FCC PART 15.407

TEST REPORT

For

ZIONCOM ELECTRONICS (SHENZHEN) LTD.

Building A1-A2, Lantian Science and Technology Park, Xinyu Road,Xinqiao Henggang Block Shajing Street, Baoan District, Shenzhen, Guangdong, China

FCC ID: X7DIP04304

Report Type:	**Product Name:**
Original Report	AC1200 Mini Dual Band Wireless Router

Report Number:	RDG170927005-00C
Report Date:	2017-10-30
Reviewed By:	Jerry Zhang EMC 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

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The ***ZIONCOM ELECTRONICS (SHENZHEN) LTD.***'s product, model number: ***A3 (FCC ID: X7DIP04304)*** (the "EUT") in this report was a ***AC1200 Mini Dual Band Wireless Router,*** which was measured approximately: 9.1cm(L)*8.0cm(W)*3.8cm(H) without antenna, 9.1cm(L)*16.0cm(W)*20.8cm(H) with antenna, rated power: DC 9V from adapter

Adapter Information:
Model: DCP005C09080U
Input: AC100-240V, 50/60Hz, 0.2A
Output: DC9V, 0.8A

Note: The series product, model IP04304 is electrically identical with model A3, the difference between them is the model name, we selected A3 for fully testing, the detail was explained in the attached declaration letter.

**All measurement and test data in this report was gathered from production sample serial number: 170927005 (Assigned by BACL,Dongguan). The EUT was received on 2017-09-27.*

Objective

This type approval report is prepared on behalf of ***ZIONCOM ELECTRONICS (SHENZHEN) LTD.*** in accordance with Part 2-Subpart J, Part 15-Subparts A, and E of the Federal Communications Commission's rules.

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.

Related Submittal(s)/Grant(s)

FCC Part 15C DTS submissions with FCC ID: X7DIP04304.

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 v01r04 .

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

Bay Area Compliance Laboratories Corp. (Dongguan) has been accredited to ISO/IEC 17025 by CNAS(Lab code: L5662). And accredited to ISO/IEC 17025 by NVLAP(Test Laboratory Accreditation Certificate Number 500069-0), the FCC Designation No. CN5002 under the KDB 974614 D01.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Bay Area Compliance Laboratories Corp. (Dongguan) was registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

The system support 802.11a/n ht20/n ht40/ac vht20/ac vht40/ac vht80, the vh20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.

For 5150~5250 MHz band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

802.11a, 802.11n ht20 and 802.11ac20 modes were tested with Channel 36, 40 and 48,
802.11n ht40 and 802.11ac40 modes were tested with Channel 38 and 46.
802.11ac80 mode was tested with channel 42

For 5725~5850MHz band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
155	5775	165	5825

802.11a, 802.11n ht20 and 802.11ac20 modes were tested with Channel 149, 157 and 165,
802.11n ht40 and 802.11ac40 modes were tested with Channel 151 and 159.
802.11ac80 mode was tested with channel 155.

The device supports SISO and MIMO at 802.11n ht20/n ht40/AC80 mode, per pre-test, MIMO mode was the worst and reported.

EUT Exercise Software

The software “MT76xxE_AP” was used for testing, which was provided by manufacturer. The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all date rates bandwidths, and modulations. The maximum power was configured as below table, that provided by the manufacturer:

5125-5250 MHz:

Test Mode	Test Software Version	MT76xxE_AP		
802.11a	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	6Mbps	6Mbps	6Mbps
	Power Lever Setting	0D/0D	0D/0D	0D/0E
802.11n ht20	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	4/6	5/4	6/6
802.11n ht40	Test Frequency	5190MHz	/	5230MHz
	Data Rate	MCS0	/	MCS0
	Power Level Setting	2/3	/	5/3
802.11ac ht80	Test Frequency	/	5210MHz	/
	Data Rate	/	NSS1 MCS0	/
	Power Level Setting	/	1/1	/

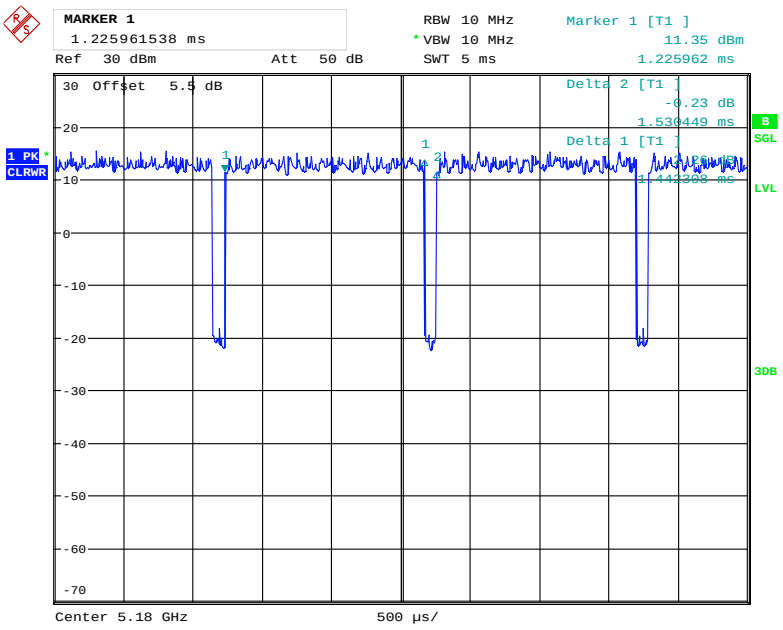
5725-5850MHz:

Test Mode	Test Software Version	MT76xxE_AP		
802.11a	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	6Mbps	6Mbps	6Mbps
	Power Level Setting	0A/8	0A/8	0A/8
802.11n ht20	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	2/1	3/1	2/1
802.11n ht40	Test Frequency	5755MHz	/	5795MHz
	Data Rate	MCS0	/	MCS0
	Power Level Setting	2/1	/	3/1
802.11 ac80	Test Frequency	/	5775MHz	/
	Data Rate	/	NSS1 MCS0	/
	Power Level Setting	/	0/0	/

The duty cycle as below:

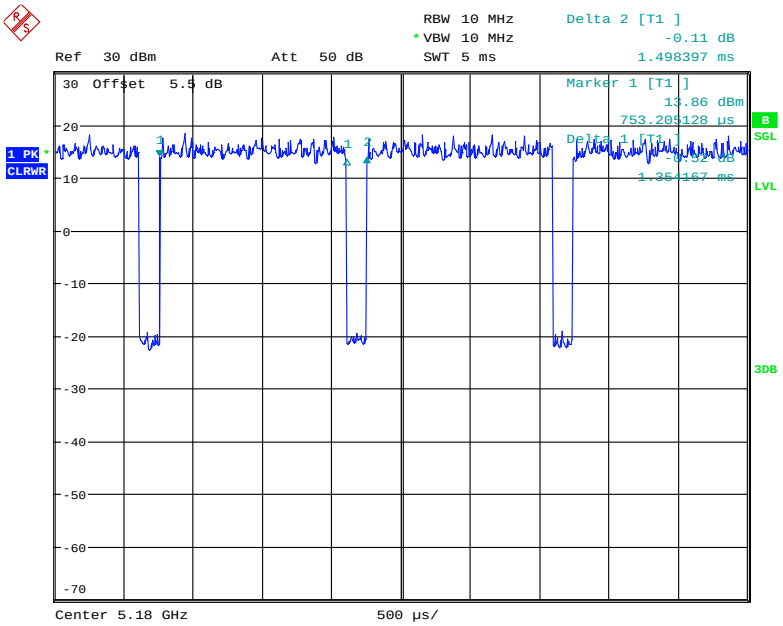
Mode	T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)	Duty cycle Factor (10*log(1/x))
802.11 a	1.44	1.53	94%	0.26
802.11n ht20	1.35	1.50	90%	0.46
802.11n ht40	0.673	0.808	83%	0.79
802.11ac80	0.337	0.444	76%	1.20

802.11a



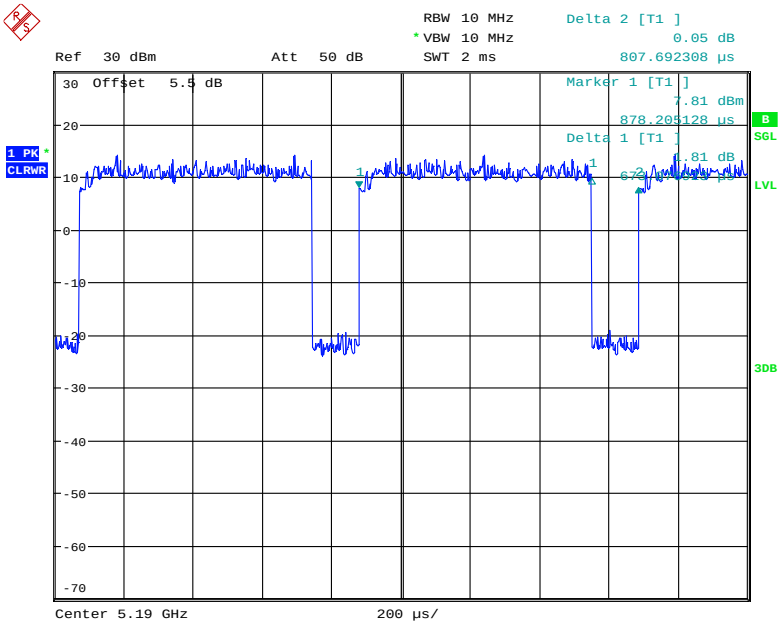
Date: 28.OCT.2017 20:19:17

802.11n ht20



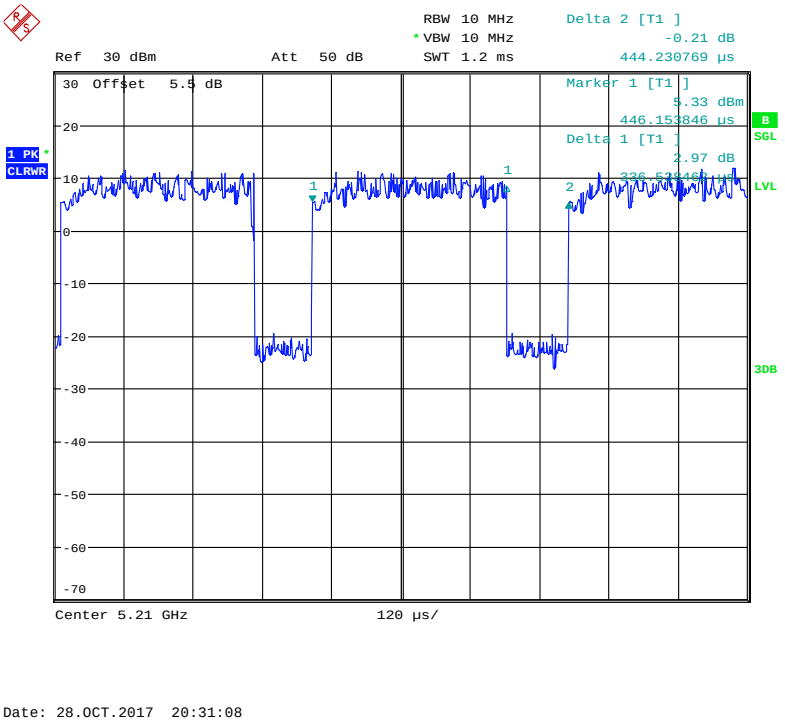
Date: 28.OCT.2017 20:20:42

802.11n ht40



Date: 28.OCT.2017 20:24:46

802.11 ac80



Equipment Modifications

No modification was made to the EUT.

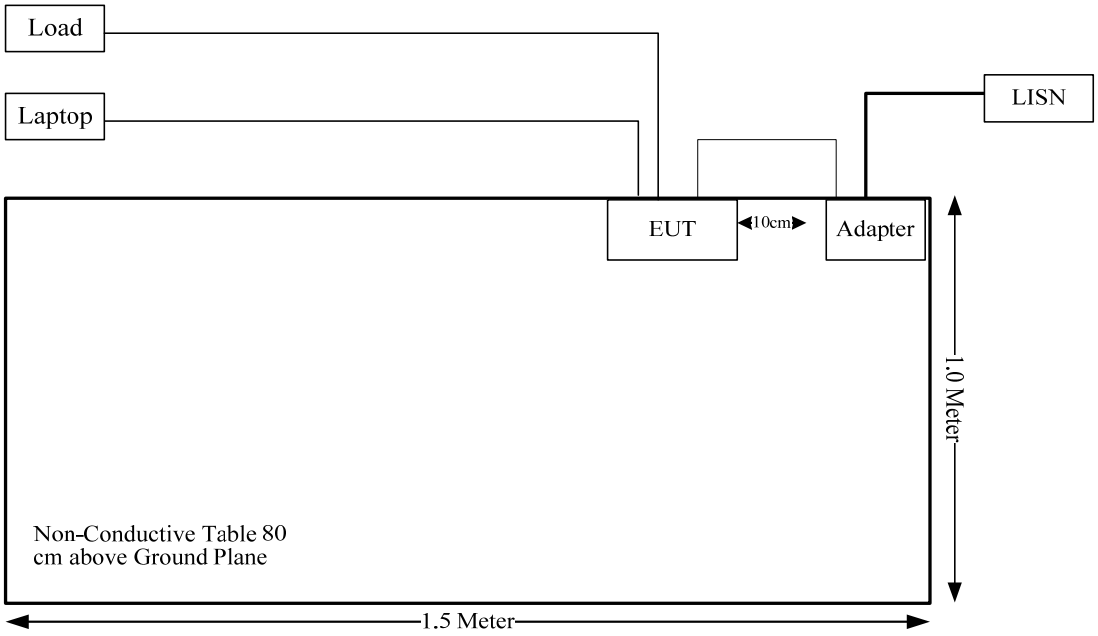
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
N/A	Load	N/A	N/A

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	yes	No	10.0	RJ45 Port of Laptop	EUT
RJ45 Cable*2	yes	No	10.0	Load	EUT
Adapter Cable	no	no	1.3	Adapter	EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091	Maximum Permissable Exposure (MPE)	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b)	Out Of Band Emissions	Compliance
§15.407(a) (e)	Emission Bandwidth	Compliance
§15.407(g)	Frequency Stability	Compliance
§15.407(a)	Conducted Transmitter Output Power	Compliance
§15.407 (a)	Power Spectral Density	Compliance

FCC §15.407 (f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

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.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
	(dBi)	(numeric)	(dBm)	(mW)			
2412-2462	5	3.16	27	501.19	20.00	0.3155	1.0
5180-5825	5	3.16	17	50.12	20.00	0.0315	1.0

The 2.4GHz band and 5GHz band can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$=S_{2.4}/S_{limit-2.4} + S_5/S_{limit-5}$

$=0.3155/1+0.0315/1$

$=0.347$

< 1.0

Result: The device meet FCC MPE at 20 cm distance

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 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 use of a standard antenna jack or electrical connector is prohibited.
And according to FCC 47 CFR section 15.407 (a)(1),if transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT have 2 external antennas for 2.4G and 5GHz band, which was permanently attached to the Unit, both antenna gains are 5dBi in 2.4G and 5GHz range. Please refer to the EUT photo.

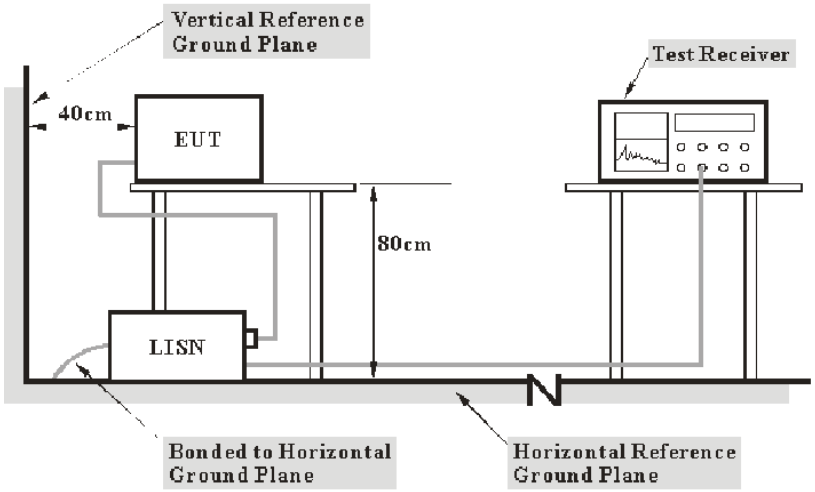
Result: Compliance.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), §15.407(b) (6).

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.

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
R&S	EMI Test Receiver	ESCS 30	830245/006	2016-12-08	2017-12-08
R&S	L.I.S.N	ESH2-Z5	892107/021	2017-09-01	2018-09-01
R&S	Two-line V-network	ENV 216	3560.6550.12	2016-12-08	2017-12-08
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
Unknown	Coaxial Cable	2m	Con-1	2017-09-01	2018-09-01

*** 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 adapter 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

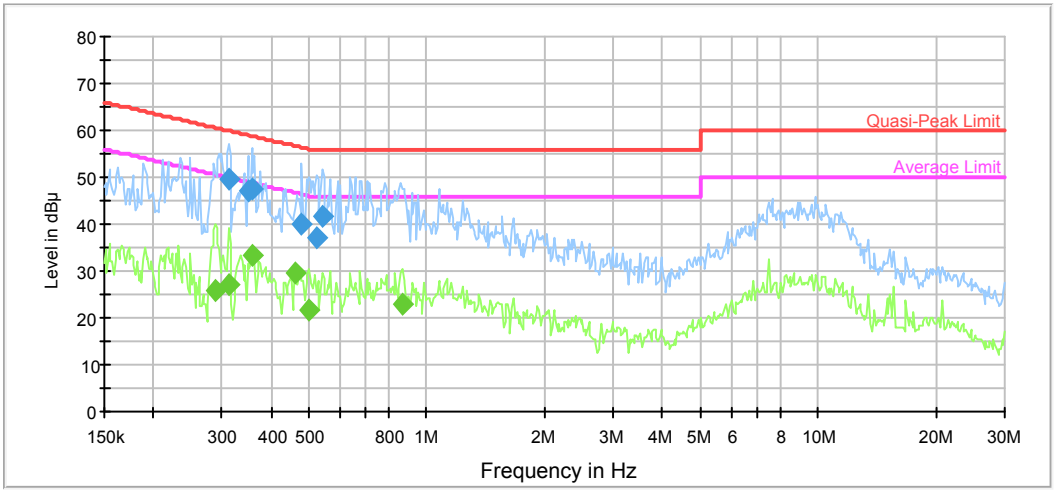
Environmental Conditions

Temperature:	26.1 °C
Relative Humidity:	48 %
ATM Pressure:	100.6 kPa

The testing was performed by Alex You on 2017-10-10.

Test Mode: Transmitting

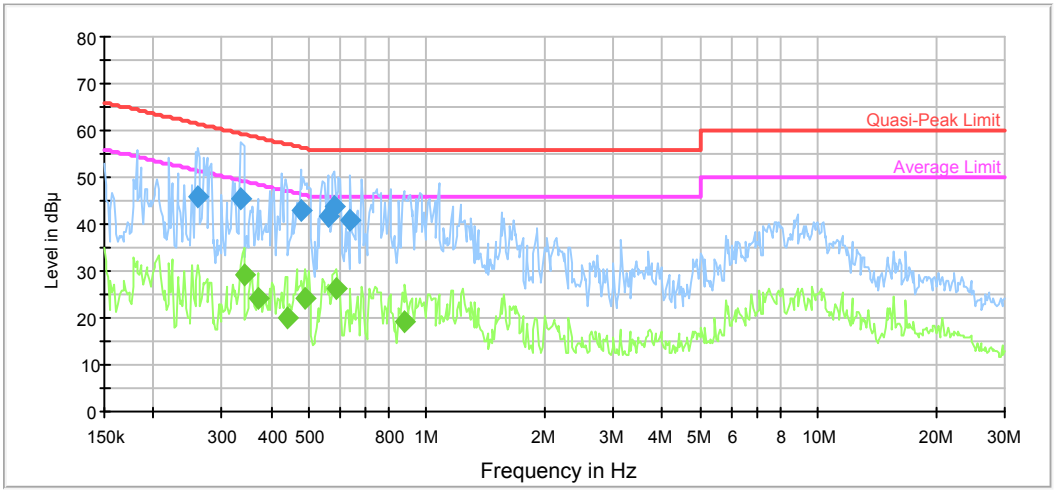
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.312220	49.7	9.000	L1	10.1	10.2	59.9	Compliance
0.349066	47.0	9.000	L1	10.0	12.0	59.0	Compliance
0.357511	47.4	9.000	L1	10.0	11.4	58.8	Compliance
0.480097	40.0	9.000	L1	9.9	16.3	56.3	Compliance
0.524077	37.0	9.000	L1	9.9	19.0	56.0	Compliance
0.541050	41.8	9.000	L1	9.9	14.2	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.288307	26.0	9.000	L1	10.2	24.6	50.6	Compliance
0.312220	27.2	9.000	L1	10.1	22.7	49.9	Compliance
0.357511	33.2	9.000	L1	10.0	15.6	48.8	Compliance
0.461346	29.8	9.000	L1	9.9	16.9	46.7	Compliance
0.499611	21.7	9.000	L1	9.9	24.3	46.0	Compliance
0.865782	23.0	9.000	L1	9.8	23.0	46.0	Compliance

AC120 V, 60 Hz, Neutral:



requency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.259937	45.8	9.000	N	10.3	15.6	61.4	Compliance
0.335433	45.5	9.000	N	10.1	13.8	59.3	Compliance
0.476287	42.7	9.000	N	9.9	13.7	56.4	Compliance
0.558572	41.9	9.000	N	9.9	14.1	56.0	Compliance
0.581275	43.8	9.000	N	9.8	12.2	56.0	Compliance
0.639600	40.6	9.000	N	9.8	15.4	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.340821	29.2	9.000	N	10.1	20.0	49.2	Compliance
0.369089	24.0	9.000	N	10.0	24.5	48.5	Compliance
0.439808	20.2	9.000	N	9.9	26.9	47.1	Compliance
0.487810	24.2	9.000	N	9.9	22.0	46.2	Compliance
0.585926	26.4	9.000	N	9.8	19.6	46.0	Compliance
0.879690	19.2	9.000	N	9.8	26.8	46.0	Compliance

FCC §15.209, §15.205 & §15.407(b) –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:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(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.

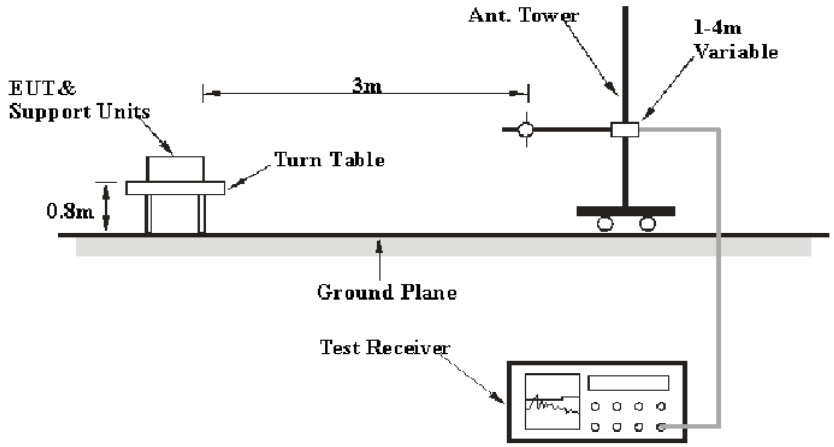
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(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.

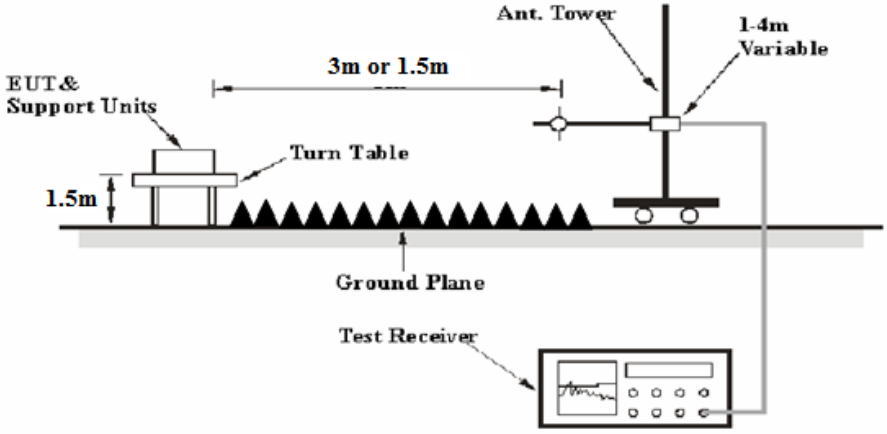
(7) The provisions of §15.205 apply to intentional radiators operating under this section.

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.407 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:

30MHz-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

Test Procedure

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

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

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 v01r04, emission shall be computed as: E [dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

Corrected Amplitude & Margin Calculation

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 = Extrapolation result -Limit

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2017-09-01	2018-08-31
Sunol Sciences	Antenna	JB3	A060611-1	2014-11-06	2017-11-06
HP	Amplifier	8447D	2727A05902	2017-09-05	2018-09-05
R&S	Spectrum Analyzer	FSU 26	200256	2016-12-08	2017-12-08
R&S	Spectrum Analyzer	FSP 38	100478	2016-12-08	2017-12-08
ETS-Lindgren	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-02 1304	2017-06-16	2020-06-15
Ducommun Technolagies	Horn Antenna	ARH-2823-02	1007726-01 1302	2016-11-18	2019-11-18
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2017-06-27	2018-06-27
MITEQ	Amplifier	AFS42-00101800-25-S-42	2001271	2017-09-05	2018-09-05
Unknown	Coaxial Cable	Chamber A-1	4m	2017-09-05	2018-09-05
Unknown	Coaxial Cable	Chamber B-1	0.75m	2017-09-05	2018-09-05
Unknown	Coaxial Cable	Chamber A-2	10m	2017-09-05	2018-09-05
Unknown	Coaxial Cable	Chamber B-2	8m	2017-09-05	2018-09-05
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	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

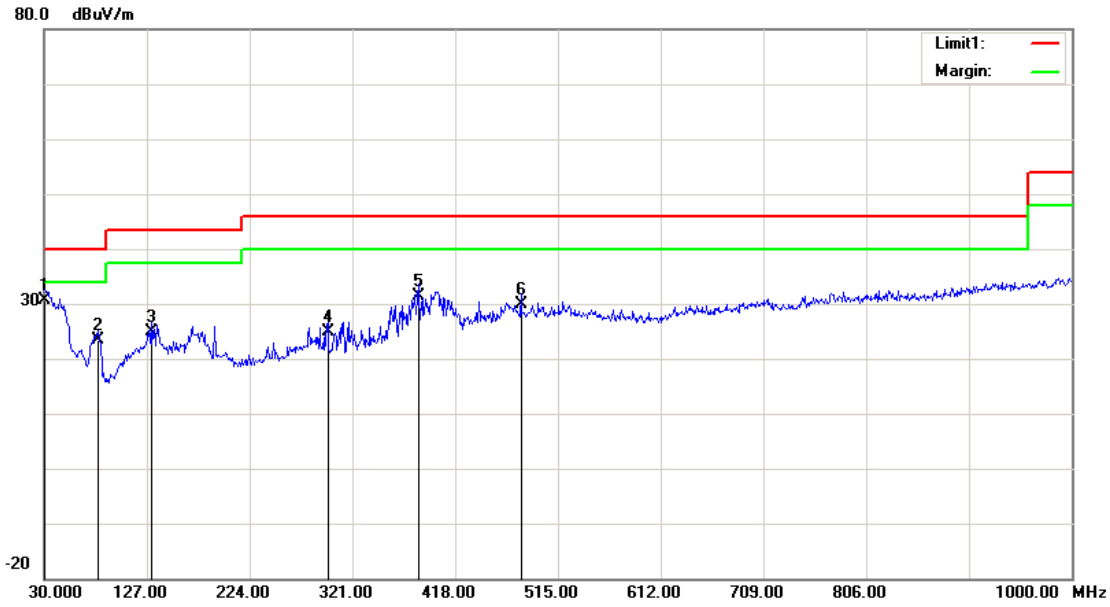
Temperature:	23.3 °C
Relative Humidity:	33%
ATM Pressure:	101.4 kPa

** The testing was performed by Sunny Cen on 2017-10-25.*

Test Mode: Transmitting

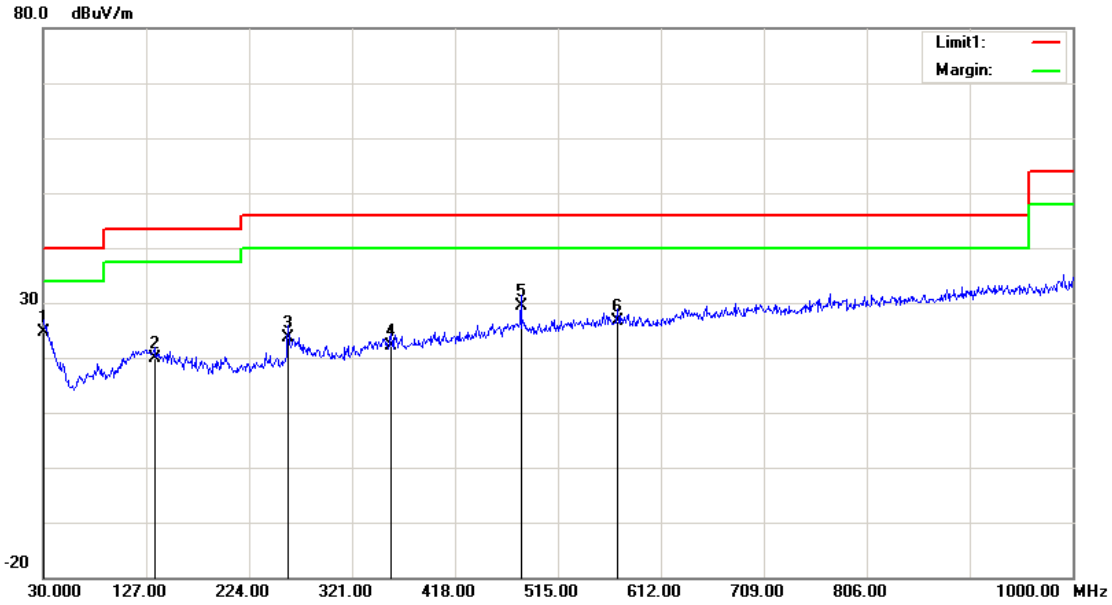
1) Below 1GHz(802.11a 5785MHz was the worst):

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	29.62	QP	1.08	30.70	40.00	9.30
80.4400	34.43	QP	-11.13	23.30	40.00	16.70
130.8800	29.99	QP	-5.19	24.80	43.50	18.70
297.7200	29.25	QP	-4.35	24.90	46.00	21.10
383.0800	34.11	QP	-2.61	31.50	46.00	14.50
480.0800	30.81	QP	-1.01	29.80	46.00	16.20

Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	23.62	QP	1.08	24.70	40.00	15.30
134.7600	25.40	QP	-5.50	19.90	43.50	23.60
260.8600	28.82	QP	-5.12	23.70	46.00	22.30
357.8600	25.19	QP	-2.99	22.20	46.00	23.80
480.0800	30.41	QP	-1.01	29.40	46.00	16.60
571.2600	26.14	QP	0.46	26.60	46.00	19.40

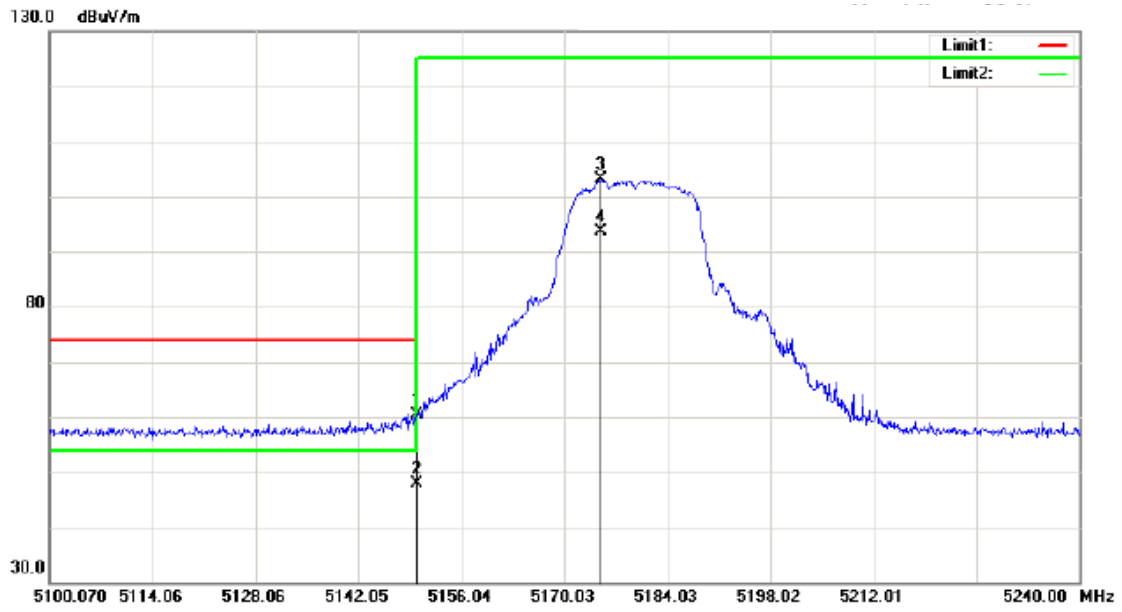
2) 1GHz-40GHz:

5150-5250MHz, 802.11a:

A mode

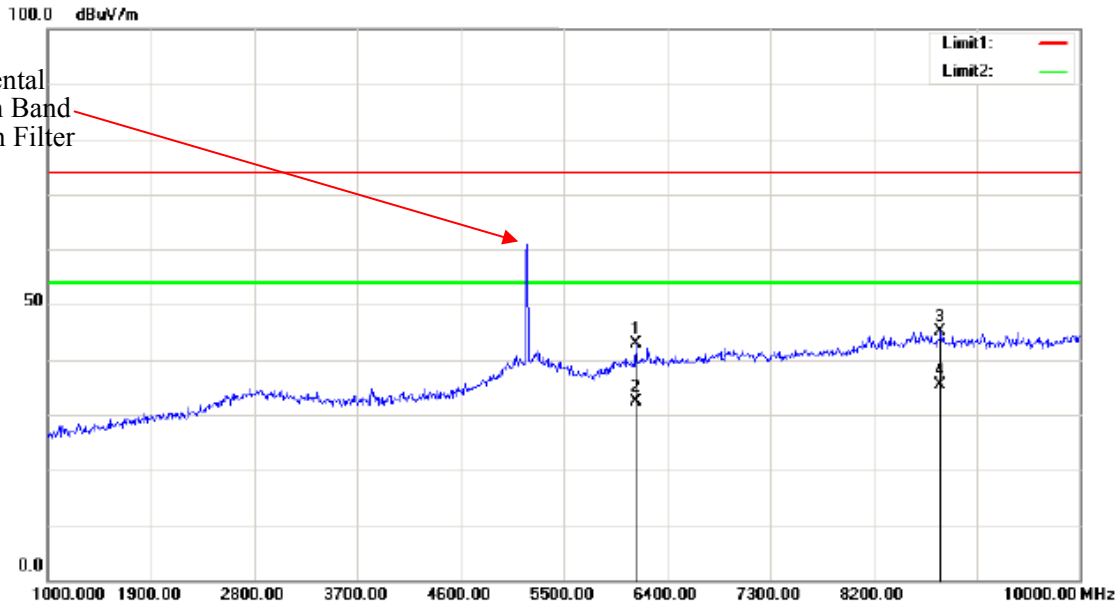
Low Channel

Horizontal

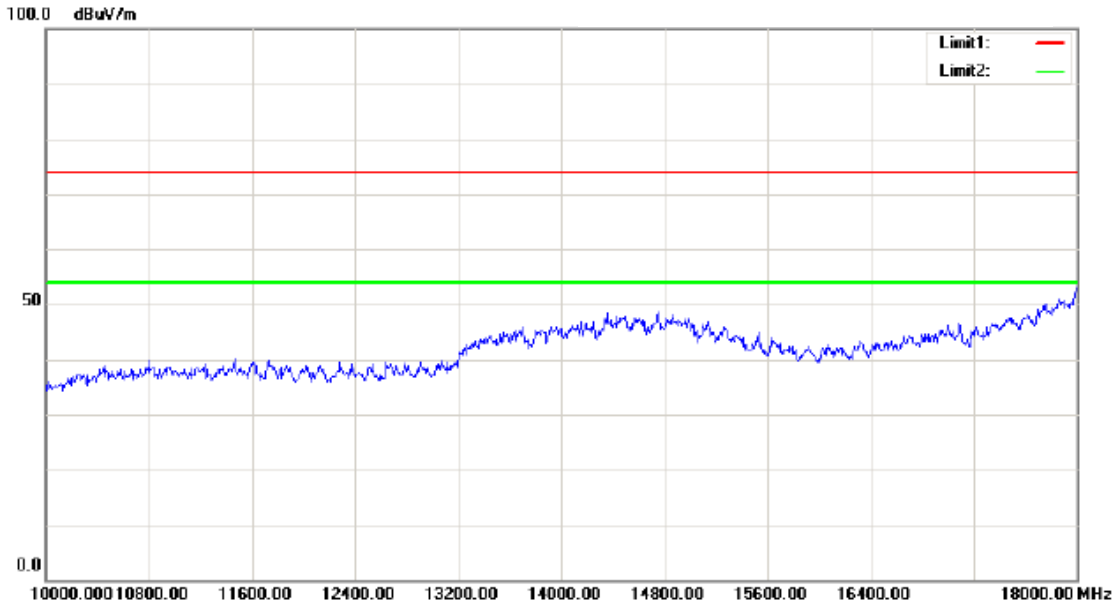


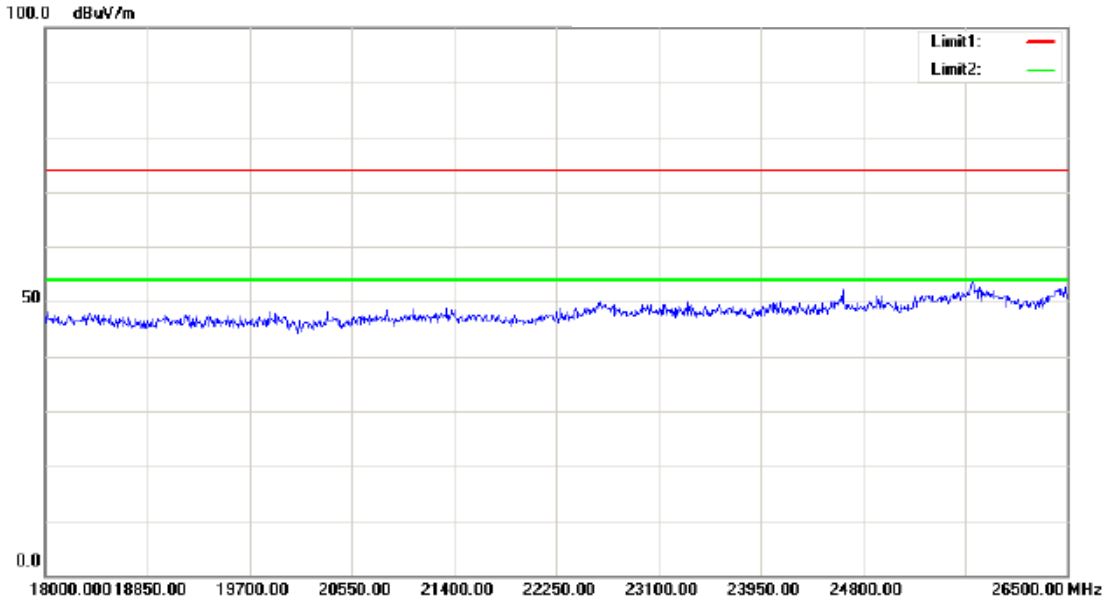
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5150.000	29.40	peak	31.10	60.50	74.00	145	228	13.50	
*	2	5150.000	16.75	AVG	31.10	47.85	54.00	145	228	6.15	
	3	5175.180	71.92	peak	31.16	103.08	125.20	145	228	22.12	Fundamental
	4	5175.180	62.38	AVG	31.16	93.54	125.20	145	228	31.66	Fundamental

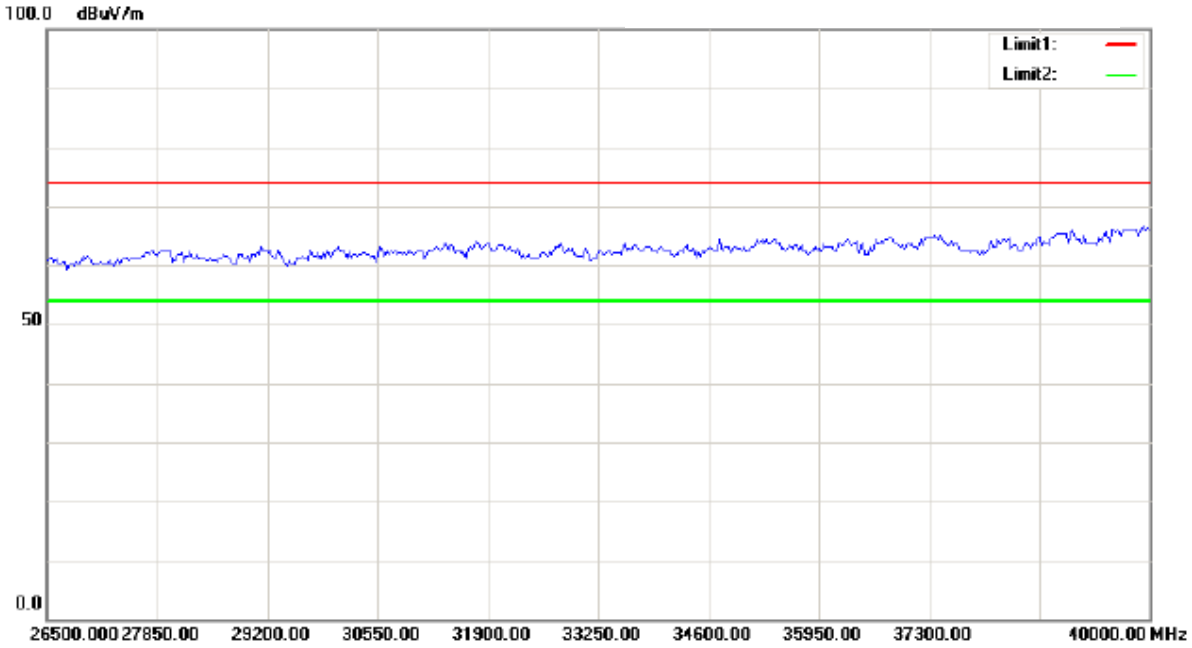
Fundamental Test with Band Rejection Filter



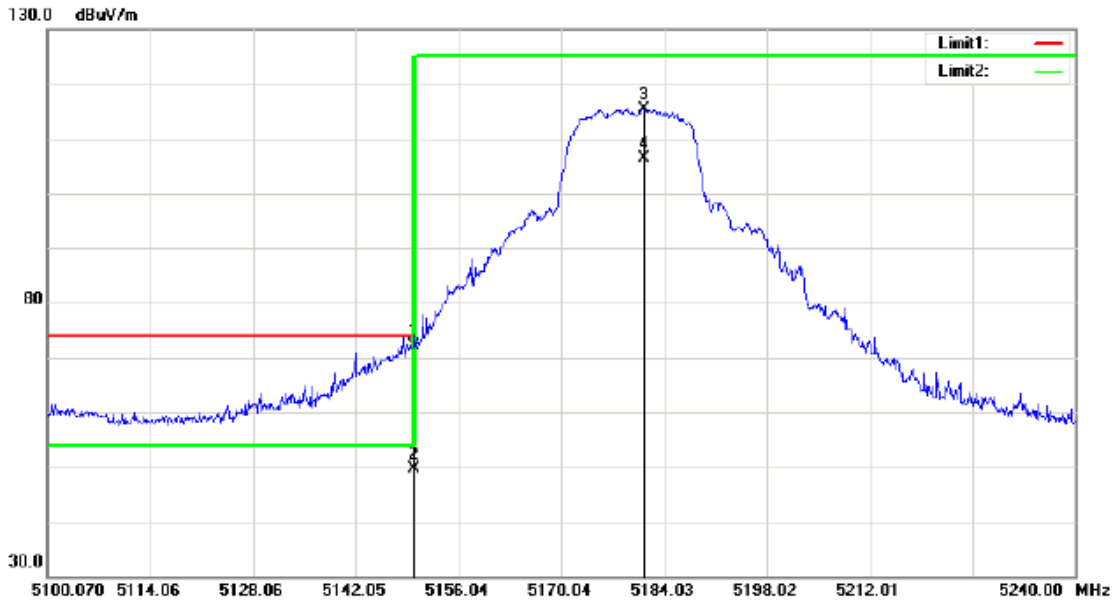
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	47.80	peak	-4.92	42.88	74.00	150	211	31.12	
	2	6130.000	37.20	AVG	-4.92	32.28	54.00	150	211	21.72	
	3	8789.500	45.11	peak	-0.08	45.03	74.00	150	211	28.97	
*	4	8789.500	35.56	AVG	-0.08	35.48	54.00	150	211	18.52	


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
10000.000 10800.00 11600.00 12400.00 13200.00 14000.00 14800.00 15600.00 16400.00 18000.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz

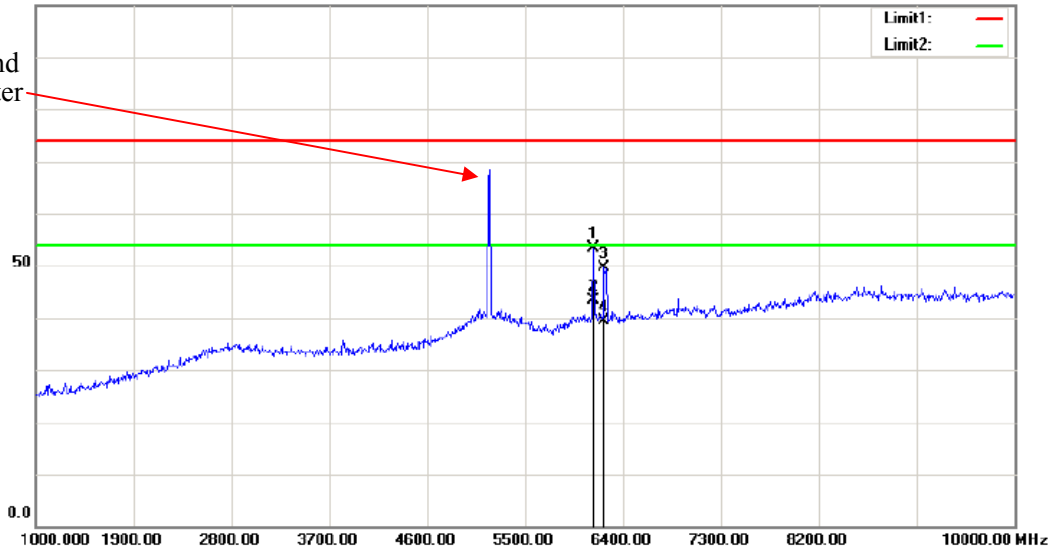

100.0 dBuV/m
Limit1:
Limit2:
50
0.0
26500.000 27850.00 29200.00 30550.00 31900.00 33250.00 34600.00 35950.00 37300.00 40000.00 MHz

Vertical:

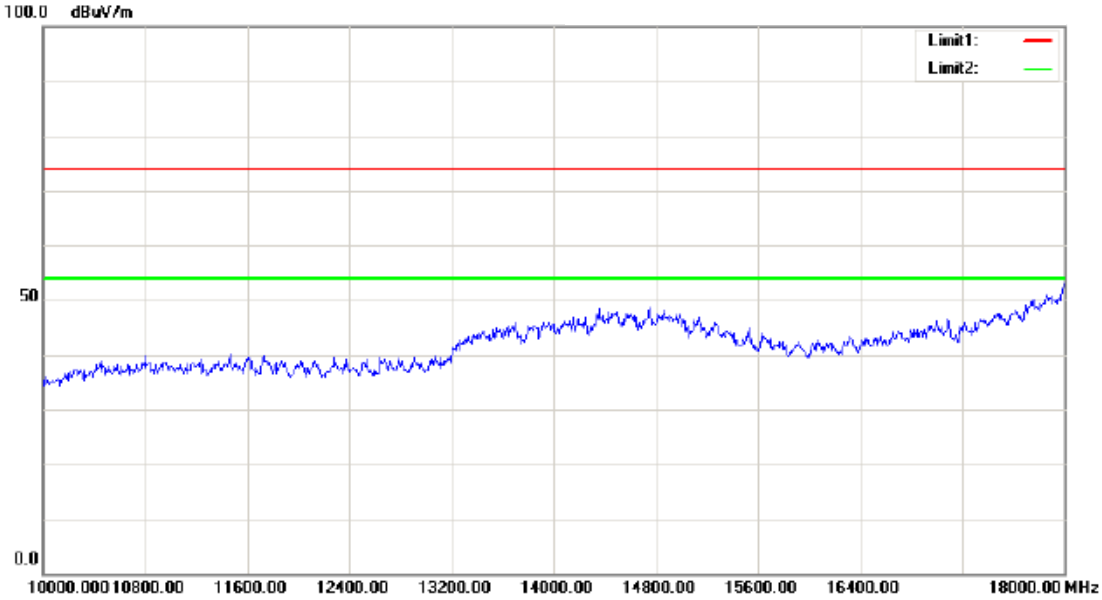


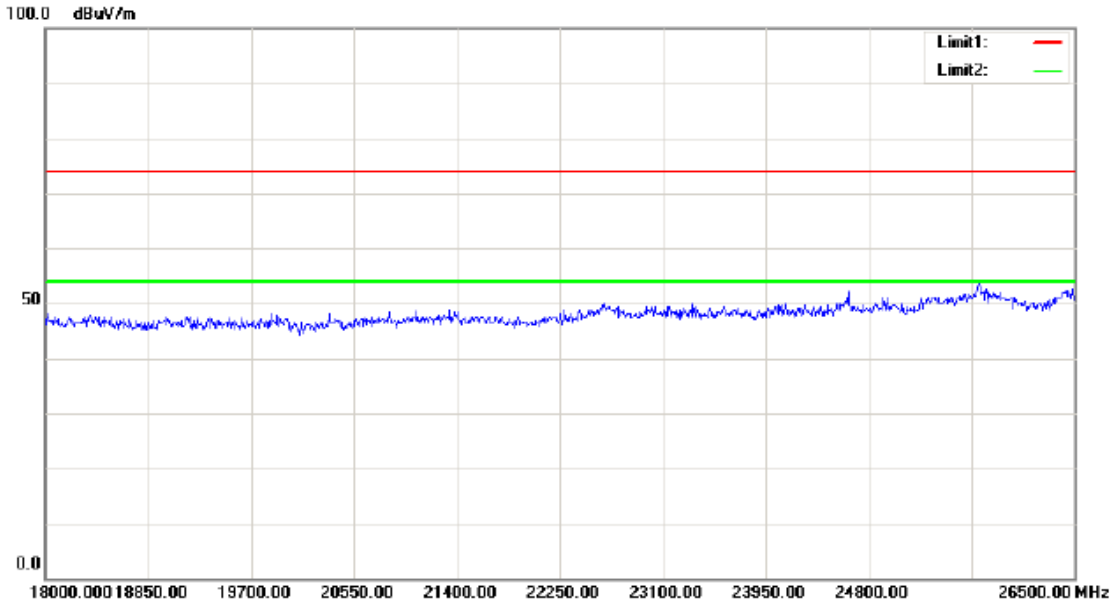
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5150.000	41.08	peak	31.10	72.18	74.00	163	225	1.82	
	2	5150.000	18.59	AVG	31.10	49.69	54.00	163	225	4.31	
	3	5181.270	84.31	peak	31.18	115.49	125.20	163	225	9.71	Fundamental
	4	5181.270	75.24	AVG	31.18	106.42	125.20	163	225	18.78	Fundamental

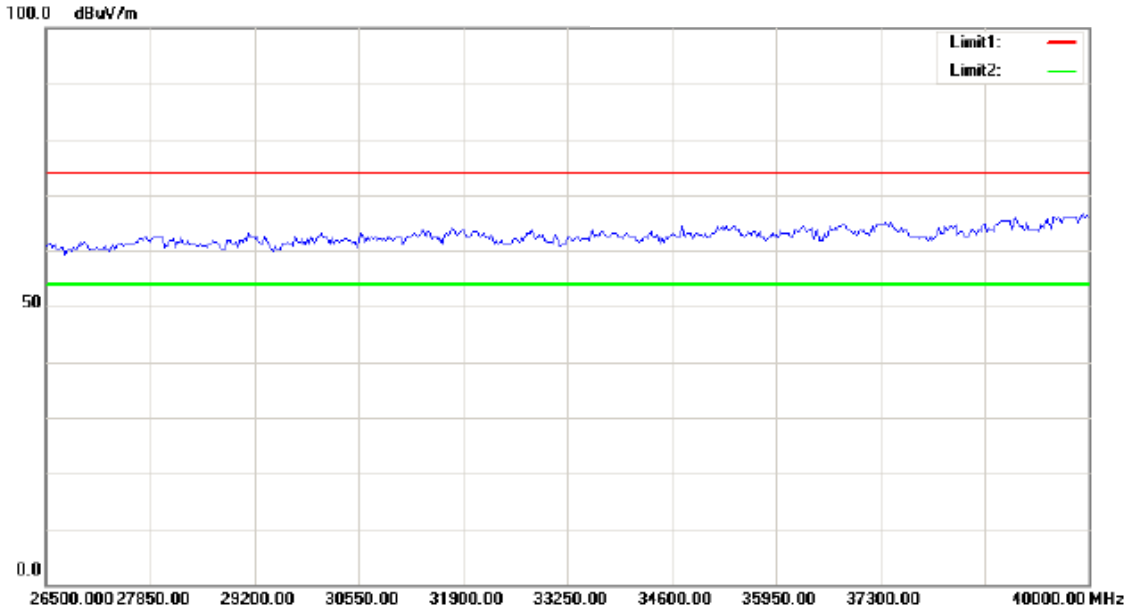
Fundamental Test with Band Rejection Filter



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	58.30	peak	-4.92	53.38	74.00	158	241	20.62	
*	2	6130.000	48.21	AVG	-4.92	43.29	54.00	158	241	10.71	
	3	6233.500	54.24	peak	-4.70	49.54	74.00	158	241	24.46	
	4	6233.500	44.17	AVG	-4.70	39.47	54.00	158	241	14.53	

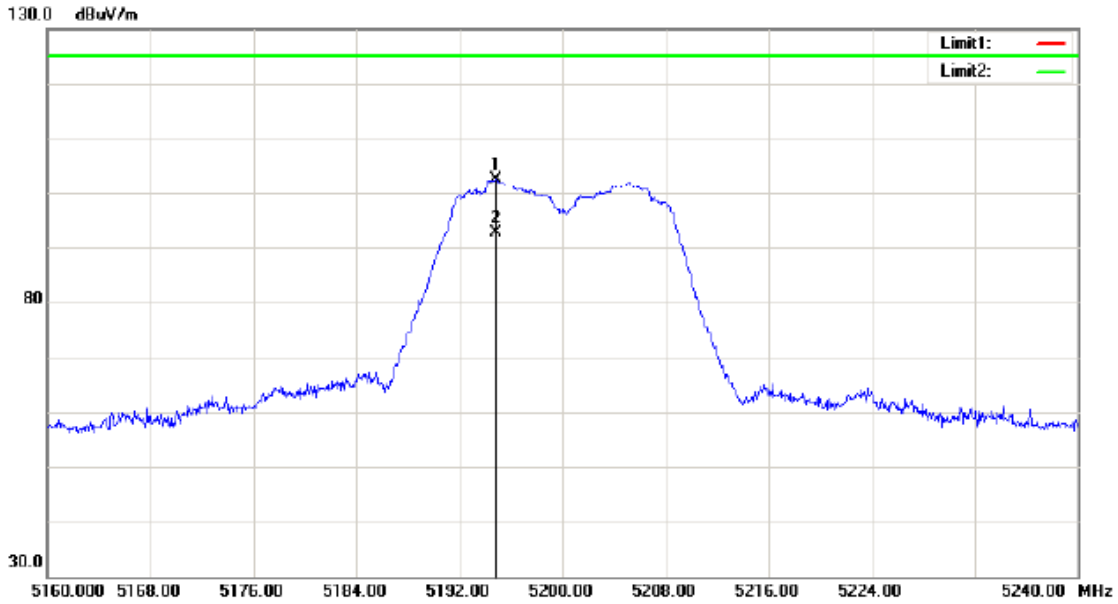

100.0 dBuV/m
Limit1:
Limit2:
50
0.0
10000.000 10800.00 11600.00 12400.00 13200.00 14000.00 14800.00 15600.00 16400.00 18000.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
26500.000 27850.00 29200.00 30550.00 31900.00 33250.00 34600.00 35950.00 37300.00 40000.00 MHz

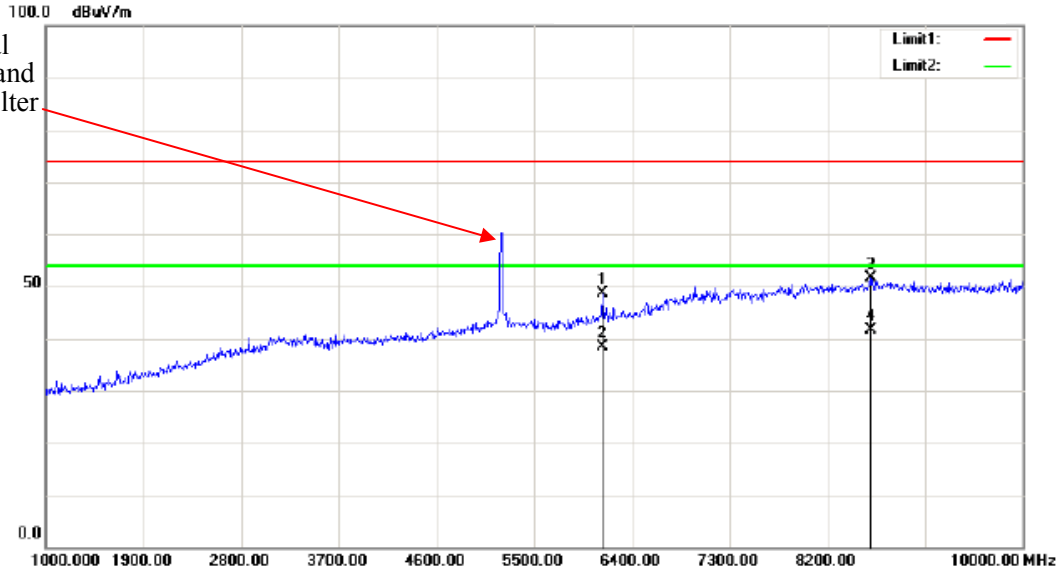
Midle Channel

Horizontal

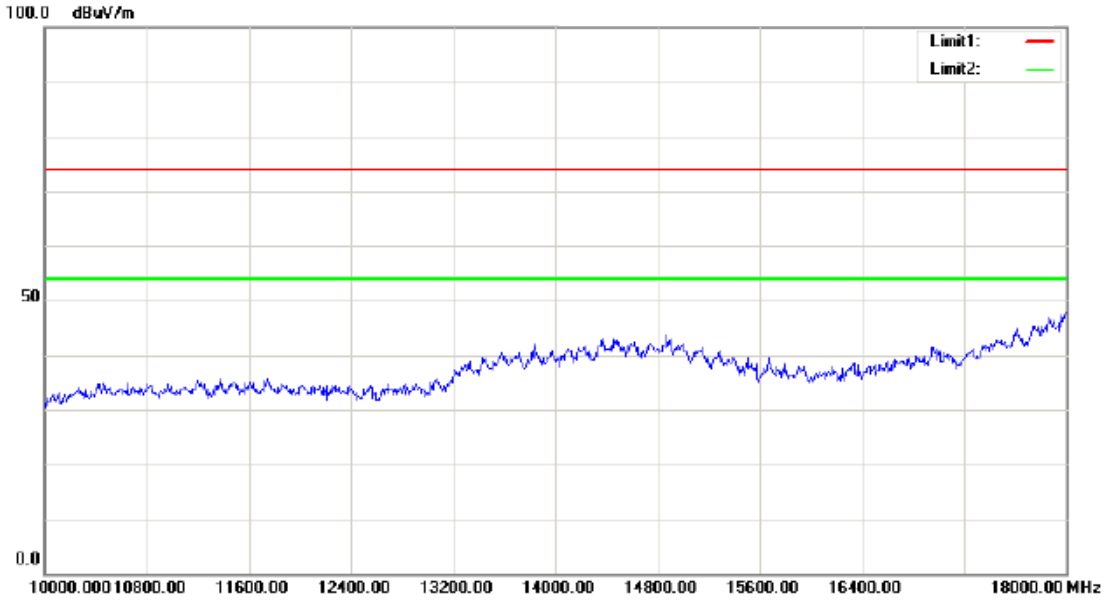


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5194.800	71.39	peak	31.21	102.60	125.20	154	23	22.60	Fundamental
	2	5194.800	61.34	AVG	31.21	92.55	125.20	154	23	32.65	Fundamental

Fundamental Test with Band Rejection Filter

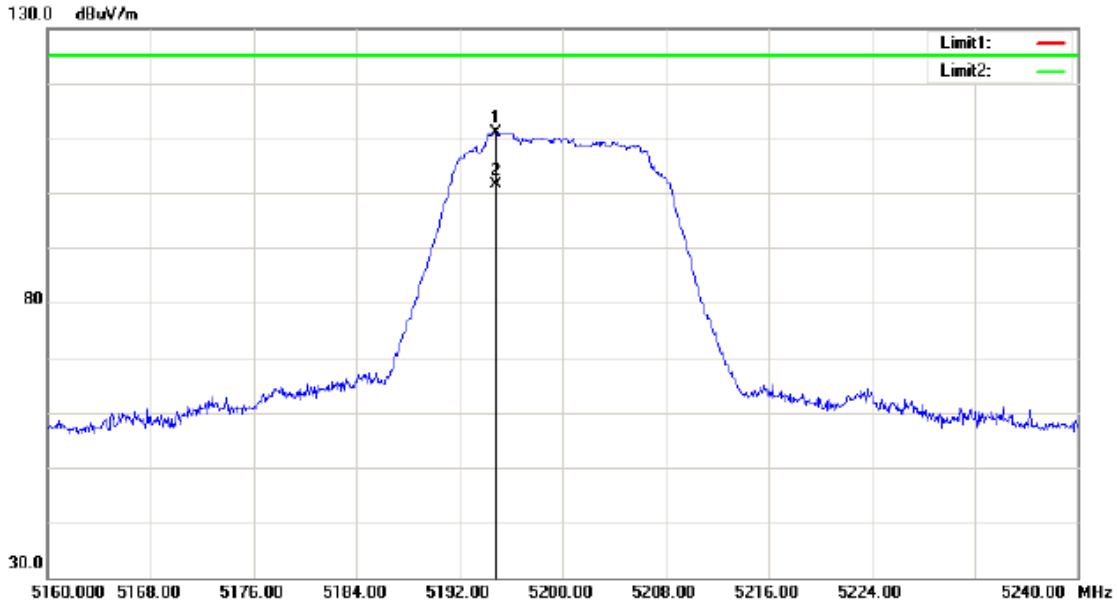


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	53.49	peak	-4.92	48.57	74.00	166	110	25.43	
	2	6130.000	43.37	AVG	-4.92	38.45	54.00	166	110	15.55	
	3	8596.000	51.94	peak	-0.39	51.55	74.00	166	110	22.45	
*	4	8596.000	42.04	AVG	-0.39	41.65	54.00	166	110	12.35	



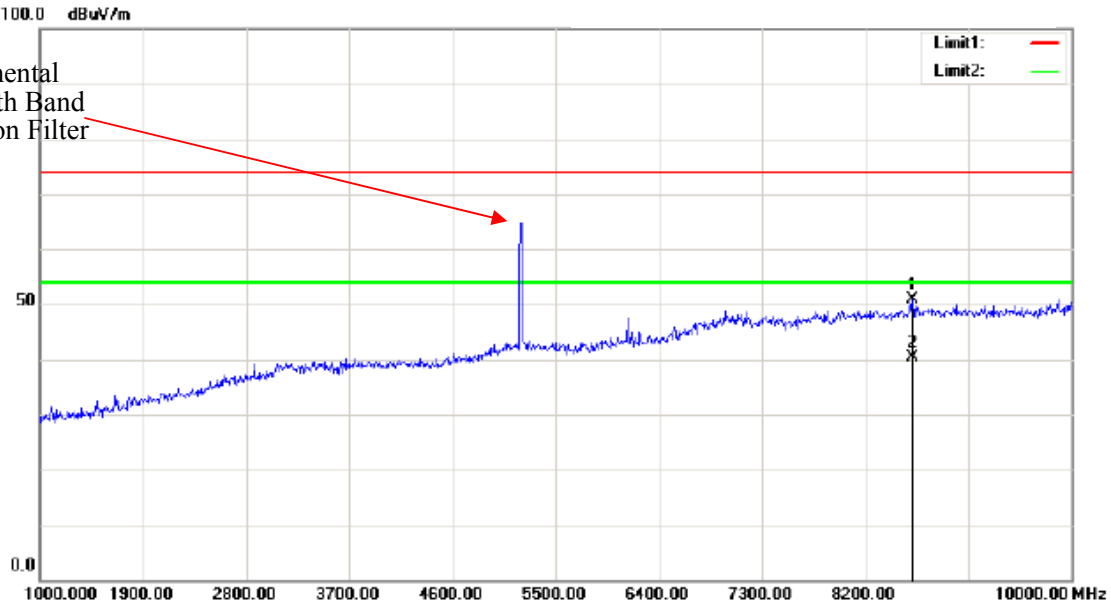
Note: No emission was detected in the range 18-40GHz.

Vertical

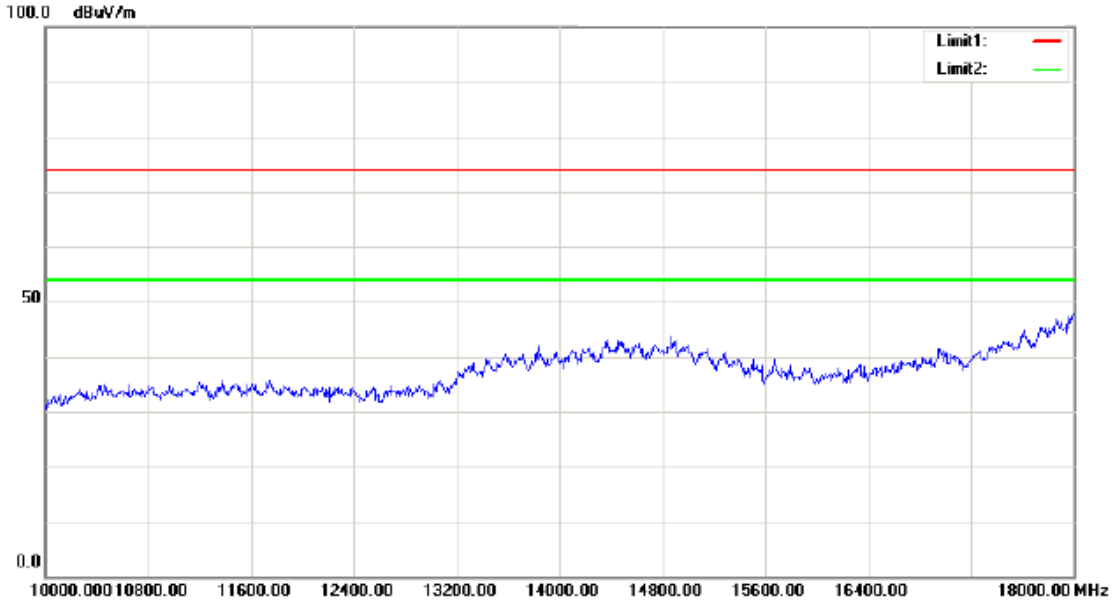


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5194.800	79.89	peak	31.21	111.10	125.20	152	79	14.10	
	2	5194.800	70.35	AVG	31.21	101.56	125.20	152	79	23.64	

Fundamental
Test with Band
Rejection Filter



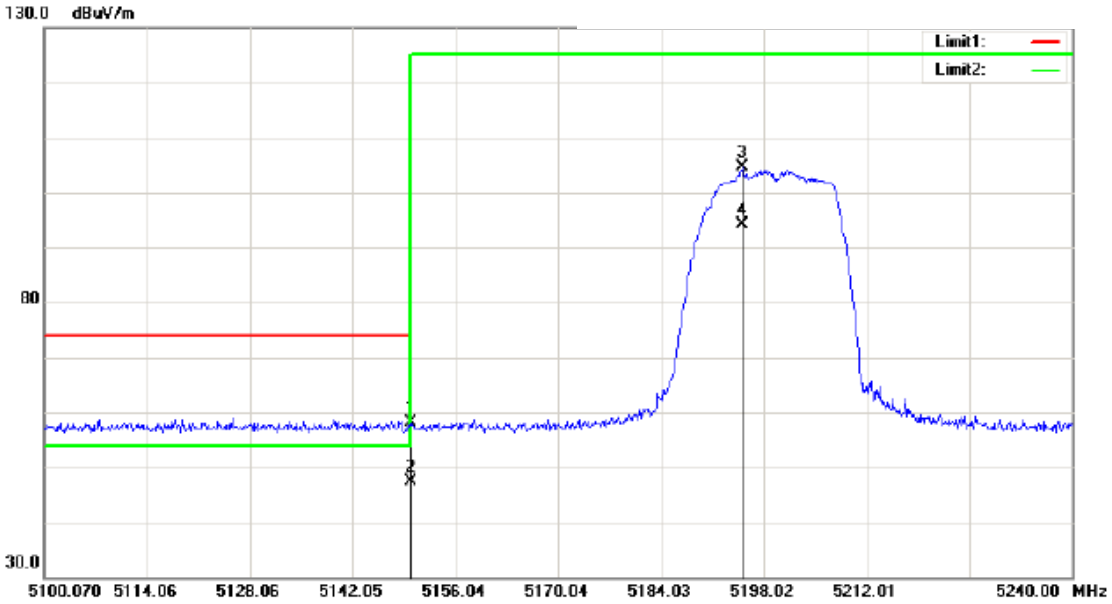
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8618.500	51.20	peak	-0.35	50.85	74.00	166	247	23.15	
*	2	8618.500	40.73	AVG	-0.35	40.38	54.00	166	247	13.62	



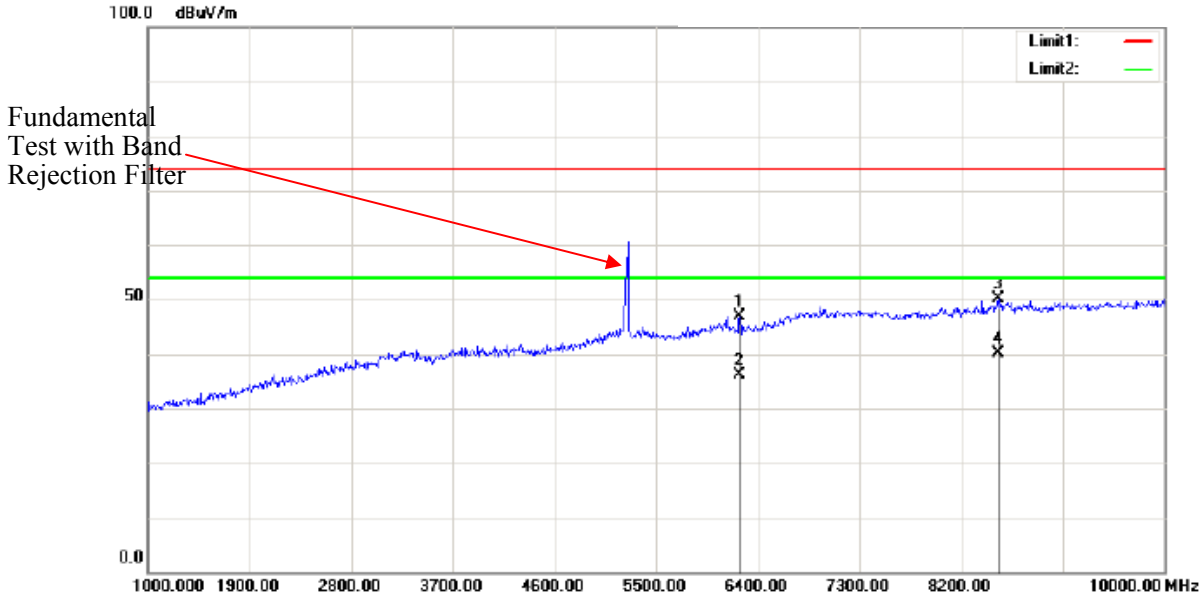
Note: No emission was detected in the range 18-40GHz.

High Channel

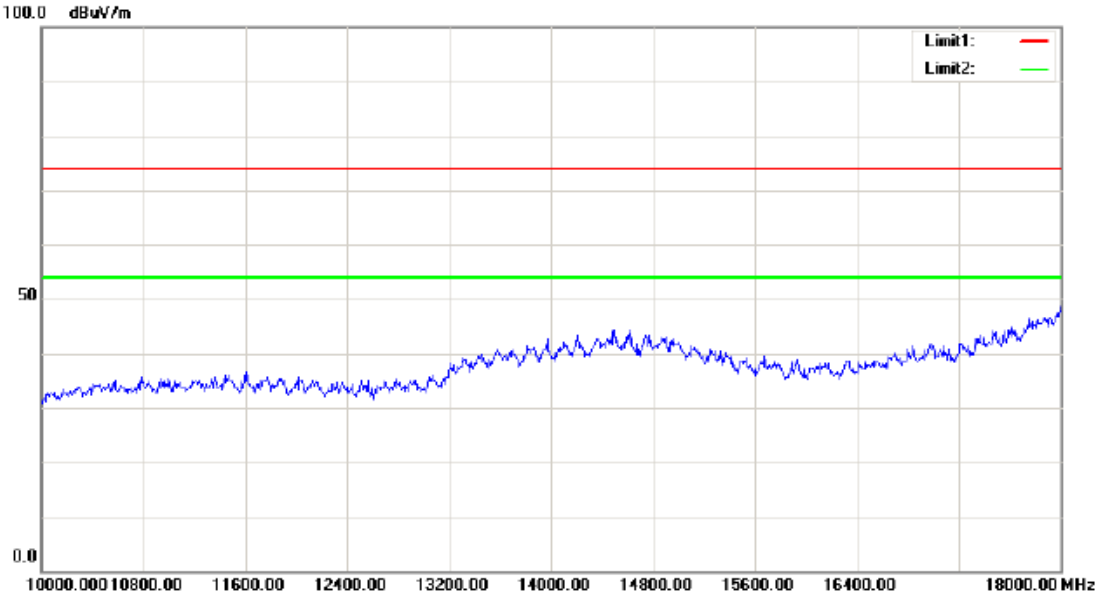
Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5235.063	69.63	peak	31.21	100.84	125.20	163	218	24.36	
	2	5235.063	59.13	AVG	31.21	90.34	125.20	163	218	34.86	
	3	5350.000	25.33	peak	31.38	56.71	74.00	163	218	17.29	
*	4	5350.000	14.09	AVG	31.38	45.47	54.00	163	218	8.53	

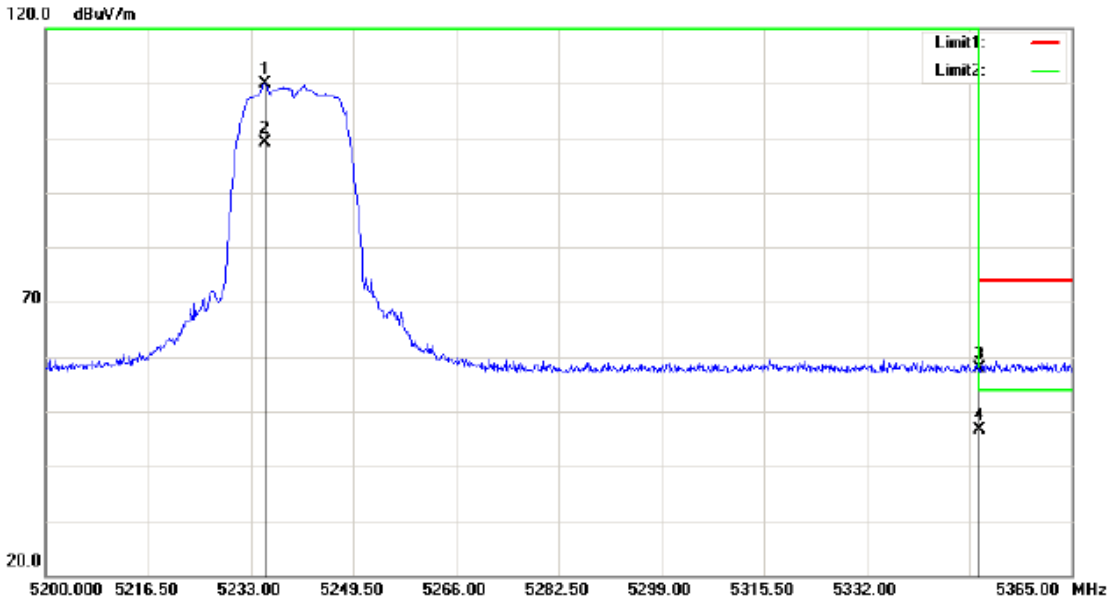


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6238.000	51.63	peak	-4.69	46.94	74.00	180	210	27.06	
	2	6238.000	40.94	AVG	-4.69	36.25	54.00	180	210	17.75	
	3	8528.500	50.55	peak	-0.50	50.05	74.00	180	210	23.95	
*	4	8528.500	40.62	AVG	-0.50	40.12	54.00	180	210	13.88	



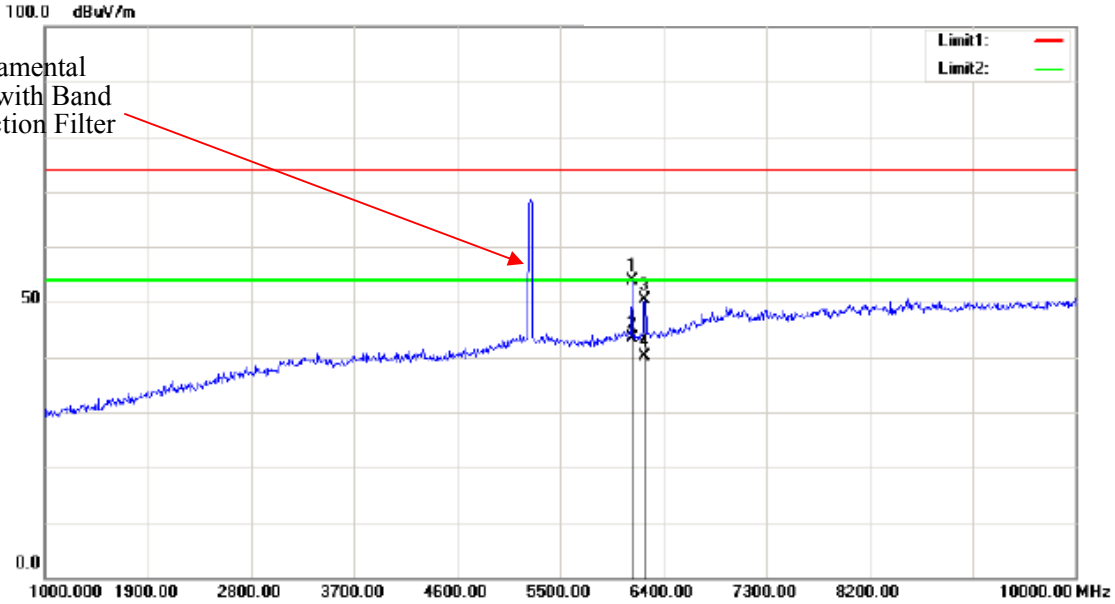
Note: No emission was detected in the range 18-40GHz.

Vertical

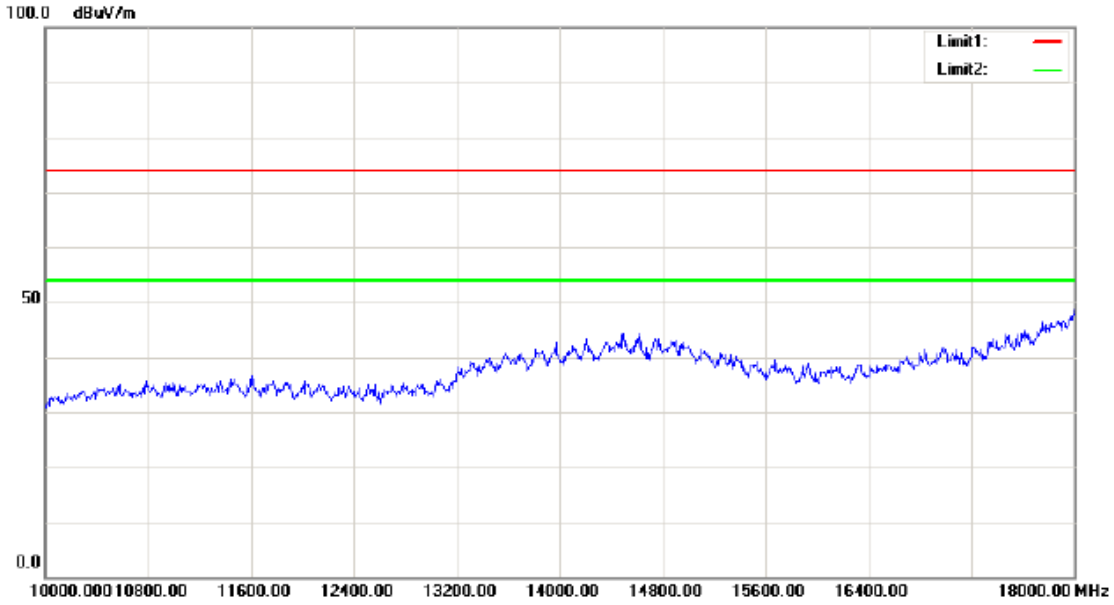


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5235.310	78.70	peak	31.21	109.91	125.20	153	122	15.29	
	2	5235.310	68.04	AVG	31.21	99.25	125.20	153	122	25.95	
	3	5350.000	26.48	peak	31.38	57.86	74.00	153	122	16.14	
*	4	5350.000	15.21	AVG	31.38	46.59	54.00	153	122	7.41	

Fundamental Test with Band Rejection Filter



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	58.74	peak	-4.92	53.82	74.00	159	211	20.18	
*	2	6130.000	48.37	AVG	-4.92	43.45	54.00	159	211	10.55	
	3	6238.000	55.13	peak	-4.69	50.44	74.00	159	211	23.56	
	4	6238.000	44.84	AVG	-4.69	40.15	54.00	159	211	13.85	

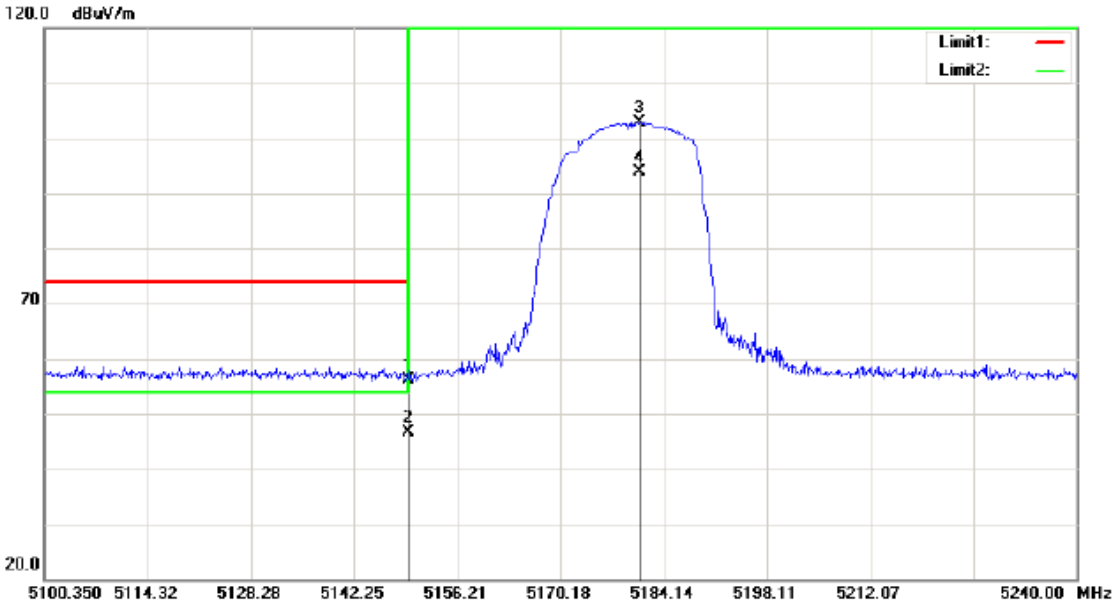


Note: No emission was detected in the range 18-40GHz.

N20 mode

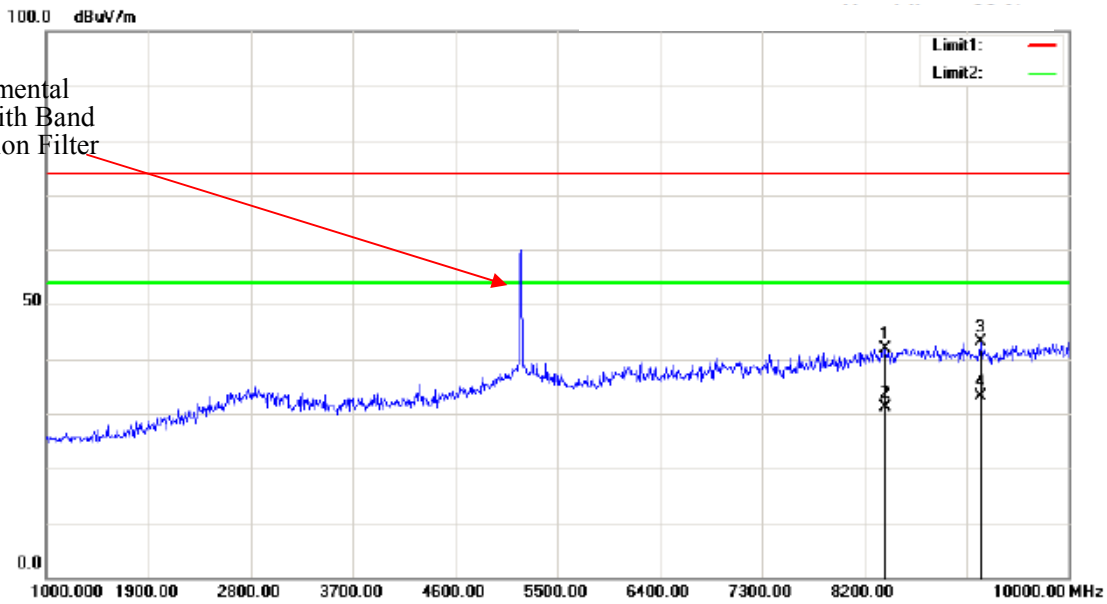
Low Channel

Horizontal

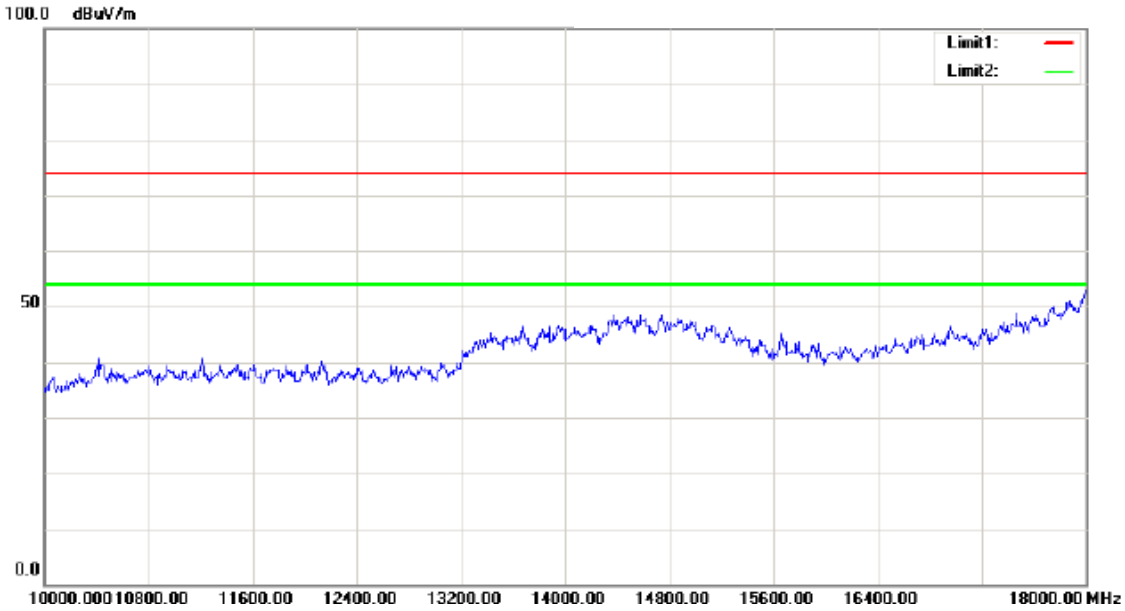


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5150.000	24.96	peak	31.10	56.06	74.00	153	145	17.94	
*	2	5150.000	15.42	AVG	31.10	46.52	54.00	153	145	7.48	
	3	5181.340	71.80	peak	31.18	102.98	125.20	153	145	22.22	Fundamental
	4	5181.340	62.64	AVG	31.18	93.82	125.20	153	145	31.38	Fundamental

Fundamental
Test with Band
Rejection Filter

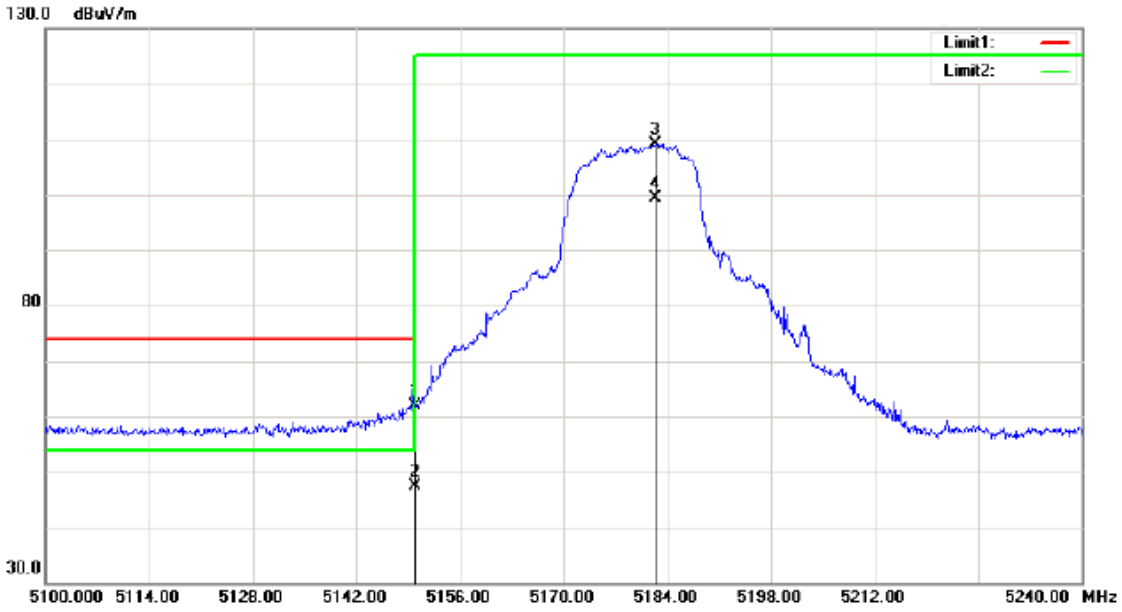


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8389.000	42.64	peak	-0.68	41.96	74.00	169	150	32.04	
	2	8389.000	31.86	AVG	-0.68	31.18	54.00	169	150	22.82	
	3	9226.000	42.41	peak	0.60	43.01	74.00	169	150	30.99	
*	4	9226.000	32.41	AVG	0.60	33.01	54.00	169	150	20.99	

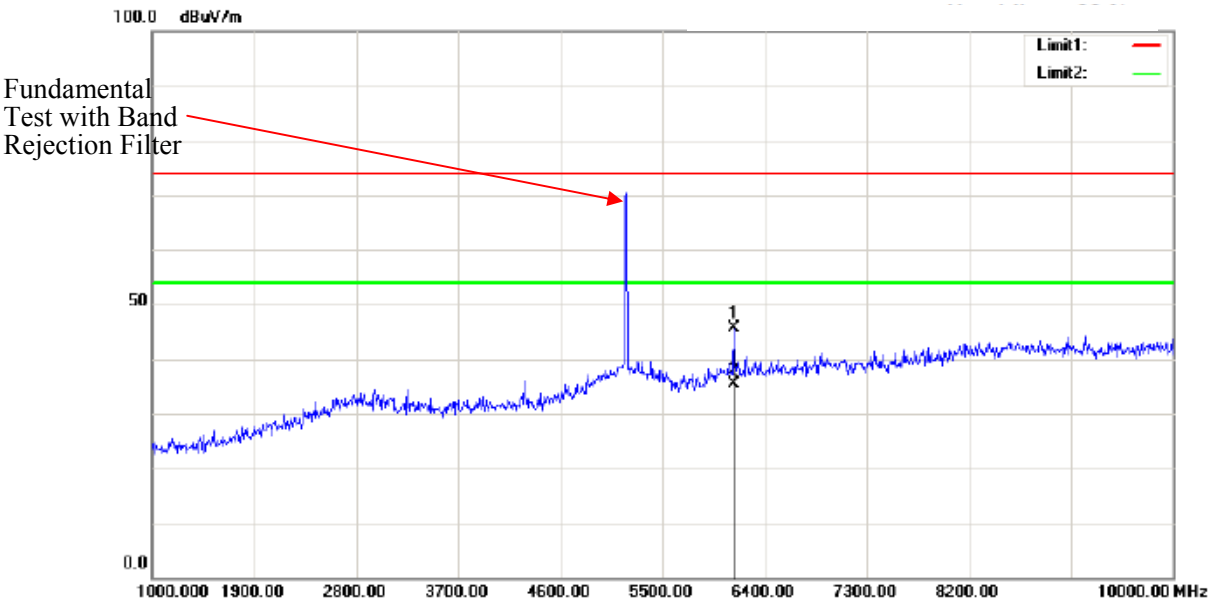


Note: No emission was detected in the range 18-40GHz.

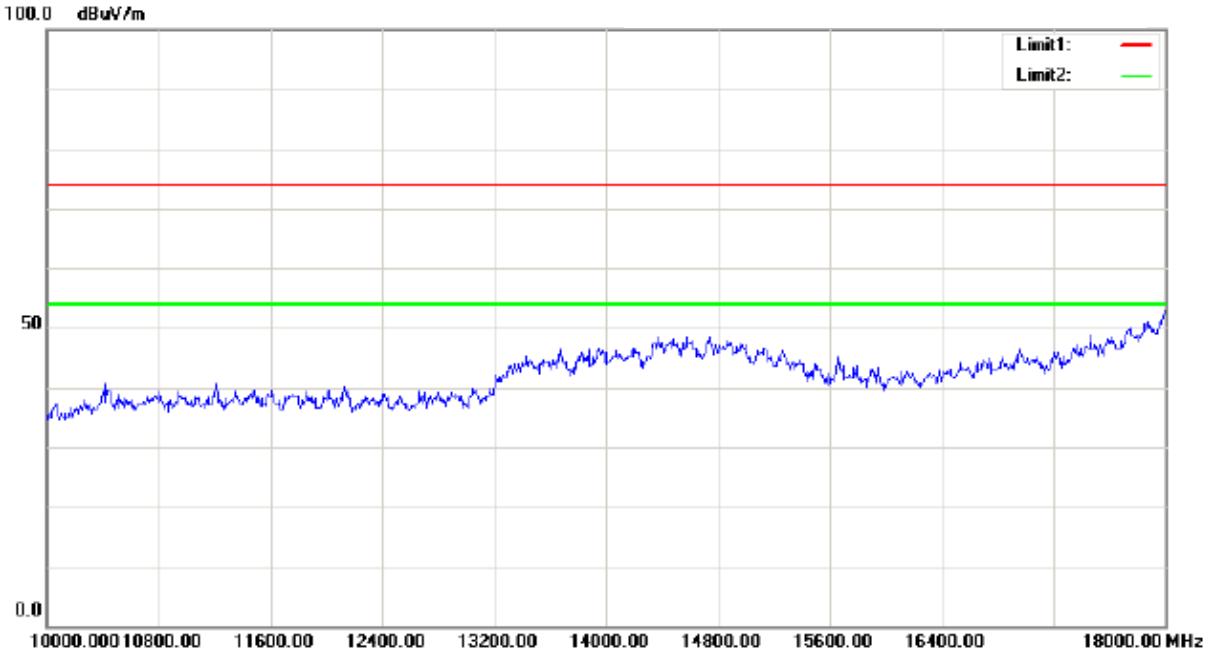
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5150.000	30.70	peak	31.10	61.80	74.00	154	224	12.20	
*	2	5150.000	16.38	AVG	31.10	47.48	54.00	154	224	6.52	
	3	5182.530	78.01	peak	31.18	109.19	125.20	154	224	16.01	Fundamental
	4	5182.530	68.15	AVG	31.18	99.33	125.20	154	224	25.87	Fundamental



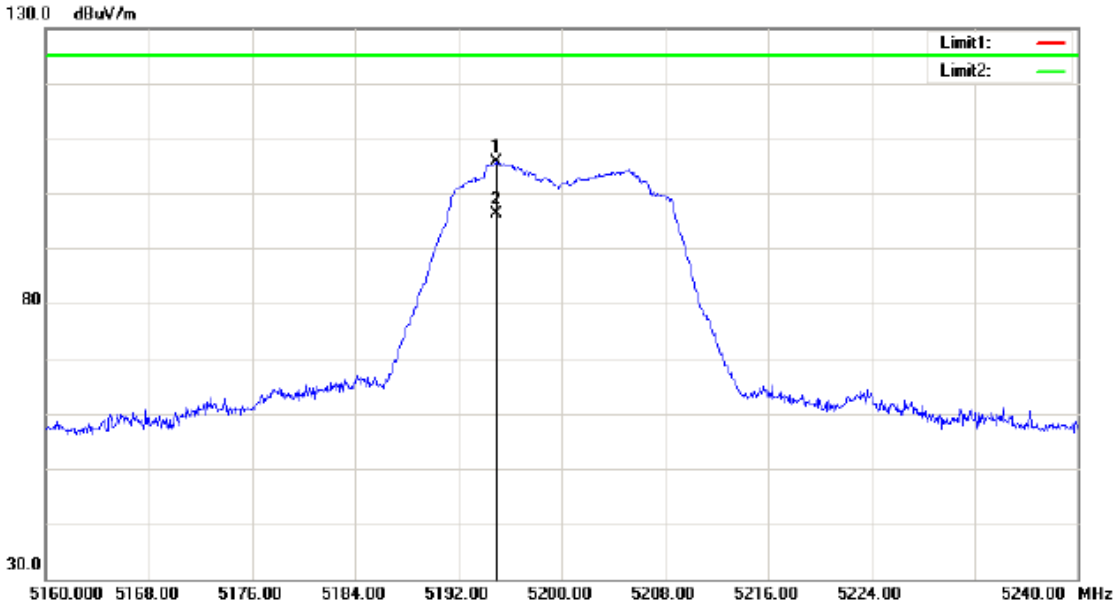
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	50.57	peak	-4.92	45.65	74.00	161	216	28.35	
*	2	6130.000	40.39	AVG	-4.92	35.47	54.00	161	216	18.53	



Note: No emission was detected in the range 18-40GHz.

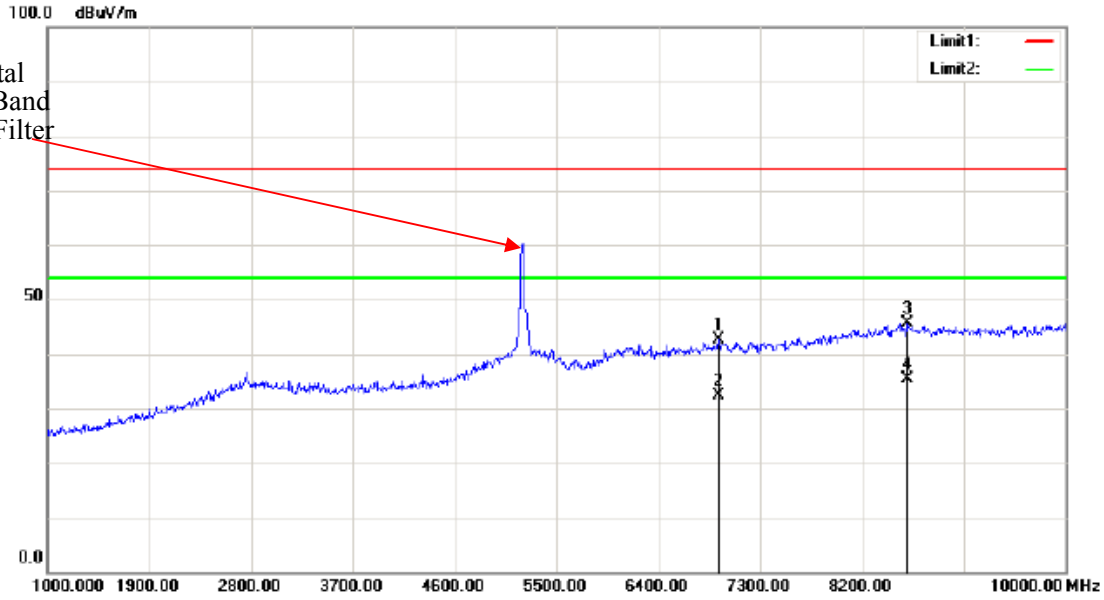
Middle Channel

Horizontal

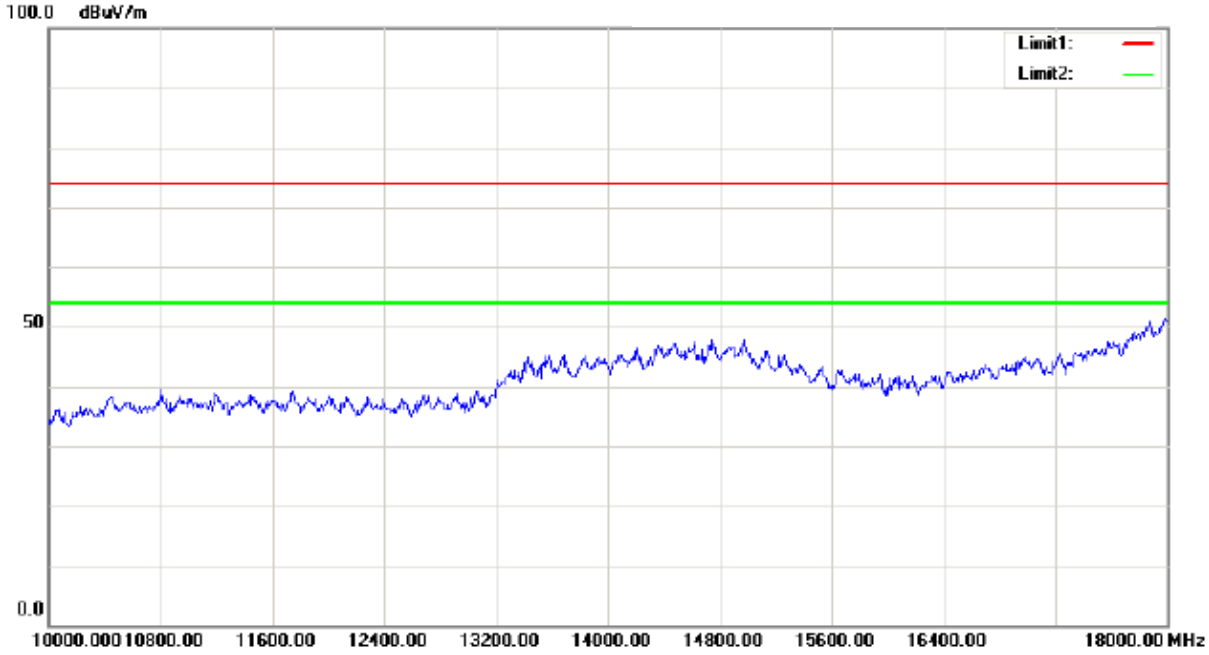


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5194.880	74.69	peak	31.21	105.90	125.20	148	75	19.30	Fundamental
	2	5194.880	64.83	AVG	31.21	96.04	125.20	148	75	29.16	Fundamental

Fundamental Test with Band Rejection Filter

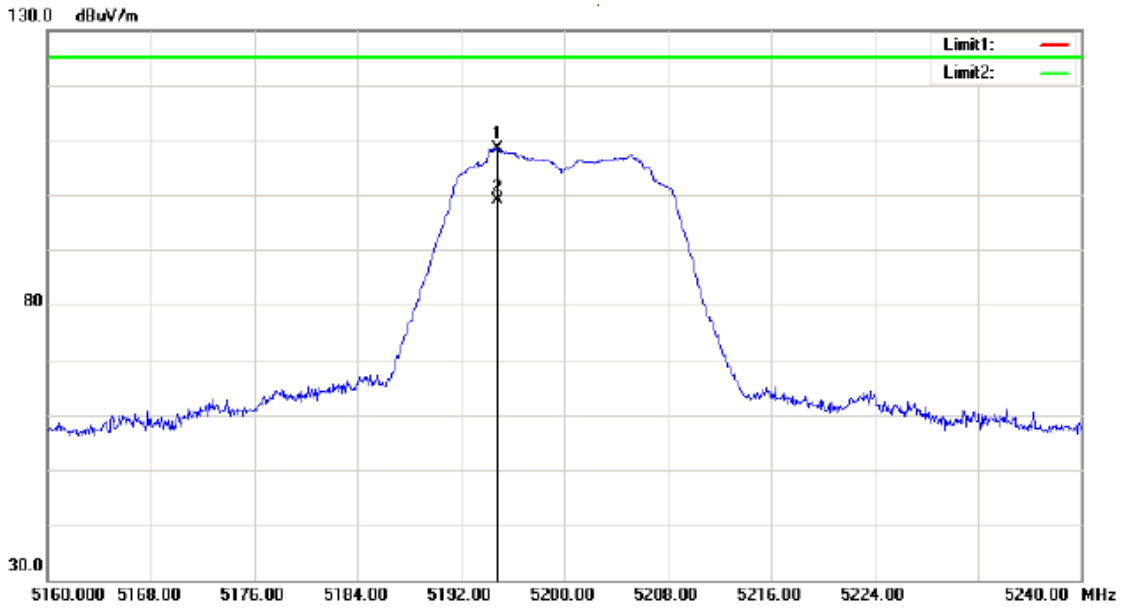


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6931.000	45.34	peak	-2.80	42.54	74.00	164	230	31.46	
	2	6931.000	35.14	AVG	-2.80	32.34	54.00	164	230	21.66	
	3	8609.500	46.06	peak	-0.37	45.69	74.00	164	230	28.31	
*	4	8609.500	35.83	AVG	-0.37	35.46	54.00	164	230	18.54	



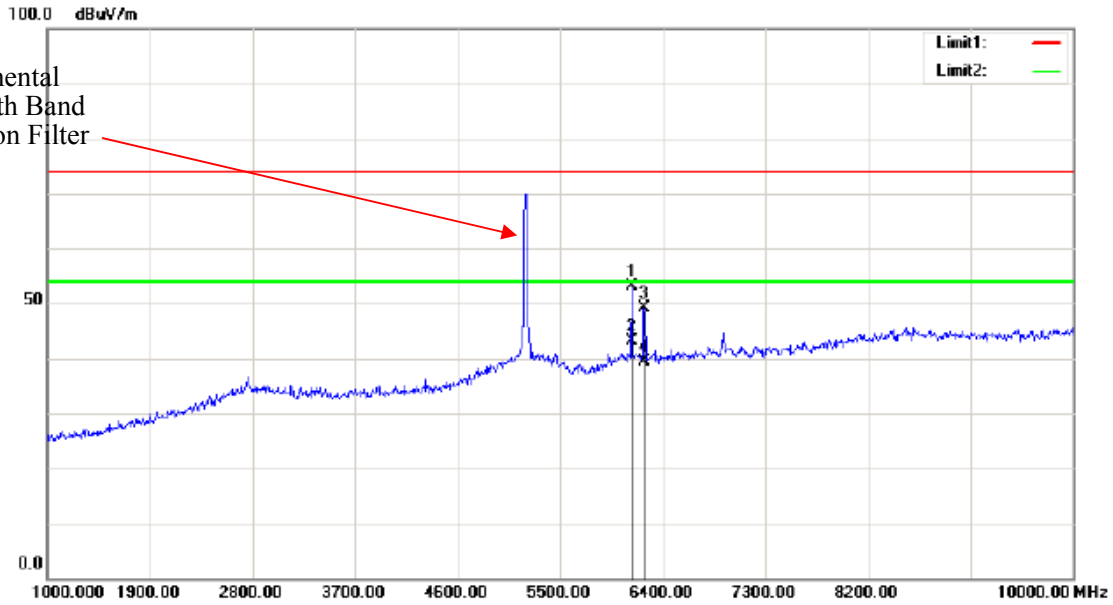
Note: No emission was detected in the range 18-40GHz.

Vertical

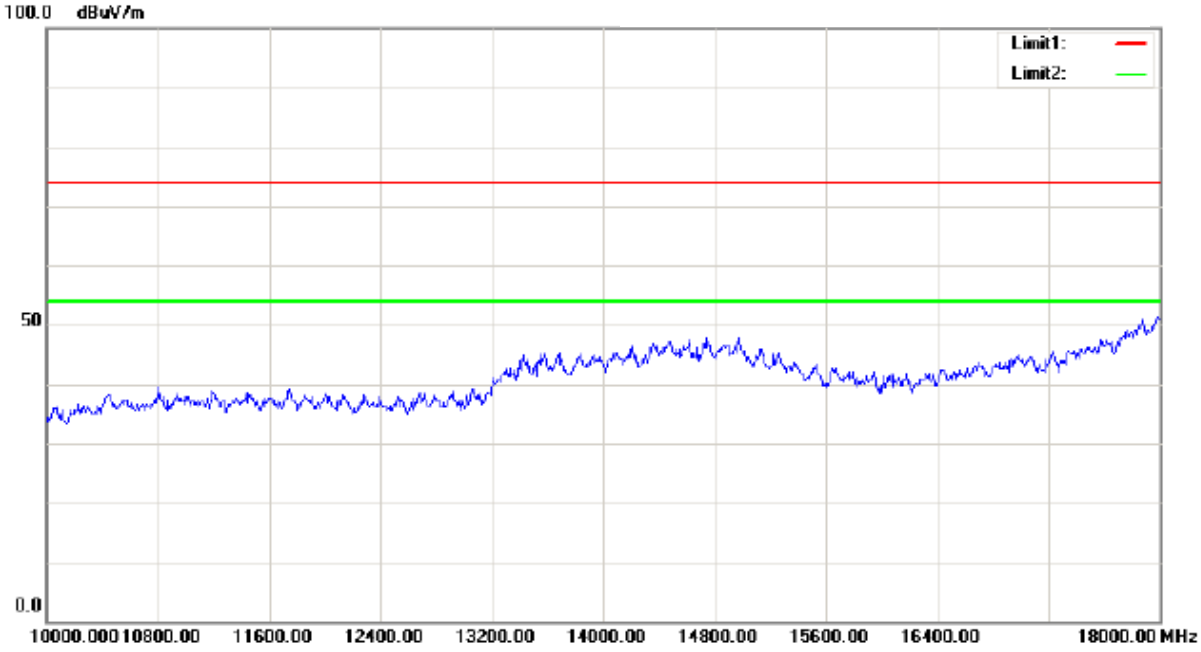


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5194.800	77.39	peak	31.21	108.60	125.20	136	54	16.60	Fundamental
	2	5194.800	67.58	AVG	31.21	98.79	125.20	136	54	26.41	Fundamental

Fundamental Test with Band Rejection Filter

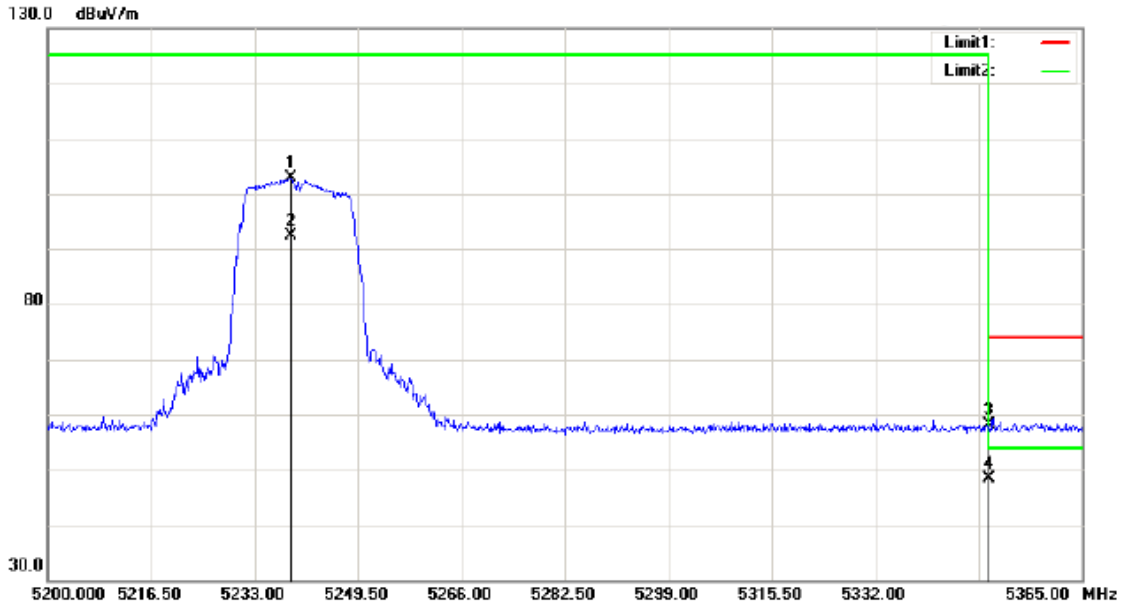


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	58.03	peak	-4.92	53.11	74.00	170	200	20.89	
*	2	6130.000	48.17	AVG	-4.92	43.25	54.00	170	200	10.75	
	3	6238.000	53.82	peak	-4.69	49.13	74.00	170	200	24.87	
	4	6238.000	44.16	AVG	-4.69	39.47	54.00	170	200	14.53	



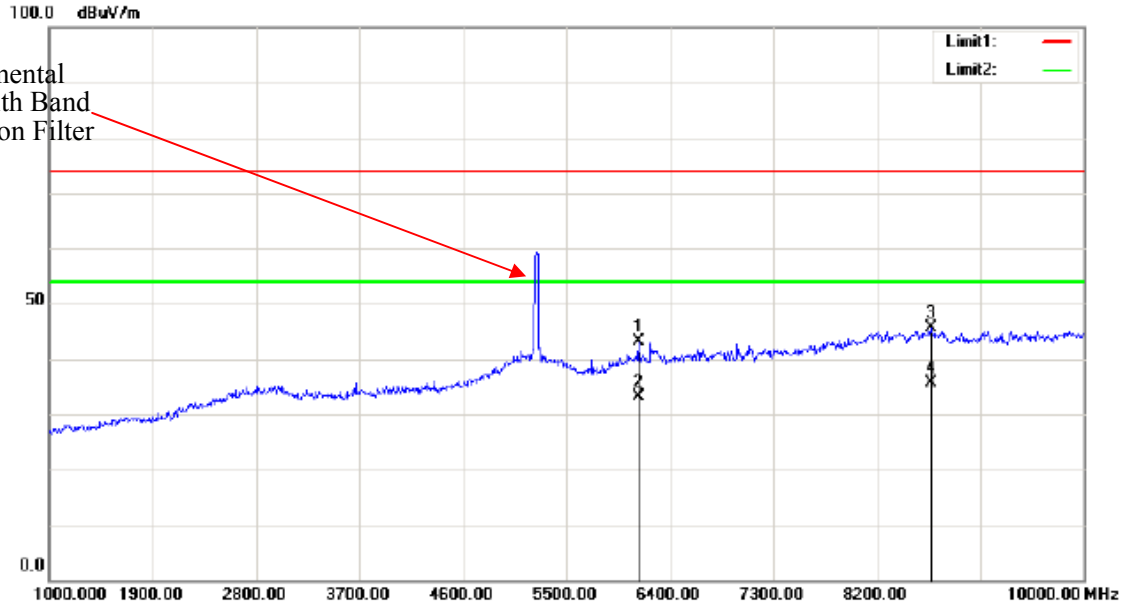
Note: No emission was detected in the range 18-40GHz.

High Channel

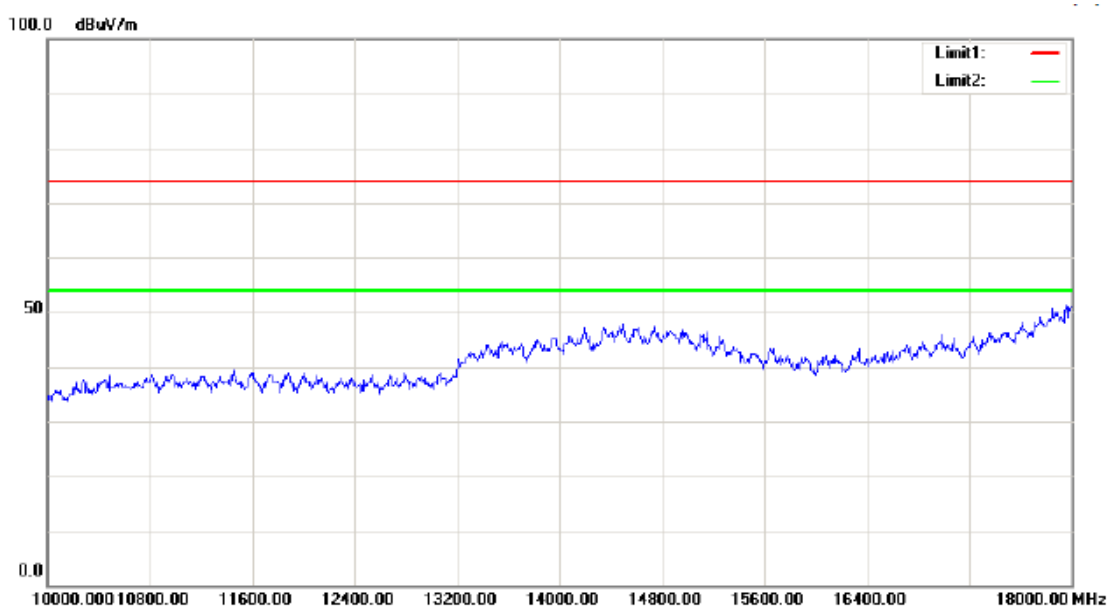


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5238.775	71.55	peak	31.21	102.76	125.20	168	188	22.44	
	2	5238.775	61.10	AVG	31.21	92.31	125.20	168	188	32.89	
	3	5350.000	26.75	peak	31.38	58.13	74.00	168	188	15.87	Fundamental
*	4	5350.000	16.88	AVG	31.38	48.26	54.00	168	188	5.74	Fundamental

Fundamental Test with Band Rejection Filter

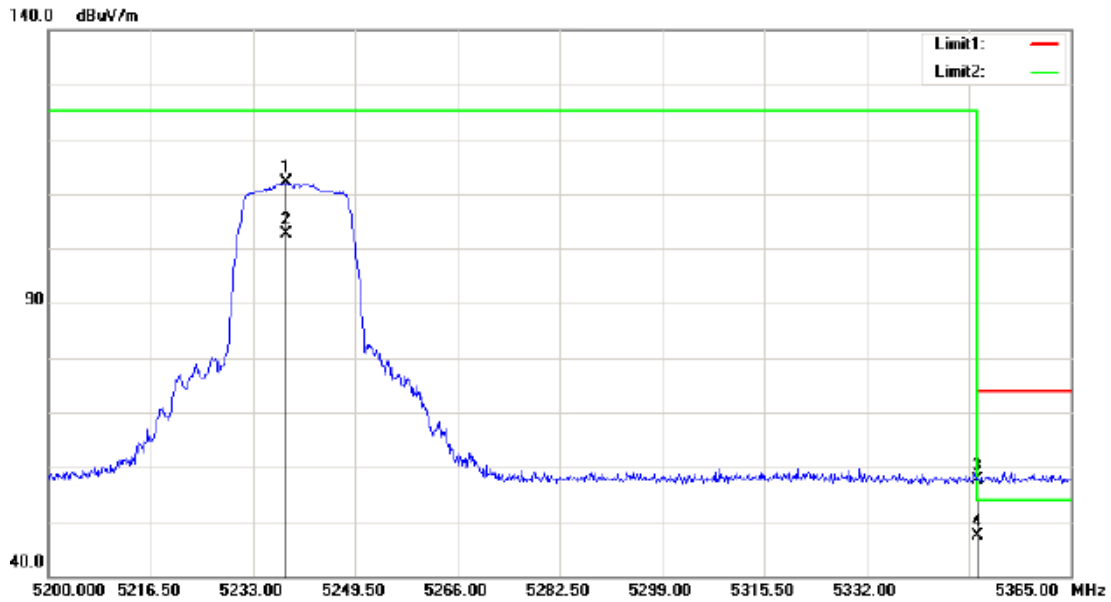


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	48.09	peak	-4.92	43.17	74.00	165	177	30.83	
	2	6130.000	38.07	AVG	-4.92	33.15	54.00	165	177	20.85	
	3	8668.000	45.97	peak	-0.28	45.69	74.00	165	177	28.31	
*	4	8668.000	35.89	AVG	-0.28	35.61	54.00	165	177	18.39	

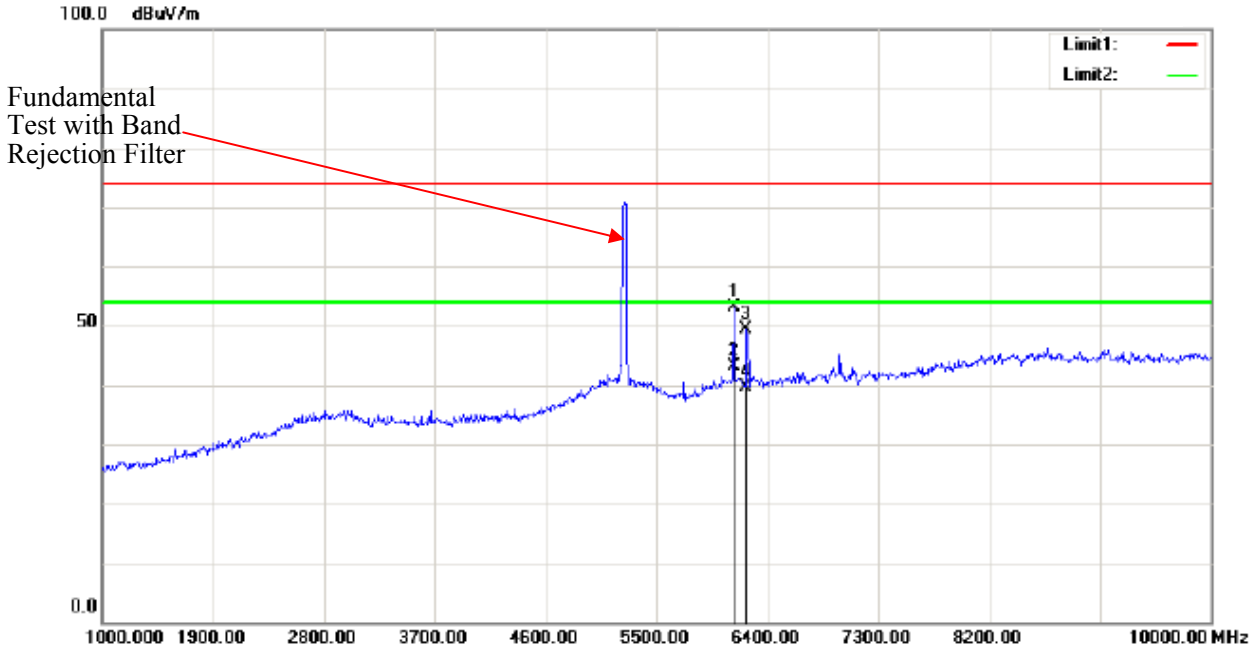


Note: No emission was detected in the range 18-40GHz.

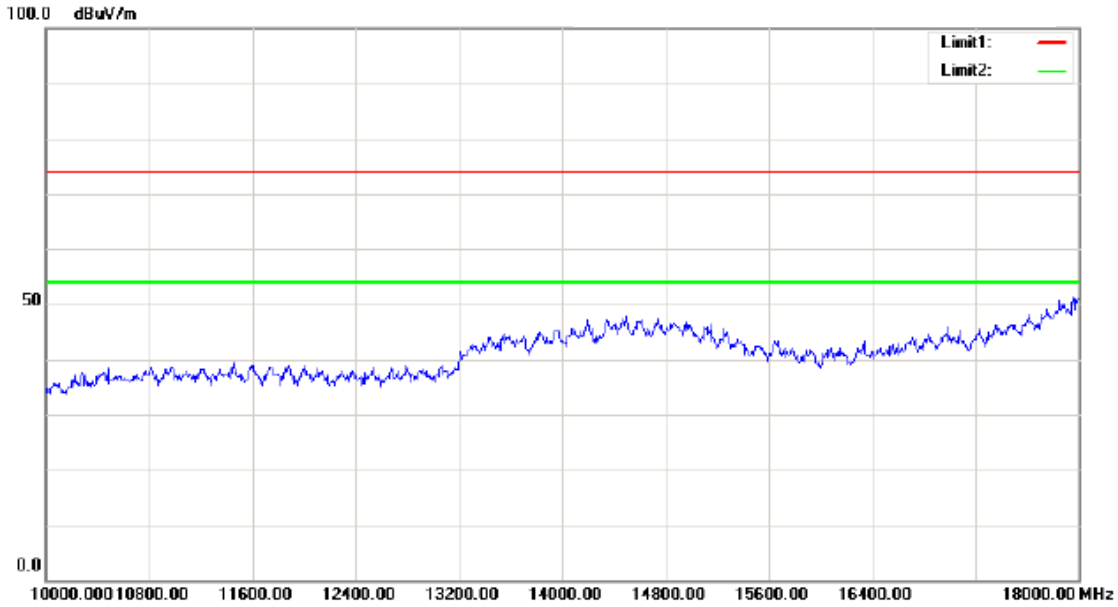
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5238.528	80.98	peak	31.21	112.19	125.20	158	236	13.01	
	2	5238.528	71.40	AVG	31.21	102.61	125.20	158	236	22.59	
	3	5350.000	26.27	peak	31.38	57.65	74.00	158	236	16.35	Fundamental
*	4	5350.000	16.11	AVG	31.38	47.49	54.00	158	236	6.51	Fundamental



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	58.09	peak	-4.92	53.17	74.00	164	218	20.83	
*	2	6130.000	48.17	AVG	-4.92	43.25	54.00	164	218	10.75	
	3	6233.500	53.99	peak	-4.70	49.29	74.00	164	218	24.71	
	4	6233.500	44.44	AVG	-4.70	39.74	54.00	164	218	14.26	

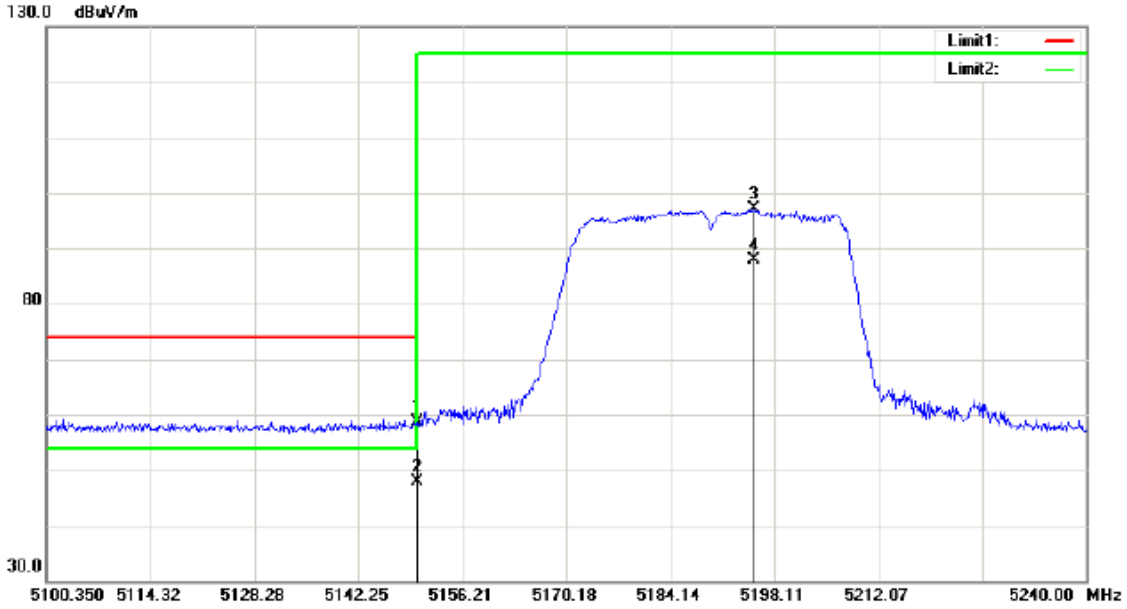


Note: No emission was detected in the range 18-40GHz.

N40 mode

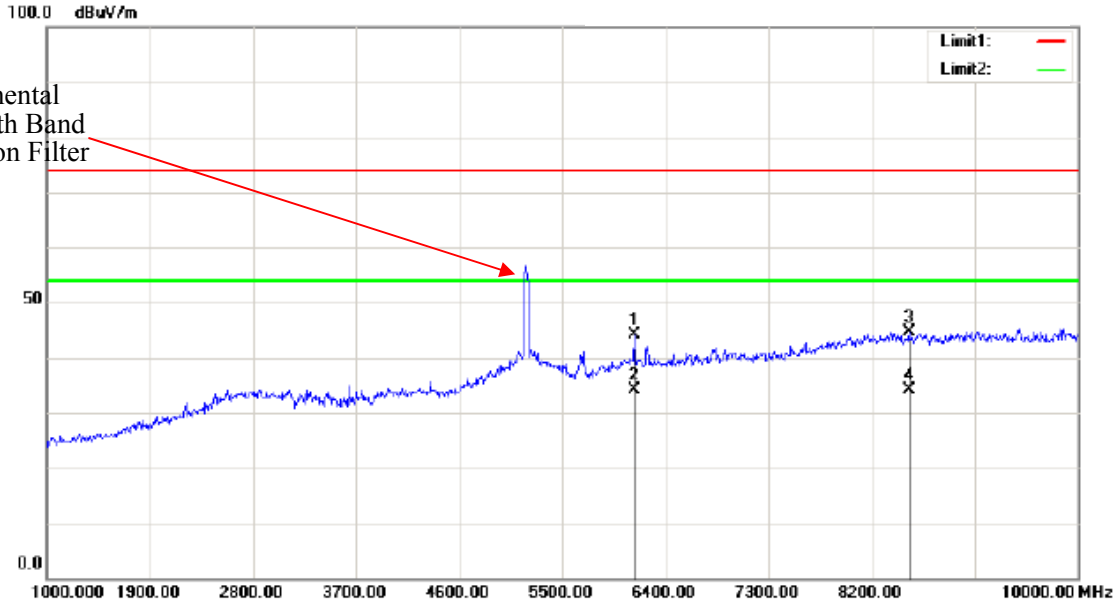
Low Channel

Horizontal

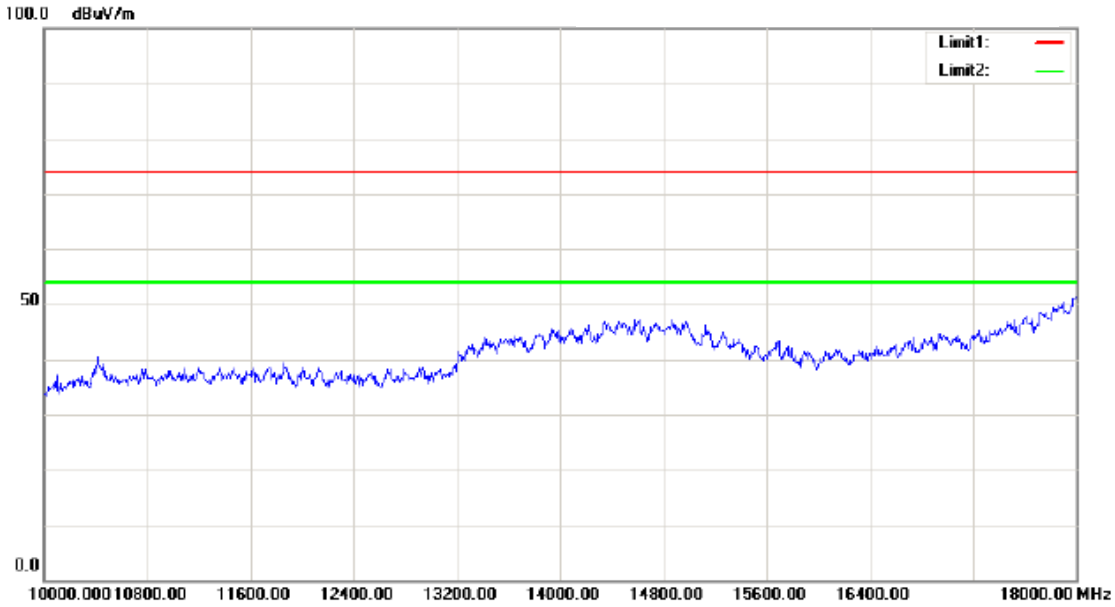


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5150.000	27.43	peak	31.10	58.53	74.00	163	224	15.47	
*	2	5150.000	16.82	AVG	31.10	47.92	54.00	163	224	6.08	
	3	5195.270	65.84	peak	31.21	97.05	125.20	163	224	28.15	Fundamental
	4	5195.270	56.73	AVG	31.21	87.94	125.20	163	224	37.26	Fundamental

Fundamental
Test with Band
Rejection Filter

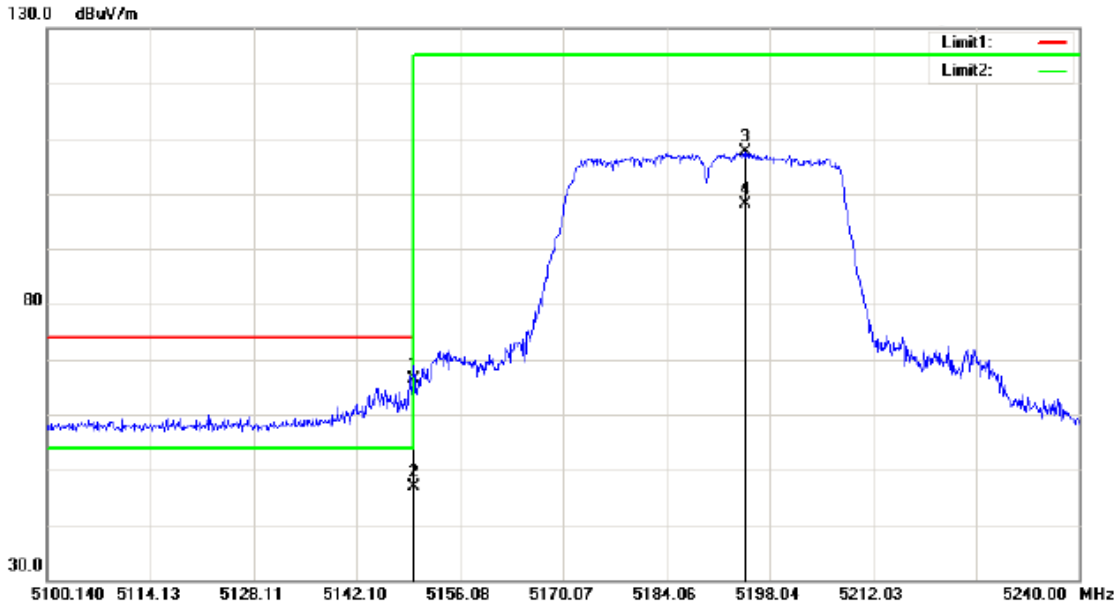


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	49.11	peak	-4.92	44.19	74.00	200	160	29.81	
*	2	6130.000	39.17	AVG	-4.92	34.25	54.00	200	160	19.75	
	3	8524.000	45.23	peak	-0.51	44.72	74.00	200	160	29.28	
	4	8524.000	34.70	AVG	-0.51	34.19	54.00	200	160	19.81	

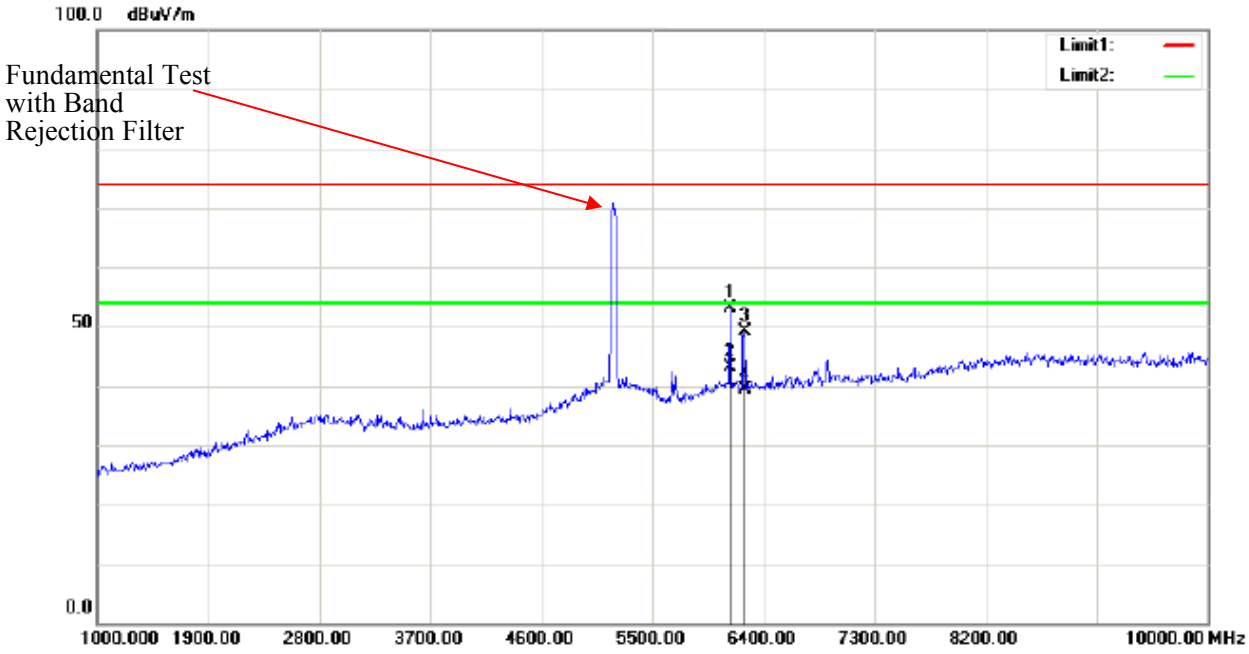


Note: No emission was detected in the range 18-40GHz.

Vertical

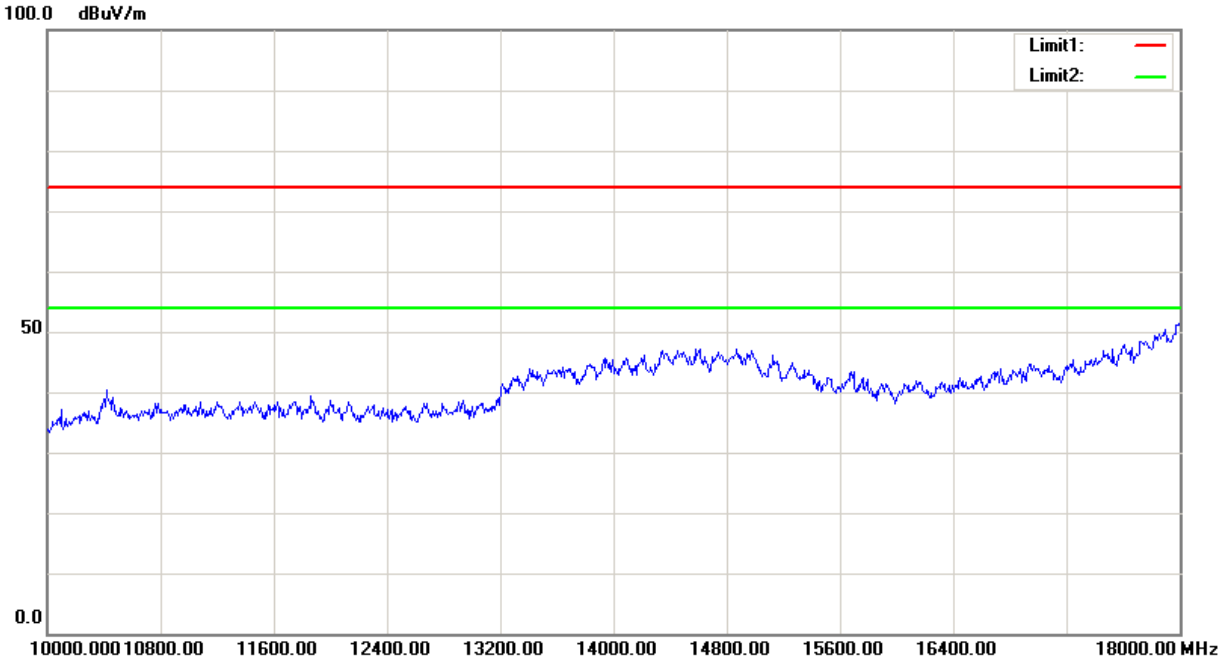


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5150.000	35.26	peak	31.10	66.36	74.00	153	69	7.64	
*	2	5150.000	15.69	AVG	31.10	46.79	54.00	153	69	7.21	
	3	5195.200	76.35	peak	31.21	107.56	125.20	153	69	17.64	Fundamental
	4	5195.200	66.87	AVG	31.21	98.08	125.20	153	69	27.12	Fundamental



Fundamental Test with Band Rejection Filter

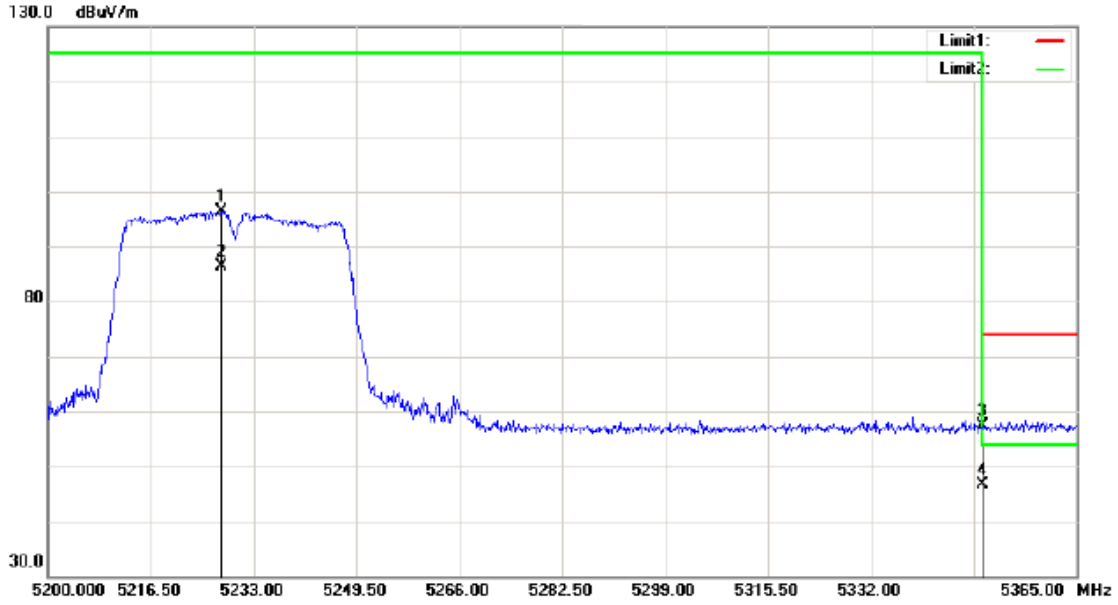
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	58.11	peak	-4.92	53.19	74.00	168	214	20.81	
*	2	6130.000	48.08	AVG	-4.92	43.16	54.00	168	214	10.84	
	3	6247.000	53.88	peak	-4.67	49.21	74.00	168	214	24.79	
	4	6247.000	44.15	AVG	-4.67	39.48	54.00	168	214	14.52	



Note: No emission was detected in the range 18-40GHz.

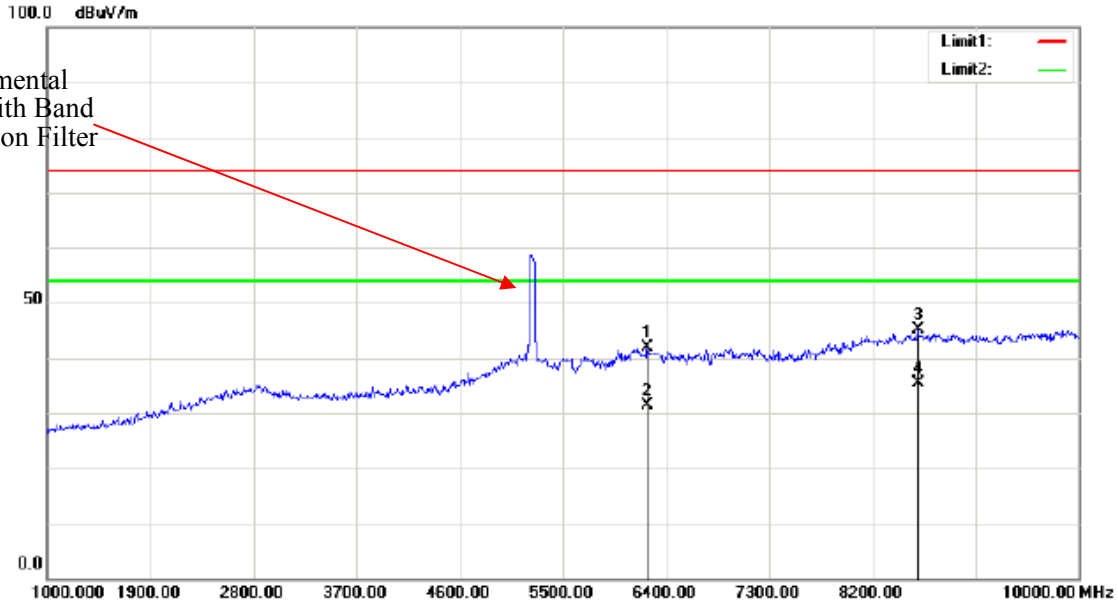
High Channel

Horizontal

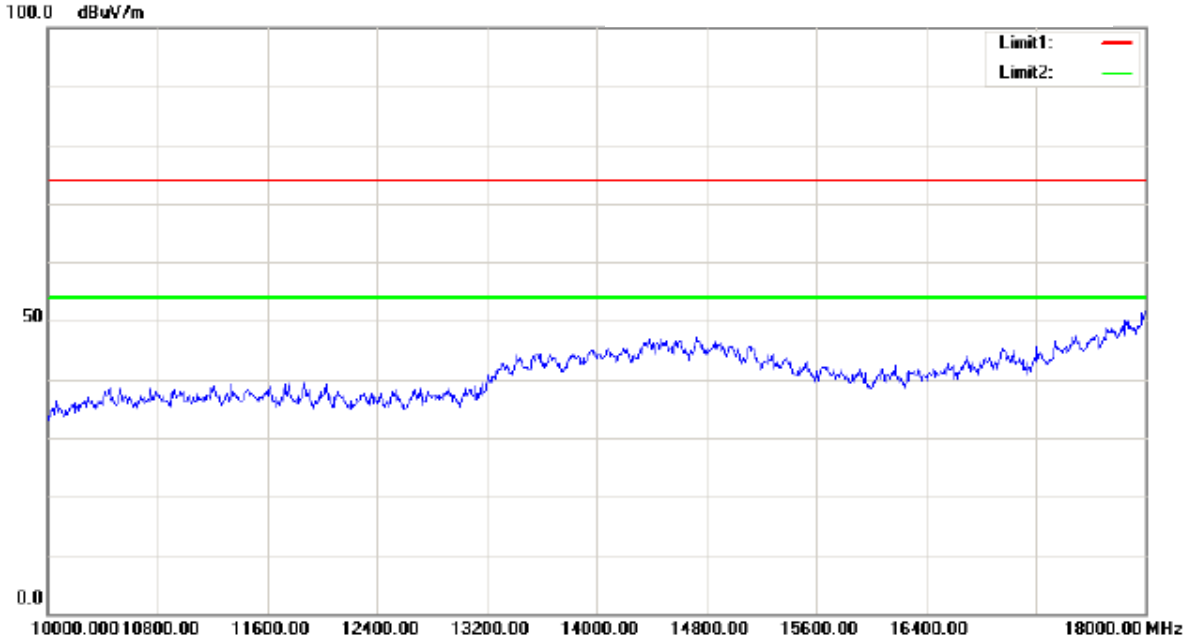


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5227.802	65.14	peak	31.21	96.35	125.20	159	218	28.85	
	2	5227.802	55.26	AVG	31.21	86.47	125.20	159	218	38.73	
	3	5350.000	25.92	peak	31.38	57.30	74.00	159	218	16.70	Fundamental
*	4	5350.000	15.21	AVG	31.38	46.59	54.00	159	218	7.41	Fundamental

Fundamental
Test with Band
Rejection Filter

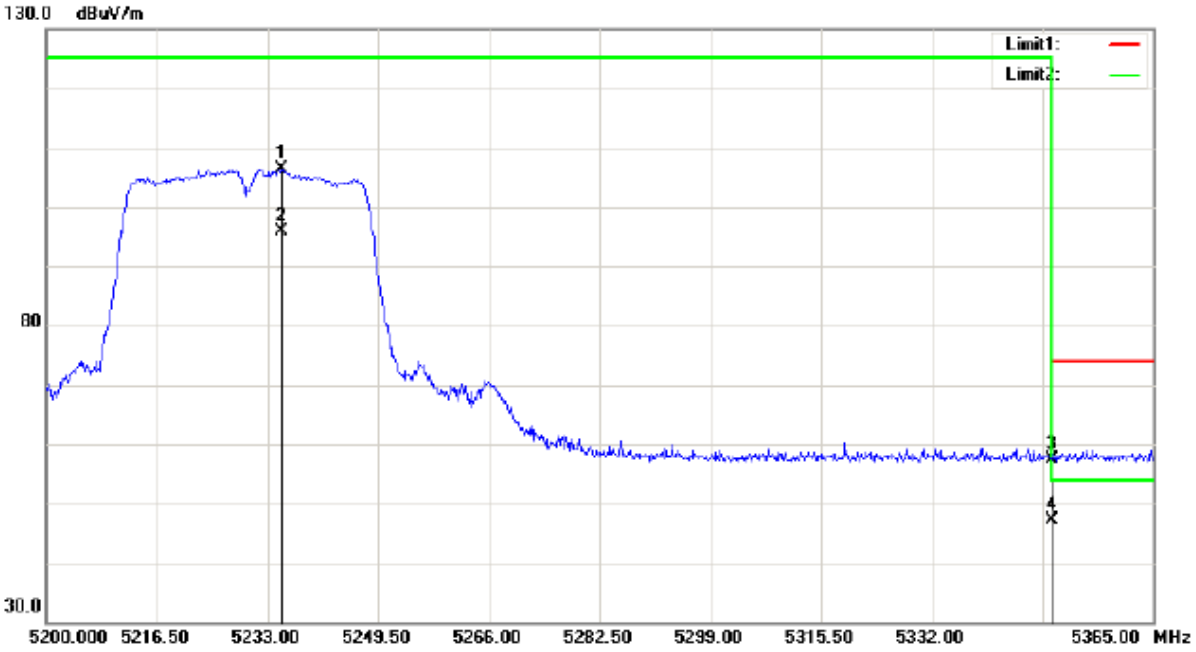


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6238.000	46.54	peak	-4.69	41.85	74.00	180	55	32.15	
	2	6238.000	36.17	AVG	-4.69	31.48	54.00	180	55	22.52	
	3	8600.500	45.52	peak	-0.39	45.13	74.00	180	55	28.87	
*	4	8600.500	35.85	AVG	-0.39	35.46	54.00	180	55	18.54	

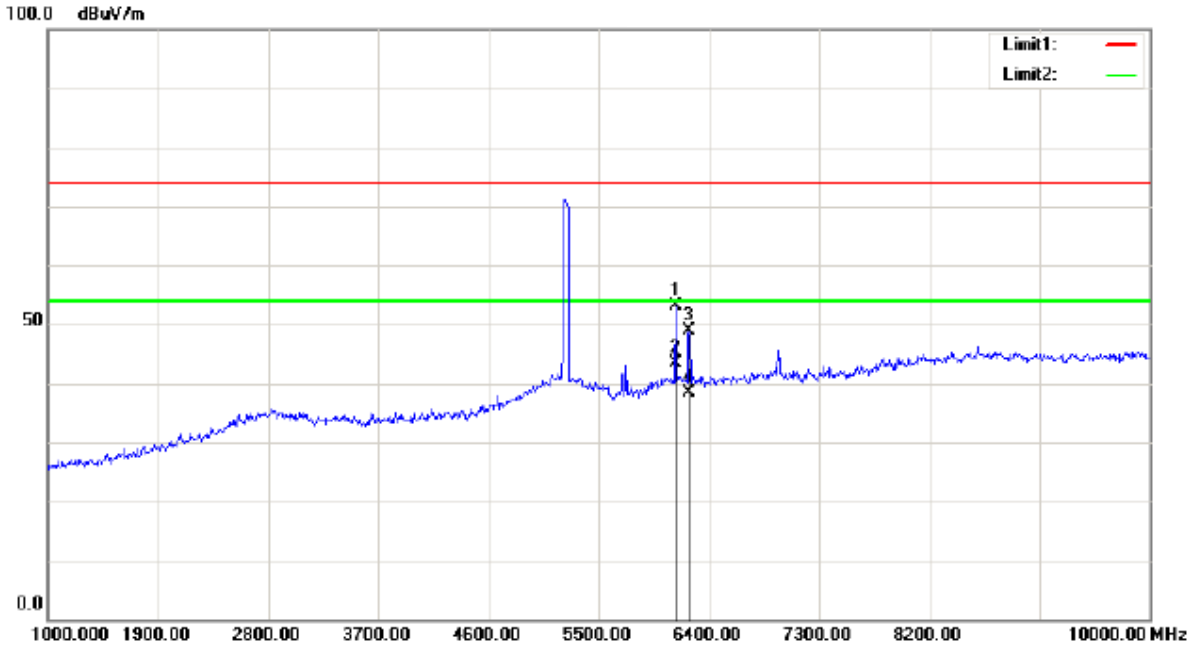


Note: No emission was detected in the range 18-40GHz.

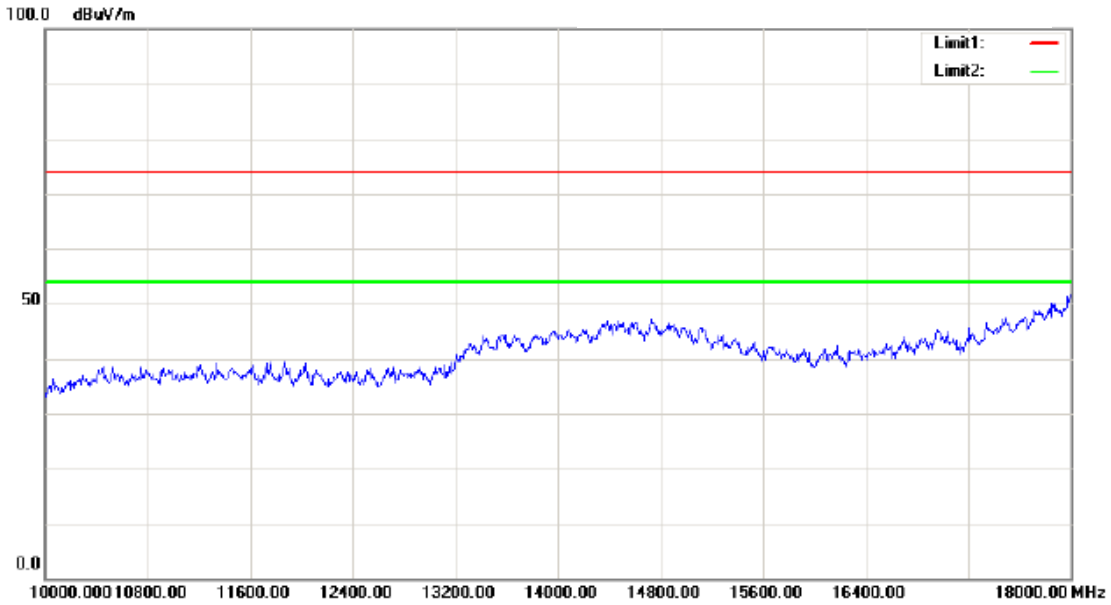
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5235.063	75.17	peak	31.21	106.38	125.20	170	190	18.82	
	2	5235.063	64.79	AVG	31.21	96.00	125.20	170	190	29.20	
	3	5350.000	26.02	peak	31.38	57.40	74.00	170	190	16.60	Fundamental
*	4	5350.000	15.80	AVG	31.38	47.18	54.00	170	190	6.82	Fundamental



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	57.98	peak	-4.92	53.06	74.00	158	223	20.94	
*	2	6130.000	48.40	AVG	-4.92	43.48	54.00	158	223	10.52	
	3	6238.000	53.54	peak	-4.69	48.85	74.00	158	223	25.15	
	4	6238.000	43.16	AVG	-4.69	38.47	54.00	158	223	15.53	



Note: No emission was detected in the range 18-40GHz.

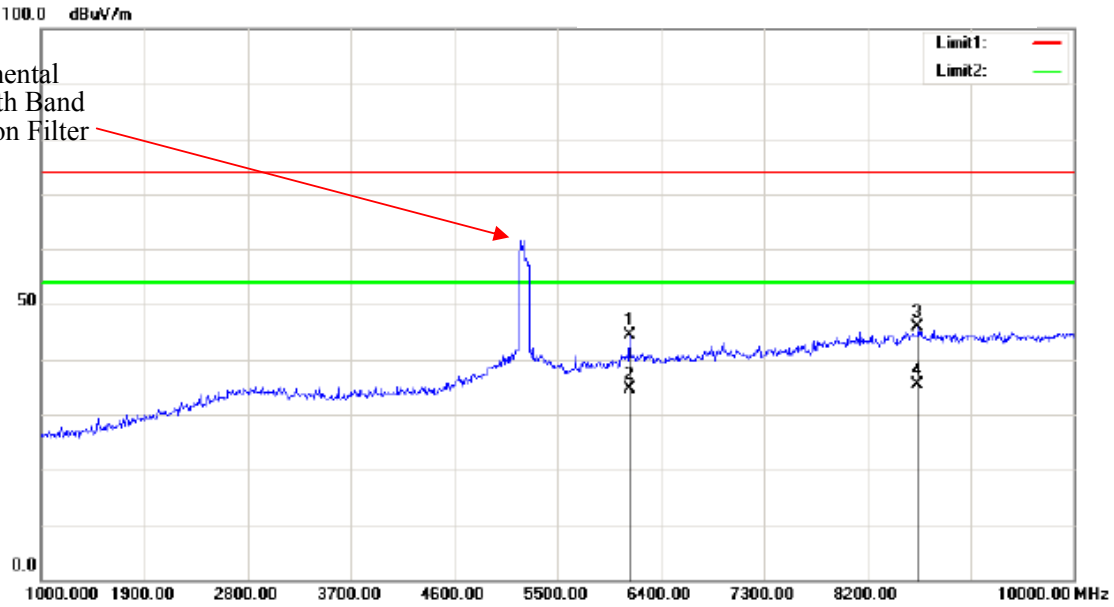
AC80 mode

Low Channel

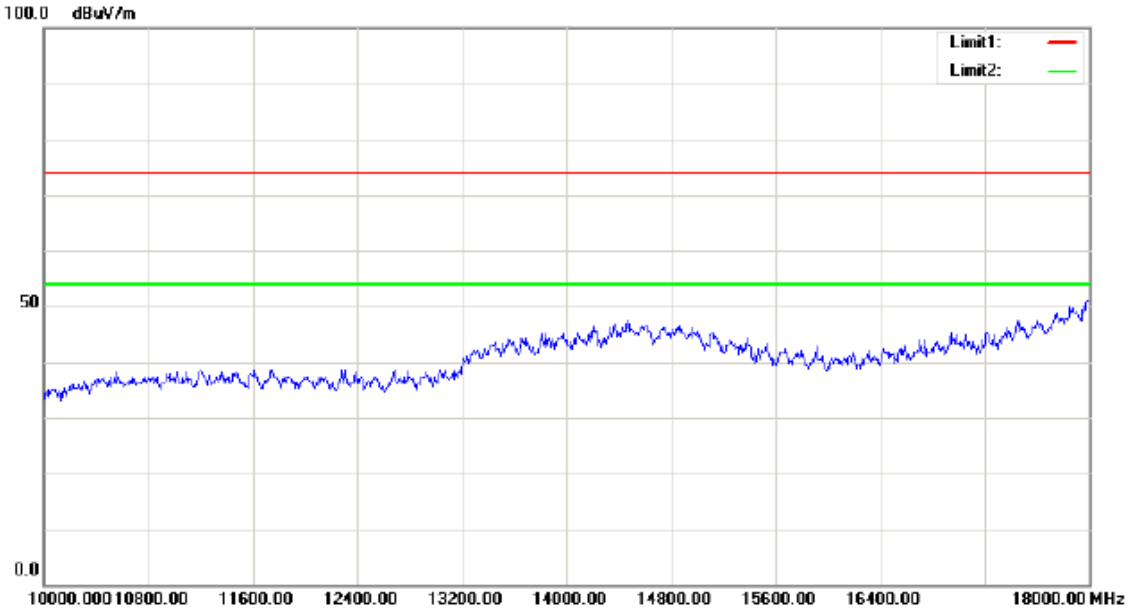
Horizontal

Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5150.000	29.17	peak	31.10	60.27	74.00	159	177	13.73	
*	2	5150.000	19.04	AVG	31.10	50.14	54.00	159	177	3.86	
	3	5203.217	66.42	peak	31.22	97.64	125.20	159	177	27.56	Fundamental
	4	5203.217	56.06	AVG	31.22	87.28	125.20	159	177	37.92	Fundamental
	5	5350.000	25.79	peak	31.38	57.17	74.00	159	177	16.83	
	6	5350.000	16.00	AVG	31.38	47.38	54.00	159	177	6.62	

Fundamental Test with Band Rejection Filter

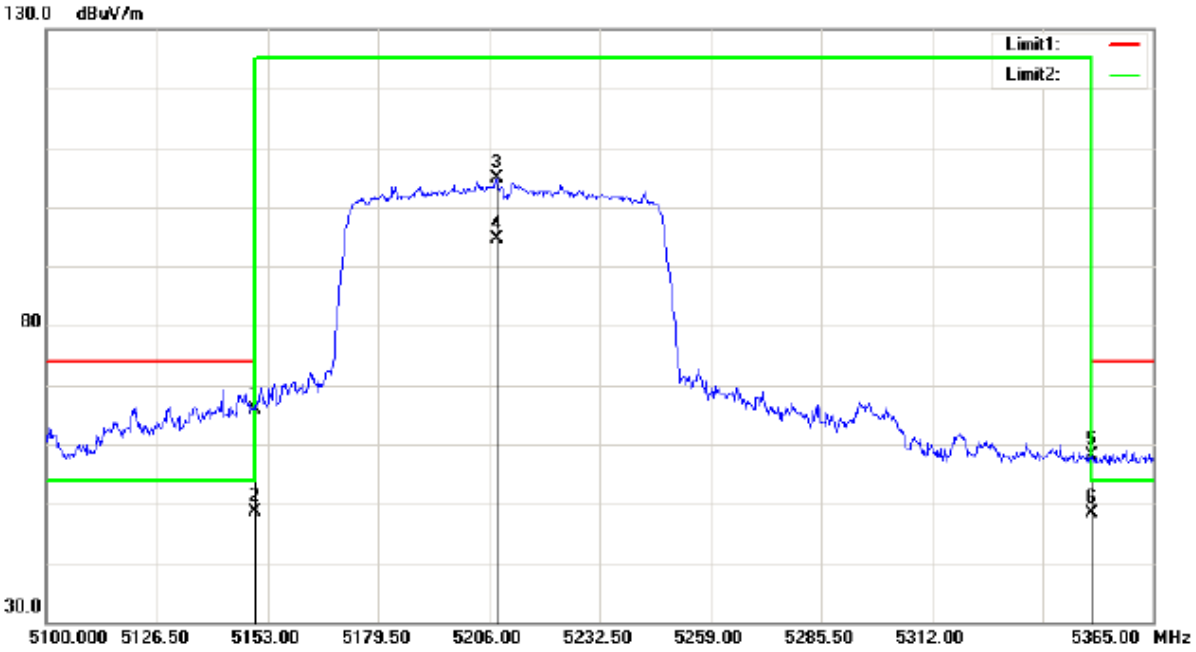


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	6130.000	49.19	peak	-4.92	44.27	74.00	188	11	29.73	
	2	6130.000	39.51	AVG	-4.92	34.59	54.00	188	11	19.41	
	3	8641.000	46.28	peak	-0.33	45.95	74.00	188	11	28.05	
*	4	8641.000	35.80	AVG	-0.33	35.47	54.00	188	11	18.53	

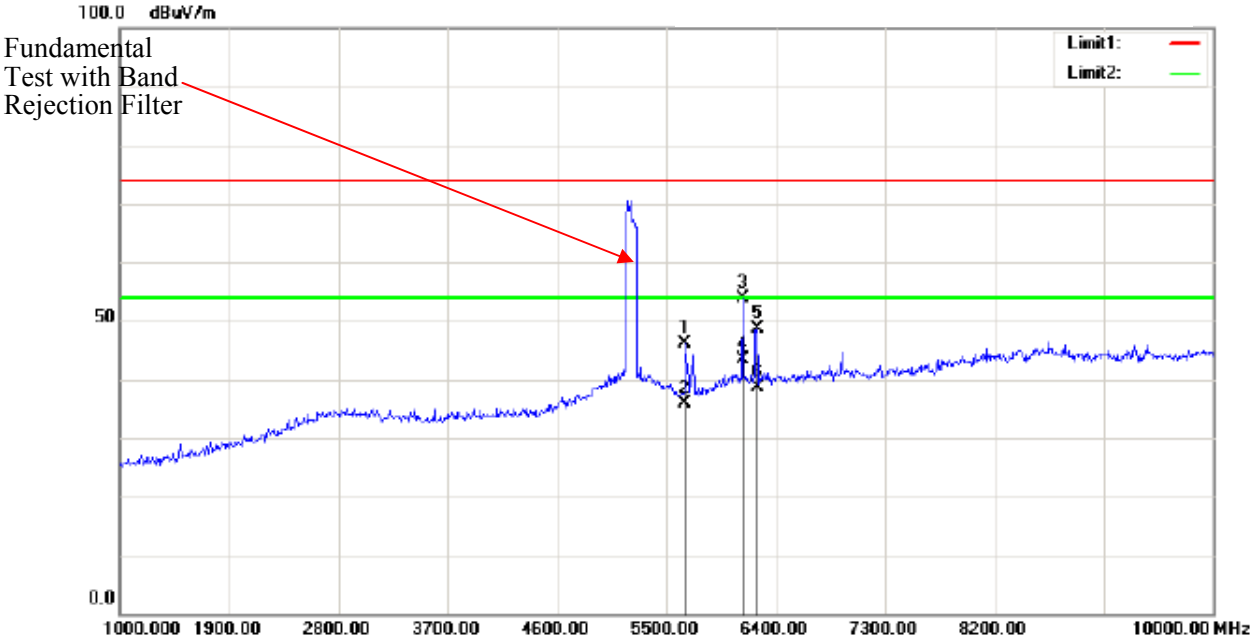


Note: No emission was detected in the range 18-40GHz.

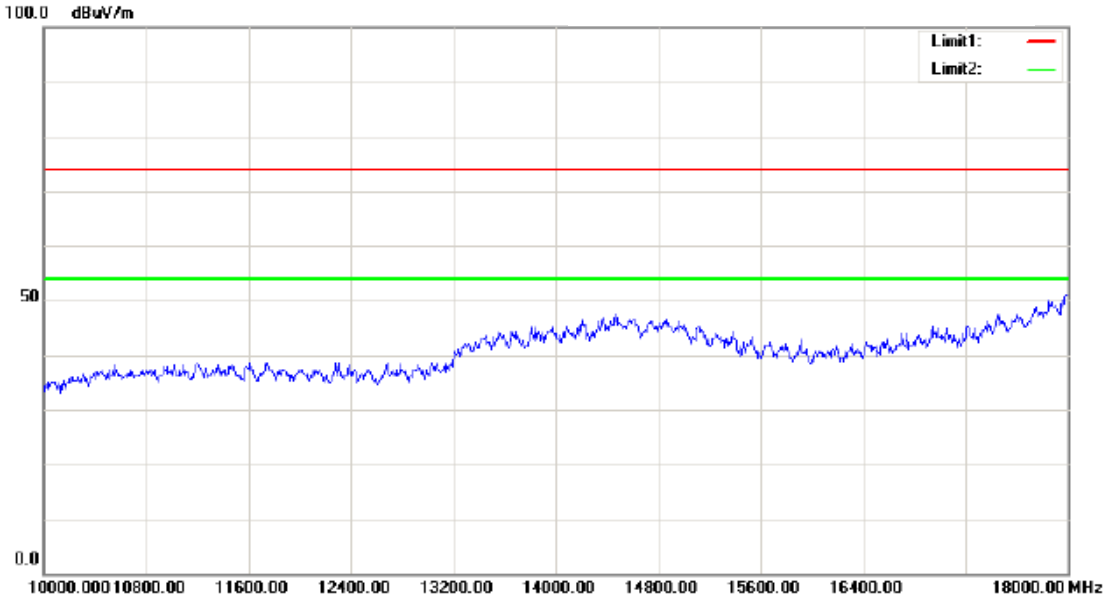
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5150.000	34.85	peak	31.10	65.95	74.00	164	168	8.05	
*	2	5150.000	17.57	AVG	31.10	48.67	54.00	164	168	5.33	
	3	5207.988	73.66	peak	31.21	104.87	125.20	164	168	20.33	Fundamental
	4	5207.988	63.46	AVG	31.21	94.67	125.20	164	168	30.53	Fundamental
	5	5350.000	26.78	peak	31.38	58.16	74.00	164	168	15.84	
	6	5350.000	16.99	AVG	31.38	48.37	54.00	164	168	5.63	



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5653.000	51.74	peak	-5.67	46.07	74.00	166	200	27.93	
	2	5653.000	41.67	AVG	-5.67	36.00	54.00	166	200	18.00	
	3	6130.000	58.69	peak	-4.92	53.77	74.00	166	200	20.23	
*	4	6130.000	48.20	AVG	-4.92	43.28	54.00	166	200	10.72	
	5	6251.500	53.27	peak	-4.66	48.61	74.00	166	200	25.39	
	6	6251.500	43.23	AVG	-4.66	38.57	54.00	166	200	15.43	



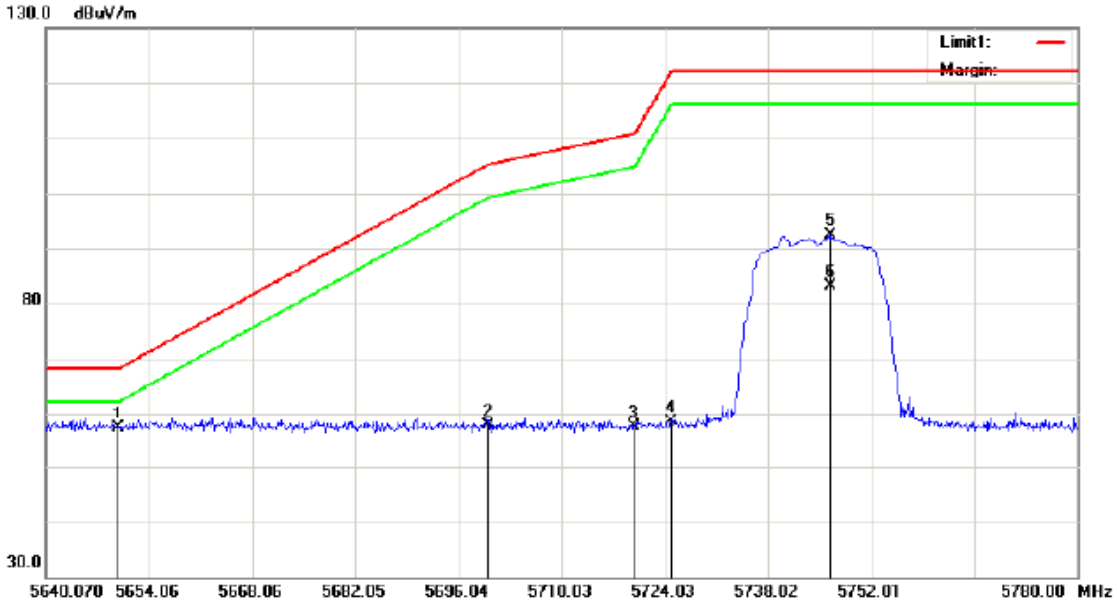
Note: No emission was detected in the range 18-40GHz.

3)5725-5850MHz:

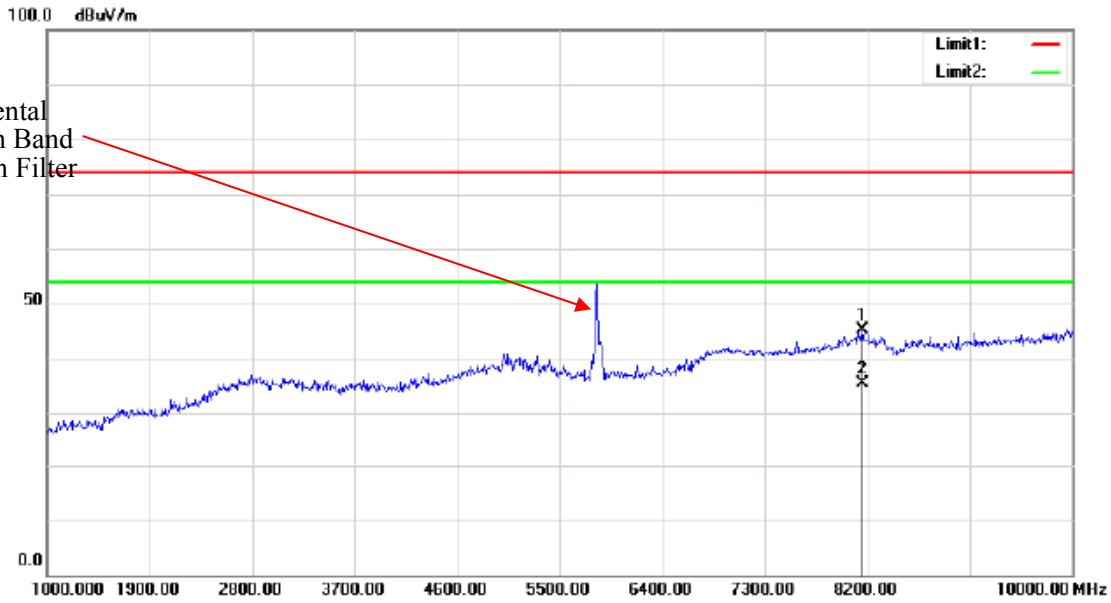
A20-Model

Low Channel

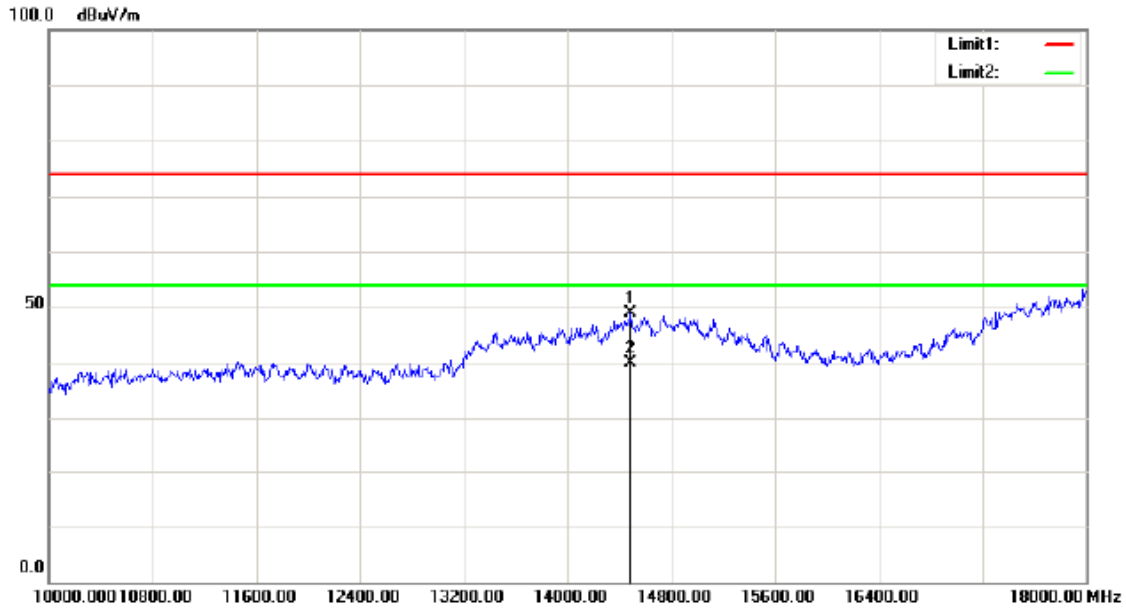
Horizontal



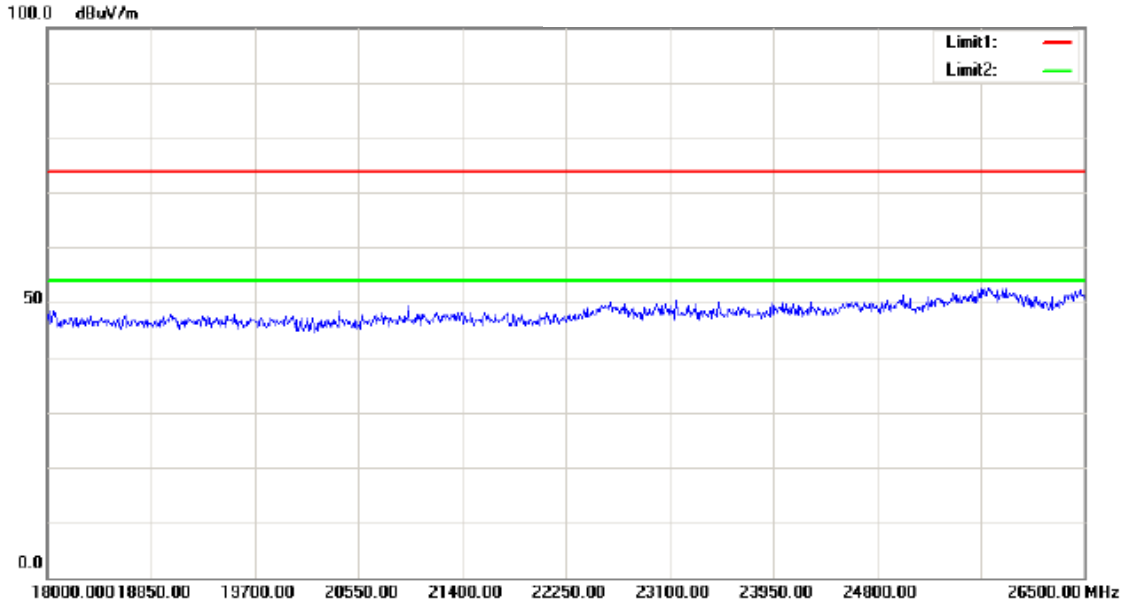
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	25.33	peak	31.79	57.12	68.20	135	224	11.08	
	2	5700.000	25.69	peak	31.86	57.55	105.20	135	224	47.65	
	3	5720.000	25.55	peak	31.88	57.43	110.80	135	224	53.37	
	4	5725.000	26.53	peak	31.88	58.41	122.20	135	224	63.79	
	5	5746.540	60.49	peak	31.89	92.38	122.20	135	224	29.82	Fundamental
	6	5746.540	51.36	AVG	31.89	83.25	122.20	135	224	38.95	Fundamental

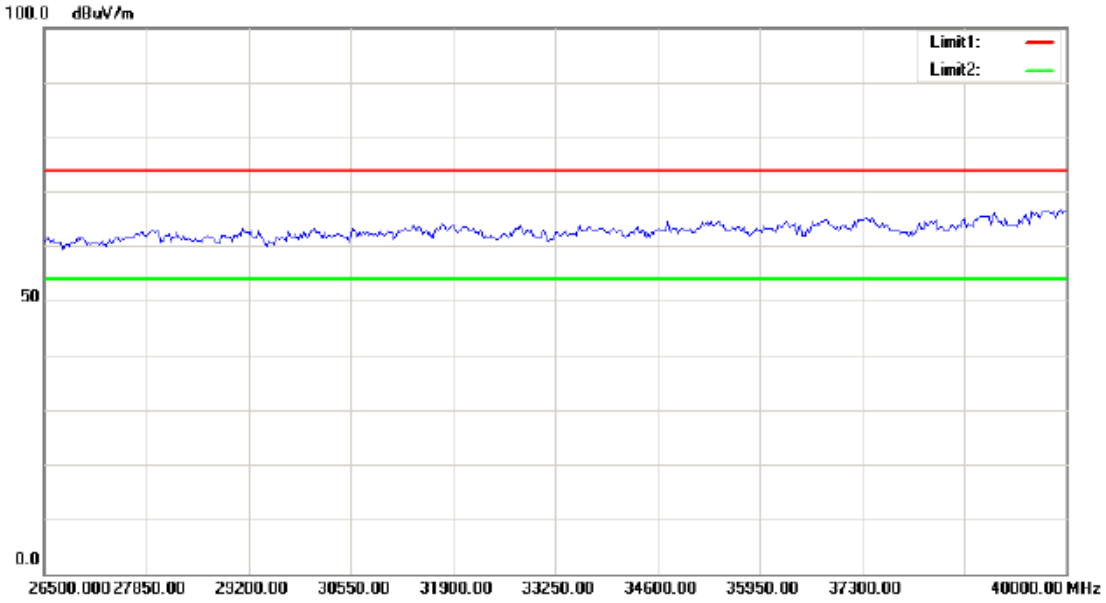


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8155.000	45.99	peak	-0.96	45.03	74.00	168	159	28.97	
*	2	8155.000	36.44	AVG	-0.96	35.48	54.00	168	159	18.52	

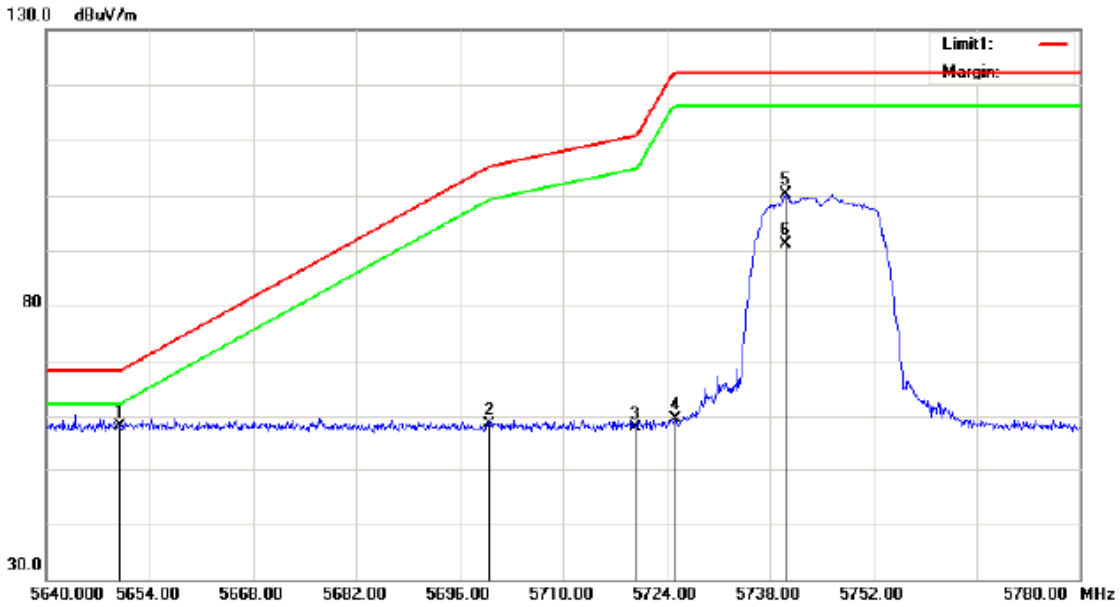


Mk.	No.	Frequency (MHz)	Reading (dBµV/m)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14488.000	44.49	peak	4.30	48.79	74.00	157	48	25.21	
*	2	14488.000	35.64	AVG	4.30	39.94	54.00	157	48	14.06	


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz

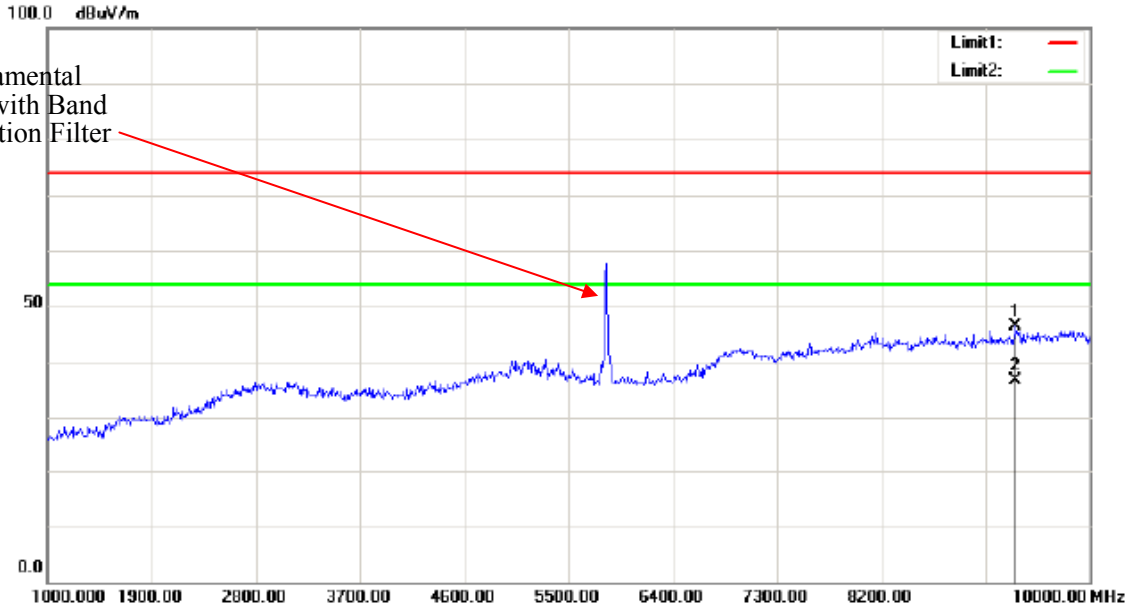

100.0 dBuV/m
Limit1:
Limit2:
50
0.0
26500.000 27850.00 29200.00 30550.00 31900.00 33250.00 34600.00 35950.00 37300.00 40000.00 MHz

Vertical

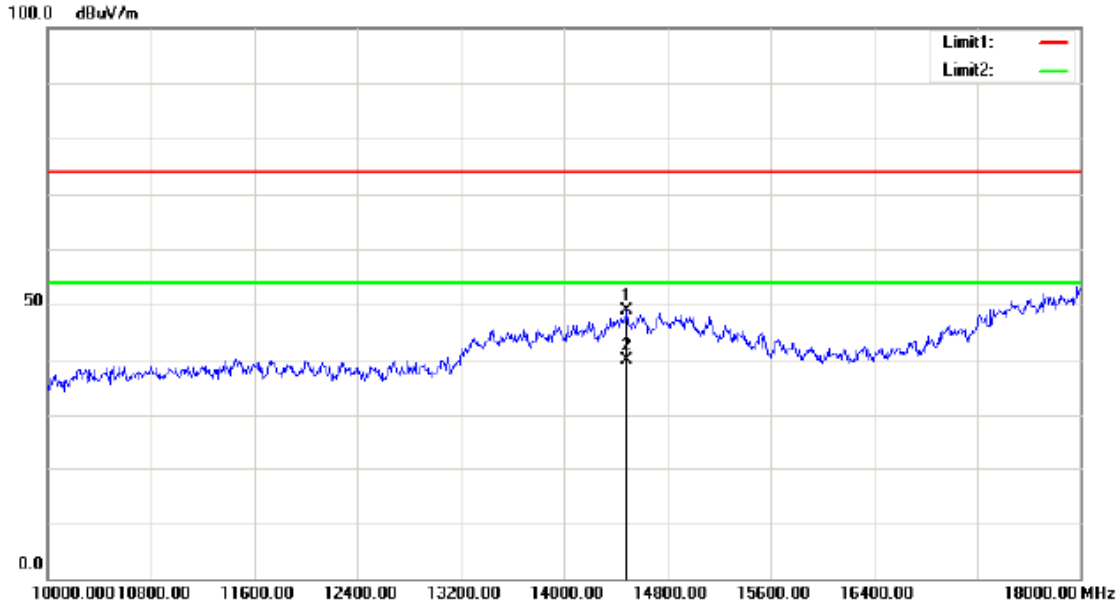


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	26.19	peak	31.79	57.98	68.20	166	221	10.22	
	2	5700.000	26.58	peak	31.86	58.44	105.20	166	221	46.76	
	3	5720.000	25.85	peak	31.88	57.73	110.80	166	221	53.07	
	4	5725.000	27.58	peak	31.88	59.46	122.20	166	221	62.74	
	5	5740.100	68.33	peak	31.89	100.22	122.20	166	221	21.98	Fundamental
	6	5740.100	59.16	AVG	31.89	91.05	122.20	166	221	31.15	Fundamental

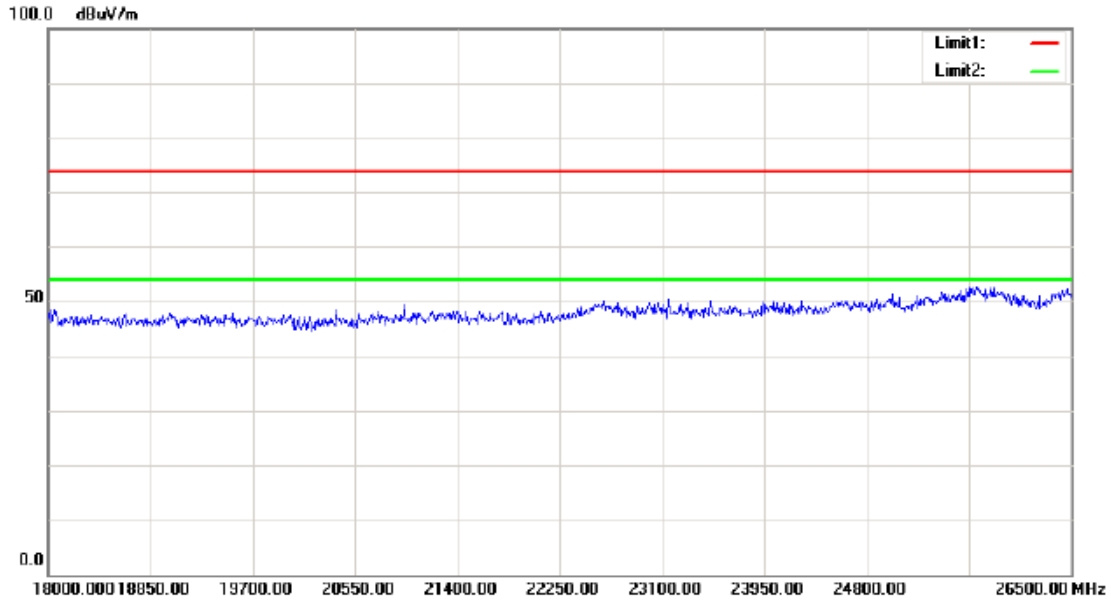
Fundamental Test with Band Rejection Filter

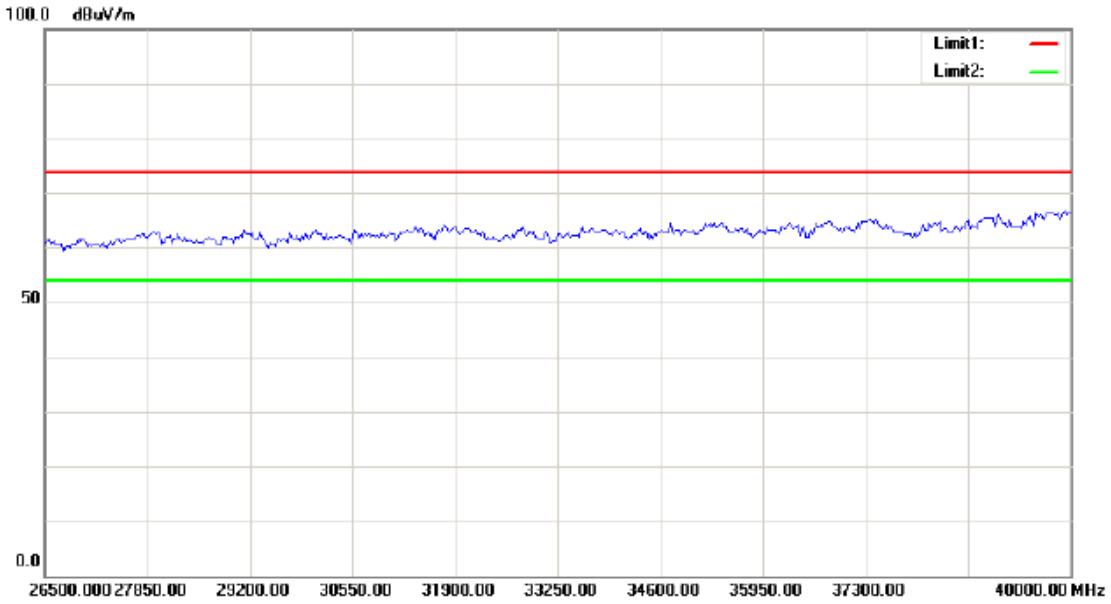


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	9365.500	45.56	peak	0.82	46.38	74.00	159	45	27.62	
*	2	9365.500	35.75	AVG	0.82	36.57	54.00	159	45	17.43	



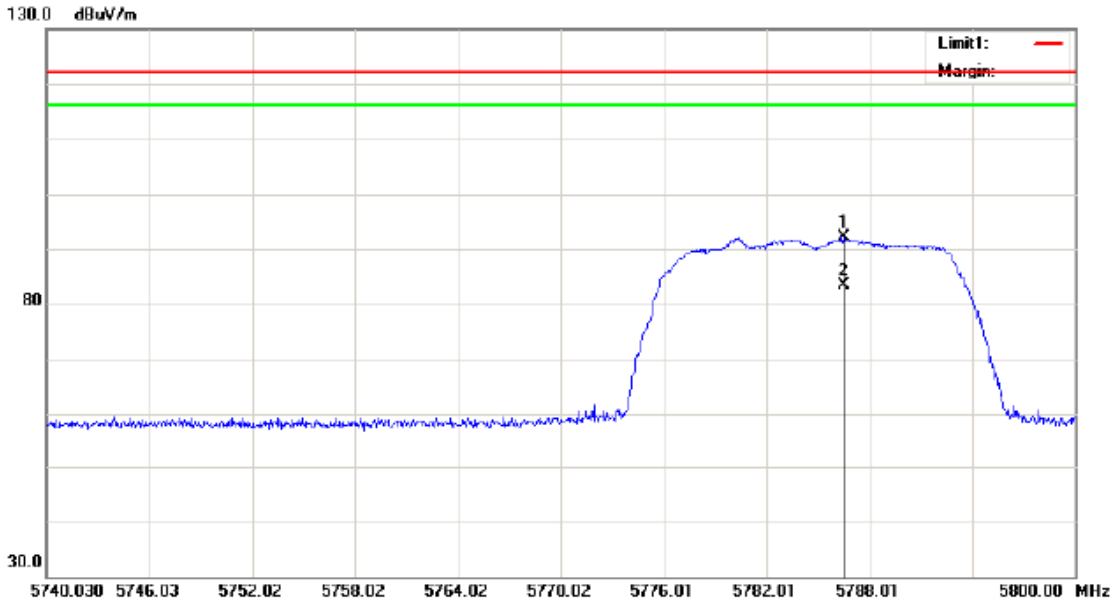
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14488.000	44.49	peak	4.30	48.79	74.00	157	48	25.21	
*	2	14488.000	35.64	AVG	4.30	39.94	54.00	157	48	14.06	


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
26500.000 27850.00 29200.00 30550.00 31900.00 33250.00 34600.00 35950.00 37300.00 40000.00 MHz

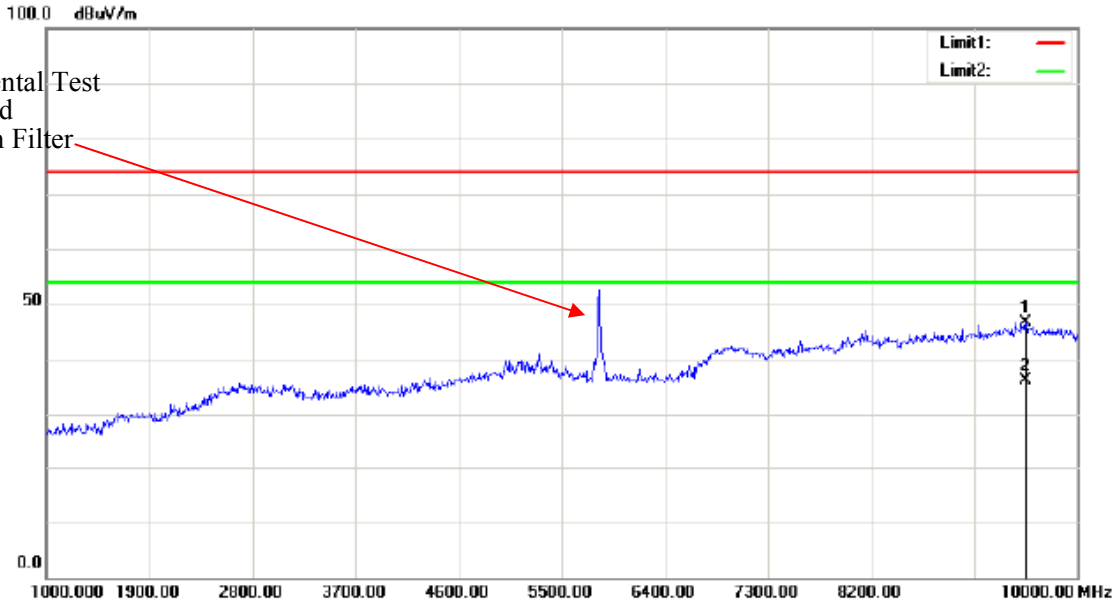
Middle Channel

Horizontal

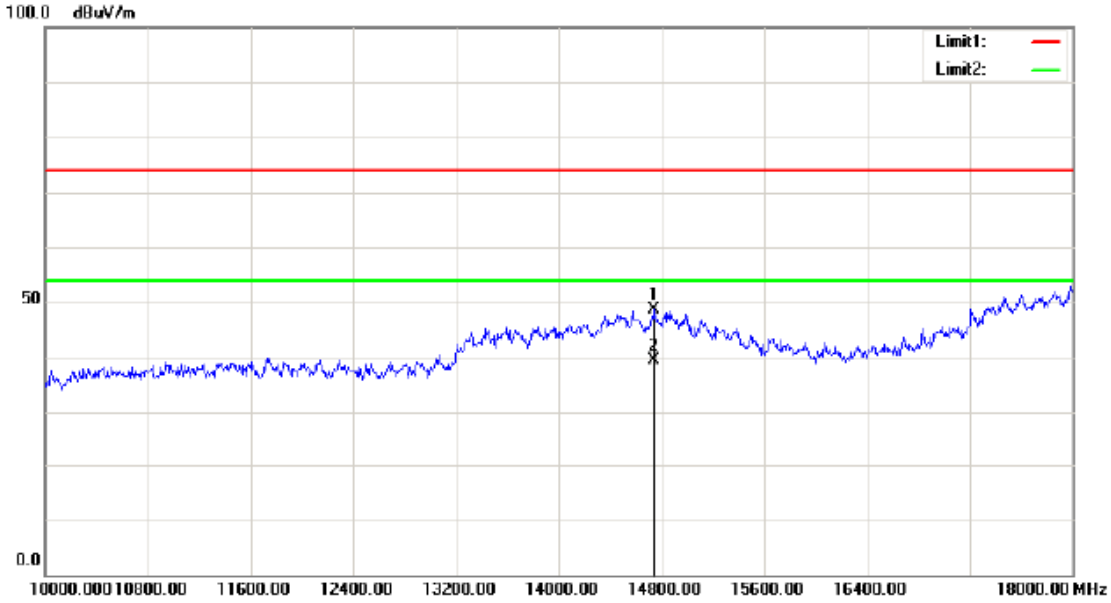


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5786.500	60.11	peak	31.92	92.03	122.20	152	148	30.17	Fundamental
	2	5786.500	51.34	AVG	31.92	83.26	122.20	152	148	38.94	Fundamental

Fundamental Test with Band Rejection Filter



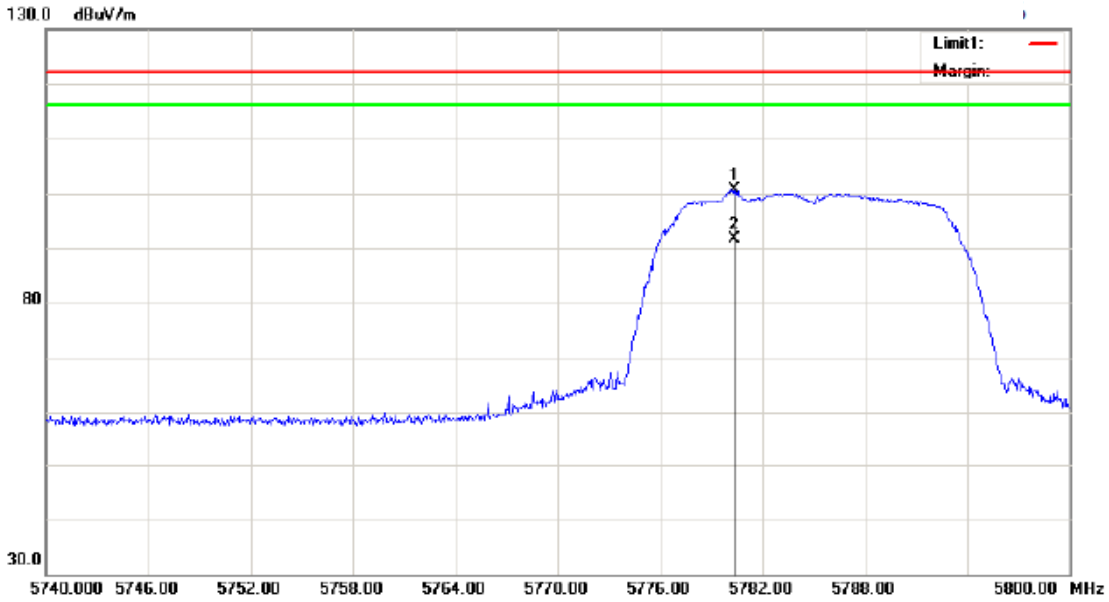
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	9550.000	45.57	peak	1.06	46.63	74.00	166	180	27.37	
*	2	9550.000	35.02	AVG	1.06	36.08	54.00	166	180	17.92	



Mk.	No.	Frequency (MHz)	Reading (dBµV/m)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14748.000	44.42	peak	4.10	48.52	74.00	136	97	25.48	
*	2	14748.000	35.39	AVG	4.10	39.49	54.00	136	97	14.51	

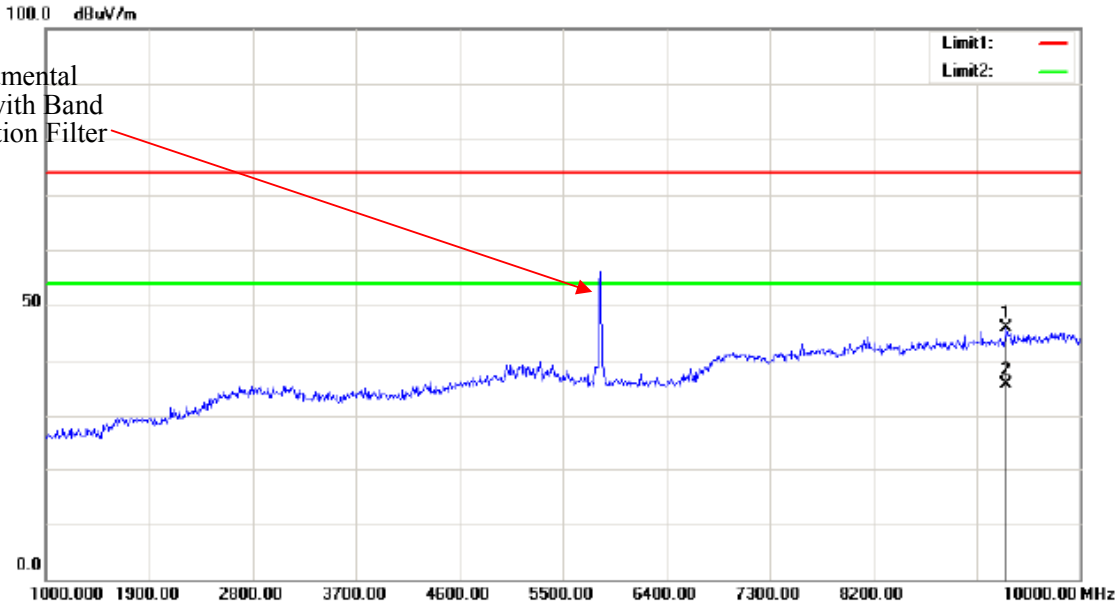
Note: No emission was detected in the range 18-40GHz.

Vertical

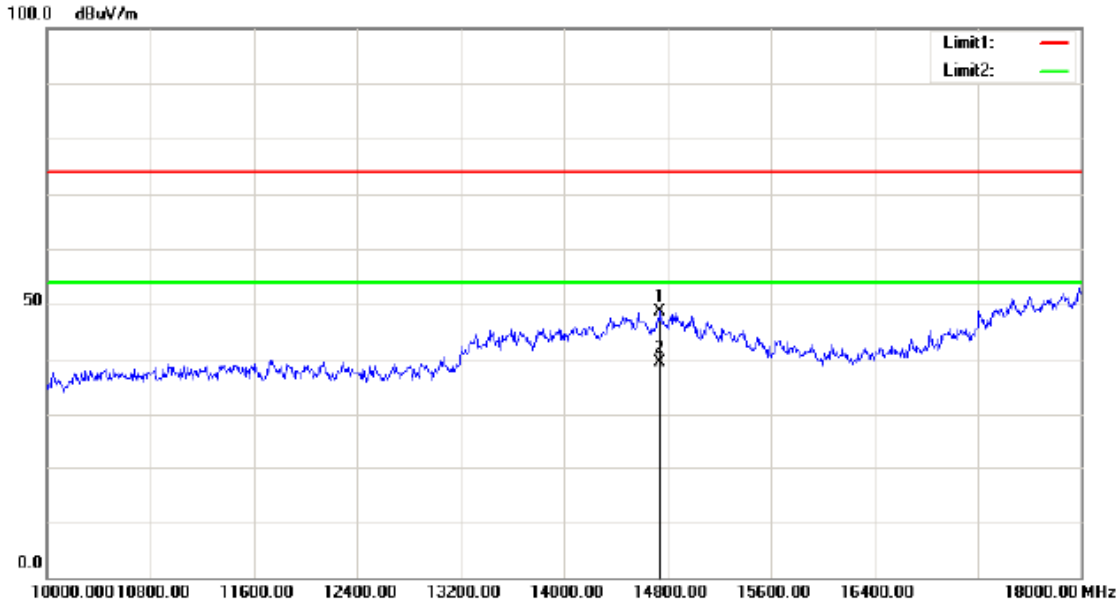


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5780.350	68.69	peak	31.91	100.60	122.20	154	27	21.60	Fundamental
	2	5780.350	59.76	AVG	31.91	91.67	122.20	154	27	30.53	Fundamental

Fundamental Test with Band Rejection Filter



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	9365.500	45.06	peak	0.82	45.88	74.00	160	180	28.12	
*	2	9365.500	34.92	AVG	0.82	35.74	54.00	160	180	18.26	

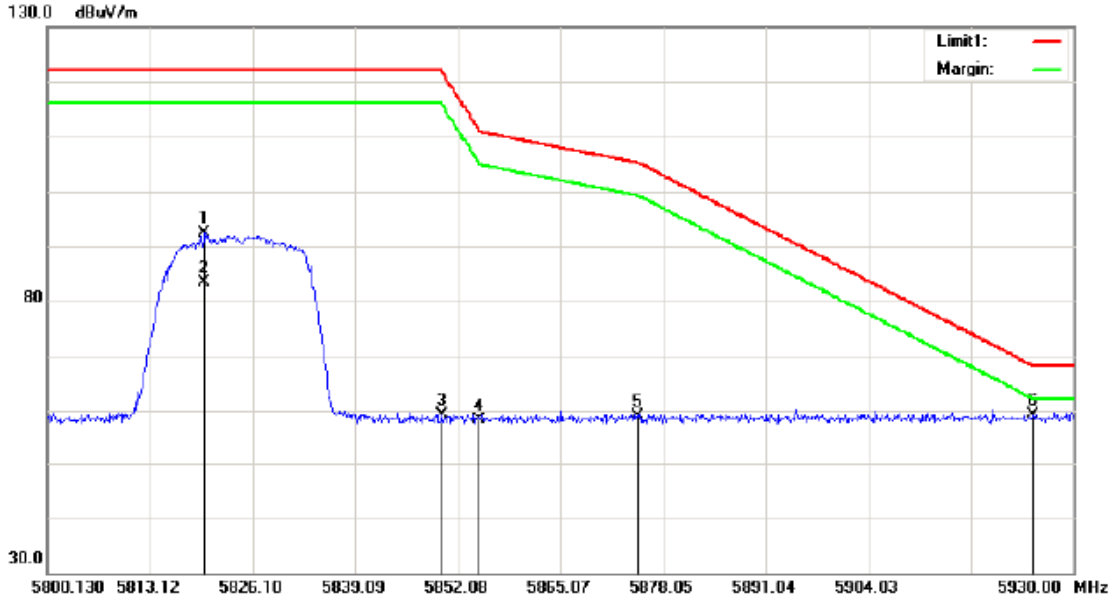


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14748.000	44.42	peak	4.10	48.52	74.00	136	97	25.48	
*	2	14748.000	35.39	AVG	4.10	39.49	54.00	136	97	14.51	

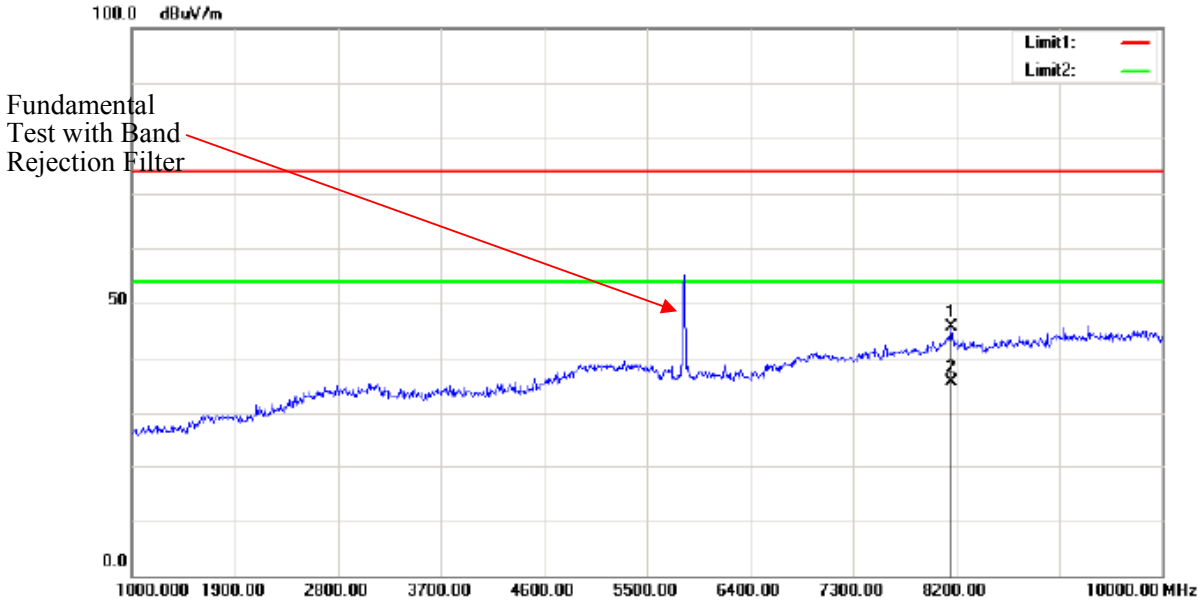
Note: No emission was detected in the range 18-40GHz.

High Channel

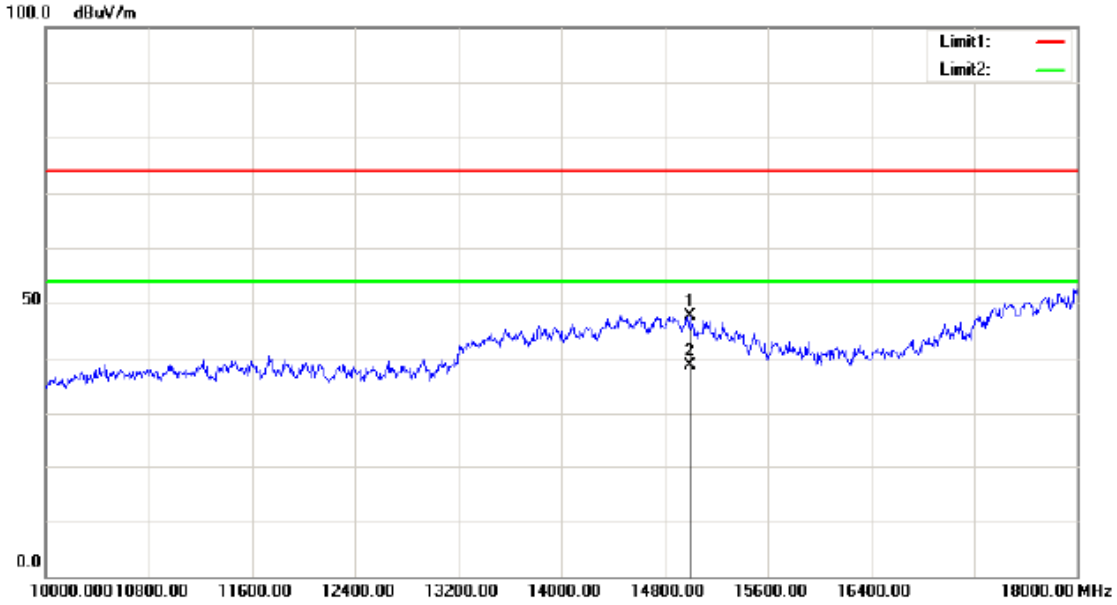
Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5820.085	60.53	peak	31.96	92.49	122.20	157	132	29.71	Fundamental
	2	5820.085	51.48	AVG	31.96	83.44	122.20	157	132	38.76	Fundamental
	3	5850.000	27.02	peak	31.99	59.01	122.20	157	132	63.19	
	4	5855.000	26.10	peak	31.99	58.09	110.80	157	132	52.71	
	5	5875.000	26.92	peak	32.02	58.94	105.20	157	132	46.26	
*	6	5925.000	27.13	peak	32.07	59.20	68.20	157	132	9.00	



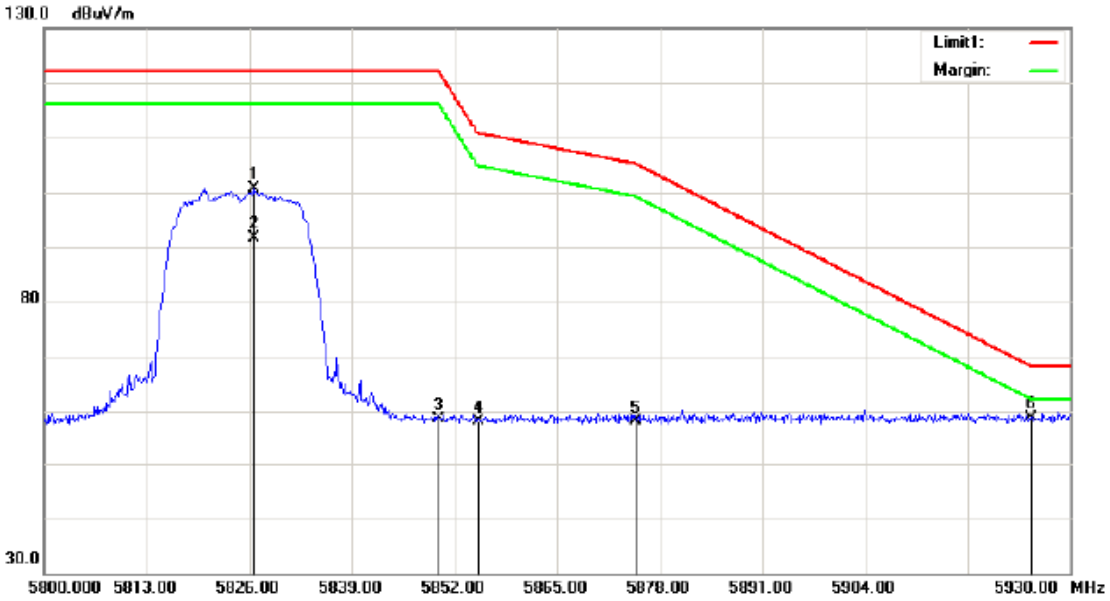
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8155.000	46.49	peak	-0.96	45.53	74.00	136	211	28.47	
*	2	8155.000	36.60	AVG	-0.96	35.64	54.00	136	211	18.36	



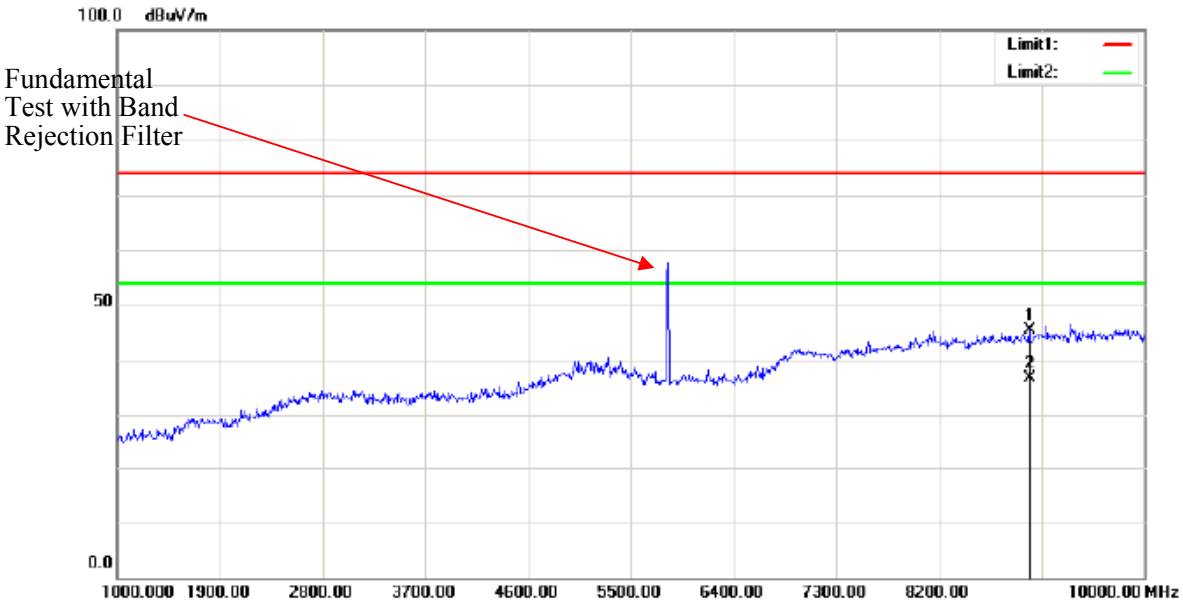
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14996.000	43.76	peak	3.91	47.67	74.00	154	67	26.33	
*	2	14996.000	34.82	AVG	3.91	38.73	54.00	154	67	15.27	

Note: No emission was detected in the range 18-40GHz.

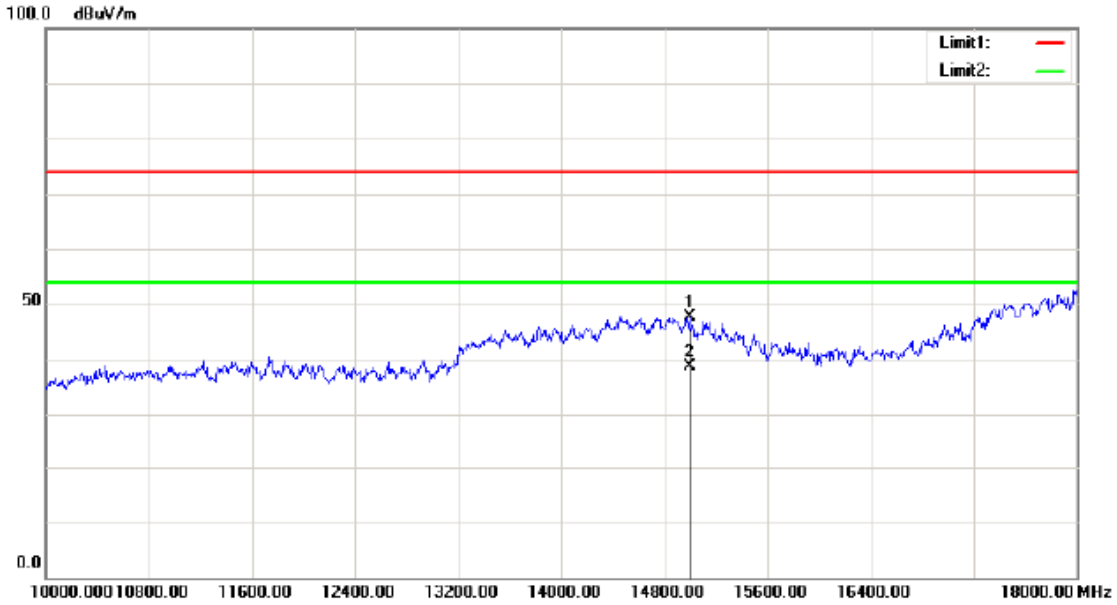
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5826.520	68.69	peak	31.96	100.65	122.20	146	223	21.55	Fundamental
	2	5826.520	59.76	AVG	31.96	91.72	122.20	146	223	30.48	Fundamental
	3	5850.000	26.45	peak	31.99	58.44	122.20	146	223	63.76	
	4	5855.000	25.77	peak	31.99	57.76	110.80	146	223	53.04	
	5	5875.000	25.79	peak	32.02	57.81	105.20	146	223	47.39	
*	6	5925.000	26.53	peak	32.07	58.60	68.20	146	223	9.60	



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8992.000	45.05	peak	0.25	45.30	74.00	157	84	28.70	
*	2	8992.000	36.35	AVG	0.25	36.60	54.00	157	84	17.40	



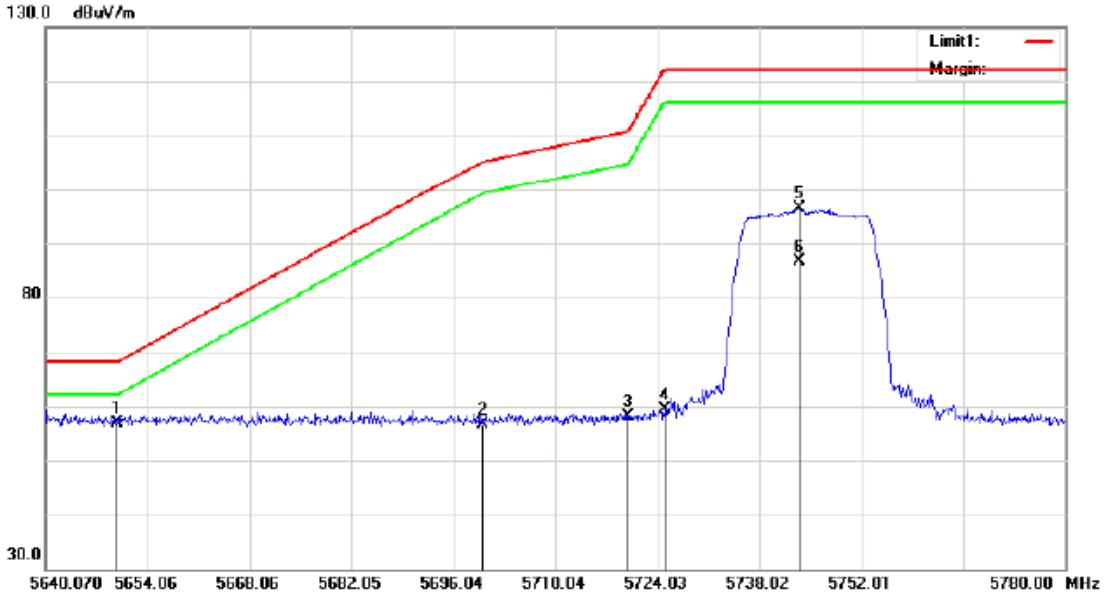
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14996.000	43.76	peak	3.91	47.67	74.00	154	67	26.33	
*	2	14996.000	34.82	AVG	3.91	38.73	54.00	154	67	15.27	

Note: No emission was detected in the range 18-40GHz.

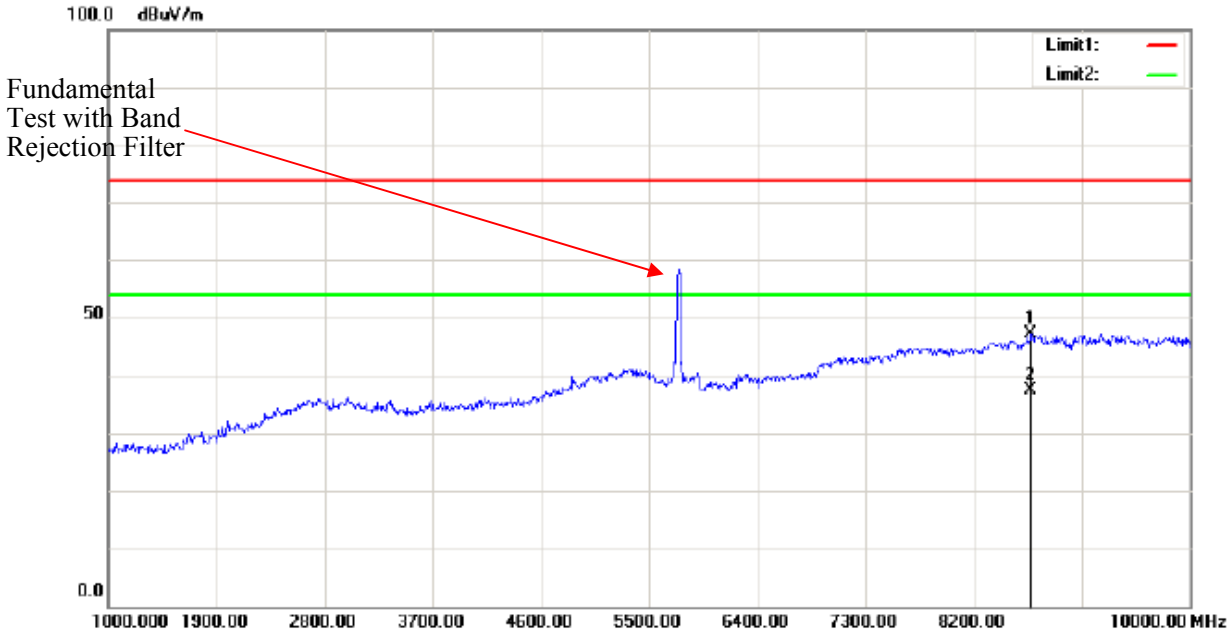
N20 mode

Low Channel

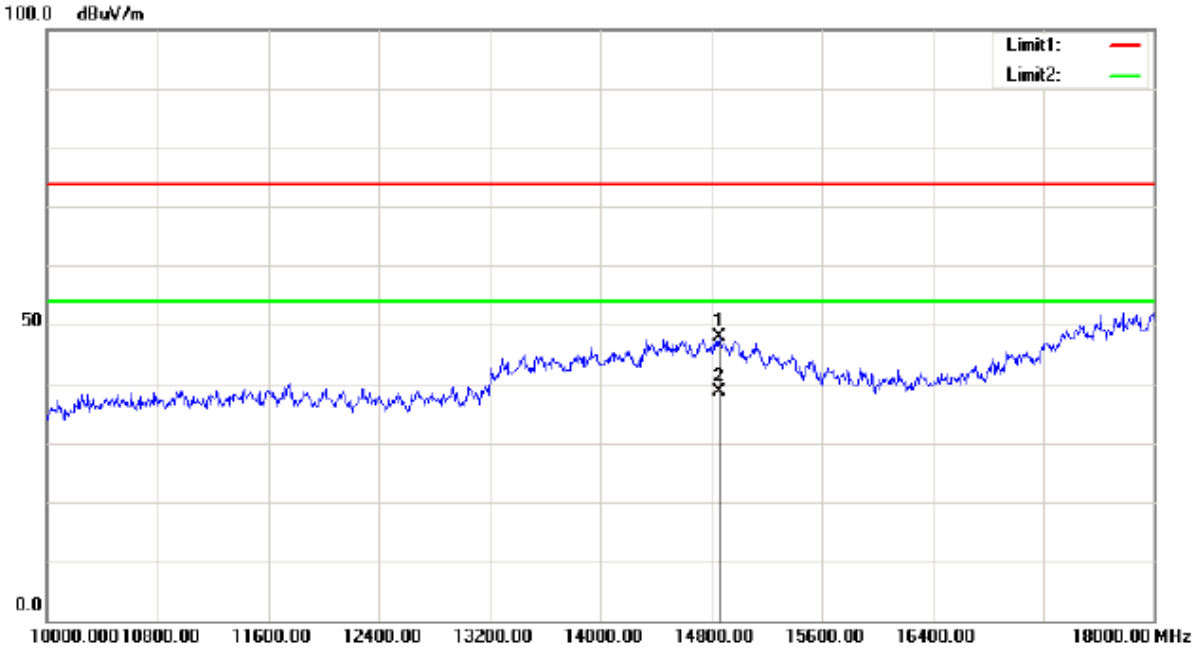
Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	25.13	peak	31.79	56.92	68.20	153	45	11.28	
	2	5700.000	24.89	peak	31.86	56.75	105.20	153	45	48.45	
	3	5720.000	26.17	peak	31.88	58.05	110.80	153	45	52.75	
	4	5725.000	27.39	peak	31.88	59.27	122.20	153	45	62.93	
	5	5743.530	64.51	peak	31.89	96.40	122.20	153	45	25.80	Fundamental
	6	5743.530	54.62	AVG	31.89	86.51	122.20	153	45	35.69	Fundamental



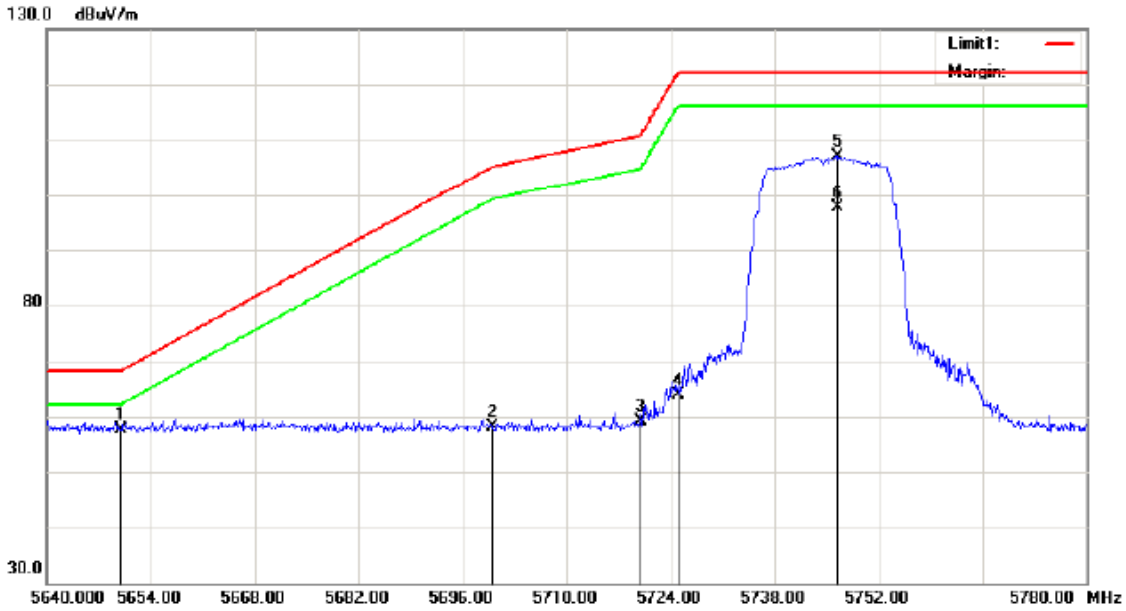
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8677.000	47.49	peak	-0.26	47.23	74.00	165	166	26.77	
*	2	8677.000	37.55	AVG	-0.26	37.29	54.00	165	166	16.71	



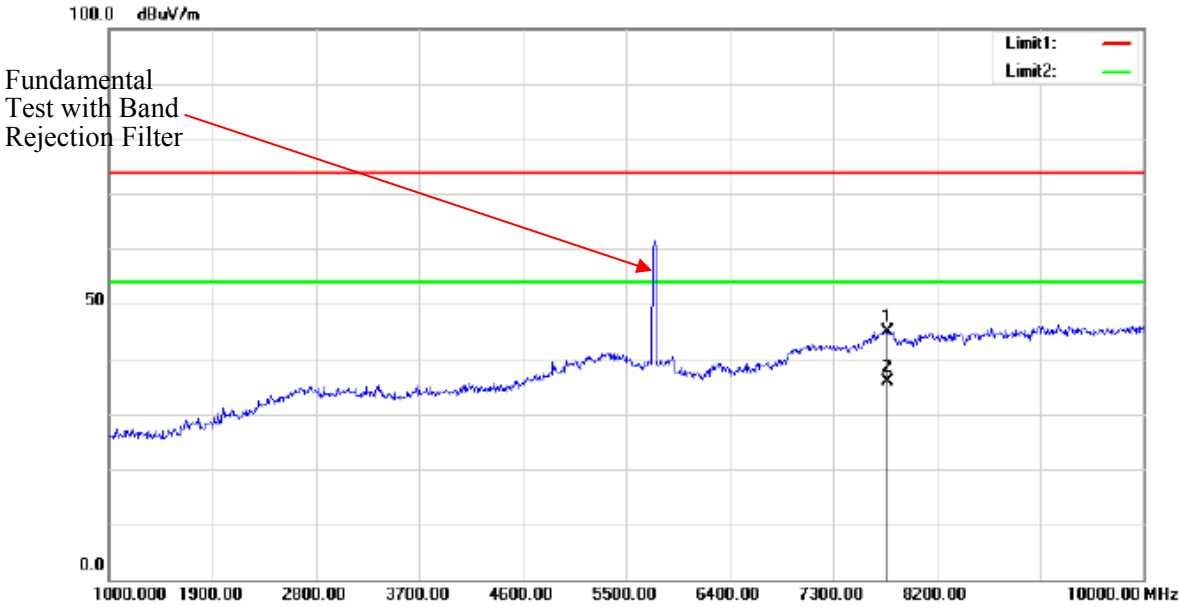
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14860.000	43.82	peak	4.02	47.84	74.00	158	227	26.16	
*	2	14860.000	34.57	AVG	4.02	38.59	54.00	158	227	15.41	

Note: No emission was detected in the range 18-40GHz.

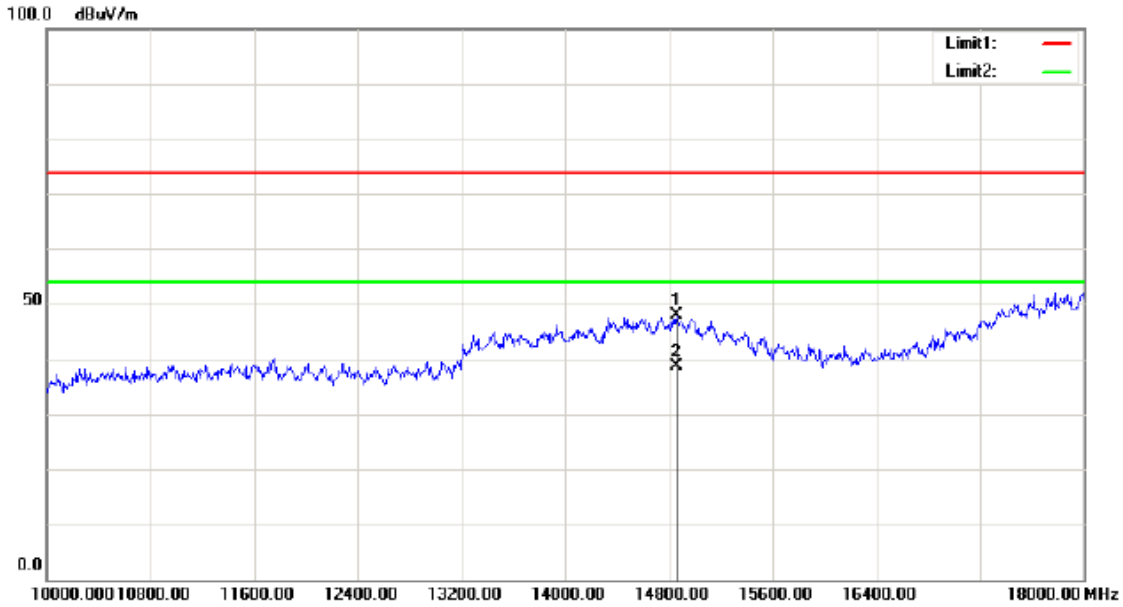
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	25.87	peak	31.79	57.66	68.20	159	323	10.54	
	2	5700.000	26.36	peak	31.86	58.22	105.20	159	323	46.98	
	3	5720.000	27.18	peak	31.88	59.06	110.80	159	323	51.74	
	4	5725.000	32.07	peak	31.88	63.95	122.20	159	323	58.25	
	5	5746.540	75.19	peak	31.89	107.08	122.20	159	323	15.12	Fundamental
	6	5746.540	65.63	AVG	31.89	97.52	122.20	159	323	24.68	Fundamental



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	7768.000	46.92	peak	-1.92	45.00	74.00	165	22	29.00	
*	2	7768.000	37.85	AVG	-1.92	35.93	54.00	165	22	18.07	

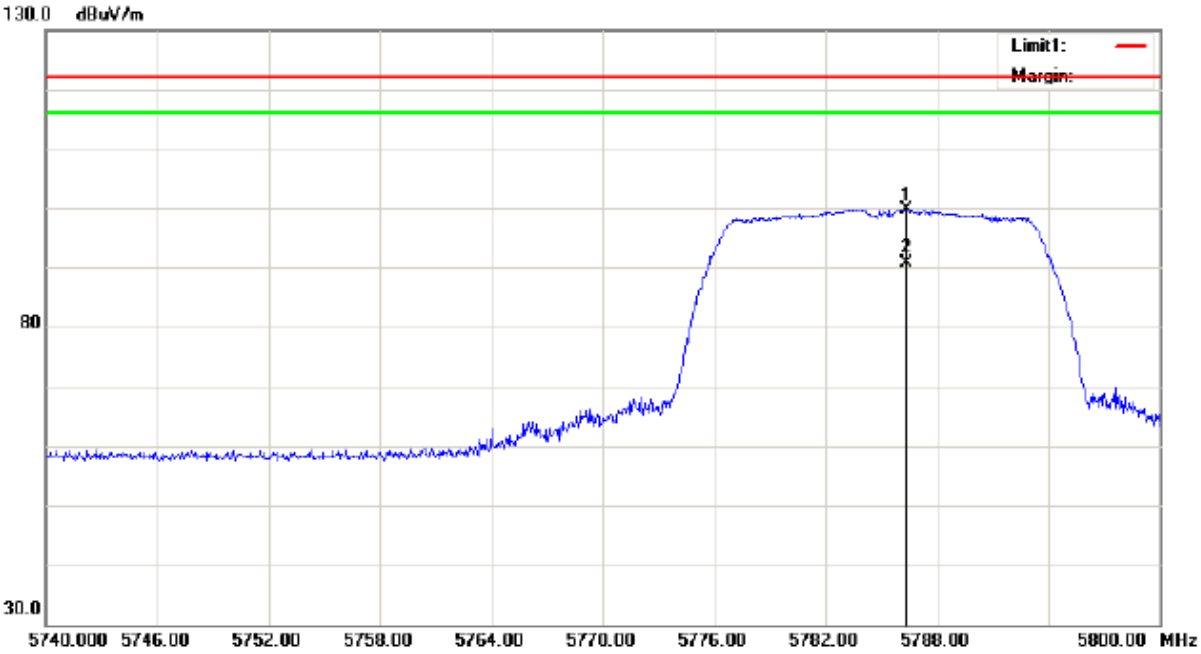


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14860.000	43.82	peak	4.02	47.84	74.00	158	227	26.16	
*	2	14860.000	34.57	AVG	4.02	38.59	54.00	158	227	15.41	

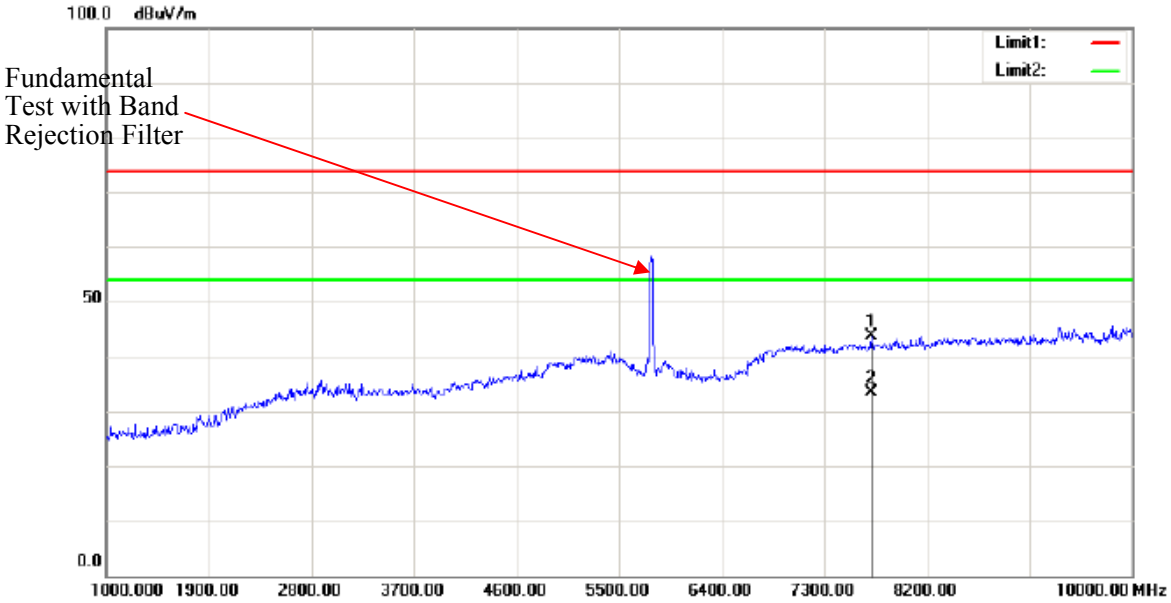
Note: No emission was detected in the range 18-40GHz.

Middle Channel

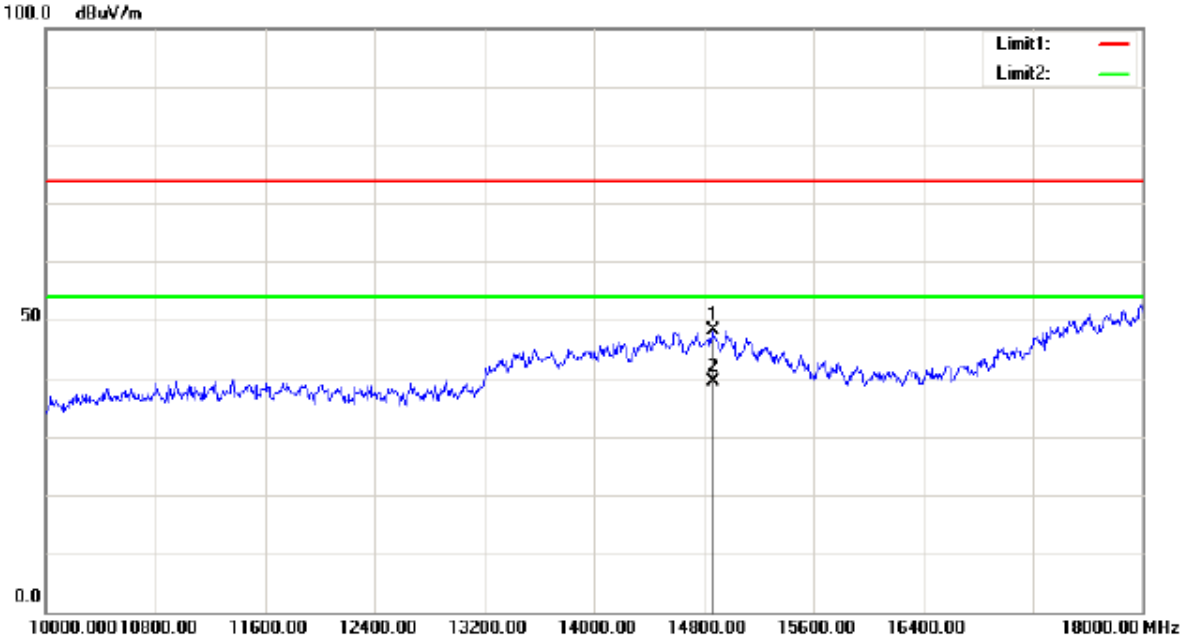
Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5786.350	67.80	peak	31.92	99.72	122.20	153	227	22.48	Fundamental
	2	5786.350	58.64	AVG	31.92	90.56	122.20	153	227	31.64	Fundamental



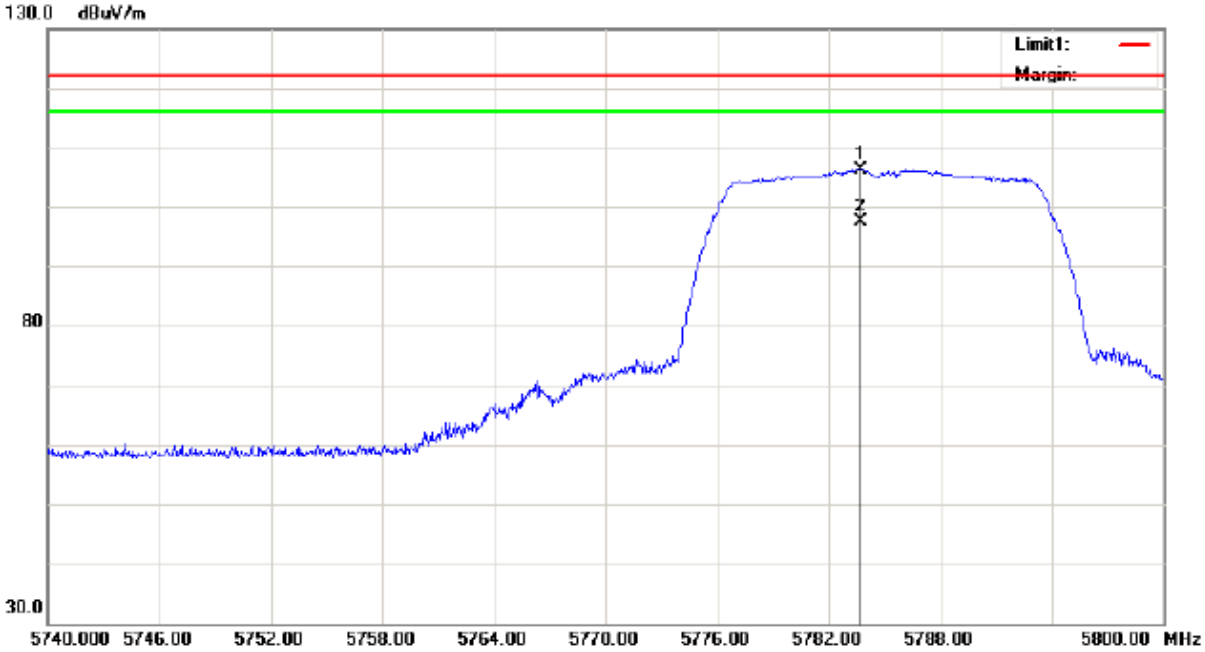
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	7714.000	45.68	peak	-2.09	43.59	74.00	166	100	30.41	
*	2	7714.000	35.56	AVG	-2.09	33.47	54.00	166	100	20.53	



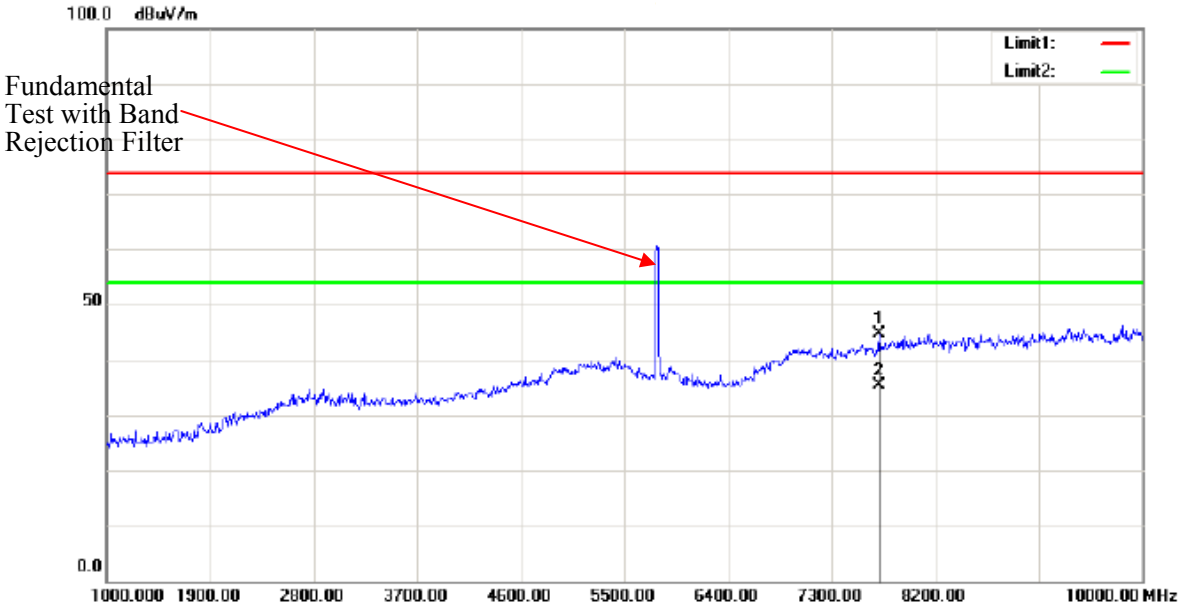
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14868.000	44.16	peak	4.01	48.17	74.00	162	37	25.83	
*	2	14868.000	35.37	AVG	4.01	39.38	54.00	162	37	14.62	

Note: No emission was detected in the range 18-40GHz.

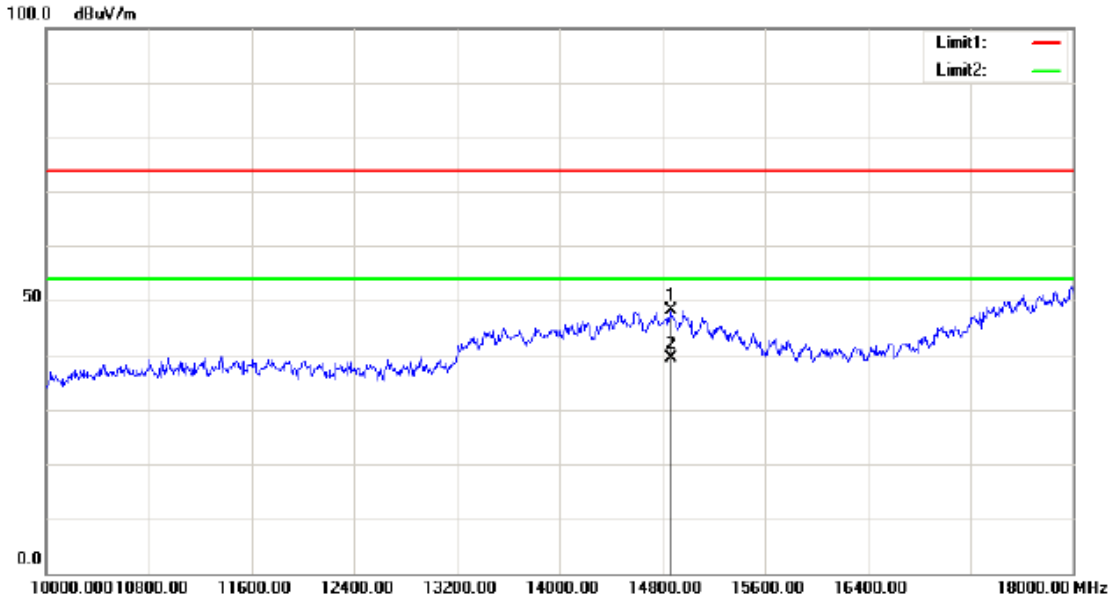
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5783.680	74.43	peak	31.92	106.35	122.20	157	123	15.85	Fundamental
	2	5783.680	65.38	AVG	31.92	97.30	122.20	157	123	24.90	Fundamental



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	7714.000	46.68	peak	-2.09	44.59	74.00	162	335	29.41	
*	2	7714.000	37.59	AVG	-2.09	35.50	54.00	162	335	18.50	

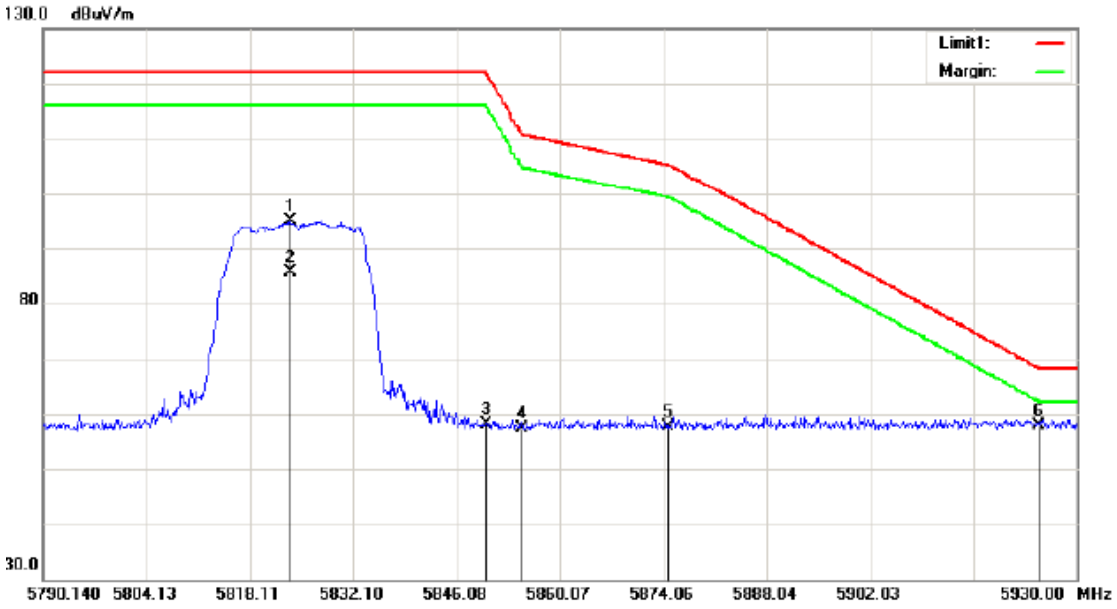


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14868.000	44.16	peak	4.01	48.17	74.00	162	37	25.83	
*	2	14868.000	35.37	AVG	4.01	39.38	54.00	162	37	14.62	

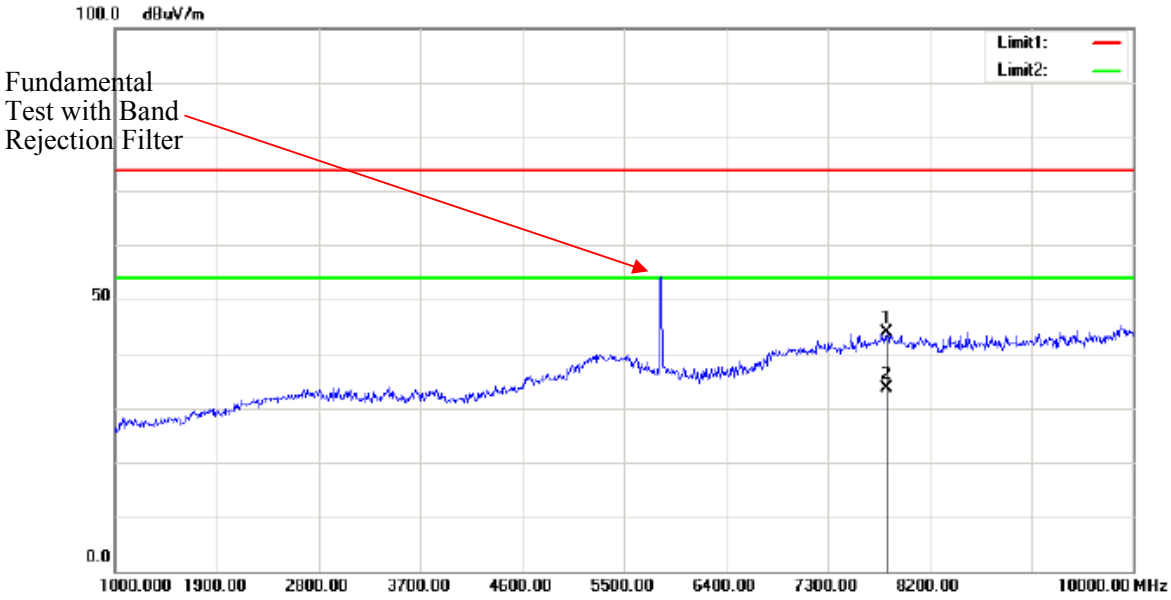
Note: No emission was detected in the range 18-40GHz.

High Channel

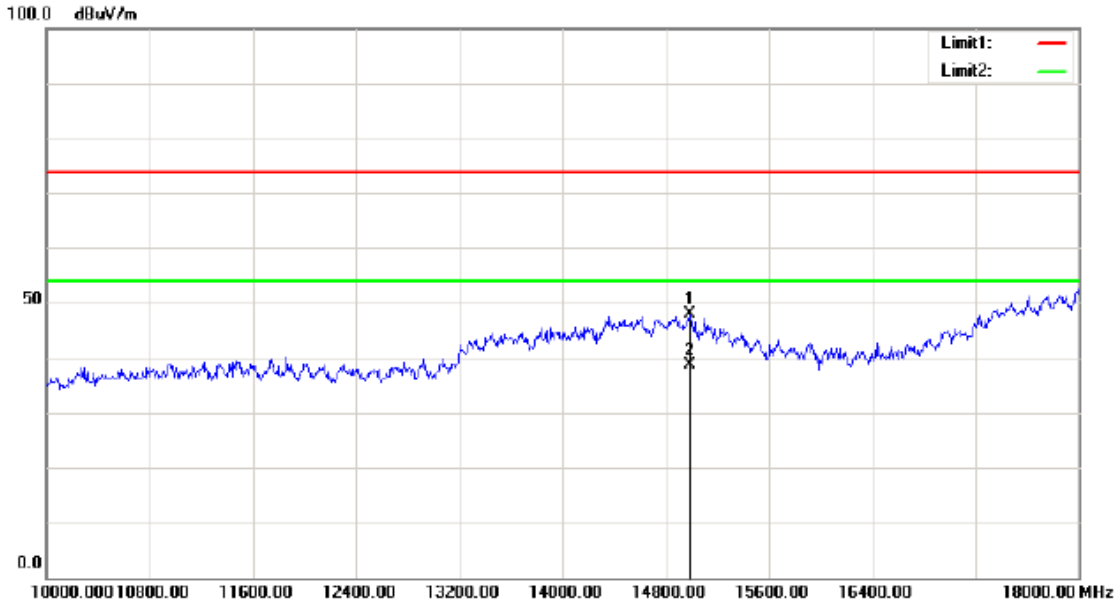
Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5823.530	62.97	peak	31.96	94.93	122.20	148	22	27.27	Fundamental
	2	5823.530	53.68	AVG	31.96	85.64	122.20	148	22	36.56	Fundamental
	3	5850.000	26.24	peak	31.99	58.23	122.20	148	22	63.97	
	4	5855.000	25.49	peak	31.99	57.48	110.80	148	22	53.32	
	5	5875.000	25.68	peak	32.02	57.70	105.20	148	22	47.50	
*	6	5925.000	25.93	peak	32.07	58.00	68.20	148	22	10.20	



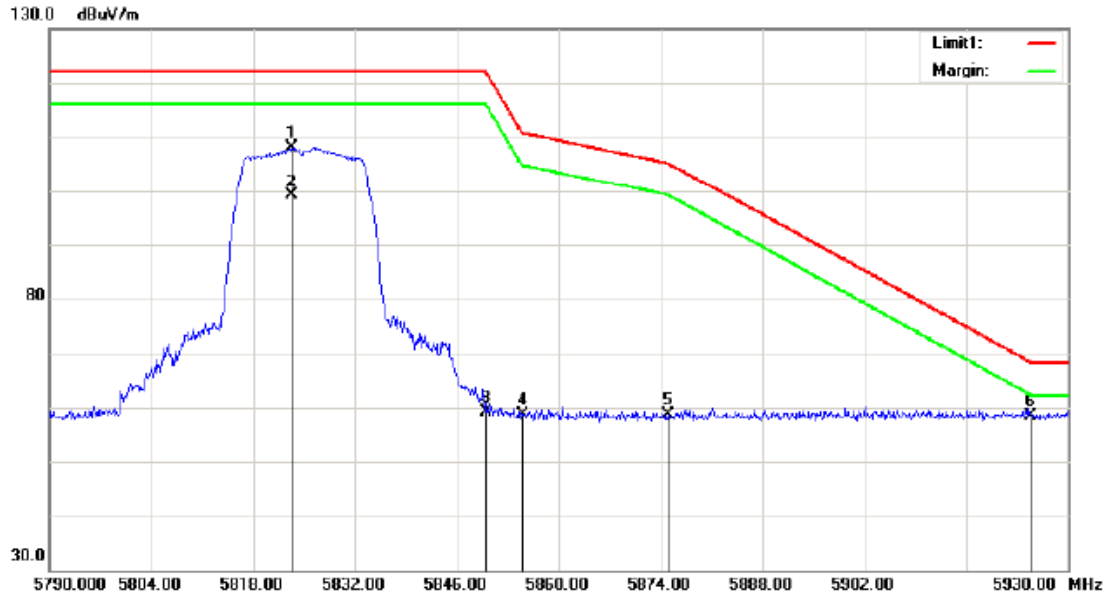
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	7826.500	45.50	peak	-1.73	43.77	74.00	160	155	30.23	
*	2	7826.500	35.31	AVG	-1.73	33.58	54.00	160	155	20.42	



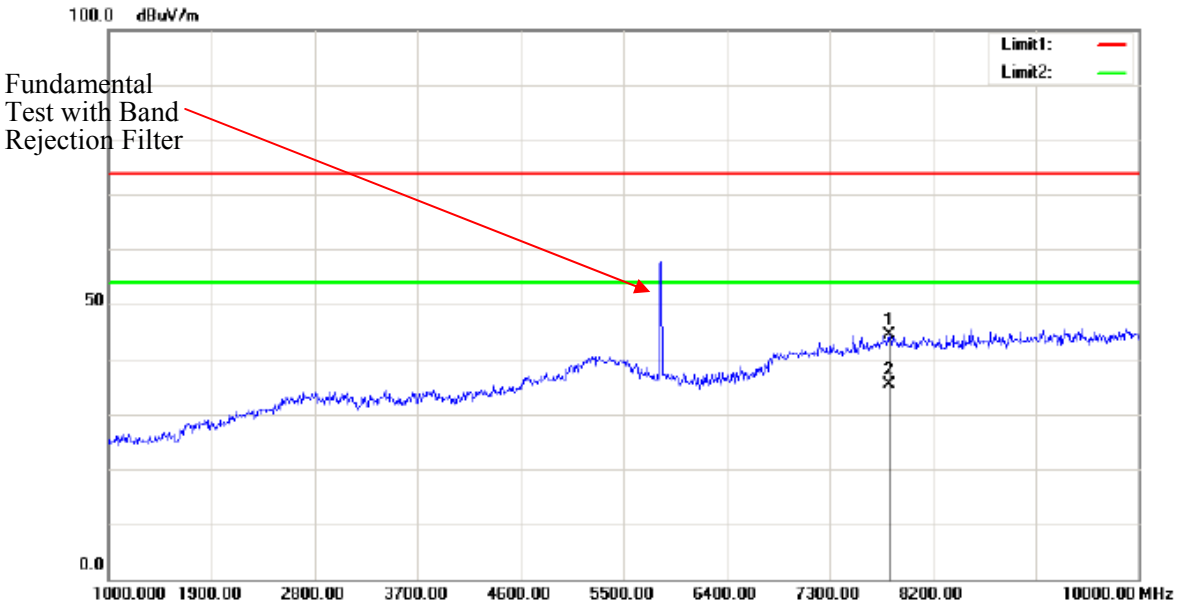
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14984.000	43.96	peak	3.92	47.88	74.00	142	34	26.12	
*	2	14984.000	34.59	AVG	3.92	38.51	54.00	142	34	15.49	

Note: No emission was detected in the range 18-40GHz.

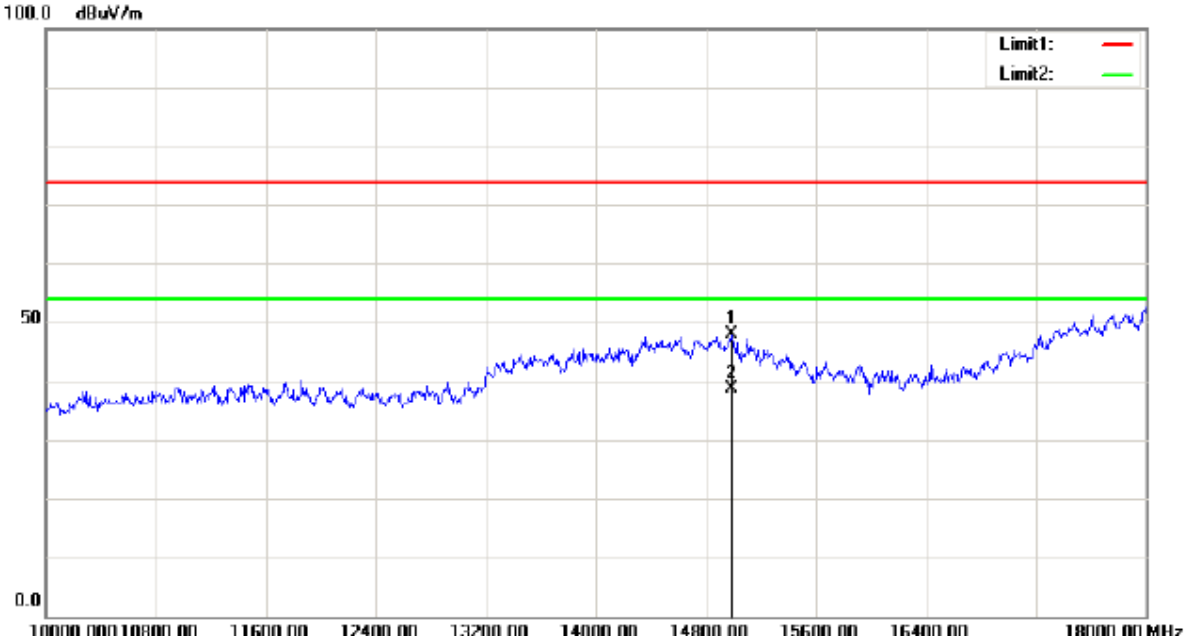
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5823.390	76.26	peak	31.96	108.22	122.20	154	86	13.98	Fundamental
	2	5823.390	67.15	AVG	31.96	99.11	122.20	154	86	23.09	Fundamental
	3	5850.000	27.14	peak	31.99	59.13	122.20	154	86	63.07	
	4	5855.000	26.76	peak	31.99	58.75	110.80	154	86	52.05	
	5	5875.000	26.63	peak	32.02	58.65	105.20	154	86	46.55	
*	6	5925.000	26.37	peak	32.07	58.44	68.20	154	86	9.76	



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	7826.500	46.00	peak	-1.73	44.27	74.00	164	228	29.73	
*	2	7826.500	37.14	AVG	-1.73	35.41	54.00	164	228	18.59	



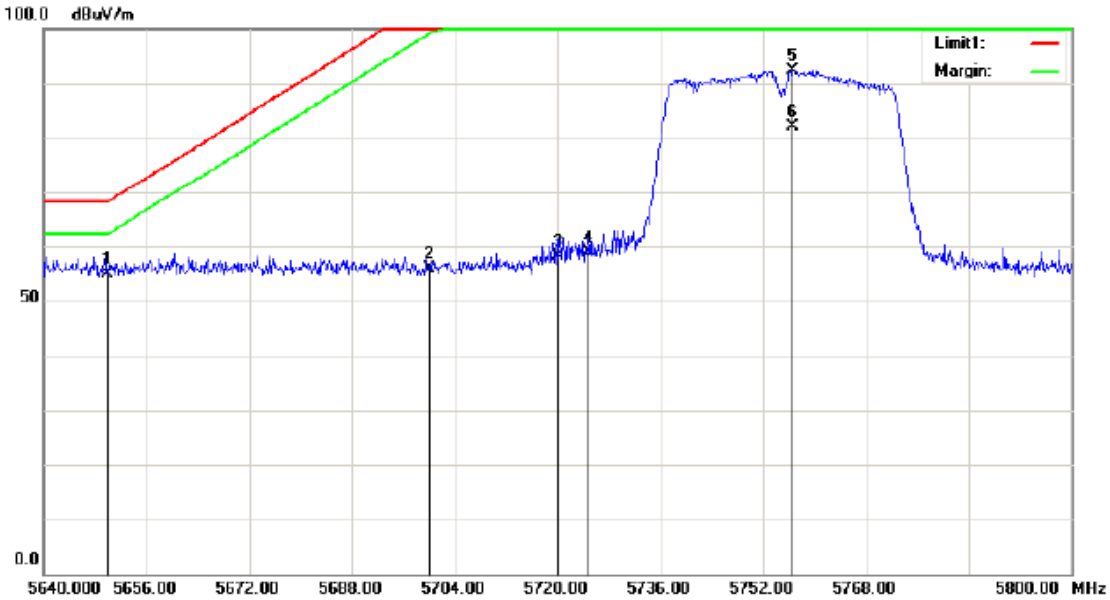
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14984.000	43.96	peak	3.92	47.88	74.00	142	34	26.12	
*	2	14984.000	34.59	AVG	3.92	38.51	54.00	142	34	15.49	

Note: No emission was detected in the range 18-40GHz.

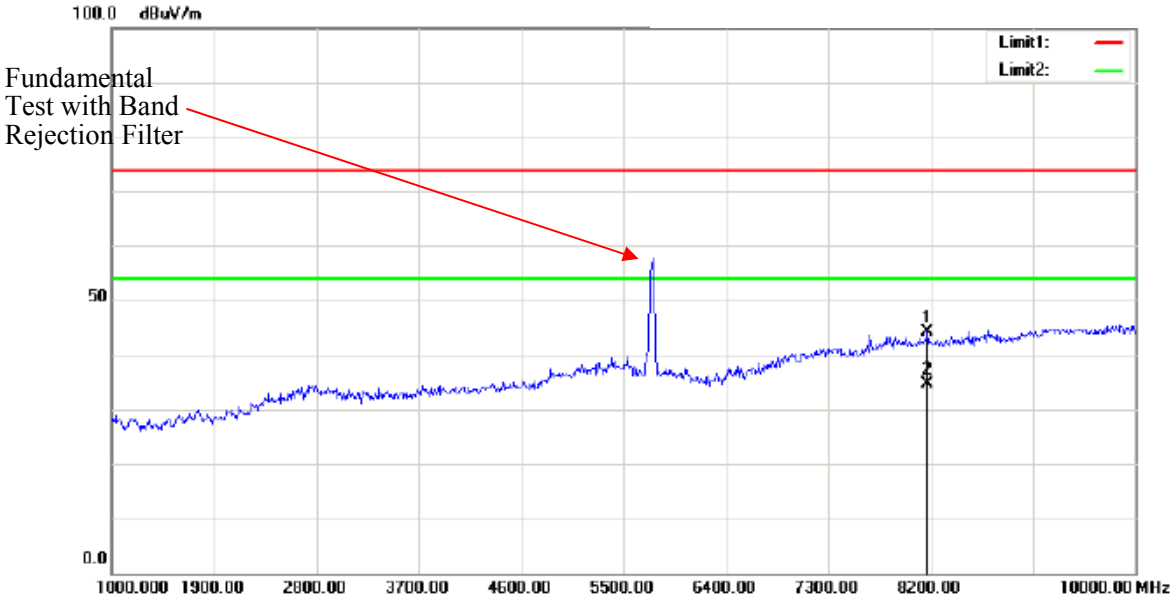
N40 mode

Low Channel

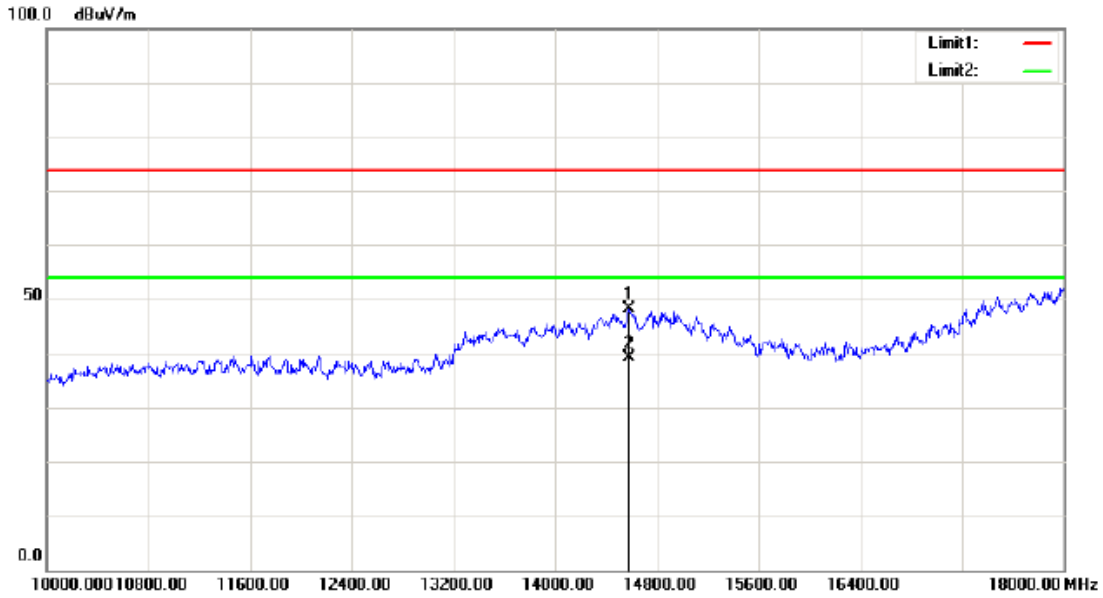
Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	23.12	peak	31.79	54.91	68.20	153	22	13.29	
	2	5700.000	24.03	peak	31.86	55.89	105.20	153	22	49.31	
	3	5720.000	26.18	peak	31.88	58.06	110.80	153	22	52.74	
	4	5725.000	26.98	peak	31.88	58.86	122.20	153	22	63.34	
	5	5756.640	60.57	peak	31.90	92.47	122.20	153	22	29.73	Fundamental
	6	5756.640	50.24	AVG	31.90	82.14	122.20	153	22	40.06	Fundamental



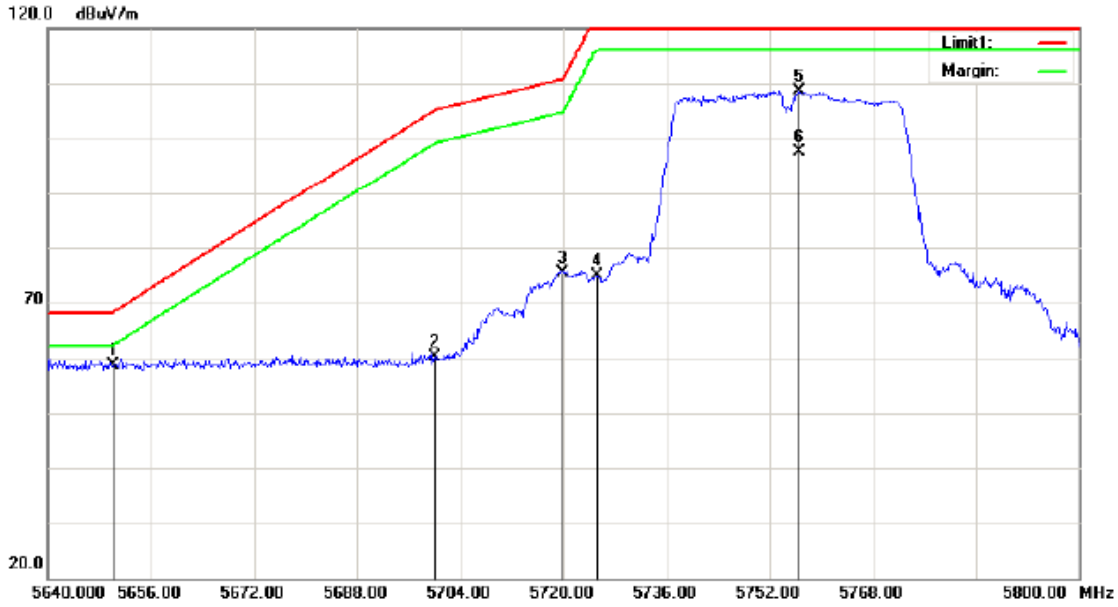
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8177.500	45.15	peak	-0.94	44.21	74.00	188	177	29.79	
*	2	8177.500	35.50	AVG	-0.94	34.56	54.00	188	177	19.44	



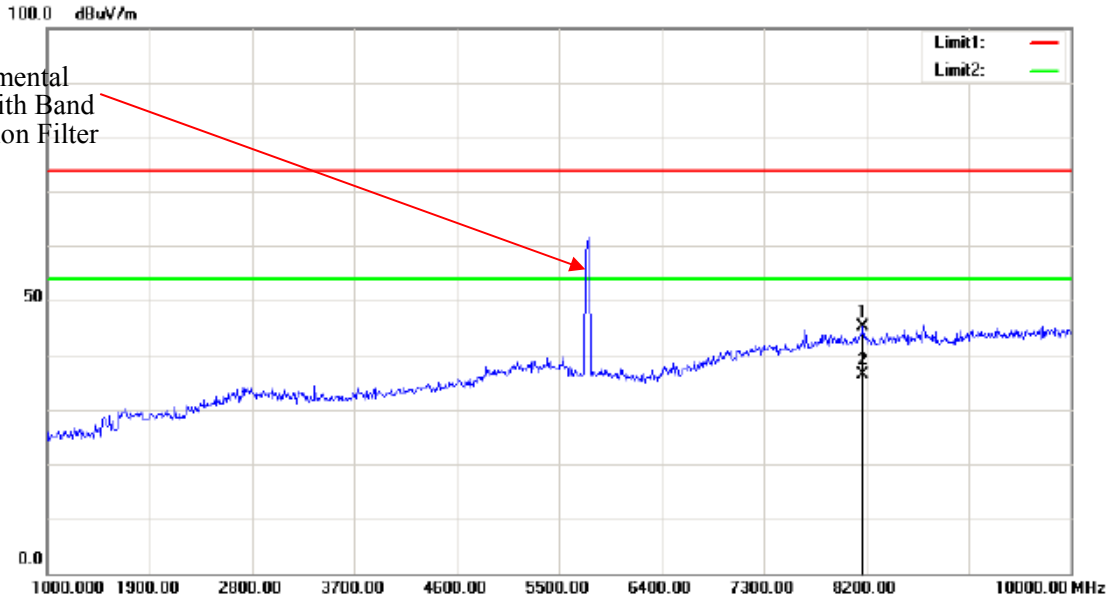
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14584.000	43.99	peak	4.25	48.24	74.00	152	343	25.76	
*	2	14584.000	34.86	AVG	4.25	39.11	54.00	152	343	14.89	

Note: No emission was detected in the range 18-40GHz.

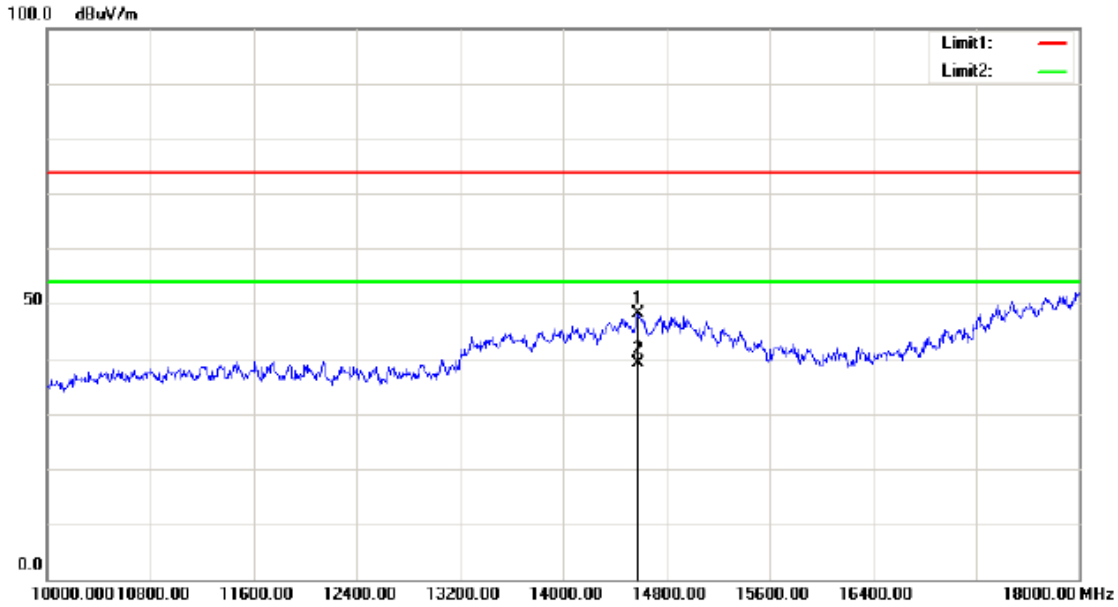
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	26.96	peak	31.79	58.75	68.20	132	45	9.45	
	2	5700.000	28.31	peak	31.86	60.17	105.20	132	45	45.03	
	3	5720.000	43.57	peak	31.88	75.45	110.80	132	45	35.35	
	4	5725.000	43.05	peak	31.88	74.93	122.20	132	45	47.27	
	5	5756.720	76.72	peak	31.90	108.62	122.20	132	45	13.58	Fundamental
	6	5756.720	65.69	AVG	31.90	97.59	122.20	132	45	24.61	Fundamental



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8177.500	46.15	peak	-0.94	45.21	74.00	157	224	28.79	
*	2	8177.500	37.24	AVG	-0.94	36.30	54.00	157	224	17.70	

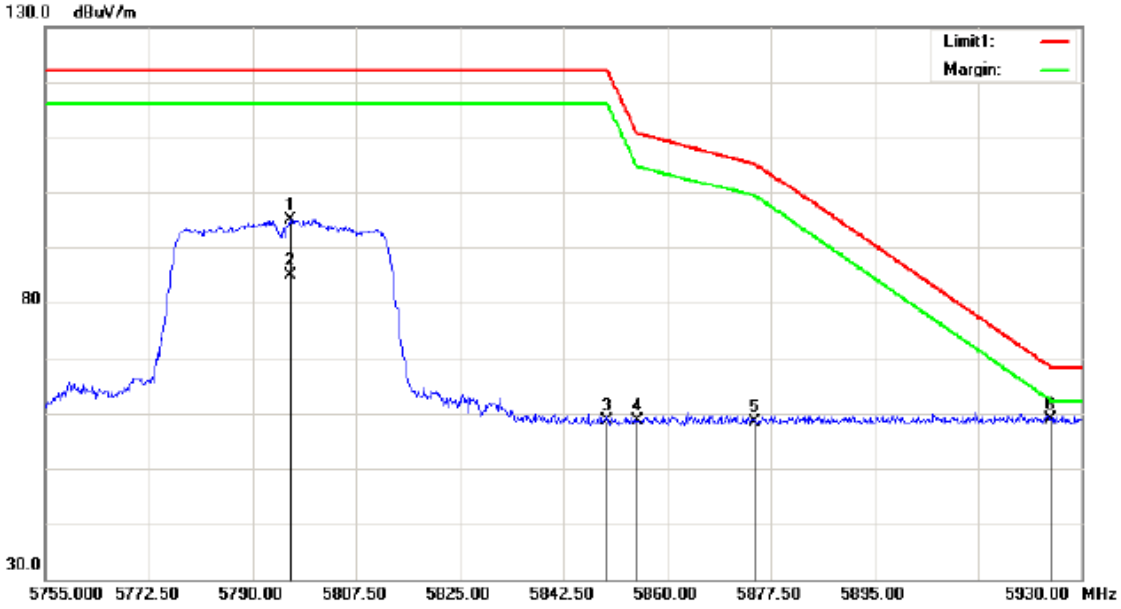


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	14584.000	43.99	peak	4.25	48.24	74.00	152	343	25.76	
*	2	14584.000	34.86	AVG	4.25	39.11	54.00	152	343	14.89	

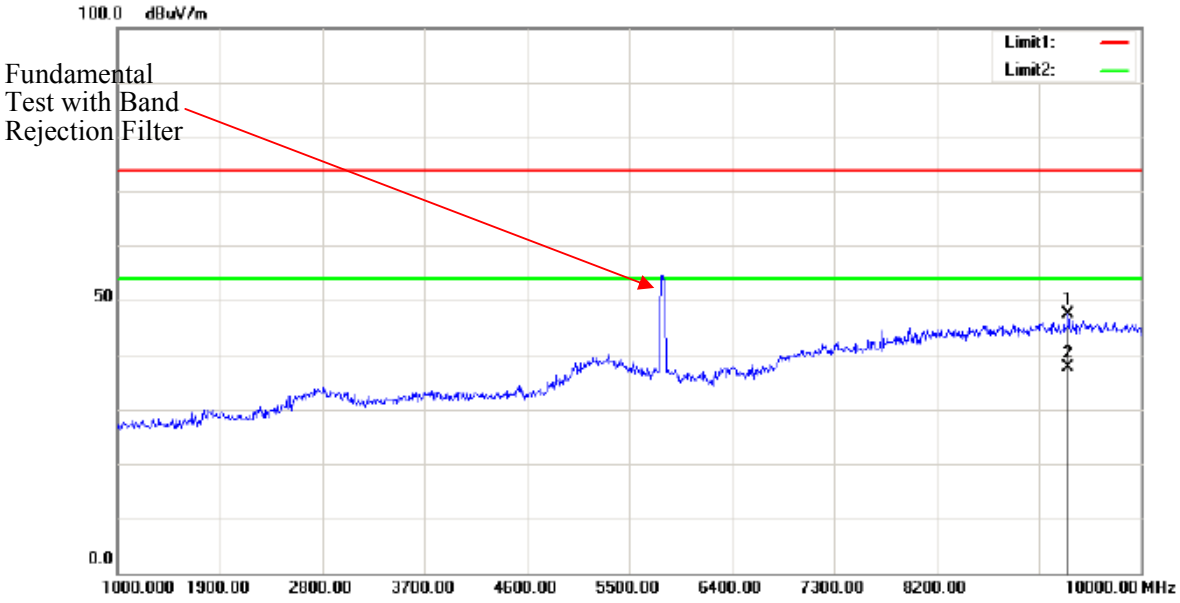
Note: No emission was detected in the range 18-40GHz.

High Channel

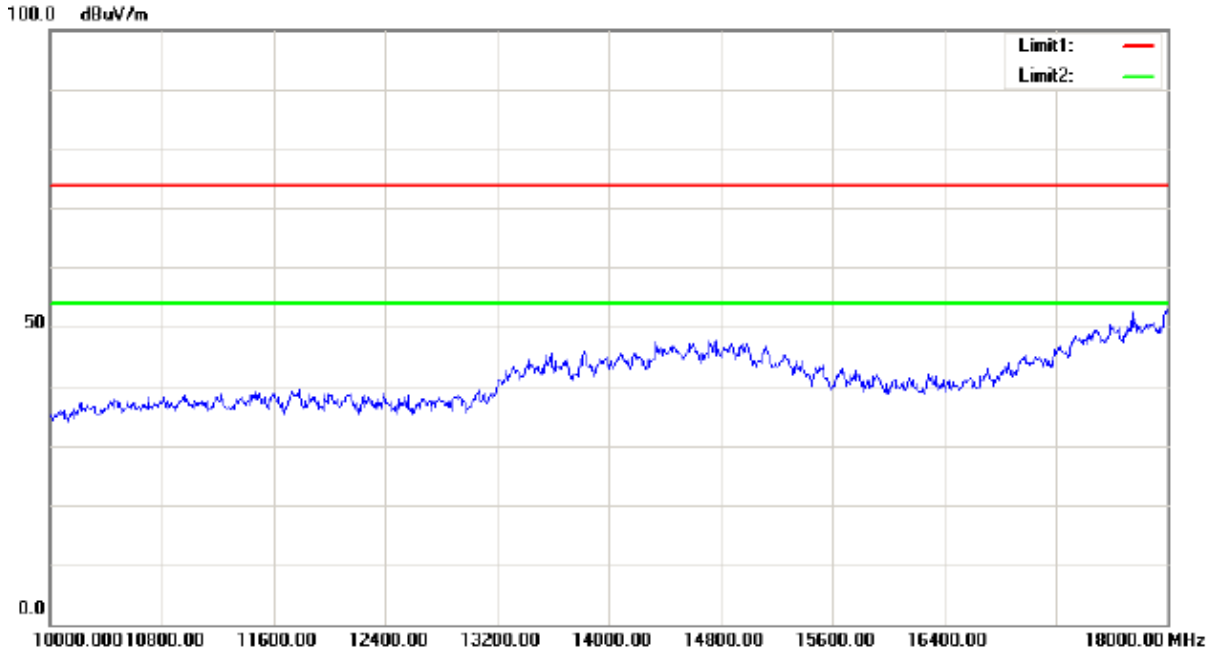
Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5796.563	62.95	peak	31.93	94.88	122.20	159	227	27.32	Fundamental
	2	5796.563	52.83	AVG	31.93	84.76	122.20	159	227	37.44	Fundamental
	3	5850.000	26.67	peak	31.99	58.66	122.20	159	227	63.54	
	4	5855.000	26.65	peak	31.99	58.64	110.80	159	227	52.16	
	5	5875.000	26.41	peak	32.02	58.43	105.20	159	227	46.77	
*	6	5925.000	26.82	peak	32.07	58.89	68.20	159	227	9.31	

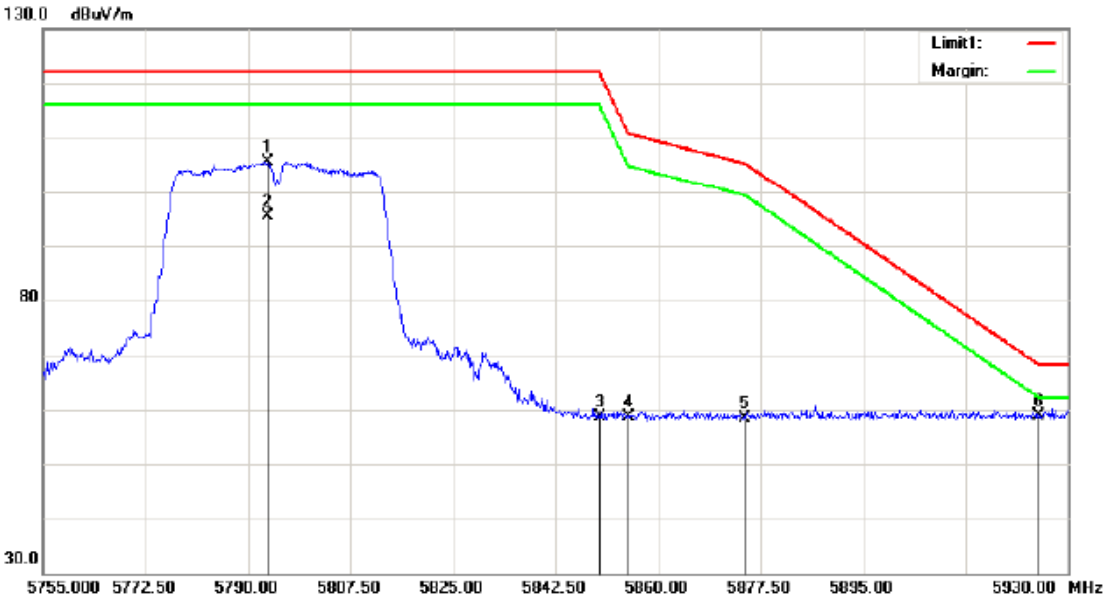


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	9361.000	46.50	peak	0.81	47.31	74.00	166	55	26.69	
*	2	9361.000	36.78	AVG	0.81	37.59	54.00	166	55	16.41	

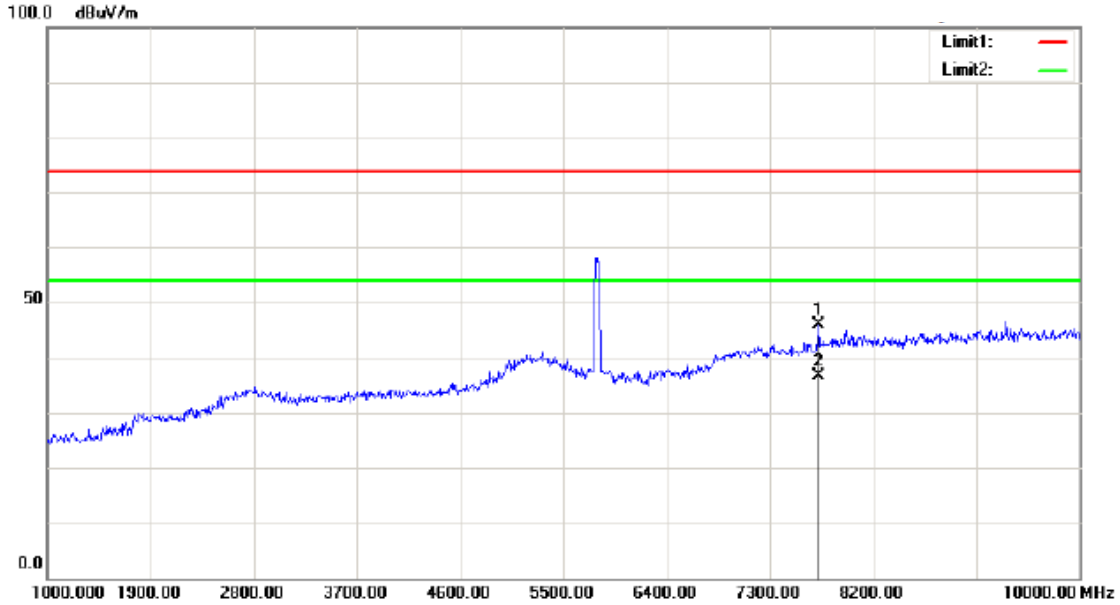


Note: No emission was detected in the range 18-40GHz.

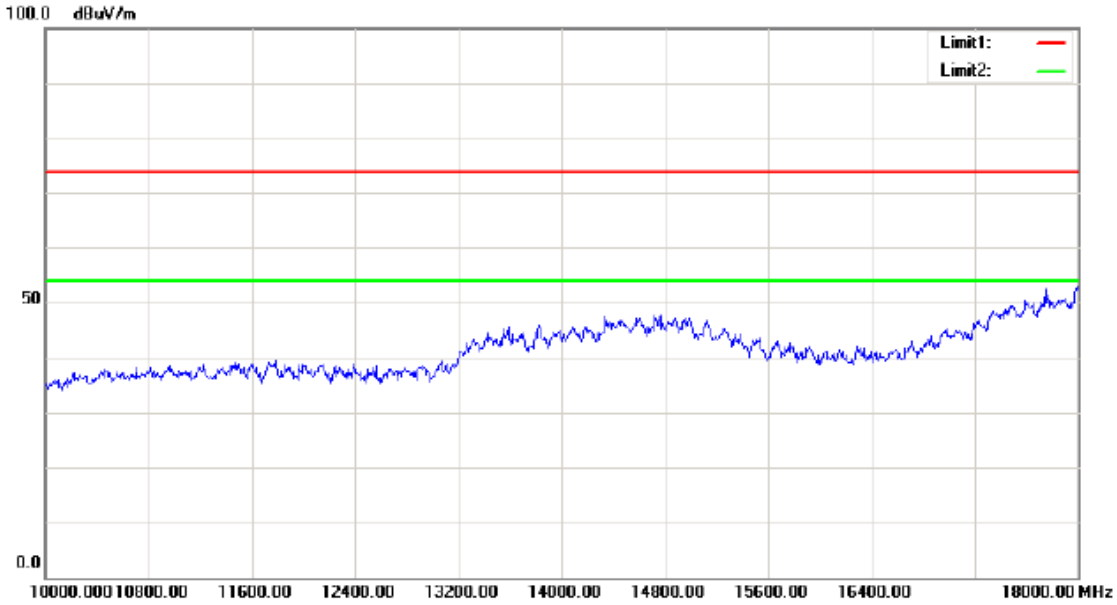
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	5793.325	73.77	peak	31.93	105.70	122.20	163	248	16.50	Fundamental
	2	5793.325	63.41	AVG	31.93	95.34	122.20	163	248	26.86	Fundamental
	3	5850.000	26.67	peak	31.99	58.66	122.20	163	248	63.54	
	4	5855.000	26.59	peak	31.99	58.58	110.80	163	248	52.22	
	5	5875.000	26.30	peak	32.02	58.32	105.20	163	248	46.88	
*	6	5925.000	26.83	peak	32.07	58.90	68.20	163	248	9.30	



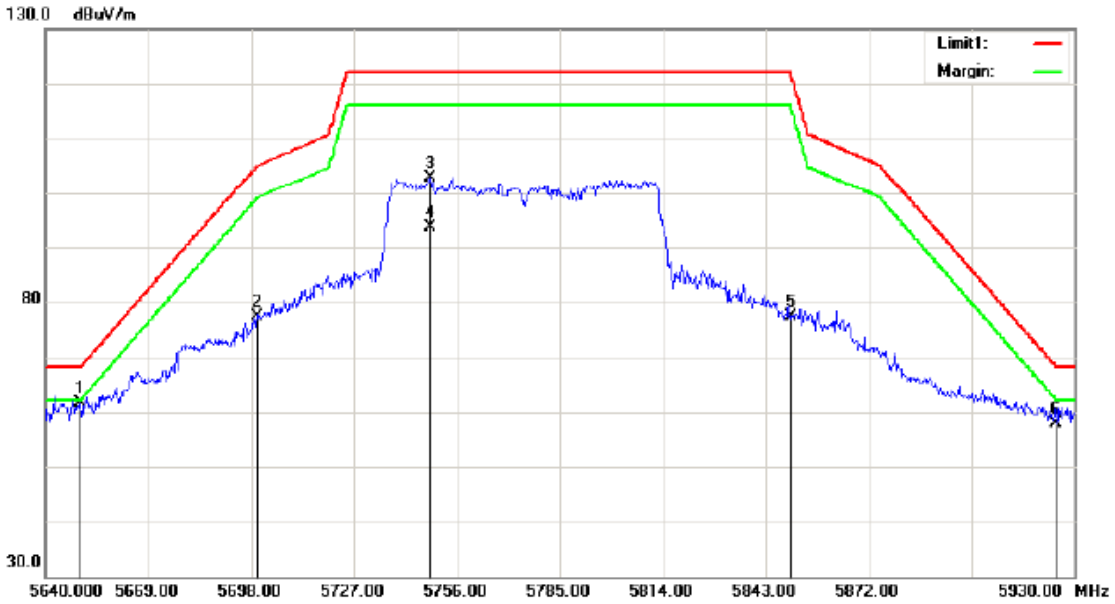
Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	7727.500	47.92	peak	-2.05	45.87	74.00	154	29	28.13	
*	2	7727.500	38.67	AVG	-2.05	36.62	54.00	154	29	17.38	



Note: No emission was detected in the range 18-40GHz.

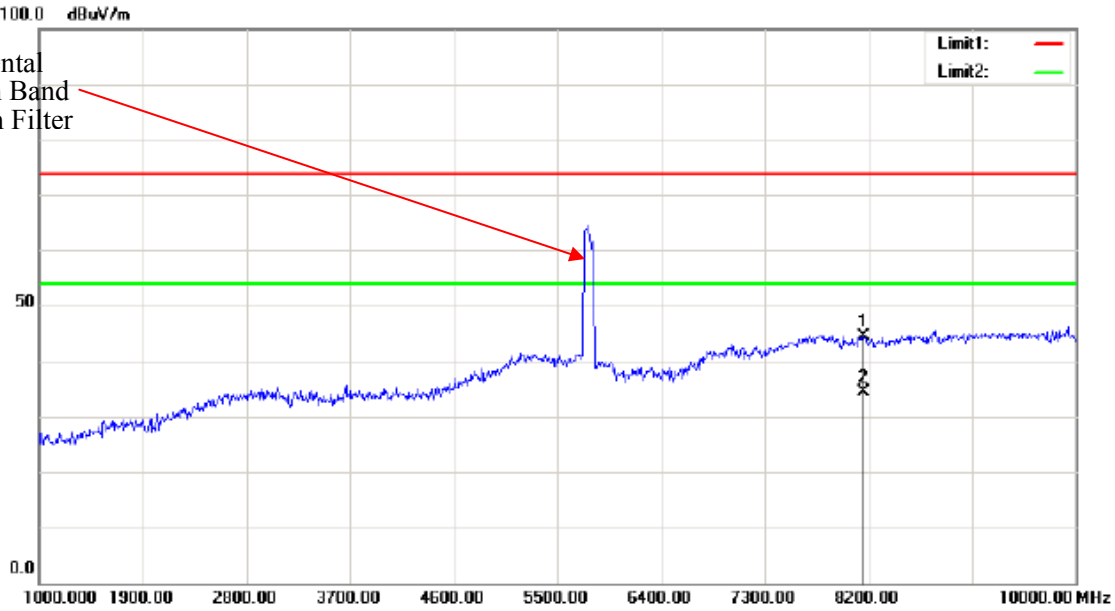
AC 80 mode

Horizontal

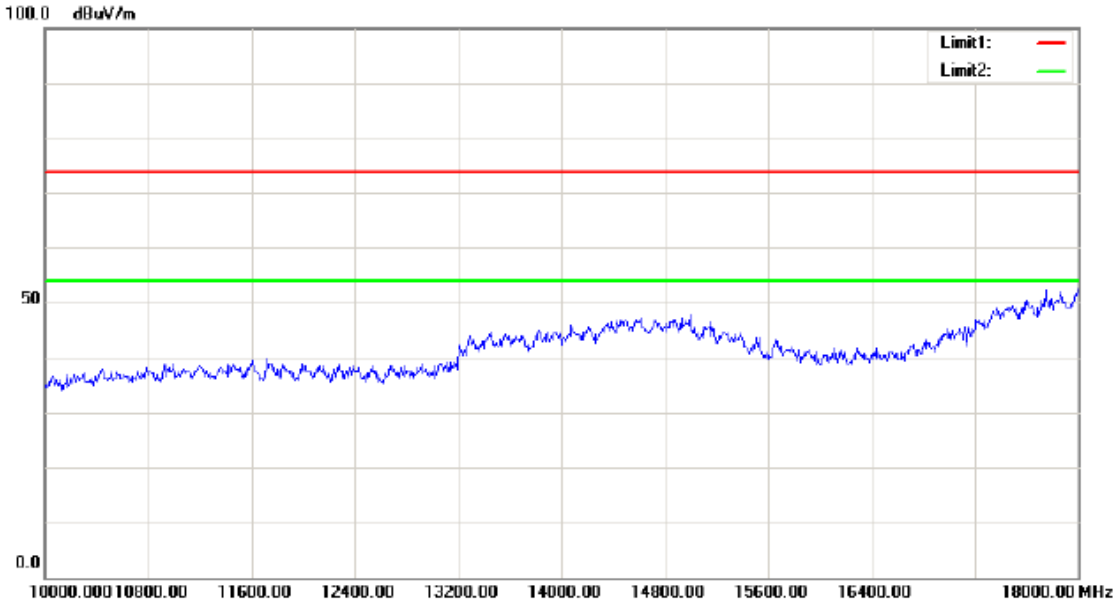


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	29.76	peak	31.79	61.55	68.20	153	144	6.65	
	2	5700.000	45.45	peak	31.86	77.31	105.20	153	144	27.89	
	3	5748.460	70.99	peak	31.89	102.88	122.20	153	144	19.32	Fundamental
	4	5748.460	61.85	AVG	31.89	93.74	122.20	153	144	28.46	Fundamental
	5	5850.000	45.40	peak	31.99	77.39	122.20	153	144	44.81	
	6	5925.000	25.72	peak	32.07	57.79	68.20	153	144	10.41	

Fundamental
Test with Band
Reiection Filter

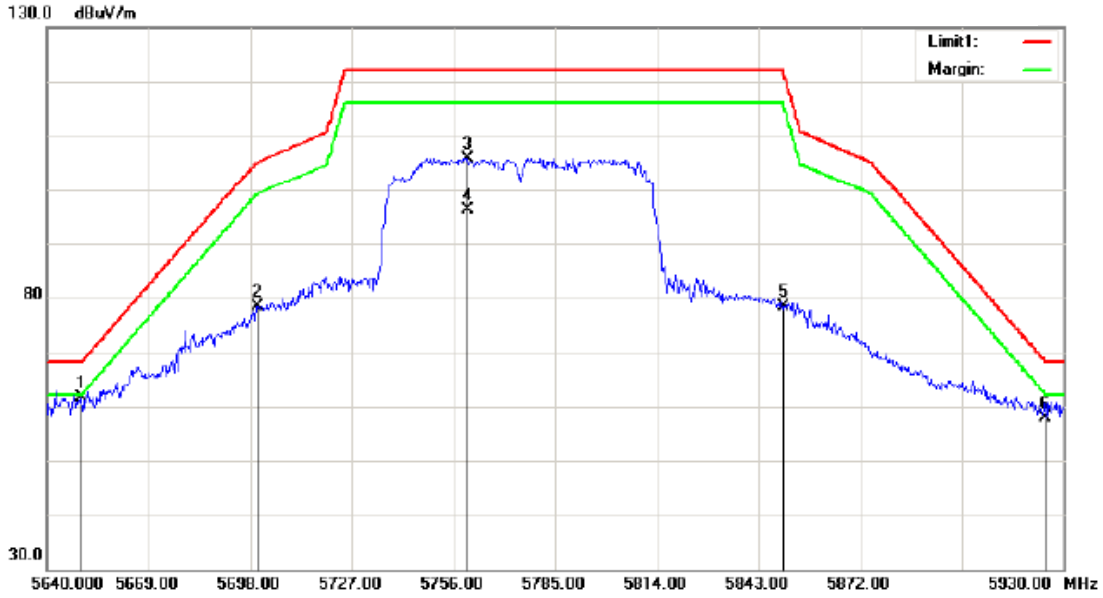


Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8159.500	45.44	peak	-0.97	44.47	74.00	174	211	29.53	
*	2	8159.500	35.26	AVG	-0.97	34.29	54.00	174	211	19.71	

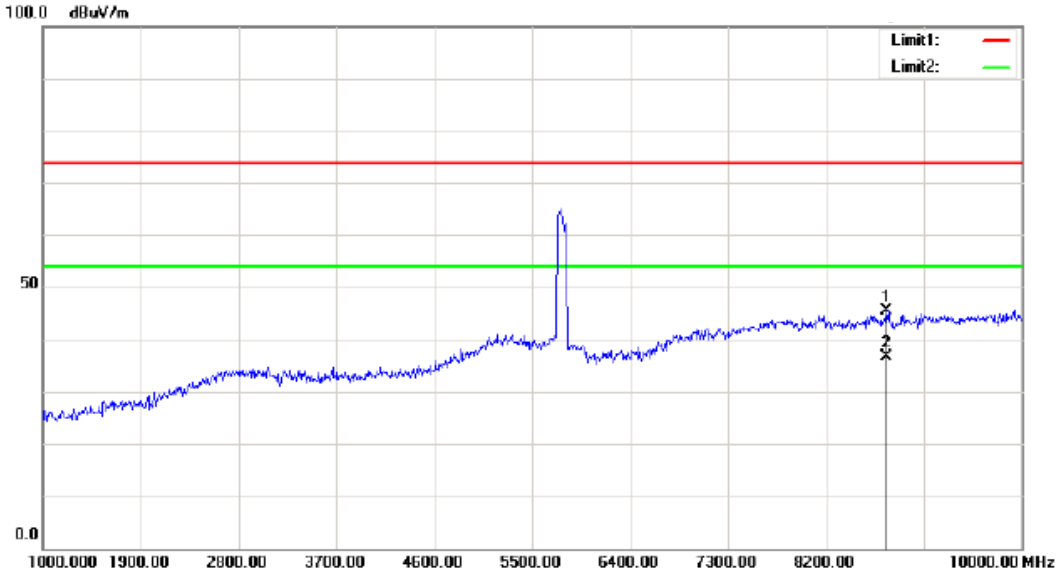


Note: No emission was detected in the range 18-40GHz.

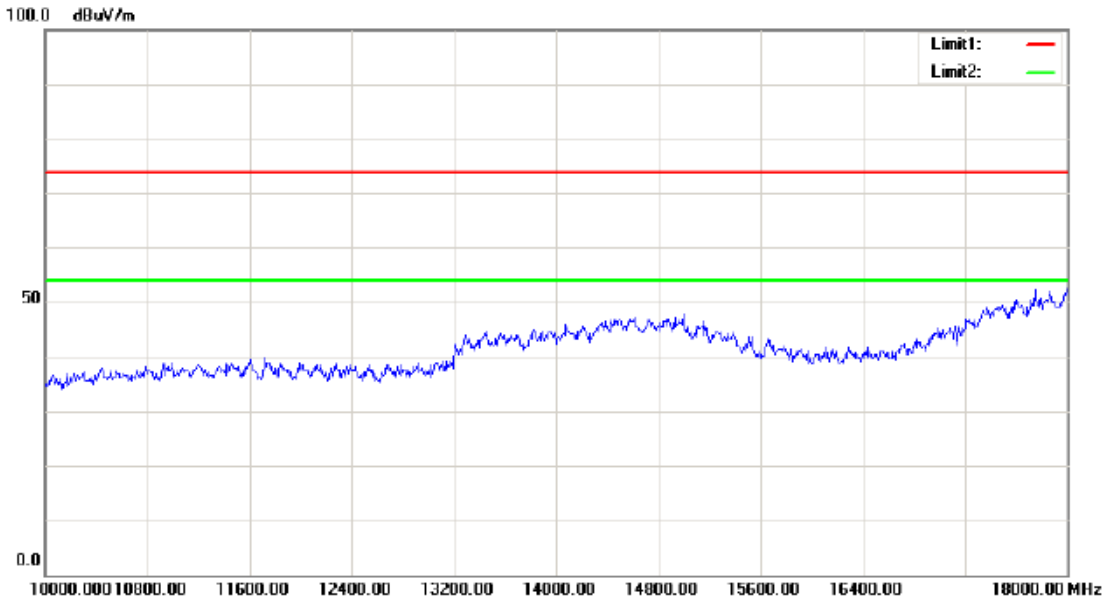
Vertical



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	1	5650.000	29.76	peak	31.79	61.55	68.20	145	166	6.65	
	2	5700.000	46.45	peak	31.86	78.31	105.20	145	166	26.89	
	3	5760.060	74.04	peak	31.90	105.94	122.20	145	166	16.26	Fundamental
	4	5760.060	64.35	AVG	31.90	96.25	122.20	145	166	25.95	Fundamental
	5	5850.000	46.40	peak	31.99	78.39	122.20	145	166	43.81	
	6	5925.000	25.72	peak	32.07	57.79	68.20	145	166	10.41	



Mk.	No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected factor(dB)	Result (dBµV/m)	Limit (dBµV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1	8762.500	45.55	peak	-0.12	45.43	74.00	148	27	28.57	
*	2	8762.500	36.67	AVG	-0.12	36.55	54.00	148	27	17.45	



Note: No emission was detected in the range 18-40GHz.

FCC §15.407(b)–OUT- OF-BAND EMISSIONS

Applicable Standard

FCC §15.407

(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:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(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.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r04

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESPI	100120	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-4	Each Time	/

*** 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:	25.8~26.8 °C
Relative Humidity:	49~50 %
ATM Pressure:	100.6~100.8 kPa

The testing was performed by Mark Pan from 2017-10-19 to 2017-10-23.

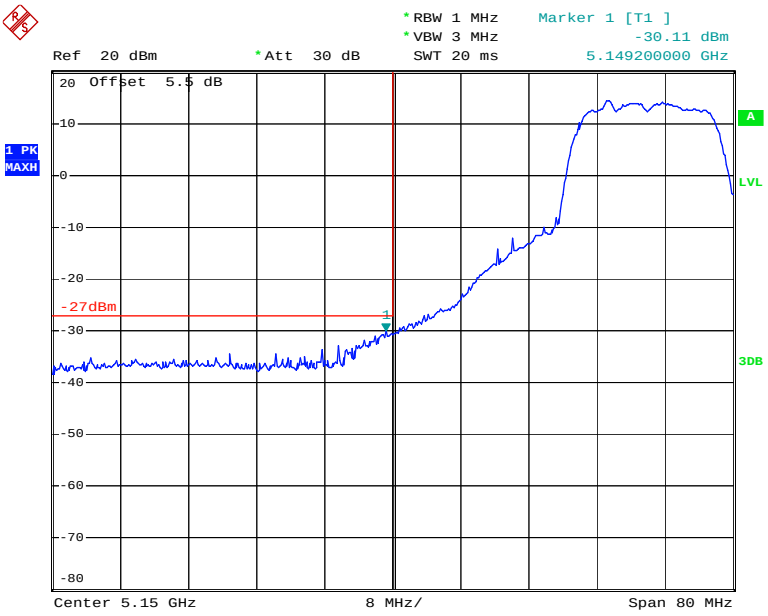
Test Result: Pass.

Please refer to the following plots.

5150-5250MHz(the atenna gain was offset in the display, all emission under limit more than 3dBc, so 2TX mode also compliance the requirement)

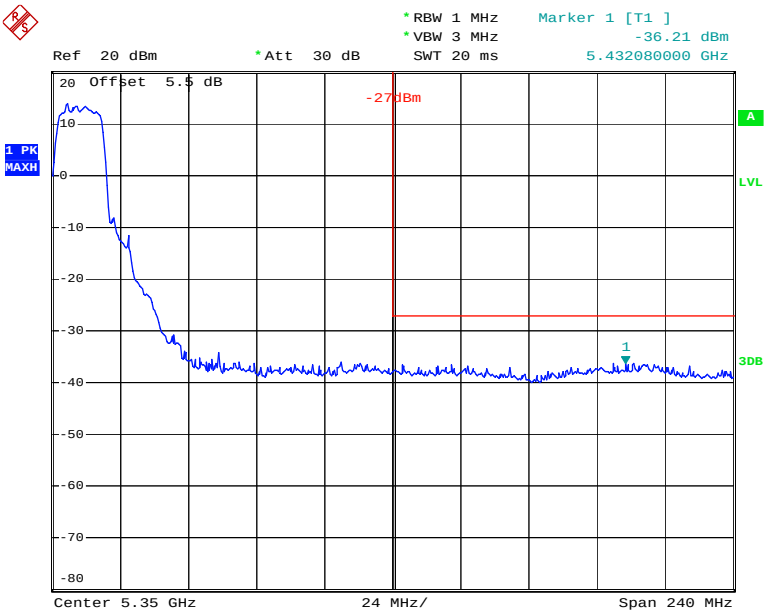
Chain 0:

802.11a Low Channel



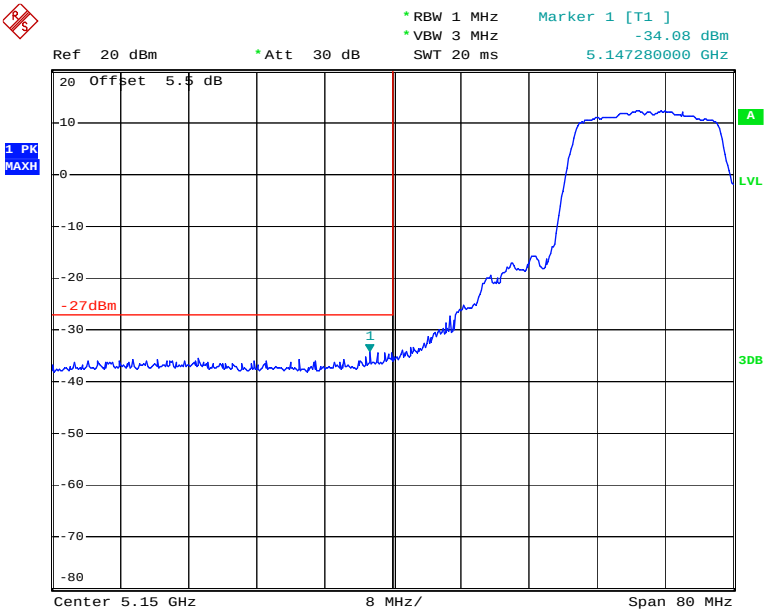
Date: 20.OCT.2017 19:52:39

802.11a High Channel



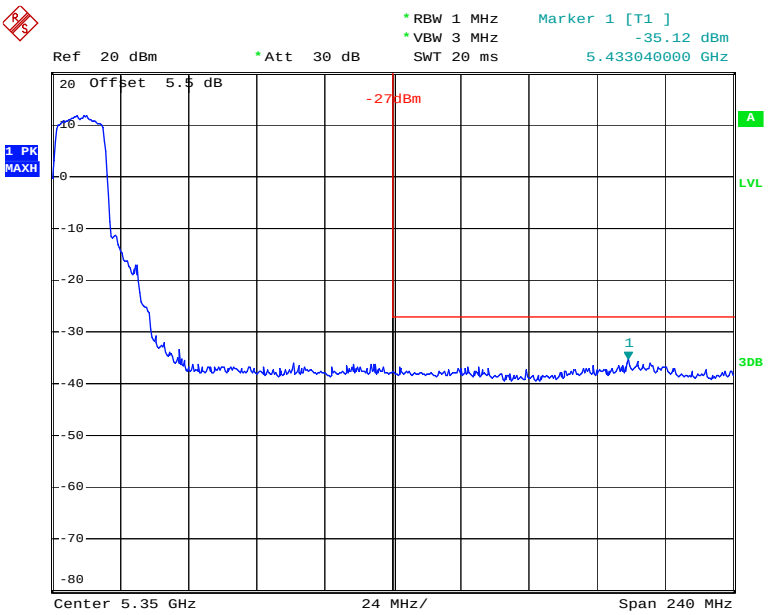
Date: 20.OCT.2017 19:55:17

802.11n ht20 Low Channel



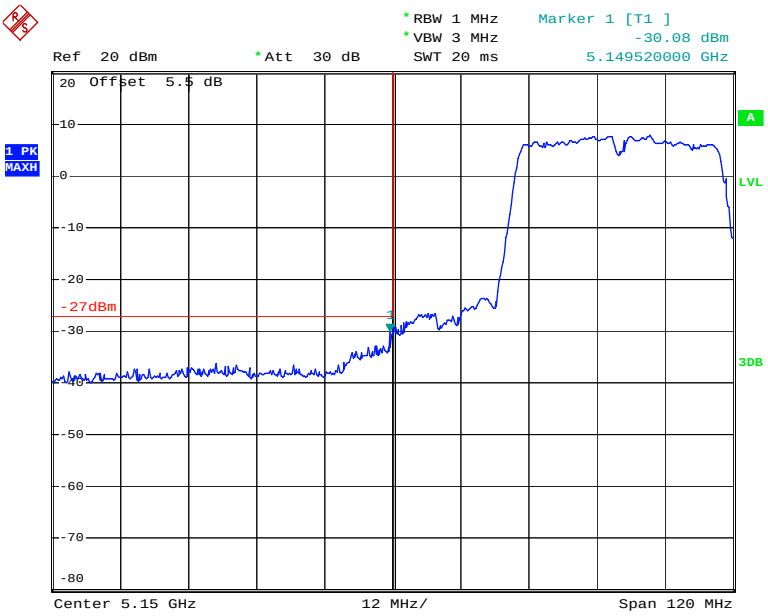
Date: 20.OCT.2017 19:37:37

802.11n ht20 High Channel



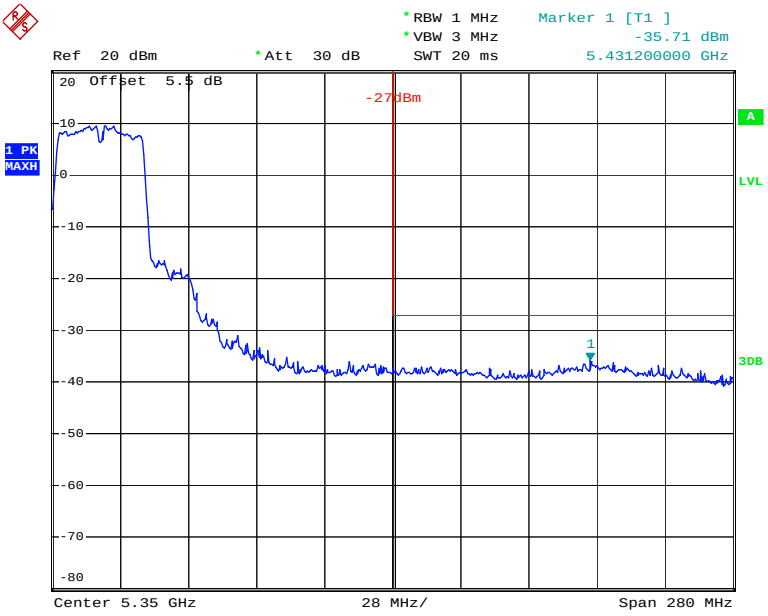
Date: 20.OCT.2017 19:40:41

802.11n ht40 Low Channel



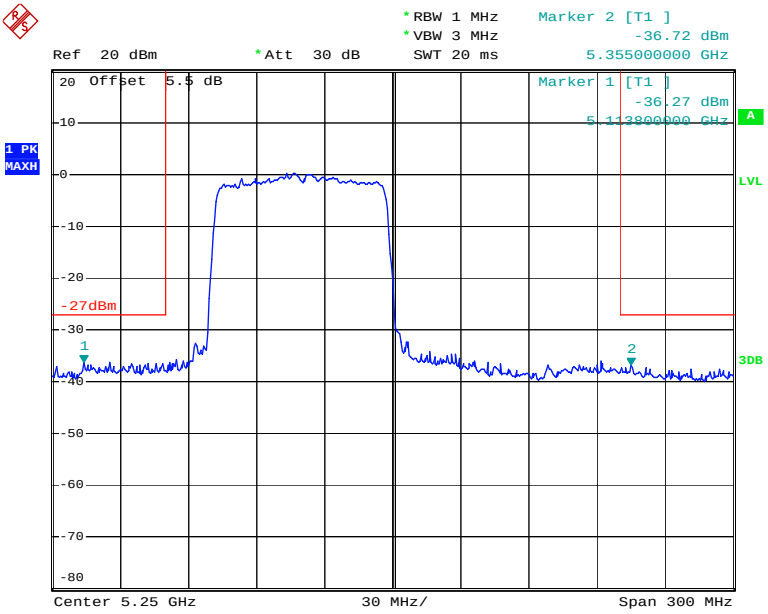
Date: 20.OCT.2017 19:47:04

802.11n ht40 High Channel



Date: 20.OCT.2017 19:42:05

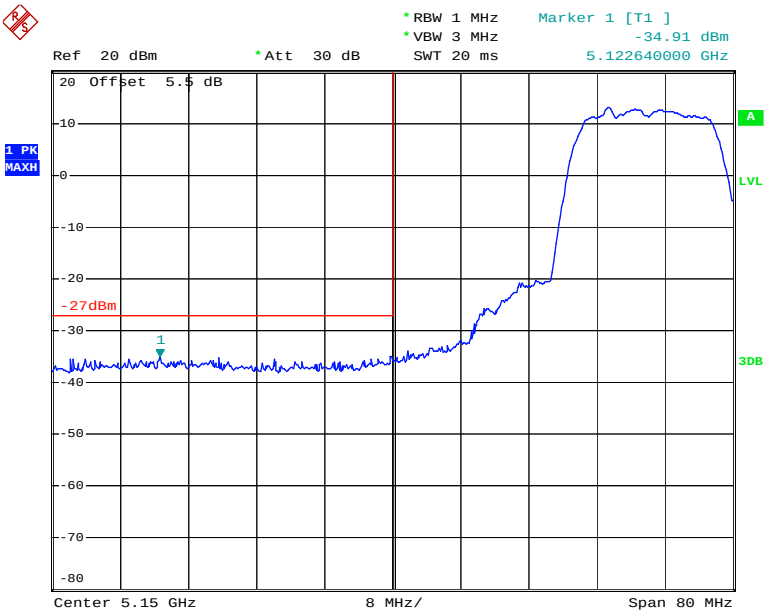
802.11n ac80 Middle Channel



Date: 19.OCT.2017 14:22:05

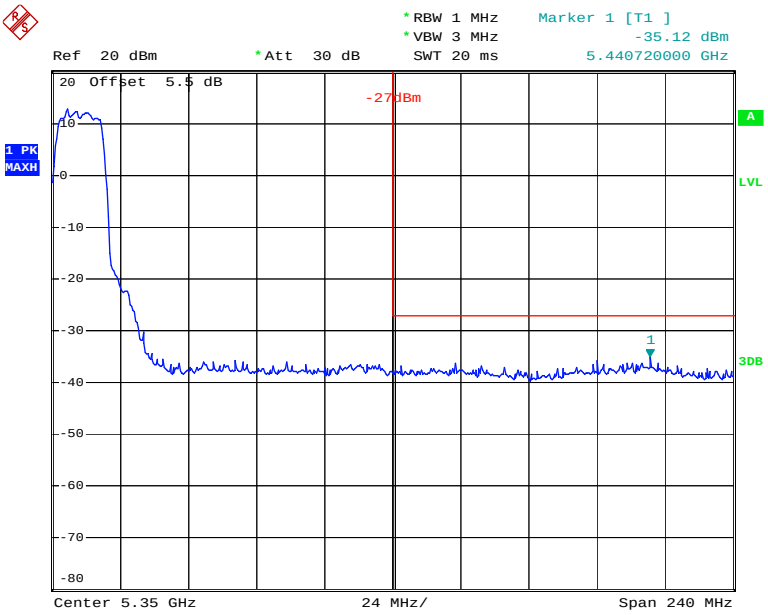
Chain 1:

802.11a Low Channel



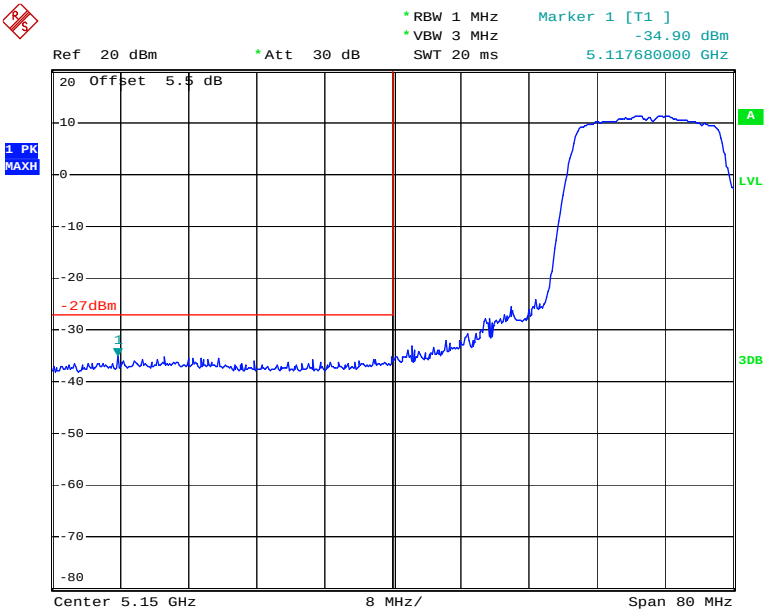
Date: 20.OCT.2017 16:56:23

802.11a High Channel



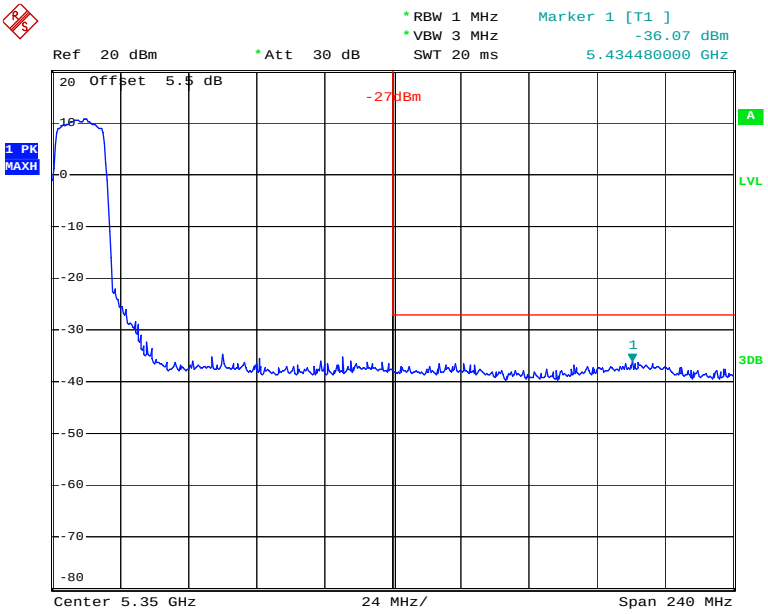
Date: 20.OCT.2017 17:11:29

802.11n ht20 Low Channel



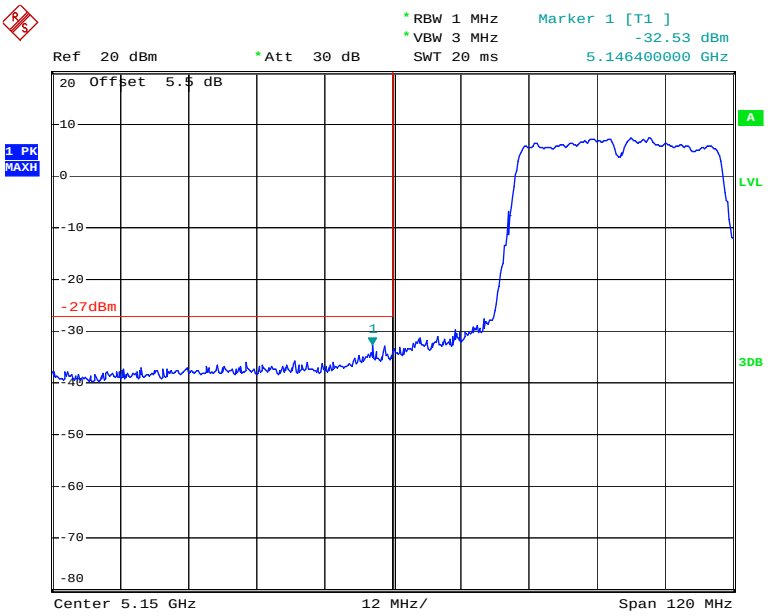
Date: 20.OCT.2017 18:18:44

802.11n ht20 High Channel



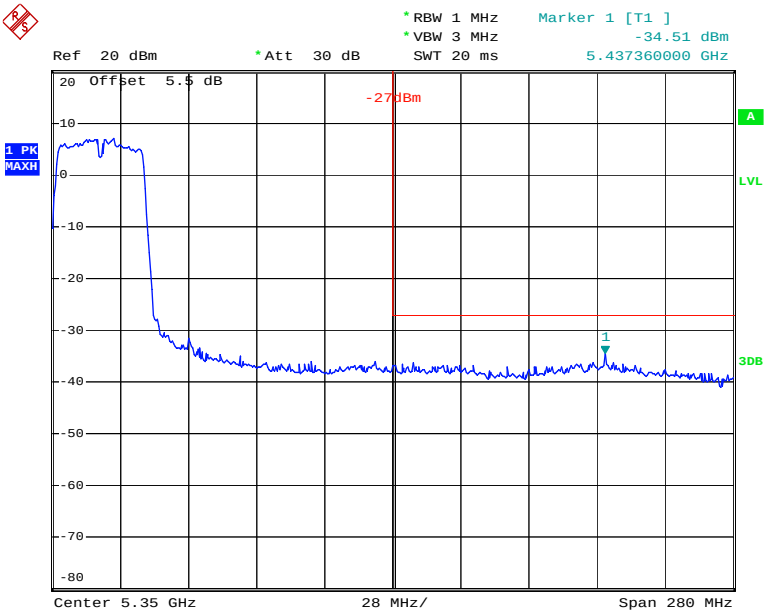
Date: 20.OCT.2017 18:21:31

802.11n ht40 Low Channel



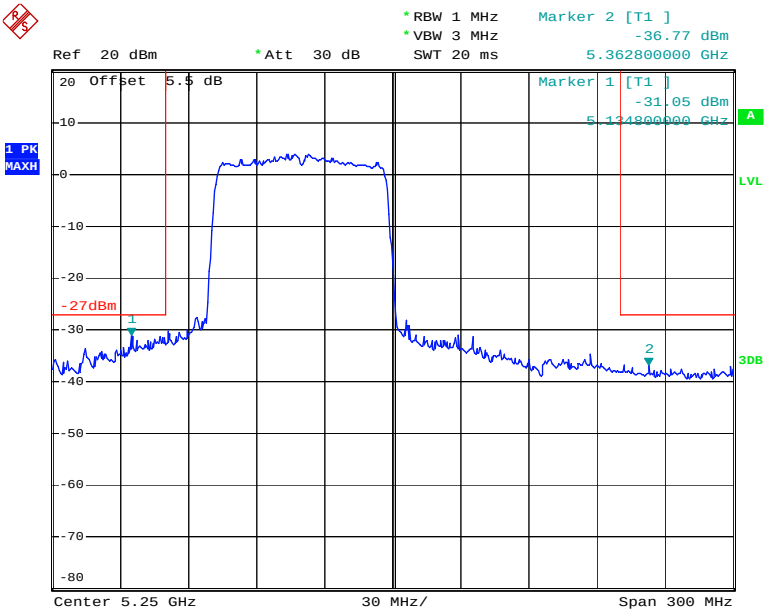
Date: 20.OCT.2017 18:05:08

802.11n ht40 High Channel



Date: 20.OCT.2017 18:06:58

802.11n ac80 Middle Channel

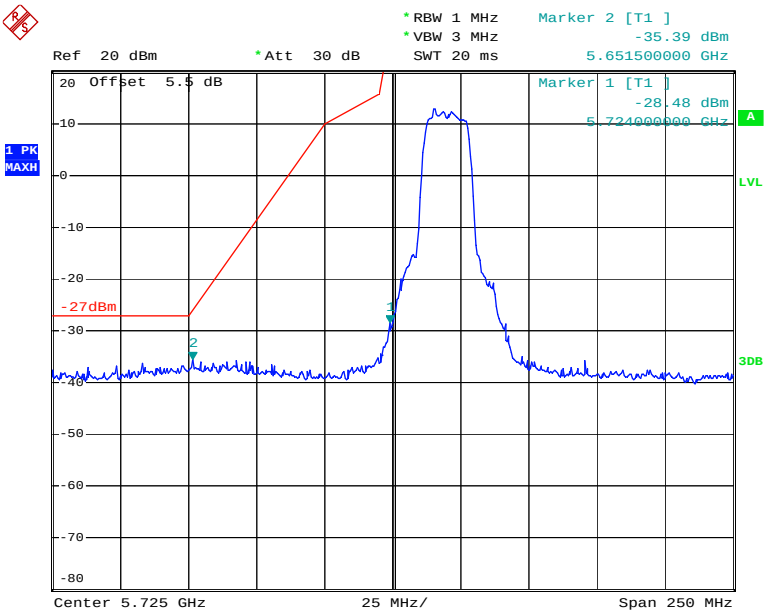


Date: 20.OCT.2017 18:16:15

5725-5850MHz(the atenna gain was offset in the display, all emission under limit more than 3dBc, so 2TX mode also compliance the requirement)

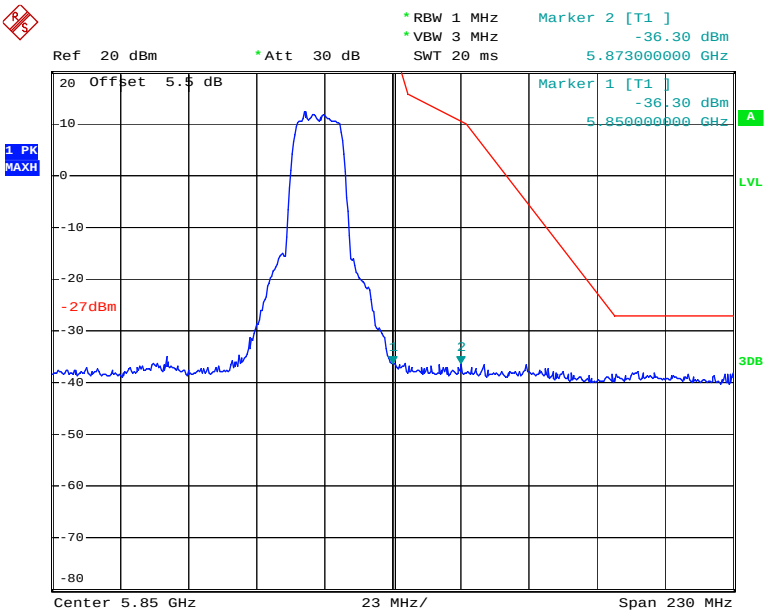
Chain 0:

802.11a Low Channel



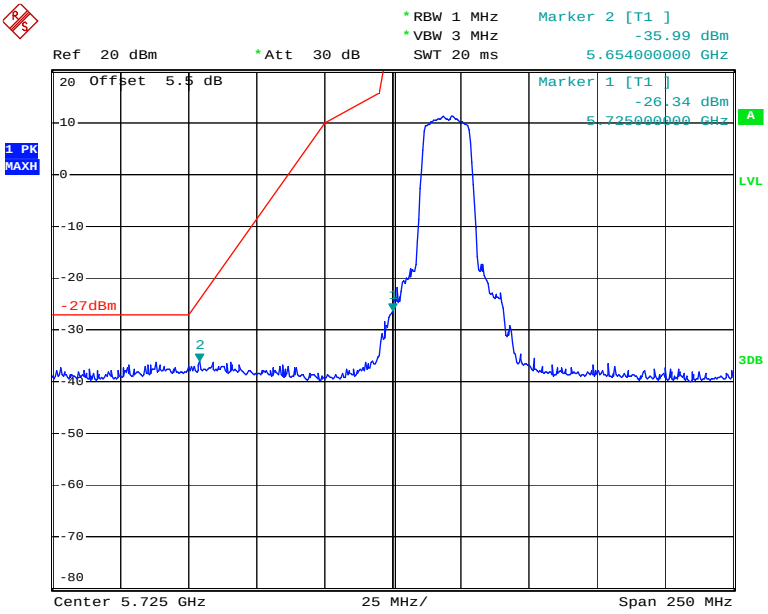
Date: 20.OCT.2017 20:02:10

802.11a High Channel



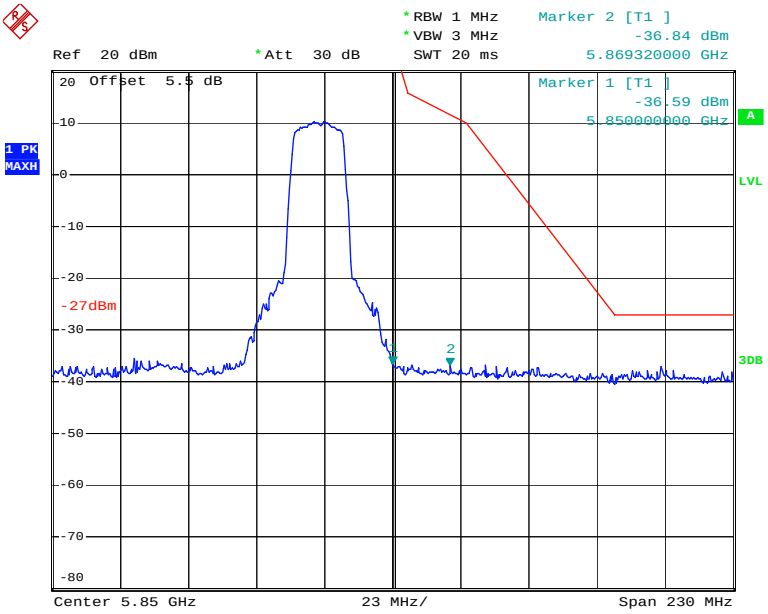
Date: 20.OCT.2017 20:05:50

802.11n ht20 Low Channel



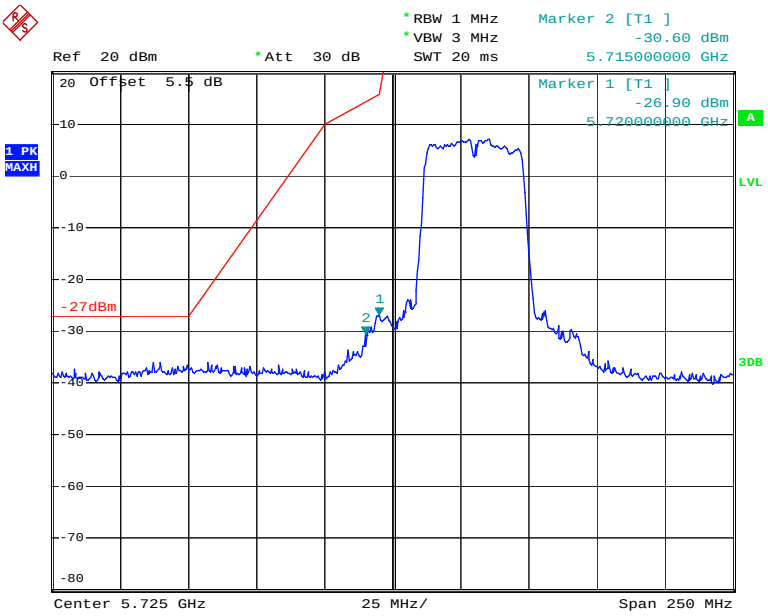
Date: 20.OCT.2017 20:13:05

802.11n ht20 High Channel



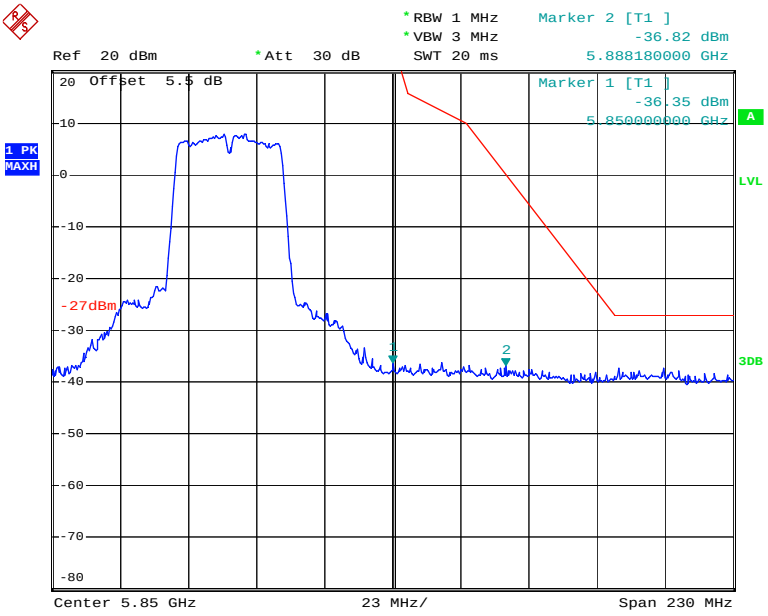
Date: 20.OCT.2017 20:08:34

802.11n ht40 Low Channel



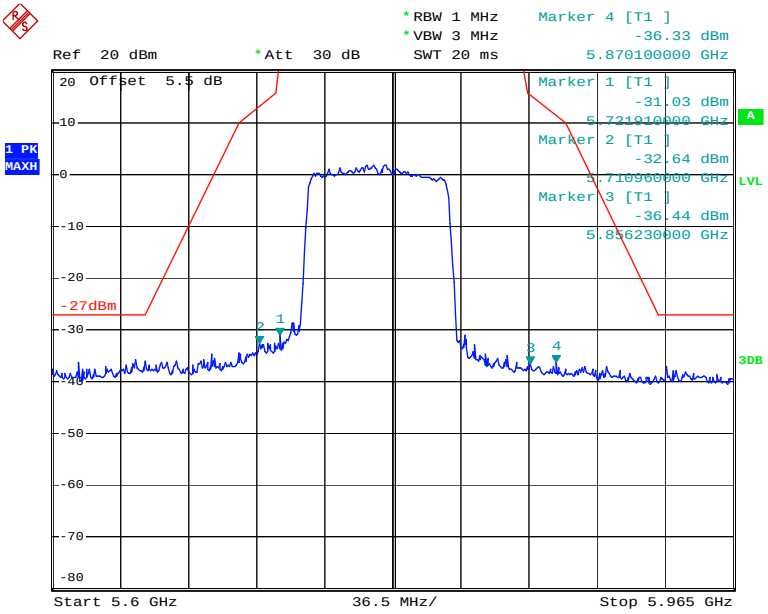
Date: 20.OCT.2017 20:14:59

802.11n ht40 High Channel



Date: 20.OCT.2017 20:16:43

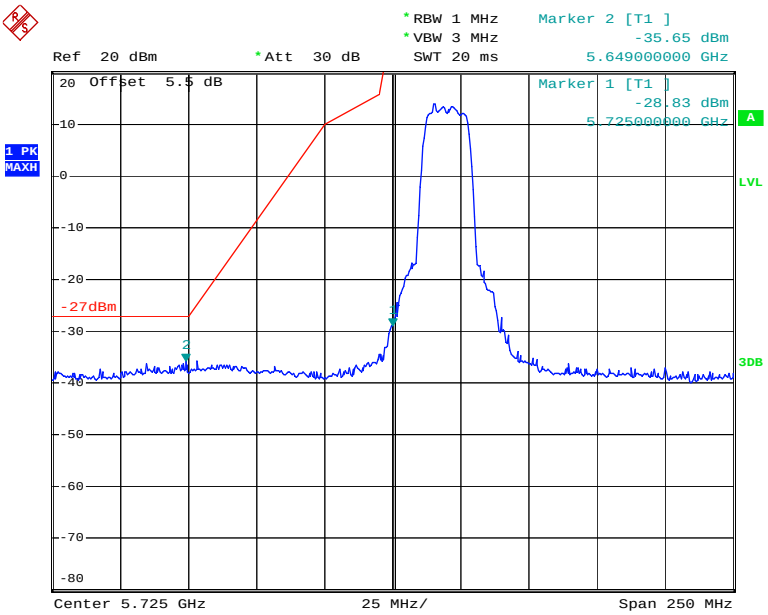
802.11n ac80 Middle Channel



Date: 23.OCT.2017 08:40:49

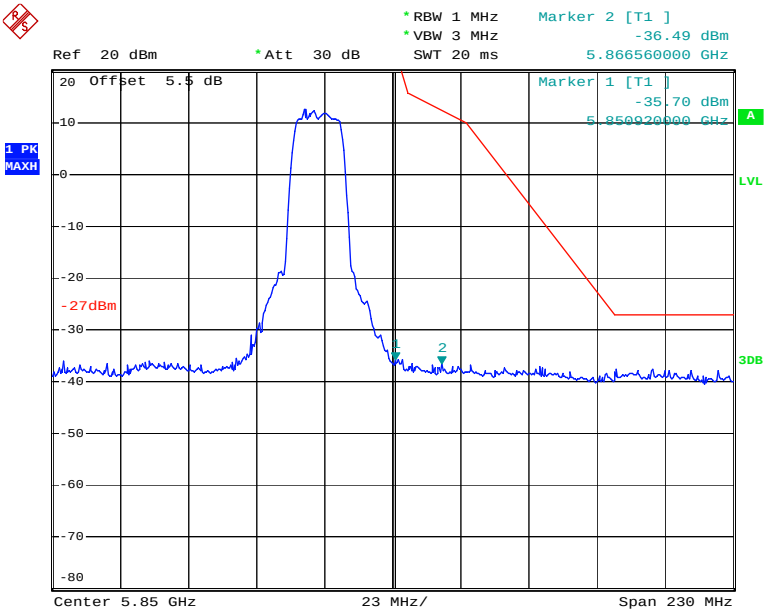
Chain 1:

802.11a Low Channel



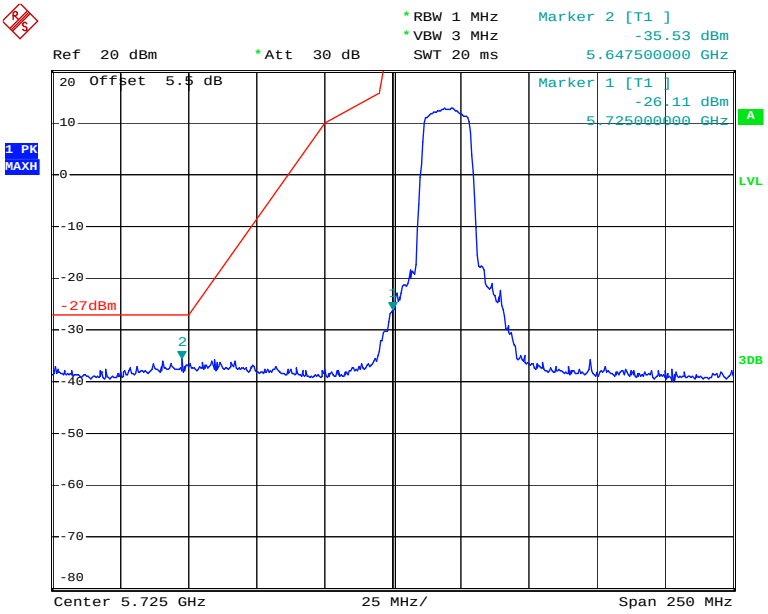
Date: 20.OCT.2017 18:39:03

802.11a High Channel



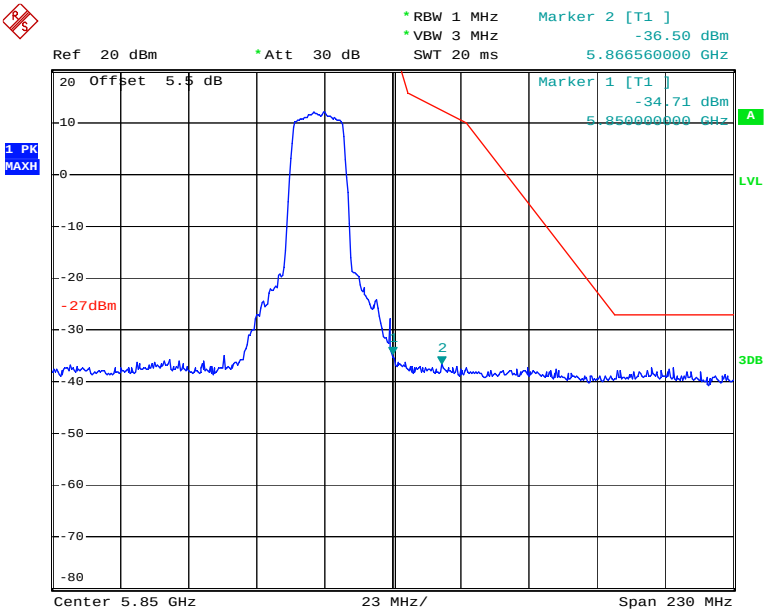
Date: 20.OCT.2017 18:42:34

802.11n ht20 Low Channel



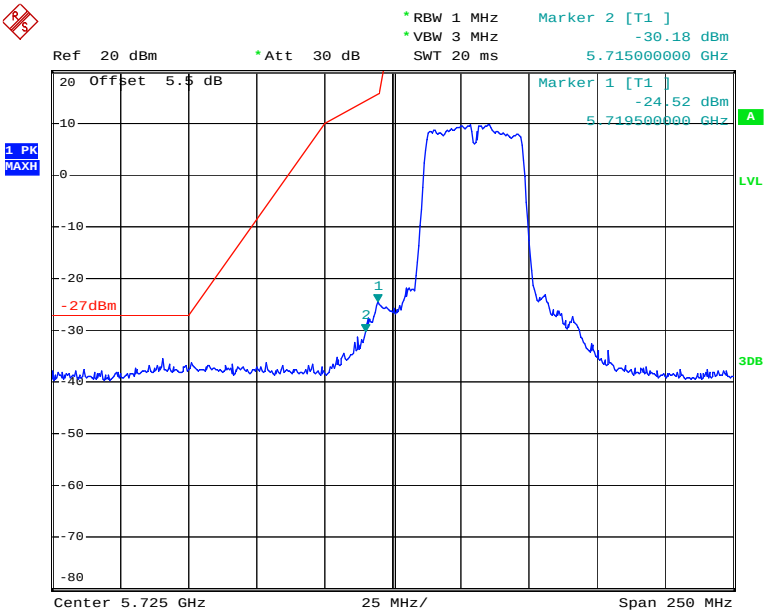
Date: 20.OCT.2017 18:49:50

802.11n ht20 High Channel



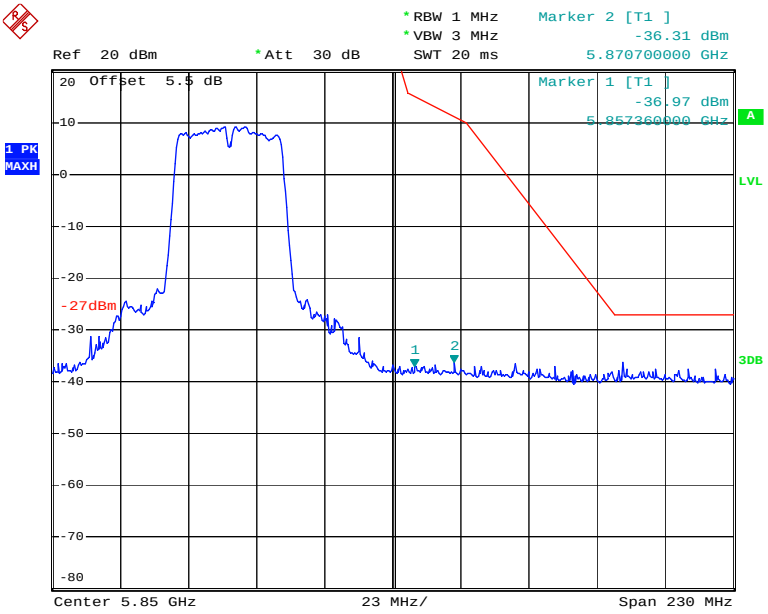
Date: 20.OCT.2017 19:19:24

802.11n ht40 Low Channel



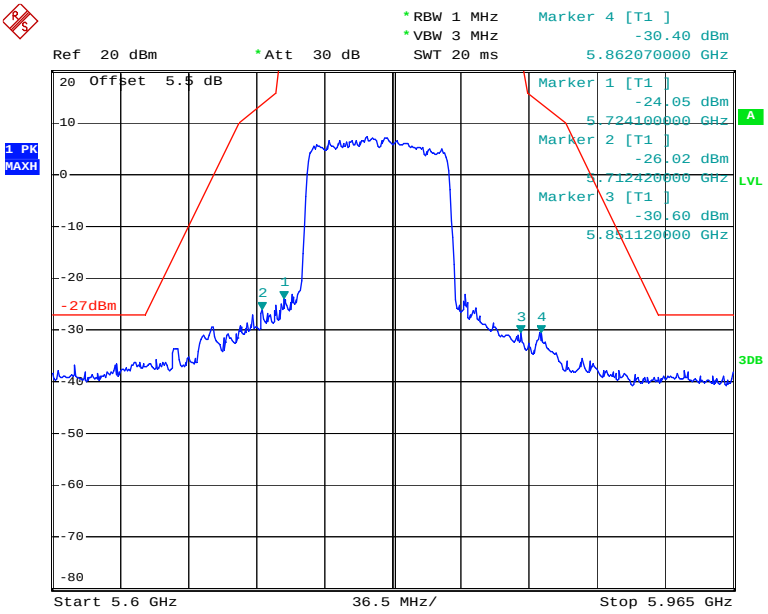
Date: 20.OCT.2017 19:24:50

802.11n ht40 High Channel



Date: 20.OCT.2017 19:23:10

802.11n ac80 Middle Channel



Date: 20.OCT.2017 19:27:09

FCC §15.407(a)(e) –EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

Applicable Standard

15.407(a) (e)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESPI	100120	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-4	Each Time	/

*** 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 v01r04

Test Data

Environmental Conditions

Temperature:	26.8°C
Relative Humidity:	49 %
ATM Pressure:	100.8 kPa

The testing was performed by Mark Pan on 2017-10-20.

Test Result: Pass.

Please refer to the following tables and plots.

Test mode: Transmitting(Test performed at chain 0)

5150-5250MHz:

Mode	Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11 a	Low	5180	24.8	17.12
	Middle	5200	26.16	17.2
	High	5240	25.6	17.2
802.11n ht20	Low	5180	20.72	17.84
	Middle	5200	21.68	17.84
	High	5240	21.84	17.92
802.11n ht40	Low	5190	40.32	36.48
	High	5230	40.48	36.8
802.11ac80	Middle	5210	81.92	75.52

Note: the 99% Occupied Bandwidth have not fall into the band 5250-5350MHz, please refer to the test plots of 99% Occupied Bandwidth.

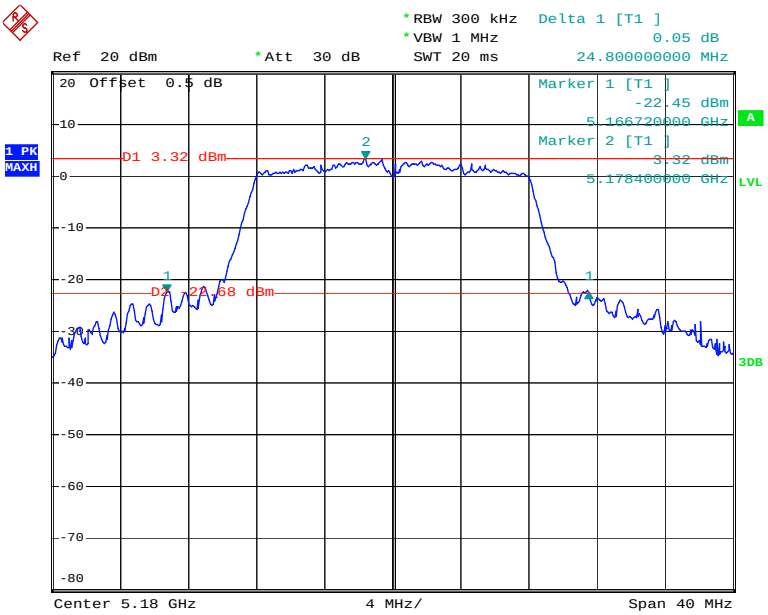
5725-5850MHz:

Mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11 a	Low	5745	16.08	17.04
	Middle	5785	16.32	17.04
	High	5825	16.24	17.04
802.11n ht20	Low	5745	16.88	17.84
	Middle	5785	16.4	17.84
	High	5825	16.96	17.84
802.11n ht40	Low	5755	35.52	36.48
	High	5795	35.52	36.48
802.11ac80	Middle	5775	75.52	75.20

Note: For 5725-5850MHz band, the 99% Occupied Bandwidth have not fall into the band 5470-5725MHz.

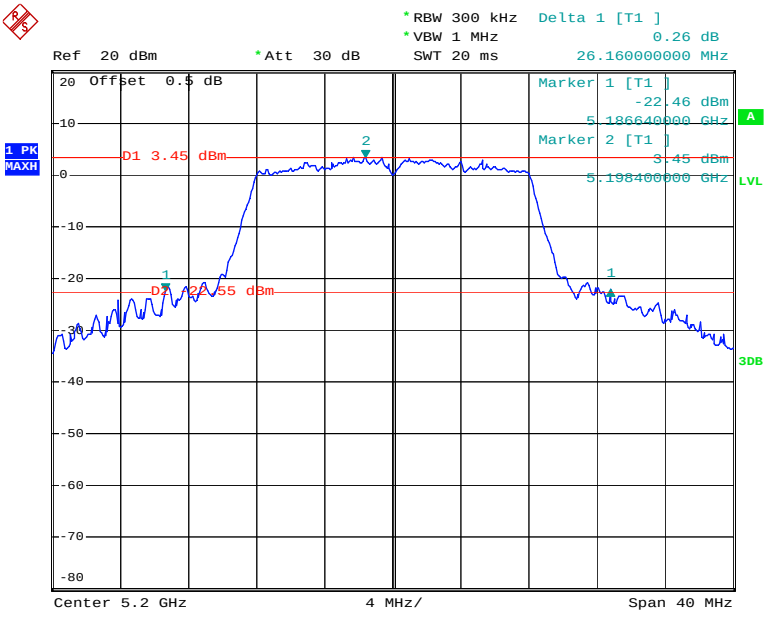
5150-5250MHz: 26dB Emission Bandwidth:

802.11a Low Channel



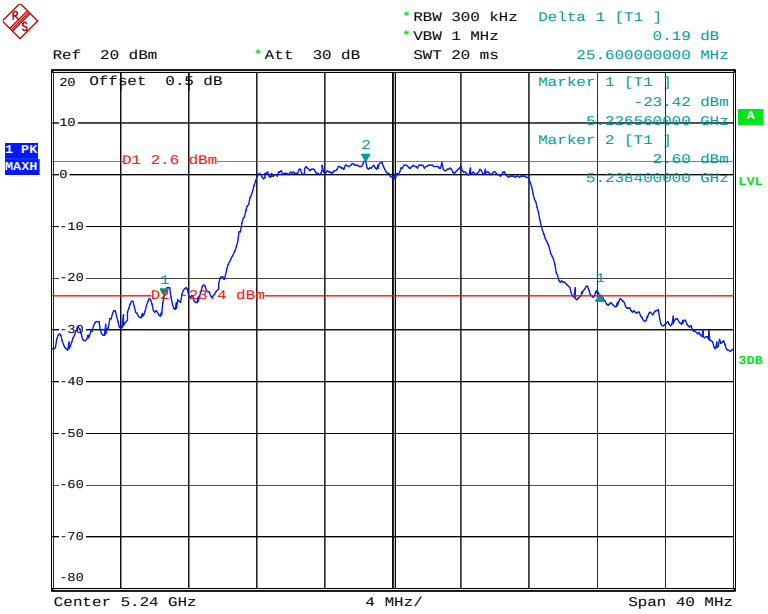
Date: 20.OCT.2017 16:21:41

802.11a Middle Channel



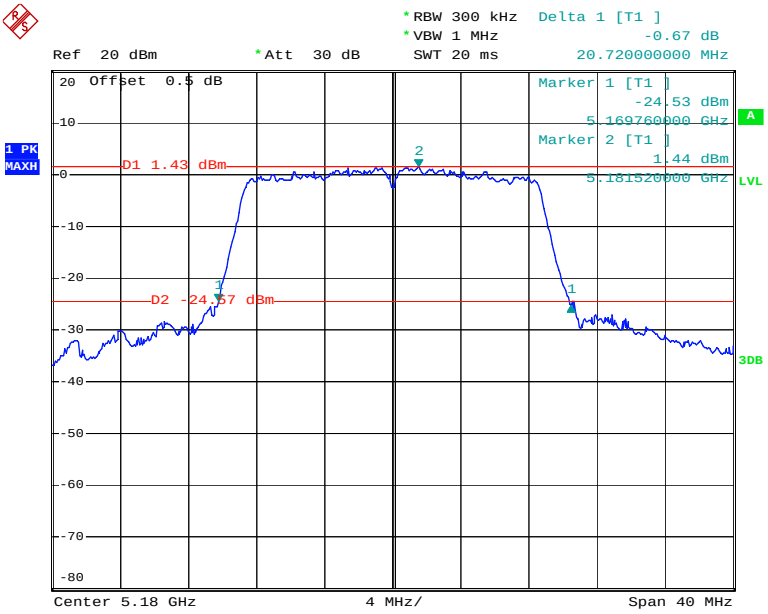
Date: 20.OCT.2017 16:25:57

802.11a High Channel



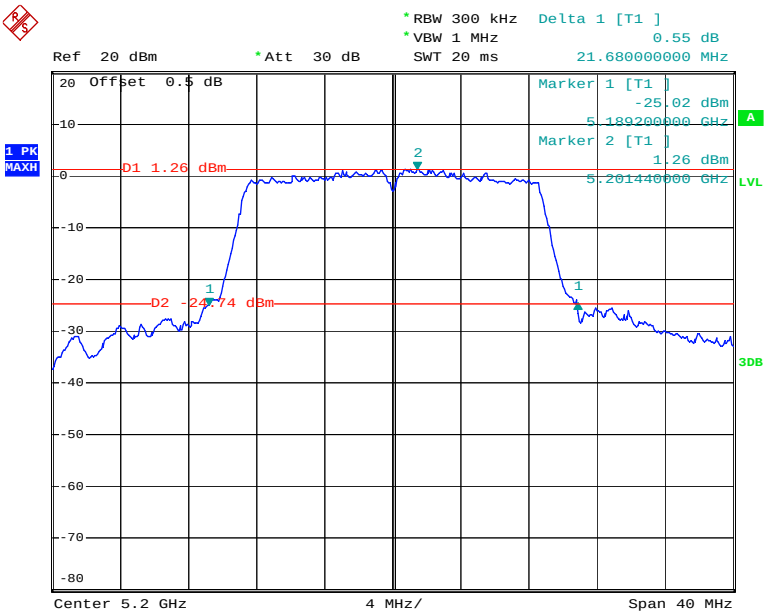
Date: 20.OCT.2017 16:32:04

802.11n ht20 Low Channel



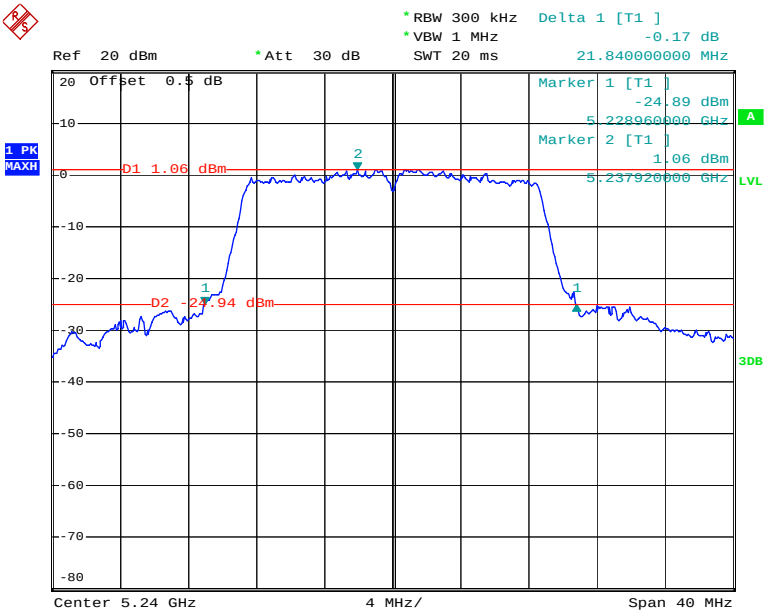
Date: 20.OCT.2017 19:36:51

802.11n ht20 Middle Channel



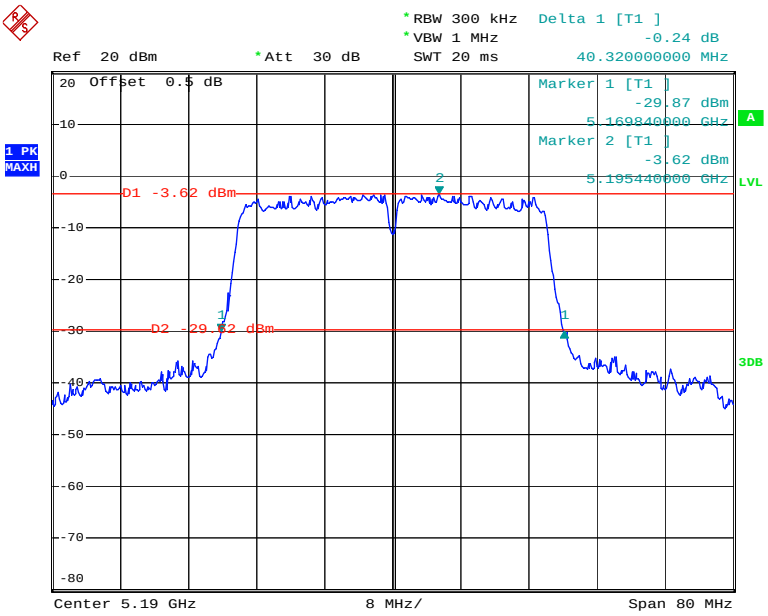
Date: 20.OCT.2017 19:38:37

802.11n ht20 High Channel



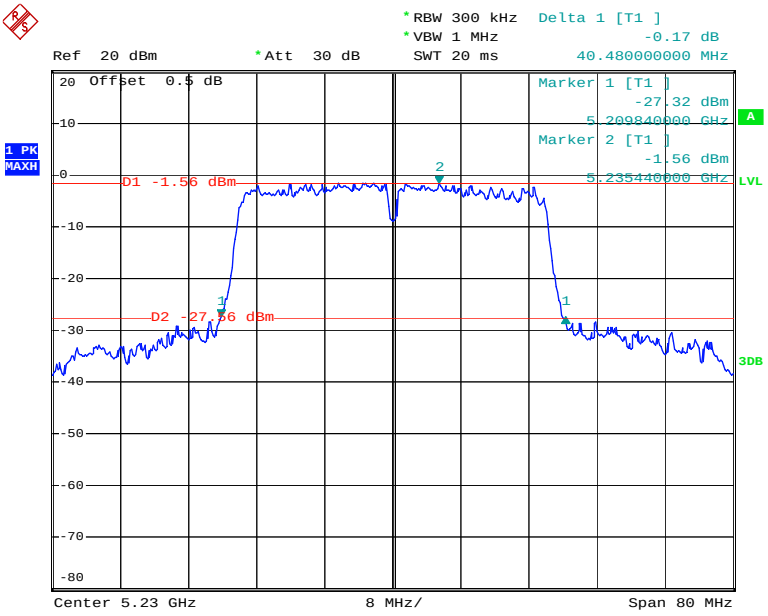
Date: 20.OCT.2017 19:39:53

802.11n ht40 Low Channel



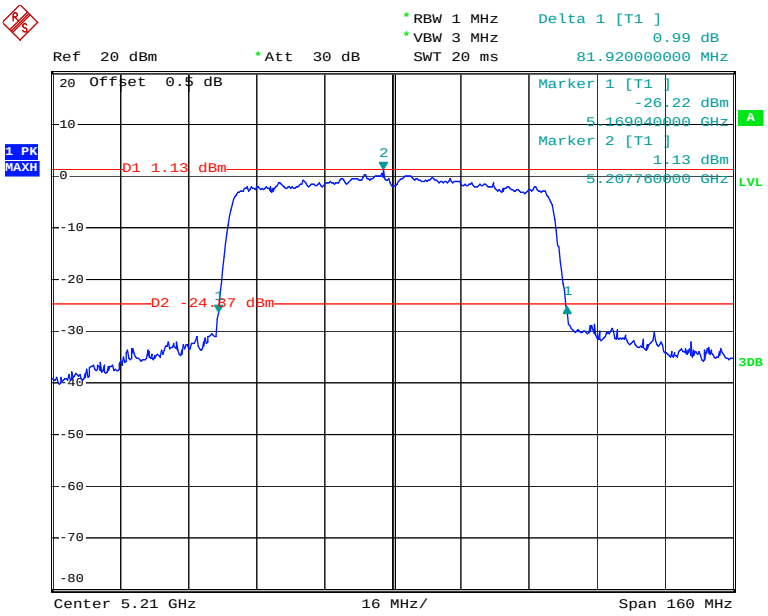
Date: 20.OCT.2017 19:46:16

802.11n ht40 High Channel



Date: 20.OCT.2017 19:41:24

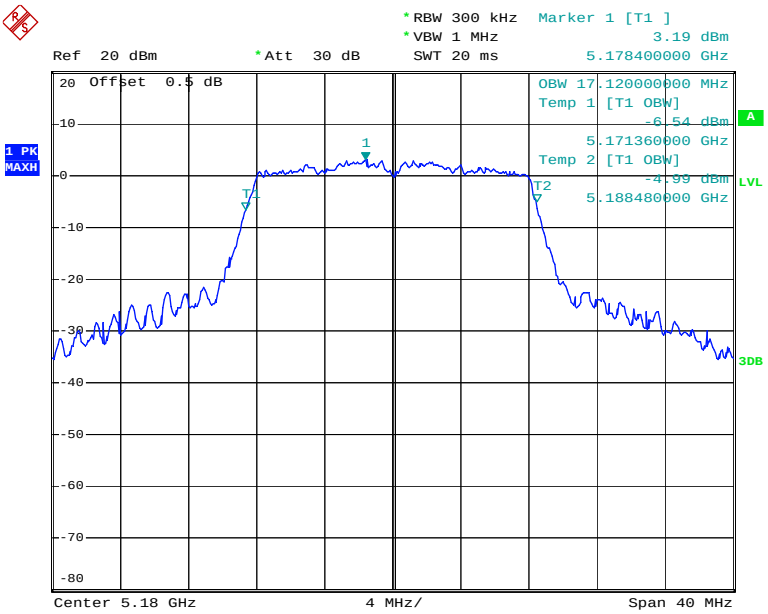
802.11ac80 Middle Channel



Date: 20.OCT.2017 19:48:35

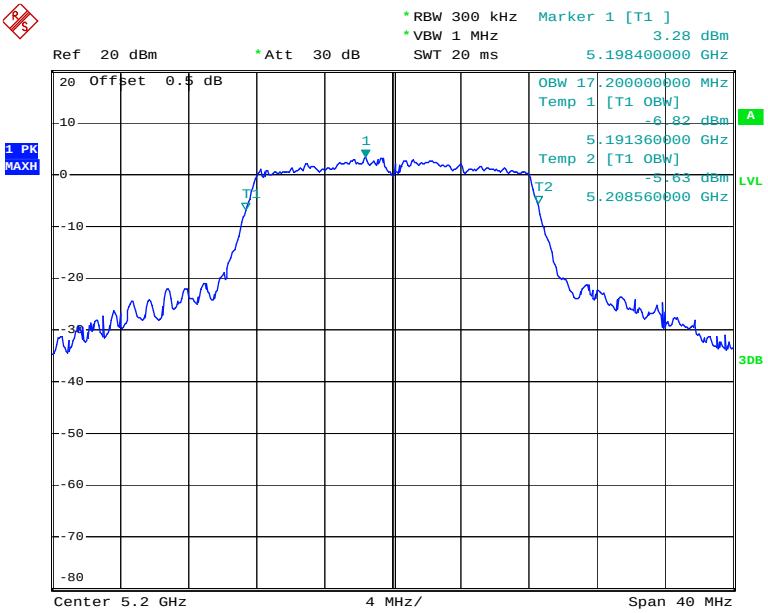
99% Occupied Bandwidth

802.11a Low Channel



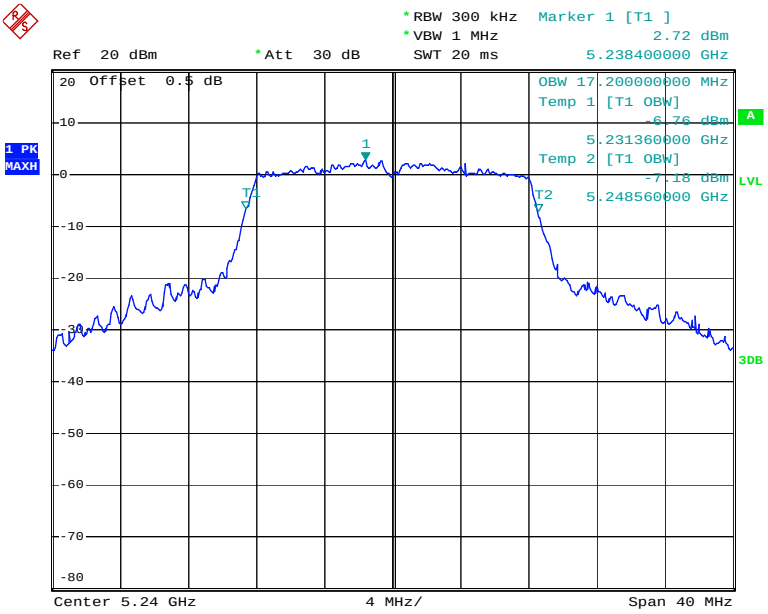
Date: 20.OCT.2017 19:52:05

802.11a Middle Channel



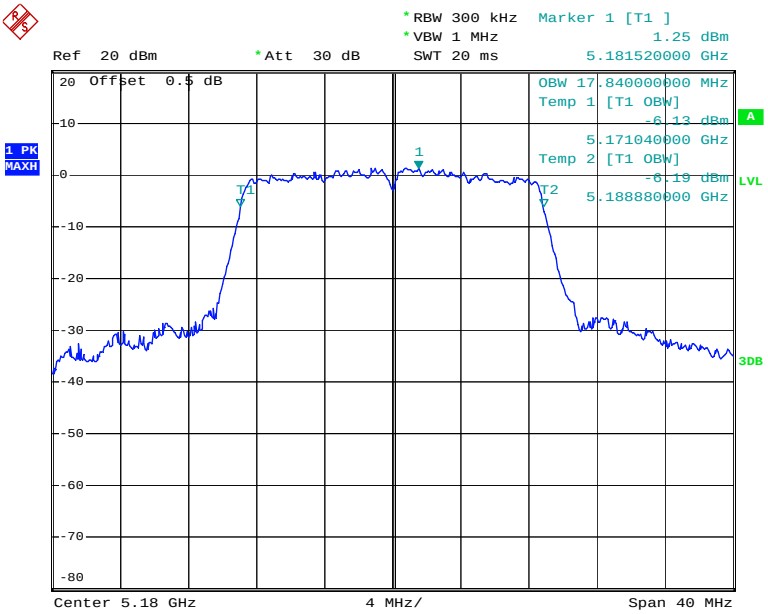
Date: 20.OCT.2017 19:53:39

802.11a High Channel



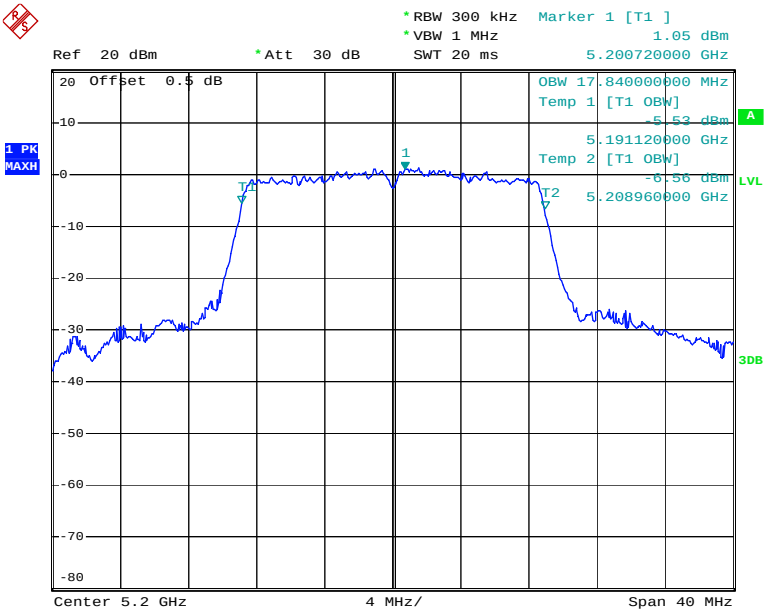
Date: 20.OCT.2017 19:54:49

802.11n ht20 Low Channel



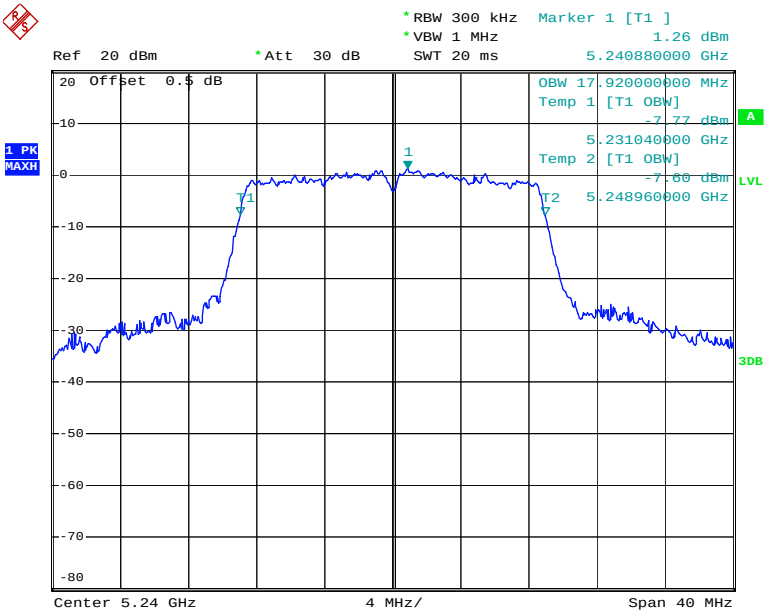
Date: 20.OCT.2017 19:37:04

802.11n ht20 Middle Channel



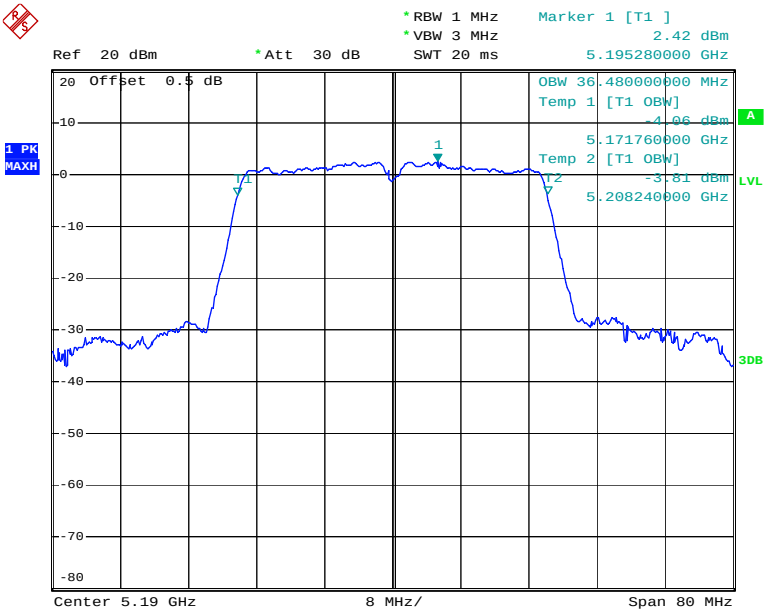
Date: 20.OCT.2017 19:38:49

802.11n ht20 High Channel



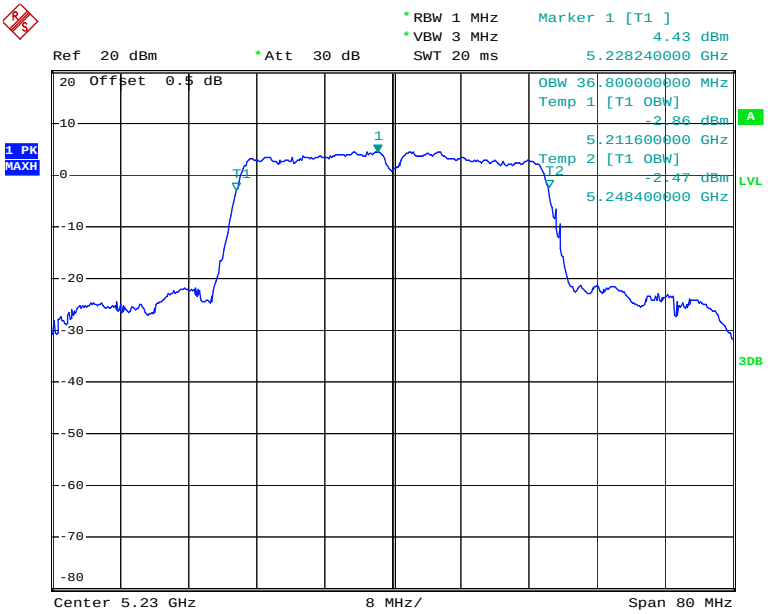
Date: 20.OCT.2017 19:40:06

802.11n ht40 Low Channel



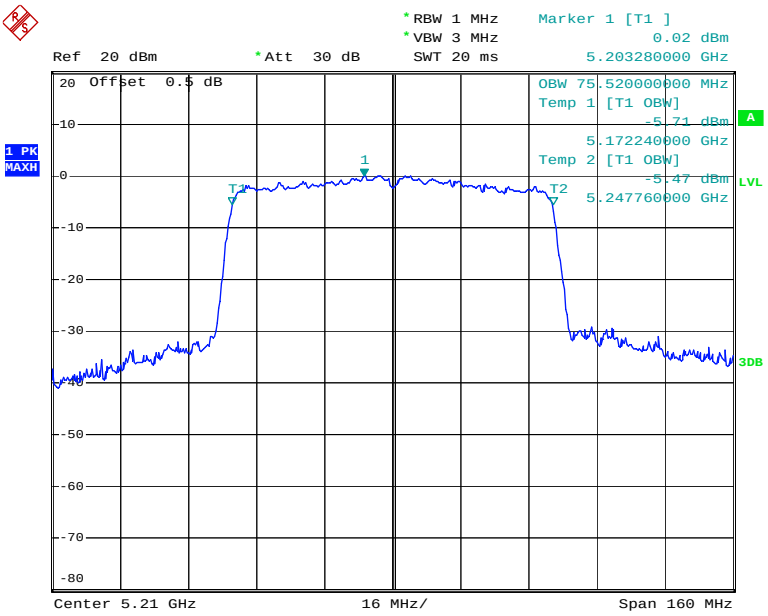
Date: 20.OCT.2017 19:46:29

802.11n ht40 High Channel



Date: 20.OCT.2017 19:41:37

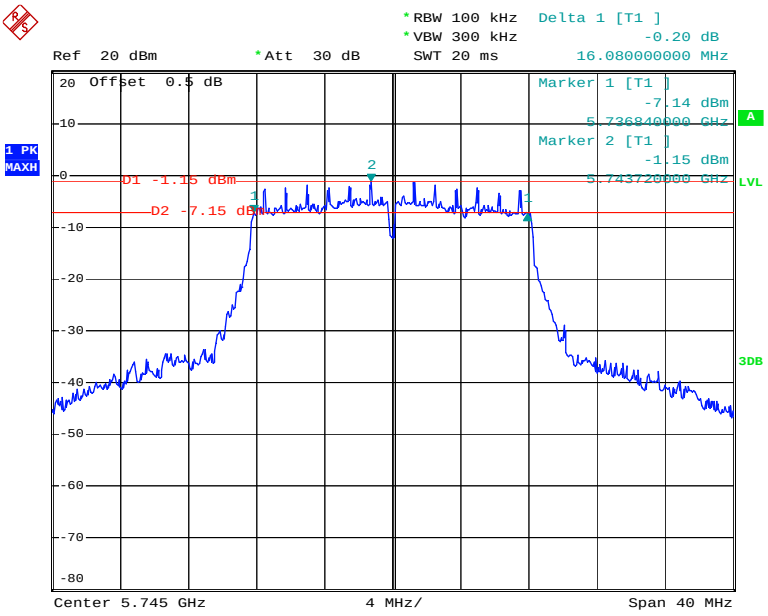
802.11ac80 Middle Channel



Date: 20.OCT.2017 19:48:50

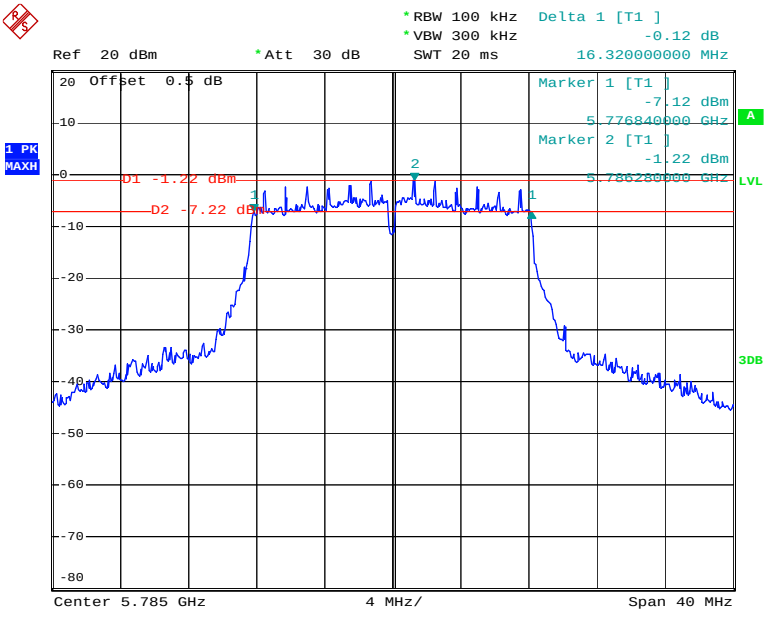
5725-5850MHz:
6dB Bandwidth:

802.11a Low Channel



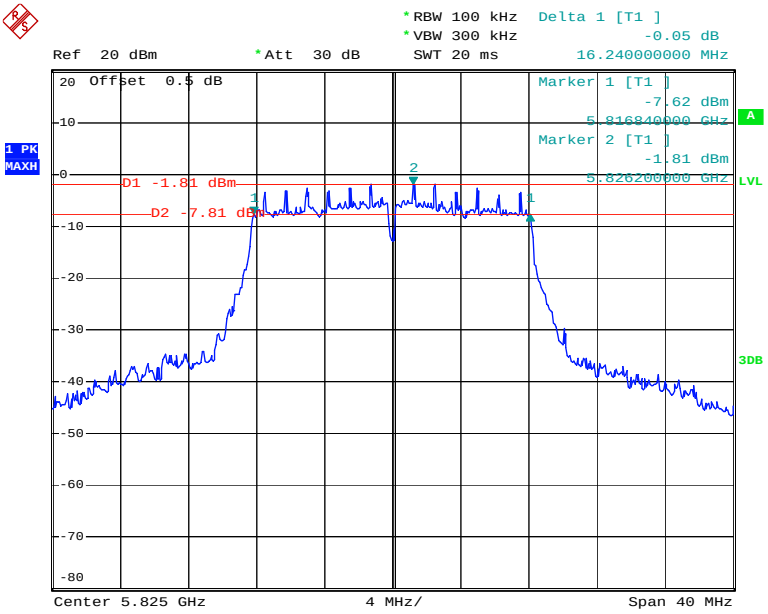
Date: 20.OCT.2017 20:01:28

802.11a Middle Channel



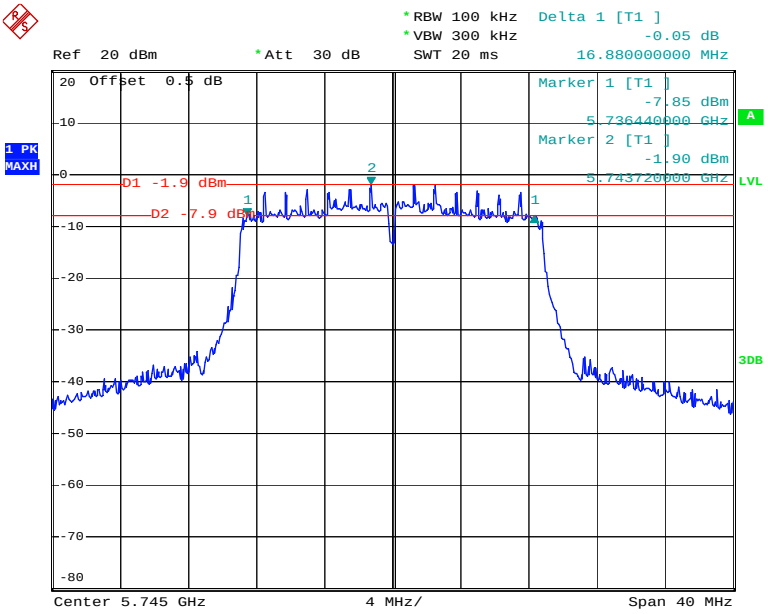
Date: 20.OCT.2017 20:03:23

802.11a High Channel



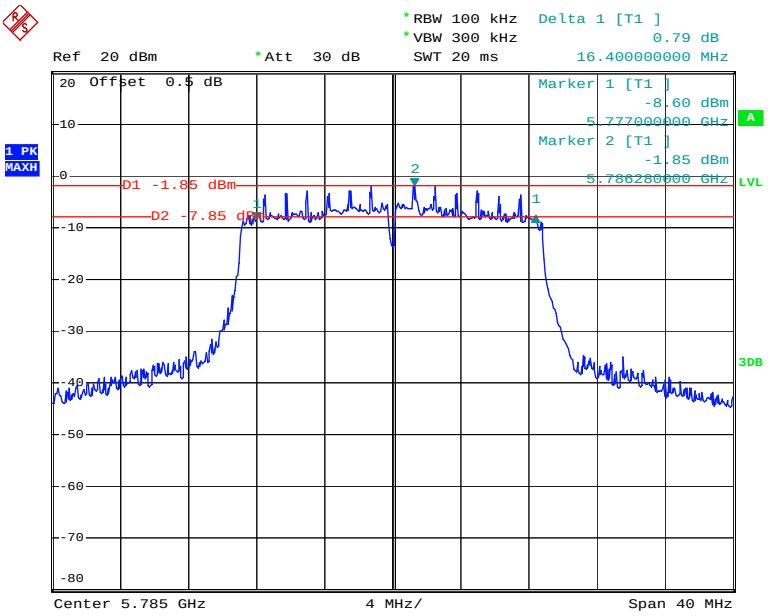
Date: 20.OCT.2017 20:05:02

802.11ht20 Low Channel



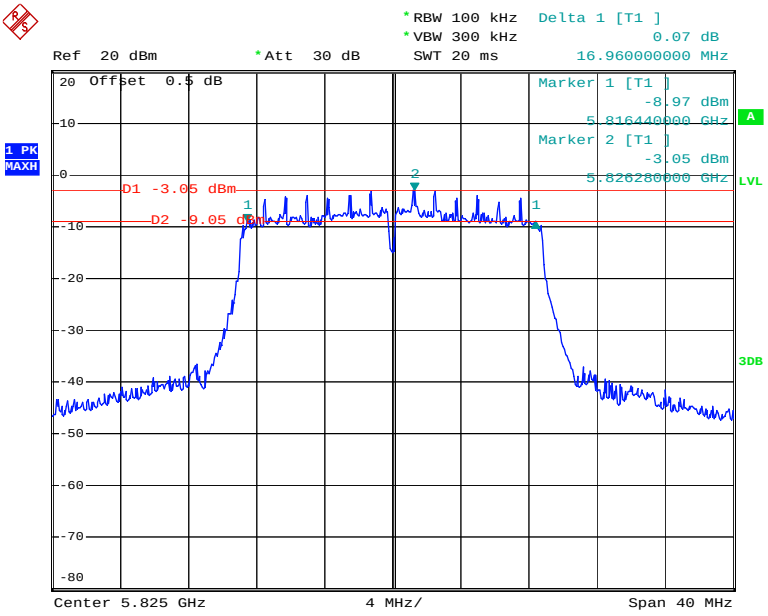
Date: 20.OCT.2017 20:12:24

802.11ht20 Middle Channel



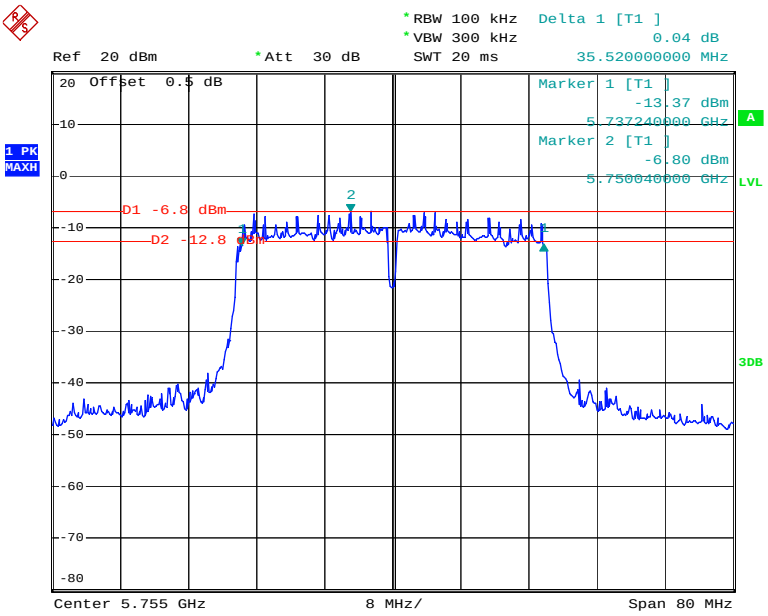
Date: 20.OCT.2017 20:09:32

802.11ht20 High Channel



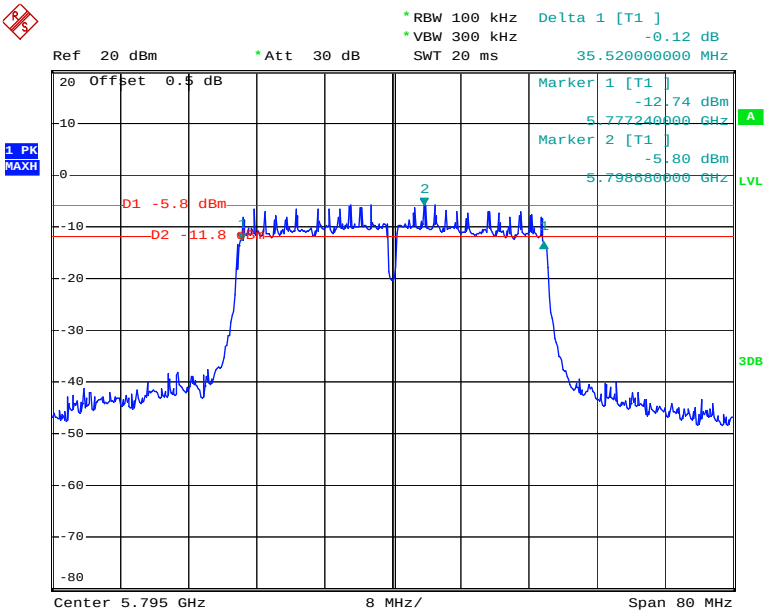
Date: 20.OCT.2017 20:07:46

802.11ht40 Low Channel



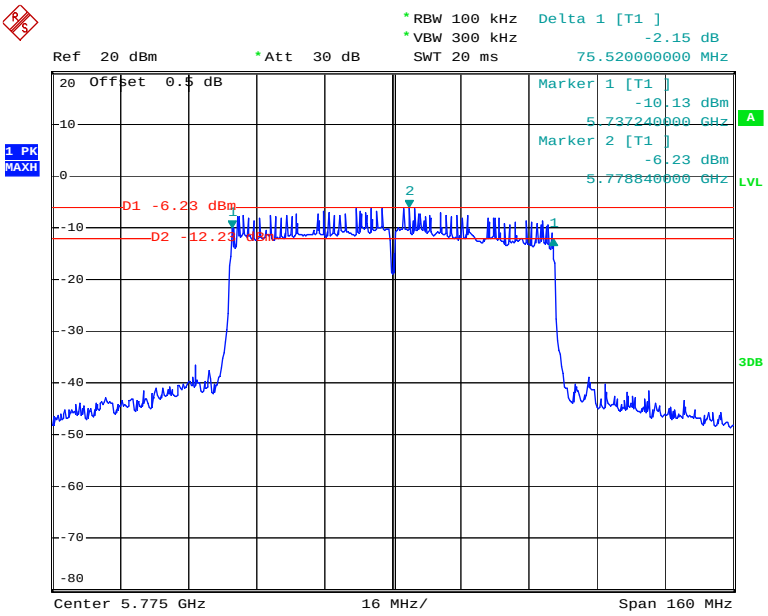
Date: 20.OCT.2017 20:14:17

802.11ht40 High Channel



Date: 20.OCT.2017 20:15:55

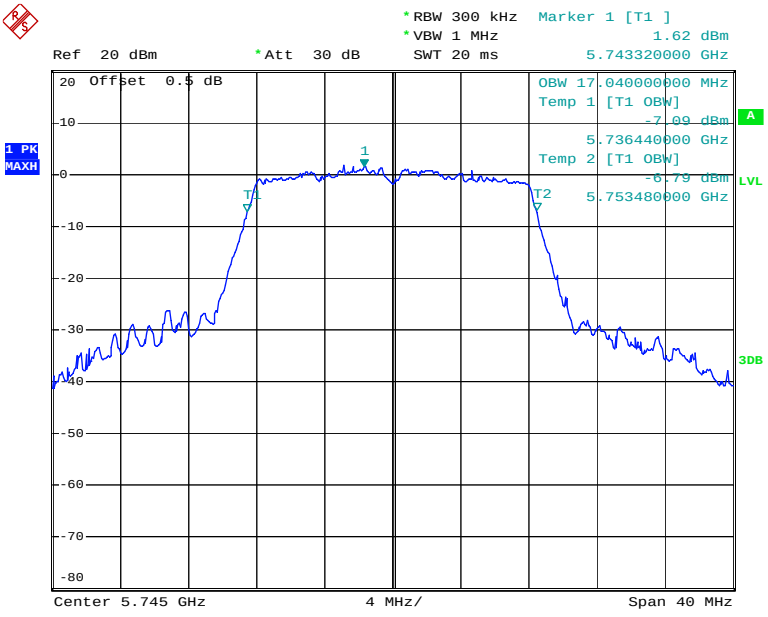
802.11ac80 Middle Channel



Date: 20.OCT.2017 19:26:26

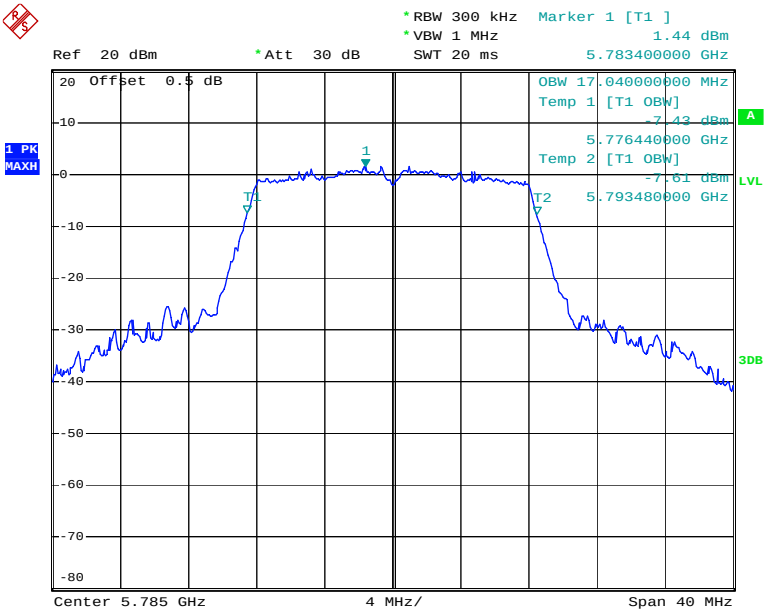
99% Occupied Bandwidth:

802.11a Low Channel



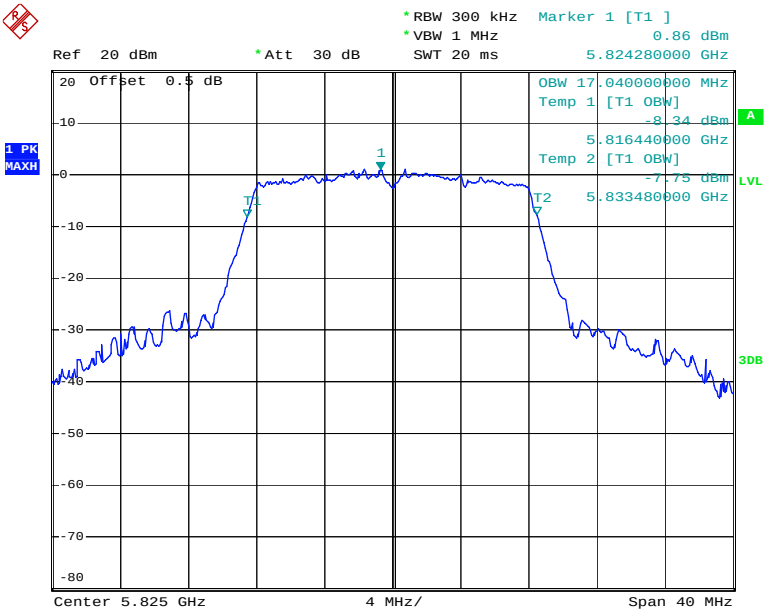
Date: 20.OCT.2017 20:01:42

802.11a Middle Channel



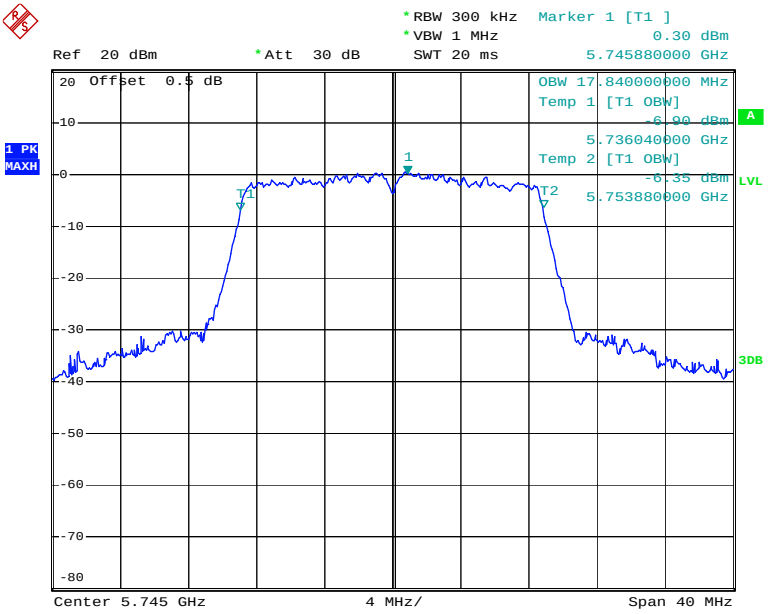
Date: 20.OCT.2017 20:03:35

802.11a High Channel



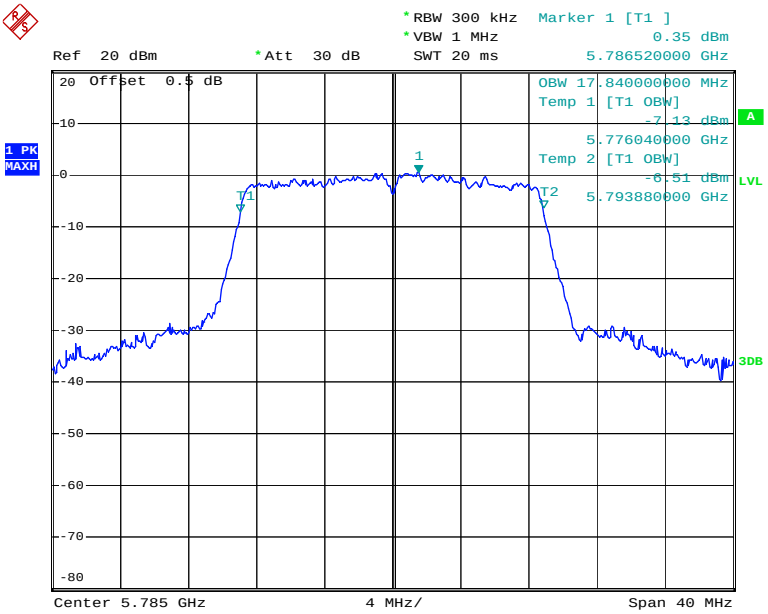
Date: 20.OCT.2017 20:05:14

802.11ht20 Low Channel



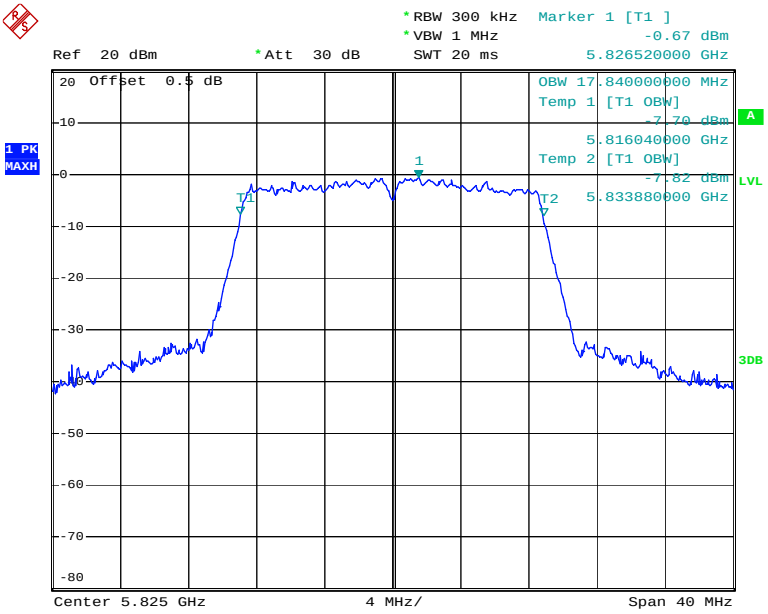
Date: 20.OCT.2017 20:12:37

802.11ht20 Middle Channel



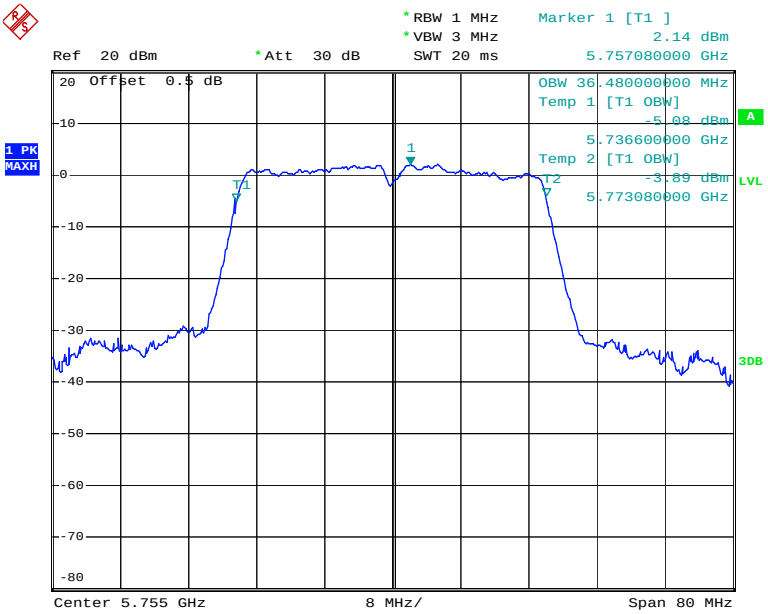
Date: 20.OCT.2017 20:09:44

802.11ht20 High Channel



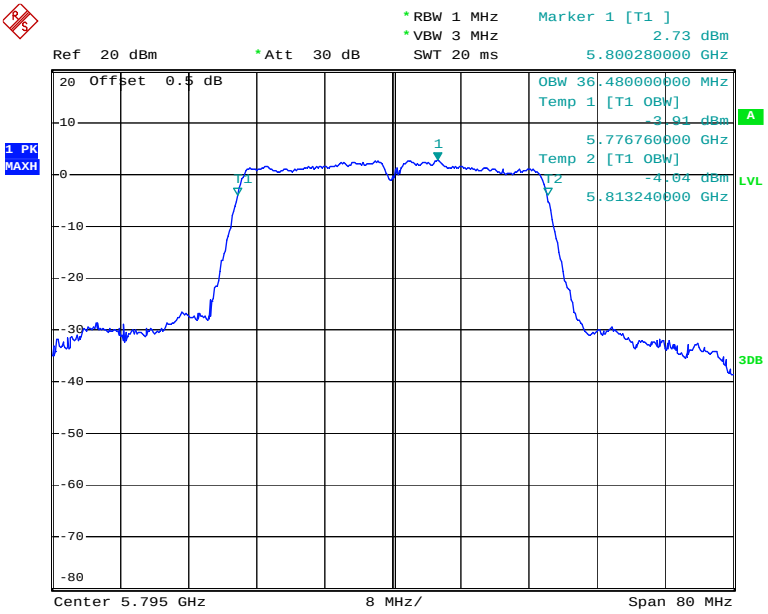
Date: 20.OCT.2017 20:07:59

802.11ht40 Low Channel



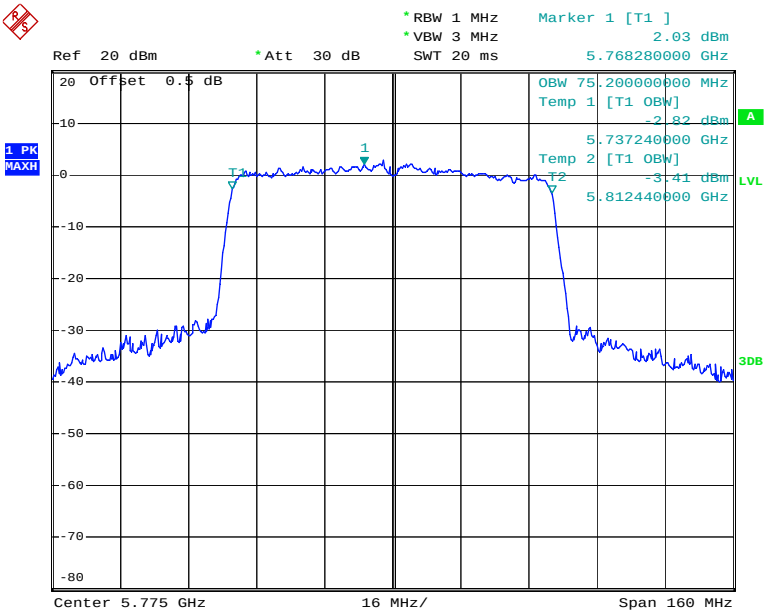
Date: 20.OCT.2017 20:14:30

802.11ht40 High Channel



Date: 20.OCT.2017 20:16:09

802.11ac80 Middle Channel



Date: 20.OCT.2017 19:26:38

FCC §15.407(g)–FREQUENCY STABILITY

Applicable Standard

FCC §15.407(g)

(g) Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

Test Procedure

According to ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices".

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	DE23437	2016-11-22	2017-11-22
Unknown	RF Cable	Unknown	C-4	Each Time	/
UNI-T	Multimeter	UT39A	M130199938	2017-04-10	2018-04-10
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-4	2017-09-10	2018-09-09

*** 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 Data

Environmental Conditions

Temperature:	26.8 °C
Relative Humidity:	49%
ATM Pressure:	100.8 kPa

The testing was performed by Gavin Xu on 2017-10-20.

Test Mode: Transmitting(Test was performed at Chain 0)

Test Result: Pass.

5150-5250MHz:

802.11a

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5170.7415	5248.6172	f_L and f_H Within 5150~5250MHz range
10		5170.7418	5248.6179	
20		5170.7419	5248.6176	
30		5170.7412	5248.6173	
40		5170.7409	5248.6166	
25	102	5170.7404	5248.6176	
25	138	5170.7409	5248.6167	

802.11n ht20:

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5171.0621	5249.0177	f_L and f_H Within 5150~5250MHz range
10		5171.0623	5249.0189	
20		5171.0624	5249.0145	
30		5171.0625	5249.0179	
40		5171.0626	5249.0188	
25	102	5171.0624	5249.0182	
25	138	5171.0622	5249.0183	

802.11n ht40:

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5171.3226	5248.3567	f_L and f_H Within 5150~5250MHz range
10		5171.3223	5248.3564	
20		5171.3221	5248.3562	
30		5171.3224	5248.3564	
40		5171.3222	5248.3563	
25	102	5171.3221	5248.3562	
25	138	5171.3222	5248.3561	

802.11ac80:

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5172.0042	5247.9967	f_L and f_H Within 5150~5250MHz range
10		5172.0045	5247.9955	
20		5172.0041	5247.9946	
30		5172.0045	5247.9942	
40		5172.0043	5247.9953	
25	102	5172.0041	5247.9952	
25	138	5172.0044	5247.9959	

Note: the f_L and f_H determined by 99% Occupied bandwidth low edge at Low test channel and High edge at High test channel.

5725-5850MHz:

802.11a

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5736.6274	5833.4556	f_L and f_H Within 5725~5850MHz range
10		5736.6255	5833.4575	
20		5736.6274	5833.4588	
30		5736.6255	5833.4574	
40		5736.6222	5833.4567	
25	102	5736.6274	5833.4565	
25	138	5736.6245	5833.4562	

802.11n ht20:

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5735.9819	5834.0984	f_L and f_H Within 5725~5850MHz range
10		5735.9812	5834.0912	
20		5735.9813	5834.0923	
30		5735.9812	5834.0967	
40		5735.9813	5834.0982	
25	102	5735.9802	5834.0981	
25	138	5735.9841	5834.0983	

802.11n ht40:

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5736.6437	5813.5169	f_L and f_H Within 5725~5850MHz range
10		5736.6440	5813.5158	
20		5736.6454	5813.5165	
30		5736.6452	5813.5157	
40		5736.6437	5813.5177	
25	102	5736.6438	5813.5175	
25	138	5736.6435	5813.5172	

802.11ac80:

Temperature	Voltage	f_L at Low Test Channel	F_H at High Test Channel	Limit
℃	V_{AC}	MHz	MHz	
0	120	5737.0040	5812.9952	f_L and f_H Within 5725~5850MHz range
10		5737.0049	5812.9954	
20		5737.0045	5812.9952	
30		5737.0042	5812.9959	
40		5737.0044	5812.9954	
25	102	5737.0045	5812.9953	
25	138	5737.0064	5812.9952	

Note: the f_L and f_H determined by 99% Occupied bandwidth low edge at Low test channel and High edge at High test channel.

FCC §15.407(a) –MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

(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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54210016	2016-11-03	2017-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2016-11-03	2017-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2016-11-03	2017-11-03
Unknown	RF Cable	Unknown	C-4	Each Time	/

*** 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 v01r04

Test Data

Environmental Conditions

Temperature:	26.8 °C
Relative Humidity:	49%
ATM Pressure:	100.8 kPa

The testing was performed by Mark Pan on 2017-10-20.

Test Mode: Transmitting

UNII Band	Mode	Frequency (MHz)	Conducted Average Output Power (dBm)			Limit (dBm)	Result
			Chain 0	Chain 1	Total		
5150-5250 MHz	802.11 a	5180	13.61	13.45	/	30	PASS
		5200	13.34	13.74	/	30	PASS
		5240	13.43	13.34	/	30	PASS
	802.11ht20	5180	12.45	12.55	15.51	30	PASS
		5200	12.64	12.68	15.67	30	PASS
		5240	12.51	12.53	15.53	30	PASS
	802.11ht40	5190	12.44	12.27	15.37	30	PASS
		5230	12.28	12.16	15.23	30	PASS
	802.11 ac80	5210	11.38	11.62	14.51	30	PASS
5725-5850 MHz	802.11 a	5745	13.57	13.52	/	30	PASS
		5785	13.43	13.43	/	30	PASS
		5825	13.23	13.35	/	30	PASS
	802.11ht20	5745	12.55	13.59	16.11	30	PASS
		5785	12.75	13.69	16.26	30	PASS
		5825	12.51	13.54	16.07	30	PASS
	802.11ht40	5755	12.54	13.55	16.08	30	PASS
		5795	12.41	13.27	15.87	30	PASS
	802.11 ac80	5775	12.75	13.19	15.99	30	PASS

Note 1: the duty cycle have been calculated in the result.
Note 2: The maximum antenna gain is 5dBi in 5GHz band. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

So:

Directional gain = G_{ANT} + Array Gain = 5dBi < 6dBi

FCC §15.407(a) - POWER SPECTRAL DENSITY

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz 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.

(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.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01r04

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESPI	100120	2016-12-08	2017-12-08
Unknown	RF Cable	Unknown	C-4	Each Time	/

*** 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:	26.8~27.8°C
Relative Humidity:	44~49 %
ATM Pressure:	100.8 ~101kPa

The testing was performed by Mark Pan from 2017-10-20 to 2017-10-21.

Test Mode: Transmitting

Test Result:Compliance.Please refer to the following table and plot.

5150-5250MHz

Mode	Frequency (MHz)	Reading (dBm/MHz)		Duty Cycle Factor (dB)	Power Spectral Density (dBm/MHz)			
		Chain 0	Chain 1		Chain 0	Chain 1	Total	Limits
802.11 a	5180	0.90	-2.67	0.26	1.16	-2.41	/	17
	5200	1.28	-2.80	0.26	1.54	-2.54	/	17
	5240	1.00	-3.01	0.26	1.26	-2.75	/	17
802.11 ht20	5180	-0.74	-4.12	0.46	-0.28	-3.66	1.36	15
	5200	-0.13	-4.76	0.46	0.33	-4.3	1.62	15
	5240	-0.92	-4.92	0.46	-0.46	-4.46	1.00	15
802.11 ht40	5190	-4.54	-8.38	0.79	-3.75	-7.59	-2.25	15
	5230	-7.16	-8.91	0.79	-6.37	-8.12	-4.15	15
802.11 ac80	5210	-6.78	-11.88	1.20	-5.58	-10.68	-4.41	15

5725-5850MHz

Mode	Frequency (MHz)	Reading (dBm/500kHz)		Duty Cycle Factor (dB)	Power Spectral Density (dBm/500kHz)			
		Chain 0	Chain 1		Chain 0	Chain 1	Total	Limit
802.11 a	5745	-0.18	-3.22	0.26	0.08	-2.96	/	30
	5785	-0.6	-3.32	0.26	-0.34	-3.06	/	30
	5825	-1.67	-3.4	0.26	-1.41	-3.14	/	30
802.11 ht20	5745	-2.03	-3.21	0.46	-1.57	-2.75	0.89	28
	5785	-3.06	-3.51	0.46	-2.6	-3.05	0.19	28
	5825	-1.98	-3.81	0.46	-1.52	-3.35	0.67	28
802.11 ht40	5755	-6.66	-6.18	0.79	-5.87	-5.39	-2.61	28
	5795	-5.2	-6.8	0.79	-4.41	-6.01	-2.13	28
802.11 ac80	5775	-10.57	-3.87	1.20	-9.37	-2.67	-1.83	28

Note 1:The maximum antenna gain is 5dBi in 5GHz band. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

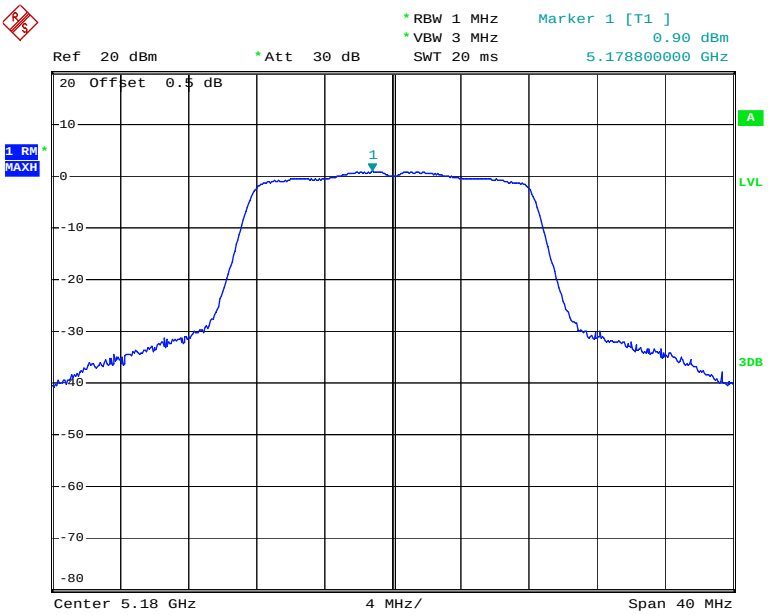
So:

Directional gain = G_{ANT} + Array Gain = 5.0dBi+10*log(2)=8dBi

Note 2: For 5.8GHz band, If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

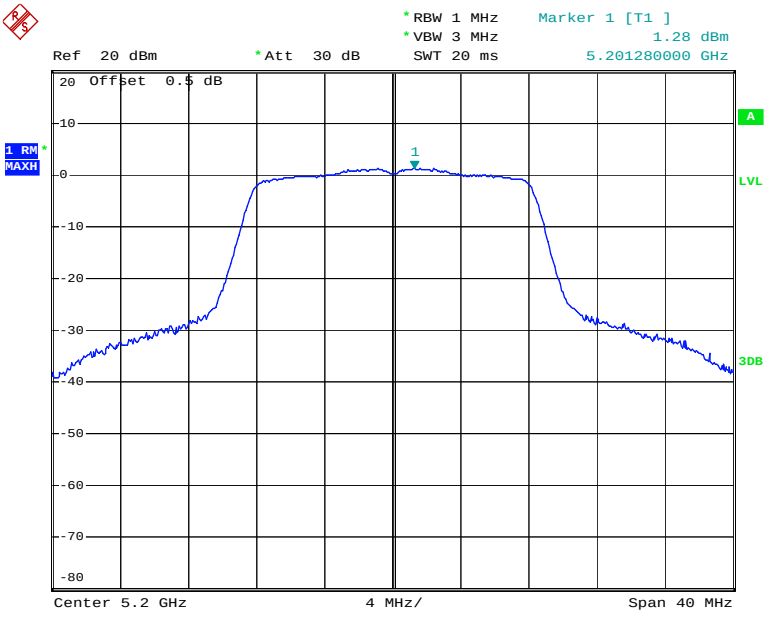
5150-5250MHz
Chain 0:

802.11a Low Channel



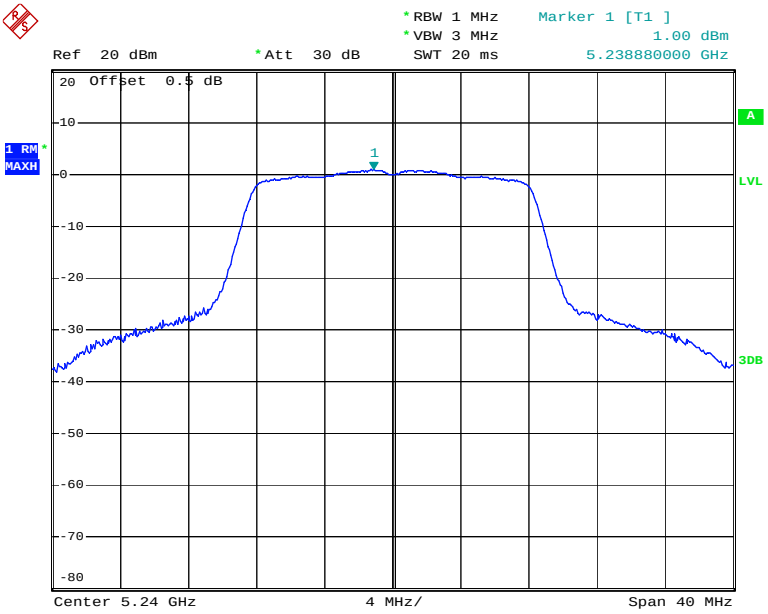
Date: 20.OCT.2017 20:59:44

802.11a Middle Channel



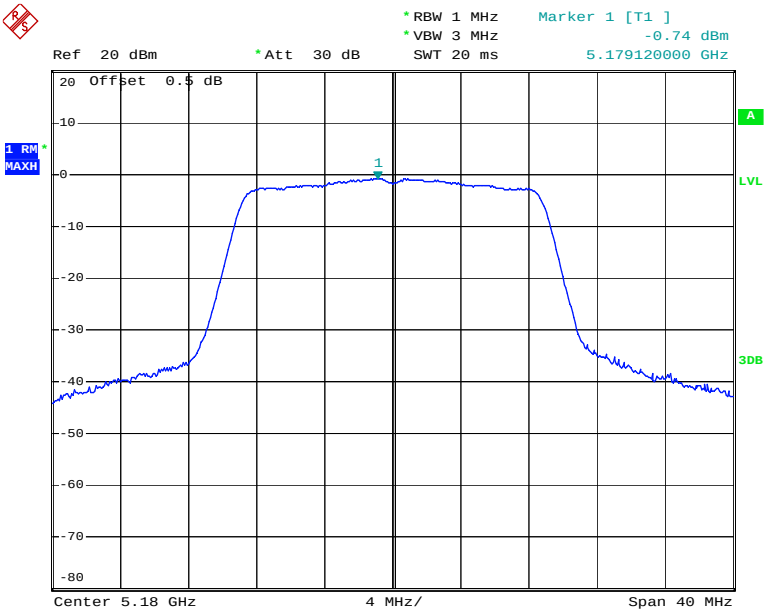
Date: 20.OCT.2017 21:03:21

802.11a High Channel



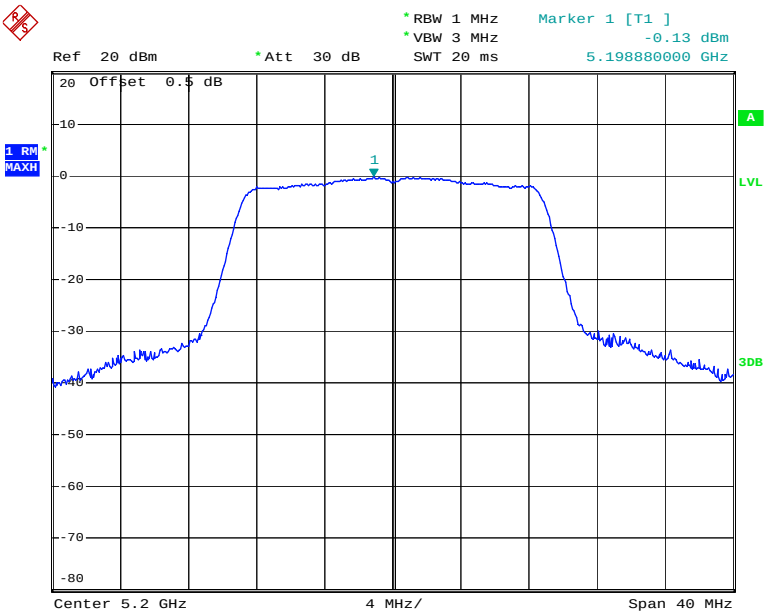
Date: 20.OCT.2017 21:01:35

802.11n ht20 Low Channel



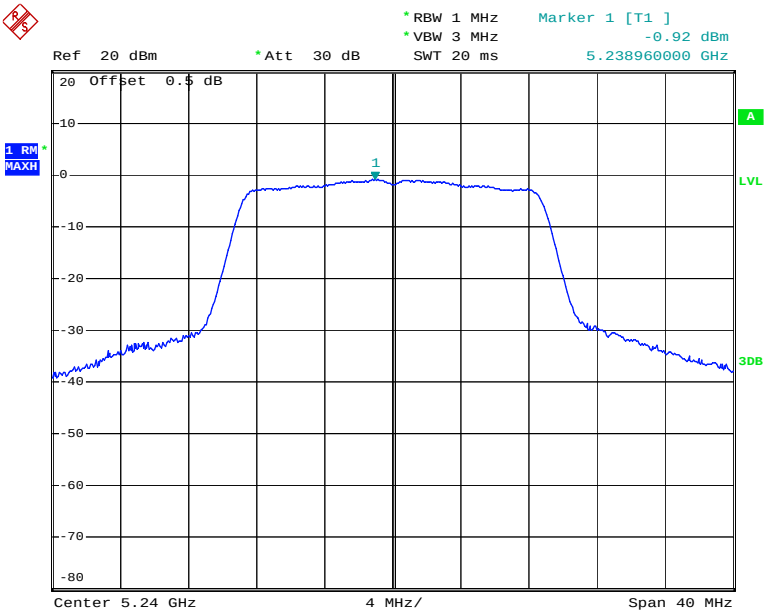
Date: 20.OCT.2017 21:12:24

802.11n ht20 Middle Channel



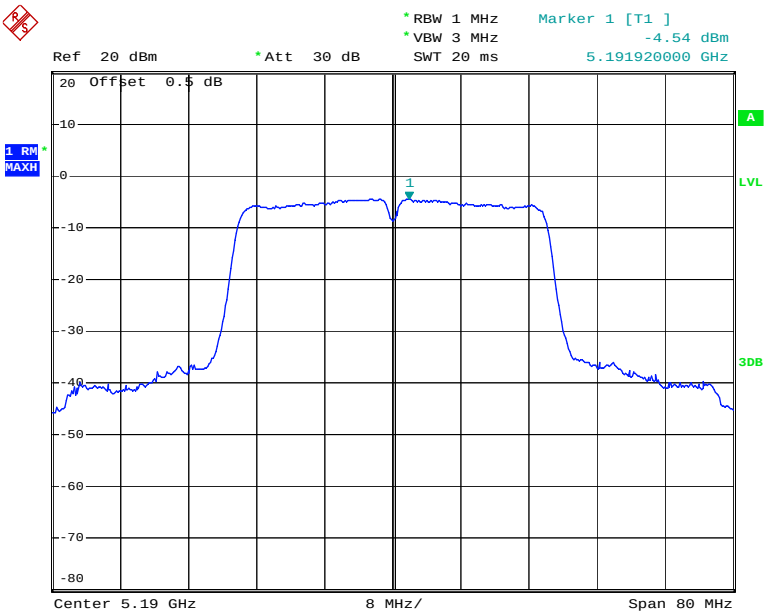
Date: 20.OCT.2017 21:10:41

802.11n ht20 High Channel



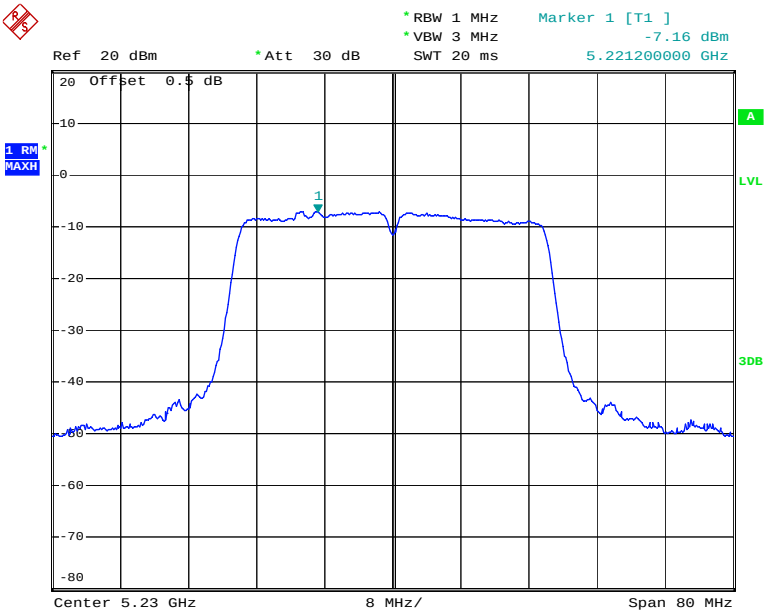
Date: 20.OCT.2017 21:11:26

802.11n ht40 Low Channel



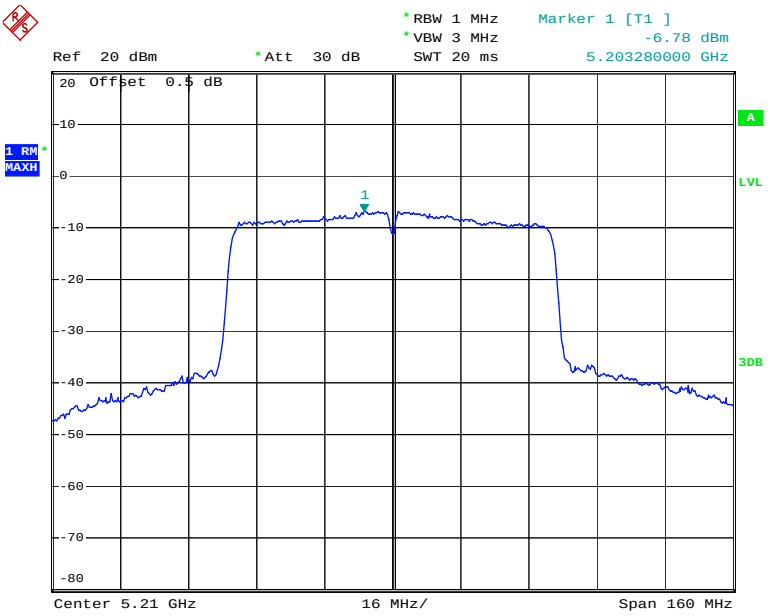
Date: 27.OCT.2017 00:45:12

802.11n ht40 High Channel



Date: 20.OCT.2017 21:19:42

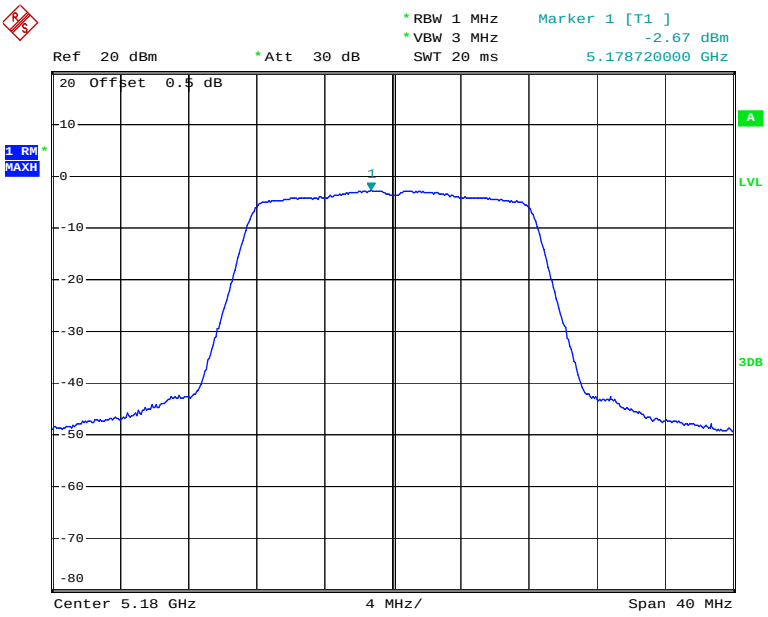
802.11ac80 Middle Channel



Date: 20.OCT.2017 21:20:53

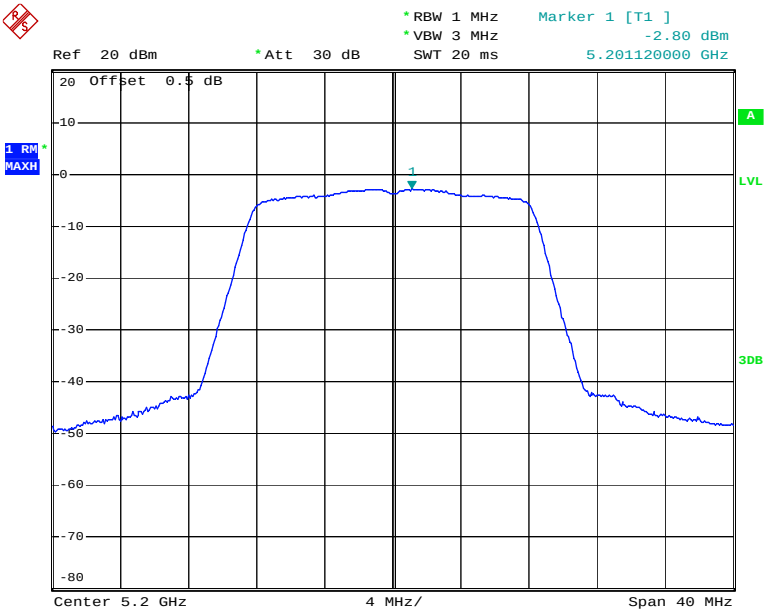
Chain 1:

802.11a Low Channel



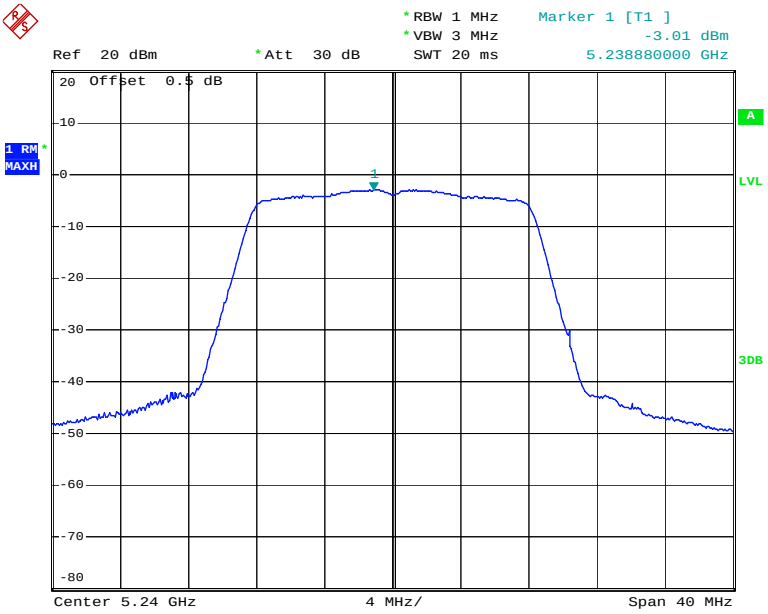
Date: 21.OCT.2017 00:32:12

802.11a Middle Channel



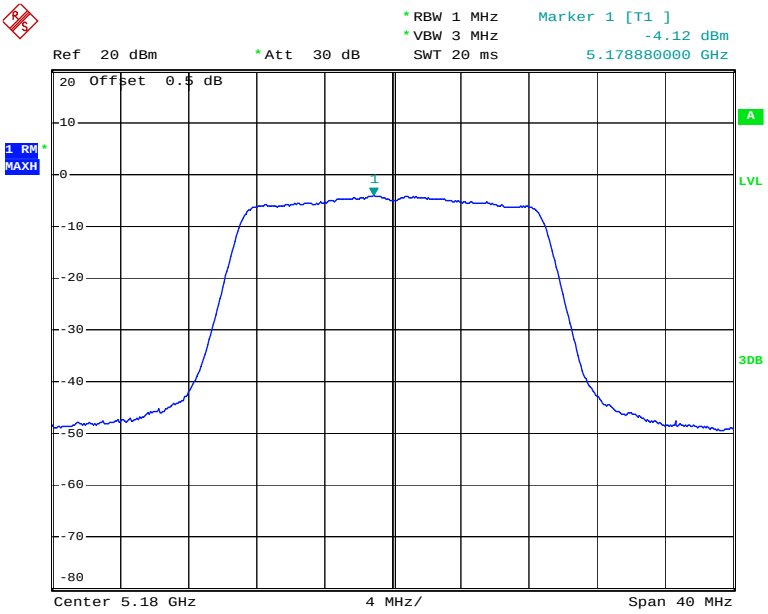
Date: 21.OCT.2017 00:32:48

802.11a High Channel



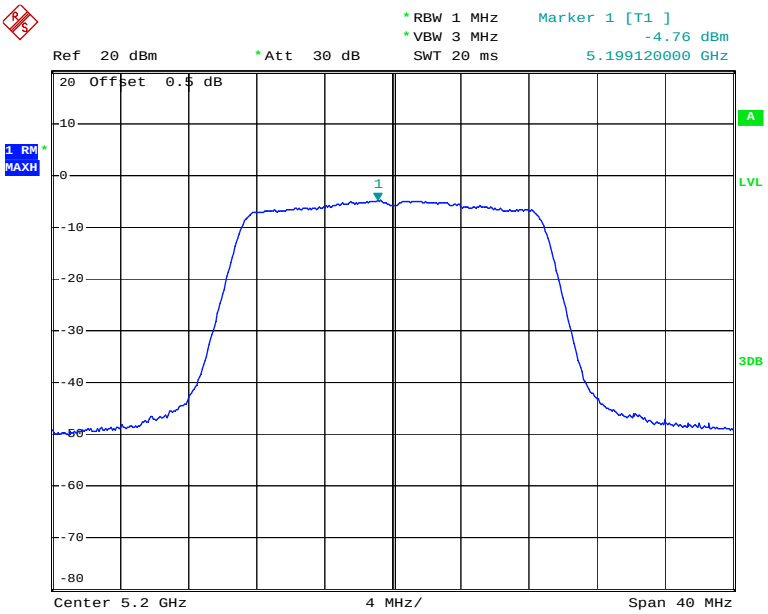
Date: 21.OCT.2017 00:33:31

802.11n ht20 Low Channel



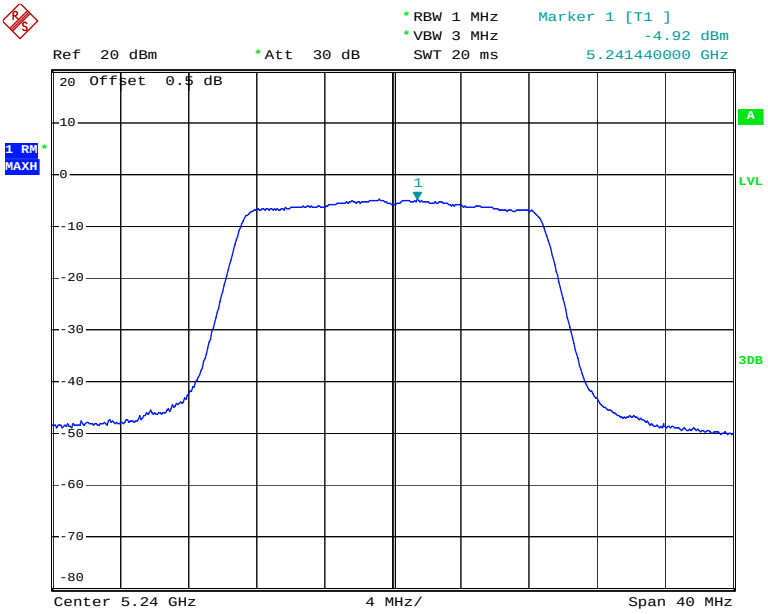
Date: 21.OCT.2017 00:29:32

802.11n ht20 Middle Channel



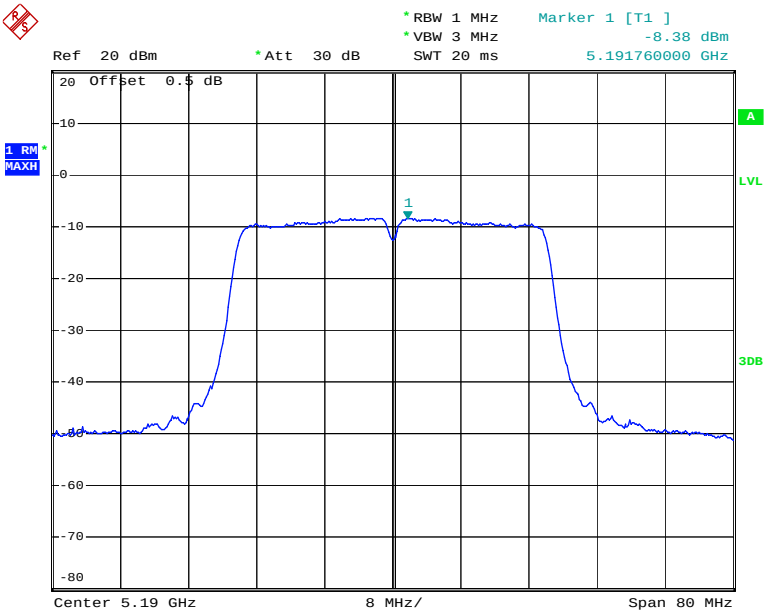
Date: 21.OCT.2017 00:30:28

802.11n ht20 High Channel



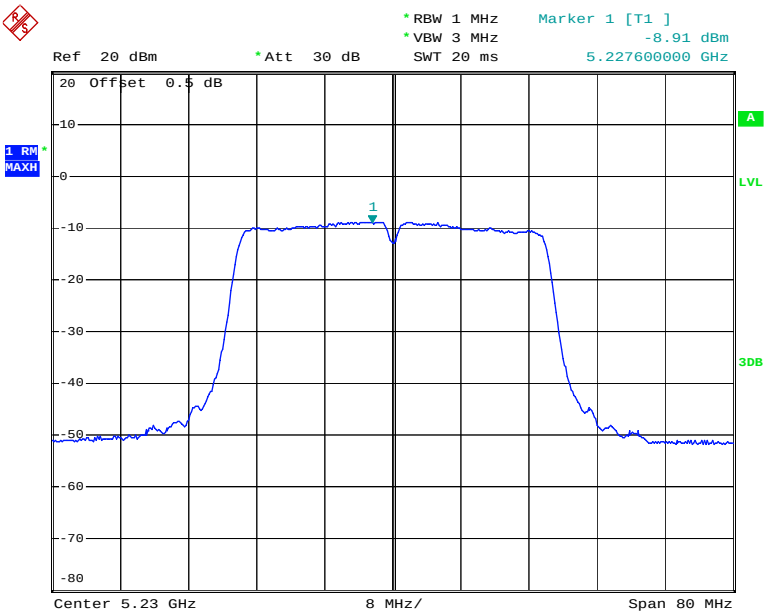
Date: 21.OCT.2017 00:31:12

802.11n ht40 Low Channel



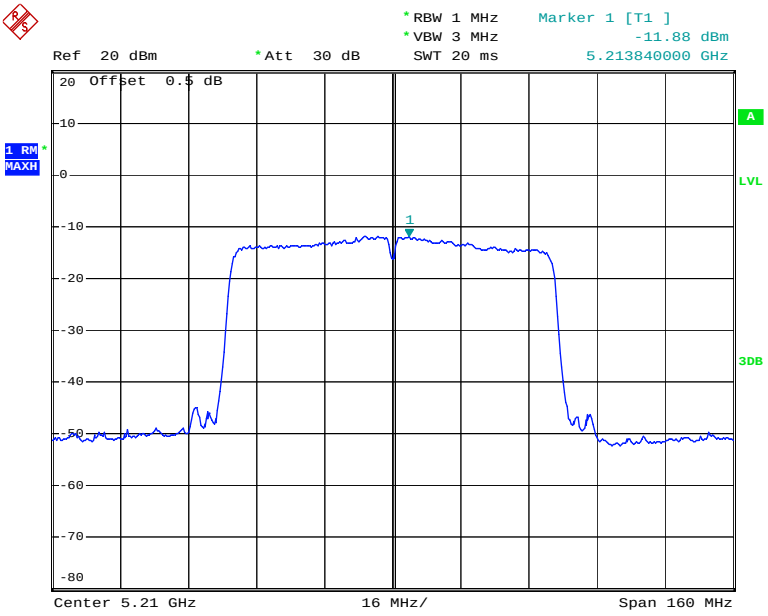
Date: 21.OCT.2017 00:27:35

802.11n ht40 High Channel



Date: 21.OCT.2017 00:28:27

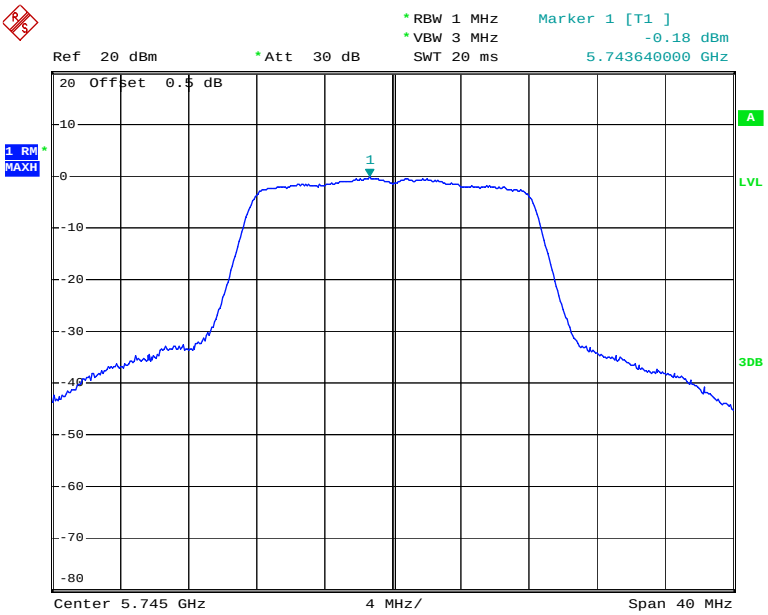
802.11ac80 Middle Channel



Date: 21.OCT.2017 00:26:28

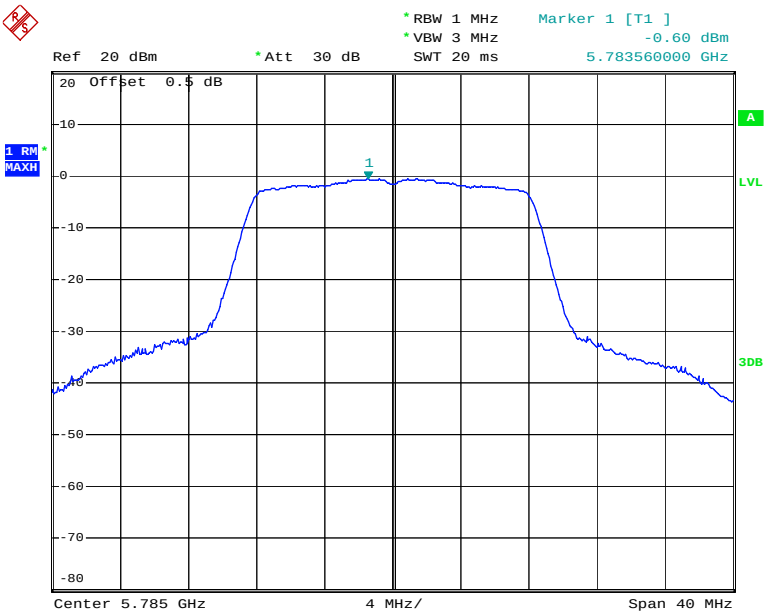
5725-5850MHz
Chain 0:

802.11a Low Channel



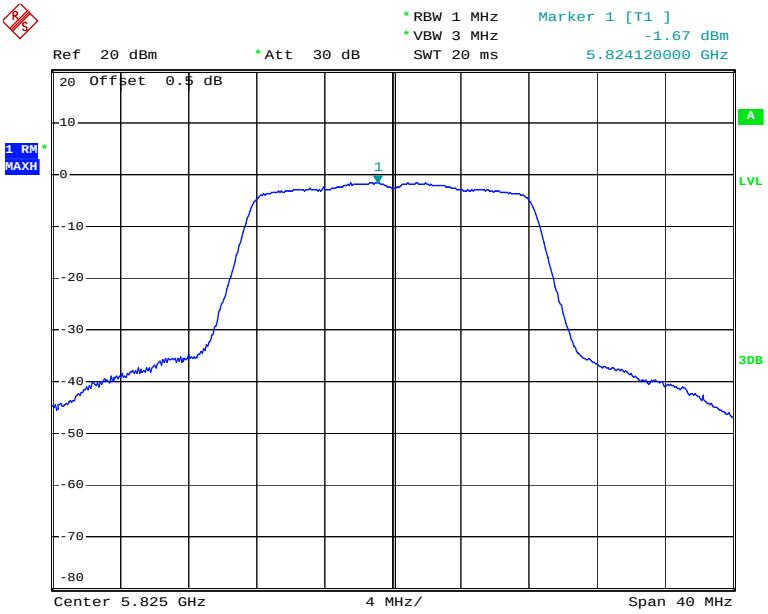
Date: 20.OCT.2017 21:53:01

802.11a Middle Channel



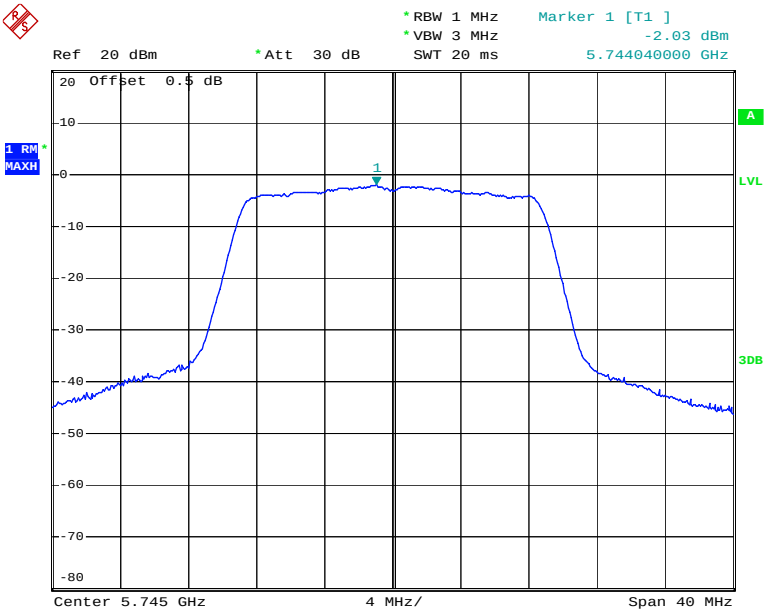
Date: 20.OCT.2017 21:54:04

802.11a High Channel



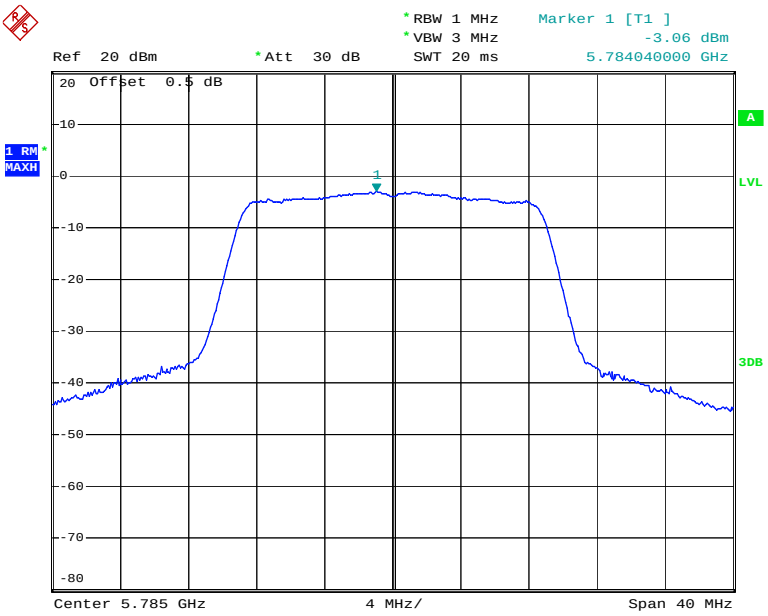
Date: 20.OCT.2017 21:55:00

802.11n ht20 Low Channel



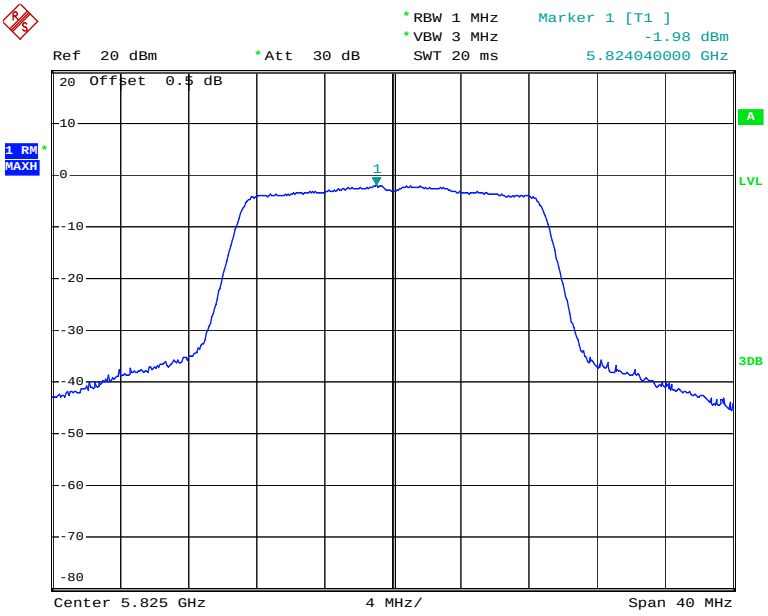
Date: 20.OCT.2017 21:49:16

802.11n ht20 Middle Channel



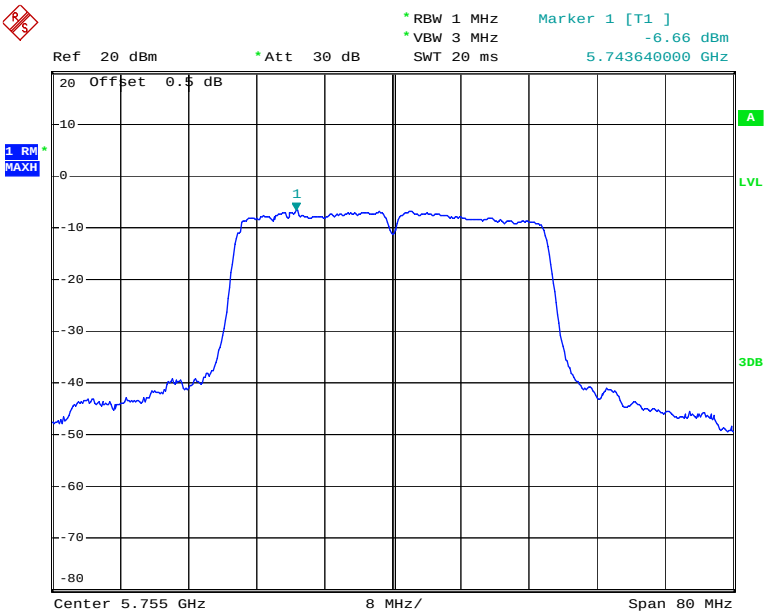
Date: 20.OCT.2017 21:50:40

802.11n ht20 High Channel



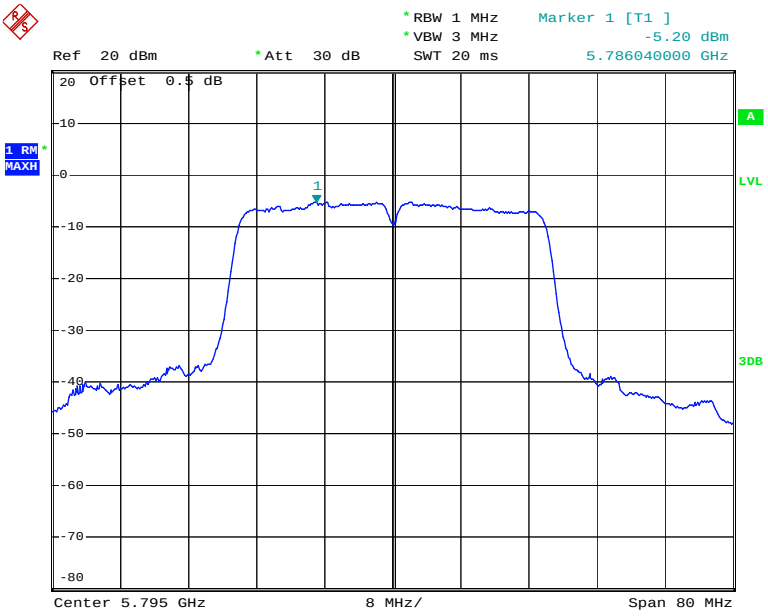
Date: 20.OCT.2017 21:51:36

802.11n ht40 Low Channel



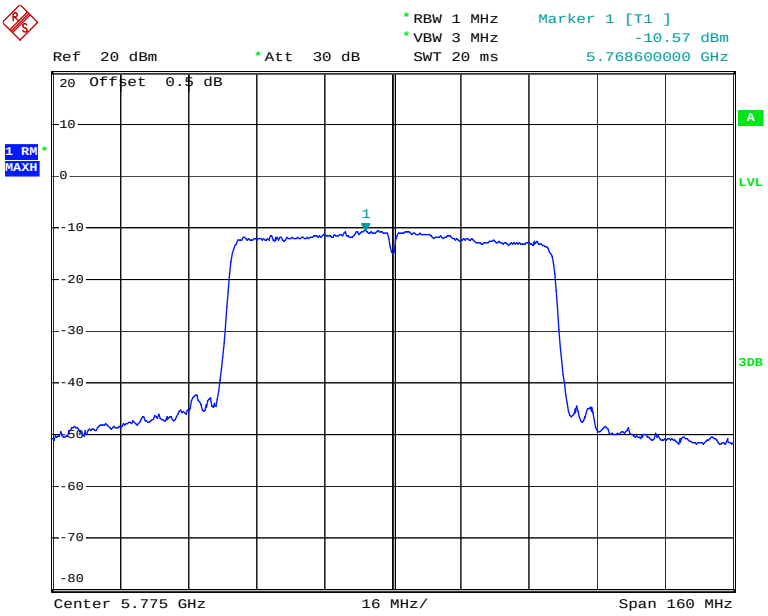
Date: 20.OCT.2017 21:46:56

802.11n ht40 High Channel



Date: 20.OCT.2017 21:48:06

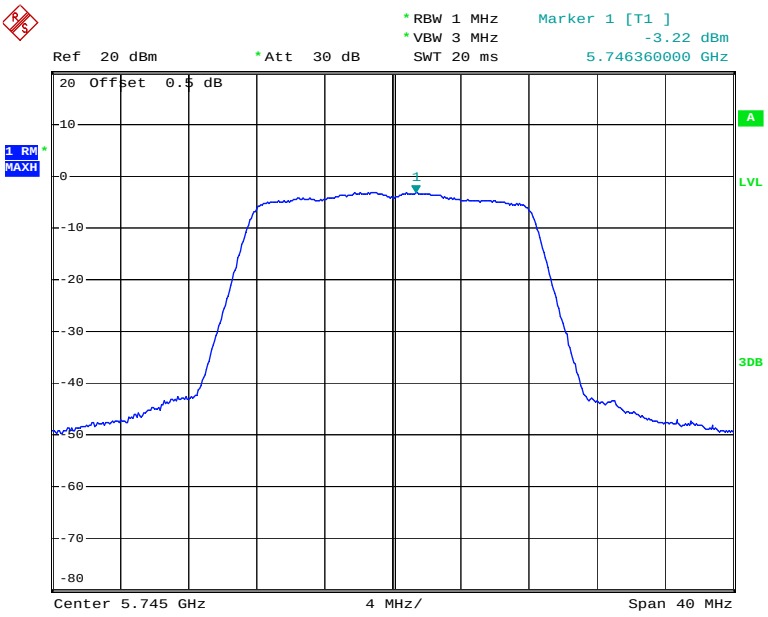
802.11ac80 Middle Channel



Date: 20.OCT.2017 21:45:02

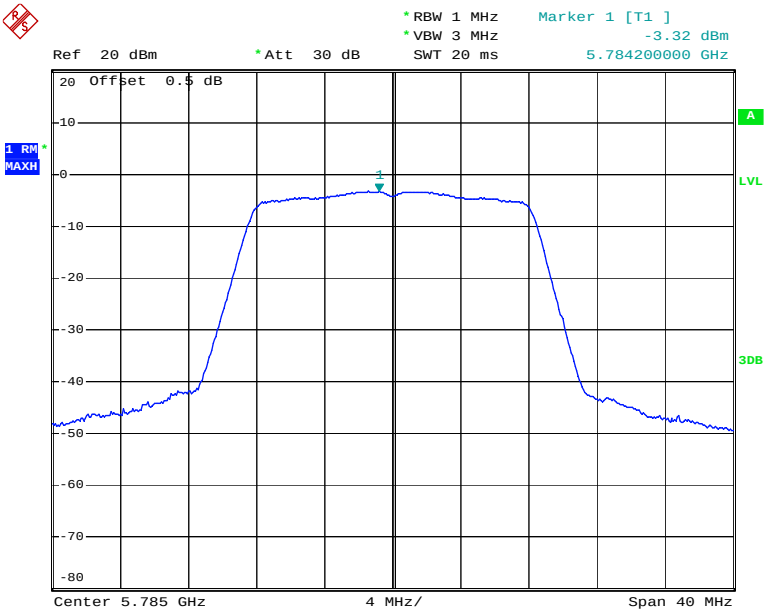
Chain 1:

802.11a Low Channel



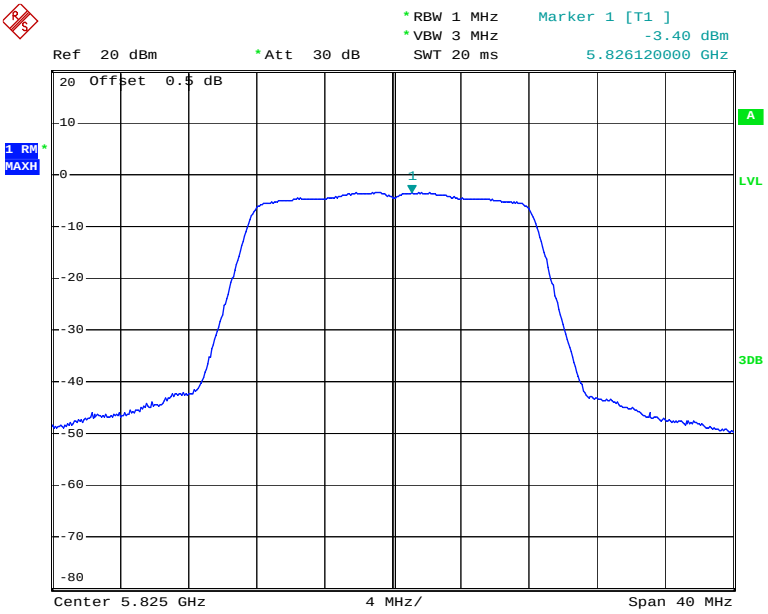
Date: 21.OCT.2017 00:16:13

802.11a Middle Channel



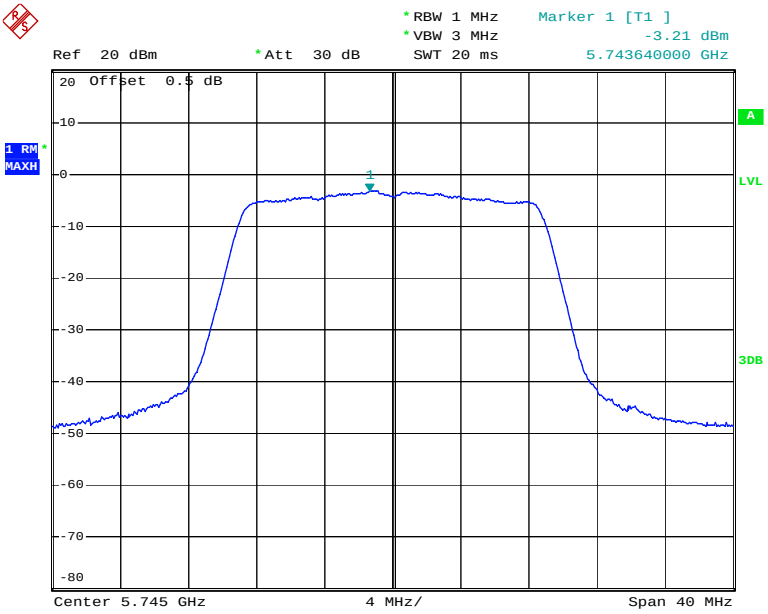
Date: 21.OCT.2017 00:17:30

802.11a High Channel



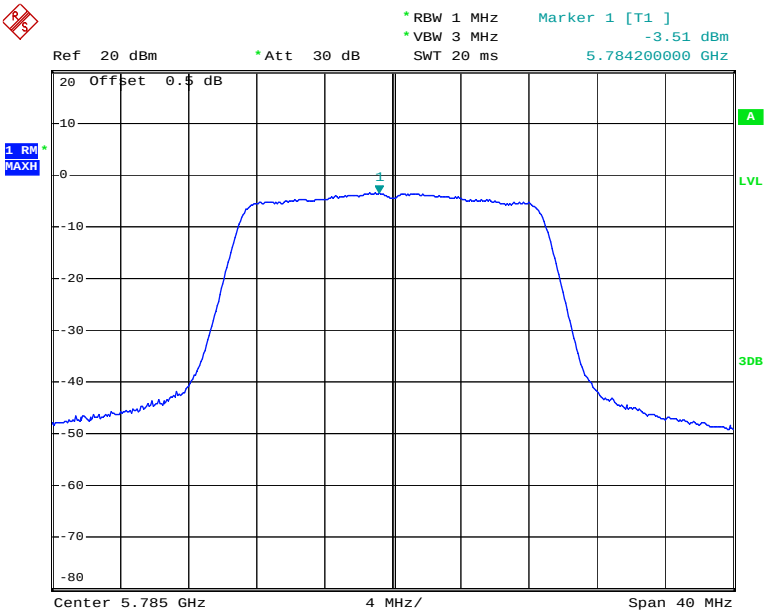
Date: 21.OCT.2017 00:18:03

802.11n ht20 Low Channel



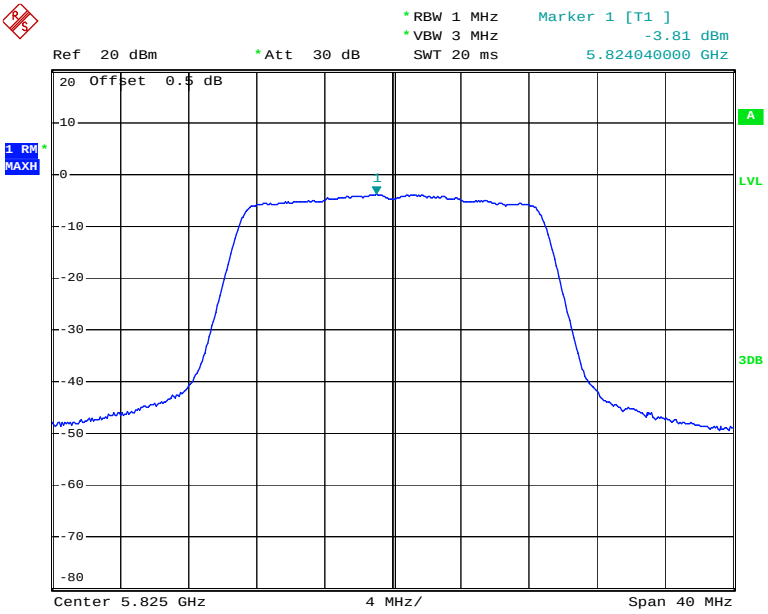
Date: 21.OCT.2017 00:19:09

802.11n ht20 Middle Channel



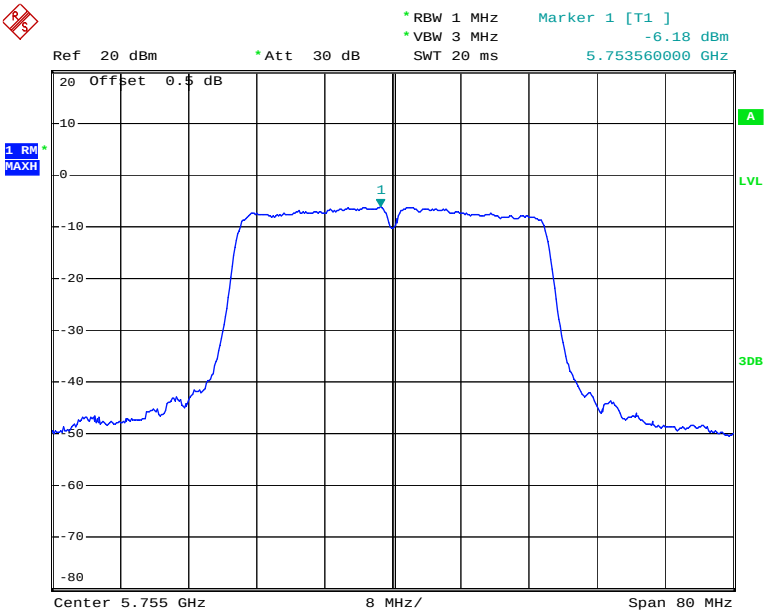
Date: 21.OCT.2017 00:20:06

802.11 n ht20 High Channel



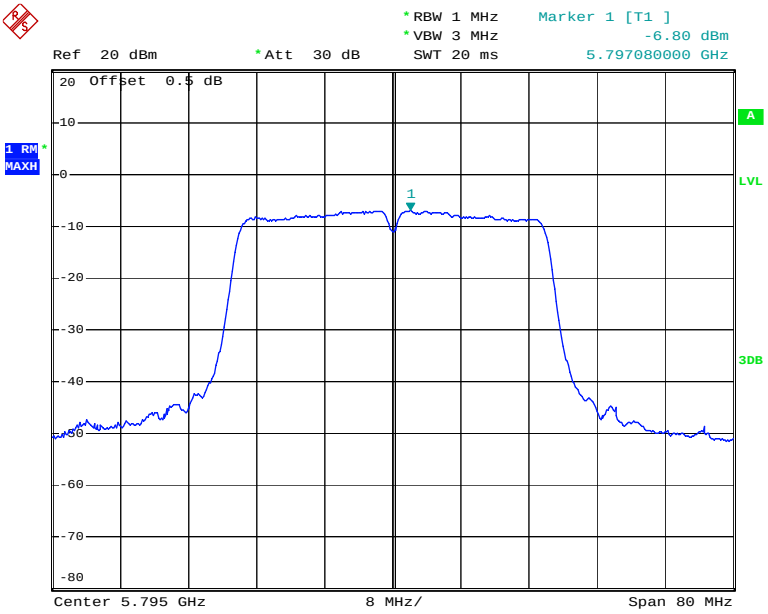
Date: 21.OCT.2017 00:20:40

802.11n ht40 Low Channel



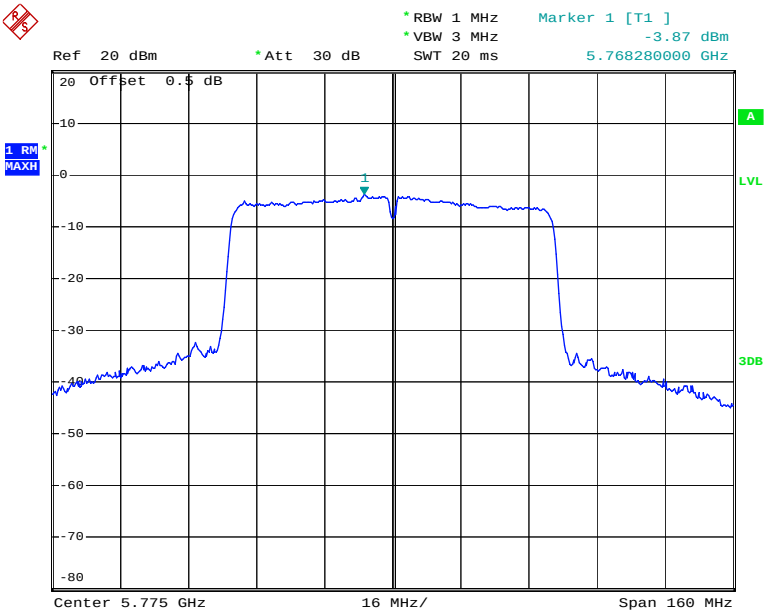
Date: 21.OCT.2017 00:21:48

802.11n ht40 High Channel



Date: 21.OCT.2017 00:22:49

802.11ac80 Middle Channel



Date: 20.OCT.2017 22:11:23

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