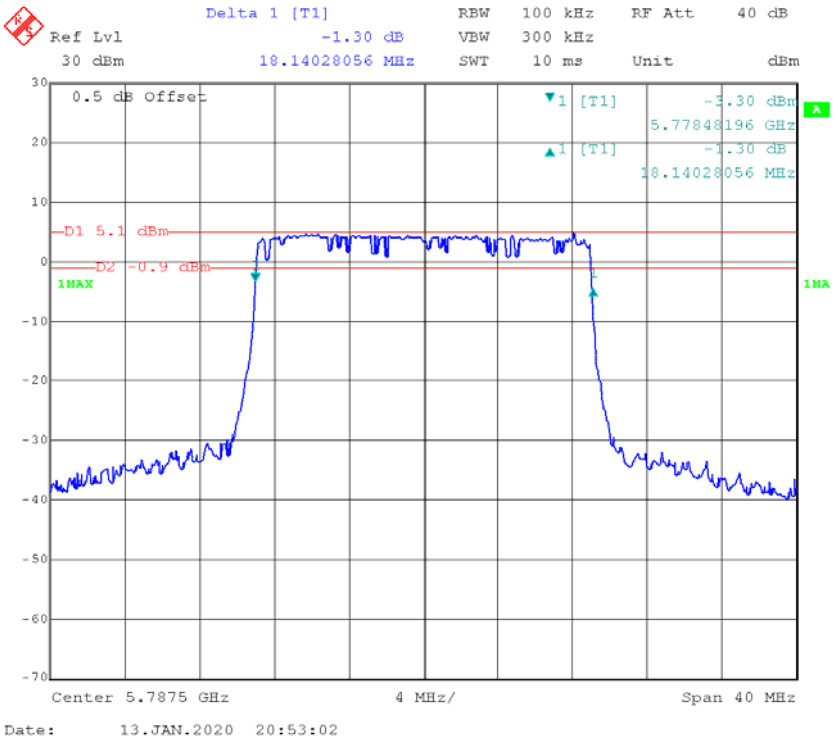
10M High Channel



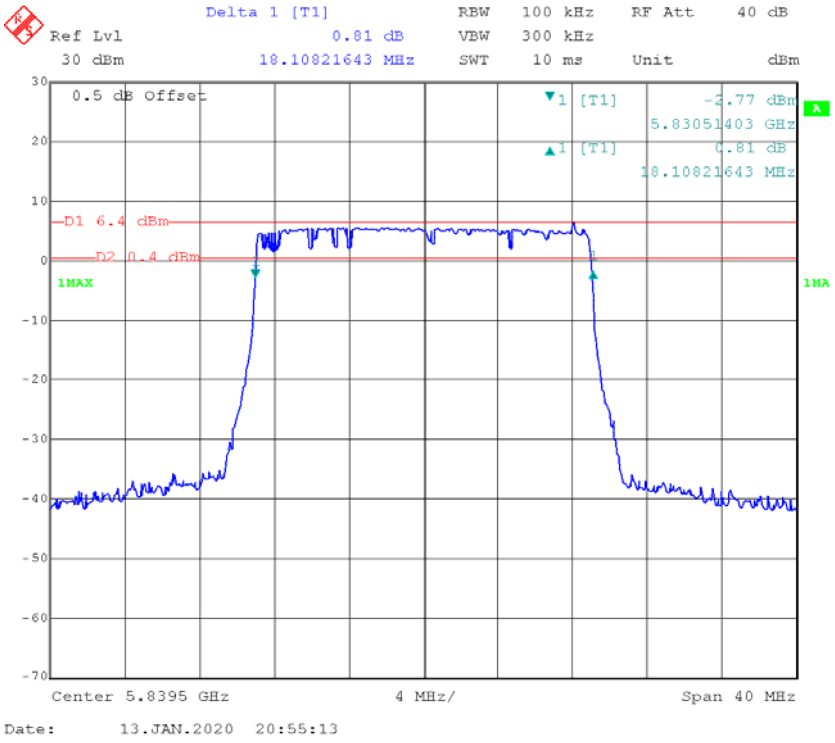
20M Low Channel



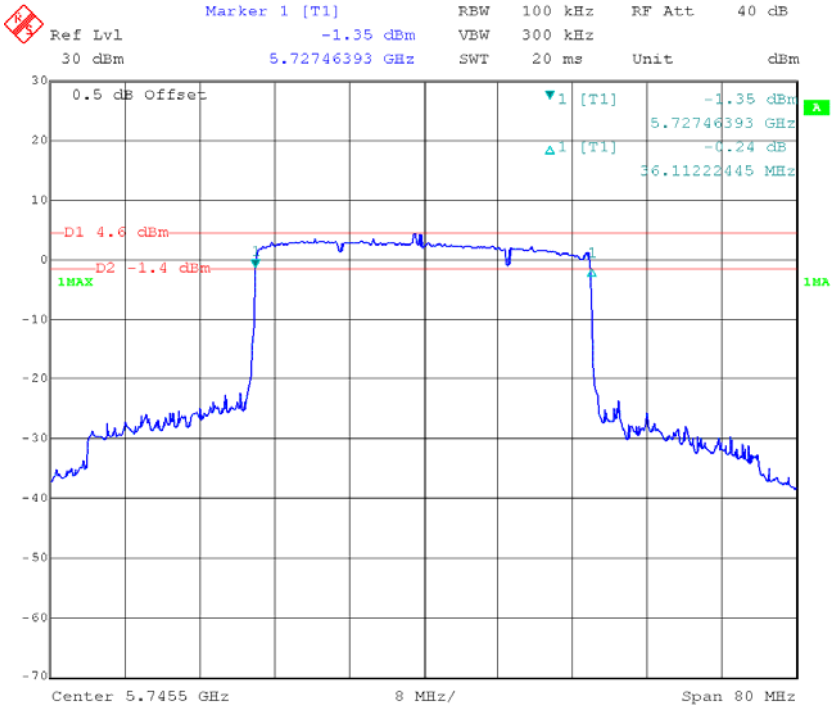
20M Middle Channel



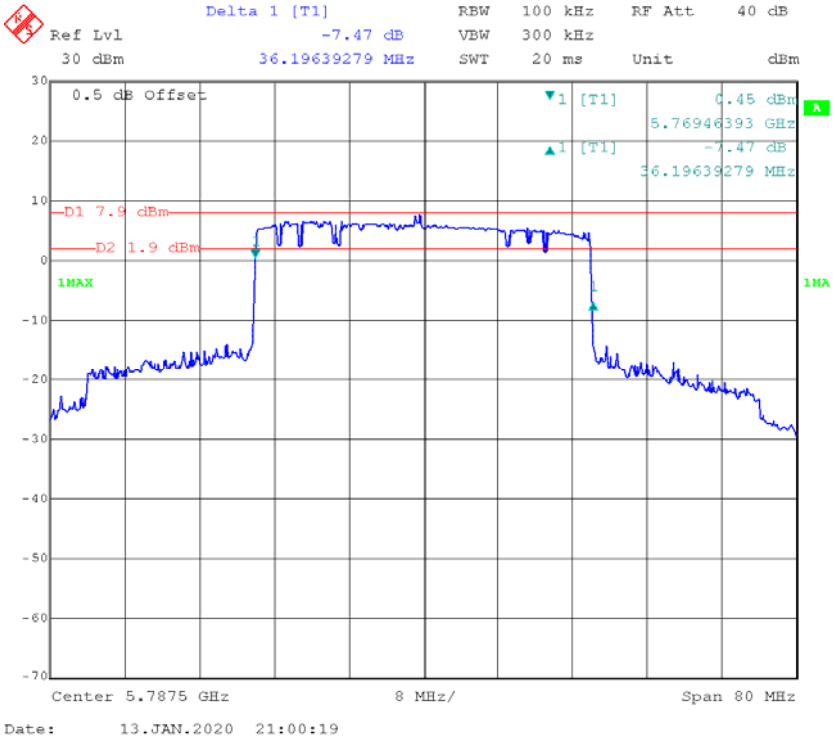
20M High Channel



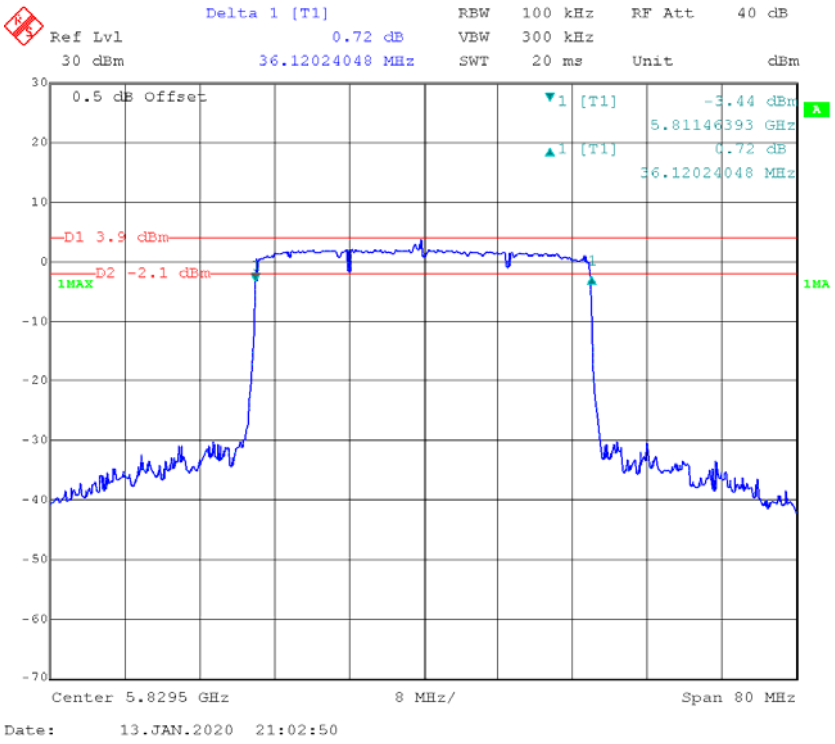
40M Low Channel



40M Middle Channel

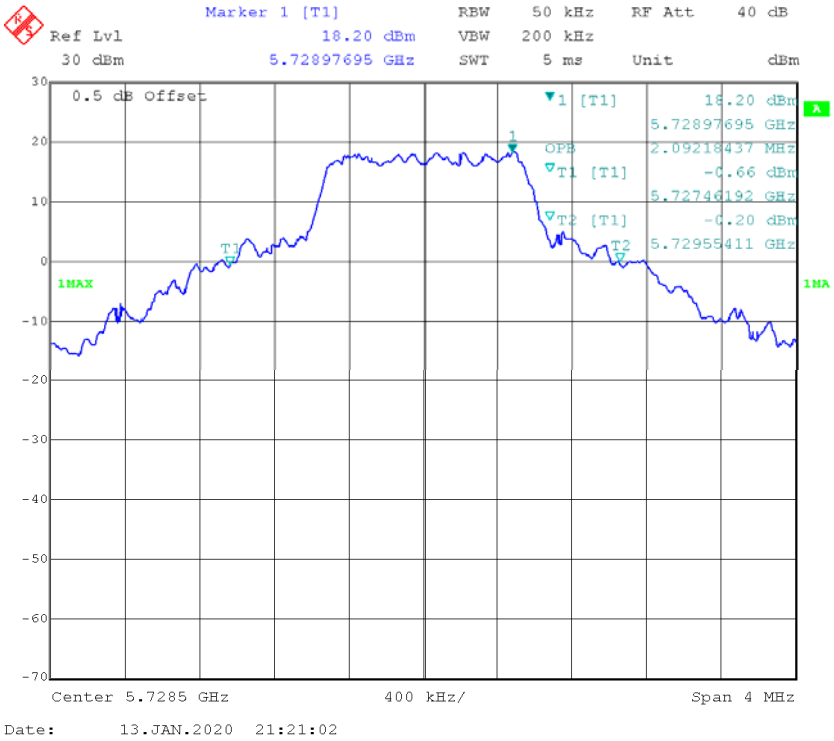


40M High Channel



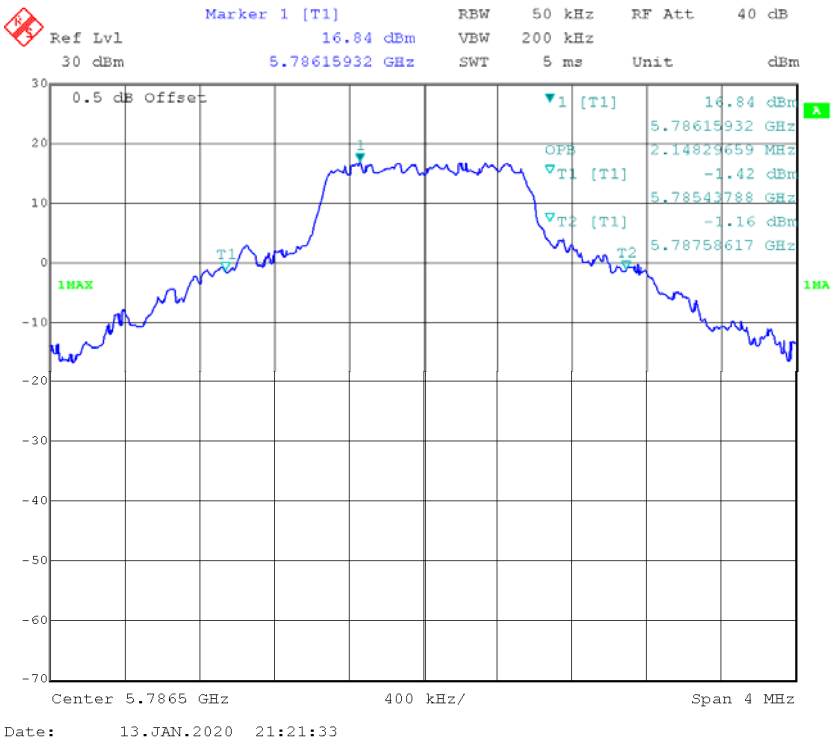
99% Occupied bandwidth:

1.4M Low Channel



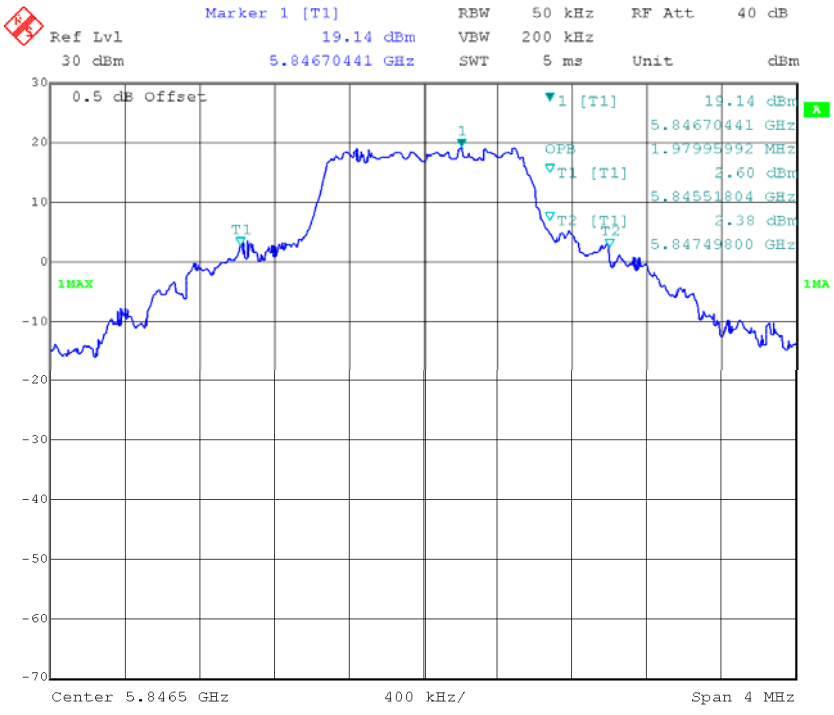
Date: 13.JAN.2020 21:21:02

1.4M Middle Channel



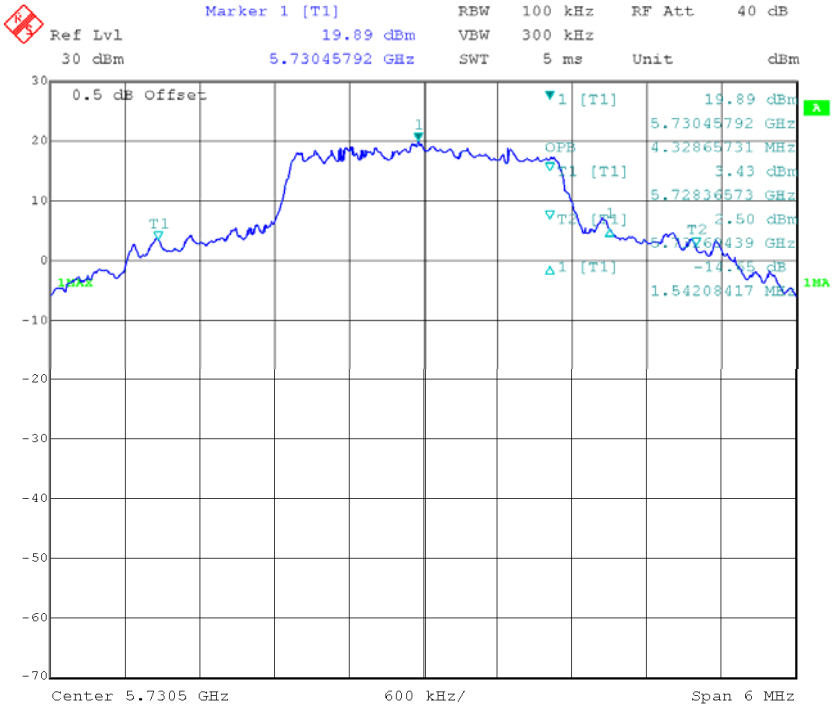
Date: 13.JAN.2020 21:21:33

1.4M High Channel



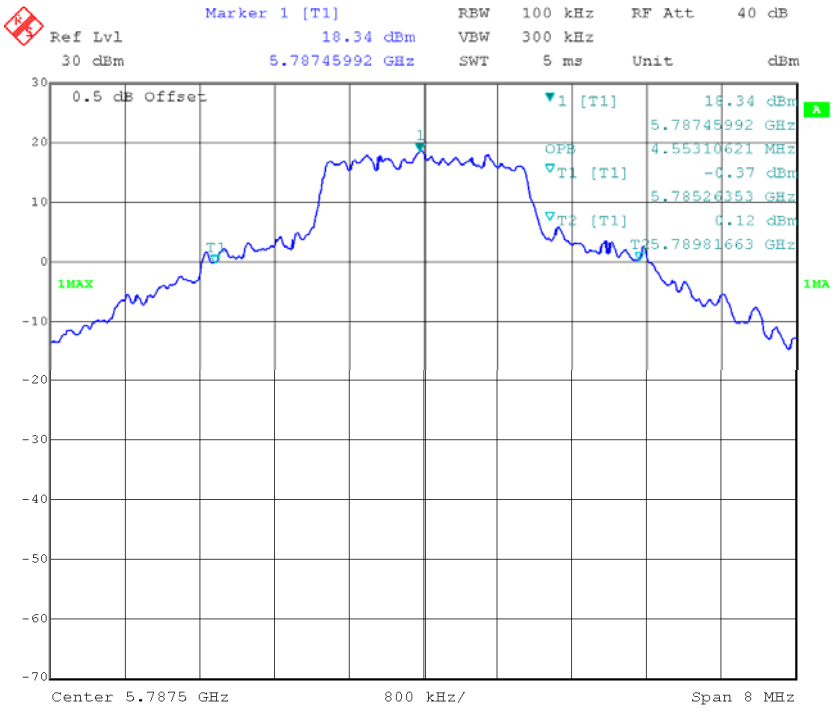
Date: 13.JAN.2020 21:22:10

3M Low Channel



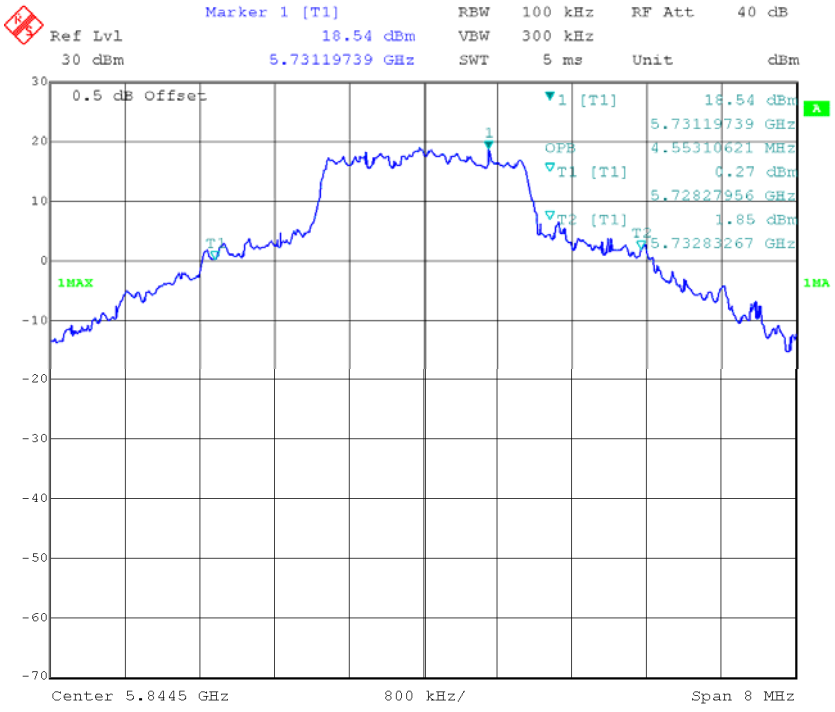
Date: 13.JAN.2020 21:17:20

3M Middle Channel



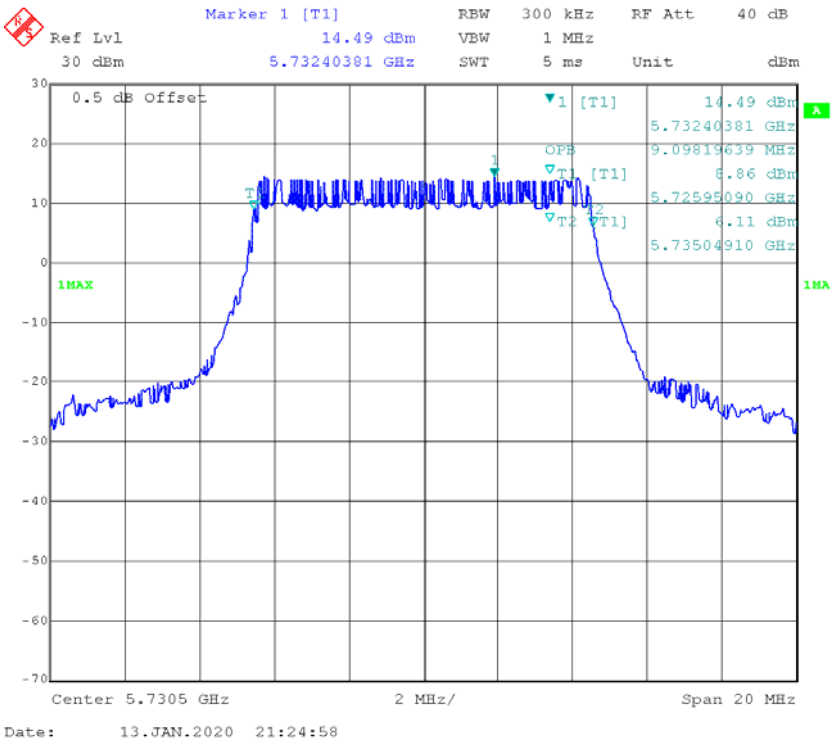
Date: 13.JAN.2020 21:18:46

3M High Channel

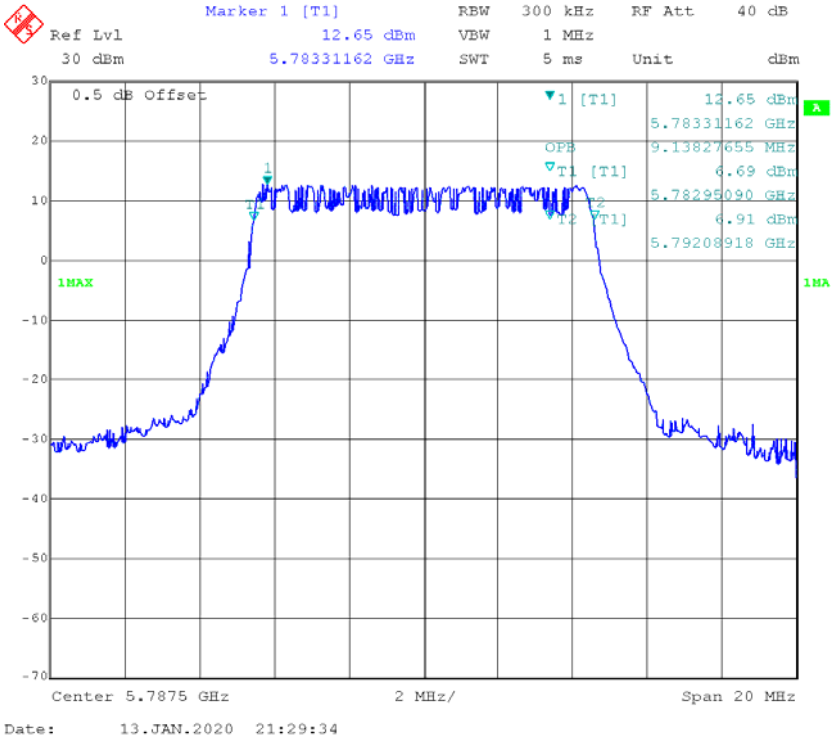


Date: 13.JAN.2020 21:19:40

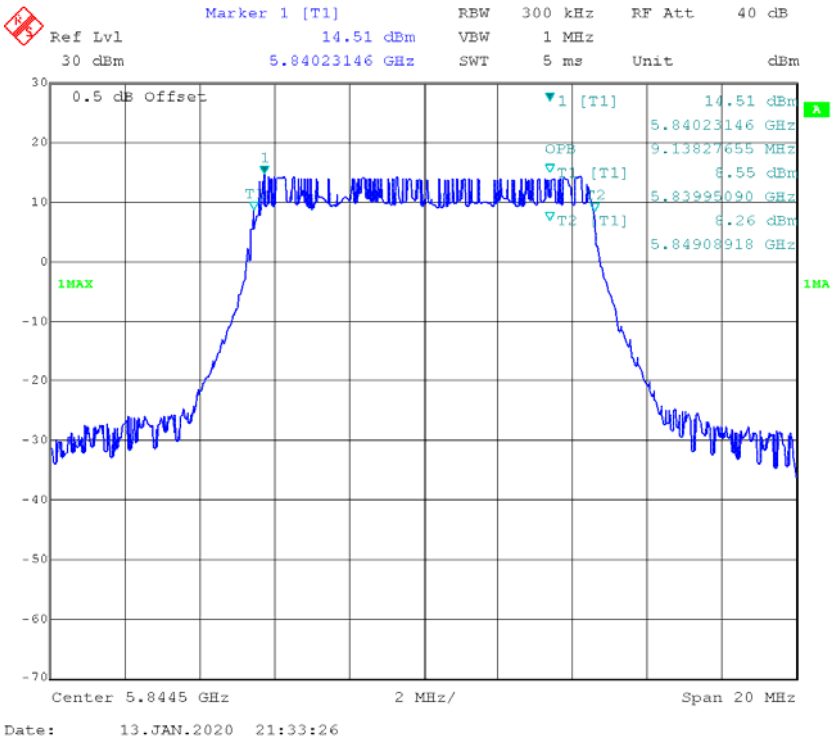
10M Low Channel



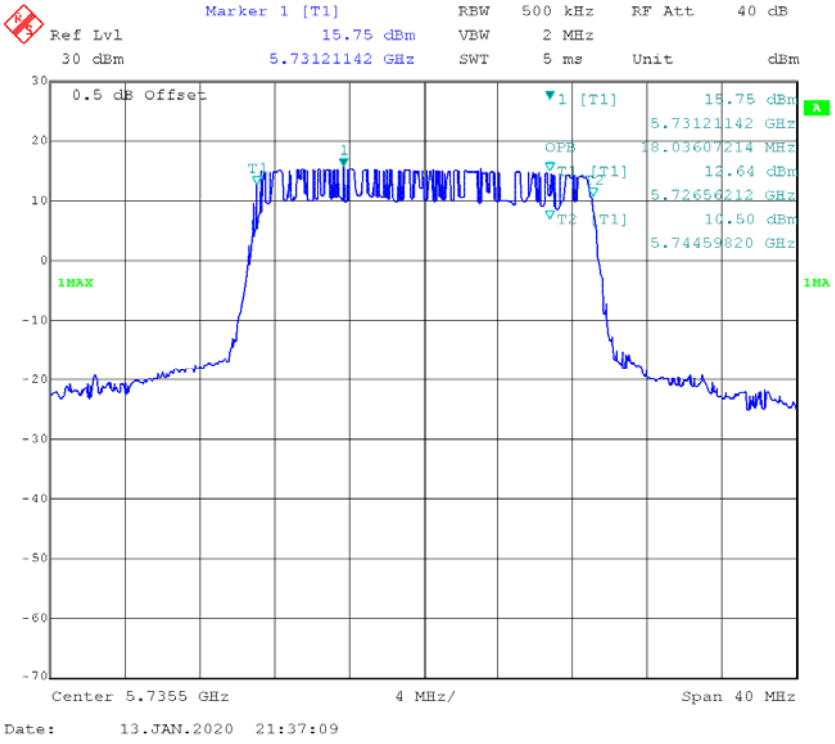
10M Middle Channel



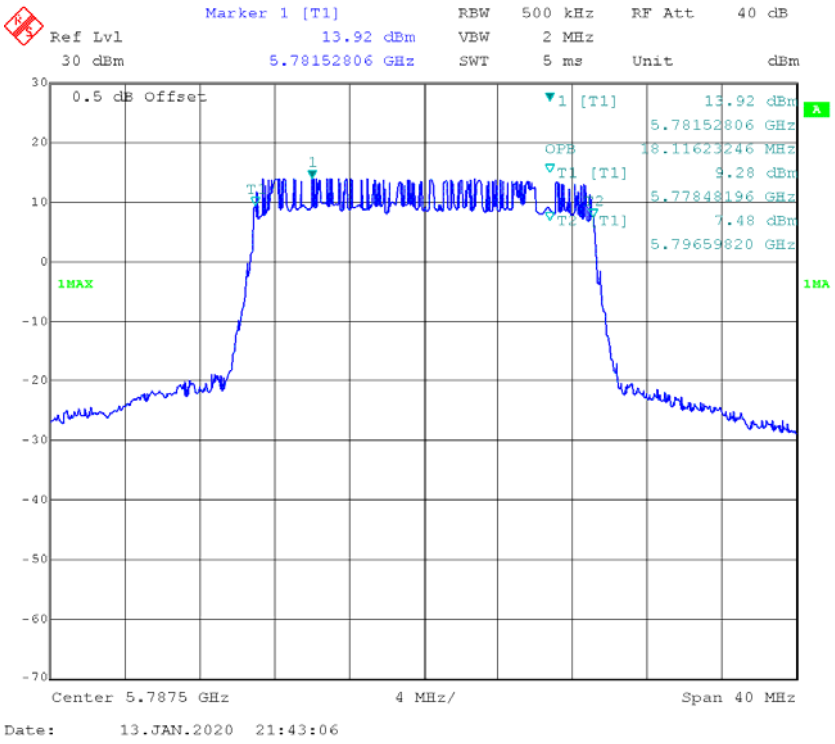
10M High Channel



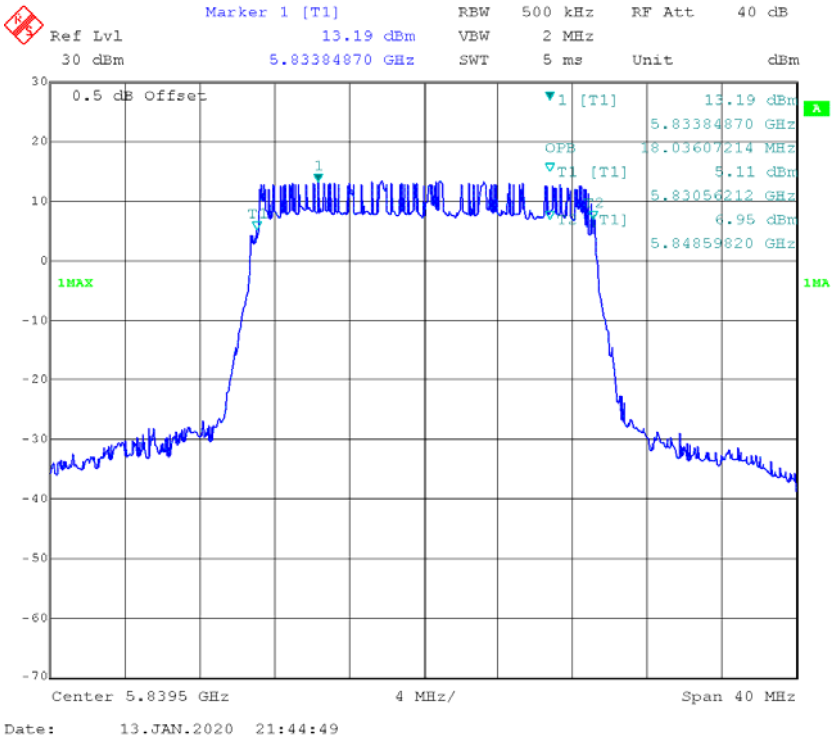
20M Low Channel



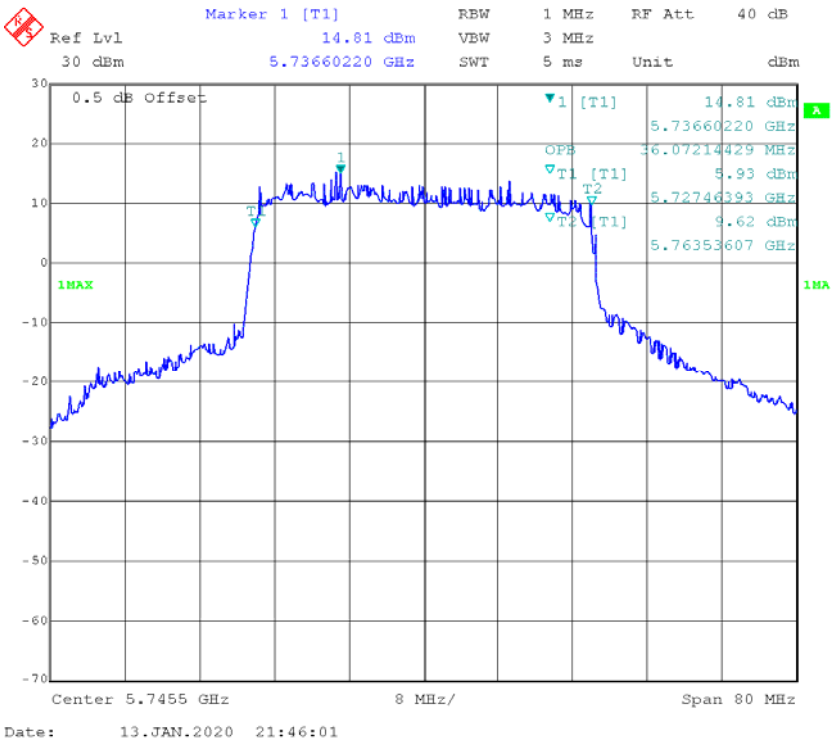
20M Middle Channel



20M High Channel

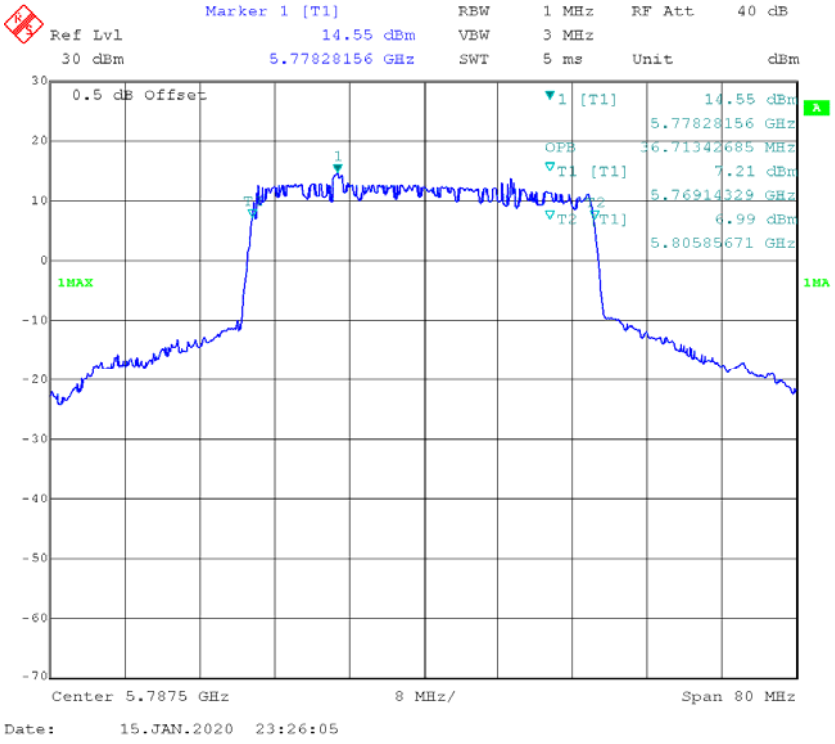


40M Low Channel



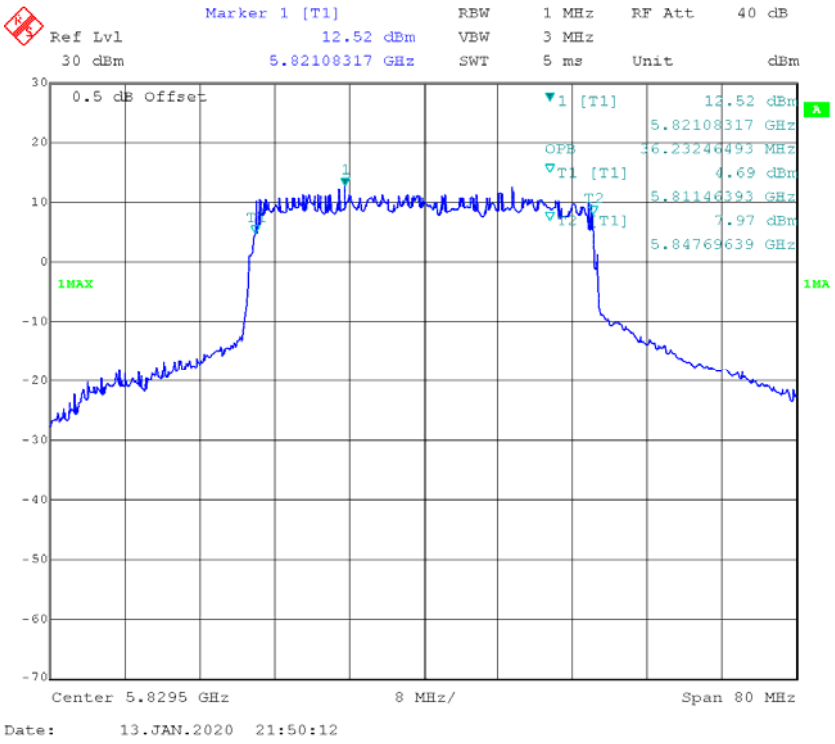
Date: 13.JAN.2020 21:46:01

40M Middle Channel



Date: 15.JAN.2020 23:26:05

40M High Channel



FCC §15.407(a) & RSS-247 CLAUSE 6.2 –MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.407(a)

(a) Power limits:

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

According to RSS-247 Clause 6.2:

Frequency band 5725-5850 MHz

6.2.4.1 Power limits

For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-SJ00-0010	C0010/02	Each time	N/A
E-Microwave	Coaxial Attenuators	EMCA10-5RN-6	OE01203239	Each time	N/A
Agilent	USB Wideband Power Sensor	U2021XA	MY5425009	2019-05-09	2020-05-09

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Test Data

Environmental Conditions

Temperature:	23.6 °C
Relative Humidity:	43%
ATM Pressure:	101.5kPa
Tester:	Severn Zhu
Test Date:	2020-01-13

Test Mode: Transmitting

Mode	Test Frequency (MHz)	Conducted Average Output Power (dBm)	
		Result	Limit
1.4M	5728.5	26.23	30
	5786.5	25.51	
	5846.5	25.78	
3M	5730.5	26.17	
	5787.5	25.85	
	5844.5	25.61	
10M	5730.5	15.83	
	5787.5	15.56	
	5844.5	15.27	
20M	5735.5	15.77	
	5787.5	15.31	
	5839.5	15.54	
40M	5745.5	15.63	
	5787.5	16.12	
	5829.5	15.67	

Note:
The maximum antenna gain is 3.45dBi in 5GHz band. Meet the RSS-247 Requirement.
The duty cycle factor have been calculated into the result.

FCC §15.407(a)& RSS-247 CLAUSE 6.2- POWER SPECTRAL DENSITY

Applicable Standard

According to FCC §15.407(a)

(a) Power limits:

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

According to RSS-247 Clause 6.2:

Frequency band 5725-5850 MHz

6.2.4.1 Power limits

For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

The maximum conducted output power shall not exceed 1 W. The output power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint[3] systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2019-09-12	2020-09-12
Unknown	Coaxial Cable	C-SJ00-0010	C0010/02	Each time	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	23.6 °C
Relative Humidity:	43%
ATM Pressure:	101.5kPa
Tester:	*Severn Zhu*
Test Date:	*2020-01-13*

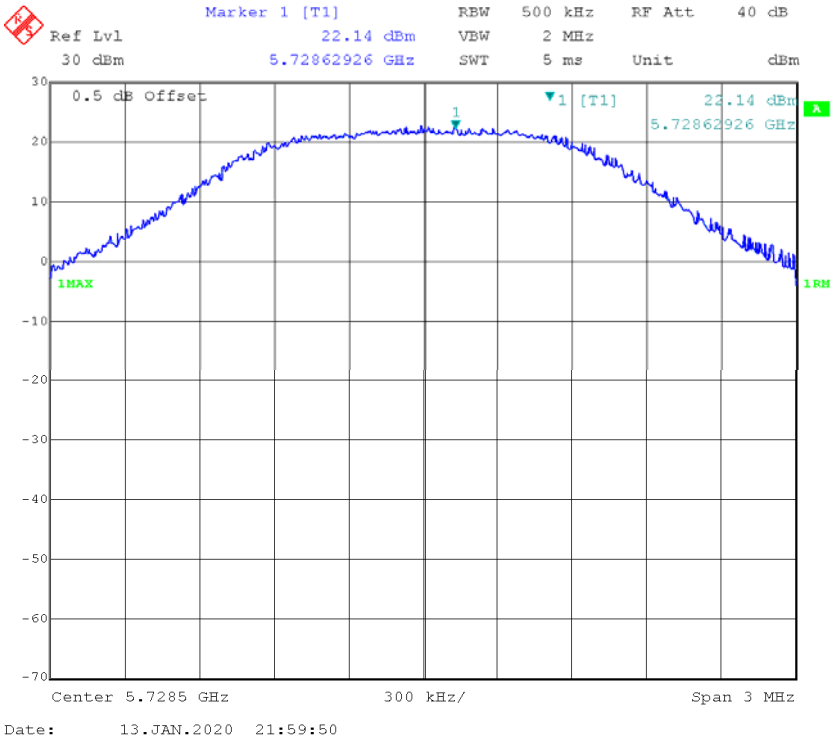
Test Result:Compliance.

Test Mode: Transmitting

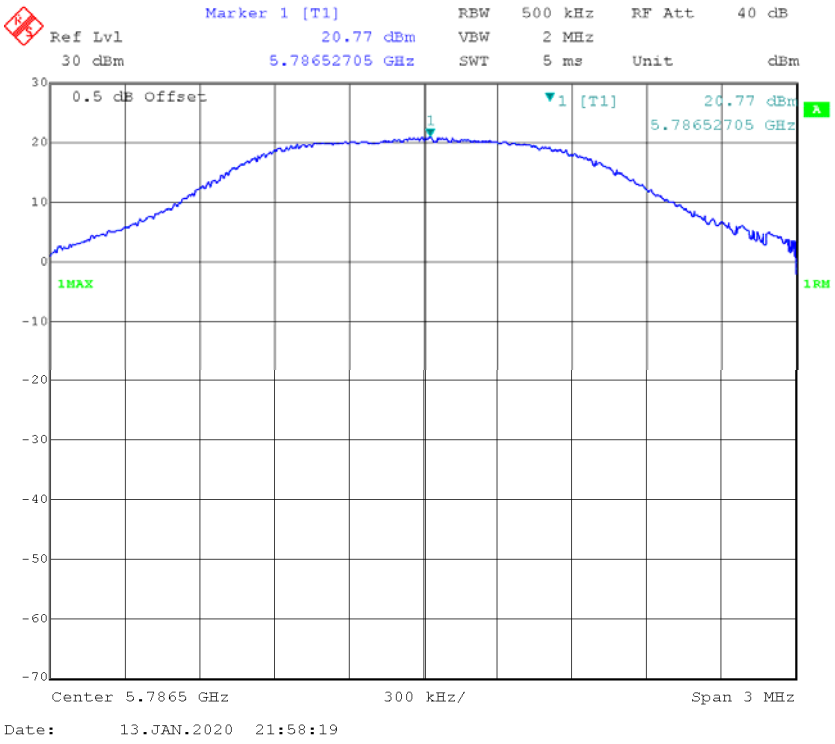
Mode	Test Frequency (MHz)	Maximum Conducted Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)
1.4M	5728.5	22.14	30
	5786.5	20.77	
	5846.5	21.03	
3M	5730.5	21.24	
	5787.5	20.21	
	5844.5	19.35	
10M	5730.5	9.51	
	5787.5	9.21	
	5844.5	8.45	
20M	5735.5	8.65	
	5787.5	7.24	
	5839.5	8.07	
40M	5745.5	8.15	
	5787.5	9.05	
	5829.5	8.18	

Method SA-3 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01was used for PSD test.

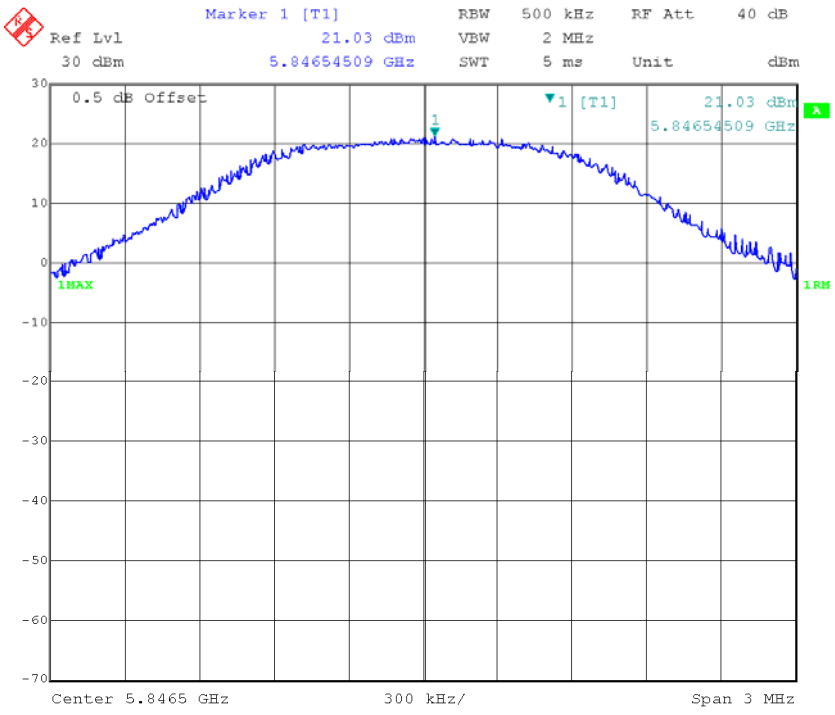
1.4M Low Channel



1.4M Middle Channel

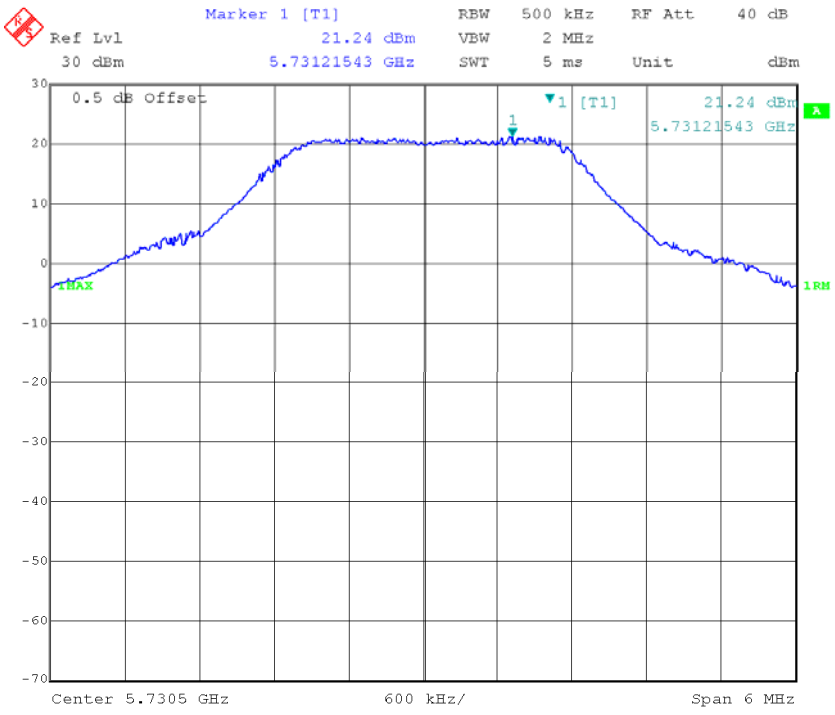


1.4M High Channel



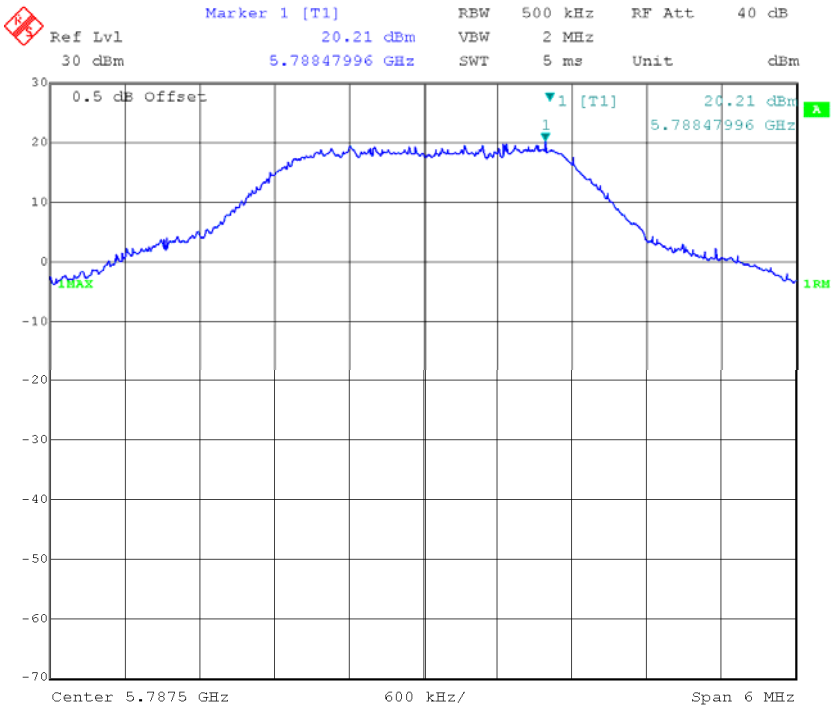
Date: 13.JAN.2020 22:00:57

3M Low Channel



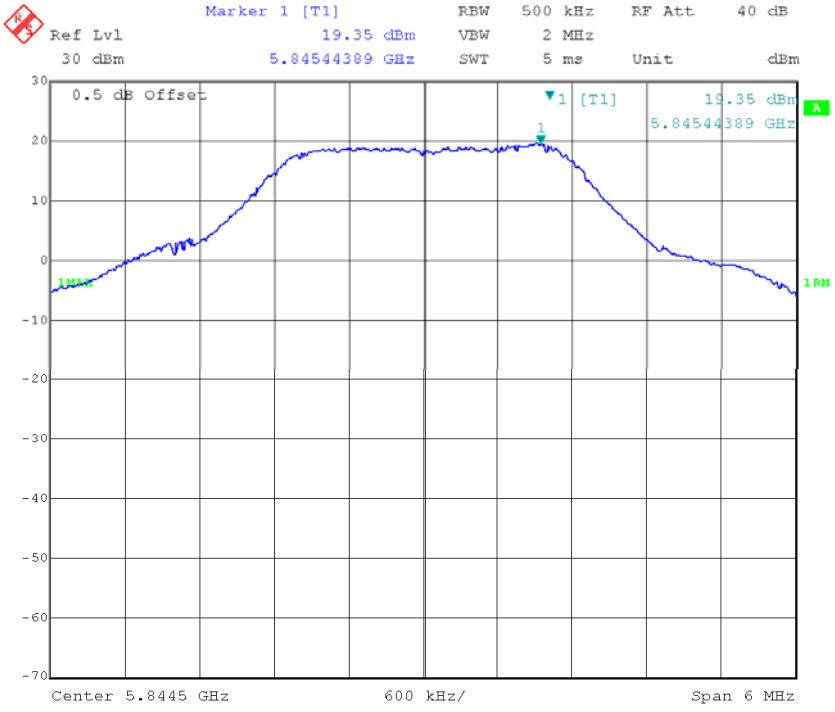
Date: 13.JAN.2020 22:04:35

3M Middle Channel



Date: 13.JAN.2020 22:02:57

3M High Channel



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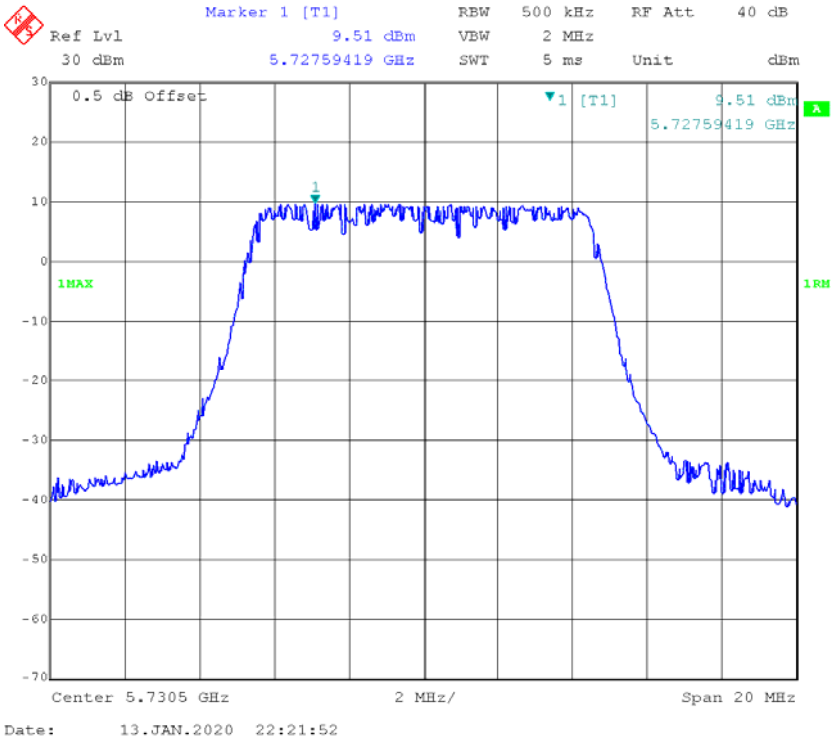
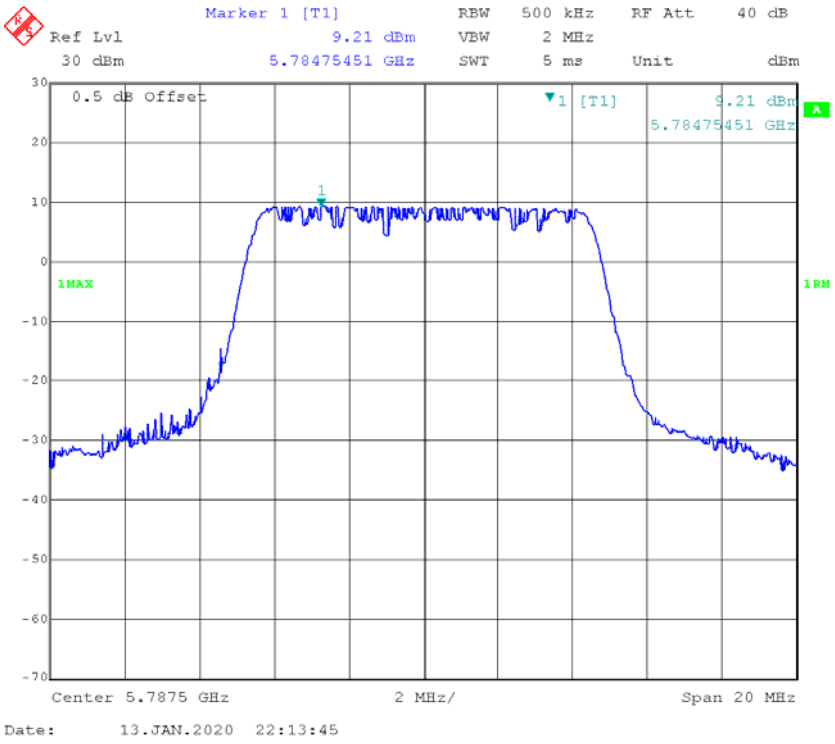
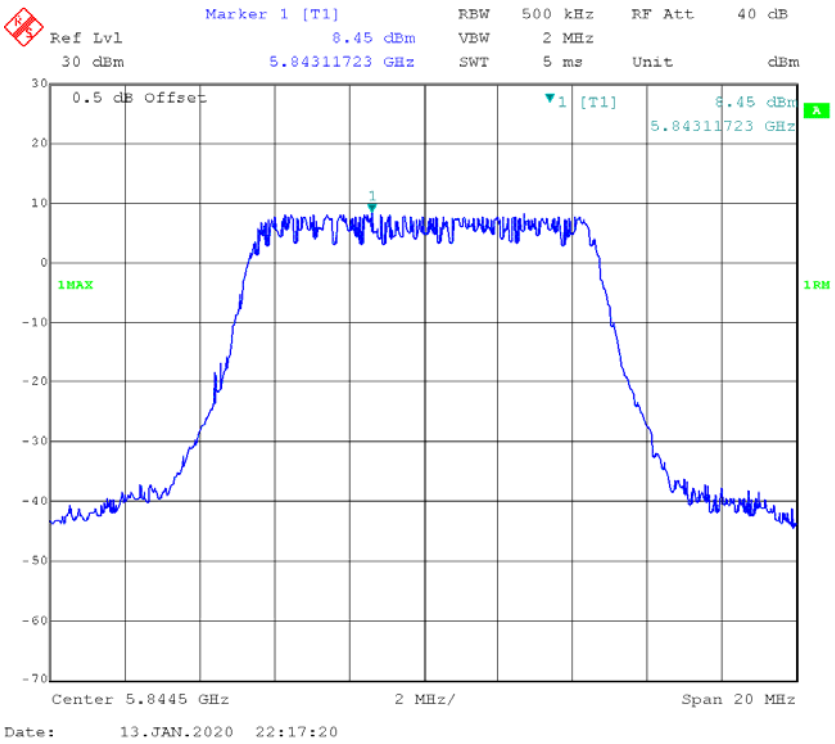
10M Low Channel



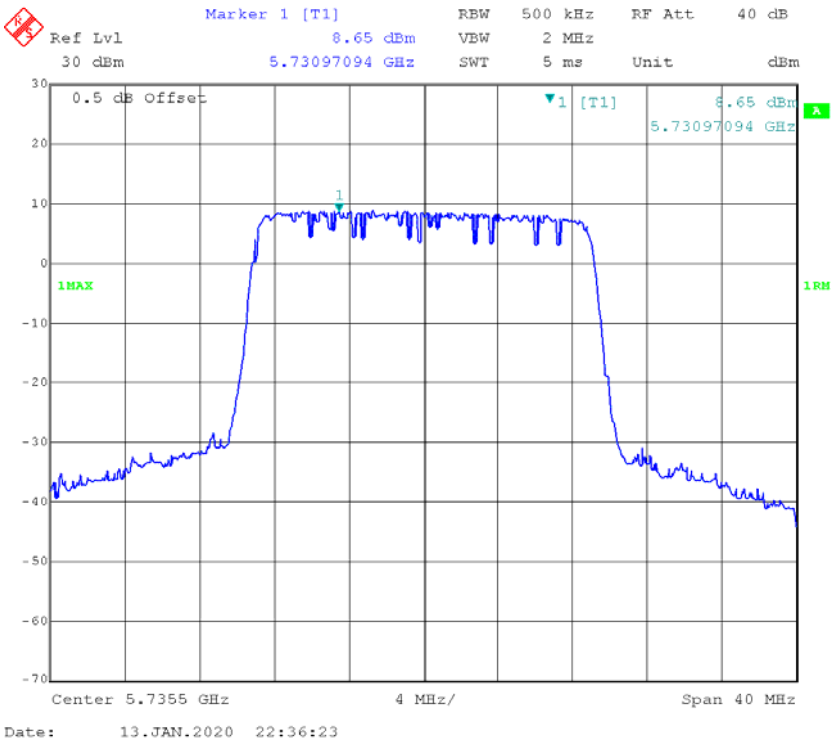
10M Middle Channel



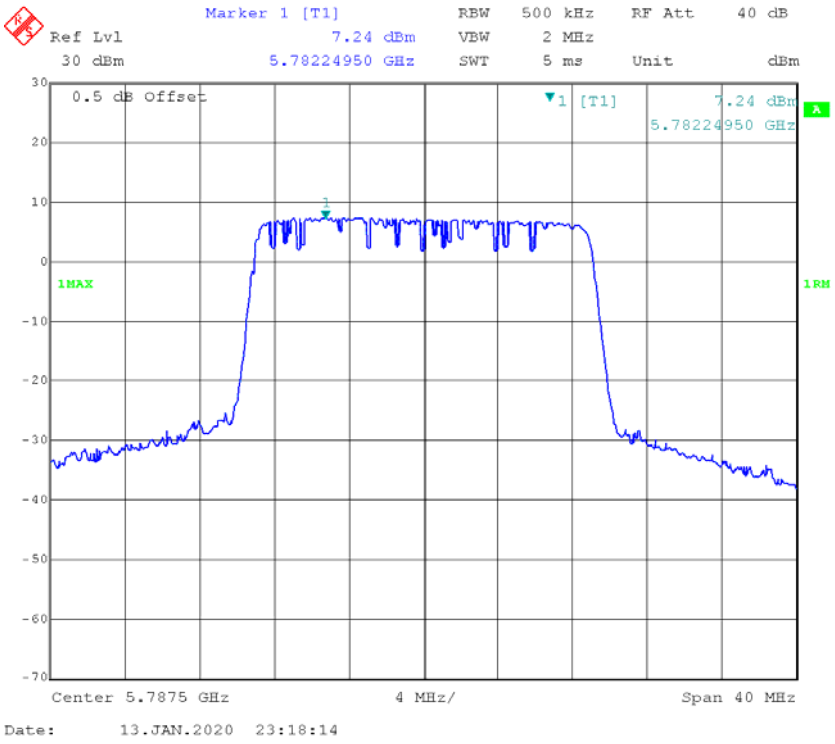
10M High Channel



20M Low Channel



20M Middle Channel



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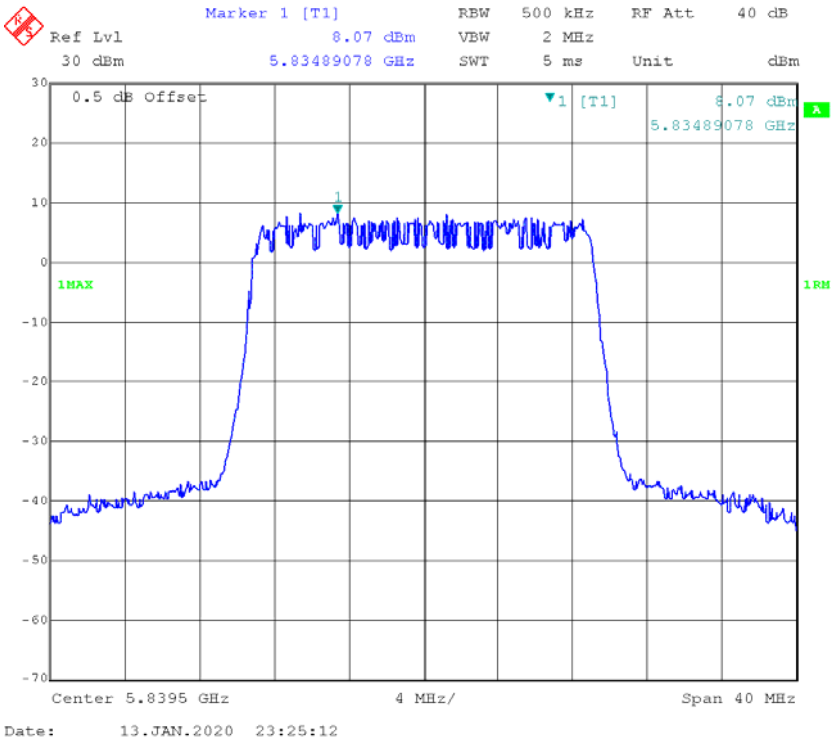

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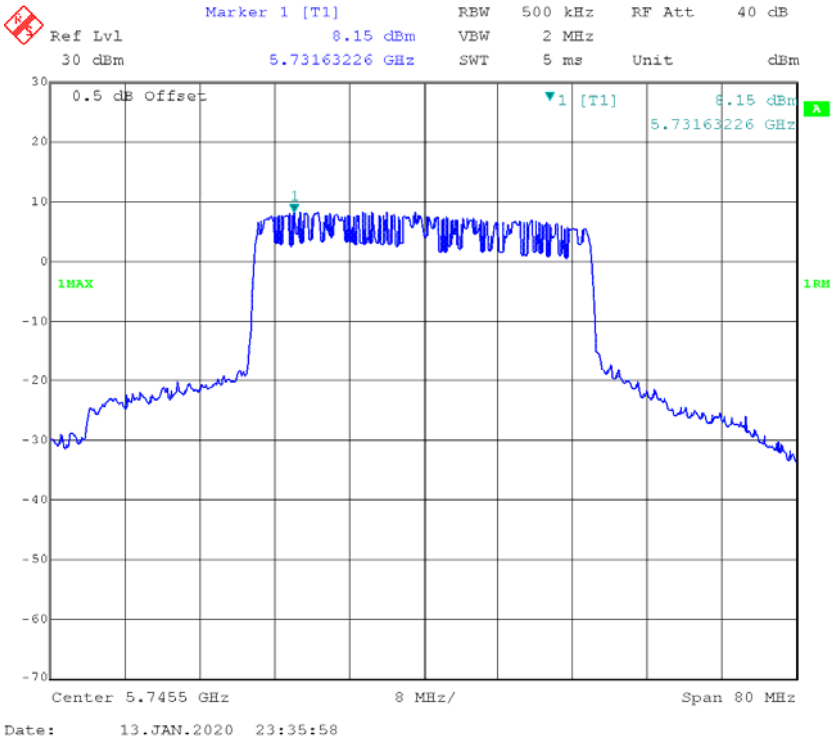
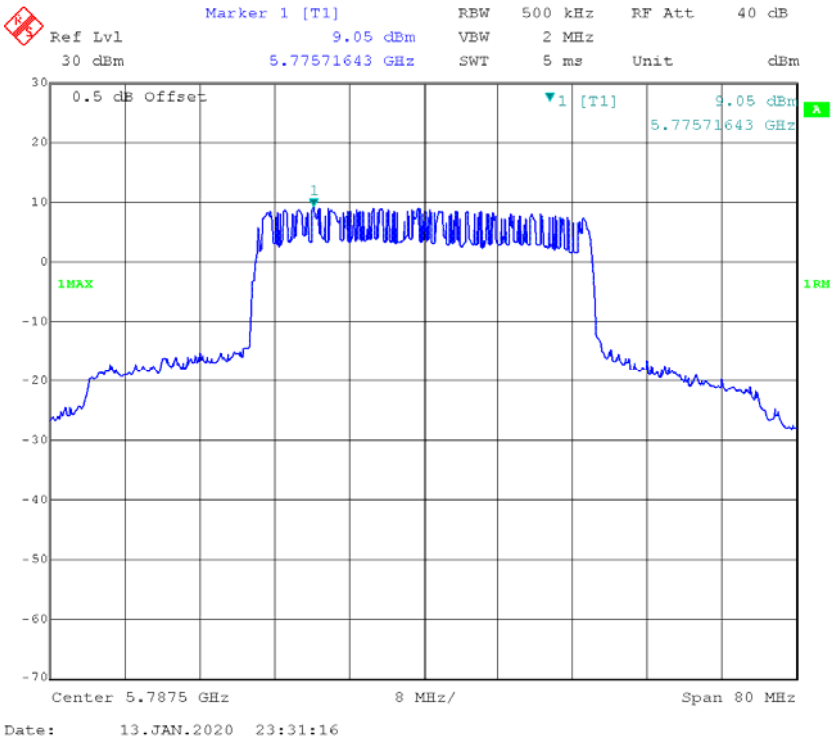
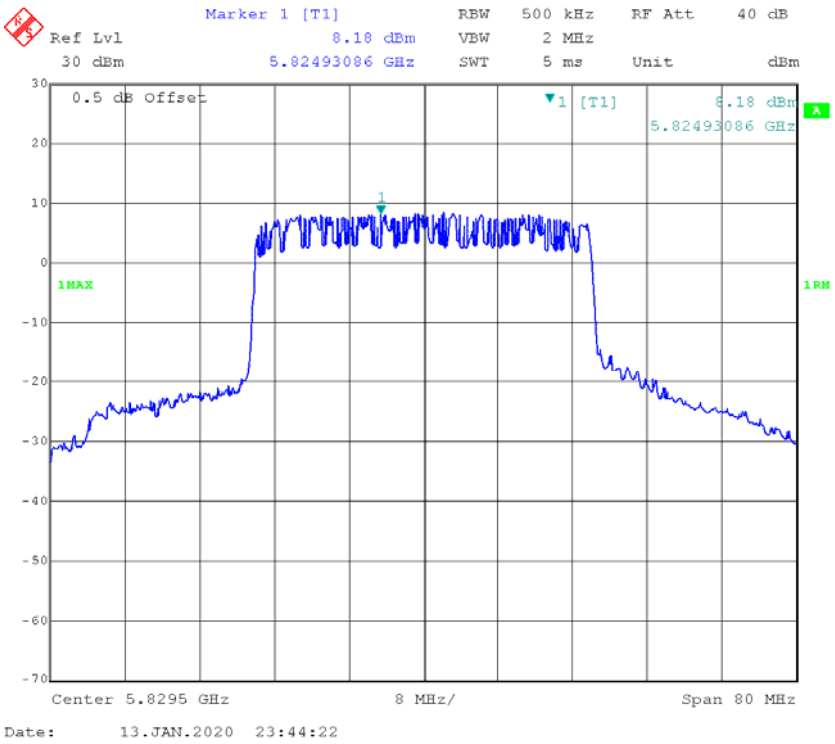


40M Middle Channel



40M High Channel



******* END OF REPORT *******